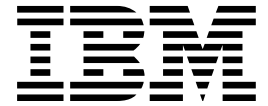IBM Print Services Facility for AIX:

AFP Upload Configuration Guide Using SNA

Version 2.1

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Second Edition (October, 1996)

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About This Publication

This publication contains examples and guidelines for configuring AFP Upload on SNA networks.

These configurations represent Systems Network Architecture (SNA) communications networks of the following types:

- SDLC
- token-ring

AFP Upload can also be used with other types of SNA networks that provide an LU 6.2 session between an AIX system and an MVS system. Examples of other network types include ethernet and X.25. These network types are not described in this publication.

Who Should Use This Publication

Any systems administrator or networking specialist responsible for configuring or using AFP Upload on SNA networks.

Using the Documentation for PSF for AIX

IBM PSF for AIX provides the following types of documentation:

- Hardcopy publications
- Contextual help for the PSF for AIX SMIT panels
- PSF for AIX DynaText hypertext data base
- PSF for AIX online message catalog

Hardcopy Publications

PSF for AIX ships with the following hardcopy publications, some of which are also available as DynaText hypertext information and as BookManager information (on the *Printing and Publishing: Collection Kit*):

- *IBM Print Services Facility for AIX: AIX for Users of Print Services Facility*, G544-3877. For PSF users who are new to AIX, this publication helps you learn some of the basic AIX concepts and basic commands used in the AIX environment so that you can print using PSF for AIX.

- *IBM Print Services Facility for AIX: Print Administration*, S544-3817. This publication provides instructions for installing, customizing, configuring, and using PSF for AIX and is intended for the person who administers your system.

- *IBM Print Services Facility for AIX: Print Submission*, S544-3878. This publication provides instructions for submitting print jobs using PSF for AIX and is intended for the end user.

- *IBM Print Services Facility for AIX: PSF Direct Network Configuration Guide for S/370*, S544-5287. This publication is intended for a systems administrator or network specialist responsible for configuring their system for AFP Upload, a function of PSF for AIX that allows another PSF program (PSF/VM, PSF/MVS, PSF/VSE, or PSF/400) to print remotely, using the SNA LU 6.2 protocol, on printers supported by PSF for AIX. The PSF program sends the print data stream directly to the PSF for AIX printer, bypassing the AIX spool.

- *IBM Print Services Facility for AIX: Guide for Printer and COM Operators*, S544-5286. This publication is intended for people whose PSF for AIX systems have been customized for restricted access to operations functions. This customization must be done at installation for each user ID.

- *AFP Conversion and Indexing Facility: User's Guide*, S544-5285. This publication is intended for application programmers interested in preparing their Advanced Function Presentation (AFP) files for archival and retrieval. In addition, users can view AFP files using the Viewer application of AFP Workbench for Windows on any workstation running Microsoft Windows.
- *IBM Page Printer Formatting Aid: User's Guide,* S544-5284. This publication provides instructions for creating form definitions and page definitions with Page Printer Formatting Aid for AIX (PPFA for AIX), a separately-orderable feature of PSF for AIX.

  Note: This publication is only supplied when the PPFA for AIX feature is ordered.

The following publications are also provided with PSF for AIX:

- *Licensed Program Specifications for IBM Print Services Facility for AIX*, G544-3815. This publication describes PSF for AIX and the resources that are shipped with the program. It also lists hardware and software requirements for PSF for AIX.
- *AFP Fonts: Font Summary*, G544-3810 This publication describes the IBM Expanded Core Fonts and the IBM Compatibility fonts that are shipped with PSF for AIX.

Contextual Help for the PSF for AIX SMIT Panels

Contextual help is available for each field on each PSF for AIX System Management Interface Tool (SMIT) panel. This help provides additional information on print submission and printer configuration options.

To view the help information, select a title or a field on a SMIT panel (the border highlights when you select a title or a field), and press F1. PSF for AIX displays a separate Help Context window.

You can also select help from the action bar (only with the AIXwindows interface of SMIT). When you do this, a message box displays, and the highlighting on the panel changes.

PSF for AIX DynaText Hypertext Data Base

Use the PSF for AIX **dtext** command to view the PSF for AIX DynaText hypertext documentation. This data base contains the following PSF for AIX publications:

- *IBM Print Services Facility for AIX: Print Submission*
- *IBM Print Services Facility for AIX: Print Administration*
- *Facts about PSF for AIX*

You also use normal DynaText functions to print portions of PSF for AIX documentation.

Note: You must have the both **dtext.brswr** and the **psf.online.books** options installed to view PSF for AIX hypertext documentation.

PSF for AIX Online Message Catalog

PSF for AIX supplies a message catalog for the messages issued during the operation of PSF for AIX. For each message, the message catalog includes the text of the message, an explanation, a system action, and a response. You view this information by using the PSF for AIX **psfmsg** command.

Related Publications

This section contains lists of publications, by category, that may be helpful to you as you install and use AFP Upload on SNA networks.

IBM Printing

The following publications contain information about or related to general concepts and procedures about IBM printing:

Why Enterprise Printing?, G544-3642

Printing for Fun and Profit Under AIX Version 4, GG24-3570

Printing and Publishing: Collection, SK2T-2921

Print Services Facility/MVS

The following publications contain information about or related to Print Services Facility/MVS:

PSF/MVS System Programming Guide, S544-3672

PSF/MVS Messages and Codes, S544-3675

AIX Operating System

The following publications contain information about or related to AIX general concepts and procedures:

IBM AIX Getting Started, GC23-2521

AIX General Concepts and Procedures, GC23-2202

IBM AIX Version System Management Guide: Communications and Networks, GC23-2487

AIX Version 3.2 Commands Reference, GBOF-1802

AIX and RISC System/6000 Hypertext Information Base Library, SC23-2163

SNA Server/6000

The following publications contain information about or related to SNA Server/6000:

AIX SNA Server/6000: User's Guide, SC31-7002

AIX SNA Server/6000: Configuration Reference, SC31-7014

AIX SNA Server/6000: Command Reference, SC31-7100

AIX SNA Server/6000: Diagnostic Guide and Messages, SC31-7101

A Guided Tour of SNA Server/6000 Version 2.1, GG24-4189

APPC/MVS

The following publications contain information about or related to Advanced Program-to-Program Communication/MVS:

MVS/ESA Planning: APPC Management, GC28-1110

General SNA Communications

The following publications contain information about or related to SNA communications:

Systems Network Architecture: Technical Overview, GC30-3073

Systems Network Architecture: Network Product Formats, LY43-0081

Systems Network Architecture: Guide to SNA Publications, GC30-3438

VTAM

The following publications contain information about or related to Virtual Telecommunications Access Method (VTAM) definitions:

VTAM V4R1: Network Implementation Guide, SC31-6419

VTAM V4R1: Resource Definition Reference, SC31-6427

VTAM V4R1: Resource Definition Samples, SC31-6428

VTAM V4R1: Messages and Codes, SC31-6418

NCP

The following publications contain information about or related to Network Control Program (NCP) definitions:

NCP V7R1, SSP V4R1 EP R12 Resource Definition, SC31-6224

Controller Guides

The following publications contain information about or related to the 3172 Interconnect Controller and the 3174 Establishment Controller:

3172 Program User's Guide, SC30-3543

3172 Operator's Guide, GA27-3970

3172 Hardware Planning Guide, GA27-4003

3174 Planning Guide, GA27-3918

PL/I

The following publications contain information about or related to running programs written in the PL/I language:

OS PL/I Version 2 Programming Guide, SC26-4307

Part 1. Overview and General Configuration Information

Chapter 1. Configuration Overview

This chapter contains an overview of the components you need to configure AFP Upload on SNA networks. This chapter contains these sections:

- What is AFP Upload?
- What is SNA Server/6000?
- What is APPC/MVS?
- Software prerequisites
- An overview of network configurations
- How to use this guide

What is AFP Upload?

AFP Upload includes an AIX client program (as part of PSF for AIX) and an MVS server program (available as a priced feature of PSF/MVS). The AIX client accepts MO:DCA-P files, or files it can convert to MO:DCA-P, and sends them to the MVS server which places them on the JES spool. Many of the attributes of the MO:DCA-P files, such as class, forms, and destination, are also communicated to the MVS system and recorded with the data sets on the JES spool. AFP Upload uses either TCP/IP or SNA LU 6.2 protocols to communicate between the AIX and MVS systems. This publication describes how to configure AFP Upload to use SNA LU 6.2 protocols.

What is SNA Server/6000?

SNA Server/6000 is required to use AFP Upload on SNA networks. SNA Server/6000 is an implementation of SNA for the AIX operating system running on the RISC System/6000 workstation. It enables a RISC System/6000 workstation to communicate with other nodes in an SNA network.

SNA Server/6000 contains a set of AIX utilities that includes the following components:

- Device drivers
- Kernel extensions
- Daemon processes

For more information about SNA Server/6000 and an overview of SNA terms and concepts, you can order these IBM publications by calling 1-800-879-2755 (US only):

- *AIX SNA Server/6000: User's Guide*.
- *AIX SNA Server/6000: Configuration Reference*.

What is APPC/MVS?

Advanced Program-to-Program Communication/MVS is required to use AFP Upload on SNA networks. APPC/MVS is an implementation of SNA LU 6.2 protocols for the MVS operating system. It is part of the MVS operating system and not a separately purchased product.

For more information about APPC/MVS and an overview of SNA terms and concepts, you can order *MVS/ESA Planning: APPC Management* by calling 1-800-879-2755 (US only).

Software Prerequisites

The following software products are required to use AFP Upload on SNA networks:

Host System

- MVS/ESA-JES SP 4.2.2 or later
- PL/I Version 2.3.0 or later (run-time library)
- VTAM Version 3.4 or later
- NCP Version 4.3.1 or later
- PSF/MVS Version 2.2 AFP Upload Feature

AIX System

- AIX Version 3.2.5 or AIX Version 4.1.3 or later
- SNA Server/6000 Version 2.1 or later (for AIX Version 3.2.5)
- SNA Server/6000 Version 2.2 or later (for AIX Version 4)
- SNA Server for AIX Version 3.1 or later (for AIX Version 4 SMP)
- PSF for AIX Version 2.1 with APAR IX57887 or later

An Overview of Network Configurations

This publication includes detailed examples and guidelines for five common SNA configurations. The diagrams in this section illustrate the five network configurations.

Local 37xx Token Ring Configuration

A detailed example of this configuration is displayed in "Local or Remote 37xx Token-Ring Example" on page 39. Guidelines for defining this configuration are provided in "Guidelines for Configuring Local or Remote 37xx Token-Ring" on page 52.
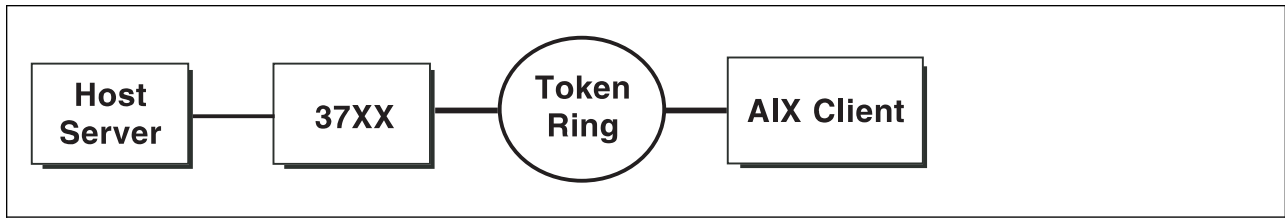
Figure 1. Local 37xx Token-Ring

Local 3172 Token Ring Configuration

A detailed example of this configuration is displayed in "Local 3172 Token-Ring Example" on page 75. Guidelines for defining this configuration are provided in "Guidelines for Configuring Local 3172 Token-Ring" on page 89.
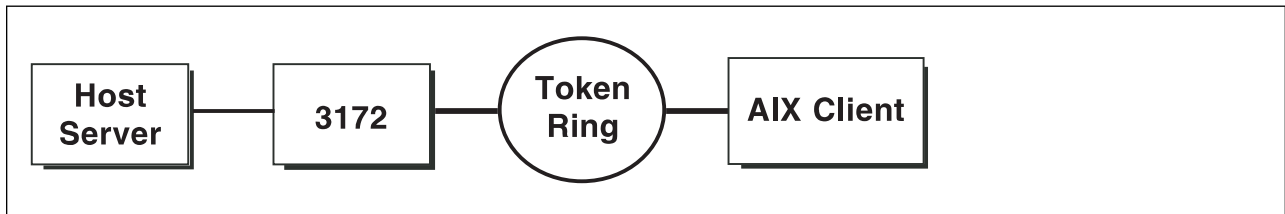
Figure 2. Local 3172 Token-Ring

Local 3174 Token Ring Gateway Configuration

A detailed example of this configuration is displayed in "Local 3174 Token-Ring Gateway Example" on page 111. Guidelines for defining this configuration are provided in "Guidelines for Configuring Local 3174 Token-Ring Gateway" on page 124.
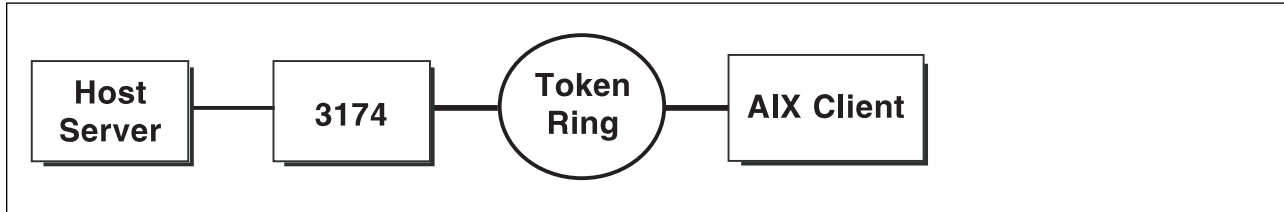
Figure 3. Local 3174 Token-Ring Gateway

Remote 3174 Token Ring Gateway Configuration

A detailed example of this configuration is displayed in "Remote 3174 Token-Ring Gateway Example" on page 145. Guidelines for defining this configuration are provided in "Guidelines for Configuring Remote 3174 Token-Ring Gateway" on page 158.
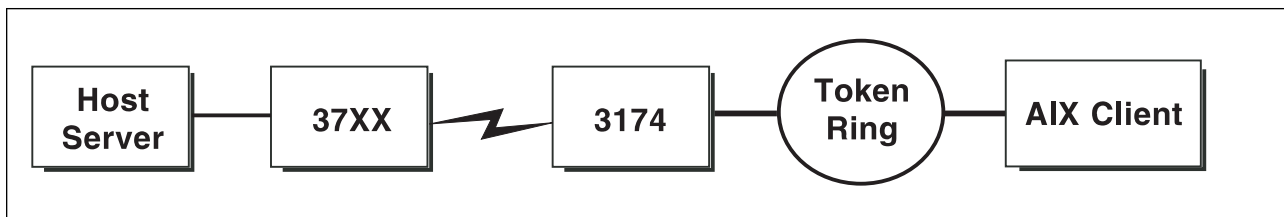
Figure 4. Remote 3174 Token-Ring Gateway

Local 37xx SDLC Configuration

A detailed example of this configuration is displayed in "Local or Remote 37xx SDLC Example" on page 179. Guidelines for defining this configuration are provided in "Guidelines for Configuring Local or Remote 37xx SDLC" on page 191.

Figure 5. Local 37xx SDLC

How To Use This Guide

This publication provides five detailed examples to help you configure your SNA environment to use AFP Upload:

1. Read all of **Part 1** because it contains an overview and general configuration information.

2. Read the chapter in **Part 2** that offers an example and guidelines for configuring an SNA network that most closely resembles your own SNA network.

Chapter 2. General Information About the Host Server Program

The host server program is a single MVS load module that can be purchased as a feature of PSF/MVS. It must be configured, using an APPC/MVS TP profile, as a transaction program that is started by the APPC/MVS transaction scheduler, ASCH. The APPC/MVS TP profile includes the JCL that executes the host server program.

The APPC/MVS transaction scheduler starts the host server program when it receives an SNA conversation request from an AIX client. The transaction scheduler starts a separate instance of the host server program for each conversation request.

Once the host server program is started, the AIX client sends MOD:CA data which the server program places in a SYSOUT data set. When the host server program allocates the SYSOUT data set it accepts the default spool space allocation for the SYSOUT class definition in JES.

The host server program associates attributes passed by the AIX client with the SYSOUT data set. These attributes are similar to JCL OUTPUT statement parameters. They include:

- ADDRESS
- BUILDING
- CLASS
- COPIES
- DATACK
- DEPARTMENT
- DESTINATION
- FORMDEF
- FORMS
- NAME
- ROOM
- TITLE
- WRITER

Notes:

1. The host server program requires that MOD:CA-P statements sent by the AIX client be preceded by a 5A control character.

2. The AIX client program always passes a value for the DATACK parameter with each uploaded file. This DATACK value overrides the DATACK parameter in the PSF/MVS PRINTDEV statement.

9

Specifying the SYSPRINT DD Statement

The host server program records its configuration settings and information about errors in the data set referenced by the SYSPRINT DD statement. You must include a SYSPRINT DD statement in the JCL statements that the ASCH scheduler uses to run the host server program. You specify these JCL statements when you create an APPC/MVS TP profile for the host server program.

If the SYSPRINT DD statement refers to a data set other than SYSOUT or DUMMY, the data set must have the following attributes:

directory blocks: 0

record format: VA

record length: 125

block size: 129

Supported Configuration Parameters

The AIX client provides most of the information required by the host server program. The host server program has only a few configuration parameters. The default values for these parameters are appropriate in most cases.

CASE

Specifies whether the host server program should convert text OUTPUT parameter values to upper case. The following OUTPUT parameters are affected:

- ADDRESS
- BUILDING
- DEPARTMENT
- NAME
- ROOM
- TITLE

The CASE parameter does not affect some other OUTPUT parameter values, which are always converted to upper case:

- CLASS
- DESTINATION
- FORMDEF
- FORMS
- WRITER

MIXED

Accept the text values as provided by the AIX client.

Note: Some code pages used by fonts printed on header and trailer pages do not include lower case characters.

UPPER

Convert all alphabetic English characters to upper case.

TRACE

Specifies whether the host server program should record its internal flow in the data set referenced in the SYSPRINT DD statement.

Note: Using a TRACE value other than NONE degrades performance. You should specify a value other than NONE only if directed to do so by an IBM service representative.

DS

Record transmitted and received data, as well as the internal execution path.

NONE

Do not record trace information. The host server program only writes configuration and error information in the SYSPRINT data set.

NORM

Record the internal execution path.

Specifying the Configuration Parameters

Specify host server program parameters and values as a program parameter on the JCL EXEC statement.

For example,

```
//STEP    EXEC PGM=AUPSNAS,PARM='/CASE=MIXED'
```

 or

```
//STEP    EXEC PGM=AUPSNAS,PARM='/CASE=MIXED,TRACE=NORM'
```

The PARM value has the format:

'run-time options/program parameter'

Run-time options control aspects of the program's execution environment, such as the amount of storage available to the program.

The program parameter is passed to the program.

Specifying PL/I Run-Time Options

The host server program is written in the PL/I language. Like most PL/I programs, aspects of its execution environment can be controlled by run-time options.

You can specify run-time options in the PARM operand on the JCL EXEC statement.

For example,

```
//STEP    EXEC PGM=AUPSNAS,PARM='SPAE,SPIE/CASE=MIXED'
```

The PARM value has the format:

'run-time options/program parameter'

The program parameter is passed to the program. The host server program accepts its configuration parameters in this way.

For more information about run-time options for PL/I programs, see *OS PL/I Version 2 Programming Guide*.

Chapter 3. General Information About the AIX Client Program

The AFP Upload AIX client program is part of PSF for AIX. The AIX client program operates as a PSF for AIX printer. Like other PSF for AIX printers, it accepts data from the AIX spool. It converts the data to MO:DCA-P, if possible, and uses SNA LU 6.2 protocols to send the data to the AFP Upload host server program. The host server program copies the data into a JES SYSOUT data set.

Because the AIX client program operates as a PSF for AIX printer, it can be controlled and monitored by the same commands used with other PSF for AIX printers (**psfctl**, **psfstat**, and **enq**). Refer to the *IBM Print Services Facility for AIX: Print Administration* publication for more information about these commands.

The AIX client program only sends MO:DCA-P data to the host server program. Therefore, files to be uploaded must contain MO:DCA-P data or data that PSF for AIX can transform to MO:DCA-P. The AIX client program cannot directly accept ASCII files. You must use the AFP Conversion and Indexing Facility (ACIF) to transform an ASCII file to MO:DCA-P data before enqueing it to a PSF for AIX printer configured to upload files. Refer to the *AFP Conversion and Indexing Facility: User's Guide* for more information about ACIF.

The AIX client program passes the following attributes to the host server program along with each file:

- address1
- address2
- address3
- address4
- building
- class
- copies
- datack
- department
- destination
- formdef
- forms
- name
- room
- title
- writer

"Specifying Attributes Using the AIX enq Command" on page 14 briefly describes how to specify these attributes to the AIX client program using the **enq** command. Refer to the *IBM Print Services Facility for AIX: Print Submission* publication for detailed information about how to specify these attributes when you submit a file.

Notes:

1. The AIX client program does not accept files read from tape by the PSF for AIX Input Manager.

2. The maximum length of a MO:DCA-P data stream statement that can be accepted by the AIX client program is 32,756 bytes.

3. The AIX client program always passes the effective **datack** value with each uploaded file. This **datack** value overrides the DATACK parameter in the PSF/MVS PRINTDEV statement.

Specifying Attributes Using the AIX enq Command

Figure 6 indicates how to specify passed attributes using the AIX **enq** command.

Figure 6. Passing Attributes Using the AIX enq Command

Attribute	enq Option
address1	-o address1=*address1*
address2	-o address2=*address2*
address3	-o address3=*address3*
address4	-o address4=*address4*
building	-o building=*building*
class	-o passthru=class=*class*[1]
copies	-o copies=*copies*
datack	-o datack=*datack*
department	-o department=*department*
destination	-o passthru=destination=*destination*[1]
formdef	-o formdef=*formdef*
forms	-o passthru=forms=*forms*[1]
name	-o name=*name*
room	-o room=*room*
title	-o title=*title*
writer	-o writer=*writer*

---

[1] To specify the **class**, **destination**, and **forms** attributes, you must use the -o passthru option.

You should use one -o passthru specification that includes all the attributes that you want to provide:

```
enq -P upload1 -o passthru=class=k,forms=std smp.file
```

In this example, the PSF for AIX printer **upload1** will upload the file **smp.file** and correctly pass the class and forms attributes.

If you use the -o passthru specification more than once, PSF for AIX only processes the last specification:

```
enq -P upload1 -o passthru=class=k -o passthru=forms=std smp.file
```

In this example, the PSF for AIX printer **upload1** will upload the file **smp.file** and correctly process the **forms** attribute, but ignore the **class** attribute.

To combine passthru parameters with other values:

```
enq -P upload1 -o passthru=class=k -o name="John Doe" smp.file
```

In this example, the PSF for AIX printer **upload1** will upload the file **smp.file** and correctly process the **class** and **name** attributes.

See the *IBM Print Services Facility for AIX: Print Submission* publication for detailed information about how to specify these attributes using the **enq** command and the **psfin** command.

See relevant MVS publications for information about acceptable values for each of the passed attributes.

Chapter 4. Information About MVS Userids and Passwords

This chapter describes crucial information about determining whether AFP Upload must use an MVS userid and password and, if so, how to specify them to the AIX client program.

<u>Please read this chapter!</u>

Determining Whether an MVS Userid and Password Are Necessary

The APPC/MVS scheduler (ASCH) starts the AFP Upload host server program when a conversation request is received. The APPC/MVS scheduler accepts conversation requests that contain a valid MVS userid and password. It also accepts conversation requests that do not contain any MVS userid and password data.

If the AIX client program provides an MVS userid in its conversation requests, it must also provide the valid password for this userid. The userid must have sufficient RACF access to all of the resources referenced explicitly and implicitly in the APPC/MVS TP profile for the host server program.

The AIX client program can also omit an MVS userid and password from its conversation requests. In this case, RACF must be configured to allow universal access to all resources referenced explicitly and implicitly in the APPC/MVS TP profile for the host server program.

Specifying an MVS Userid and Password

You can configure the AFP Upload AIX client program to provide an MVS userid and password in the conversation requests it sends to APPC/MVS. Or, you can configure the AIX client program to omit userid and password data from its conversation requests.

To avoid exposing the userid and password to many AIX users, the SMIT configuration panels for AFP Upload do not accept userid and password data. You must include the userid and password data in a separate file that can be made readable only by the **root** login.

To cause the AIX client program to include MVS userid and password data in the conversation requests it sends to APPC/MVS, you must create a file named **.security** in the directory for the PSF for AIX printer:

> `/var/psf/`*printername*`/.security`

where *printername* is the name of your PSF for AIX printer.

The file must contain the MVS userid followed by at least one blank or new line, then the password. For example,

> `UPUSER UPUSERPW`

or

> `UPUSER`
>
> `UPUSERPW`

where `UPUSER` is the MVS userid and `UPUSERPW` is the password.

The **.security** file must be readable by the **root** login. Permissions for all other logins can be denied. You must create the file using the **root** login. Then, you can exclude all logins other than **root** from reading the file by running the AIX **chmod** command:

```
chmod 600 .security
```

If you do not create a **.security** file in the PSF for AIX printer's directory as described above, the AIX client program will omit userid and password data from its conversation requests.

Errors and Symptoms Involving the MVS Userid and Password

The following describes two common errors that can occur when an AIX client program sends a conversation request to the APPC/MVS scheduler.

Insufficient RACF Access to Resources in the APPC/MVS TP Profile

The APPC/MVS scheduler ends the SNA LU 6.2 conversation with the AIX client program if the client provides a valid MVS userid and password, but the userid does not have access to a resource referenced in the TP profile for the host server program.

The APPC/MVS scheduler also ends the conversation with the AIX client program if the client does not provide a userid and password and there is insufficient RACF universal access to a resource referenced in the TP profile for the host server program.

In either case, RACF messages are logged on the MVS system and the AIX client program reports an error message which indicates that the remote transaction program ended abnormally. The description of the AIX client's message indicates that this failure often occurs because the remote TP has insufficient access authority for resources on the remote server. You can use the **psfmsg** command to display detailed information about any PSF for AIX message. For more information about the **psfmsg** command, refer to the *IBM Print Services Facility for AIX: Print Submission* publication.

Expired MVS Password in .security File

If you specify an MVS userid in the **.security** file, you must also specify the valid password for the userid. If the password is missing, invalid, or expired, the AIX client program reports an error message that indicates the password is invalid. You can use the **psfmsg** command to display detailed information about any PSF for AIX message. For more information about the **psfmsg** command, refer to the *IBM Print Services Facility for AIX: Print Submission* publication.

If you include an MVS userid and password in the **.security** file, the **.security** file must be updated each time the password for the MVS userid is changed.

Chapter 5. Understanding SYSOUT Data Set Attributes

This chapter describes the origin of attributes of the SYSOUT data set into which the AFP Upload host server program places MO:DCA-P data sent by the AIX client program.

Print Attributes Passed from AIX to MVS

For each MO:DCA-P file that the AFP Upload client program sends to the host server program on MVS, it passes the following AIX print file options:

- address1
- address2
- address3
- address4
- building
- class
- copies
- datack
- department
- destination
- formdef
- forms
- name
- room
- title
- writer

Refer to the *IBM Print Services Facility for AIX: Print Submission* publication for information about how to specify these attributes when you submit a file to a PSF for AIX printer.

The host server program uses values passed by the AIX client program to set the following OUTPUT descriptor parameters on the SYSOUT data set into which the uploaded MO:DCA-P data is placed:

- ADDRESS
- BUILDING
- CLASS
- COPIES
- DATACK
- DEPARTMENT
- DESTINATION
- FORMDEF
- FORMS
- NAME
- ROOM
- TITLE
- WRITER

Identification Attributes Passed from AIX to MVS

The USERID attribute comes from the MVS userid used by the AIX client program when it sends a conversation request to the APPC/MVS scheduler. You can specify this userid in the **.security** file in the directory for the PSF for AIX printer that uploads files. For more information about the **.security** file, refer to Chapter 4, "Information About MVS Userids and Passwords" on page 15.

Attributes Obtained from the APPC/MVS TP Profile

The JOBNAME and ACCOUNT attributes come from the JCL you specify in your APPC/MVS Transaction Program profile. If you want to use several different accounts, you can define several host server programs, each with a different transaction program name and profile.

Assigning Default Print Attributes to Uploaded Files

You can use AIX shell scripts to define default print file options for uploaded files rather than manually specifying them each time a file is enqueued.

The following example AIX shell script assigns defaults for the class and destination options:

```
#!/bin/ksh
#######################################################################
##                                                                   ##
## NAME:        upsubmit                                             ##
##                                                                   ##
## DESCRIPTION: Add default class and destination values to          ##
##              files that are uploaded to MVS.                      ##
##                                                                   ##
##              Since the default values are inserted prior          ##
##              to the options specified by the user, options        ##
##              specified by the user take precedence.               ##
##                                                                   ##
##              Note that a user who specifies the -o passthru       ##
##              option MUST specify all the subparameters (forms,    ##
##              class, destination).  The user's passthru            ##
##              specification completely overrides the default       ##
##              one in this shell script.                            ##
##                                                                   ##
## EXAMPLE:     Put this shell script in a directory in users'       ##
##              PATH statement.  For instance, /usr/lpp/psf/bin.     ##
##                                                                   ##
##              Ensure that the file has its execute permissions     ##
##              set (chmod 755 upsubmit).                            ##
##                                                                   ##
##              User invokes "upsubmit" instead of "enq" but         ##
##              specifies normal enq options.                        ##
##                                                                   ##
##                 upsubmit -P upload1 -o copies=2 sample.afp        ##
##                                                                   ##
##              The upsubmit script adds default options and         ##
##              enqueues the file.                                   ##
##                                                                   ##
#######################################################################

command="enq -o passthru=class=x,destination=prt1 $@"
exec $command
```

Figure 7. Sample AIX Shell Script To Set Default Class And Destination Values.

Chapter 6. General APPC/MVS Configuration Tasks

This chapter briefly discusses a few general tasks that must be performed before you can use APPC/MVS. This chapter should be used in conjunction with *MVS/ESA Planning: APPC Management*, which describes in detail how to configure and use APPC/MVS. On systems where APPC/MVS is already in use, the tasks described in this chapter may already have been performed.

Creating VSAM Data Sets for TP and Side Information Profiles

APPC/MVS requires one VSAM key-sequenced data set (KSDS) to hold TP profiles and one VSAM KSDS to hold side information profiles. Sample JCL statements and definitions to create these VSAM data sets are located in:

- SYS1.SAMPLIB(ATBTPVSM)
- SYS1.SAMPLIB(ATBSIVSM)

Configuring and Running the APPC and ASCH Address Spaces

APPC/MVS includes an APPC address space (APPC) and an APPC transaction scheduler address space (ASCH). AFP Upload requires that both address spaces be running.

You must create two parmlib members to record configuration definitions for the APPC and ASCH address spaces:

- APPCPMxx
- ASCHPMxx

Each chapter in Part 2 of this publication includes sample APPCPMxx and ASCHPMxx parmlib members.

SYS1.PROCLIB contains JCL procedures for APPC and ASCH. Each procedure accepts a parameter that indicates the parmlib member to use (xx). You must use the MVS START command to create the APPC and ASCH address spaces before you can use AFP Upload. For example,

```
START APPC,SUB=MSTR
START ASCH,SUB=MSTR
```

Chapter 7. General AIX Configuration Tasks and Considerations

This chapter describes important AIX and SNA Server/6000 system administration tasks and considerations that you might need to understand as you install and configure AFP Upload. For more detailed information about the AIX operating system and AIX Server/6000, refer to the publications listed in "Related Publications" on page xxi.

SNA Server for AIX, SNA Server/6000, and SNA Services/6000

The minimum required version of IBM SNA system software for the RISC System/6000 is named SNA Server/6000 Version 2 Release 1. The previous version of this product was named SNA Services/6000 Version 1 Release 2. Beginning with Version 3 Release 1, this product is named SNA Server for AIX. AFP Upload requires SNA Server/6000 Version 2 Release 1, or later.

Note that AIX software management facilities might report SNA Server/6000 Version 2 Release 1 components as level 1.3; for example, if you use SMIT to list installed software, you might observe components in the form:

```
sna.xxx.xxx   01.03.nn.nnn
```

SNA Gateway/6000

AFP Upload does not require a separate product named SNA Gateway/6000; however, you can choose to install the SNA Gateway/6000 product in addition to the SNA Server/6000 product. If you install both products, note that SNA Server/6000 requires that both products be at the same maintenance level.

Verifying and Updating SNA Server/6000 Configuration Profiles

SNA Server/6000 maintains two databases of configuration profiles:

- **working** configuration database
- **committed** configuration database

When you add or change SNA Server/6000 profiles, the **working** configuration database is modified. However, the **working** configuration database does not affect SNA Server/6000 operation; the **committed** configuration database controls SNA Server/6000 operation.

To cause profiles you add or change to affect SNA Server/6000 operation, you must:

- **Verify** the profiles in the **working** configuration database

- **Update** the profiles in the **committed** configuration database

Several procedures can be used to perform these verify and update actions. Here is one such procedure:

Note: You must have **root** authority to perform this procedure.

1. Stop SNA Server/6000.

   If no sessions are active, enter the following at the AIX command-line prompt:

       sna -stop sna

   If sessions are active, end them and enter:

       sna -stop sna

2. At the AIX command-line prompt, enter:

       smit

3. From the `System Management` menu, select **Communications Applications and Services**.

4. From the `Communications Applications and Services` menu, select **SNA Server/6000**.

5. From the `SNA Server/6000` menu, select **Configure SNA Profiles**.

6. From the `Configure SNA Profiles` menu, select **Advanced Configuration**.

7. From the `Advanced Configuration` menu, select **Verify Configuration Profiles**.

8. From the `Verify Configuration Profiles` menu, select `normal_update` for the **Update action if verification successful** parameter.

9. Press Enter (ASCII interface), or select **DO** (AIXwindows interface).

10. Exit SMIT.

11. Start SNA Server/6000.

    At the AIX command-line prompt, enter:

        sna -start sna

SNA Server/6000 configuration profiles can also be updated while SNA Server/6000 is running; however, there are some restrictions in these dynamic updates.

For more information about verifying and updating SNA Server/6000 configuration profiles, see *SNA Server/6000: Configuration Reference*.

SNA Server/6000 Use of Space in /var Filesystem

By default, SNA Server/6000 maintains as many as 10 service log files in the **/var** filesystem. Each service log file can be as large as 1.5 MB, for a maximum total of 15 MBs.

You can configure the amount of space SNA Server/6000 uses in the **/var** filesystem for service log files. For example, to cause SNA Server/6000 to use a maximum of 1 MB in the **/var** filesystem for service log files, perform the following procedure:

Note: You must have **root** authority to perform this procedure.

1. At the AIX command-line prompt, enter:

   ```
   smit
   ```

2. From the System Management menu, select **Communications Applications and Services**.

3. From the Communications Applications and Services menu, select **SNA Server/6000**.

4. From the SNA Server/6000 menu, select **Problem Determination Aids**.

5. From the Problem Determination Aids menu, select **Configure SNA Log and Trace Files**.

   SMIT displays a panel similar to the following:

```
                    Configure SNA Log and Trace Files

   Type or select values in entry fields.
   Press Enter AFTER making all desired changes.


                                                    [Entry Fields]
   Set file and names sizes
     Use SNA or System file as service log?          SNA
       Service log file name                        [/var/sna/snaservice]
       Service log file size                        [1500000]
     SNA event/flow trace log file name             [/var/sna/snatrace]
     SNA event/flow trace log file size             [0]
     SNA failure log file name                      [/var/sna/snafailure]
     SNA failure log file size                      [0]

     File wrap limit                                [10]
```

Figure 8. Configure SNA Log and Trace Files Panel

6. Change the **Service log file size** parameter to 500000.

7. Change the **File wrap limit** parameter to 2.

8. Press Enter (ASCII interface), or select **DO** (AIXwindows interface).

9. Exit SMIT.

For more information about how to configure the space in your **/var** filesystem for service log files, see *SNA Server/6000: Diagnosis Guide and Messages*.

Making a Data Link Control (DLC) Available

Data link control (DLC) functions are normally provided by an AIX device that must be in "Available" state for SNA Server/6000 to use the DLC functions. Usually, a DLC device must be made available once and then remains available, even after the RISC System/6000 is shutdown and restarted. To identify available DLC devices on a system, enter:

```
lsdev -C | grep dlc
```

The following procedure makes the token-ring DLC available (other DLCs are similar):

Note: You must have **root** authority to perform this procedure.

1. At the AIX command-line prompt, enter:

   ```
   smit
   ```

2. From the `System Management` menu, select **Devices**.

3. From the `Devices` menu, select **Communication**.

4. From the `Communication` menu, select **Token Ring Adapter**.

5. From the `Token Ring Adapter` menu, select **Services**.

6. From the `Services` menu, select **Data Link Controls**.

7. From the `Data Link Controls` menu, select **Add a Token Ring Data Link Control**.

8. Select the name of the device to add.

9. Press Enter (ASCII interface), or select **DO** (AIXwindows interface).

10. Exit SMIT.

"Calling" Versus "Listening" Link Stations

Before sessions can be established with a physical unit (PU) or a logical unit (LU) on an SNA node, a link connection must be started with the node. You can configure an SNA Server/6000 link station either:

- To call another node with a link connection request
      -- or --
- To listen for a link connection request from another node

To define a **calling** link station, specify `yes` for the **Initiate call when link station is activated?** parameter in the link station profile.

To define a **listening** link station, specify `no` for the **Initiate call when link station is activated?** parameter in the link station profile.

Token-Ring examples in this publication use **calling** link stations. Using a **calling** link station causes VTAM to send PU and LU activation commands promptly in all configurations. In contrast, when you use a **listening** link station, VTAM does not send PU and LU activation commands in some configurations until the host PSF program is started.

A **calling** link station must know the address of the adjacent node with which it should initiate a link connection.

A **listening** link station can be either selective or non-selective. A selective listening link station accepts link connection requests only from a node at a specific address. A non-selective listening link station accepts link connection requests from any node.

For both selective and non-selective listening link stations, the adjacent node must know the address of the listening link station. For example in 37xx token-ring configurations the address is specified in the DIALNO operand in the VTAM switched major node PATH statement.

Using an Alternate Token Ring Address for a RISC System/6000

A token-ring address, often called a **MAC address**, has 12 hexadecimal digits, for example `10005AC8B0EA`. Each device in a token-ring network must have a unique address. To facilitate unique token-ring addressing, every manufacturer assigns a distinct address called a **universal MAC address** to each token-ring adapter. By default, a token-ring adapter in a RISC System/6000 uses the token-ring address that the manufacturer assigned when the adapter was made. However, AIX systems provide **root** users the ability to define an **alternate token-ring address**, also called a **local MAC address**.

In some configurations an alternate token-ring address might be necessary. For example, if the DIALNO operand is included in a VTAM switched major node PATH statement, an alternate token-ring address is generally required. The DIALNO operand accepts only digits in the 0-9 range; however, most universal MAC addresses (assigned by the manufacturers) include at least one digit in the A-F range. In these instances, it might be necessary to use an alternate token ring address that does not contain any digits in the A-F range. Generally, the first four digits of alternate token-ring addresses must be `4000`.

Follow these steps to assign an alternate token-ring address to a token-ring adapter in a RISC System/6000:

Note: You must have **root** authority to perform this procedure.

1. At the AIX command-line prompt, enter:

       smit

2. From the `System Management` menu, select **Devices**.

3. From the `Devices` menu, select **Communication**.

4. From the `Communication` menu, select **Token Ring Adapter**.

5. From the `Token Ring Adapter` menu, select **Adapter**.

6. From the `Adapter` menu, select **Change / Show Characteristics of a Token Ring Adapter** and select the adapter that you want to change.

7. From the `Change / Show Characteristics of a Token Ring Adapter` menu, update the parameters as illustrated in Figure 9.

```
    Enable ALTERNATE TOKEN RING address      yes                  +
    ALTERNATE TOKEN RING address             [0x4000nnnnnnnn]
    Apply change to DATABASE only            yes                  +
```

Figure 9. Token Ring Adapter Values to Change

8. Specify `yes` for the **Enable ALTERNATE TOKEN RING address** parameter.

9. Specify the **ALTERNATE TOKEN RING address** parameter.

   The 12-digit alternate token-ring address must be preceded by `0x`. Generally, the first four digits of the 12-digit alternate address must be `4000`.

10. Specify `yes` for the **Apply change to DATABASE only** parameter.

    Selecting `no` causes the AIX operating system to attempt to update the adapter immediately. Such an update normally fails because the adapter is active and active adapters cannot be updated.

11. Press Enter (ASCII interface), or select **DO** (AIXwindows interface).

12. Exit SMIT.

13. Shut down and then restart the RISC System/6000.

Note: The alternate token-ring address does not become effective until the RISC System/6000 is restarted.

Independent Logical Units Versus Dependent Logical Units

The AFP Upload AIX client program communicates using an SNA LU 6.2 logical unit provided by SNA Server/6000. The logical unit can be either independent or dependent. More than one AFP Upload printer on an AIX system can use the same independent logical unit. However, only one AFP Upload printer on an AIX system can use a dependent logical unit. If you use dependent logical units, you must define a dependent logical unit for each PSF for AIX AFP Upload printer.

Chapter 8. Troubleshooting Problems with AFP Upload

This chapter describes some of the places where information about errors is recorded. It also lists a few common errors and their most likely causes.

Places Where Error Information Is Recorded

This section lists a few of the places you should look to get information about errors configuring and using AFP Upload:

error.log for the PSF for AIX printer
> The AFP Upload AIX client program operates as a PSF for AIX printer. Like all PSF for AIX printers, it records error messages in a file named **error.log** in the directory for the PSF for AIX printer. The directory is named

>> /var/psf/*printername*

> where *printername* is the name of the PSF for AIX printer.

> You can use the **psfmsg** command to display detailed information about any PSF for AIX message. For more information about the **psfmsg** command, refer to the *IBM Print Services Facility for AIX: Print Submission* publication.

MVS console log
> The APPC/MVS scheduler (ASCH) is sometimes unable to start the AFP Upload host server program due to a JCL error in the TP profile for the host server program. Or the userid associated with a conversation request might have insufficient RACF access to resources explicitly or implicitly referenced in the TP profile. In these situations, the AIX client program issues a message indicating that the remote transaction program ended abnormally. You should check the console log on your MVS system because APPC/MVS and RACF normally write messages there that indicate the specific error.

SYSPRINT data set
> The AFP Upload host server program records its configuration values and information about run-time errors in the data set referenced by the SYSPRINT DD statement. Refer to "Specifying the SYSPRINT DD Statement" on page 10.

Common Errors with AFP Upload Using SNA Networks

The following contains common errors when using AFP Upload. Each problem displays the **Symptom** and its **Likely Causes and Resolutions**:

<u>Symptom</u>:

You start a PSF for AIX printer that performs upload and it issues the following error message:

```
0423-652 The remote transaction program (TP) ended abnormally.
```

<u>Likely Causes and Resolutions</u>:

This error often occurs because of insufficient RACF access to resources referenced by the JCL statements in the TP profile for the host server program. You may need to specify an MVS userid and password for the AIX client program to use. Or you may need to adjust the RACF authorizations for resources on the MVS system. Refer to Chapter 4, "Information About MVS Userids and Passwords" on page 15.

<u>Symptom</u>:

You provide values for **class**, **destination**, and **forms** when you enqueue a print file, but some of the values are not reflected on the SYSOUT data set created in the MVS JES spool.

<u>Likely Causes and Resolutions</u>:

If you use the AIX **enq** command and want to specify **class**, **destination**, and **forms** values, you must use the -o passthru option.

You should use only one -o passthru specification that includes all the values you want to provide. For example,

```
enq -P upload1 -o passthru=class=k,forms=std sample
```

is correct.

If you use the -o passthru specification more than once, only the last specification will be processed. For example,

```
enq -P upload1 -o passthru=class=k -o passthru=forms=std sample
```

is incorrect. The **enq** command will process the **forms** value, but will ignore the **class** value.

<u>Symptom</u>:

You enqueue an ASCII file to be uploaded, but PSF for AIX issues the following error message:

```
0423-659, File _____ contains data of a type that cannot be processed by this PSF/6000
instance. For example, the PSF/6000 instance cannot process ASCII datatype files.
```

<u>Likely Causes and Resolutions</u>:

You cannot directly enqueue an ASCII file to be uploaded; you must use ACIF to transform the file into a MO:DCA-P data stream file.

<u>Symptom</u>:

You enqueue a PostScript or SAP OTF file to be transformed into a MO:DCA-P data stream file and uploaded to your MVS system. However, no SYSOUT data sets are created on your MVS system. The SYSPRINT data set for the host server program contains the following error:

```
ATBRCVW() ERROR = 24
```

<u>Likely Causes and Resolutions</u>:

The PSF for AIX PostScript or SAP OTF transform was not successful; it produced an empty data set. Refer to the *IBM Print Services Facility for AIX: Print Administration* publication for information about the transform programs and how they report errors.

Part 2. SNA Network Configuration Examples and Guidelines

Chapter 9. Local or Remote 37xx Token-Ring
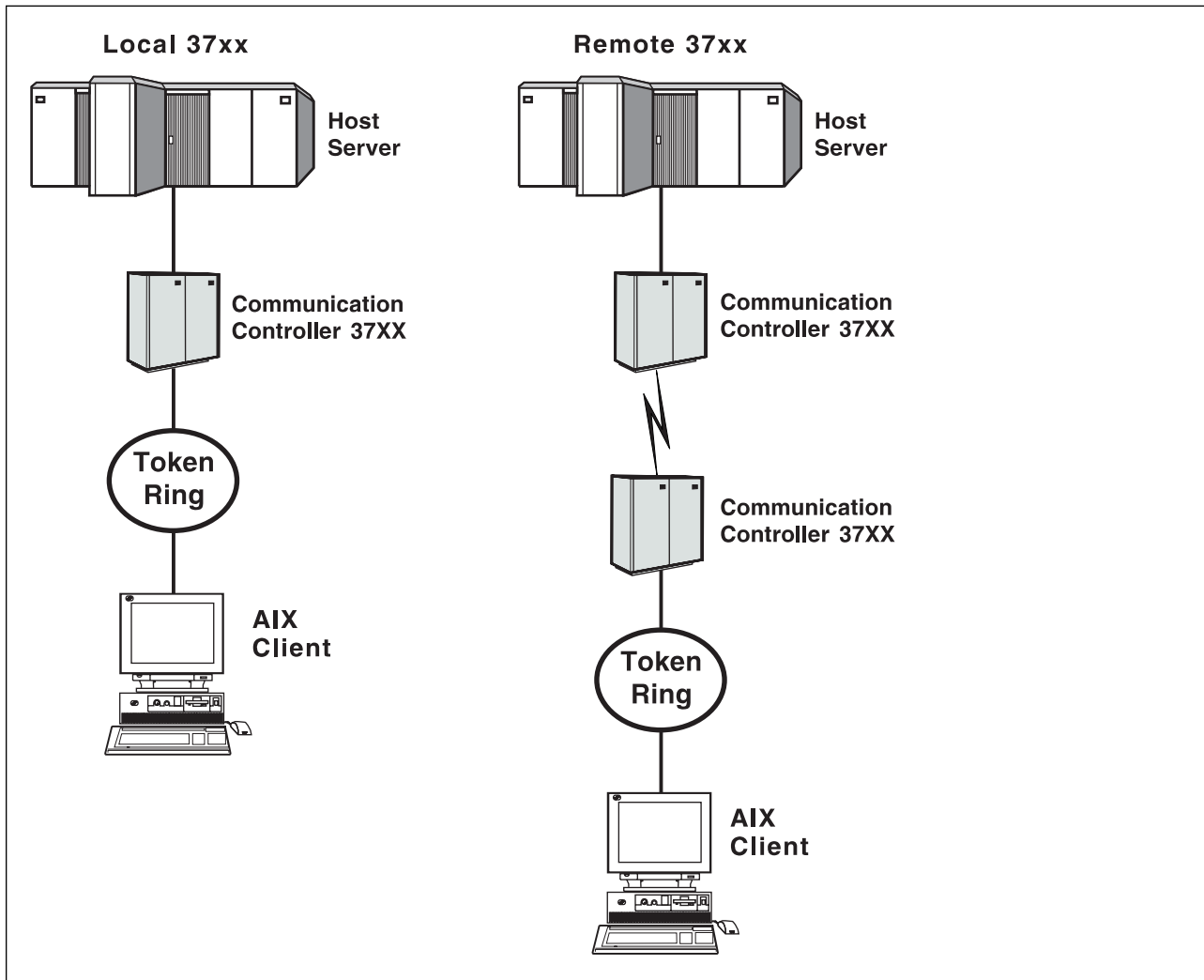
Figure 10. Local or Remote 37xx Token-Ring

Key Configuration Parameter Interrelationships

Several network components have configuration parameters whose values are related to configuration parameters for other network components. These interrelated parameters must be configured consistently to make end-to-end communication possible.

Several figures follow. They illustrate some of the key interrelationships among configuration parameters for SNA network components.

Figure 11 illustrates the interrelationships in defining the name of the transaction program used by the AFP Upload host server.
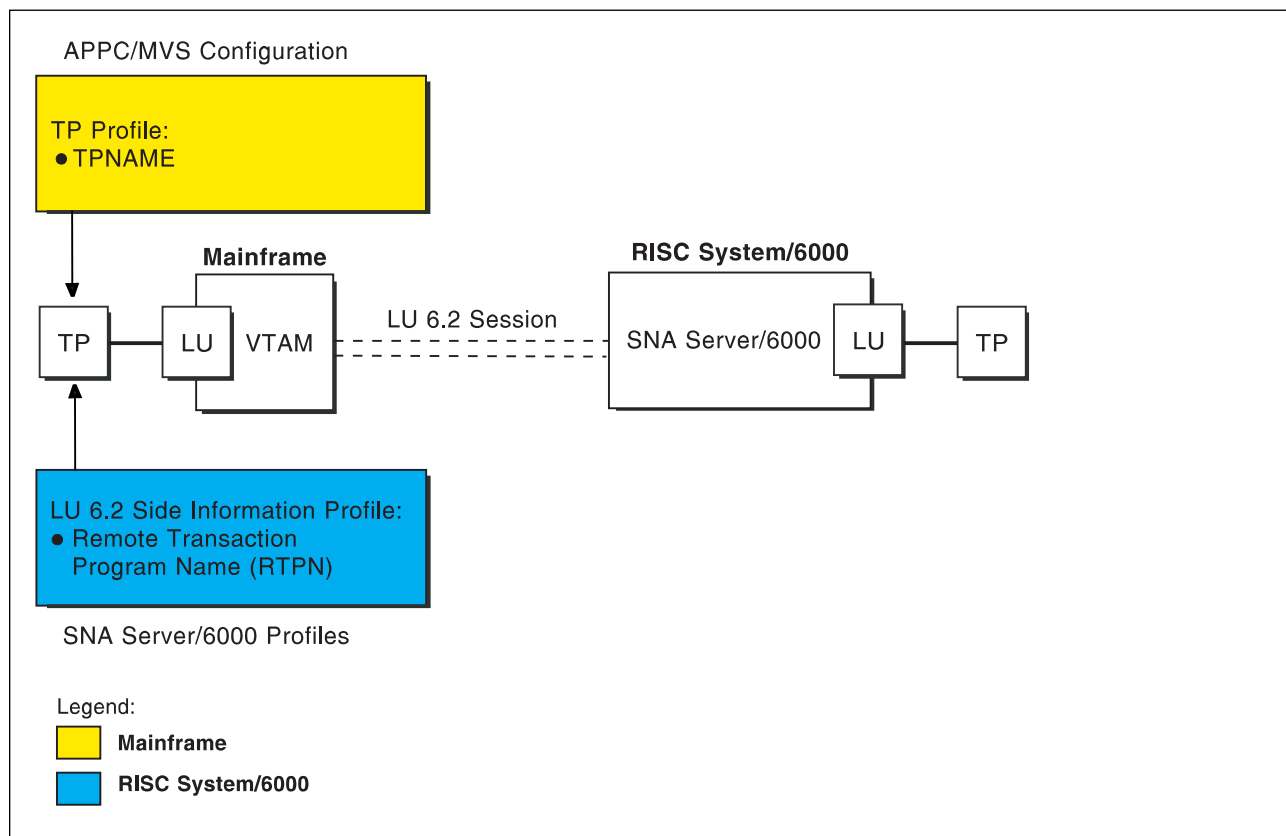
Figure 11. Transaction Program Name

Figure 12 illustrates the interrelationships in defining logical unit (LU) names.
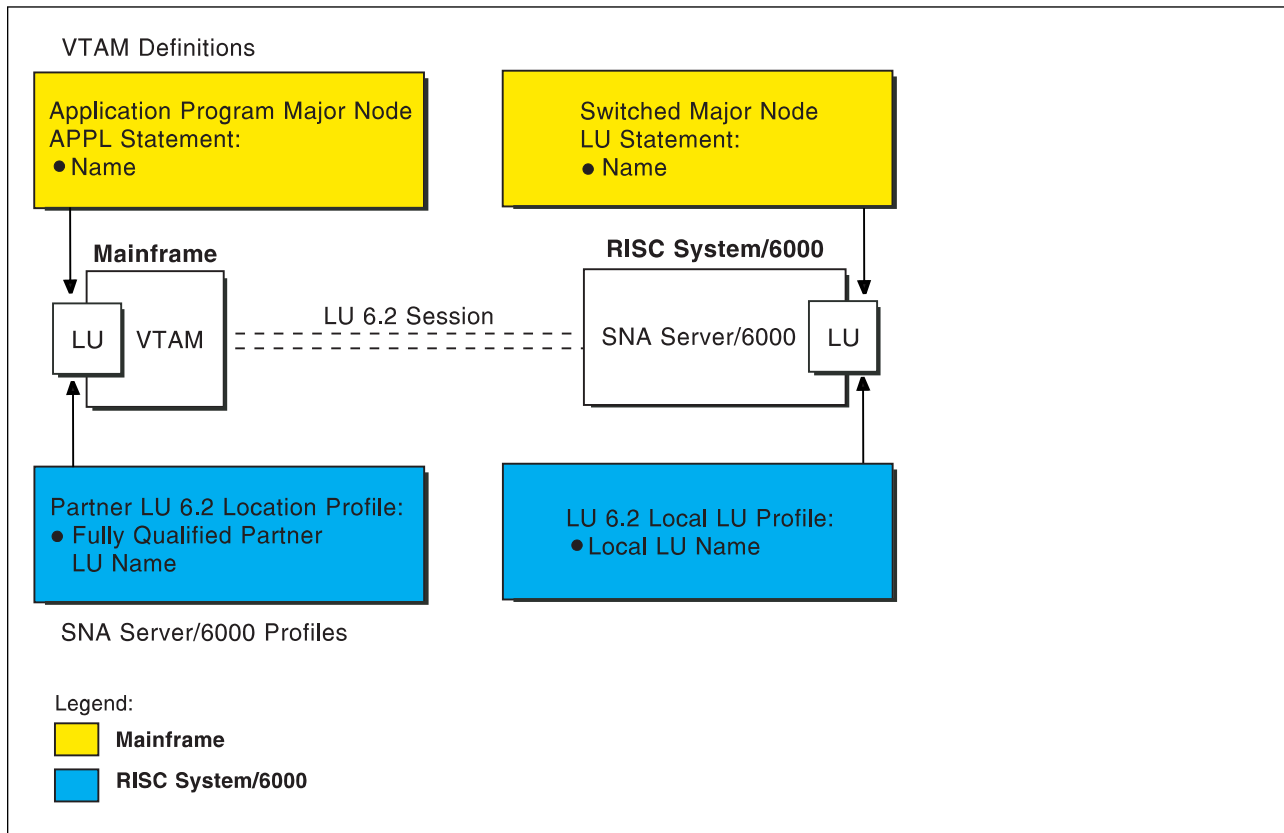
Figure 12. Logical Unit Names

Figure 13 illustrates the interrelationships in defining the local address of the logical unit provided by SNA Server/6000.
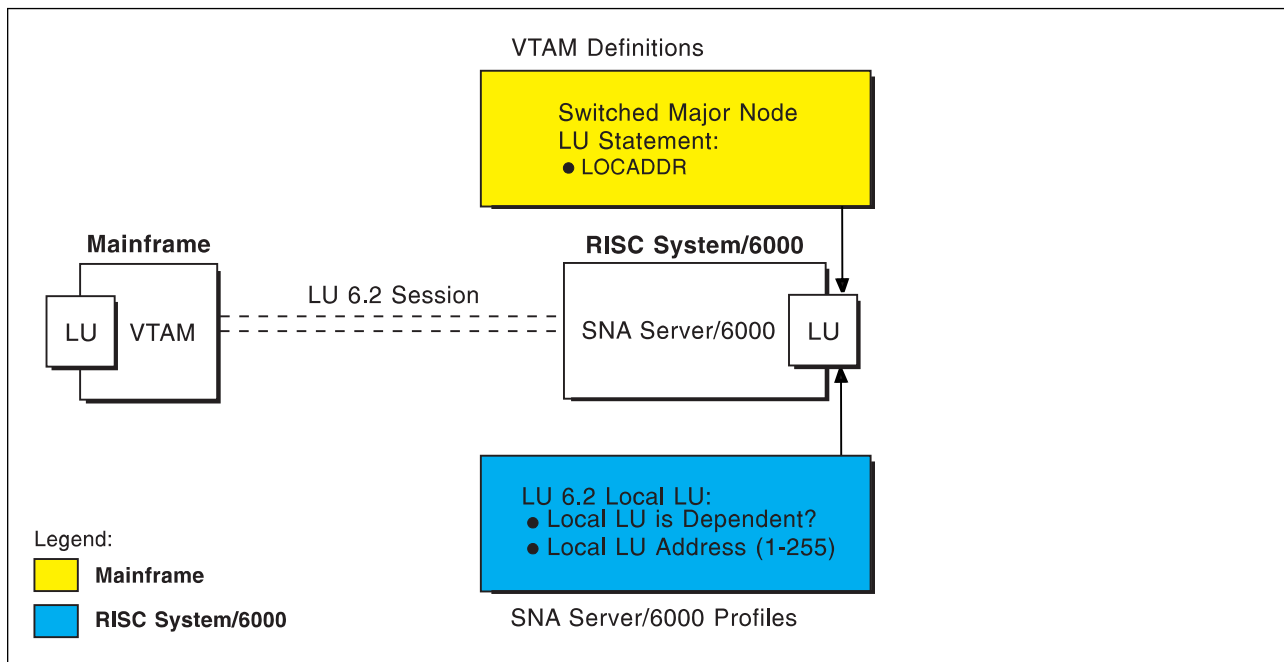
Figure 13. Local Address of Logical Unit

Figure 14 illustrates the interrelationships in defining the name of the physical unit/control point provided by SNA Server/6000.
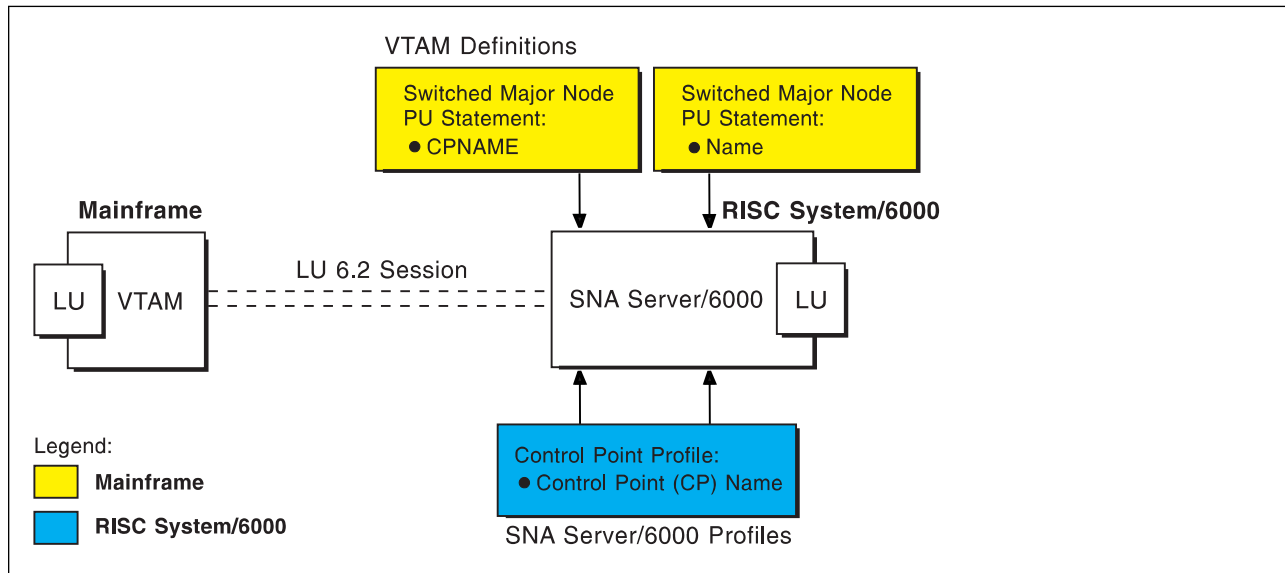
Figure 14. Physical Unit/Control Point Name

Figure 15 illustrates the interrelationships in defining the Token-Ring addresses used in this configuration.
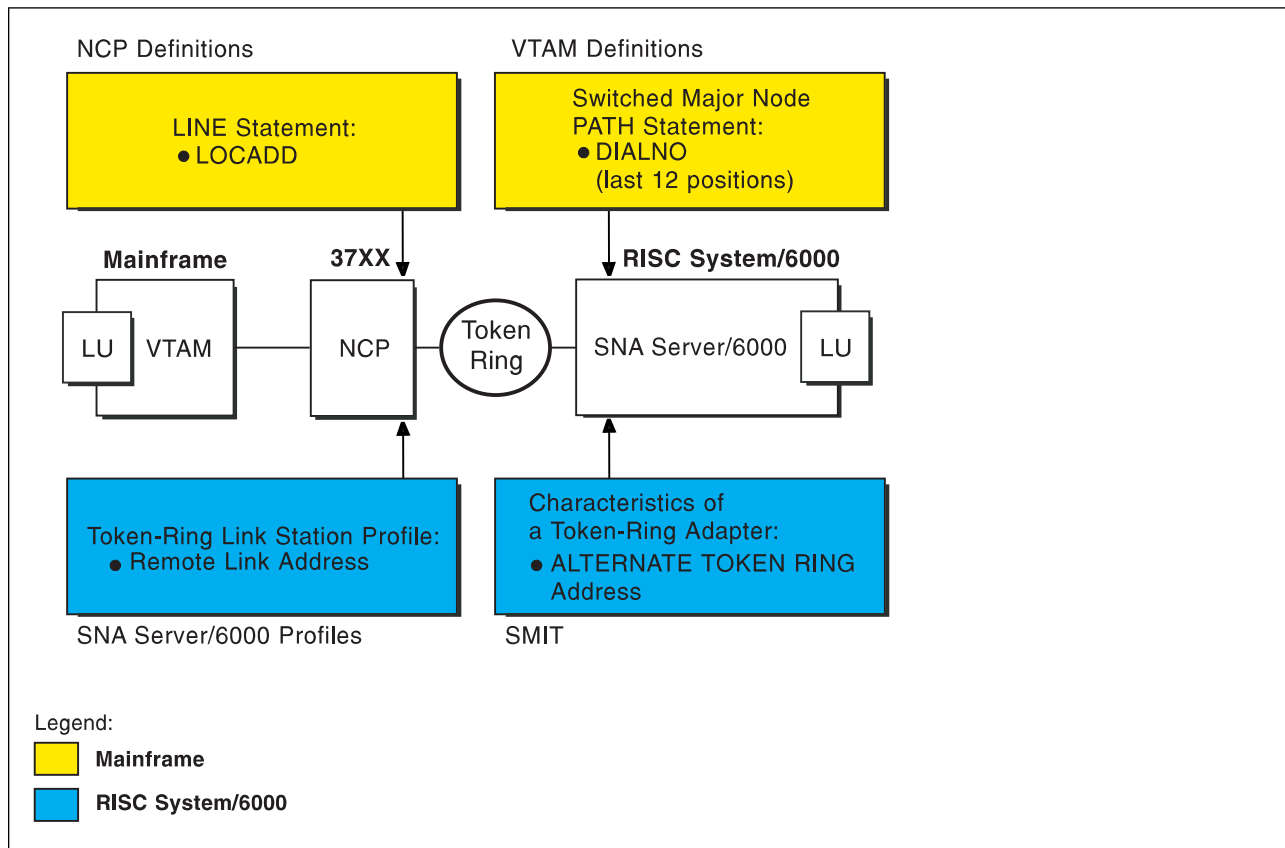
Figure 15. Token-Ring Addresses

Local or Remote 37xx Token-Ring Example

For an explanation of pertinent configuration parameters, see"Guidelines for Configuring Local or Remote 37xx Token-Ring" on page 52 .

APPC/MVS APPCPMxx Parameter Example

For an explanation of these values, see "Specifying the APPC/MVS APPCPMxx Parameters" on page 52.

```
LUADD
  ACBNAME(MVSLU01),
  SCHED(ASCH),
  TPDATA(SYS1.APPCTP),
  TPLEVEL(SYSTEM),
  BASE

SIDEINFO
  DATASET(SYS1.APPCSI)
```

Figure 16. Sample APPC/MVS APPCPMxx Parameters

APPC/MVS ASCHPMxx Parameters Example

For an explanation of these values, see "Specifying the APPC/MVS ASCHPMxx Parameters" on page 52.

```
CLASSADD
  CLASSNAME(FAST),
  MAX(10),
  MIN(2),
  RESPGOAL(.01),
  MSGLIMIT(500)
```

Figure 17. Sample APPC/MVS ASCHPMxx Parameters

APPC/MVS TP Profile Example

For an explanation of these values, see "Specifying the APPC/MVS TP Profile" on page 53.

```
//JOBNAME  JOB  ACCOUNT
//*
//TPPROF   EXEC PGM=ATBSDFMU
//SYSPRINT DD   SYSOUT=*
//SYSSDLIB DD   DSN=SYS1.APPCTP,DISP=SHR
//SYSSDOUT DD   SYSOUT=*
//SYSIN    DD   DATA,DLM=XX
  TPADD
    TPNAME(AFPSVR1)
    TPSCHED_DELIMITER(##)
      CLASS(FAST)
      JCL_DELIMITER(END_OF_JCL)
//JOBNAME  JOB  ACCOUNT
//STEP     EXEC PGM=AUPSNAS
//STEPLIB  DD   DSN=AUP.SAUPLOAD,DISP=SHR
//         DD   DSN=PLI.V2R3M0.PLILINK,DISP=SHR
//         DD   DSN=PLI.V2R3M0.SIBMLINK,DISP=SHR
//SYSPRINT DD   SYSOUT=*
END_OF_JCL
  KEEP_MESSAGE_LOG(ALWAYS)
  MESSAGE_DATA_SET(AUP.APPCLOG)
  DATASET_STATUS(OLD)
##
XX
/*
```

Figure 18. Sample JCL To Create an APPC/MVS TP Profile

VTAM Start Option List (ATCSTRxx) Example

For an explanation of these values, see "Specifying the VTAM Start Option List (ATCSTRxx)" on page 53.

```
CONFIG=00,          ATCCON MEMBER OF VTAMLIST              X
NETID=USIBMBQ,      NETWORK IDENTIFIER                     X
SSCPNAME=ST1,       SSCP NAME                              X
⋮
```

Figure 19. Sample VTAM Start Option List

VTAM Configuration List (ATCCONnn) Example

For an explanation of these values, see "Specifying the VTAM Configuration List (ATCCONnn)" on page 53.

```
APPCAPLS                                                  X
⋮
```

Figure 20. Sample VTAM Configuration List

VTAM Application Program Major Node and Application Program Example

For an explanation of these values, see "Specifying the VTAM Application Program Major Node and Application Program" on page 54.

```
APPCAPLS VBUILD TYPE=APPL
MVSLU01  APPL  ACBNAME=MVSLU01,                           X
               APPC=YES,                                  X
               AUTOSES=0,                                 X
               DDRAINL=NALLOW,                            X
               DMINWNL=5,                                 X
               DMINWNR=5,                                 X
               DRESPL=NALLOW,                             X
               DSESLIM=10,                                X
               LMDENT=100,                                X
               MODETAB=ISTINCLM,                          X
               PARSESS=YES,                               X
               SECACPT=CONV,                              X
               SRBEXIT=YES
```

Figure 21. Sample VTAM Application Program Major Node and Application Program

VTAM Switched Major Node Example

For an explanation of these values, see "Specifying the VTAM Switched Major Node" on page 55.

```
SWAIX01   VBUILD TYPE=SWNET
*
AIX01     PU    ADDR=04,               ADDRESS REQUIRED, BUT IGNORED X
                CPNAME=AIX01,          CONTROL POINT NAME           X
                MAXOUT=7,              LINK LEVEL WINDOW            X
                MODETAB=ISTINCLM,      LOGON MODE TABLE            X
                VPACING=0              NO PACING TO BOUNDARY NODE
*
UPLD0101  LU    LOCADDR=0              INDEPENDENT LU
```

Figure 22. Sample VTAM Switched Major Node

Network Control Program (NCP) Definitions Example

For an explanation of these values, see "Specifying the Network Control Program Definitions" on page 59.

```
⋮
G31P      GROUP ECLTYPE=PHYSICAL,      PHYSICAL GROUP               X
                ISTATUS=ACTIVE         INITIAL STATUS
LN31      LINE  ADDRESS=(1088,FULL),   LINE NUM AND DATA TRANS MODE X
                LOCADD=400023101088,   TOKEN RING ADDRESS FOR LINE  X
                MAXTSL=1033,           MAXIMUM BYTES OF DATA        X
                PORTADD=1,             PORT ADDRESS                X
                RCVBUFC=4095           BUFFER CAPACITY
PU31      PU
LU31      LU    ISTATUS=INACTIVE       INITIAL STATUS
*
G31L      GROUP ECLTYPE=LOGICAL,       LOGICAL GROUP               X
                ISTATUS=ACTIVE,        INITIAL STATUS              X
                AUTOGEN=8,             # OF LINE AND PU PAIRS GENED X
                CALL=INOUT,            CALL IN OR OUT              X
                PHYPORT=1              CORRELATES WITH PORTADD
⋮
```

Figure 23. Sample NCP Definitions

PSF for AIX Printer Example

For an explanation of these values, see "Specifying the PSF for AIX Printer" on page 61.

```
   smit
     PSF for AIX Printing and Configuration
       Administer PSF for AIX
         Manage a PSF for AIX Printer
           Add a Printer or PSF Queue
             Upload
```

Figure 24. SMIT Panel Sequence for PSF for AIX Printer

```
 * Data stream type                 AFPDS
 * Printer NAME                 [upload1]          /
   ASCII code-set               []
 * EBCDIC code-set              [IBM-037]
 * Number of QUEUE DEVICES      [4]                #
   Description                  []
```

Figure 25. Sample PSF for AIX Printer

SNA Server/6000 Configuration Profile Examples

This section lists sample SNA Server/6000 profiles. Each profile is preceded by the sequence of SMIT panels to access the profile.

- SNA Node

- Control Point

- Token-Ring SNA DLC

- Token-Ring Link Station

- LU 6.2 Local LU

- LU 6.2 Side Information

- Partner LU 6.2 Location

```
smit
   Communications Applications and Services
      SNA Server/6000
         Configure SNA Profiles
            Advanced Configuration
               SNA System Defaults
                  Change/Show a Profile
```

Figure 26. SMIT Panel Sequence For SNA Node Profile

```
Profile name                                    sna
Maximum number of sessions (1-5000)            [200]                      #
Maximum number of conversations (1-5000)       [200]                      #
Restart action                                  once                    +
Recovery resource manager (RRM) enabled?        no                      +
Dynamic inbound partner LU definitions allowed? yes                     +
NMVT action when no NMVT process                reject                  +
Standard output file/device                    [/dev/console]
Standard error file/device                     [/var/sna/sna.stderr]

Comments                                        []
```

Figure 27. Sample SNA Node Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Control Point
                Change/Show a Profile
```

Figure 28. SMIT Panel Sequence For Control Point Profile

```
Profile name                                       node_cp
XID node ID                                        [*]
Network name                                       [USIBMBQ]
Control Point (CP) name                            [AIX01]
Control Point alias                                [AIX01]
Control Point type                                  appn_end_node      +
Maximum number of cached routing trees             [500]              #
Maximum number of nodes in the TRS database        [500]              #
Route addition resistance                          [128]              #

Comments                                           []
```

Figure 29. Sample Control Point Profile

Local or Remote 37xx Token-Ring

```
 smit
  Communications Applications and Services
    SNA Server/6000
      Configure SNA Profiles
        Advanced Configuration
          Links
            Token-Ring
              Token-Ring SNA DLC
                Add a Profile
```

Figure 30. SMIT Panel Sequence For Token-Ring SNA DLC Profile

```
* Profile name                                    [tr3745]
  Data link device name                           [tok0]         +
  Force disconnect time-out (1-600 seconds)       [120]          #
  User-defined maximum I-Field size?               no            +
     If yes, Max. I-Field size (265-30729)        [30729]        #
  Max. num of active link stations (1-255)        [100]          #
     Number reserved for inbound activation       [0]            #
     Number reserved for outbound activation      [0]            #
  Transmit window count (1-127)                   [16]           #
  Dynamic window increment (1-127)                [1]            #
  Retransmit count (1-30)                         [8]            #
  Receive window count (1-127)                    [7]            #
  Ring access priority                            [0]            +
  Inactivity time-out (1-120 seconds)             [48]           #
  Response time-out (1-40, 500 msec intervals)    [4]            #
  Acknowledge time-out (1-40, 500 msec intervals) [1]            #
  Local link name                                 []
  Local SAP address (04-ec)                       [04]           X
  Trace base listening link station?              no             +
     If yes, Trace format                         long           +
  Dynamic link stations supported?                yes            +

  Link Recovery Parameters
     Retry interval (1-10000 seconds)             [60]           #
     Retry limit (0-500 attempts)                 [0]            #

  Dynamic Link Activation Parameters
     Solicit SSCP sessions?                       yes            +
     CP-CP sessions supported?                    yes            +
     Partner required to support CP-CP sessions?  no             +

  Dynamic Link TG COS Characteristics
     Effective capacity                           [4300800]      #
     Cost per connect time                        [0]            #
     Cost per byte                                [0]            #
     Security                                     nonsecure      +
     Propagation delay                            lan            +
     User-defined 1                               [128]          #
     User-defined 2                               [128]          #
     User-defined 3                               [128]          #

  Comments                                        []
```

Figure 31. Sample Token-Ring SNA DLC Profile

```
smit
  Communications Applications and Services
    SNA Server/6000
      Configure SNA Profiles
        Advanced Configuration
          Links
            Token-Ring Link Station
              Add a Profile
```

Figure 32. SMIT Panel Sequence For Token-Ring Link Station Profile

```
* Profile name                                          [tr3745]
  Use APPN Control Point's XID node ID?                  yes                  +
     If no, XID node ID                                  [*]
* SNA DLC Profile name                                   [tr3745]             +
  Stop link station on inactivity?                       no                   +
     If yes, Inactivity time-out (0-10 minutes)          [0]                          #
  LU address registration?                               no                   +
     If yes, LU Address Registration Profile name        []                   +
  Trace link?                                            no                   +
     If yes, Trace size                                  long                 +

  Adjacent Node Address Parameters
     Access routing                                      link_address         +
     If link_name, Remote link name                      []
     If link_address,
        Remote link address                              [400023101088]       X
        Remote SAP address (04-ec)                       [04]                 X

  Adjacent Node Identification Parameters
     Verify adjacent node?                               no                   +
     Network ID of adjacent node                         []
     CP name of adjacent node                            []
     XID node ID of adjacent node (LEN node only)        [*]
     Node type of adjacent node                          learn                +

  Link Activation Parameters
     Solicit SSCP sessions?                              yes                  +
     Initiate call when link station is activated?       yes                  +
     Activate link station at SNA start up?              yes                  +
     Activate on demand?                                 no                   +
     CP-CP sessions supported?                           yes                  +
     If yes,
        Adjacent network node preferred server?          no                   +
     Partner required to support CP-CP sessions?         no                   +
     Initial TG number (0-20)                            [0]                          #

  Restart Parameters
     Restart on activation?                              no                   +
     Restart on normal deactivation?                     yes                  +
     Restart on abnormal deactivation?                   yes                  +

  Transmission Group COS Characteristics
     Effective capacity                                  [4300800]                    #
     Cost per connect time                               [0]                          #
     Cost per byte                                       [0]                          #
     Security                                            nonsecure            +
     Propagation delay                                   lan                  +
     User-defined 1                                      [128]                        #
     User-defined 2                                      [128]                        #
     User-defined 3                                      [128]                        #

  Comments                                               []
```

Figure 33. Sample Token-Ring Link Station Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Sessions
                LU 6.2
                  LU 6.2 Local LU
                    Add a Profile
```

Figure 34. SMIT Panel Sequence For LU 6.2 Local LU Profile

```
* Profile name                                      [UPLD0101]
  Local LU name                                      [UPLD0101]
  Local LU alias                                     [UPLD0101]
  Local LU is dependent?                              no           +
    If yes,
       Local LU address (1-255)                      []                #
       System services control point
         (SSCP) ID (*, 0-65535)                      [*]
       Link Station Profile name                     []                +
  Conversation Security Access List Profile name     []

  Comments                                           []
```

Figure 35. Sample LU 6.2 Local LU Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Sessions
                LU 6.2
                  LU 6.2 Side Information
                    Add a Profile
```

Figure 36. SMIT Panel Sequence For LU 6.2 Side Information Profile

```
* Profile name                                      [upload1]
  Local LU or Control Point alias                    [UPLD0101]         +
  Provide only one of the following:
     Partner LU alias                                []                +
     Fully qualified partner LU name                 [USIBMBQ.MVSLU01]
  Mode name                                          [#INTER]          +
  Remote transaction program name (RTPN)             [AFPSVR1]
  RTPN in hexadecimal?                                no               +

  Comments                                           []
```

Figure 37. Sample LU 6.2 Side Information Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Sessions
                LU 6.2
                  Partner LU 6.2 Location
                    Add a Profile
```

Figure 38. SMIT Panel Sequence For Partner LU 6.2 Location Profile

```
* Profile name                                      [MVSLU01]
  Fully qualified partner LU name                    [USIBMBQ.MVSLU01]
  Partner LU location method                          owning_cp
  If owning_cp,
     Fully qualified owning Control Point (CP) name  [USIBMBQ.ST1]          +
     Local node is network server for LEN node?       no
     Fully qualified network node server name        []
  If link_station,
     Local LU name                                   []
     Link Station Profile name                       []                     +

  Comments                                           []
```

Figure 39. Sample Partner LU 6.2 Location Profile

Configuration Worksheet Example

The following worksheet records values for SNA Server/6000 configuration parameters that are related to other configuration settings:

Figure 40. Sample Configuration Worksheet				
SNA Server/6000	**Value**	**APPC/MVS**	**VTAM**	**NCP**
Control Point: Control Point (CP) name	AIX01		PU: name PU: CPNAME	
Token-Ring SNA DLC: Receive window count	7		PU: MAXOUT	
Token-Ring Link Station: Remote link address	400023101088			LINE: LOCADD
LU 6.2 Local LU: Local LU name	UPLD0101		LU: name	
LU 6.2 Local LU: Local LU is dependent?	no		LU: LOCADDR	
LU 6.2 Local LU: Local LU address	n/a		LU: LOCADDR	
LU 6.2 Side Information: Fully qualified partner LU name	USIBMBQ.MVSLU01	APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name	
LU 6.2 Side Information: Remote transaction program name (RTPN)	AFPSVR1	TP profile: TPNAME		
Partner LU 6.2 Location: Fully qualified partner LU name	USIBMBQ.MVSLU01	APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name	
Partner LU 6.2 Location: Fully qualified owning Control Point (CP) name	USIBMBQ.ST1		ATCSTRxx: NETID ATCSTRxx: SSCPNAME	

Guidelines for Configuring Local or Remote 37xx Token-Ring

The following provides guidance for implementing the examples displayed in "Local or Remote 37xx Token-Ring Example" on page 39. Note that a subset of the example is displayed below, displaying the pertinent parameters and describing which of these require you to specify *variable_names* and which require a specific name or number, such as MODETAB=ISTINCLM.

Specifying the APPC/MVS APPCPMxx Parameters

The pertinent statements and parameters for the APPCPMxx member of SYS1.PARMLIB are illustrated in Figure 41 and described below.

```
LUADD
   ACBNAME(lu_name),
   SCHED(ASCH),
   TPDATA(tp_profile_dataset),
   TPLEVEL(level)
```

Figure 41. APPC/MVS APPCPMxx Parameter Guidelines

ACBNAME
Specifies the name of a logical unit to be controlled by APPC/MVS. The value must match an APPL statement name in a VTAM application program major node.

SCHED
Specify ASCH to indicate that inbound conversation requests should be scheduled by the APPC/MVS transaction scheduler (ASCH).

TPDATA
Specify the name of the VSAM key-sequenced dataset (KSDS) that contains TP profiles for the logical unit referenced by the ACBNAME parameter.

TPLEVEL
Controls access, for the logical unit referenced by the ACBNAME parameter, to execution of transaction programs (TP's).

Specify SYSTEM to allow access to all authenticated MVS users.

Specifying the APPC/MVS ASCHPMxx Parameters

AFP Upload requires that a class of transaction initiators be defined to the APPC/MVS transaction scheduler (ASCH) so the class can be referenced in the APPC/MVS TP profile that describes an AFP Upload server. AFP Upload does not have special requirements for the parameters used in defining the class.

Specifying the APPC/MVS TP Profile

Use the APPC/MVS ATBSDFMU administration utility program to create an APPC/MVS TP profile.

The TPNAME value must match the **Remote transaction program name (RTPN)** parameter in the SNA/6000 LU 6.2 Side Information profile.

The scheduler information in the TP profile must include JCL that the ASCH scheduler uses to run the transaction program. The JCL must execute the AFP Upload server program, named AUPSNAS. This program is written in the PL/I language. It requires that the PL/I PLILINK and SIBMLINK libraries be included in the STEPLIB definition. The AFP Upload server program also requires that the SYSPRINT DD name be allocated. Unless the SYSPRINT DD statement refers to DUMMY or a SYSOUT data set, the data set referenced by the SYSPRINT DD statement must have the following attributes:

directory blocks:	0
record format:	VA
record length:	125
block size:	129

For more information about the SYSPRINT DD name used by the host server program, refer to "Specifying the SYSPRINT DD Statement" on page 10.

Specifying the VTAM Start Option List (ATCSTRxx)

You must specify the values illustrated in Figure 42 and described below:

```
CONFIG=nn,              ATCCON MEMBER OF VTAMLST       X
NETID=network_id,       NETWORK IDENTIFIER             X
SSCPNAME=sscp_name,     SSCP NAME                      X
  ⋮
```

Figure 42. VTAM Start Option List Guidelines

CONFIG
   Specifies the ATCCON*nn* member to use.

NETID
   Specifies the network identifier for the host system.

SSCPNAME
   Specifies the System Services Control Point (SSCP) name for the host system.

Specifying the VTAM Configuration List (ATCCONnn)

The VTAM configuration list indicates the application program major nodes that should be made available when VTAM is started. Include the application program major node that contains the application program that APPC/MVS uses:

```
appl_prog_major_node        X
  ⋮
```

Specifying the VTAM Application Program Major Node and Application Program

The pertinent statements and parameters for the VTAM Application Program Major Node and Application Program are illustrated in Figure 43 and described below.

```
majname  VBUILD TYPE=APPL
minname  APPL   ACBNAME=minname,                      X
                APPC=YES,                             X
                MODETAB=ISTINCLM,                     X
                PARSESS=YES,                          X
                SECACPT=CONV,                         X
                SRBEXIT=YES
```

Figure 43. VTAM Application Program Major Node and Application Program Guidelines

ACBNAME
Specify the minor node name to assign to the application program. This name must be unique within the domain in which the application program resides.

APPC
Specify YES.

MODETAB
Specify ISTINCLM or the name of an alternative VTAM logon mode table to be used to associate each logon mode name with a set of session parameters for the application program.

PARSESS
Specify YES, or do not include the PARSESS parameter. PARSESS defaults to YES when APPC=YES.

This value indicates that the application program can have multiple concurrent (parallel) sessions with an independent logical unit.

SECACPT
Specify CONV.

This value indicates that the application program's logical unit supports conversation requests containing access security subfields.

SRBEXIT
Specify YES.

This value indicates that the application program is authorized to use service request block (SRB) processing in its exit routines.

Specifying the VTAM Switched Major Node

The following statements and values must be specified (as illustrated in Figure 44) if a **calling** SNA Server/6000 link station initiates a link connection with the 37xx communication controller:

```
node_name VBUILD TYPE=SWNET
*
pu_name    PU     ADDR=nn,                          X
                  CPNAME=cp_name,                   X
                  MAXOUT=7,                         X
                  MODETAB=mode_table,               X
                  VPACING=0
*
lu_name    LU     LOCADDR=nn
```

Figure 44. VTAM Switched Major Node Guidelines for SNA Server/6000 Calling Link Station

Local or Remote 37xx Token-Ring

The following statements and values must be specified (as illustrated in Figure 45) if a **listening** SNA Server/6000 link station waits for the 37xx communication controller to initiate a link connection:

```
node_name VBUILD TYPE=SWNET,MAXGRP=1,MAXNO=1
*
pu_name    PU      ADDR=nn,                        X
                   CPNAME=cp_name,                 X
                   MAXOUT=7,                       X
                   MAXPATH=1,                      X
                   MODETAB=mode_table,             X
                   VPACING=0
*
path_name PATH     DIALNO=xx044000nnnnnnnn,        X
                   GRPNM=ncp_group
*
lu_name    LU      LOCADDR=nn
```

Figure 45. VTAM Switched Major Node Guidelines for SNA Server/6000 Listening Link Station

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

TYPE
Specify "SWNET" to indicate that the node is a switched major node.

MAXGRP
Specifies the number of unique path groups (GROUP names) that are defined in the GRPNM operand of all PATH statements within the switched major node. There is one unique path group in the switched major node guideline presented in Figure 45 for an SNA Server/6000 listening link station.

MAXNO
Specifies the number of unique Token-Ring addresses that are defined in the DIALNO operand of all PATH statements within the switched major node. There is one unique Token-Ring address in the switched major node guideline presented in Figure 45 for an SNA Server/6000 listening link station.

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

Note that the 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 MODETAB and VPACING operands are specified on the PU statement, they do not have to be specified on any of the LU statements.

ADDR
Specifies the address of the physical unit. Note that this operand is required, but ignored.

CPNAME
Identifies the control point. The value specified for CPNAME must match the **Control Point (CP) name** value in the SNA Server/6000 Control Point profile. By convention, the CPNAME value usually matches the PU name.

Either the CPNAME operand or both the IDBLK and the IDNUM operands are required. CPNAME can only be used with PU type 2.1 nodes, such as SNA Server/6000.

MAXDATA

Specifies the maximum amount of data (in bytes) that the physical unit can receive in one path information unit (PIU). This amount includes the transmission header (TH) and the request/response header (RH).

Note: MAXDATA is ignored for type 2.1 nodes, such as SNA Server/6000, that are attached through an NCP with peripheral node type 2.1 support. The type 2.1 node indicates the maximum PIU size when the connection is established. The value that SNA Server/6000 supplies can be configured using the Token-Ring SNA DLC profile's **User-defined maximum I-Field size?** and **Max. I-Field size** parameters.

MAXOUT

Specifies the maximum number of path information units (PIUs) that are sent to the physical unit before waiting for a response from that physical unit.

For optimum performance, the MAXOUT value must be equal to, or greater than, the **Receive window count** in the SNA Server/6000 Token-Ring SNA DLC profile. The **Receive window count** parameter specifies how many frames are received by the link station before SNA Server/6000 sends an acknowledgement.

MAXPATH

Specifies the number of dial-out paths to the physical unit. There is one dial-out path presented in Figure 45 on page 56 for an SNA Server/6000 listening link station.

MODETAB

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

VPACING

Determines how VTAM paces the flow of the data from VTAM to the boundary node to which the logical unit is connected. In this configuration, the boundary node is the communication controller.

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.

Local or Remote 37xx Token-Ring

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

DIALNO=*xx044000nnnnnnnn*
> This parameter value has three parts:
>
> *xx* Specifies the Token-Ring Interface Coupler (TIC) number in the communication controller.
>
> *04* Specifies the Service Access Point (SAP). This value must always be *04*.
>
> *4000nnnnnnnn*
> > Specifies the Token-Ring address of the Token-Ring adapter in the RISC System/6000.
> >
> > Although Token-Ring addresses include twelve hexadecimal digits, the VTAM DIALNO operand only accepts digits in the range 0-9. Therefore, an **alternate Token-Ring address** that contains only digits in the range 0-9 must be assigned to the Token-Ring adapter in the RISC System/6000. For instructions on configuring an alternate Token-Ring address, see "Using an Alternate Token Ring Address for a RISC System/6000" on page 27.

GRPNM
> Refers to a logical GROUP statement in the NCP definitions.

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

LOCADDR
> `LOCADDR=0` specifies that this logical unit is an independent logical unit. An SSCP-LU session does not have to be established prior to an LU-LU session with an independent logical unit. For independent logical units, the **Local LU is dependent?** parameter in the SNA Server/6000 LU 6.2 Local LU profile must be `no`.
>
> To use a dependent logical unit, specify a value between 1 and 255 for LOCADDR. Also, in the SNA Server/6000 LU 6.2 Local LU profile, specify `yes` for the **Local LU is dependent?** parameter, and the LOCADDR value for the **Local LU address** parameter.

SSCPFM
> The SSCPFM operand indicates the type of request units (RUs) that the logical unit supports over its SSCP-LU session.
>
> The guidelines illustrated in Figure 44 on page 55 and Figure 45 on page 56 use an independent logical unit. Therefore, the SSCPFM operand is not specified. If you require a dependent logical unit, specify `SSCPFM=USSSCS`.

Specifying the Network Control Program Definitions

The keywords and values for the Network Control Program (NCP) definitions are illustrated in Figure 46 and described below:

```
pgroup_name GROUP ECLTYPE=PHYSICAL,                 X
                   ISTATUS=ACTIVE
line_name    LINE  ADDRESS=(line_number,FULL),      X
                   LOCADD=4000nnnnnnnn,             X
                   MAXTSL=nnnn,                     X
                   PORTADD=port_number,             X
                   RCVBUFC=4095
pu_name      PU
lu_name      LU    ISTATUS=INACTIVE
*
lgroup_name GROUP ECLTYPE=LOGICAL,                  X
                   ISTATUS=ACTIVE,                  X
                   AUTOGEN=n,                       X
                   CALL=INOUT,                      X
                   PHYPORT=port_number
```

Figure 46. NCP Definition Guidelines

The Network Control Program (NCP) definitions include a **physical group** and a **logical group**. The PORTADD keyword on the LINE statement and the PHYPORT keyword on the logical GROUP statement both refer to the same port number.

The following describes the pertinent keywords on the **LINE** statement:

ADDRESS
Specifies the relative line number and data transfer mode for the line.

LOCADD
Indicates the Token-Ring address that the Token-Ring Interface Coupler (TIC) uses.

MAXTSL
Specifies the maximum amount of data (in bytes) that can be transmitted over the Token-Ring connection. Note that this amount includes both the transmission header (TH) and the request/response header (RH).

MAXTSL must be greater than or equal to the maximum size of a path information unit (PIU).

PORTADD
Assigns a port number to the physical line.

RCVBUFC

Specifies the NTRI (NCP Token-Ring interconnect) buffer capacity for receiving data from a telecommunication link during one data transfer. The value must be greater than or equal to the maximum size of a path information unit (PIU).

The following describes the pertinent keywords on the logical **GROUP** statement:

AUTOGEN

Specifies how many LINE and PU statements the NCP Definition Facility (NDF) should automatically add to this group.

CALL

Specifies whether the link station in the communication controller should call out to the remote link station, or whether the remote link station should call into the communication controller link station.

Specify `CALL=INOUT`, which enables either **calling** or **listening** link stations to be configured in SNA Server/6000.

CALL is a LINE statement operand that sifts down to each of the automatically-generated LINE statements.

PHYPORT

Associates the logical lines in this group with a particular physical line. The PHYPORT value must match the PORTADD value on the LINE statement for the physical line.

Specifying the PSF for AIX Printer

The pertinent parameters for the PSF for AIX printer are illustrated in Figure 47 and described below:

```
* Printer NAME                [printer_name]      /
  ASCII code-set              [ascii_code-set]
* EBCDIC code-set             [ebcdic_code-set]
* Number of QUEUE DEVICES     [devices]           #
```

Figure 47. PSF for AIX Printer Guidelines

Printer NAME
The name you choose must match the SNA Server/6000 LU 6.2 Side Information Profile name.

ASCII code-set
Specify the ASCII code-set in which attributes such as class, forms, and destination are specified on your AIX system. Before sending the attributes to the host server program, PSF for AIX converts the attributes from the specified ASCII code-set to the specified EBCDIC code-set.

If you do not specify an ASCII code set, PSF for AIX uses the current code set on your AIX system.

EBCDIC code-set
Specify the EBCDIC code-set used on the host system to which print files are sent and spooled. Before sending the attributes to the host server program, PSF for AIX converts attributes such as class, forms, and destination from the specified ASCII code-set to the specified EBCDIC code set.

Number of QUEUE DEVICES
Specify the number of queue devices to be created for the PSF for AIX printer. Multiple queue devices allow PSF for AIX to simultaneously send one file while converting the next file.

You can define up to nine queue devices. However, note that PSF for AIX requires more RISC System/6000 memory for each queue device.

Specifying the SNA Server/6000 Profiles

This section contains guidelines on configuring the SNA Server/6000 Profiles. Configure these profiles through the System Management Interface Tool (SMIT) panels. Examples of these panels and the hierarchical paths to each SNA definition are illustrated in "SNA Server/6000 Configuration Profile Examples" on page 44.

Note: You must have **root** authority to add or change SNA Server/6000 configuration profiles. After you add or change SNA Server/6000 configuration profiles, you must **verify** and **update** them. For more information about performing this task, see "Verifying and Updating SNA Server/6000 Configuration Profiles" on page 24.

Specifying the SNA Node Profile for AFP Upload: AFP Upload requires no modifications to the SNA Node profile.

Specifying the Control Point Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the Control Point Profile. Note that all values refer to Figure 48.

```
XID node ID                                            [*]
Control Point (CP) name                                [cp_name]
Control Point type                                      appn_end_node   +
```

Figure 48. Control Point Profile Guidelines

XID node ID
> If the IDBLK and IDNUM operands are used in the VTAM switched major node PU statement (rather than CPNAME), then the **XID node ID** value in the Control Point profile or Token-Ring Link Station profile must match the combined IDBLK and IDNUM operands. The IDBLK operand is normally `071` for SNA Server/6000.
>
> Either the CPNAME operand or both the IDBLK and IDNUM operands are required. CPNAME can only be used with PU type 2.1 nodes, such as SNA Server/6000.

Control Point (CP) name
> If the CPNAME operand is used in the VTAM switched major node PU statement (rather than IDBLK and IDNUM), then the **Control Point (CP) name** must match the CPNAME operand. By convention, the CPNAME is usually the same as the PU name.
>
> Either the CPNAME operand or both the IDBLK and the IDNUM operands are required. CPNAME can only be used with PU type 2.1 nodes, such as SNA Server/6000.

Control Point type
> Specify either `appn_end_node` or `appn_network_node`.

Specifying the Token-Ring SNA DLC Profile for AFP Upload: The following displays how to specify the values AFP Upload requires in the Token-Ring SNA DLC Profile. Note that all values refer to Figure 49.

```
 * Profile name                                    [profile_name]
   Data link device name                           [tokn]              +
   Receive window count (1-127)                     [7]                 #
   Local SAP address (04-ec)                        [04]                X

   Link Recovery Parameters
     Retry interval (1-10000 seconds)               [60]                #
     Retry limit (0-500 attempts)                   [0]                 #
```

Figure 49. Token-Ring SNA DLC Profile Guidelines

Profile name
Choose any meaningful value.

Data link device name
Select one of the available adapters.

Receive window count (1-127)
This value should be equal to the MAXOUT value in the VTAM switched major node PU statement.

The **Receive window count** defines the size of the link-level window. It specifies the maximum number of frames to receive before sending a link-level acknowledgement.

The VTAM PU MAXOUT value indicates the number of frames the 37xx communication controller sends before waiting for a link-level acknowledgement.

If the MAXOUT operand is less than the **Receive window count** parameter, extremely poor throughput can result. The default MAXOUT value is 1. The default **Receive window count** value is 8. These defaults must be adjusted to yield acceptable throughput.

Local SAP address (04-ec)
Specify 04.

Link Recovery Parameters - Retry interval (1-10000 seconds)
Specify 60. If the link station is a **calling** link station, this value causes it to try to establish a link connection with the 37xx communication controller every 60 seconds, until a link connection can be established.

Link Recovery Parameters - Retry limit (0-500 attempts)
Specify 0. If the link station is a **calling** link station, this value indicates that there is no limit on the number of attempts the link station makes to establish a link connection with the 37xx communication controller. The interval between the attempts is defined by the previous parameter.

Specifying the Token-Ring Link Station Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the Token-Ring Link Station Profile. Note that all values refer to Figure 50.

```
 * Profile name                                      [profile_name]
   Use APPN Control Point's XID node ID?              yes                       +
      If no, XID node ID                              [*]
 * SNA DLC Profile name                               [DLC_profile_name]        +
   Stop link station on inactivity?                   no                        +
   LU address registration?                           no                        +

   Adjacent Node Address Parameters
      Access routing                                  link_address              +
      If link_address,
         Remote link address                          [4000nnnnnnnn]            X
         Remote SAP address (04-ec)                   [04]                      X

   Adjacent Node Identification Parameters
      Verify adjacent node?                           no                        +

   Link Activation Parameters
      Solicit SSCP sessions?                          yes                       +
      Initiate call when link station is activated?   yes                       +
      Activate link station at SNA start up?          yes                       +

   Restart Parameters
      Restart on activation?                          no                        +
      Restart on normal deactivation?                 yes                       +
      Restart on abnormal deactivation?               yes                       +
```

Figure 50. Token-Ring Link Station Profile Guidelines

Profile name
    Choose any meaningful value.

Use APPN Control Point's XID node ID?
    Select yes if the CPNAME operand is used in the VTAM switched major node PU statement or IDBLK and IDNUM are used and these operands match the Control Point's **XID node ID**.

    Select no if the VTAM switched major node PU statement uses IDBLK and IDNUM and these values do not match the Control Point's **XID node ID**.

If no, XID node ID
    If **Use APPN Control Point's XID node ID?** is no, this parameter must match the combined IDBLK and IDNUM operands in the VTAM switched major node PU statement.

    The **XID node ID** has form xxxxxxxx, where x is a hexadecimal digit (0-F). The first three positions correspond to the IDBLK operand. The last five positions correspond to the IDNUM operand.

    Normally, the first three hexadecimal digits should be 071 for SNA Server/6000.

SNA DLC Profile name
    Select the name of the SNA DLC profile.

Stop link station on inactivity?
    Select no.

LU address registration?
Select no.

Adjacent Node Address Parameters - Access routing
Select link_address.

This parameter is referenced only for **calling** link stations and selective **listening** link stations. For more information, refer to ""Calling" Versus "Listening" Link Stations" on page 26.

Adjacent Node Address Parameters - Remote link address
For **calling** link stations and selective **listening** link stations, specify the Token-Ring address of the 37xx communication controller Token-Ring interface coupler (TIC). The Token-Ring address is 12 hexadecimal digits and is specified through the NCP definitions in the LOCADD operand on the LINE statement in the physical group.

For non-selective **listening** link stations, leave this parameter blank.

Adjacent Node Address Parameters - Remote SAP address
Specify 04.

Adjacent Node Identification Parameters - Verify adjacent node?
Select no.

Link Activation Parameters - Solicit SSCP sessions?
Select yes.

Link Activation Parameters - Initiate call when link station is activated?
To define a **calling** link station, select yes.

To define a **listening** link station, select no.

Link Activation Parameters - Activate link station at SNA start up?
Select yes.

Restart Parameters - Restart on activation?
Select no.

Restart Parameters - Restart on normal deactivation?
Select yes.

Restart Parameters - Restart on abnormal deactivation?
Select yes.

Specifying the LU 6.2 Local LU Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the LU 6.2 Local LU Profile. Note that all values refer to Figure 51.

```
* Profile name                                          [profile_name]
  Local LU name                                         [lu_name]
  Local LU alias                                        [lu_alias]
  Local LU is dependent?                                 no                    +
        If yes,
            Local LU address (1-255)                    [ ]                    #
            Link Station Profile name                   [ ]                    +
```

Figure 51. LU 6.2 Local LU Profile Guidelines

Profile name
    Choose any meaningful value.

Local LU name
    This value must match the name on the LU statement in the VTAM switched major node.

Local LU alias
    Choose any meaningful value.

Local LU is dependent?
    The logical unit can be either dependent (yes) or independent (no). Dependent logical units are managed by an SSCP. In general, independent logical units offer more flexibility.

    For dependent logical units, the LOCADDR value in the VTAM switched major node LU statement is non-zero. For independent logical units, LOCADDR=0.

If yes, Local LU address (1-255)
    If the logical unit is dependent, the **Local LU address** parameter must match the LOCADDR value in the VTAM switched major node LU statement.

If yes, Link Station Profile name
    If the logical unit is dependent, select the profile name of the link station through which SNA Server/6000 communicates with the host system.

Specifying the LU 6.2 Side Information Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the LU 6.2 Side Information Profile. Note that all values refer to Figure 52.

```
 * Profile name                                 [profile_name]
   Local LU or Control Point alias              [lu_alias]                        +
   Provide only one of the following:
      Partner LU alias                          []                                +
      Fully qualified partner LU name           [network_id.partner_lu_name]
   Mode name                                    [#INTER]                          +
   Remote transaction program name (RTPN)       [remote_TP_name]                  +
   RTPN in hexadecimal?                          no                               +
```

Figure 52. LU 6.2 Side Information Profile Guidelines

Profile name

The name you choose must match the name of the PSF for AIX printer.

Local LU or Control Point alias

Select the local LU alias that you specified in the LU 6.2 Local LU profile.

Fully qualified partner LU name

Specifies the network identifier of the network in which the host server program resides (followed by a period), and the logical unit name used by the host server program.

The network identifier portion must match the NETID value in the VTAM start option list (ATCSTRxx).

The logical unit name portion must match an APPL statement name in a VTAM application program major node. It must also match an LUADD ACBNAME value in the APPC/MVS APPCPMxx member of SYS1.PARMLIB.

Mode name

Specify #INTER.

Remote transaction program name (RTPN)

The name you choose must match the TPNAME value in the APPC/MVS TP profile.

RTPN in hexadecimal?

Specify no.

Specifying the Partner LU 6.2 Location Profile for AFP Upload: The following describes
how to specify the values AFP Upload requires in the Partner LU 6.2 Location Profile. Note that all values
refer to Figure 53.

```
* Profile name                                 [profile_name]
  Fully qualified partner LU name              [network_id.lu_name]
  Partner LU location method                    owning_cp                        +
  If owning_cp,
     Fully qualified owning Control Point (CP) name [network_id.cp_name]
     Local node is network server for LEN node?    no                            +
     Fully qualified network node server name   []
```

Figure 53. Partner LU 6.2 Location Profile Guidelines

Profile name
Choose any meaningful value.

Fully qualified partner LU name
Specifies the network identifier of the network in which the host server program resides (followed by a
period), and the logical unit name used by the host server program.

The network identifier portion must match the NETID value in the VTAM start option list (ATCSTRxx).

The logical unit name portion must match an APPL statement name in a VTAM application program
major node. It must also match an LUADD ACBNAME value in the APPC/MVS APPCPMxx member
of SYS1.PARMLIB.

Partner LU location method
Select owning_cp.

If owning_cp, Fully qualified owning Control Point (CP) name
Specifies the network identifier of the network in which the host server program resides (followed by a
period), and the name of the System Services Control Point (SSCP) for the host system.

The network identifier portion must match the NETID value in the VTAM start option list (ATCSTRxx).

The CP name portion must match the SSCPNAME value in the VTAM start option list (ATCSTRxx).

If owning_cp, Local node is network server for LEN node
Select no.

If owning_cp, Fully qualified network node server name
Leave blank.

Configuration Worksheet

Use the following worksheet to record values for SNA Server/6000 configuration parameters that are related to other configuration settings:

SNA Server/6000	Value	APPC/MVS	VTAM	NCP
Figure 54. Configuration Worksheet				
SNA Server/6000	**Value**	**APPC/MVS**	**VTAM**	**NCP**
Control Point: Control Point (CP) name			PU: name PU: CPNAME	
Token-Ring SNA DLC: Receive window count			PU: MAXOUT	
Token-Ring Link Station: Remote link address				LINE: LOCADD
LU 6.2 Local LU: Local LU name			LU: name	
LU 6.2 Local LU: Local LU is dependent?			LU: LOCADDR	
LU 6.2 Local LU: Local LU address			LU: LOCADDR	
LU 6.2 Side Information: Fully qualified partner LU name		APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name	
LU 6.2 Side Information: Remote transaction program name (RTPN)		TP profile: TPNAME		
Partner LU 6.2 Location: Fully qualified partner LU name		APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name	
Partner LU 6.2 Location: Fully qualified owning Control Point (CP) name			ATCSTRxx: NETID ATCSTRxx: SSCPNAME	

Local or Remote 37xx Token-Ring

Chapter 10. Local 3172 Token-Ring
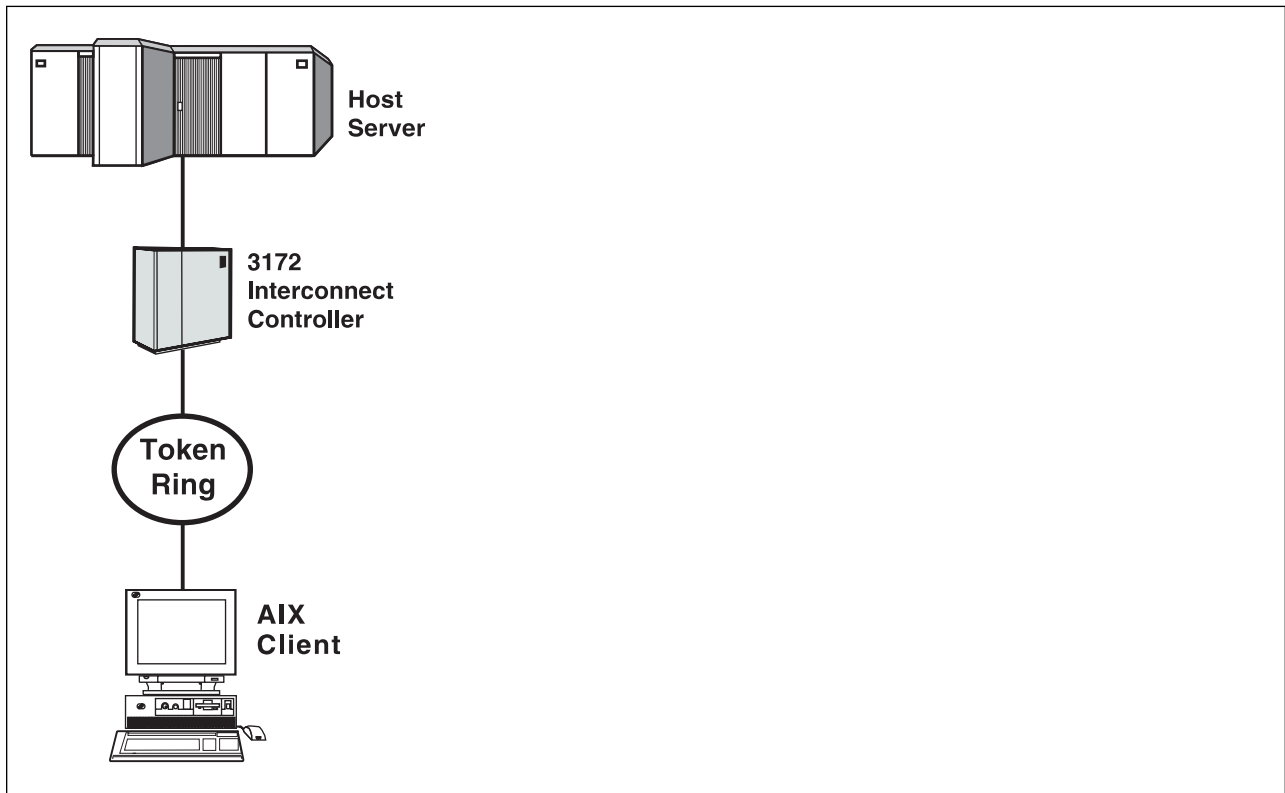
Figure 55. Local 3172 Token-Ring

Key Configuration Parameter Interrelationships

Several network components have configuration parameters whose values are related to configuration parameters for other network components. These interrelated parameters must be configured consistently to make end-to-end communication possible.

Several figures follow. They illustrate some of the key interrelationships among configuration parameters for SNA network components.

Figure 56 illustrates the interrelationships in defining the name of the transaction program used by the AFP Upload host server.
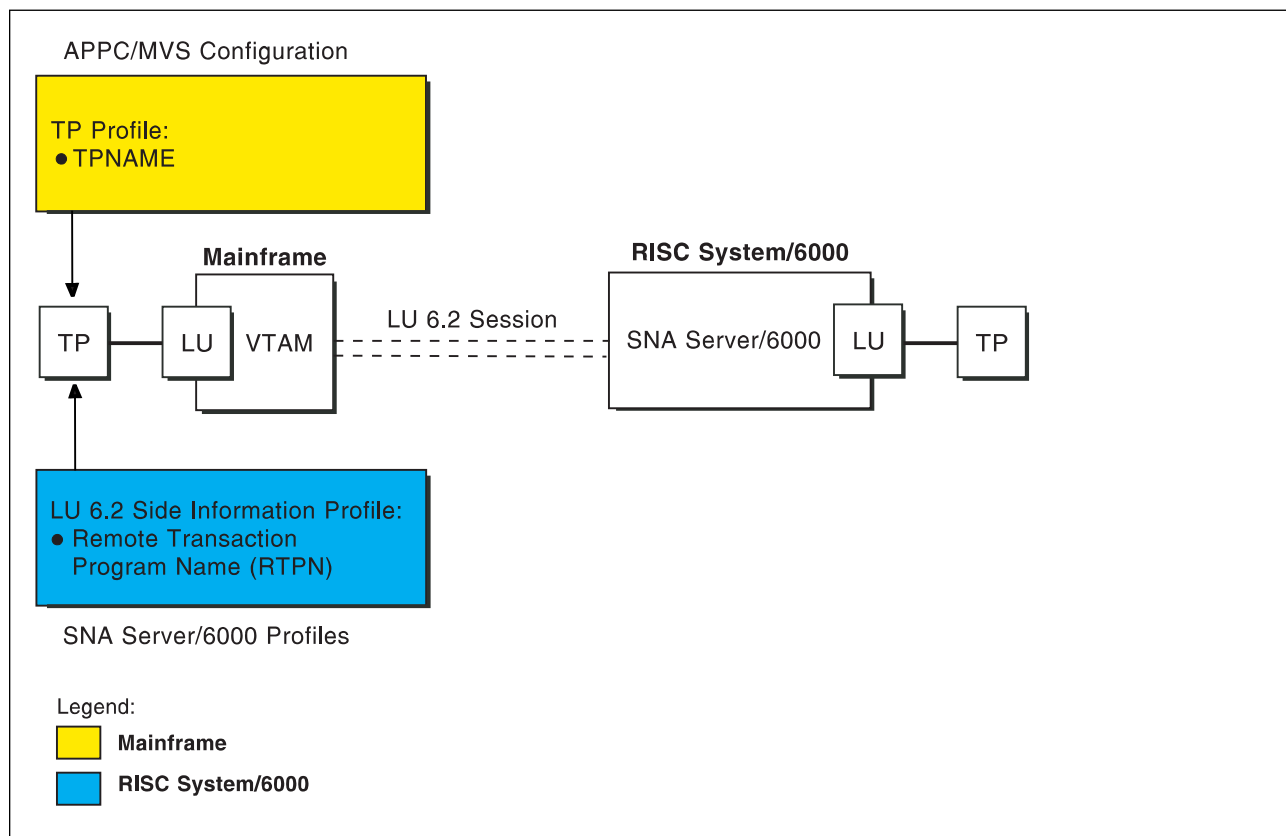
Figure 56. Transaction Program Name

Figure 57 illustrates the interrelationships in defining logical unit (LU) names.
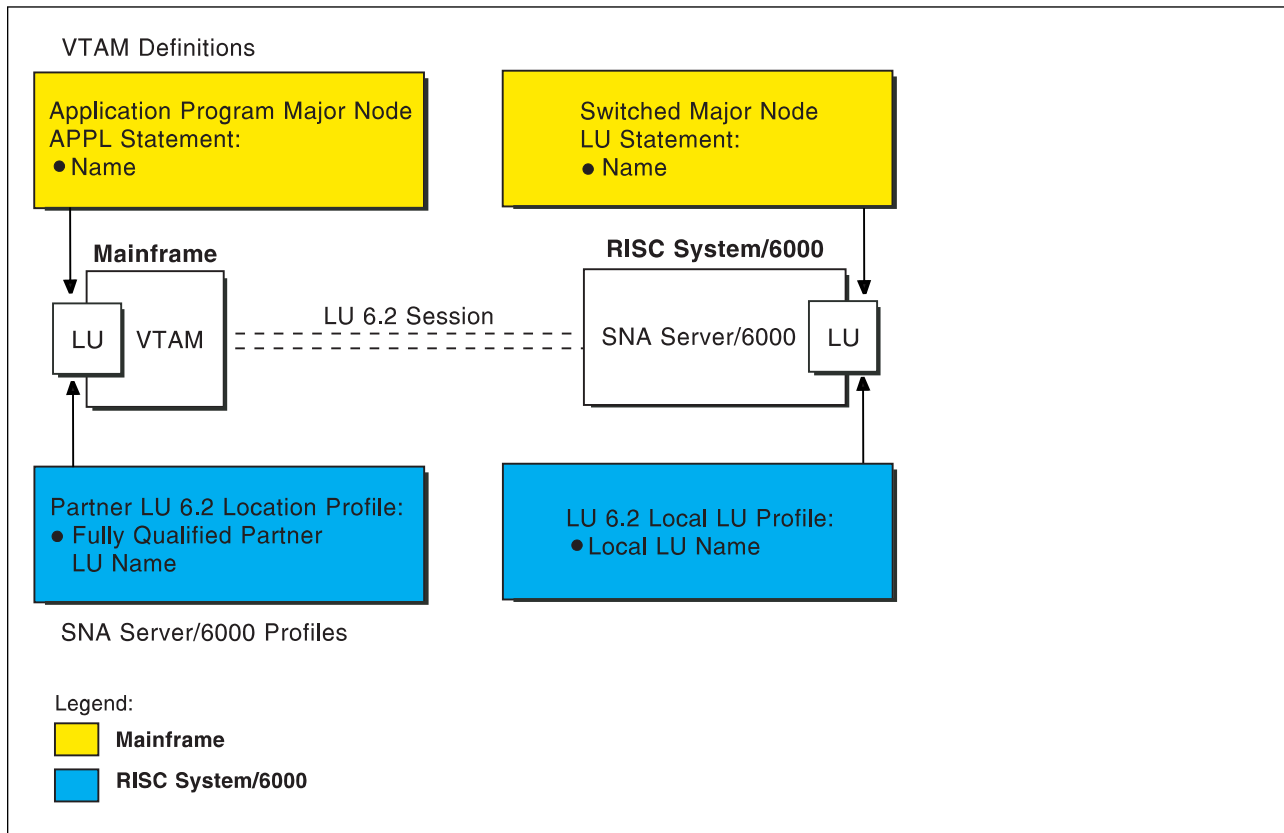
Figure 57. Logical Unit Names

Figure 58 illustrates the interrelationships in defining the local address of the logical unit provided by SNA Server/6000.
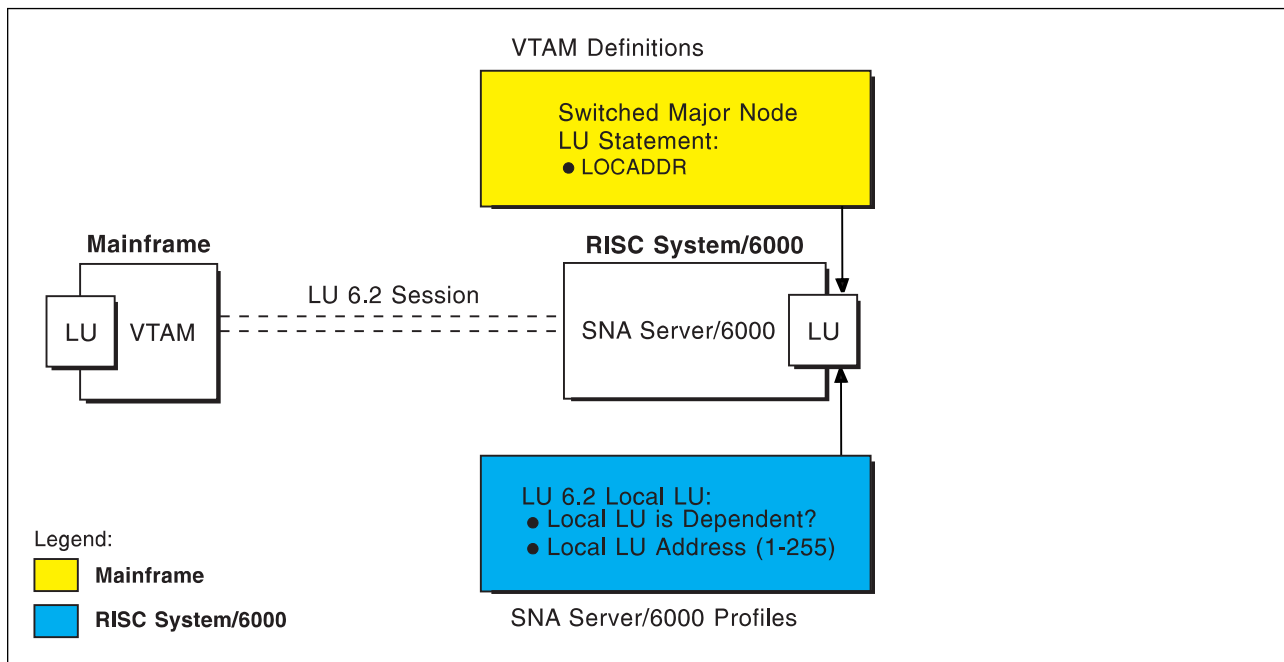
Figure 58. Local Address of Logical Unit

Figure 59 illustrates the interrelationships in defining the name of the physical unit/control point provided by SNA Server/6000.
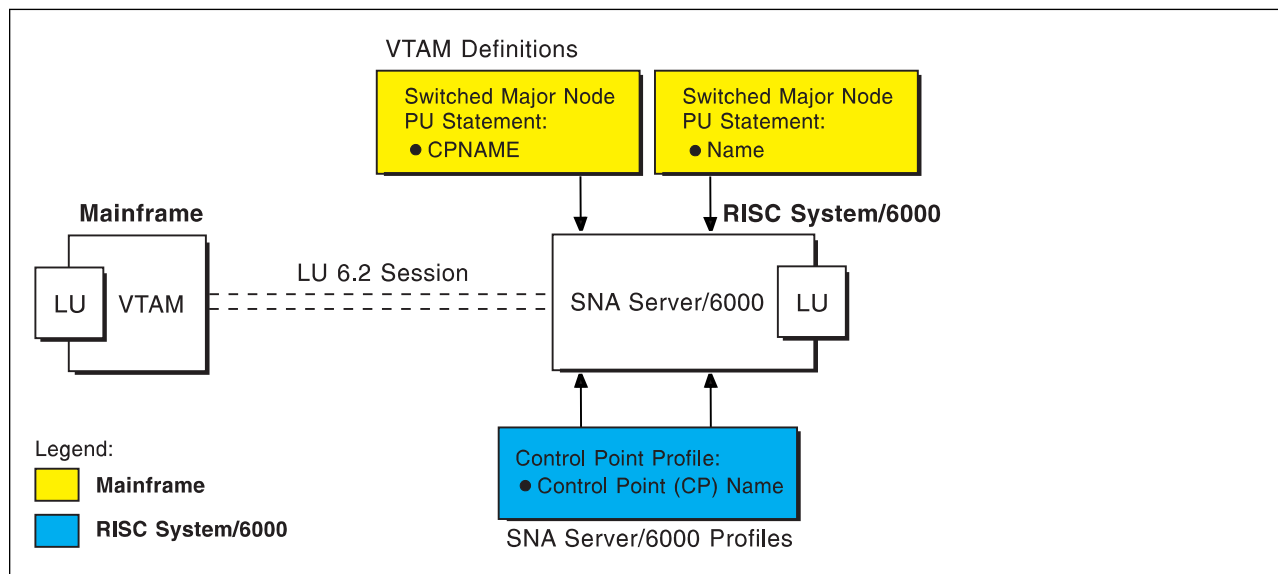
Figure 59. Physical Unit/Control Point Name

Figure 60 illustrates the interrelationships in defining Token-Ring addresses used in this configuration.
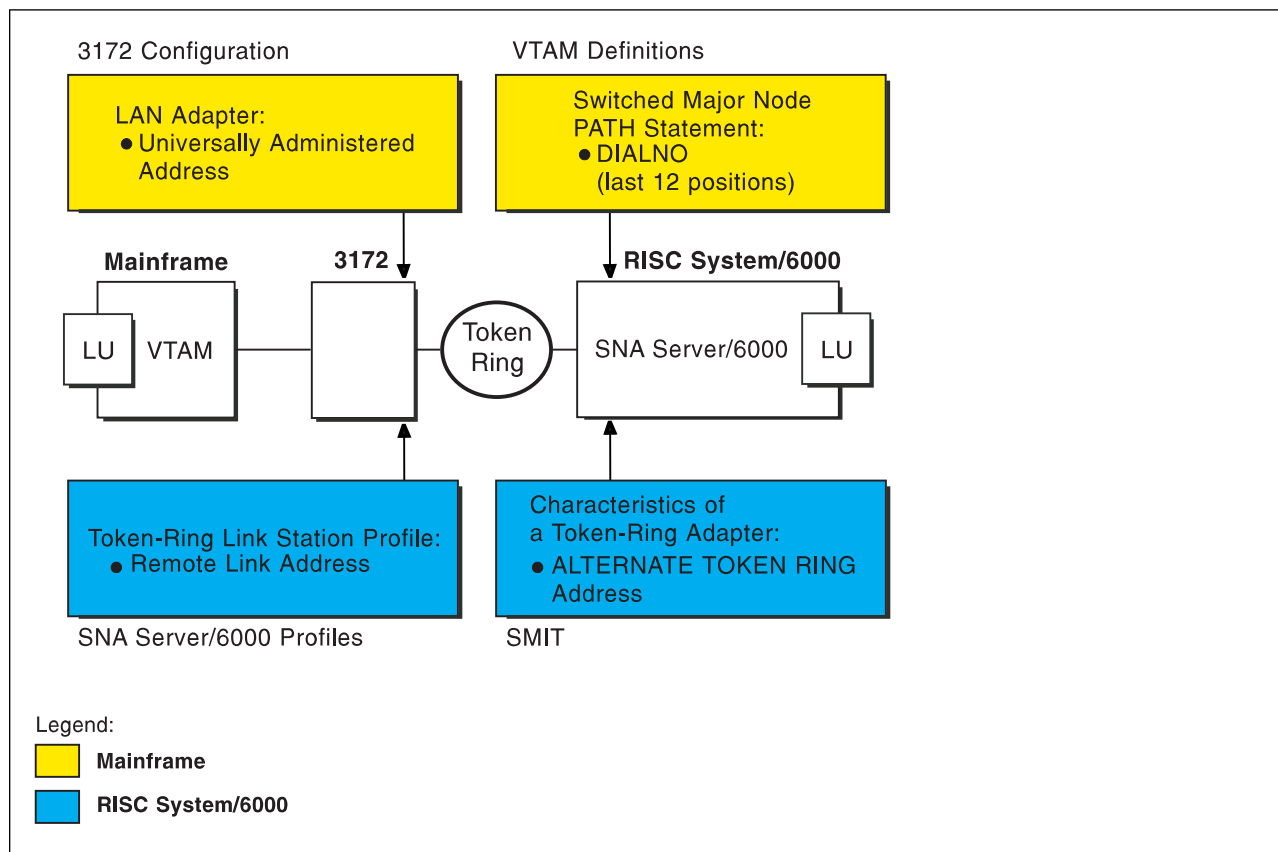
Figure 60. Token-Ring Addresses

Local 3172 Token-Ring Example

For an explanation of pertinent configuration parameters, see "Guidelines for Configuring Local 3172 Token-Ring" on page 89.

APPC/MVS APPCPMxx Parameters Example

For an explanation of these values, see "Specifying the APPC/MVS APPCPMxx Parameters" on page 89.

```
LUADD
 ACBNAME(MVSLU01),
 SCHED(ASCH),
 TPDATA(SYS1.APPCTP),
 TPLEVEL(SYSTEM),
 BASE
SIDEINFO
 DATASET(SYS1.APPCSI)
```

Figure 61. Sample APPC/MVS APPCPMxx Parameters

APPC/MVS ASCHPMxx Parameters Example

For an explanation of these values, see "Specifying the APPC/MVS ASCHPMxx Parameters" on page 89.

```
CLASSADD
  CLASSNAME(FAST),
  MAX(10),
  MIN(2),
  RESPGOAL(.01),
  MSGLIMIT(500)
```

Figure 62. Sample APPC/MVS ASCHPMxx Parameters

APPC/MVS TP Profile Example

For an explanation of these values, see "Specifying the APPC/MVS TP Profile" on page 90.

```
//JOBNAME    JOB    ACCOUNT
//*
//TPPROF     EXEC   PGM=ATBSDFMU
//SYSPRINT  DD     SYSOUT=*
//SYSSDLIB  DD     DSN=SYS1.APPCTP,DISP=SHR
//SYSSDOUT  DD     SYSOUT=*
//SYSIN     DD     DATA,DLM=XX
  TPADD
    TPNAME(AFPSVR1)
    TPSCHED_DELIMITER(##)
      CLASS(FAST)
      JCL_DELIMITER(END_OF_JCL)
//JOBNAME  JOB  ACCOUNT
//STEP     EXEC PGM=AUPSNAS
//STEPLIB  DD   DSN=AUP.SAUPLOAD,DISP=SHR
//         DD   DSN=PLI.V2R3M0.PLILINK,DISP=SHR
//         DD   DSN=PLI.V2R3M0.SIBMLINK,DISP=SHR
//SYSPRINT DD   SYSOUT=*
END_OF_JCL
  KEEP_MESSAGE_LOG(ALWAYS)
  MESSAGE_DATA_SET(AUP.APPCLOG)
  DATASET_STATUS(OLD)
##
XX
/*
```

Figure 63. Sample JCL to Create an APPC/MVS TP Profile

VTAM Start Option List (ATCSTRxx) Example

For an explanation of these values, see "Specifying the VTAM Start Option List (ATCSTRxx)" on page 90.

```
CONFIG=00,          ATCCON MEMBER OF VTAMLST            X
NETID=USIBMBQ,      NETWORK IDENTIFIER                  X
SSCPNAME=ST1,       SSCP NAME                           X
   ⋮
```

Figure 64. Sample VTAM Start Option List

VTAM Configuration List (ATCCONnn) Example

For an explanation of these values, refer to "Specifying the VTAM Configuration List (ATCCONnn)" on page 90.

```
APPCAPLS                                               X
   ⋮
```

Figure 65. Sample VTAM Configuration List

VTAM Application Program Major Node and Application Program Example

For an explanation of these values, see "Specifying the VTAM Application Program Major Node and Application Program" on page 91.

```
APPCAPLS VBUILD TYPE=APPL
MVSLU01  APPL  ACBNAME=MVSLU01,                         X
               APPC=YES,                                X
               AUTOSES=0,                               X
               DDRAINL=NALLOW,                          X
               DMINWNL=5,                               X
               DMINWNR=5,                               X
               DRESPL=NALLOW,                           X
               DSESLIM=10,                              X
               LMDENT=100,                              X
               MODETAB=ISTINCLM,                        X
               PARSESS=YES,                             X
               SECACPT=CONV,                            X
               SRBEXIT=YES
```

Figure 66. Sample VTAM Application Program Major Node and Application Program

VTAM Switched Major Node Example

For an explanation of these values, see "Specifying the VTAM Switched Major Node" on page 92.

```
SWAIX01   VBUILD TYPE=SWNET
*
AIX01     PU    ADDR=04,               ADDRESS REQUIRED, BUT IGNORED X
                CPNAME=AIX01,          CONTROL POINT NAME           X
                MAXDATA=1033,          MAXIMUM PIU SIZE             X
                MODETAB=ISTINCLM,      LOGON MODE TABLE             X
                VPACING=0              NO PACING TO BOUNDARY NODE
*
UPLD0101  LU    LOCADDR=0              INDEPENDENT LU
```

Figure 67. Sample VTAM Switched Major Node

VTAM External Communication Adapter (XCA) Major Node Example

For an explanation of these values, see "Specifying the VTAM External Communication Adapter (XCA) Major Node" on page 96.

```
B3172     VBUILD  TYPE=XCA
*
B3172P01 PORT     ADAPNO=0,                                          X
                  CUADDR=5EC,                                        X
                  MEDIUM=RING
*
B3172GR1 GROUP    DIAL=YES
*
B3172LN1 LINE     CALL=INOUT
*
B3172PU1 PU
```

Figure 68. Sample VTAM External Communication Adapter (XCA) Major Node Example

PSF for AIX Printer Example

For an explanation of these values, see "Specifying the PSF for AIX Printer" on page 97.

```
smit
  PSF for AIX Printing and Configuration
    Administer PSF for AIX
      Manage a PSF for AIX Printer
        Add a Printer or PSF Queue
          Upload
```

Figure 69. SMIT Panel Sequence for PSF for AIX Printer

```
* Data stream type              AFPDS
* Printer NAME                   [upload1]         /
  ASCII code-set                 []
* EBCDIC code-set                [IBM-037]
* Number of QUEUE DEVICES        [4]               #
  Description                    []
```

Figure 70. Sample PSF for AIX Printer

SNA Server/6000 Configuration Profile Examples

This section lists sample SNA Server/6000 profiles. Each profile is preceded by the sequence of SMIT panels to access the profile.

- SNA Node

- Control Point

- Token-Ring SNA DLC

- Token-Ring Link Station

- LU 6.2 Local LU

- LU 6.2 Side Information

- Partner LU 6.2 Location

```
   smit
     Communications Applications and Services
       SNA Server/6000
         Configure SNA Profiles
           Advanced Configuration
             SNA System Defaults
               Change/Show a Profile
```

Figure 71. SMIT Panel Sequence For SNA Node Profile

```
 Profile name                                     sna
 Maximum number of sessions (1-5000)              [200]                      #
 Maximum number of conversations (1-5000)         [200]                      #
 Restart action                                    once                      +
 Recovery resource manager (RRM) enabled?          no                        +
 Dynamic inbound partner LU definitions allowed?   yes                       +
 NMVT action when no NMVT process                  reject                    +
 Standard output file/device                      [/dev/console]
 Standard error file/device                       [/var/sna/sna.stderr]

 Comments                                         []
```

Figure 72. Sample SNA Node Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Control Point
                Change/Show a Profile
```

Figure 73. SMIT Panel Sequence For Control Point Profile

```
Profile name                                    node_cp
XID node ID                                     [*]
Network name                                    [USIBMBQ]
Control Point (CP) name                         [AIX01]
Control Point alias                             [AIX01]
Control Point type                               appn_end_node     +
Maximum number of cached routing trees          [500]             #
Maximum number of nodes in the TRS database     [500]             #
Route addition resistance                       [128]             #

Comments                                        []
```

Figure 74. Sample Control Point Profile

Local 3172 Token-Ring

```
smit
 Communications Applications and Services
    SNA Server/6000
       Configure SNA Profiles
          Advanced Configuration
             Links
                Token-Ring
                   Token-Ring SNA DLC
                       Add a Profile
```

Figure 75. SMIT Panel Sequence For Token-Ring SNA DLC Profile

```
* Profile name                                       [tr3172]
  Data link device name                              [tok0]        +
  Force disconnect time-out (1-600 seconds)          [120]          #
  User-defined maximum I-Field size?                  no           +
      If yes, Max. I-Field size (265-30729)          [30729]        #
  Max. num of active link stations (1-255)           [100]          #
      Number reserved for inbound activation         [0]            #
      Number reserved for outbound activation        [0]            #
  Transmit window count (1-127)                      [16]           #
  Dynamic window increment (1-127)                   [1]            #
  Retransmit count (1-30)                            [8]            #
  Receive window count (1-127)                       [1]            #
  Ring access priority                               [0]           +
  Inactivity time-out (1-120 seconds)                [48]           #
  Response time-out (1-40, 500 msec intervals)       [4]            #
  Acknowledge time-out (1-40, 500 msec intervals)    [1]            #
  Local link name                                    []
  Local SAP address (04-ec)                          [04]          X
  Trace base listening link station?                  no           +
      If yes, Trace format                            long         +
  Dynamic link stations supported?                    yes          +

  Link Recovery Parameters
      Retry interval (1-10000 seconds)               [60]           #
      Retry limit (0-500 attempts)                   [0]            #

  Dynamic Link Activation Parameters
      Solicit SSCP sessions?                          yes          +
      CP-CP sessions supported?                       yes          +
      Partner required to support CP-CP sessions?     no           +

  Dynamic Link TG COS Characteristics
      Effective capacity                             [4300800]      #
      Cost per connect time                          [0]            #
      Cost per byte                                  [0]            #
      Security                                        nonsecure    +
      Propagation delay                               lan          +
      User-defined 1                                 [128]          #
      User-defined 2                                 [128]          #
      User-defined 3                                 [128]          #

  Comments                                           []
```

Figure 76. Sample Token-Ring SNA DLC Profile

Local 3172 Token-Ring

```
smit
  Communications Applications and Services
    SNA Server/6000
      Configure SNA Profiles
        Advanced Configuration
          Links
            Token-Ring Link Station
              Add a Profile
```

Figure 77. SMIT Panel Sequence For Token-Ring Link Station Profile

```
* Profile name                                      [tr3172]
  Use APPN Control Point's XID node ID?              yes                +
     If no, XID node ID                              [*]
* SNA DLC Profile name                               [tr3172]           +
  Stop link station on inactivity?                   no                 +
     If yes, Inactivity time-out (0-10 minutes)      [0]                     #
  LU address registration?                           no                 +
     If yes, LU Address Registration Profile name    []                 +
  Trace link?                                        no                 +
     If yes, Trace size                              long               +

  Adjacent Node Address Parameters
     Access routing                                  link_address       +
     If link_name, Remote link name                  []
     If link_address,
        Remote link address                          [08005A946169]     X
        Remote SAP address (04-ec)                   [04]               X

  Adjacent Node Identification Parameters
     Verify adjacent node?                           no                 +
     Network ID of adjacent node                     []
     CP name of adjacent node                        []
     XID node ID of adjacent node (LEN node only)    [*]
     Node type of adjacent node                      learn              +

  Link Activation Parameters
     Solicit SSCP sessions?                          yes                +
     Initiate call when link station is activated?   yes                +
     Activate link station at SNA start up?          yes                +
     Activate on demand?                             no                 +
     CP-CP sessions supported?                       yes                +
     If yes,
        Adjacent network node preferred server?      no                 +
     Partner required to support CP-CP sessions?     no                 +
     Initial TG number (0-20)                        [0]                     #

  Restart Parameters
     Restart on activation?                          no                 +
     Restart on normal deactivation?                 yes                +
     Restart on abnormal deactivation?               yes                +

  Transmission Group COS Characteristics
     Effective capacity                              [4300800]               #
     Cost per connect time                           [0]                     #
     Cost per byte                                   [0]                     #
     Security                                        nonsecure          +
     Propagation delay                               lan                +
     User-defined 1                                  [128]                   #
     User-defined 2                                  [128]                   #
     User-defined 3                                  [128]                   #

  Comments                                           []
```

Figure 78. Sample Token-Ring Link Station Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Sessions
                LU 6.2
                  LU 6.2 Local LU
                    Add a Profile
```

Figure 79. SMIT Panel Sequence For LU 6.2 Local LU Profile

```
* Profile name                                        [UPLD0101]
  Local LU name                                        [UPLD0101]
  Local LU alias                                       [UPLD0101]
  Local LU is dependent?                                no            +
     If yes,
        Local LU address (1-255)                       []               #
        System services control point
           (SSCP) ID (*, 0-65535)                      [*]
        Link Station Profile name                      []             +
  Conversation Security Access List Profile name       []

  Comments                                             []
```

Figure 80. Sample LU 6.2 Local LU Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Sessions
                LU 6.2
                  LU 6.2 Side Information
                    Add a Profile
```

Figure 81. SMIT Panel Sequence For LU 6.2 Side Information Profile

```
* Profile name                                        [upload1]
  Local LU or Control Point alias                      [UPLD0101]        +
  Provide only one of the following:
     Partner LU alias                                  []               +
     Fully qualified partner LU name                   [USIBMBQ.MVSLU01]
  Mode name                                            [#INTER]         +
  Remote transaction program name (RTPN)               [AFPSVR1]
  RTPN in hexadecimal?                                  no              +

  Comments                                             []
```

Figure 82. Sample LU 6.2 Side Information Profile

```
   smit
     Communications Applications and Services
       SNA Server/6000
         Configure SNA Profiles
           Advanced Configuration
             Sessions
               LU 6.2
                 Partner LU 6.2 Location
                   Add a Profile
```

Figure 83. SMIT Panel Sequence For Partner LU 6.2 Location Profile

```
* Profile name                                         [MVSLU01]
  Fully qualified partner LU name                       [USIBMBQ.MVSLU01]
  Partner LU location method                             owning_cp
  If owning_cp,
     Fully qualified owning Control Point (CP) name     [USIBMBQ.ST1]          +
     Local node is network server for LEN node?          no
     Fully qualified newtork node server name           []
  If link_station,
     Local LU name                                      []
     Link Station Profile name                          []                          +

  Comments                                              []
```

Figure 84. Sample Partner LU 6.2 Location Profile

Configuration Worksheet Example

The following worksheet records values for SNA Server/6000 configuration parameters that are related to other configuration settings:

SNA Server/6000	Value	APPC/MVS	VTAM	3172
Control Point: Control Point (CP) name	AIX01		PU: name PU: CPNAME	
Token-Ring Link Station: Remote link address	08005A946169			universal address
LU 6.2 Local LU: Local LU name	UPLD0101		LU: name	
LU 6.2 Local LU: Local LU is dependent?	no		LU: LOCADDR	
LU 6.2 Local LU: Local LU address	n/a		LU: LOCADDR	
LU 6.2 Side Information: Fully qualified partner LU name	USIBMBQ.MVSLU01	APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name	
LU 6.2 Side Information: Remote transaction program name (RTPN)	AFPSVR1	TP profile: TPNAME		
Partner LU 6.2 Location: Fully qualified partner LU name	USIBMBQ.MVSLU01	APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name	
Partner LU 6.2 Location: Fully qualified owning Control Point (CP) name	USIBMBQ.ST1		ATCSTRxx: NETID ATCSTRxx: SSCPNAME	

Figure 85. Sample Configuration Worksheet

Guidelines for Configuring Local 3172 Token-Ring

The following provides guidance for implementing the examples displayed in "Local 3172 Token-Ring Example" on page 75. Note that a subset of the example is displayed below, displaying the pertinent parameters and describing which of these require you to specify *variable_names* and which require a specific name or number, such as MODETAB=ISTINCLM.

Specifying the APPC/MVS APPCPMxx Parameters

The pertinent statements and parameters for the APPCPMxx member of SYS1.PARMLIB are illustrated in Figure 86 and described below.

```
LUADD
   ACBNAME(lu_name),
   SCHED(ASCH),
   TPDATA(tp_profile_dataset),
   TPLEVEL(level)
```

Figure 86. APPC/MVS APPCPMxx Parameter Guidelines

ACBNAME
Specifies the name of a logical unit to be controlled by APPC/MVS. The value must match an APPL statement name in a VTAM application program major node.

SCHED
Specify ASCH to indicate that inbound conversation requests should be scheduled by the APPC/MVS transaction scheduler (ASCH).

TPDATA
Specify the name of the VSAM key-sequenced dataset (KSDS) that contains TP profiles for the logical unit referenced by the ACBNAME parameter.

TPLEVEL
Controls access, for the logical unit referenced by the ACBNAME parameter, to execution of transaction programs (TP's).

Specify SYSTEM to allow access to all authenticated MVS users.

Specifying the APPC/MVS ASCHPMxx Parameters

AFP Upload requires that a class of transaction initiators be defined to the APPC/MVS transaction scheduler (ASCH) so the class can be referenced in the APPC/MVS TP profile that describes an AFP Upload server. AFP Upload does not have special requirements for the parameters used in defining the class.

Specifying the APPC/MVS TP Profile

Use the APPC/MVS ATBSDFMU administration utility program to create an APPC/MVS TP profile.

The TPNAME value must match the **Remote transaction program name (RTPN)** parameter in the SNA/6000 LU 6.2 Side Information profile.

The scheduler information in the TP profile must include JCL that the ASCH scheduler uses to run the transaction program. The JCL must execute the AFP Upload server program, named AUPSNAS. This program is written in the PL/I language. It requires that the PL/I PLILINK and SIBMLINK libraries be included in the STEPLIB definition. The AFP Upload server program also requires that the SYSPRINT DD name be allocated. Unless the SYSPRINT DD statement refers to DUMMY or a SYSOUT data set, the data set referenced by the SYSPRINT DD statement must have the following attributes:

directory blocks: 0

record format: VA

record length: 125

block size: 129

For more information about the SYSPRINT DD name used by the host server program, refer to "Specifying the SYSPRINT DD Statement" on page 10.

Specifying the VTAM Start Option List (ATCSTRxx)

You must specify the values illustrated in Figure 87 and described below:

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

Figure 87. VTAM Start Option List Guidelines

CONFIG
    Specifies the ATCCON*nn* member to use.

NETID
    Specifies the network identifier for the host system.

SSCPNAME
    Specifies the System Services Control Point (SSCP) name for the host system.

Specifying the VTAM Configuration List (ATCCONnn)

The VTAM configuration list indicates the application program major nodes that should be made available when VTAM is started. Include the application program major node that contains the application program that APPC/MVS uses:

appl_prog_major_node   X
    .
    .
    .

Specifying the VTAM Application Program Major Node and Application Program

The pertinent statements and parameters for the VTAM Application Program Major Node and Application Program are illustrated in Figure 88 and described below.

```
majname VBUILD TYPE=APPL
minname APPL   ACBNAME=minname,                     X
               APPC=YES,                            X
               MODETAB=ISTINCLM,                    X
               PARSESS=YES,                         X
               SECACPT=CONV,                        X
               SRBEXIT=YES
```

Figure 88. VTAM Application Program Major Node and Application Program Guidelines

ACBNAME
Specify the minor node name to assign to the application program. This name must be unique within the domain in which the application program resides.

APPC
Specify `YES`.

MODETAB
Specify `ISTINCLM` or the name of an alternative VTAM logon mode table to be used to associate each logon mode name with a set of session parameters for the application program.

PARSESS
Specify `YES`, or do not include the PARSESS parameter. PARSESS defaults to `YES` when `APPC=YES`.

This value indicates that the application program can have multiple concurrent (parallel) sessions with an independent logical unit.

SECACPT
Specify `CONV`.

This value indicates that the application program's logical unit supports conversation requests containing access security subfields.

SRBEXIT
Specify `YES`.

This value indicates that the application program is authorized to use service request block (SRB) processing in its exit routines.

Specifying the VTAM Switched Major Node

The following statements and values must be specified (as illustrated in Figure 89) if a **calling** SNA Server/6000 link station initiates a link connection with the 3172 interconnect controller:

```
node_name VBUILD TYPE=SWNET
*
pu_name    PU     ADDR=nn,                        X
                  CPNAME=cp_name,                 X
                  MAXDATA=nnnn,                   X
                  MODETAB=mode_table,             X
                  VPACING=0
*
lu_name    LU     LOCADDR=nn
```

Figure 89. VTAM Switched Major Node Guidelines for SNA Server/6000 Calling Link Station

The following statements and values must be specified (as illustrated in Figure 90) if a **listening** SNA Server/6000 link station waits for the 3172 interconnect controller to initiate a link connection:

```
node_name VBUILD TYPE=SWNET,MAXGRP=1,MAXNO=1
*
pu_name    PU      ADDR=nn,                            X
                   CPNAME=cp_name,                     X
                   MAXDATA=nnnn,                       X
                   MAXPATH=1,                          X
                   MODETAB=mode_table,                 X
                   VPACING=0
*
path_name PATH     DIALNO=xx044000nnnnnnnn,            X
                   GRPNM=xca_group
*
lu_name    LU      LOCADDR=nn
```

Figure 90. VTAM Switched Major Node Guidelines for SNA Server/6000 Listening Link Station

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

TYPE
Specify "SWNET" to indicate that the node is a switched major node.

MAXGRP
Specifies the number of unique path groups (GROUP names) that are defined in the GRPNM operand of all PATH statements within the switched major node. There is one unique path group in the switched major node guideline presented in Figure 90 for an SNA Server/6000 listening link station.

MAXNO
Specifies the number of unique token-ring addresses that are defined in the DIALNO operand of all PATH statements within the switched major node. There is one unique token-ring address in the switched major node guideline presented in Figure 90 for an SNA Server/6000 listening link station.

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

Note that the 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 MODETAB, and VPACING operands are specified on the PU statement, they do not have to be specified on any of the LU statements.

ADDR
Specifies the address of the physical unit. Note that this operand is required, but ignored.

CPNAME
Identifies the control point. The value specified for CPNAME must match the **Control Point (CP) name** value in the SNA Server/6000 Control Point profile. By convention, the CPNAME value usually matches the PU name.

Either the CPNAME operand or both the IDBLK and the IDNUM operands are required. CPNAME can only be used with PU type 2.1 nodes, such as SNA Server/6000.

MAXDATA

Specifies the maximum amount of data (in bytes) that the physical unit can receive in one path information unit (PIU). This amount includes the transmission header (TH) and the request/response header (RH).

To prevent basic information units (BIUs) from being segmented, specify a MAXDATA value that is at least 9 bytes greater than the maximum RU size in the logon mode table entry.

MAXOUT

Specifies the maximum number of path information units (PIUs) that are sent to the physical unit before waiting for a response from that physical unit.

Note: VTAM ignores the MAXOUT operand for a type 2.1 physical unit (PU), such as SNA Server/6000, connected through a 3172 interconnect controller.

MAXPATH

Specifies the number of dial-out paths to the physical unit. There is one dial-out path presented in Figure 90 on page 93 for an SNA Server/6000 listening link station.

MODETAB

Specifies the name of the logon mode table that contains entries that describe 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 **PATH** statement:

DIALNO=_xx044000nnnnnnnn_

This parameter value has three parts:

_xx_ These two digits are required but ignored for the 3172 interconnect controller.

_04_ Specifies the Service Access Point (SAP). This value must always be _04_.

4000nnnnnnnn

Specifies the token-ring address of the token-ring adapter in the RISC System/6000.

Although token-ring addresses include twelve hexadecimal digits, the VTAM DIALNO operand only accepts digits in the range 0-9. Therefore, an **alternate Token-Ring address** that contains only digits in the range 0-9 must be assigned to the token-ring adapter in the RISC System/6000. For instructions on configuring an alternate token-ring address, see "Using an Alternate Token Ring Address for a RISC System/6000" on page 27.

GRPNM

Refers to a GROUP statement in an External Communication Adapter (XCA) major node.

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

LOCADDR

`LOCADDR=0` specifies that this logical unit is an independent logical unit. An SSCP-LU session does not have to be established prior to an LU-LU session with an independent logical unit. For independent logical units, the **Local LU is dependent?** parameter in the SNA Server/6000 LU 6.2 Local LU profile must be `no`.

To use a dependent logical unit, specify a value between 1 and 255 for LOCADDR. Also, in the SNA Server/6000 LU 6.2 Local LU profile, specify `yes` for the **Local LU is dependent?** parameter, and the LOCADDR value for the **Local LU address** parameter.

SSCPFM

The SSCPFM operand indicates the type of request units (RUs) that the logical unit supports over its SSCP-LU session.

The guidelines illustrated in Figure 89 on page 92 and Figure 90 on page 93 use an independent logical unit. Therefore, the SSCPFM operand is not specified. If you require a dependent logical unit, specify `SSCPFM=USSSCS`.

Specifying the VTAM External Communication Adapter (XCA) Major Node

The operands for the VTAM External Communication Adapter (XCA) major node are illustrated in Figure 91 and described below:

```
node_name    VBUILD     TYPE=XCA
port_name    PORT       ADAPNO=n,        X
                        CUADDR=nnn,      X
                        MEDIUM=RING
group_name   GROUP      DIAL=YES
line_name    LINE       CALL=INOUT
pu_name      PU
```

Figure 91. VTAM External Communication Adapter (XCA) Major Node Guidelines

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

TYPE
Specify XCA to indicate that the node is an External Communication Adapter major node.

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

ADAPNO
Specifies the adapter number in the 3172 interconnect controller.

CUADDR
Defines the 3-digit hexadecimal channel control unit address that is used for the attached local area network (LAN).

MEDIUM
Specify RING for a token-ring network.

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

DIAL
Specify YES to indicate that the lines in the group require switched line control protocols.

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

CALL
Specifies whether the link station in the 3172 interconnect controller should call out to the remote link station, or whether the remote link station should call into the 3172 interconnect controller link station.

Specify CALL=INOUT, which enables either **calling** or **listening** link stations to be configured in SNA Server/6000.

Specifying the PSF for AIX Printer

The pertinent parameters for the PSF for AIX printer are illustrated in Figure 92 and described below:

```
 * Printer NAME                     [printer_name]      /
   ASCII code-set                   [ascii_code-set]
 * EBCDIC code-set                  [ebcdic_code-set]
 * Number of QUEUE DEVICES          [#qdevices]           #
```

Figure 92. PSF for AIX Printer Guidelines

Printer NAME
    The name you choose must match the SNA Server/6000 LU 6.2 Side Information Profile name.

ASCII code-set
    Specify the ASCII code-set in which attributes such as class, forms, and destination are specified on your AIX system. Before sending the attributes to the host server program, PSF for AIX converts the attributes from the specified ASCII code-set to the specified EBCDIC code-set.

    If you do not specify an ASCII code set, PSF for AIX uses the current code set on your AIX system.

EBCDIC code-set
    Specify the EBCDIC code-set used on the host system to which print files are sent and spooled. Before sending the attributes to the host server program, PSF for AIX converts attributes such as class, forms, and destination from the specified ASCII code-set to the specified EBCDIC code set.

Number of QUEUE DEVICES
    Specify the number of queue devices to be created for the PSF for AIX printer. Multiple queue devices allow PSF for AIX to simultaneously send one file while converting the next file.

    You can define up to nine queue devices. However, note that PSF for AIX requires more RISC System/6000 memory for each queue device.

Specifying the SNA Server/6000 Profiles

This section contains guidelines on configuring the SNA Server/6000 Profiles. Configure these profiles through the System Management Interface Tool (SMIT) panels. Examples of these panels and the hierarchical paths to each SNA definition are illustrated in "SNA Server/6000 Configuration Profile Examples" on page 80.

Note: You must have **root** authority to add or change SNA Server/6000 configuration profiles. After you add or change SNA Server/6000 configuration profiles, you must **verify** and **update** them. For more information about performing this task, see"Verifying and Updating SNA Server/6000 Configuration Profiles" on page 24.

Specifying the SNA Node Profile for AFP Upload: AFP Upload requires no modifications to the SNA Node profile.

Specifying the Control Point Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the Control Point Profile. Note that all values refer to Figure 93.

```
XID node ID                             [*]
Control Point (CP) name                 [cp_name]
Control Point type                       appn_end_node            +
```

Figure 93. Control Point Profile Guidelines

XID node ID
   If the IDBLK and IDNUM operands are used in the VTAM switched major node PU statement (rather than CPNAME), then the **XID node ID** value in the Control Point profile or Token-Ring Link Station profile must match the combined IDBLK and IDNUM operands. The IDBLK operand is normally `071` for SNA Server/6000.

   Either the CPNAME operand or both the IDBLK and IDNUM operands are required. CPNAME can only be used with PU type 2.1 nodes, such as SNA Server/6000.

Control Point (CP) name
   If the CPNAME operand is used in the VTAM switched major node PU statement (rather than IDBLK and IDNUM), then the **Control Point (CP) name** must match the CPNAME operand. By convention, the CPNAME is usually the same as the PU name.

   Either the CPNAME operand or both the IDBLK and the IDNUM operands are required. CPNAME can only be used with PU type 2.1 nodes, such as SNA Server/6000.

Control Point type
   Specify either `appn_end_node` or `appn_network_node`.

Specifying the Token-Ring SNA DLC Profile for AFP Upload: The following displays how to specify the values AFP Upload requires in the Token-Ring SNA DLC Profile. Note that all values refer to Figure 94.

```
* Profile name                                  [profile_name]
  Data link device name                         [tokn]              +
  Receive window count (1-127)                  [1]                 #
  Local SAP address (04-ec)                     [04]                X

  Link Recovery Parameters
    Retry interval (1-10000 seconds)            [60]                #
    Retry limit (0-500 attempts)                [0]                 #
```

Figure 94. Token-Ring SNA DLC Profile Guidelines

Profile name
   Choose any meaningful value.

Data link device name
   Select one of the available adapters.

Receive window count (1-127)
   Specify 1.

   The **Receive window count** defines the size of the link-level window. It specifies the maximum number of frames to receive before sending a link-level acknowledgement.

   Because VTAM ignores the MAXOUT operand for a type 2.1 physical unit (PU) connected through a 3172 interconnect controller, it is not clear how many frames the 3172 interconnect controller sends before waiting for a link-level acknowledgement.

   Specifying 1 for the **Receive window count** parameter ensures that the 3172 interconnect controller does not wait for prolonged periods for a link-level acknowledgement.

   The default **Receive window count** value is 8; extremely poor performance can result if you do not set this value to 1.

Local SAP address (04-ec)
   Specify 04.

Link Recovery Parameters - Retry interval (1-10000 seconds)
   Specify 60. If the link station is a **calling** link station, this value causes it to try to establish a link connection with the 3172 interconnect controller every 60 seconds, until a link connection can be established.

Link Recovery Parameters - Retry limit (0-500 attempts)
   Specify 0. If the link station is a **calling** link station, this value indicates that there is no limit on the number of attempts the link station makes to establish a link connection with the 3172 interconnect controller. The interval between the attempts is defined by the previous parameter.

Specifying the Token-Ring Link Station Profile for AFP Upload: The following describes
how to specify the values AFP Upload requires in the Token-Ring Link Station Profile. Note that all values
refer to Figure 95.

```
* Profile name                                       [profile_name]
   Use APPN Control Point's XID node ID?              yes                    +
      If no, XID node ID                             [*]
* SNA DLC Profile name                                [DLC_profile_name]     +
   Stop link station on inactivity?                   no                     +
   LU address registration?                           no                     +

   Adjacent Node Address Parameters
      Access routing                                  link_address           +
      If link_address,
         Remote link address                         [nnnnnnnnnnnn]          X
         Remote SAP address (04-ec)                   [04]                   X

   Adjacent Node Identification Parameters
      Verify adjacent node?                           no                     +

   Link Activation Parameters
      Solicit SSCP sessions?                          yes                    +
      Initiate call when link station is activated?   yes                    +
      Activate link station at SNA start up?          yes                    +

   Restart Parameters
      Restart on activation?                          no                     +
      Restart on normal deactivation?                 yes                    +
      Restart on abnormal deactivation?               yes                    +
```

Figure 95. Token-Ring Link Station Profile Guidelines

Profile name
   Choose any meaningful value.

Use APPN Control Point's XID node ID?
   Select yes if the CPNAME operand is used in the VTAM switched major node PU statement or IDBLK
   and IDNUM are used and these operands match the Control Point's **XID node ID**.

   Select no if the VTAM switched major node PU statement uses IDBLK and IDNUM and these values
   do not match the Control Point's **XID node ID**.

If no, XID node ID
   If **Use APPN Control Point's XID node ID?** is no, this parameter must match the combined IDBLK
   and IDNUM operands in the VTAM switched major node PU statement.

   The **XID node ID** has form xxxxxxxx, where x is a hexadecimal digit (0-F). The first three positions
   correspond to the IDBLK operand. The last five positions correspond to the IDNUM operand.

   Normally, the first three hexadecimal digits should be 071 for SNA Server/6000.

SNA DLC Profile name
   Select the name of the SNA DLC profile.

Stop link station on inactivity?
   Select no.

LU address registration?
Select no.

Adjacent Node Address Parameters - Access routing
Select link_address.

This parameter is referenced only for **calling** link stations and selective **listening** link stations. For more information, refer to ""Calling" Versus "Listening" Link Stations" on page 26.

Adjacent Node Address Parameters - Remote link address
For **calling** link stations, specify the Token-Ring address of the 3172 interconnect controller's Token-Ring adapter. The token-ring address is 12 hexadecimal digits. Normally, the adapter uses its universal MAC address.

To display an adapter's universal MAC address, see the topic "Show Universally Administered Address of LAN Adapter in Slot n" in the "IBM 3172 Commands" section of the *3172 Program User's Guide*. It describes the following procedure:

1. Specify from the display console:

   D0*n*

   where *n* is the slot number of the LAN adapter.

   The console displays Fd0n.

2. Press the ENTER key to execute the command.

   The console displays the first 4 digits of the address.

3. Press the ENTER key a second time.

   The console displays the second 4 digits of the address.

4. Press the ENTER key a third time.

   The console displays the third 4 digits of the address.

5. Press the CLEAR key to end the display.

Note: On a 3172 LED display console, it might be difficult to distinguish the letter 'b' (it does not have a top bar) from the number '6' (it does have a top bar).

For **listening** link stations, leave this parameter blank.

Adjacent Node Address Parameters - Remote SAP address
Specify 04.

Adjacent Node Identification Parameters - Verify adjacent node?
Select no.

Link Activation Parameters - Solicit SSCP sessions?
Select yes.

Link Activation Parameters - Initiate call when link station is activated?
To define a **calling** link station, select yes.

To define a **listening** link station, select no.

Link Activation Parameters - Activate link station at SNA start up?
Select yes.

Restart Parameters - Restart on activation?
Select no.

Restart Parameters - Restart on normal deactivation?
   Select yes.

Restart Parameters - Restart on abnormal deactivation?
   Select yes.

Specifying the LU 6.2 Local LU Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the LU 6.2 Local LU Profile. Note that all values refer to Figure 96.

```
* Profile name                                          [profile_name]
  Local LU name                                         [lu_name]
  Local LU alias                                        [lu_alias]
  Local LU is dependent?                                 no                      +
          If yes,
              Local LU address (1-255)                  [ ]                       #
              Link Station Profile name                 [ ]                       +
```

Figure 96. LU 6.2 Local LU Profile Guidelines

Profile name
  Choose any meaningful value.

Local LU name
  This value must match the name on the LU statement in the VTAM switched major node.

Local LU alias
  Choose any meaningful value.

Local LU is dependent?
  The logical unit can be either dependent (yes) or independent (no). Dependent logical units are managed by an SSCP. In general, independent logical units offer more flexibility.

  For dependent logical units, the LOCADDR value in the VTAM switched major node LU statement is non-zero. For independent logical units, LOCADDR=0.

If yes, Local LU address (1-255)
  If the logical unit is dependent, the **Local LU address** parameter must match the LOCADDR value in the VTAM switched major node LU statement.

If yes, Link Station Profile name
  If the logical unit is dependent, select the profile name of the link station through which SNA Server/6000 communicates with the host system.

Specifying the LU 6.2 Side Information Profile for AFP Upload: The following describes
how to specify the values AFP Upload requires in the LU 6.2 Side Information Profile. Note that all values
refer to Figure 97.

```
 * Profile name                                      [profile_name]
   Local LU or Control Point alias                   [lu_alias]                  +
   Provide only one of the following:
      Partner LU alias                               []                         +
      Fully qualified partner LU name                [network_id.partner_lu_name]
   Mode name                                         [#INTER]                   +
   Remote transaction program name (RTPN)            [remote_TP_name]           +
   RTPN in hexadecimal?                              no                         +
```

Figure 97. LU 6.2 Side Information Profile Guidelines

Profile name
     The name you choose must match the name of the PSF for AIX printer.

Local LU or Control Point alias
     Select the local LU alias that you specified in the LU 6.2 Local LU profile.

Fully qualified partner LU name
     Specifies the network identifier of the network in which the host server program resides (followed by a
     period), and the logical unit name used by the host server program.

     The network identifier portion must match the NETID value in the VTAM start option list (ATCSTRxx).

     The logical unit name portion must match an APPL statement name in a VTAM application program
     major node. It must also match an LUADD ACBNAME value in the APPC/MVS APPCPMxx member
     of SYS1.PARMLIB.

Mode name
     Specify #INTER.

Remote transaction program name (RTPN)
     The name you choose must match the TPNAME value in the APPC/MVS TP profile.

RTPN in hexadecimal?
     Specify no.

Specifying the Partner LU 6.2 Location Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the Partner LU 6.2 Location Profile. Note that all values refer to Figure 98.

```
* Profile name                                    [profile_name]
  Fully qualified partner LU name                 [network_id.lu_name]
  Partner LU location method                       owning_cp               +
  If owning_cp,
     Fully qualified owning Control Point (CP) name [network_id.cp_name]
     Local node is network server for LEN node?    no                      +
     Fully qualified network node server name      []
```

Figure 98. Partner LU 6.2 Location Profile Guidelines

Profile name
    Choose any meaningful value.

Fully qualified partner LU name
    Specifies the network identifier of the network in which the host server program resides (followed by a period), and the logical unit name used by the host server program.

    The network identifier portion must match the NETID value in the VTAM start option list (ATCSTRxx).

    The logical unit name portion must match an APPL statement name in a VTAM application program major node. It must also match an LUADD ACBNAME value in the APPC/MVS APPCPMxx member of SYS1.PARMLIB.

Partner LU location method
    Select owning_cp.

If owning_cp, Fully qualified owning Control Point (CP) name
    Specifies the network identifier of the network in which the host server program resides (followed by a period), and the name of the System Services Control Point (SSCP) for the host system.

    The network identifier portion must match the NETID value in the VTAM start option list (ATCSTRxx).

    The CP name portion must match the SSCPNAME value in the VTAM start option list (ATCSTRxx).

If owning_cp, Local node is network server for LEN node
    Select no.

If owning_cp, Fully qualified network node server name
    Leave blank.

Configuration Worksheet

Use the following worksheet to record values for SNA Server/6000 configuration parameters that are related to other configuration settings:

Figure 99. Configuration Worksheet				
SNA Server/6000	**Value**	**APPC/MVS**	**VTAM**	**3172**
Control Point: Control Point (CP) name			PU: name PU: CPNAME	
Token-Ring Link Station: Remote link address				universal address
LU 6.2 Local LU: Local LU name			LU: name	
LU 6.2 Local LU: Local LU is dependent?			LU: LOCADDR	
LU 6.2 Local LU: Local LU address			LU: LOCADDR	
LU 6.2 Side Information: Fully qualified partner LU name		APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name	
LU 6.2 Side Information: Remote transaction program name (RTPN)		TP profile: TPNAME		
Partner LU 6.2 Location: Fully qualified partner LU name		APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name	
Partner LU 6.2 Location: Fully qualified owning Control Point (CP) name			ATCSTRxx: NETID ATCSTRxx: SSCPNAME	

Chapter 11. Local 3174 Token-Ring Gateway
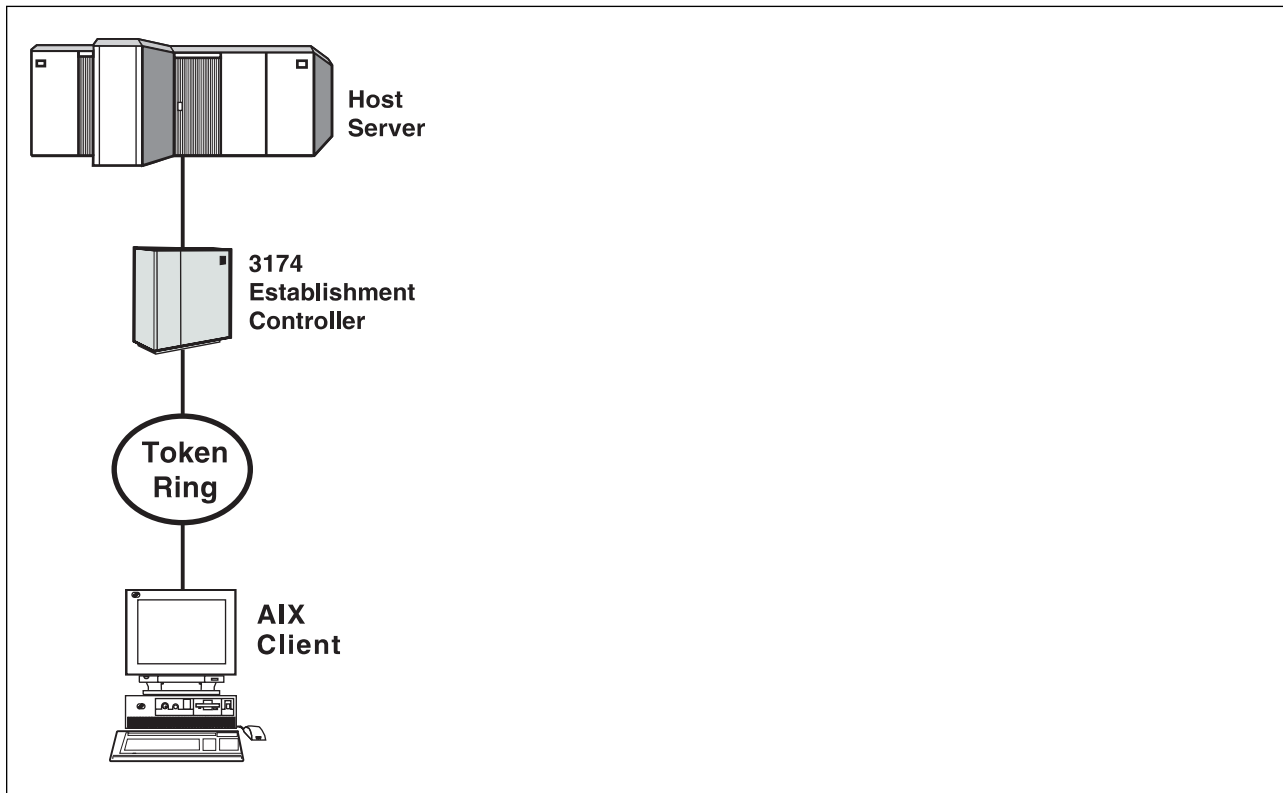
Figure 100. Local 3174 Token-Ring Gateway

Key Configuration Parameter Interrelationships

Several network components have configuration parameters whose values are related to configuration parameters for other network components. These interrelated parameters must be configured consistently to make end-to-end communication possible.

Several figures follow. They illustrate some of the key interrelationships among configuration parameters for SNA network components.

Figure 101 illustrates the interrelationships in defining the name of the transaction program used by the AFP Upload host server.
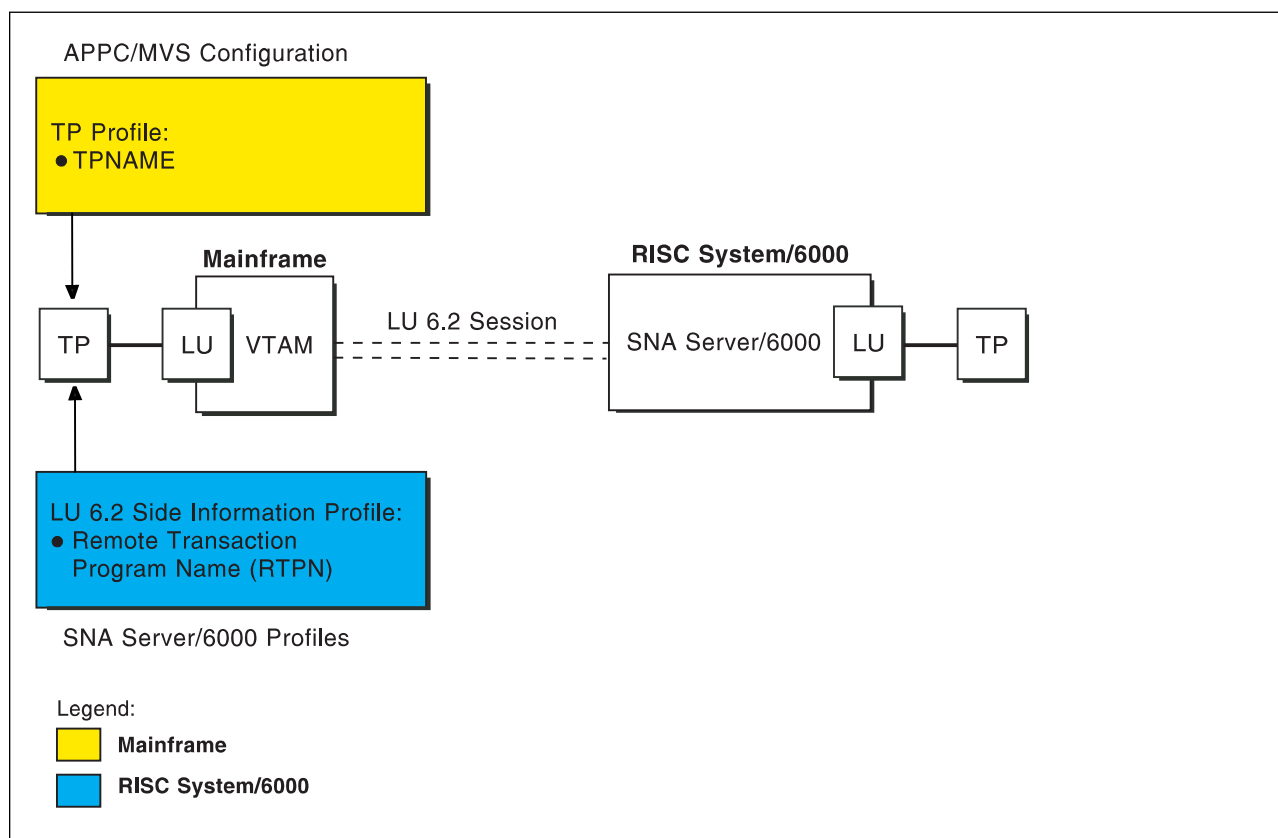
Figure 101. Transaction Program Name

Figure 102 illustrates the interrelationships in defining logical unit (LU) names.
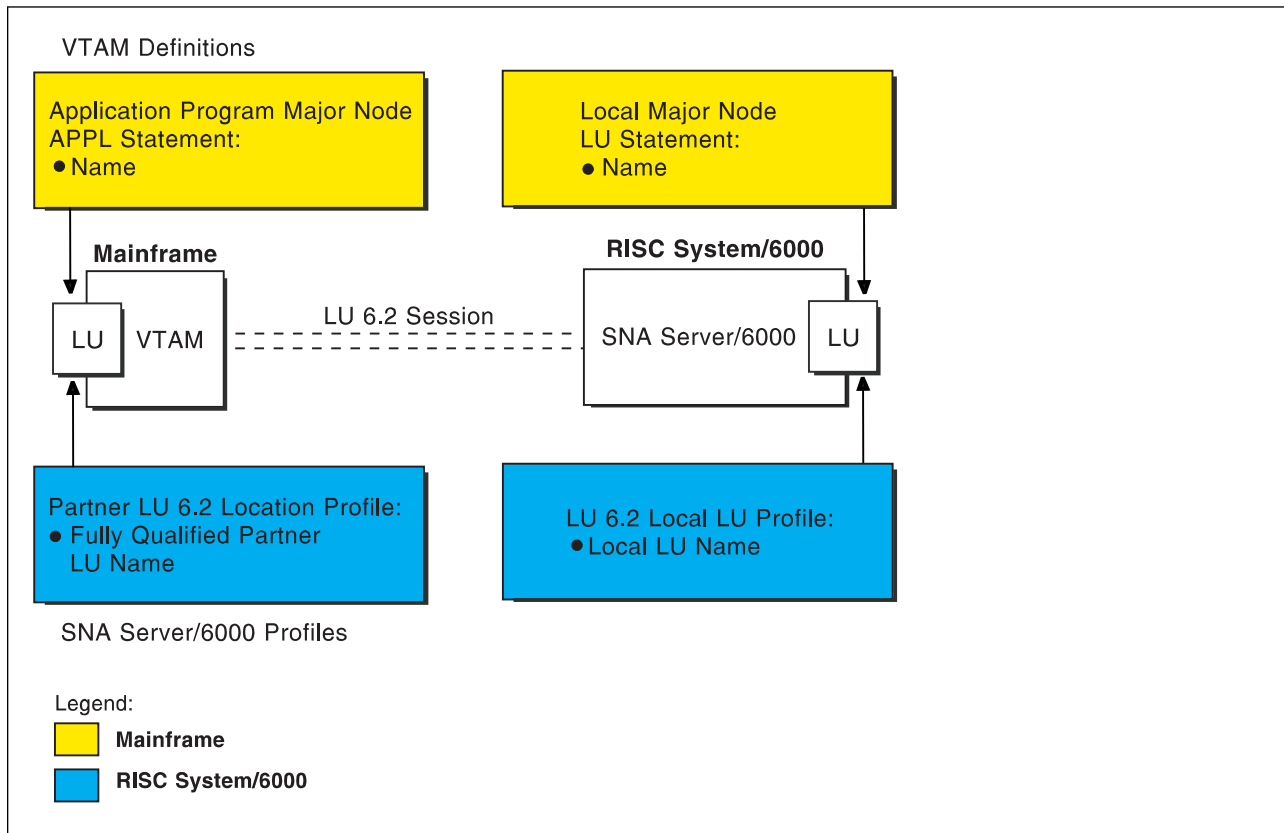
Figure 102. Logical Unit Names

Figure 103 illustrates the interrelationships in defining the local address of the logical unit provided by SNA Server/6000.
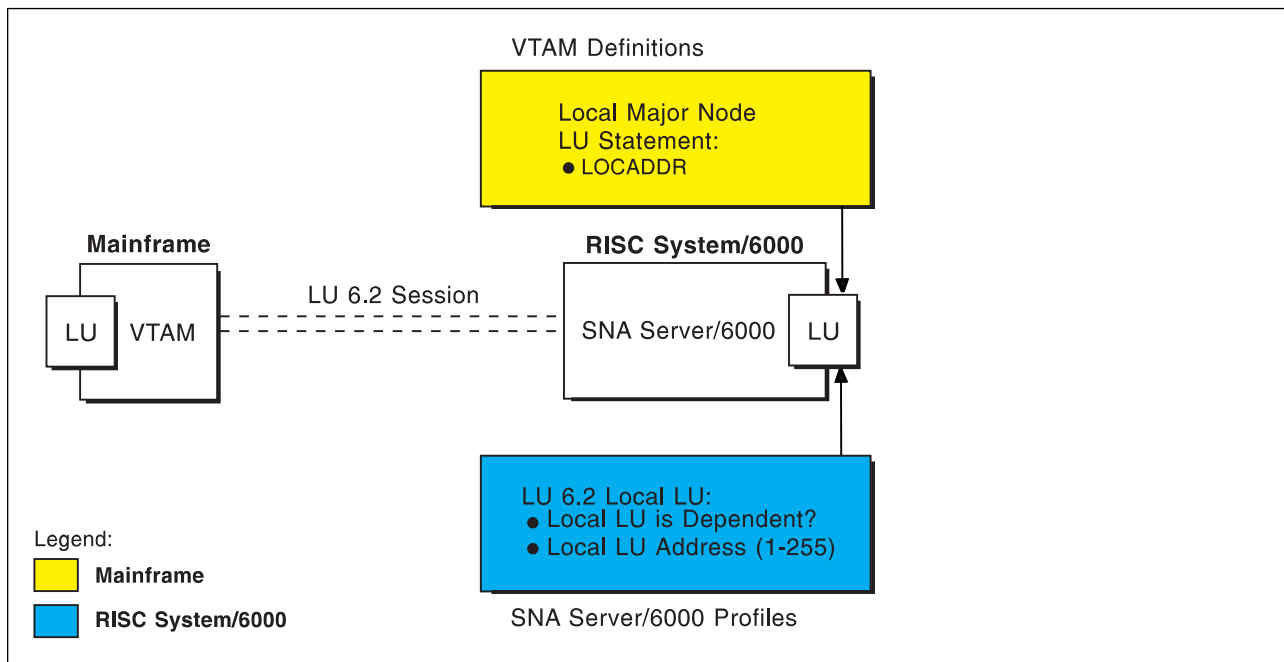
Figure 103. Local Address of Logical Unit

Local 3174 Token-Ring Gateway

Figure 104 illustrates the interrelationships in defining the name of the physical unit/control point provided by SNA Server/6000.
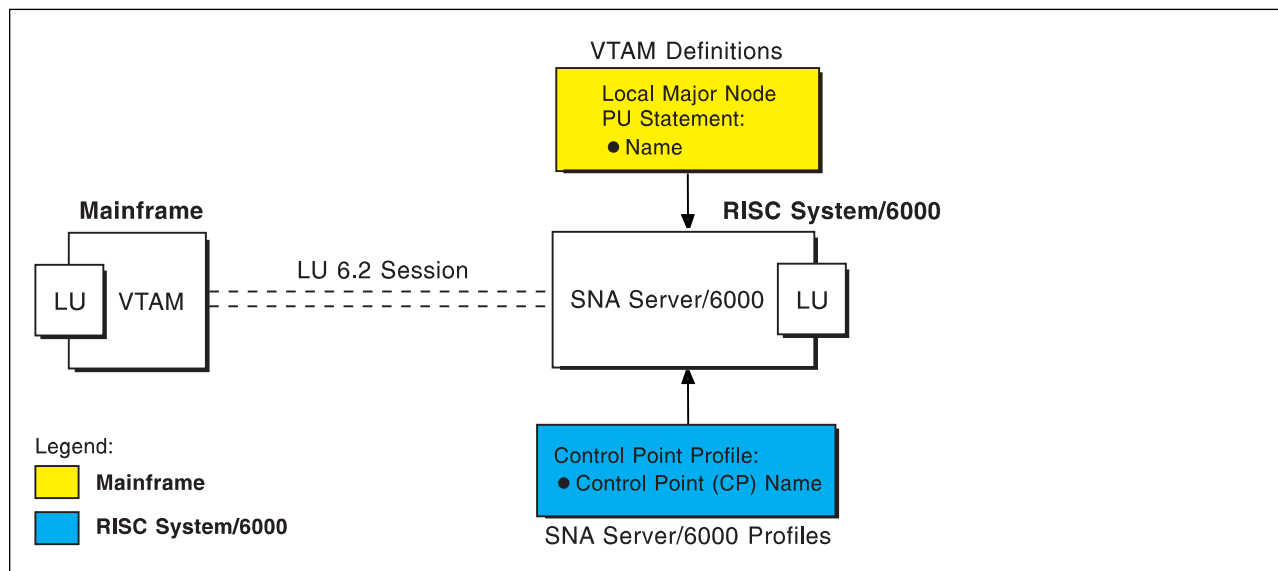
Figure 104. Physical Unit/Control Point Name

Figure 105 illustrates the interrelationships in defining token ring addresses used in this configuration.
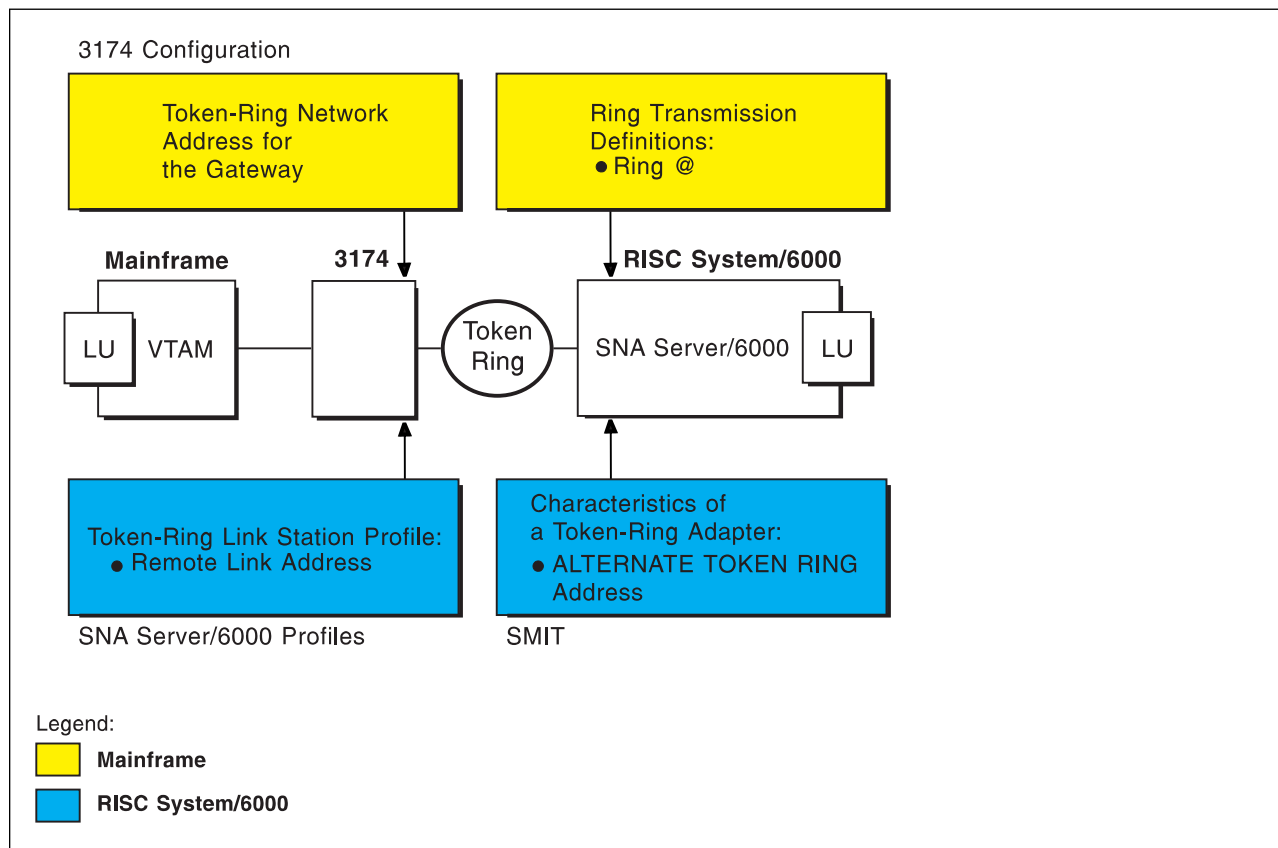
Figure 105. Token Ring Addresses

Local 3174 Token-Ring Gateway Example

For an explanation of pertinent configuration parameters, see "Guidelines for Configuring Local 3174 Token-Ring Gateway" on page 124.

APPC/MVS APPCPMxx Parameters Example

For an explanation of these values, see "Specifying the APPC/MVS APPCPMxx Parameters" on page 124.

```
LUADD
 ACBNAME(MVSLU01),
 SCHED(ASCH),
 TPDATA(SYS1.APPCTP),
 TPLEVEL(SYSTEM),
 BASE

SIDEINFO
 DATASET(SYS1.APPCSI)
```

Figure 106. Sample APPC/MVS APPCPMxx Parameters

APPC/MVS ASCHPMxx Parameters Example

For an explanation of these values, see "Specifying the APPC/MVS ASCHPMxx Parameters" on page 124.

```
CLASSADD
 CLASSNAME(FAST),
 MAX(10),
 MIN(2),
 RESPGOAL(.01),
 MSGLIMIT(500)
```

Figure 107. Sample APPC/MVS ASCHPMxx Parameters

APPC/MVS TP Profile Example

For an explanation of these values, see "Specifying the APPC/MVS TP Profile" on page 125.

```
//JOBNAME  JOB  ACCOUNT
//*
//TPPROF   EXEC PGM=ATBSDFMU
//SYSPRINT DD   SYSOUT=*
//SYSSDLIB DD   DSN=SYS1.APPCTP,DISP=SHR
//SYSSDOUT DD   SYSOUT=*
//SYSIN    DD   DATA,DLM=XX
  TPADD
    TPNAME(AFPSVR1)
    TPSCHED_DELIMITER(##)
      CLASS(FAST)
      JCL_DELIMITER(END_OF_JCL)
//JOBNAME  JOB  ACCOUNT
//STEP     EXEC PGM=AUPSNAS
//STEPLIB  DD   DSN=AUP.SAUPLOAD,DISP=SHR
//         DD   DSN=PLI.V2R3M0.PLILINK,DISP=SHR
//         DD   DSN=PLI.V2R3M0.SIBMLINK,DISP=SHR
//SYSPRINT DD   SYSOUT=*
END_OF_JCL
  KEEP_MESSAGE_LOG(ALWAYS)
  MESSAGE_DATA_SET(AUP.APPCLOG)
  DATASET_STATUS(OLD)
##
XX
/*
```

Figure 108. Sample APPC/MVS TP Profile Example

VTAM Start Option List (ATCSTRxx) Example

For an explanation of these values, see "Specifying the VTAM Start Option List (ATCSTRxx)" on page 125.

```
CONFIG=00,         ATCCON MEMBER OF VTAMLIST              X
NETID=USIBMBQ,     NETWORK IDENTIFIER                    X
SSCPNAME=ST1,      SSCP NAME                             X
 ⋮
```

Figure 109. Sample VTAM Start Option List

VTAM Configuration List (ATCCONnn) Example

For an explanation of these values, see "Specifying the VTAM Configuration List (ATCCONnn)" on page 125.

```
APPCAPLS                                                 X
 ⋮
```

Figure 110. Sample VTAM Configuration List

VTAM Application Program Major Node and Application Program Example

For an explanation of these values, see "Specifying the VTAM Application Program Major Node and Application Program" on page 126.

```
APPCAPLS VBUILD TYPE=APPL
MVSLU01  APPL  ACBNAME=MVSLU01,                          X
               APPC=YES,                                 X
               AUTOSES=0,                                X
               DDRAINL=NALLOW,                           X
               DMINWNL=5,                                X
               DMINWNR=5,                                X
               DRESPL=NALLOW,                            X
               DSESLIM=10,                               X
               LMDENT=100,                               X
               MODETAB=ISTINCLM,                         X
               PARSESS=YES,                              X
               SECACPT=CONV,                             X
               SRBEXIT=YES
```

Figure 111. Sample VTAM Application Program Major Node and Application Program

VTAM Local Major Node Example

For an explanation of these values, see "Specifying the VTAM Local Major Node" on page 127.

```
LOCAIX01  VBUILD TYPE=LOCAL
*
AIX01     PU    CUADDR=3C2,            CHANNEL CONTROL UNIT ADDRESS    X
                MAXBFRU=10,            VTAM BUFFERS FOR RECEIVING      X
                MODETAB=ISTINCLM,      LOGON MODE TABLE                X
                VPACING=0              NO PACING TO BOUNDARY NODE
*
UPLD0101  LU    LOCADDR=1             DEPENDENT LU
```

Figure 112. Sample VTAM Local Major Node

3174 Establishment Controller Configuration Example

For an explanation of these values, see "Specifying the 3174 Establishment Controller Configuration" on page 129.

```
Configuration Support C Release 3

900: Token-Ring Network Address for the Gateway

  4000 3000 1001

940: Ring Address Assignment

  S@    Ring@           SAP
  C1    4000 3000 1001
  C2    4000 3000 1002    04

941: Ring Transmission Definition

                     F    W
  C1    4000 3000 1001
  C2    4000 3000 1002    2    7
```

Figure 113. Sample 3174 Establishment Controller Configuration

PSF for AIX Printer Example

For an explanation of these values, see "Specifying the PSF for AIX Printer" on page 131.

```
smit
  PSF for AIX Printing and Configuration
    Administer PSF for AIX
      Manage a PSF for AIX Printer
        Add a Printer or PSF Queue
          Upload
```

Figure 114. SMIT Panel Sequence for PSF for AIX Printer

```
* Data stream type              AFPDS
* Printer NAME                   [upload1]        /
  ASCII code-set                 []
* EBCDIC code-set                [IBM-037]
* Number of QUEUE DEVICES        [4]              #
  Description                    []
```

Figure 115. Sample PSF for AIX Printer

SNA Server/6000 Configuration Profile Examples

This section lists sample SNA Server/6000 profiles. Each profile is preceded by the sequence of SMIT panels to access the profile.

- SNA Node

- Control Point

- Token-Ring SNA DLC

- Token-Ring Link Station

- LU 6.2 Local LU

- LU 6.2 Side Information

- LU 6.2 Partner LU 6.2 Location

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              SNA System Defaults
                Change/Show a Profile
```

Figure 116. SMIT Panel Sequence For SNA Node Profile

```
 Profile name                                     sna
 Maximum number of sessions (1-5000)             [200]                      #
 Maximum number of conversations (1-5000)        [200]                      #
 Restart action                                   once                 +
 Recovery resource manager (RRM) enabled?         no                   +
 Dynamic inbound partner LU definitions allowed?  yes                  +
 NMVT action when no NMVT process                 reject               +
 Standard output file/device                     [/dev/console]
 Standard error file/device                      [/var/sna/sna.stderr]

 Comments                                        []
```

Figure 117. Sample SNA Node Profile

```
   smit
     Communications Applications and Services
       SNA Server/6000
         Configure SNA Profiles
           Advanced Configuration
             Control Point
               Change/Show a Profile
```

Figure 118. SMIT Panel Sequence For Control Point Profile

```
Profile name                                    node_cp
XID node ID                                     [*]
Network name                                    [USIBMBQ]
Control Point (CP) name                         [AIX01]
Control Point alias                             [AIX01]
Control Point type                              appn_end_node      +
Maximum number of cached routing trees          [500]               #
Maximum number of nodes in the TRS database     [500]               #
Route addition resistance                       [128]               #

Comments                                        []
```

Figure 119. Sample Control Point Profile

Local 3174 Token-Ring Gateway

```
smit
  Communications Applications and Services
    SNA Server/6000
      Configure SNA Profiles
        Advanced Configuration
          Links
            Token-Ring
              Token-Ring SNA DLC
                Add a Profile
```

Figure 120. SMIT Panel Sequence For Token-Ring SNA DLC Profile

```
* Profile name                                      [tr3174]
  Data link device name                             [tok0]         +
  Force disconnect time-out (1-600 seconds)         [120]            #
  User-defined maximum I-Field size?                 no             +
      If yes, Max. I-Field size (265-30729)         [30729]          #
  Max. num of active link stations (1-255)          [100]            #
      Number reserved for inbound activation        [0]              #
      Number reserved for outbound activation       [0]              #
  Transmit window count (1-127)                     [16]             #
  Dynamic window increment (1-127)                  [1]              #
  Retransmit count (1-30)                           [8]              #
  Receive window count (1-127)                      [7]              #
  Ring access priority                              [0]            +
  Inactivity time-out (1-120 seconds)               [48]             #
  Response time-out (1-40, 500 msec intervals)      [4]              #
  Acknowledge time-out (1-40, 500 msec intervals)   [1]              #
  Local link name                                   []
  Local SAP address (04-ec)                         [04]           X
  Trace base listening link station?                 no             +
      If yes, Trace format                           long           +
  Dynamic link stations supported?                   yes            +

  Link Recovery Parameters
      Retry interval (1-10000 seconds)              [60]             #
      Retry limit (0-500 attempts)                  [0]              #

  Dynamic Link Activation Parameters
      Solicit SSCP sessions?                         yes            +
      CP-CP sessions supported?                      yes            +
      Partner required to support CP-CP sessions?    no             +

  Dynamic Link TG COS Characteristics
      Effective capacity                            [4300800]        #
      Cost per connect time                         [0]              #
      Cost per byte                                 [0]              #
      Security                                       nonsecure      +
      Propagation delay                              lan            +
      User-defined 1                                [128]            #
      User-defined 2                                [128]            #
      User-defined 3                                [128]            #

  Comments                                          []
```

Figure 121. Sample Token-Ring SNA DLC Profile

```
smit
  Communications Applications and Services
    SNA Server/6000
      Configure SNA Profiles
        Advanced Configuration
          Links
            Token-Ring Link Station
              Add a Profile
```

Figure 122. SMIT Panel Sequence For Token-Ring Link Station Profile

Local 3174 Token-Ring Gateway

```
* Profile name                                     [tr3174]
  Use APPN Control Point's XID node ID?             yes                +
     If no, XID node ID                             [*]
* SNA DLC Profile name                              [tr3174]           +
  Stop link station on inactivity?                  no                 +
     If yes, Inactivity time-out (0-10 minutes)     [0]                     #
  LU address registration?                          no                 +
     If yes, LU Address Registration Profile name   []                 +
  Trace link?                                       no                 +
     If yes, Trace size                             long               +

  Adjacent Node Address Parameters
     Access routing                                 link_address       +
     If link_name, Remote link name                 []
     If link_address,
        Remote link address                         [400030001001]     X
        Remote SAP address (04-ec)                  [04]               X

  Adjacent Node Identification Parameters
     Verify adjacent node?                          no                 +
     Network ID of adjacent node                    []
     CP name of adjacent node                       []
     XID node ID of adjacent node (LEN node only)   [*]
     Node type of adjacent node                     learn              +

  Link Activation Parameters
     Solicit SSCP sessions?                         yes                +
     Initiate call when link station is activated?  yes                +
     Activate link station at SNA start up?         yes                +
     Activate on demand?                            no                 +
     CP-CP sessions supported?                      yes                +
     If yes,
        Adjacent network node preferred server?     no                 +
     Partner required to support CP-CP sessions?    no                 +
     Initial TG number (0-20)                       [0]                     #

  Restart Parameters
     Restart on activation?                         no                 +
     Restart on normal deactivation?                yes                +
     Restart on abnormal deactivation?              yes                +

  Transmission Group COS Characteristics
     Effective capacity                             [4300800]               #
     Cost per connect time                          [0]                     #
     Cost per byte                                  [0]                     #
     Security                                       nonsecure          +
     Propagation delay                              lan                +
     User-defined 1                                 [128]                   #
     User-defined 2                                 [128]                   #
     User-defined 3                                 [128]                   #

  Comments                                          []
```

Figure 123. Sample Token-Ring Link Station Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Sessions
                LU 6.2
                  LU 6.2 Local LU
                    Add a Profile
```

Figure 124. SMIT Panel Sequence For LU 6.2 Local LU Profile

```
* Profile name                                        [UPLD0101]
  Local LU name                                       [UPLD0101]
  Local LU alias                                      [UPLD0101]
  Local LU is dependent?                               yes            +
    If yes,
      Local LU address (1-255)                        [1]             #
      System services control point
        (SSCP) ID (*, 0-65535)                        [*]
      Link Station Profile name                       [tr3174]        +
  Conversation Security Access List Profile name      []

  Comments                                            []
```

Figure 125. Sample LU 6.2 Local LU Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Sessions
                LU 6.2
                  LU 6.2 Side Information
                    Add a Profile
```

Figure 126. SMIT Panel Sequence For LU 6.2 Side Information Profile

```
* Profile name                                        [upload1]
  Local LU or Control Point alias                     [UPLD0101]        +
  Provide only one of the following:
    Partner LU alias                                  []                +
    Fully qualified partner LU name                   [USIBMBQ.MVSLU01]
  Mode name                                           [#INTER]          +
  Remote transaction program name (RTPN)              [AFPSVR1]
  RTPN in hexadecimal?                                 no               +

  Comments                                            []
```

Figure 127. Sample LU 6.2 Side Information Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Sessions
                LU 6.2
                  Partner LU 6.2 Location
                    Add a Profile
```

Figure 128. SMIT Panel Sequence For Partner LU 6.2 Location Profile

```
* Profile name                                        [MVSLU01]
  Fully qualified partner LU name                      [USIBMBQ.MVSLU01]
  Partner LU location method                            owning_cp
  If owning_cp,
     Fully qualified owning Control Point (CP) name    [USIBMBQ.ST1]          +
     Local node is network server for LEN node?         no
     Fully qualified newtork node server name          []
  If link_station,
     Local LU name                                     []
     Link Station Profile name                         []                      +

  Comments                                             []
```

Figure 129. Sample Partner LU 6.2 Location Profile

Configuration Worksheet Example

The following worksheet records values for SNA Server/6000 configuration parameters that are related to other configuration settings:

SNA Server/6000	Value	APPC/MVS	VTAM	3174
Figure 130. Sample Configuration Worksheet				
Control Point: Control Point (CP) name	AIX01		PU: name	
Token-Ring DLC: Receive window count	7			item 941: W
Token-Ring Link Station: Remote link address	400030001001			item 900
LU 6.2 Local LU: Local LU name	UPLD0101		LU: name	
LU 6.2 Local LU: Local LU is dependent?	yes		LU: LOCADDR	
LU 6.2 Local LU: Local LU address	1		LU: LOCADDR	
LU 6.2 Side Information: Fully qualified partner LU name	USIBMBQ.MVSLU01	APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name	
LU 6.2 Side Information: Remote transaction program name (RTPN)	AFPSVR1	TP profile: TPNAME		
Partner LU 6.2 Location: Fully qualified partner LU name	USIBMBQ.MVSLU01	APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name	
Partner LU 6.2 Location: Fully qualified owning Control Point (CP) name	USIBMBQ.ST1		ATCSTRxx: NETID ATCSTRxx: SSCPNAME	

Guidelines for Configuring Local 3174 Token-Ring Gateway

The following provides guidance for implementing the examples displayed in "Local 3174 Token-Ring Gateway Example" on page 111. Note that a subset of the example is displayed below, displaying the pertinent parameters and describing which of these require you to specify *variable_names* and which require a specific name or number, such as `MODETAB=ISTINCLM`.

Specifying the APPC/MVS APPCPMxx Parameters

The pertinent statements and parameters for the APPCPMxx member of SYS1.PARMLIB are illustrated in Figure 131 and described below.

```
LUADD
   ACBNAME(lu_name),
   SCHED(ASCH),
   TPDATA(tp_profile_dataset),
   TPLEVEL(level)
```

Figure 131. APPC/MVS APPCPMxx Parameter Guidelines

ACBNAME
Specifies the name of a logical unit to be controlled by APPC/MVS. The value must match an APPL statement name in a VTAM application program major node.

SCHED
Specify `ASCH` to indicate that inbound conversation requests should be scheduled by the APPC/MVS transaction scheduler (ASCH).

TPDATA
Specify the name of the VSAM key-sequenced dataset (KSDS) that contains TP profiles for the logical unit referenced by the ACBNAME parameter.

TPLEVEL
Controls access, for the logical unit referenced by the ACBNAME parameter, to execution of transaction programs (TP's).

Specify `SYSTEM` to allow access to all authenticated MVS users.

Specifying the APPC/MVS ASCHPMxx Parameters

AFP Upload requires that a class of transaction initiators be defined to the APPC/MVS transaction scheduler (ASCH) so the class can be referenced in the APPC/MVS TP profile that describes an AFP Upload server. AFP Upload does not have special requirements for the parameters used in defining the class.

Specifying the APPC/MVS TP Profile

Use the APPC/MVS ATBSDFMU administration utility program to create an APPC/MVS TP profile.

The TPNAME value must match the **Remote transaction program name (RTPN)** parameter in the SNA/6000 LU 6.2 Side Information profile.

The scheduler information in the TP profile must include JCL that the ASCH scheduler uses to run the transaction program. The JCL must execute the AFP Upload server program, named AUPSNAS. This program is written in the PL/I language. It requires that the PL/I PLILINK and SIBMLINK libraries be included in the STEPLIB definition. The AFP Upload server program also requires that the SYSPRINT DD name be allocated. Unless the SYSPRINT DD statement refers to DUMMY or a SYSOUT data set, the data set referenced by the SYSPRINT DD statement must have the following attributes:

directory blocks: 0

record format: VA

record length: 125

block size: 129

For more information about the SYSPRINT DD name used by the host server program, refer to "Specifying the SYSPRINT DD Statement" on page 10.

Specifying the VTAM Start Option List (ATCSTRxx)

You must specify the values illustrated in Figure 132 and described below:

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

Figure 132. VTAM Start Option List Guidelines

CONFIG
    Specifies the ATCCON*nn* member to use.

NETID
    Specifies the network identifier for the host system.

SSCPNAME
    Specifies the System Services Control Point (SSCP) name for the host system.

Specifying the VTAM Configuration List (ATCCONnn)

The VTAM configuration list indicates the application program major nodes that should be made available when VTAM is started. Include the application program major node that contains the application program that APPC/MVS uses:

```
  appl_prog_major_node        X
  .
  .
  .
```

Specifying the VTAM Application Program Major Node and Application Program

The pertinent statements and parameters for the VTAM Application Program Major Node and Application Program are illustrated in Figure 133 and described below.

```
majname VBUILD TYPE=APPL
minname APPL   ACBNAME=minname,                X
               APPC=YES,                        X
               MODETAB=ISTINCLM,                X
               PARSESS=YES,                      X
               SECACPT=CONV,                     X
               SRBEXIT=YES
```

Figure 133. VTAM Application Program Major Node and Application Program Guidelines

ACBNAME
Specify the minor node name to assign to the application program. This name must be unique within the domain in which the application program resides.

APPC
Specify `YES`.

MODETAB
Specify `ISTINCLM` or the name of an alternative VTAM logon mode table to be used to associate each logon mode name with a set of session parameters for the application program.

PARSESS
Specify `YES`, or do not include the PARSESS parameter. PARSESS defaults to `YES` when `APPC=YES`.

This value indicates that the application program can have multiple concurrent (parallel) sessions with an independent logical unit.

SECACPT
Specify `CONV`.

This value indicates that the application program's logical unit supports conversation requests containing access security subfields.

SRBEXIT
Specify `YES`.

This value indicates that the application program is authorized to use service request block (SRB) processing in its exit routines.

Specifying the VTAM Local Major Node

The pertinent operands for the VTAM local major node are illustrated in Figure 134 and described below:

```
node_name VBUILD TYPE=LOCAL
*
pu_name   PU     CUADDR=nn,                         X
                 MAXBFRU=nn,                        X
                 MODETAB=mode_table,                X
                 VPACING=0
*
lu_name   LU     LOCADDR=nn
```

Figure 134. VTAM Local Major Node Guidelines

The following describes the pertinent parameters 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 that the 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 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 X 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.

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.

Local 3174 Token-Ring Gateway

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

LOCADDR

LOCADDR=0 specifies that this logical unit is an independent logical unit. An SSCP-LU session does not have to be established prior to an LU-LU session with an independent logical unit. For independent logical units, the **Local LU is dependent?** parameter in the SNA Server/6000 LU 6.2 Local LU profile must be no.

To use a dependent logical unit, specify a value between 1 and 255 for LOCADDR. Also, in the SNA Server/6000 LU 6.2 Local LU profile, specify yes for the **Local LU is dependent?** parameter, and the LOCADDR value for the **Local LU address** parameter.

Specifying the 3174 Establishment Controller Configuration

The pertinent configuration parameters are illustrated in Figure 135 and described below:

```
Configuration Support C Release 3

900: Token-Ring Network Address for the Gateway

  4000 nnnn nnnn

940: Ring Address Assignment

  S@    Ring@             SAP
  nn    4000 nnnn nnnn
  nn    nnnn nnnn nnnn    nn

941: Ring Transmission Definition

                          F    W
  nn    4000 nnnn nnnn
  nn    nnnn nnnn nnnn    n    n
```

Figure 135. Sample 3174 Establishment Controller Configuration

900: Token-Ring Network 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 when the Ring Address Assignment panel is presented. 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 when the Ring Address Assignment panel is presented.

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

 SAP
  Accept the default Service Access Point value, `04`, or specify it explicitly.

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

 F Indirectly specifies the transmit I-frame size.

  To prevent segmentation of basic information units (BIUs), 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** parameter in the SNA Server/6000 LU 6.2 Mode profile.

Local 3174 Token-Ring Gateway

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** parameter in the SNA Server/6000 Token-Ring SNA DLC profile specifies the maximum number of frames SNA Server/6000 receives before sending a link-level acknowledgement.

For optimum performance, the transmit window size (**W**) should be equal to the **Receive window count** parameter.

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

Specifying the PSF for AIX Printer

The pertinent parameters for the PSF for AIX printer are illustrated in Figure 136 and described below:

```
* Printer NAME               [printer_name]       /
  ASCII code-set             [ascii_code-set]
* EBCDIC code-set            [ebcdic_code-set]
* Number of QUEUE DEVICES    [#qdevices]          #
```

Figure 136. PSF for AIX Printer Guidelines

Printer NAME
The name you choose must match the SNA Server/6000 LU 6.2 Side Information Profile name.

ASCII code-set
Specify the ASCII code-set in which attributes such as class, forms, and destination are specified on your AIX system. Before sending the attributes to the host server program, PSF for AIX converts the attributes from the specified ASCII code-set to the specified EBCDIC code-set.

If you do not specify an ASCII code set, PSF for AIX uses the current code set on your AIX system.

EBCDIC code-set
Specify the EBCDIC code-set used on the host system to which print files are sent and spooled. Before sending the attributes to the host server program, PSF for AIX converts attributes such as class, forms, and destination from the specified ASCII code-set to the specified EBCDIC code set.

Number of QUEUE DEVICES
Specify the number of queue devices to be created for the PSF for AIX printer. Multiple queue devices allow PSF for AIX to simultaneously send one file while converting the next file.

You can define up to nine queue devices. However, note that PSF for AIX requires more RISC System/6000 memory for each queue device.

Specifying the SNA Server/6000 Profiles

This section contains guidelines on configuring the SNA Server/6000 Profiles. Configure these profiles through the System Management Interface Tool (SMIT) panels. Examples of these panels and the hierarchical paths to each SNA definition are illustrated in "SNA Server/6000 Configuration Profile Examples" on page 116.

Note: You must have **root** authority to add or change SNA Server/6000 configuration profiles. After you add or change SNA Server/6000 configuration profiles, you must **verify** and **update** them. For more information about performing this task, see "Verifying and Updating SNA Server/6000 Configuration Profiles" on page 24.

Specifying the SNA Node Profile for AFP Upload: AFP Upload requires no modifications to the SNA Node profile.

Specifying the Control Point Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the Control Point Profile. Note that all values refer to Figure 137.

```
XID node ID                            [*]
Control Point (CP) name                [cp_name]
Control Point type                      appn_end_node   +
```

Figure 137. Control Point Profile Guidelines

XID node ID
   The **XID node ID** parameter pertains to switched protocols. Because the 3174 establishment controller does not use switched protocols, the **XID node ID** value is not relevant in 3174 establishment controller configurations.

Control Point (CP) name
   The **Control Point (CP) name** parameter pertains to switched protocols. Because the 3174 establishment controller does not use switched protocols, the **Control Point (CP) name ID** value is not relevant in 3174 establishment controller configurations. However, by convention the **Control Point (CP) name** is usually the same as the PU name.

Control Point type
   Specify either appn_end_node or appn_network_node.

Specifying the Token-Ring SNA DLC Profile for AFP Upload: The following displays how to specify the values AFP Upload requires in the Token-Ring SNA DLC Profile. Note that all values refer to Figure 138.

```
* Profile name                             [profile_name]
  Data link device name                    [tokn]             +
  Receive window count (1-127)             [n]                #
  Local SAP address (04-ec)                [04]               X

  Link Recovery Parameters
    Retry interval (1-10000 seconds)       [60]               #
    Retry limit (0-500 attempts)           [0]                #
```

Figure 138. Token-Ring SNA DLC Profile Guidelines

Profile name
Choose any meaningful value.

Data link device name
Select one of the available adapters.

Receive window count (1-127)
Defines the size of the link-level window. It specifies the maximum number of frames to receive before sending a link-level acknowledgement.

The window (**W**) value in 3174 establishment controller configuration item 941 indicates the number of frames that the 3174 sends before waiting for a link-level acknowledgement.

For optimum performance, the **Receive window count** value should be equal to the window (**W**) value in 3174 establishment controller configuration item 941.

If the window (**W**) value is less than the **Receive window count** parameter, extremely poor throughput can result. In most cases, the default window (**W**) value is 2. The default **Receive window count** value is 8. You must adjust these default values to yield acceptable throughput.

Local SAP address (04-ec)
Specify 04.

Link Recovery Parameters - Retry interval (1-10000 seconds)
Specify 60. If the link station is a **calling** link station, this value causes it to try to establish a link connection with the 3174 establishment controller every 60 seconds, until a link connection can be established.

Link Recovery Parameters - Retry limit (0-500 attempts)
Specify 0. If the link station is a **calling** link station, this value indicates that there is no limit on the number of attempts the link station makes to establish a link connection with the 3174 establishment controller. The interval between the attempts is defined by the previous parameter.

Specifying the Token-Ring Link Station Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the Token-Ring Link Station Profile. Note that all values refer to Figure 139.

```
 * Profile name                                     [profile_name]
   Use APPN Control Point's XID node ID?             yes                         +
 * SNA DLC Profile name                              [DLC_profile_name]          +
   Stop link station on inactivity?                  no                          +
   LU address registration?                          no                          +

   Adjacent Node Address Parameters
      Access routing                                 link_address                +
      If link_address,
         Remote link address                         [4000nnnnnnnn]               X
         Remote SAP address (04-ec)                  [04]                         X

   Adjacent Node Identification Parameters
      Verify adjacent node?                          no                          +

   Link Activation Parameters
      Solicit SSCP sessions?                         yes                         +
      Initiate call when link station is activated?  yes                         +
      Activate link station at SNA start up?         yes                         +

   Restart Parameters
      Restart on activation?                         no                          +
      Restart on normal deactivation?               yes                         +
      Restart on abnormal deactivation?             yes                         +
```

Figure 139. Token-Ring Link Station Profile Guidelines

Profile name
Choose any meaningful value.

Use APPN Control Point's XID node ID?
Select yes.

SNA DLC Profile name
Select the name of the SNA DLC profile.

Stop link station on inactivity?
Select no.

LU address registration?
Select no.

Adjacent Node Address Parameters - Access routing
Select link_address.

This parameter is referenced only for **calling** link stations and selective **listening** link stations. For more information, refer to ""Calling" Versus "Listening" Link Stations" on page 26.

Adjacent Node Address Parameters - Remote link address
For **calling** link stations and selective **listening** link stations, the **Remote link address** parameter must match the token-ring address of the 3174 establishment controller token-ring gateway. The token-ring address of the 3174 token-ring gateway is specified in 3174 configuration item 900.

Adjacent Node Address Parameters - Remote SAP address
Specify 04.

Adjacent Node Identification Parameters - Verify adjacent node?
Select no.

Link Activation Parameters - Solicit SSCP sessions?
Select yes.

Link Activation Parameters - Initiate call when link station is activated?
To define a **calling** link station, select yes.

To define a **listening** link station, select no.

Link Activation Parameters - Activate link station at SNA start up?
Select yes.

Restart Parameters - Restart on activation?
Select no.

Restart Parameters - Restart on normal deactivation?
Select yes.

Restart Parameters - Restart on abnormal deactivation?
Select yes.

Specifying the LU 6.2 Local LU Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the LU 6.2 Local LU Profile. Note that all values refer to Figure 140.

```
* Profile name                                          [profile_name]
  Local LU name                                         [lu_name]
  Local LU alias                                        [lu_alias]
  Local LU is dependent?                                 yes                 +
        If yes,
            Local LU address (1-255)                    [nn]                  #
            Link Station Profile name                   [link_station]      +
```

Figure 140. LU 6.2 Local LU Profile Guidelines

Profile name
Choose any meaningful value.

Local LU name
This value must match the name on the LU statement in the VTAM local major node.

Local LU alias
Choose any meaningful value.

Local LU is dependent?
The logical unit can be either dependent (yes) or independent (no). Dependent logical units are managed by an SSCP. In general, independent logical units offer more flexibility.

For dependent logical units, the LOCADDR value in the VTAM local major node LU statement is non-zero. For independent logical units, LOCADDR=0.

If yes, Local LU address (1-255)
If the logical unit is dependent, the **Local LU address** parameter must match the LOCADDR value in the VTAM local major node LU statement.

If yes, Link Station Profile name
If the logical unit is dependent, select the profile name of the link station through which SNA Server/6000 communicates with the host system.

Specifying the LU 6.2 Side Information Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the LU 6.2 Side Information Profile. Note that all values refer to Figure 141.

```
 * Profile name                                 [profile_name]
   Local LU or Control Point alias              [lu_alias]              +
   Provide only one of the following:
      Partner LU alias                          []                     +
      Fully qualified partner LU name           [network_id.partner_lu_name]
   Mode name                                    [#INTER]               +
   Remote transaction program name (RTPN)       [remote_TP_name]       +
   RTPN in hexadecimal?                          no                    +
```

Figure 141. LU 6.2 Side Information Profile Guidelines

Profile name
    The name you choose must match the name of the PSF for AIX printer.

Local LU or Control Point alias
    Select the local LU alias that you specified in the LU 6.2 Local LU profile.

Fully qualified partner LU name
    Specifies the network identifier of the network in which the host server program resides (followed by a period), and the logical unit name used by the host server program.

    The network identifier portion must match the NETID value in the VTAM start option list (ATCSTRxx).

    The logical unit name portion must match an APPL statement name in a VTAM application program major node. It must also match an LUADD ACBNAME value in the APPC/MVS APPCPMxx member of SYS1.PARMLIB.

Mode name
    Specify #INTER.

Remote transaction program name (RTPN)
    The name you choose must match the TPNAME value in the APPC/MVS TP profile.

RTPN in hexadecimal?
    Specify no.

Specifying the Partner LU 6.2 Location Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the Partner LU 6.2 Location Profile. Note that all values refer to Figure 142.

```
* Profile name                                        [profile_name]
  Fully qualified partner LU name                     [network_id.lu_name]
  Partner LU location method                           owning_cp                +
  If owning_cp,
     Fully qualified owning Control Point (CP) name   [network_id.cp_name]
     Local node is network server for LEN node?        no                       +
     Fully qualified network node server name          []
```

Figure 142. Partner LU 6.2 Location Profile Guidelines

Profile name
Choose any meaningful value.

Fully qualified partner LU name
Specifies the network identifier of the network in which the host server program resides (followed by a period), and the logical unit name used by the host server program.

The network identifier portion must match the NETID value in the VTAM start option list (ATCSTRxx).

The logical unit name portion must match an APPL statement name in a VTAM application program major node. It must also match an LUADD ACBNAME value in the APPC/MVS APPCPMxx member of SYS1.PARMLIB.

Partner LU location method
Select owning_cp.

If owning_cp, Fully qualified owning Control Point (CP) name
Specifies the network identifier of the network in which the host server program resides (followed by a period), and the name of the System Services Control Point (SSCP) for the host system.

The network identifier portion must match the NETID value in the VTAM start option list (ATCSTRxx).

The CP name portion must match the SSCPNAME value in the VTAM start option list (ATCSTRxx).

If owning_cp, Local node is network server for LEN node
Select no.

If owning_cp, Fully qualified network node server name
Leave blank.

Configuration Worksheet

Use the following worksheet to record values for SNA Server/6000 configuration parameters that are related to other configuration settings:

SNA Server/6000	Value	APPC/MVS	VTAM	3174
Figure 143. Configuration Worksheet				
SNA Server/6000	**Value**	**APPC/MVS**	**VTAM**	**3174**
Control Point: Control Point (CP) name			PU: name	
Token-Ring DLC: Receive window count				item 941: W
Token-Ring Link Station: Remote link address				item 900
LU 6.2 Local LU: Local LU name			LU: name	
LU 6.2 Local LU: Local LU is dependent?			LU: LOCADDR	
LU 6.2 Local LU: Local LU address			LU: LOCADDR	
LU 6.2 Side Information: Fully qualified partner LU name		APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name	
LU 6.2 Side Information: Remote transaction program name (RTPN)		TP profile: TPNAME		
Partner LU 6.2 Location: Fully qualified partner LU name		APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name	
Partner LU 6.2 Location: Fully qualified owning Control Point (CP) name			ATCSTRxx: NETID ATCSTRxx: SSCPNAME	

Local 3174 Token-Ring Gateway

Chapter 12. Remote 3174 Token-Ring Gateway
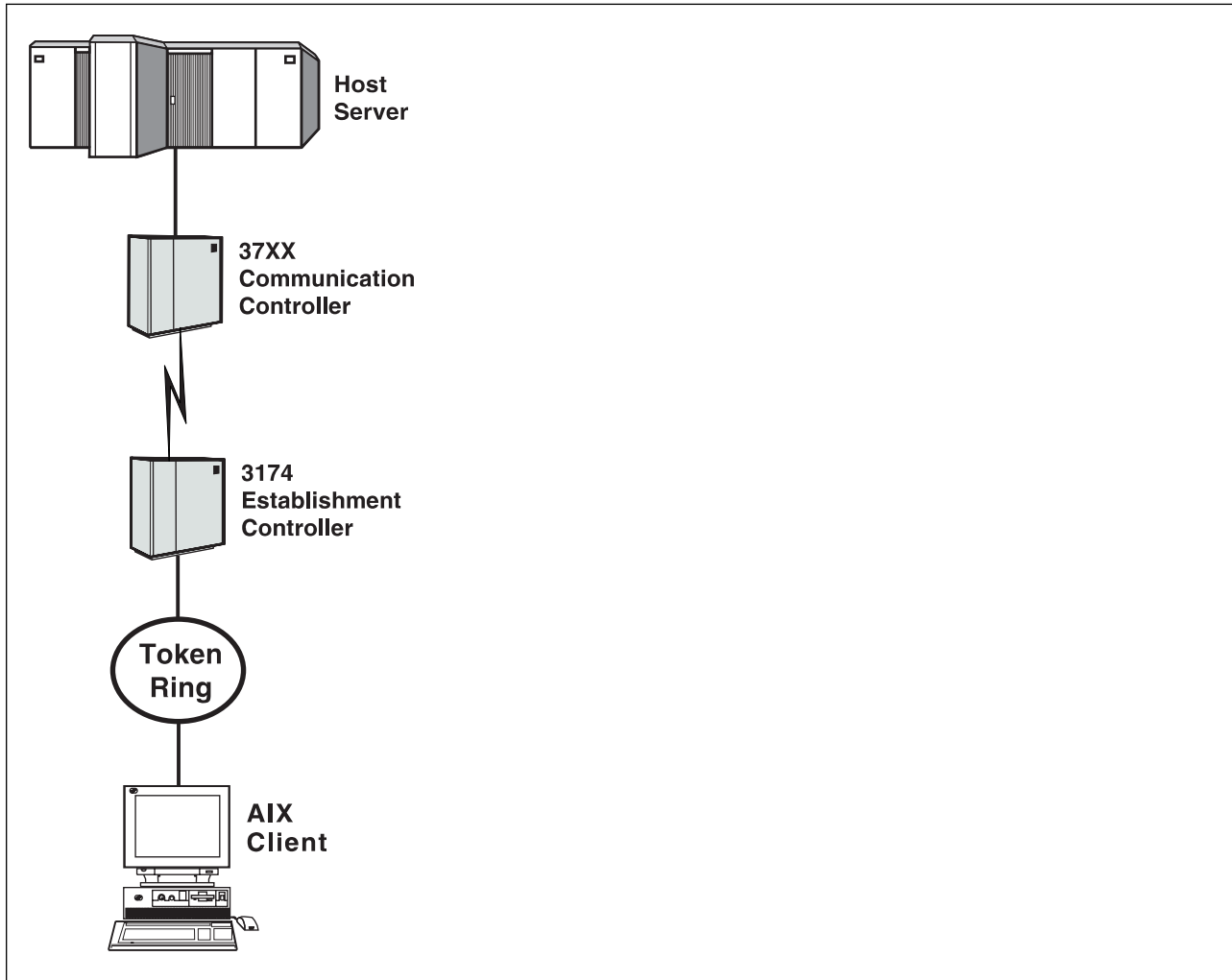
Figure 144. Remote 3174 Token-Ring Gateway

Key Configuration Parameter Interrelationships

Several network components have configuration parameters whose values are related to configuration parameters for other network components. These interrelated parameters must be configured consistently to make end-to-end communication possible.

Several figures follow. They illustrate some of the key interrelationships among configuration parameters for SNA network components.

Figure 145 illustrates the interrelationships in defining the name of the transaction program used by the AFP Upload host server.
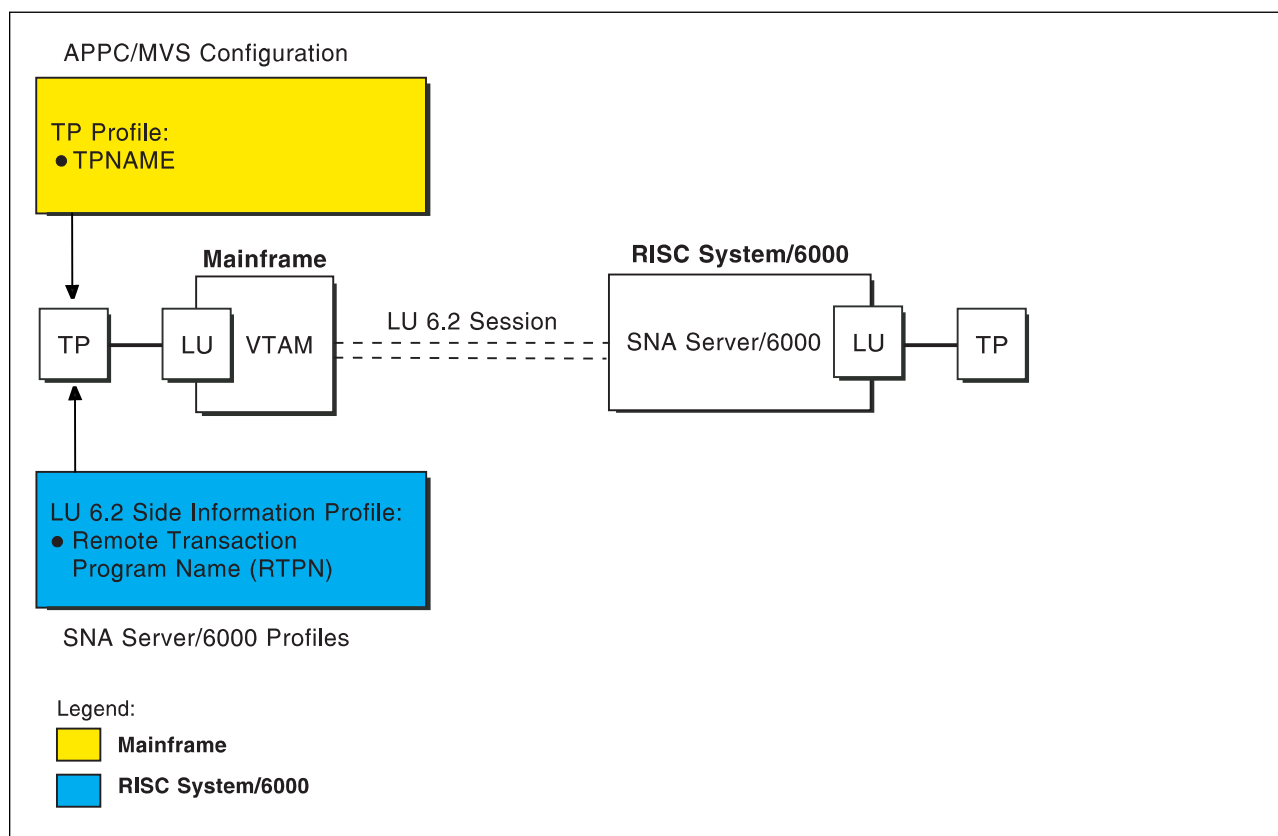
Figure 145. Transaction Program Name

Figure 146 illustrates the interrelationships in defining logical unit (LU) names.
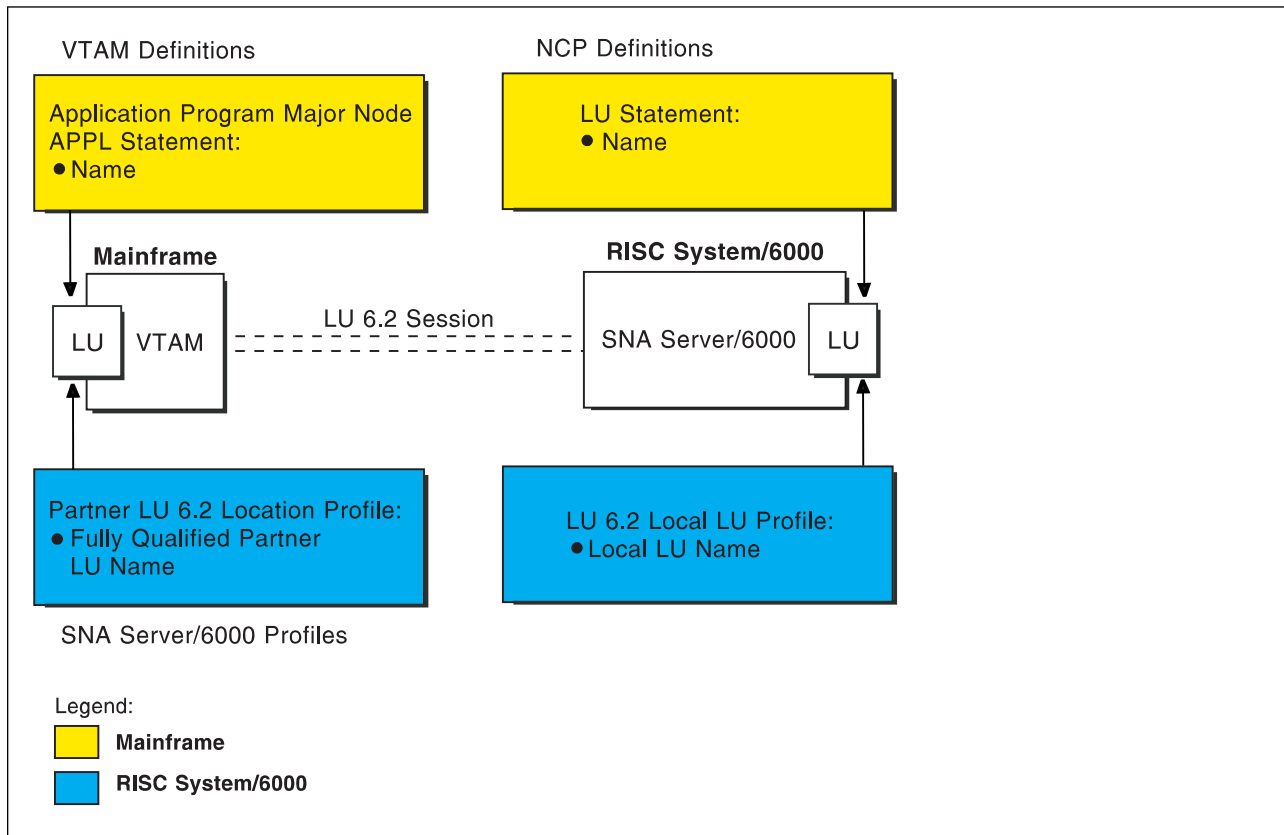
Figure 146. Logical Unit Names

Figure 147 illustrates the interrelationships in defining the local address of the logical unit provided by SNA Server/6000.
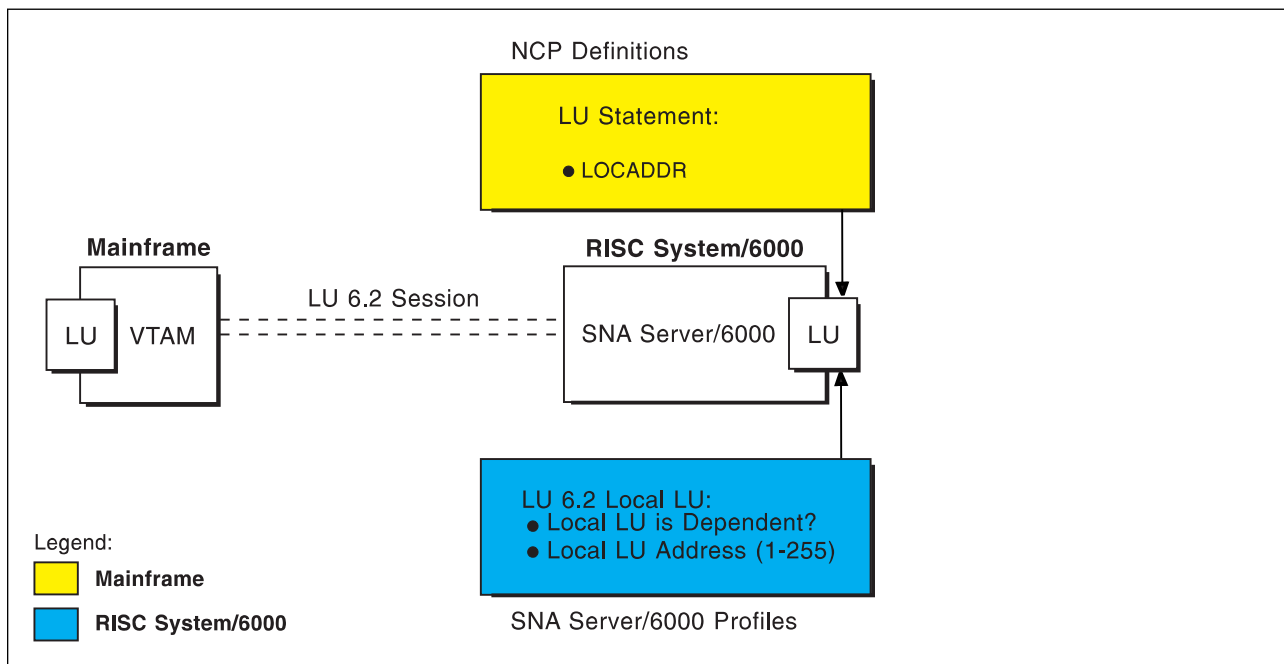
Figure 147. Local Address of Logical Unit

Remote 3174 Token-Ring Gateway

Figure 148 illustrates the interrelationships in defining the name of the physical unit/control point provided by SNA Server/6000.
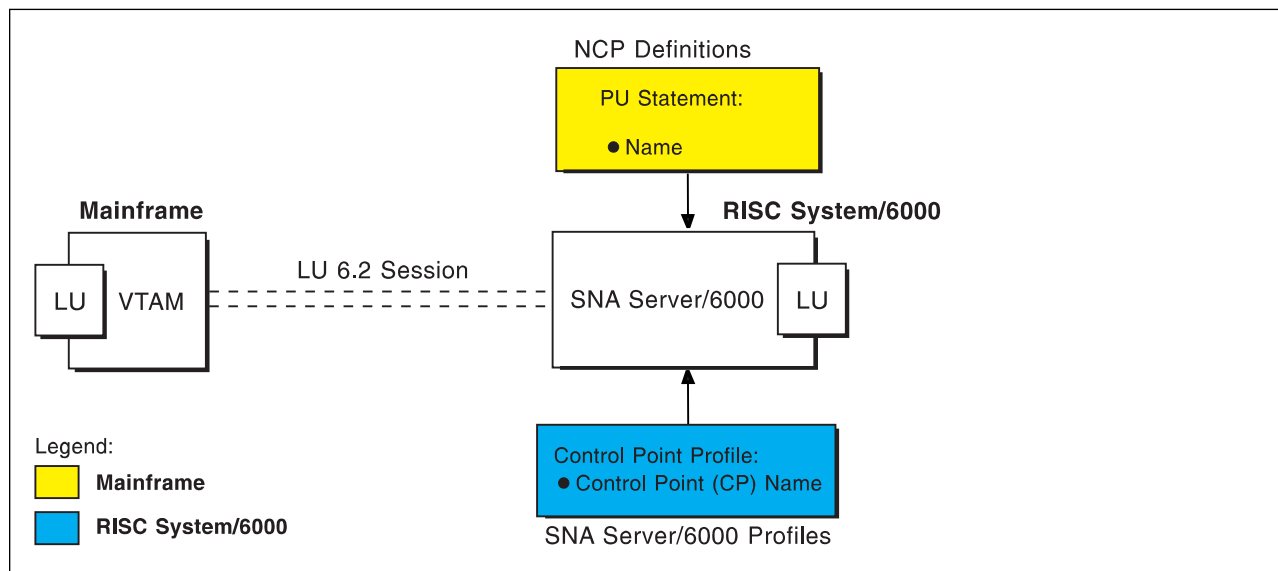
Figure 148. Physical Units/Control Point Name

Figure 149 illustrates the interrelationships in defining Token-Ring addresses used in this configuration.
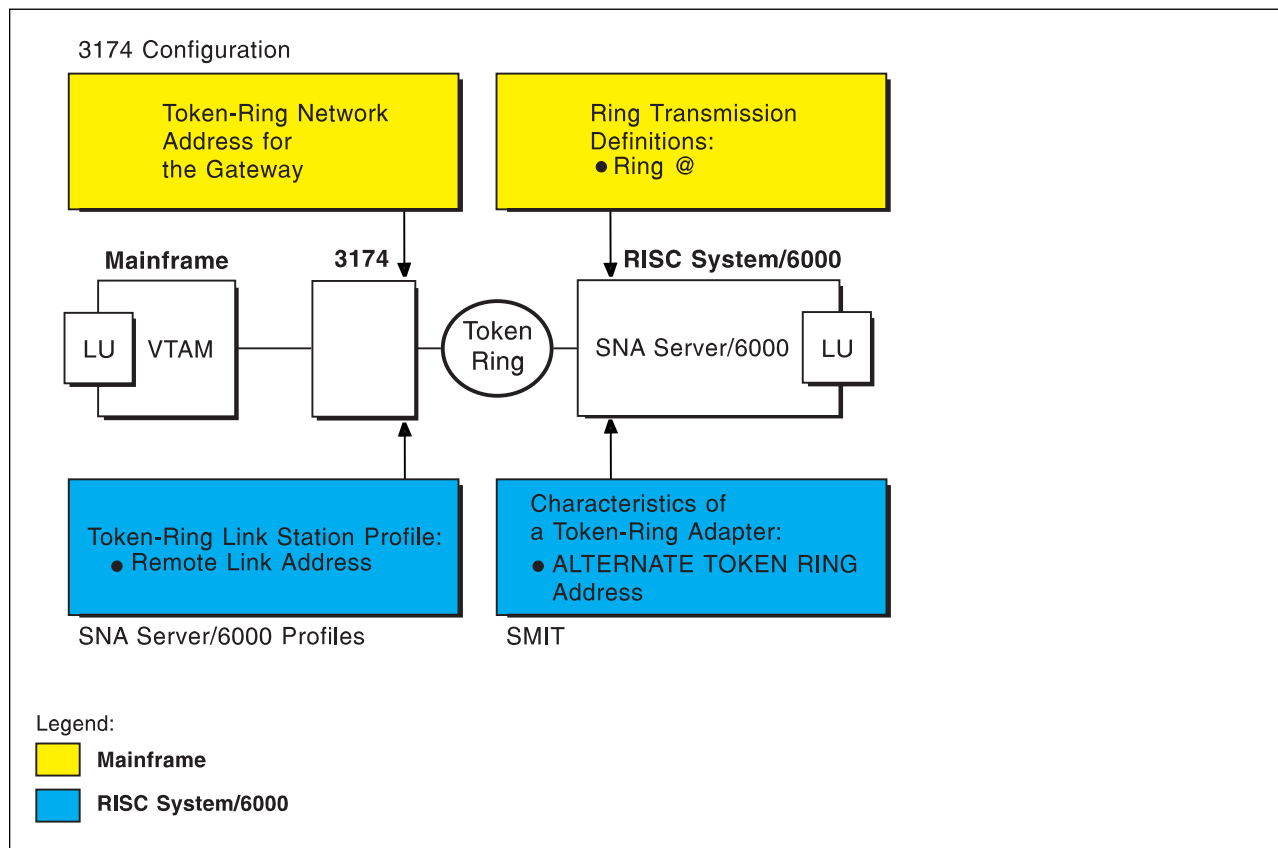
Figure 149. Token-Ring Addresses

Remote 3174 Token-Ring Gateway Example

For an explanation of pertinent configuration parameters, see "Guidelines for Configuring Remote 3174 Token-Ring Gateway" on page 158.

APPC/MVS APPCPMxx Parameters Example

For an explanation of these values, see "Specifying the APPC/MVS APPCPMxx Parameters" on page 158.

```
LUADD
 ACBNAME(MVSLU01),
 SCHED(ASCH),
 TPDATA(SYS1.APPCTP),
 TPLEVEL(SYSTEM),
 BASE

SIDEINFO
 DATASET(SYS1.APPCSI)
```

Figure 150. Sample APPC/MVS APPCPMxx Parameters Example

APPC/MVS ASCHPMxx Parameters Example

For an explanation of these values, see "Specifying the APPC/MVS ASCHPMxx Parameters" on page 158.

```
CLASSADD
 CLASSNAME(FAST),
 MAX(10),
 MIN(2),
 RESPGOAL(.01),
 MSGLIMIT(500)
```

Figure 151. Sample APPC/MVS ASCHPMxx Parameters Example

APPC/MVS TP Profile Example

For an explanation of these values, see "Specifying the APPC/MVS TP Profile" on page 159.

```
//JOBNAME  JOB  ACCOUNT
//*
//TPPROF   EXEC PGM=ATBSDFMU
//SYSPRINT DD   SYSOUT=*
//SYSSDLIB DD   DSN=SYS1.APPCTP,DISP=SHR
//SYSSDOUT DD   SYSOUT=*
//SYSIN    DD   DATA,DLM=XX
  TPADD
    TPNAME(AFPSVR1)
    TPSCHED_DELIMITER(##)
      CLASS(FAST)
      JCL_DELIMITER(END_OF_JCL)
//JOBNAME  JOB  ACCOUNT
//STEP     EXEC PGM=AUPSNAS
//STEPLIB  DD   DSN=AUP.SAUPLOAD,DISP=SHR
//         DD   DSN=PLI.V2R3M0.PLILINK,DISP=SHR
//         DD   DSN=PLI.V2R3M0.SIBMLINK,DISP=SHR
//SYSPRINT DD   SYSOUT=*
END_OF_JCL
  KEEP_MESSAGE_LOG(ALWAYS)
  MESSAGE_DATA_SET(AUP.APPCLOG)
  DATASET_STATUS(OLD)
##
XX
/*
```

Figure 152. Sample JCL to Create an APPC/MVS TP Profile Example

VTAM Start Option List (ATCSTRxx) Example

For an explanation of these values, see "Specifying the VTAM Start Option List (ATCSTRxx)" on page 159.

```
CONFIG=00,          ATCCON MEMBER OF VTAMLST       X
NETID=USIBMBQ,      NETWORK IDENTIFIER             X
SSCPNAME=ST1,       SSCP NAME                      X
 ⋮
```

Figure 153. Sample VTAM Start Option List

VTAM Configuration List (ATCCONnn) Example

For an explanation of these values, see "Specifying the VTAM Configuration List (ATCCONnn)" on page 159.

```
APPCAPLS                                           X
 ⋮
```

Figure 154. Sample VTAM Configuration List

VTAM Application Program Major Node and Application Program Example

For an explanation of these values, see "Specifying the VTAM Application Program Major Node and Application Program" on page 160.

```
APPCAPLS VBUILD TYPE=APPL
MVSLU01  APPL  ACBNAME=MVSLU01,                    X
               APPC=YES,                           X
               AUTOSES=0,                          X
               DDRAINL=NALLOW,                     X
               DMINWNL=5,                          X
               DMINWNR=5,                          X
               DRESPL=NALLOW,                      X
               DSESLIM=10,                         X
               LMDENT=100,                         X
               MODETAB=ISTINCLM,                   X
               PARSESS=YES,                        X
               SECACPT=CONV,                       X
               SRBEXIT=YES
```

Figure 155. Sample VTAM Application Program Major Node and Application Program

Network Control Program (NCP) Definitions Example

For an explanation of these values, see "Specifying the Network Control Program Definitions" on page 161.

```
  LN3174   LINE    ADDRESS=012,                              X
                   DUPLEX=FULL,                              X
                   CLOCKNG=EXT,                              X
                   SPEED=56000,                              X
                   RETRIES=(5,1,2)
  *
           SERVICE ORDER=(PU3174,AIX01)
  *
  PU3174   PU      ADDR=C1,                                  X
                   PUTYPE=2,                                 X
                   MAXDATA=521,                              X
                   MAXOUT=7,                                 X
                   PASSLIM=7
  *
  LU3270   LU      LOCADDR=2,                                X
                   MODETAB=MODEIBM,                          X
                   DLOGMOD=S32782,                           X
                   USSTAB=USSTAB1
  *
  AIX01    PU      ADDR=C2,                                  X
                   PUTYPE=2,                                 X
                   MAXDATA=521,                              X
                   MAXOUT=7,                                 X
                   PASSLIM=7
  *
  UPLD0101 LU      LOCADDR=1,                                X
                   MODETAB=ISTINCLM
```

Figure 156. Sample NCP Definitions

3174 Establishment Controller Configuration Example

For an explanation of these values, see "Specifying the 3174 Establishment Controller Configuration" on page 164.

```
Configuration Support C Release 3

900: Token-Ring Network Address for the Gateway

  4000 3000 1001

940: Ring Address Assignment

  S@    Ring@           SAP
  C1    4000 3000 1001
  C2    4000 3000 1002    04

941: Ring Transmission Definition

                         F    W
  C1    4000 3000 1001
  C2    4000 3000 1002    1    7
```

Figure 157. Sample 3174 Establishment Controller Configuration

PSF for AIX Printer Example

For an explanation of these values, see "Specifying the PSF for AIX Printer" on page 166.

```
 smit
   PSF for AIX Printing and Configuration
     Administer PSF for AIX
       Manage a PSF for AIX Printer
         Add a Printer or PSF Queue
           Upload
```

Figure 158. SMIT Panel Sequence for PSF for AIX Printer

```
 * Data stream type              AFPDS
 * Printer NAME                  [upload1]        /
   ASCII code-set                []
 * EBCDIC code-set               [IBM-037]
 * Number of QUEUE DEVICES       [4]              #
   Description                   []
```

Figure 159. Sample PSF for AIX Printer

SNA Server/6000 Configuration Profile Examples

This section lists sample SNA Server/6000 profiles. Each profile is preceded by the sequence of SMIT panels to access the profile.

- SNA Node

- Control Point

- Token-Ring SNA DLC

- Token-Ring Link Station

- LU 6.2 Local LU

- LU 6.2 Side Information

- Partner LU 6.2 Location

```
smit
   Communications Applications and Services
      SNA Server/6000
         Configure SNA Profiles
            Advanced Configuration
               SNA System Defaults
                  Change/Show a Profile
```

Figure 160. SMIT Panel Sequence For SNA Node Profile

```
Profile name                                    sna
Maximum number of sessions (1-5000)             [200]                    #
Maximum number of conversations (1-5000)        [200]                    #
Restart action                                  once                     +
Recovery resource manager (RRM) enabled?        no                       +
Dynamic inbound partner LU definitions allowed? yes                      +
NMVT action when no NMVT process                reject                   +
Standard output file/device                     [/dev/console]
Standard error file/device                      [/var/sna/sna.stderr]

Comments                                        []
```

Figure 161. Sample SNA Node Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Control Point
                Change/Show a Profile
```

Figure 162. SMIT Panel Sequence For Control Point Profile

```
Profile name                                    node_cp
XID node ID                                     [*]
Network name                                    [USIBMBQ]
Control Point (CP) name                         [AIX01]
Control Point alias                             [AIX01]
Control Point type                              appn_end_node      +
Maximum number of cached routing trees          [500]              #
Maximum number of nodes in the TRS database     [500]              #
Route addition resistance                       [128]              #

Comments                                        []
```

Figure 163. Sample Control Point Profile

```
smit
 Communications Applications and Services
   SNA Server/6000
     Configure SNA Profiles
       Advanced Configuration
         Links
           Token-Ring
             Token-Ring SNA DLC
               Add a Profile
```

Figure 164. SMIT Panel Sequence For Token-Ring SNA DLC Profile

```
* Profile name                                    [tr3174]
  Data link device name                           [tok0]          +
  Force disconnect time-out (1-600 seconds)       [120]           #
  User-defined maximum I-Field size?               no             +
      If yes, Max. I-Field size (265-30729)       [30729]         #
  Max. num of active link stations (1-255)        [100]           #
      Number reserved for inbound activation      [0]             #
      Number reserved for outbound activation     [0]             #
  Transmit window count (1-127)                   [16]            #
  Dynamic window increment (1-127)                [1]             #
  Retransmit count (1-30)                         [8]             #
  Receive window count (1-127)                    [7]             #
  Ring access priority                            [0]             +
  Inactivity time-out (1-120 seconds)             [48]            #
  Response time-out (1-40, 500 msec intervals)    [4]             #
  Acknowledge time-out (1-40, 500 msec intervals) [1]             #
  Local link name                                 []
  Local SAP address (04-ec)                       [04]            X
  Trace base listening link station?               no             +
      If yes, Trace format                         long           +
  Dynamic link stations supported?                 yes            +

  Link Recovery Parameters
      Retry interval (1-10000 seconds)            [60]            #
      Retry limit (0-500 attempts)                [0]             #

  Dynamic Link Activation Parameters
      Solicit SSCP sessions?                       yes            +
      CP-CP sessions supported?                    yes            +
      Partner required to support CP-CP sessions?  no             +

  Dynamic Link TG COS Characteristics
      Effective capacity                          [4300800]       #
      Cost per connect time                       [0]             #
      Cost per byte                               [0]             #
      Security                                     nonsecure      +
      Propagation delay                            lan            +
      User-defined 1                              [128]           #
      User-defined 2                              [128]           #
      User-defined 3                              [128]           #

  Comments                                        []
```

Figure 165. Sample Token-Ring SNA DLC Profile

```
smit
  Communications Applications and Services
    SNA Server/6000
      Configure SNA Profiles
        Advanced Configuration
          Links
            Token-Ring Link Station
              Add a Profile
```

Figure 166. SMIT Panel Sequence For Token-Ring Link Station Profile

```
* Profile name                                   [tr3174]
  Use APPN Control Point's XID node ID?            yes              +
     If no, XID node ID                           [*]
* SNA DLC Profile name                            [tr3174]         +
  Stop link station on inactivity?                 no              +
     If yes, Inactivity time-out (0-10 minutes)   [0]                    #
  LU address registration?                         no              +
     If yes, LU Address Registration Profile name []               +
  Trace link?                                      no              +
     If yes, Trace size                            long            +

  Adjacent Node Address Parameters
     Access routing                                link_address    +
     If link_name, Remote link name               []
     If link_address,
        Remote link address                       [400030001001]      X
        Remote SAP address (04-ec)                [04]                X

  Adjacent Node Identification Parameters
     Verify adjacent node?                         no              +
     Network ID of adjacent node                  []
     CP name of adjacent node                     []
     XID node ID of adjacent node (LEN node only) [*]
     Node type of adjacent node                    learn           +

  Link Activation Parameters
     Solicit SSCP sessions?                        yes             +
     Initiate call when link station is activated? yes             +
     Activate link station at SNA start up?        yes             +
     Activate on demand?                           no              +
     CP-CP sessions supported?                     yes             +
     If yes,
        Adjacent network node preferred server?    no              +
     Partner required to support CP-CP sessions?   no              +
     Initial TG number (0-20)                     [0]                    #

  Restart Parameters
     Restart on activation?                        no              +
     Restart on normal deactivation?               yes             +
     Restart on abnormal deactivation?             yes             +

  Transmission Group COS Characteristics
     Effective capacity                           [4300800]            #
     Cost per connect time                        [0]                  #
     Cost per byte                                [0]                  #
     Security                                      nonsecure       +
     Propagation delay                             lan             +
     User-defined 1                               [128]                #
     User-defined 2                               [128]                #
     User-defined 3                               [128]                #

  Comments                                        []
```

Figure 167. Sample Token-Ring Link Station Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Sessions
                LU 6.2
                  LU 6.2 Local LU
                    Add a Profile
```

Figure 168. SMIT Panel Sequence For LU 6.2 Local LU Profile

```
* Profile name                                        [UPLD0101]
  Local LU name                                       [UPLD0101]
  Local LU alias                                      [UPLD0101]
  Local LU is dependent?                               yes          +
     If yes,
        Local LU address (1-255)                      [1]              #
        System services control point
          (SSCP) ID (*, 0-65535)                      [*]
        Link Station Profile name                     [tr3174]     +
  Conversation Security Access List Profile name      []

  Comments                                            []
```

Figure 169. Sample LU 6.2 Local LU Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Sessions
                LU 6.2
                  LU 6.2 Side Information
                    Add a Profile
```

Figure 170. SMIT Panel Sequence For LU 6.2 Side Information Profile

```
* Profile name                                        [upload1]
  Local LU or Control Point alias                     [UPLD0101]        +
  Provide only one of the following:
     Partner LU alias                                 []               +
     Fully qualified partner LU name                  [USIBMBQ.MVSLU01]
  Mode name                                           [#INTER]         +
  Remote transaction program name (RTPN)              [AFPSVR1]
  RTPN in hexadecimal?                                 no              +

  Comments                                            []
```

Figure 171. Sample LU 6.2 Side Information Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Sessions
                LU 6.2
                  Partner LU 6.2 Location
                    Add a Profile
```

Figure 172. SMIT Panel Sequence For Partner LU 6.2 Location Profile

```
* Profile name                                        [MVSLU01]
  Fully qualified partner LU name                      [USIBMBQ.MVSLU01]
  Partner LU location method                            owning_cp
  If owning_cp,
     Fully qualified owning Control Point (CP) name    [USIBMBQ.ST1]          +
     Local node is network server for LEN node?         no
     Fully qualified newtork node server name          []
  If link_station,
     Local LU name                                     []
     Link Station Profile name                         []                     +

  Comments                                             []
```

Figure 173. Sample Partner LU 6.2 Location Profile

Configuration Worksheet Example

The following worksheet records values for SNA Server/6000 configuration parameters that are related to other configuration settings:

SNA Server/6000	Value	APPC/MVS	VTAM	NCP	3174
Figure 174. Sample Configuration Worksheet					
Control Point: Control Point (CP) name	AIX01			PU: name	
Token-Ring SNA DLC: Receive window count	7			PU: MAXOUT	item 941: W
Token-Ring Link Station: Remote link address	400030001001				item 900
LU 6.2 Local LU: Local LU name	UPLD0101			LU: name	
LU 6.2 Local LU: Local LU is dependent?	yes			LU: LOCADDR	
LU 6.2 Local LU: Local LU address	1			LU: LOCADDR	
LU 6.2 Side Information: Fully qualified partner LU name	USIBMBQ. MVSLU01	APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name		
LU 6.2 Side Information: Remote transaction program name (RTPN)	AFPSVR1	TP profile: TPNAME			
Partner LU 6.2 Location: Fully qualified partner LU name	USIBMBQ. MVSLU01	APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name		
Partner LU 6.2 Location: Fully qualified owning Control Point (CP) name	USIBMBQ.ST1		ATCSTRxx: NETID ATCSTRxx: SSCPNAME		

Guidelines for Configuring Remote 3174 Token-Ring Gateway

The following provides guidance for implementing the examples displayed in "Remote 3174 Token-Ring Gateway Example" on page 145. Note that a subset of the example is displayed below, displaying the pertinent parameters and describing which of these require you to specify *variable_names* and which require a specific name or number, such as MODETAB=ISTINCLM.

Specifying the APPC/MVS APPCPMxx Parameters

The pertinent statements and parameters for the APPCPMxx member of SYS1.PARMLIB are illustrated in Figure 175 and described below.

```
LUADD
   ACBNAME(lu_name),
   SCHED(ASCH),
   TPDATA(tp_profile_dataset),
   TPLEVEL(level)
```

Figure 175. APPC/MVS APPCPMxx Parameter Guidelines

ACBNAME
   Specifies the name of a logical unit to be controlled by APPC/MVS. The value must match an APPL statement name in a VTAM application program major node.

SCHED
   Specify ASCH to indicate that inbound conversation requests should be scheduled by the APPC/MVS transaction scheduler (ASCH).

TPDATA
   Specify the name of the VSAM key-sequenced dataset (KSDS) that contains TP profiles for the logical unit referenced by the ACBNAME parameter.

TPLEVEL
   Controls access, for the logical unit referenced by the ACBNAME parameter, to execution of transaction programs (TP's).

   Specify SYSTEM to allow access to all authenticated MVS users.

Specifying the APPC/MVS ASCHPMxx Parameters

AFP Upload requires that a class of transaction initiators be defined to the APPC/MVS transaction scheduler (ASCH) so the class can be referenced in the APPC/MVS TP profile that describes an AFP Upload server. AFP Upload does not have special requirements for the parameters used in defining the class.

Specifying the APPC/MVS TP Profile

Use the APPC/MVS ATBSDFMU administration utility program to create an APPC/MVS TP profile.

The TPNAME value must match the **Remote transaction program name (RTPN)** parameter in the SNA/6000 LU 6.2 Side Information profile.

The scheduler information in the TP profile must include JCL that the ASCH scheduler uses to run the transaction program. The JCL must execute the AFP Upload server program, named AUPSNAS. This program is written in the PL/I language. It requires that the PL/I PLILINK and SIBMLINK libraries be included in the STEPLIB definition. The AFP Upload server program also requires that the SYSPRINT DD name be allocated. Unless the SYSPRINT DD statement refers to DUMMY or a SYSOUT data set, the data set referenced by the SYSPRINT DD statement must have the following attributes:

directory blocks: 0

record format: VA

record length: 125

block size: 129

For more information about the SYSPRINT DD name used by the host server program, refer to "Specifying the SYSPRINT DD Statement" on page 10.

Specifying the VTAM Start Option List (ATCSTRxx)

You must specify the values illustrated in Figure 176 and described below:

```
CONFIG=nn,              ATCCON MEMBER OF VTAMLST          X
NETID=network_id,       NETWORK IDENTIFIER                X
SSCPNAME=sscp_name,     SSCP NAME                         X
   ⋮
```

Figure 176. VTAM Start Option List Guidelines

CONFIG
Specifies the ATCCON*nn* member to use.

NETID
Specifies the network identifier for the host system.

SSCPNAME
Specifies the System Services Control Point (SSCP) name for the host system.

Specifying the VTAM Configuration List (ATCCONnn)

The VTAM configuration list indicates the application program major nodes that should be made available when VTAM is started. Include the application program major node that contains the application program that APPC/MVS uses:

appl_prog_major_node   X
   ⋮

Specifying the VTAM Application Program Major Node and Application Program

The pertinent statements and parameters for the VTAM Application Program Major Node and Application Program are illustrated in Figure 177 and described below.

```
majname   VBUILD TYPE=APPL
minname   APPL   ACBNAME=minname,                    X
                 APPC=YES,                           X
                 MODETAB=ISTINCLM,                   X
                 PARSESS=YES,                        X
                 SECACPT=CONV,                       X
                 SRBEXIT=YES
```

Figure 177. VTAM Application Program Major Node and Application Program Guidelines

ACBNAME
Specify the minor node name to assign to the application program. This name must be unique within the domain in which the application program resides.

APPC
Specify YES.

MODETAB
Specify ISTINCLM or the name of an alternative VTAM logon mode table to be used to associate each logon mode name with a set of session parameters for the application program.

PARSESS
Specify YES, or do not include the PARSESS parameter. PARSESS defaults to YES when APPC=YES.

This value indicates that the application program can have multiple concurrent (parallel) sessions with an independent logical unit.

SECACPT
Specify CONV.

This value indicates that the application program's logical unit supports conversation requests containing access security subfields.

SRBEXIT
Specify YES.

This value indicates that the application program is authorized to use service request block (SRB) processing in its exit routines.

Specifying the Network Control Program Definitions

The following keywords and values must be specified if the 3174 establishment controller supports both terminals and AFP Upload:

```
line_name      LINE  ADDRESS=(nnn),                               X
                     CLOCKNG=xxx,                                 X
                     SPEED=nnnnn
*
                     SERVICE ORDER=(3174_pu_name,RISC_pu_name)
*
3174_pu_name PU      ADDR=nn,                                     X
  ⋮
*
term_lu_name LU      LOCADDR=nn,                                  X
  ⋮
*
RISC_pu_name PU      ADDR=nn,                                     X
                     PUTYPE=2,                                    X
                     MAXDATA=nnnn,                                X
                     MAXOUT=7,                                    X
                     PASSLIM=7
*
lu_name        LU    LOCADDR=nn,                                  X
                     MODETAB=mode_name
```

Figure 178. NCP Definitions for a Multi-point Configuration

The following keywords and values must be specified if the 3174 establishment controller supports one AFP Upload connection and no terminals:

```
line_name LINE  ADDRESS=(nnn),                    X
                CLOCKNG=xxx,                       X
                SPEED=nnnnn
*
pu_name   PU    ADDR=nn,                           X
                PUTYPE=2,                          X
                MAXDATA=nnnn,                      X
                MAXOUT=7,                          X
                PASSLIM=7
*
lu_name   LU    LOCADDR=nn,                        X
                MODETAB=mode_table
```

Figure 179. NCP Definitions for a Point-to-Point Configuration

The following describes the pertinent keywords on the **LINE** statement:

ADDRESS
   Specifies the relative line number for this line. The relative line number depends upon the port and line adapter type used in the 37xx communication controller.

CLOCKNG

Specifies whether the modem (EXT) or the communication scanner for the line (INT) provides clocking.

Ensure that the CLOCKNG keyword is spelled without the letter I.

SPEED

Specifies the data rate for the line in bits per second. The SPEED keyword is required if CLOCKNG=INT. The SPEED keyword is also required if you use NetView Performance Monitor (NPM) to collect NCP performance data, even when CLOCKNG=EXT.

The following describes the pertinent keywords on the **SERVICE** statement:

ORDER

Specifies the order in which the devices on the line are serviced in a multi-point configuration. In these guidelines the devices are physical units.

The following describes the pertinent keywords on the **PU** statement:

ADDR

Specifies the hexadecimal representation of the 8-bit address of the physical unit. For a 3174 establishment controller, the ADDR keyword refers to the S@ parameter in 3174 configuration item 940.

PUTYPE

Specify 2, which represents either a type 2 physical unit (PU), or a type 2.1 physical unit such as SNA Server/6000.

MAXDATA

Specifies the maximum amount of data (in bytes) that the physical unit can receive in one path information unit (PIU). This amount includes the transmission header (TH) and the request/response header (RH).

To prevent basic information units (BIUs) from being segmented, specify a MAXDATA value that is at least 9 bytes greater than the maximum RU size in the logon mode table entry.

MAXOUT

Specifies the maximum number of path information units (PIUs) that are sent to the physical unit before waiting for a response from that physical unit.

For optimum performance, the MAXOUT value should be equal to the **Receive window count** in the SNA Server/6000 Token-Ring SNA DLC profile and to the window (W) value in 3174 establishment controller configuration item 941.

The **Receive window count** defines the size of the link-level window. It specifies the maximum number of frames that SNA Server/6000 receives before sending a link-level acknowledgement.

The window (**W**) value in 3174 configuration item 941 indicates the number of frames that the 3174 sends before waiting for a link-level acknowledgement.

If the MAXOUT value or the 3174 window (**W**) value is less than the **Receive window count** parameter, extremely poor throughput can result. The default MAXOUT value is 1. In most cases, the default window (W) value is 2. The default Receive window count value is 8. You must adjust these default values to yield acceptable throughput.

PASSLIM
Specifies the maximum number of frames NCP sends at one time to this physical unit.

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

LOCADDR
`LOCADDR=0` specifies that this logical unit is an independent logical unit. An SSCP-LU session does not have to be established prior to an LU-LU session with an independent logical unit. For independent logical units, the **Local LU is dependent?** parameter in the SNA Server/6000 LU 6.2 Local LU profile must be `no`.

To use a dependent logical unit, specify a value between 1 and 255 for LOCADDR. Also, in the SNA Server/6000 LU 6.2 Local LU profile, specify `yes` for the **Local LU is dependent?** parameter, and the LOCADDR value for the **Local LU address** parameter.

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

Specifying the 3174 Establishment Controller Configuration

The pertinent configuration parameters are illustrated in Figure 180 and described below:

```
Configuration Support C Release 3

900: Token-Ring Network Address for the Gateway

  4000 nnnn nnnn

940: Ring Address Assignment

  S@    Ring@              SAP
  nn    4000 nnnn nnnn
  nn    nnnn nnnn nnnn     nn

941: Ring Transmission Definition

                          F    W
  nn    4000 nnnn nnnn
  nn    nnnn nnnn nnnn    n    n
```

Figure 180. Sample 3174 Establishment Controller Configuration

900: Token-Ring Network 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 when the Ring Address Assignment panel is presented. 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 when the Ring Address Assignment panel is presented.

>> Specify a token-ring address for each ring-attached physical unit. Local MAC addresses are suggested over universal MAC addresses. Local MAC addresses are in the form `4000` *nnnn nnnn*.

> **SAP**
>> Accept the default Service Access Point value, `04`, or specify it explicitly.

940: Ring Transmission Definition

This configuration item includes two pertinent parameters:

F   Indirectly specifies the transmit I-frame size.

To prevent segmentation of basic information units (BIUs), 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** parameter in the SNA Server/6000 LU 6.2 Mode profile.

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** parameter in the SNA Server/6000 Token-Ring SNA DLC profile specifies the maximum number of frames SNA Server/6000 receives before sending a link-level acknowledgement.

For optimum performance, the transmit window size (**W**) should be equal to the **Receive window count** parameter.

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

Specifying the PSF for AIX Printer

The pertinent parameters for the PSF for AIX printer are illustrated in Figure 181 and described below:

```
* Printer NAME              [printer_name]        /
  ASCII code-set            [ascii_code-set]
* EBCDIC code-set           [ebcdic_code-set]
* Number of QUEUE DEVICES   [#qdevices]           #
```

Figure 181. PSF for AIX Printer Guidelines

Printer NAME
The name you choose must match the SNA Server/6000 LU 6.2 Side Information Profile name.

ASCII code-set
Specify the ASCII code-set in which attributes such as class, forms, and destination are specified on your AIX system. Before sending the attributes to the host server program, PSF for AIX converts the attributes from the specified ASCII code-set to the specified EBCDIC code-set.

If you do not specify an ASCII code set, PSF for AIX uses the current code set on your AIX system.

EBCDIC code-set
Specify the EBCDIC code-set used on the host system to which print files are sent and spooled. Before sending the attributes to the host server program, PSF for AIX converts attributes such as class, forms, and destination from the specified ASCII code-set to the specified EBCDIC code set.

Number of QUEUE DEVICES
Specify the number of queue devices to be created for the PSF for AIX printer. Multiple queue devices allow PSF for AIX to simultaneously send one file while converting the next file.

You can define up to nine queue devices. However, note that PSF for AIX requires more RISC System/6000 memory for each queue device.

Specifying the SNA Server/6000 Profiles

This section contains guidelines on configuring the SNA Server/6000 Profiles. Configure these profiles through the System Management Interface Tool (SMIT) panels. Examples of these panels and the hierarchical paths to each SNA definition are illustrated in "SNA Server/6000 Configuration Profile Examples" on page 150.

Note: You must have **root** authority to add or change SNA Server/6000 configuration profiles. After you add or change SNA Server/6000 configuration profiles, you must **verify** and **update** them. For more information about performing this task, see "Verifying and Updating SNA Server/6000 Configuration Profiles" on page 24.

Specifying the SNA Node Profile for AFP Upload: AFP Upload requires no modifications to the SNA Node profile.

Specifying the Control Point Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the Control Point Profile. Note that all values refer to Figure 182.

```
XID node ID                              [*]
Control Point (CP) name                  [cp_name]
Control Point type                        appn_end_node   +
```

Figure 182. Control Point Profile Guidelines

XID node ID
    The **XID node ID** parameter pertains to switched protocols. Because the 3174 establishment controller does not use switched protocols, the **XID node ID** value is not relevant in 3174 establishment controller configurations.

Control Point (CP) name
    The **Control Point (CP) name** parameter pertains to switched protocols. Because the 3174 establishment controller does not use switched protocols, the **Control Point (CP) name ID** value is not relevant in 3174 establishment controller configurations. However, by convention the **Control Point (CP) name** is usually the same as the PU name.

Control Point type
    Specify either `appn_end_node` or `appn_network_node`.

Specifying the Token-Ring SNA DLC Profile for AFP Upload: The following displays how to specify the values AFP Upload requires in the Token-Ring SNA DLC Profile. Note that all values refer to Figure 183.

```
* Profile name                            [profile_name]
   Data link device name                  [tokn]            +
   Receive window count (1-127)            [n]               #
   Local SAP address (04-ec)               [04]              X

   Link Recovery Parameters
     Retry interval (1-10000 seconds)      [60]              #
     Retry limit (0-500 attempts)          [0]               #
```

Figure 183. Token-Ring SNA DLC Profile Guidelines

Profile name
   Choose any meaningful value.

Data link device name
   Select one of the available adapters.

Receive Window Count (1-127)
   The Receive window count defines the size of the link-level window. It specifies the maximum number of frames to receive before sending a link-level acknowledgement.

   The MAXOUT keyword specifies the maximum number of path information units (PIUs) that are sent to the physical unit before waiting for a response from that physical unit.

   The window (W) value in 3174 configuration item 941 indicates the number of frames that the 3174 sends before waiting for a link-level acknowledgement.

   For optimum performance, the **Receive window count** should be equal to the MAXOUT value in the NCP PU statement and to the window (**W**) value in 3174 establishment controller configuration item 941.

   If the MAXOUT value or the 3174 window (**W**) value is less than the **Receive window count** parameter, extremely poor throughput can result. The default MAXOUT value is 1. In most cases, the default window (**W**) value is 2. The default **Receive window count** value is 8. You must adjust these default values to yield acceptable throughput.

Local SAP address (04-ec)
   Specify 04.

Link Recovery Parameters - Retry interval (1-10000 seconds)
   Specify 60. If the link station is a **calling** link station, this value causes it to try to establish a link connection with the 3174 establishment controller every 60 seconds, until a link connection can be established.

Link Recovery Parameters - Retry limit (0-500 attempts)
   Specify 0. If the link station is a **calling** link station, this value indicates that there is no limit on the number of attempts the link station makes to establish a link connection with the 3174 establishment controller. The interval between the attempts is defined by the previous parameter.

Specifying the Token-Ring Link Station Profile for AFP Upload: The following describes
how to specify the values AFP Upload requires in the Token-Ring Link Station Profile. Note that all values
refer to Figure 184.

```
* Profile name                                  [profile_name]
   Use APPN Control Point's XID node ID?         yes                    +
* SNA DLC Profile name                           [DLC_profile_name]     +
  Stop link station on inactivity?               no                     +
  LU address registration?                       no                     +

  Adjacent Node Address Parameters
     Access routing                              link_address           +
     If link_address,
        Remote link address                      [4000nnnnnnnn]         X
        Remote SAP address (04-ec)               [04]                   X

  Adjacent Node Identification Parameters
     Verify adjacent node?                       no                     +

  Link Activation Parameters
     Solicit SSCP sessions?                      yes                    +
     Initiate call when link station is activated? yes                  +
     Activate link station at SNA start up?      yes                    +

  Restart Parameters
     Restart on activation?                      no                     +
     Restart on normal deactivation?             yes                    +
     Restart on abnormal deactivation?           yes                    +
```

Figure 184. Token-Ring Link Station Profile Guidelines

Profile name
Choose any meaningful value.

Use APPN Control Point's XID node ID?
Select yes.

SNA DLC Profile name
Select the name of the SNA DLC profile.

Stop link station on inactivity?
Select no.

LU address registration?
Select no.

Adjacent Node Address Parameters - Access routing
Select link_address.

This parameter is referenced only for **calling** link stations and selective **listening** link stations. For
more information, refer to ""Calling" Versus "Listening" Link Stations" on page 26.

Adjacent Node Address Parameters - Remote link address
For **calling** link stations and selective **listening** link stations, the **Remote link address** parameter
must match the token-ring address of the 3174 establishment controller token-ring gateway. The
token-ring address of the 3174 token-ring gateway is specified in 3174 configuration item 900.

Adjacent Node Address Parameters - Remote SAP address

Specify 04.

Adjacent Node Identification Parameters - Verify adjacent node?

Select no.

Link Activation Parameters - Solicit SSCP sessions?

Select yes.

Link Activation Parameters - Initiate call when link station is activated?

To define a **calling** link station, select yes.

To define a **listening** link station, select no.

Link Activation Parameters - Activate link station at SNA start up?

Select yes.

Restart Parameters - Restart on activation?

Select no.

Restart Parameters - Restart on normal deactivation?

Select yes.

Restart Parameters - Restart on abnormal deactivation?

Select yes.

Specifying the LU 6.2 Local LU Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the LU 6.2 Local LU Profile. Note that all values refer to Figure 185.

```
* Profile name                              [profile_name]
  Local LU name                             [lu_name]
  Local LU alias                            [lu_alias]
  Local LU is dependent?                     yes                 +
        If yes,
            Local LU address (1-255)    [nn]                     #
            Link Station Profile name   [link_station]     +
```

Figure 185. LU 6.2 Local LU Profile Guidelines

Profile name
  Choose any meaningful value.

Local LU name
  This value must match the name on the LU statement in the NCP definitions.

Local LU alias
  Choose any meaningful value.

Local LU is dependent?
  The logical unit can be either dependent (yes) or independent (no). Dependent logical units are managed by an SSCP. In general, independent logical units offer more flexibility.

  For dependent logical units, the LOCADDR value on the LU statement in the NCP definitions is non-zero. For independent logical units, LOCADDR=0.

If yes, Local LU address (1-255)
  If the logical unit is dependent, the **Local LU address** parameter must match the LOCADDR value on the LU statement in the NCP definitions.

If yes, Link Station Profile name
  If the logical unit is dependent, select the profile name of the link station through which SNA Server/6000 communicates with the host system.

Specifying the LU 6.2 Side Information Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the LU 6.2 Side Information Profile. Note that all values refer to Figure 186.

```
* Profile name                          [profile_name]
  Local LU or Control Point alias       [lu_alias]                        +
  Provide only one of the following:
     Partner LU alias                   []                                +
     Fully qualified partner LU name    [network_id.partner_lu_name]
  Mode name                             [#INTER]                          +
  Remote transaction program name (RTPN) [remote_TP_name]                 +
  RTPN in hexadecimal?                   no                               +
```

Figure 186. LU 6.2 Side Information Profile Guidelines

Profile name
   The name you choose must match the name of the PSF for AIX printer.

Local LU or Control Point alias
   Select the local LU alias that you specified in the LU 6.2 Local LU profile.

Fully qualified partner LU name
   Specifies the network identifier of the network in which the host server program resides (followed by a period), and the logical unit name used by the host server program.

   The network identifier portion must match the NETID value in the VTAM start option list (ATCSTRxx).

   The logical unit name portion must match an APPL statement name in a VTAM application program major node. It must also match an LUADD ACBNAME value in the APPC/MVS APPCPMxx member of SYS1.PARMLIB.

Mode name
   Specify #INTER.

Remote transaction program name (RTPN)
   The name you choose must match the TPNAME value in the APPC/MVS TP profile.

RTPN in hexadecimal?
   Specify no.

Specifying the Partner LU 6.2 Location Profile for AFP Upload: The following describes
how to specify the values AFP Upload requires in the Partner LU 6.2 Location Profile. Note that all values
refer to Figure 187.

```
* Profile name                                      [profile_name]
  Fully qualified partner LU name                   [network_id.lu_name]
  Partner LU location method                         owning_cp                    +
  If owning_cp,
     Fully qualified owning Control Point (CP) name [network_id.cp_name]
     Local node is network server for LEN node?      no                           +
     Fully qualified network node server name        []
```

Figure 187. Partner LU 6.2 Location Profile Guidelines

Profile name
> Choose any meaningful value.

Fully qualified partner LU name
> Specifies the network identifier of the network in which the host server program resides (followed by a
> period), and the logical unit name used by the host server program.
>
> The network identifier portion must match the NETID value in the VTAM start option list (ATCSTRxx).
>
> The logical unit name portion must match an APPL statement name in a VTAM application program
> major node. It must also match an LUADD ACBNAME value in the APPC/MVS APPCPMxx member
> of SYS1.PARMLIB.

Partner LU location method
> Select owning_cp.

If owning_cp, Fully qualified owning Control Point (CP) name
> Specifies the network identifier of the network in which the host server program resides (followed by a
> period), and the name of the System Services Control Point (SSCP) for the host system.
>
> The network identifier portion must match the NETID value in the VTAM start option list (ATCSTRxx).
>
> The CP name portion must match the SSCPNAME value in the VTAM start option list (ATCSTRxx).

If owning_cp, Local node is network server for LEN node
> Select no.

If owning_cp, Fully qualified network node server name
> Leave blank.

Configuration Worksheet

Use the following worksheet to record values for SNA Server/6000 configuration parameters that are related to other configuration settings:

SNA Server/6000	Value	APPC/MVS	VTAM	NCP	3174
Figure 188. Sample Configuration Worksheet					
Control Point: Control Point (CP) name				PU: name	
Token-Ring SNA DLC: Receive window count				PU: MAXOUT	item 941: W
Token-Ring Link Station: Remote link address					item 900
LU 6.2 Local LU: Local LU name				LU: name	
LU 6.2 Local LU: Local LU is dependent?				LU: LOCADDR	
LU 6.2 Local LU: Local LU address				LU: LOCADDR	
LU 6.2 Side Information: Fully qualified partner LU name		APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name		
LU 6.2 Side Information: Remote transaction program name (RPTN)		TP profile: TPNAME			
Partner LU 6.2 Location: Fully qualified partner LU name		APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name		
Partner LU 6.2 Location: Fully qualified owning Control Point (CP) name			ATCSTRxx: NETID ATCSTRxx: SSCPNAME		

Chapter 13. Local and Remote 37xx SDLC

Host
Server

37XX
Communication
Controller

3174
Establishment
Controller

Token
Ring

AIX
Client
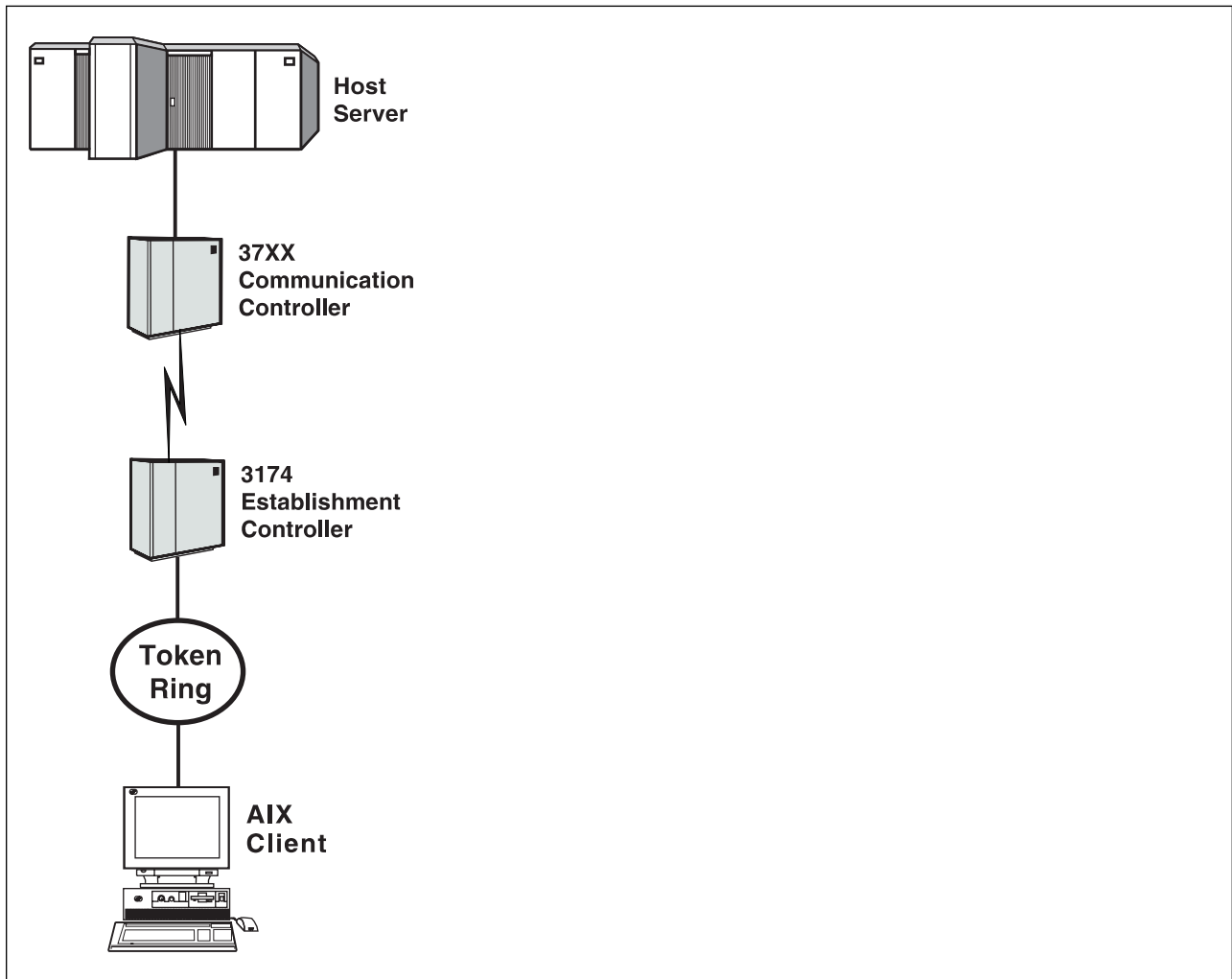
Figure 189. Local and Remote 37xx SDLC

Key Configuration Parameter Interrelationships

Several network components have configuration parameters whose values are related to configuration parameters for other network components. These interrelated parameters must be configured consistently to make end-to-end communication possible.

Several figures follow. They illustrate some of the key interrelationships among configuration parameters for SNA network components.

Figure 190 illustrates the interrelationships in defining the name of the transaction program used by the AFP Upload host server.

Figure 190. Transaction Program Name

Figure 191 illustrates the interrelationships in defining logical unit (LU) names.
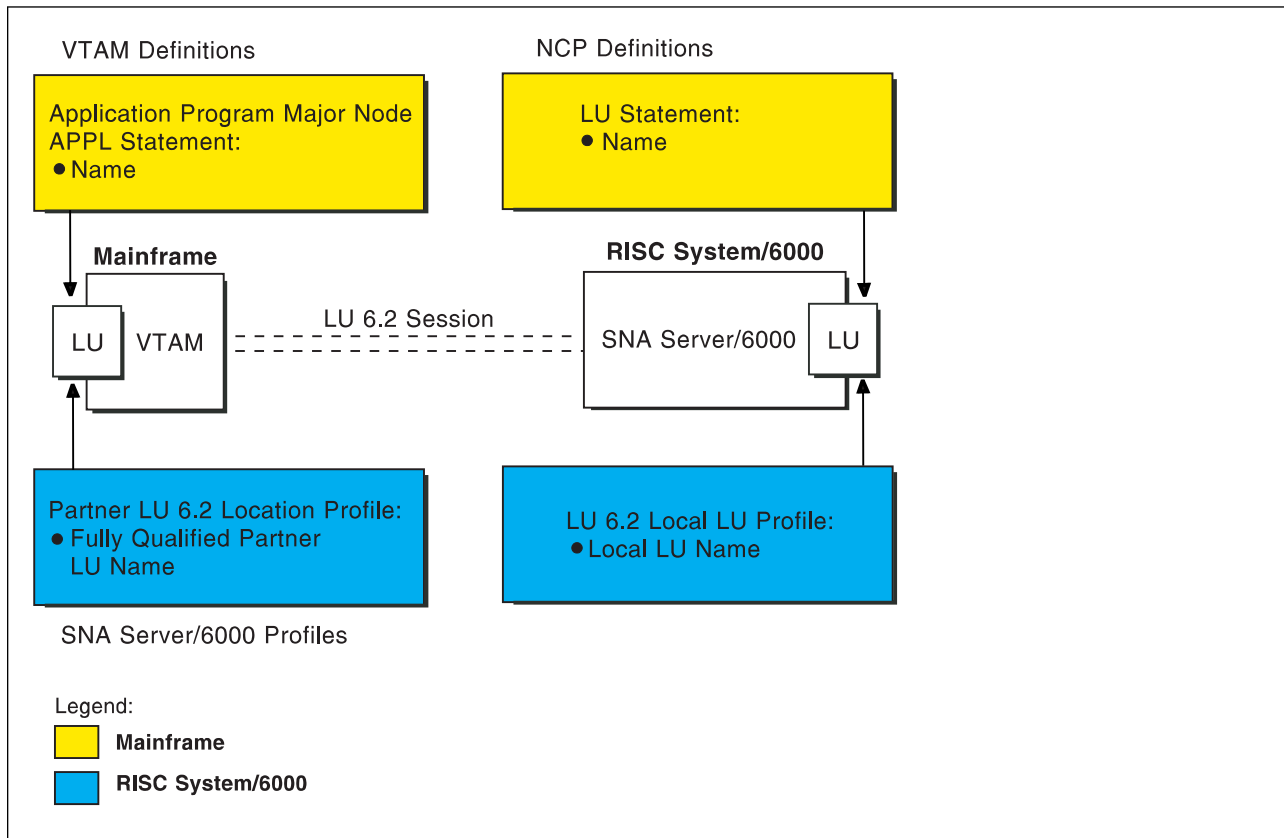
Figure 191. Logical Unit Names

Figure 192 illustrates the interrelationships in defining the local address of the logical unit provided by SNA Server/6000.
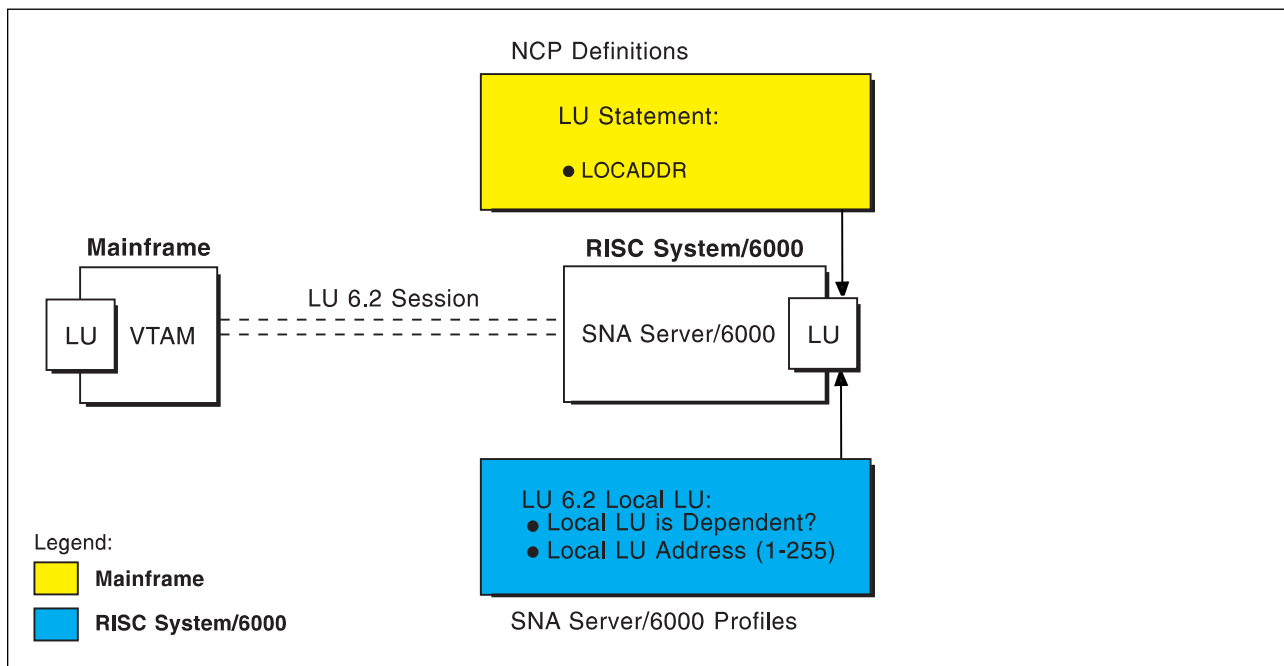
Figure 192. Local Address of Logical Unit

Figure 193 illustrates the interrelationships in defining the name of the physical unit/control point provided by SNA Server/6000.
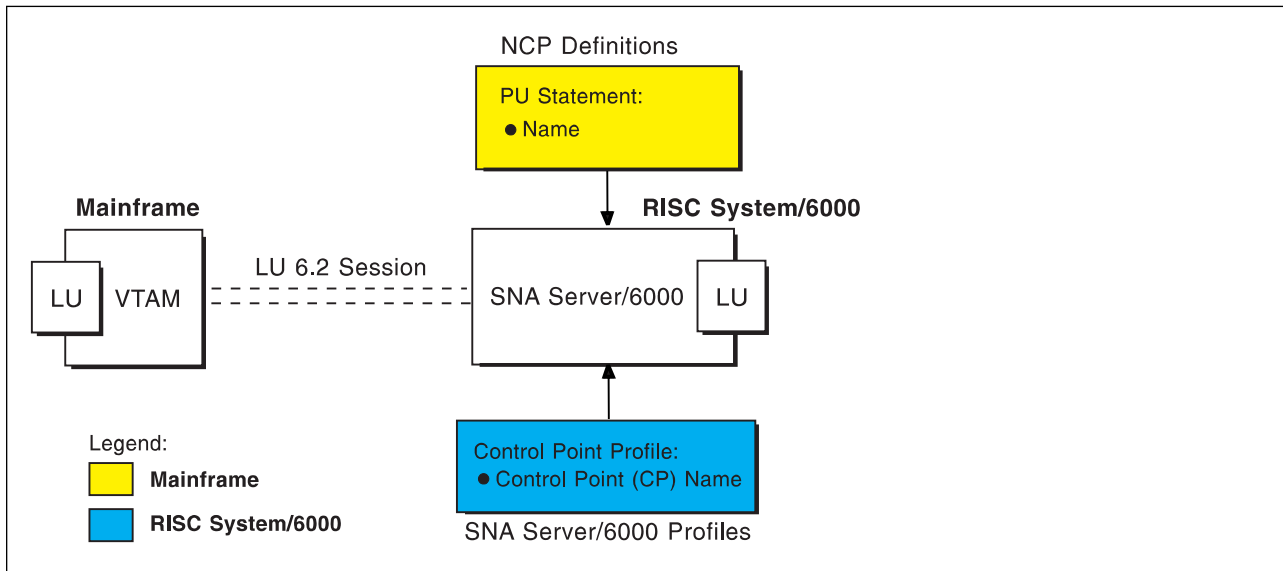
Figure 193. Physical Unit/Control Point Name

Figure 194 illustrates the interrelationships in defining the station address of the link station provided by SNA Server/6000.
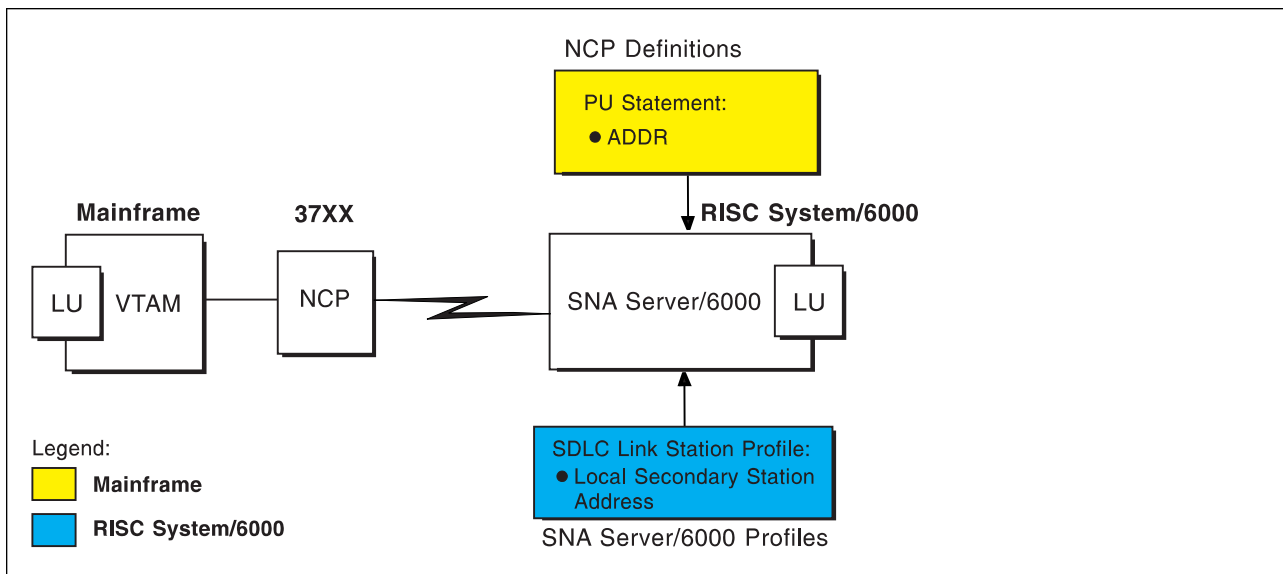
Figure 194. Station Address

Local or Remote 37xx SDLC Example

The following local 37xx SDLC example uses a **non-switched** line. A **non-switched** line is also sometimes called a **private** line or a **leased** line. For an explanation of pertinent configuration parameters, see "Guidelines for Configuring Local or Remote 37xx SDLC" on page 191.

APPC/MVS APPCPMxx Parameters Example

For an explanation of these values, see "Specifying the APPC/MVS APPCPMxx Parameters" on page 191.

```
LUADD
 ACBNAME(MVSLU01),
 SCHED(ASCH),
 TPDATA(SYS1.APPCTP),
 TPLEVEL(SYSTEM),
 BASE

SIDEINFO
 DATASET(SYS1.APPCSI)
```

Figure 195. Sample APPC/MVS APPCPMxx Parameters

APPC/MVS ASCHPMxx Parameters Example

For an explanation of these values, see "Specifying the APPC/MVS ASCHPMxx Parameters" on page 191.

```
CLASSADD
 CLASSNAME(FAST),
 MAX(10),
 MIN(2),
 RESPGOAL(.01),
 MSGLIMIT(500)
```

Figure 196. Sample APPC/MVS ASCHPMxx Parameters

APPC/MVS TP Profile Example

For an explanation of these values, see "Specifying the APPC/MVS TP Profile" on page 192.

```
//JOBNAME  JOB  ACCOUNT
//*
//TPPROF   EXEC PGM=ATBSDFMU
//SYSPRINT DD   SYSOUT=*
//SYSSDLIB DD   DSN=SYS1.APPCTP,DISP=SHR
//SYSSDOUT DD   SYSOUT=*
//SYSIN    DD   DATA,DLM=XX
  TPADD
    TPNAME(AFPSVR1)
    TPSCHED_DELIMITER(##)
      CLASS(FAST)
      JCL_DELIMITER(END_OF_JCL)
//JOBNAME  JOB  ACCOUNT
//STEP     EXEC PGM=AUPSNAS
//STEPLIB  DD   DSN=AUP.SAUPLOAD,DISP=SHR
//         DD   DSN=PLI.V2R3M0.PLILINK,DISP=SHR
//         DD   DSN=PLI.V2R3M0.SIBMLINK,DISP=SHR
//SYSPRINT DD   SYSOUT=*
END_OF_JCL
  KEEP_MESSAGE_LOG(ALWAYS)
  MESSAGE_DATA_SET(AUP.APPCLOG)
  DATASET_STATUS(OLD)
##
XX
/*
```

Figure 197. Sample JCL to Create an APPC/MVS TP Profile

VTAM Start Option List (ATCSTRxx) Example

For an explanation of these values, see "Specifying the VTAM Start Option List (ATCSTRxx)" on page 192.

```
CONFIG=00,          ATCCON MEMBER OF VTAMLST                    X
NETID=USIBMBQ,      NETWORK IDENTIFIER                          X
SSCPNAME=ST1,       SSCP NAME                                   X
  ⋮
```

Figure 198. Sample VTAM Start Option List

VTAM Configuration List (ATCCONnn) Example

For an explanation of these values, see "Specifying the VTAM Configuration List (ATCCONnn)" on page 192.

```
APPCAPLS                                                       X
  ⋮
```

Figure 199. Sample VTAM Configuration List

VTAM Application Program Major Node and Application Program Example

For an explanation of these values, see "Specifying the VTAM Application Program Major Node and Application Program" on page 193.

```
APPCAPLS VBUILD TYPE=APPL
MVSLU01  APPL  ACBNAME=MVSLU01,                                X
               APPC=YES,                                       X
               AUTOSES=0,                                      X
               DDRAINL=NALLOW,                                 X
               DMINWNL=5,                                      X
               DMINWNR=5,                                      X
               DRESPL=NALLOW,                                  X
               DSESLIM=10,                                     X
               LMDENT=100,                                     X
               MODETAB=ISTINCLM,                               X
               PARSESS=YES,                                    X
               SECACPT=CONV,                                   X
               SRBEXIT=YES
```

Figure 200. Sample VTAM Application Program Major Node and Application Program

Network Control Program (NCP) Definitions Example

For an explanation of these values, see "Specifying the Network Control Program Definitions" on page 194.

```
    ⋮
 GRPAIX    GROUP LNCTL=SDLC,              LINE CONTROL                  X
                 TYPE=NCP                 NETWORK CONTROL MODE
 *
 LNAIX     LINE  ADDRESS=(000),           RELATIVE LINE NUMBER          X
                 CLOCKNG=EXT,             MODEM DICTATES SPEED          X
                 SPEED=19200,             USED BY NPM                   X
                 RETRIES=(5,1,2)          FOR TRANSMISSION ERRORS
 *
 AIX01     PU    ADDR=1,                  STATION ADDRESS               X
                 ANS=STOP,                AUTOMATIC NETWORK SHUTDOWN    X
                 PUTYPE=2,                PU TYPE 2 OR PU TYPE 2.1      X
                 XID=YES,                 PU TYPE 2.1                   X
                 MODETAB=ISTINCLM         LOGON MODE TABLE
 *
 UPLD0101 LU     LOCADDR=0                INDEPENDENT LU
    ⋮
```

Figure 201. Sample NCP Definitions

PSF for AIX Printer Example

For an explanation of these values, see "Specifying the PSF for AIX Printer" on page 196.

```
    smit
      PSF for AIX Printing and Configuration
        Administer PSF for AIX
          Manage a PSF for AIX Printer
            Add a Printer or PSF Queue
              Upload
```

Figure 202. SMIT Panel Sequence for PSF for AIX Printer

```
 * Data stream type              AFPDS
 * Printer NAME                   [upload1]        /
   ASCII code-set                 []
 * EBCDIC code-set                [IBM-037]
 * Number of QUEUE DEVICES        [4]                    #
   Description                    []
```

Figure 203. Sample PSF for AIX Printer

SNA Server/6000 Configuration Profile Examples

This section lists sample SNA Server/6000 profiles. Each profile is preceded by the sequence of SMIT panels to access the profile.

- SNA Node

- Control Point

- SDLC EIA232D SNA DLC

- SDLC EIA232D Link Station

- LU 6.2 Local LU

- LU 6.2 Side Information

- Partner LU 6.2 Location

```
   smit
     Communications Applications and Services
       SNA Server/6000
         Configure SNA Profiles
           Advanced Configuration
             SNA System Defaults
               Change/Show a Profile
```

Figure 204. SMIT Panel Sequence For SNA Node Profile

```
Profile name                                  sna
Maximum number of sessions (1-5000)           [200]                    #
Maximum number of conversations (1-5000)      [200]                    #
Restart action                                 once                    +
Recovery resource manager (RRM) enabled?       no                      +
Dynamic inbound partner LU definitions allowed? yes                    +
NMVT action when no NMVT process               reject                  +
Standard output file/device                   [/dev/console]
Standard error file/device                    [/var/sna/sna.stderr]

Comments                                      []
```

Figure 205. Sample SNA Node Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Control Point
                Change/Show a Profile
```

Figure 206. SMIT Panel Sequence For Control Point Profile

```
 Profile name                                     node_cp
 XID node ID                                      [*]
 Network name                                     [USIBMBQ]
 Control Point (CP) name                          [AIX01]
 Control Point alias                              [AIX01]
 Control Point type                                appn_end_node      +
 Maximum number of cached routing trees           [500]              #
 Maximum number of nodes in the TRS database      [500]              #
 Route addition resistance                        [128]              #

 Comments                                         []
```

Figure 207. Sample Control Point Profile

```
 smit
  Communications Applications and Services
    SNA Server/6000
      Configure SNA Profiles
        Advanced Configuration
          Links
            SDLC
              EIA232D
                EIA232D SNA DLC
                  Add a Profile
```

Figure 208. SMIT Panel Sequence For SDLC EIA2332D SNA DLC Profile

```
* Profile name                                   [sdlc3745]
  Data link device name                          [mpq0]            +
  Force disconnect time-out (1-600 seconds)       [120]               #
  User-defined maximum I-Field size?               no               +
      If yes, Max. I-Field size (265-30729)       [256]               #
  Max. num of active link stations (1-255)        [1]                 #
      Number reserved for inbound activation      [0]                 #
      Number reserved for outbound activation     [0]                 #
  Serial encoding                                  nrzi             +
  Request to send (RTS)                            controlled       +
  DTR control                                      DTR              +
  Bit clocking                                     external         +
      If internal, Transmit rate (600-38400)      [1200]              #
  Network type                                     nonswitched      +
  Answer mode                                      automatic        +
  Transmit window count                            7                +
  Retransmit count (1-50)                         [10]                #
  Retransmit threshold (0-100)                    [10]                #

  Secondary and Negotiable stations
      Secondary inactivity time-out (1-120 sec)   [30]                #

  Primary and Negotiable stations
      Primary repoll frequency (1-250, .1 sec)    [30]                #
      Primary repoll threshold (1-100%)           [10]                #
      Primary repoll count (3-50 repols)          [15]                #

  Primary Stations
      Link type                                    point_to_point   +
      Primary idle list poll frequency (30-180 sec) [60]              #
      Primary slow list poll frequency (1-60 sec) [1]                 #

  Link Recovery Parameters
      Retry interval (1-10000 seconds)            [60]                #
      Retry limit (0-500 attempts)                [20]                #

  Comments                                        []
```

Figure 209. Sample SDLC EIA232D SNA DLC Profile

Local or Remote 37xx SDLC

```
smit
   Communications Applications and Services
     SNA Server/6000
       Configure SNA Profiles
         Advanced Configuration
           Links
             SDLC
               EIA232D
                 EIA232D Link Station
                   Add a Profile
```

Figure 210. SMIT Panel Sequence For Token-Ring Link Station Profile

```
* Profile name                                      [sdlc3745]
  Use Control Point's XID node ID?                   yes           +
      If no, XID node ID                             [*]
* SNA DLC Profile name                               [sdlc3745]    +
  Stop link station on inactivity?                   no            +
      If yes, Inactivity time-out (0-10 minutes)     [0]                #
  LU address registration?                           no            +
      If yes, LU Address Registration Profile name   []            +
  Trace link?                                        no            +
      If yes, Trace size                             long          +
  Local secondary station address                    [1]           +
  Station type                                       secondary     +
      If primary,
          Remote secondary station address (1-255)   [1]           +

  Adjacent Node Identification Parameters
      Verify adjacent node?                          no            +
      Network ID of adjacent node                    []
      CP name of adjacent node                       []
      XID node ID of adjacent node (LEN node only)   [*]
      Node type of adjacent node                     learn         +

  Link Activation Parameters
      Solicit SSCP sessions?                         yes           +
      Initiate call when link station is activated?  no            +
      Activate link station at SNA start up?         yes           +
      Activate on demand?                            no            +
      CP-CP sessions supported?                      no            +
      If yes,
          Adjacent network node preferred server?    no            +
      Partner required to support CP-CP sessions?    no            +
      Initial TG number (0-20)                       [0]                #

  Restart Parameters
      Restart on normal deactivation?                yes           +
      Restart on abnormal deactivation?              yes           +

  Transmission Group COS Characteristics
      Effective capacity                             [9600]             #
      Cost per connect time                          [0]                #
      Cost per byte                                  [0]                #
      Security                                       nonsecure     +
      Propagation delay                              telephone     +
      User-defined 1                                 [128]              #
      User-defined 2                                 [128]              #
      User-defined 3                                 [128]              #

  Comments                                           []
```

Figure 211. Sample SDLC EIA232D Link Station Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Sessions
                LU 6.2
                  LU 6.2 Local LU
                    Add a Profile
```

Figure 212. SMIT Panel Sequence For LU 6.2 Local LU Profile

```
* Profile name                                        [UPLD0101]
  Local LU name                                       [UPLD0101]
  Local LU alias                                      [UPLD0101]
  Local LU is dependent?                               no           +
     If yes,
        Local LU address (1-255)                      []                #
        System services control point
          (SSCP) ID (*, 0-65535)                      [*]
        Link Station Profile name                     []           +
  Conversation Security Access List Profile name      []

  Comments                                            []
```

Figure 213. Sample LU 6.2 Local LU Profile

```
    smit
      Communications Applications and Services
        SNA Server/6000
          Configure SNA Profiles
            Advanced Configuration
              Sessions
                LU 6.2
                  LU 6.2 Side Information
                    Add a Profile
```

Figure 214. SMIT Panel Sequence For LU 6.2 Side Information Profile

```
* Profile name                                        [upload1]
  Local LU or Control Point alias                     [UPLD0101]          +
  Provide only one of the following:
     Partner LU alias                                 []                  +
     Fully qualified partner LU name                  [USIBMBQ.MVSLU01]
  Mode name                                           [#INTER]            +
  Remote transaction program name (RTPN)              [AFPSVR1]
  RTPN in hexadecimal?                                 no                 +

  Comments                                            []
```

Figure 215. Sample LU 6.2 Side Information Profile

```
   smit
     Communications Applications and Services
       SNA Server/6000
         Configure SNA Profiles
           Advanced Configuration
             Sessions
               LU 6.2
                 Partner LU 6.2 Location
                   Add a Profile
```

Figure 216. SMIT Panel Sequence For Partner LU 6.2 Location Profile

```
* Profile name                                          [MVSLU01]
  Fully qualified partner LU name                        [USIBMBQ.MVSLU01]
  Partner LU location method                              owning_cp
  If owning_cp,
     Fully qualified owning Control Point (CP) name      [USIBMBQ.ST1]          +
     Local node is network server for LEN node?           no
     Fully qualified newtork node server name            []
  If link_station,
     Local LU name                                       []
     Link Station Profile name                           []                     +

  Comments                                               []
```

Figure 217. Sample Partner LU 6.2 Location Profile

Configuration Worksheet Example

The following worksheet records values for SNA Server/6000 configuration parameters that are related to other configuration settings:

Figure 218. Sample Configuration Worksheet				
SNA Server/6000	**Value**	**APPC/MVS**	**VTAM**	**NCP**
Control Point: Control Point (CP) name	AIX01			PU: name
SDLC Link Station: Local secondary station address	1			PU: ADDR
LU 6.2 Local LU: Local LU name	UPLD0101			LU: name
LU 6.2 Local LU: Local LU is dependent?	no			LU: LOCADDR
LU 6.2 Local LU: Local LU address	n/a			LU: LOCADDR
LU 6.2 Partner LU: Fully qualified partner LU name	USIBMBQ.MVSLU01	APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name	
LU 6.2 Side Information: Remote Transaction program name (RPTN)	AFPSVR1	TP profile: TPNAME		
Partner LU 6.2 Location: Fully qualified partner LU name	USIBMBQ.MVSLU01	APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name	
Partner LU 6.2 Location: Fully qualified owning Control Point (CP) name	USIBMBQ.ST1		ATCSTRxx: NETID ATCSTRxx: SSCPNAME	

Guidelines for Configuring Local or Remote 37xx SDLC

The following provides guidance for implementing the examples displayed in "Local or Remote 37xx SDLC Example" on page 179. Note that a subset of the example is displayed below, displaying the pertinent parameters and describing which of these require you to specify *variable_names* and which require a specific name or number, such as MODETAB=ISTINCLM.

The guidelines describe how to configure a **non-switched** line. A **non-switched** line is also sometimes called a **private** line or a **leased** line.

Note: These guidelines do not describe how to configure a **switched** line.

Specifying the APPC/MVS APPCPMxx Parameters

The pertinent statements and parameters for the APPCPMxx member of SYS1.PARMLIB are illustrated in Figure 219 and described below.

```
LUADD
  ACBNAME(lu_name),
  SCHED(ASCH),
  TPDATA(tp_profile_dataset),
  TPLEVEL(level)
```

Figure 219. APPC/MVS APPCPMxx Parameter Guidelines

ACBNAME
    Specifies the name of a logical unit to be controlled by APPC/MVS. The value must match an APPL statement name in a VTAM application program major node.

SCHED
    Specify ASCH to indicate that inbound conversation requests should be scheduled by the APPC/MVS transaction scheduler (ASCH).

TPDATA
    Specify the name of the VSAM key-sequenced dataset (KSDS) that contains TP profiles for the logical unit referenced by the ACBNAME parameter.

TPLEVEL
    Controls access, for the logical unit referenced by the ACBNAME parameter, to execution of transaction programs (TP's).

    Specify SYSTEM to allow access to all authenticated MVS users.

Specifying the APPC/MVS ASCHPMxx Parameters

AFP Upload requires that a class of transaction initiators be defined to the APPC/MVS transaction scheduler (ASCH) so the class can be referenced in the APPC/MVS TP profile that describes an AFP Upload server. AFP Upload does not have special requirements for the parameters used in defining the class.

Specifying the APPC/MVS TP Profile

Use the APPC/MVS ATBSDFMU administration utility program to create an APPC/MVS TP profile.

The TPNAME value must match the **Remote transaction program name (RTPN)** parameter in the SNA/6000 LU 6.2 Side Information profile.

The scheduler information in the TP profile must include JCL that the ASCH scheduler uses to run the transaction program. The JCL must execute the AFP Upload server program, named AUPSNAS. This program is written in the PL/I language. It requires that the PL/I PLILINK and SIBMLINK libraries be included in the STEPLIB definition. The AFP Upload server program also requires that the SYSPRINT DD name be allocated. Unless the SYSPRINT DD statement refers to DUMMY or a SYSOUT data set, the data set referenced by the SYSPRINT DD statement must have the following attributes:

directory blocks: 0

record format: VA

record length: 125

block size: 129

For more information about the SYSPRINT DD name used by the host server program, refer to "Specifying the SYSPRINT DD Statement" on page 10.

Specifying the VTAM Start Option List (ATCSTRxx)

You must specify the values illustrated in Figure 220 and described below:

```
CONFIG=nn,              ATCCON MEMBER OF VTAMLST      X
NETID=network_id,       NETWORK IDENTIFIER            X
SSCPNAME=sscp_name,     SSCP NAME                     X
   ⋮
```

Figure 220. VTAM Start Option List Guidelines

CONFIG
   Specifies the ATCCON*nn* member to use.

NETID
   Specifies the network identifier for the host system.

SSCPID
   Specifies the System Services Control Point (SSCP) name for the host system.

Specifying the VTAM Configuration List (ATCCONnn)

The VTAM configuration list indicates the application program major nodes that should be made available when VTAM is started. Include the application program major node that contains the application program that APPC/MVS uses:

```
appl_prog_major_node      X
   ⋮
```

Specifying the VTAM Application Program Major Node and Application Program

The pertinent statements and parameters for the VTAM Application Program Major Node and Application Program are illustrated in Figure 221 and described below.

```
majname VBUILD TYPE=APPL
minname APPL   ACBNAME=minname,                X
               APPC=YES,                        X
               MODETAB=ISTINCLM,                X
               PARSESS=YES,                      X
               SECACPT=CONV,                     X
               SRBEXIT=YES
```

Figure 221. VTAM Application Program Major Node and Application Program Guidelines

ACBNAME
Specify the minor node name to assign to the application program. This name must be unique within the domain in which the application program resides.

APPC
Specify YES.

MODETAB
Specify ISTINCLM or the name of an alternative VTAM logon mode table to be used to associate each logon mode name with a set of session parameters for the application program.

PARSESS
Specify YES, or do not include the PARSESS parameter. PARSESS defaults to YES when APPC=YES.

This value indicates that the application program can have multiple concurrent (parallel) sessions with an independent logical unit.

SECACPT
Specify CONV.

This value indicates that the application program's logical unit supports conversation requests containing access security subfields.

SRBEXIT
Specify YES.

This value indicates that the application program is authorized to use service request block (SRB) processing in its exit routines.

Specifying the Network Control Program Definitions

The keywords and values for the Network Control Program (NCP) definitions are illustrated in Figure 222 and described below:

```
group_name GROUP LNCTL=SDLC,                    X
                 TYPE=NCP
*
line_name  LINE  ADDRESS=(nnn),                 X
                 CLOCKNG=xxx,                   X
                 SPEED=nnnnn
*
pu_name    PU    ADDR=nn,                       X
                 PUTYPE=2,                      X
                 XID=YES,                       X
                 MODETAB=mode_table
*
lu_name    LU    LOCADDR=nn
```

Figure 222. NCP Definition Guidelines

The following describes the pertinent keywords on the **GROUP** statement:

LNCTL
Specify SDLC.

TYPE
Specify NCP.

The following describes the pertinent keywords on the **LINE** statement:

ADDRESS
Specifies the relative line number for this line. The relative line number depends upon the port and line adapter type used in the 37xx communication controller.

CLOCKNG
Specifies whether the modem (EXT) or the communication scanner for the line (INT) provides clocking.

Ensure that the CLOCKNG keyword is spelled without the letter I.

SPEED
Specifies the data rate for the line in bits per second. The SPEED keyword is required if CLOCKNG=INT. The SPEED keyword is also required if you use NetView Performance Monitor (NPM) to collect NCP performance data, even when CLOCKNG=EXT.

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

Note that MODETAB is an LU keyword, but is included on the PU statement. NCP definitions support a *sift-down* effect that allows you to code a keyword on a higher-level statement, so that you do not need to code it on each lower-level statement for which the same value is used. There is only one logical unit in the guideline presented here, so the *sift-down* effect is for demonstration only. If the MODETAB keyword is specified on the PU statement, it does not have to be specified on any of the LU statements.

ADDR

Specifies the link station address used by SNA Server/6000 on the RISC System/6000. This value must equal the **Local secondary station address** in the SNA Server/6000 SDLC Link Station Profile.

Note: The ADDR value is recorded using hexadecimal digits while the **Local secondary station address** value is recorded using decimal digits.

MAXDATA

Specifies the maximum amount of data (in bytes) that the physical unit can receive in one path information unit (PIU). This amount includes the transmission header (TH) and the request/response header (RH).

Note: It is not necessary to include the MAXDATA keyword for a type 2.1 physical unit, such as SNA Server/6000. A type 2.1 physical unit (PU) provides a value for MAXDATA during format-3 XID exchange.

MAXOUT

Specifies the maximum number of path information units (PIUs) that are sent to the physical unit before waiting for a response from that physical unit.

Note: It is not necessary to include the MAXOUT keyword for a type 2.1 physical unit, such as SNA Server/6000. A type 2.1 physical unit (PU) provides a value for MAXDATA during format-3 XID exchange.

PUTYPE

Specify 2, which represents either a type 2 physical unit (PU), or a type 2.1 physical unit such as SNA Server/6000.

XID

Specify YES. This indicates that the physical unit can receive and respond to an XID while in normal disconnected mode (NDM). XID=YES is required for a type 2.1 physical unit, such as SNA Server/6000.

MODETAB

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

The following describes the pertinent keywords on the **LU** statement.

LOCADDR

LOCADDR=0 specifies that this logical unit is an independent logical unit. An SSCP-LU session does not have to be established prior to an LU-LU session with an independent logical unit. For independent logical units, the **Local LU is dependent?** parameter in the SNA Server/6000 LU 6.2 Local LU profile must be no.

To use a dependent logical unit, specify a value between 1 and 255 for LOCADDR. Also, in the SNA Server/6000 LU 6.2 Local LU profile, specify yes for the **Local LU is dependent?** parameter and the LOCADDR value for the **Local LU address** parameter.

Specifying the PSF for AIX Printer

The pertinent parameters for the PSF for AIX printer are illustrated in Figure 223 and described below:

```
* Printer NAME              [printer_name]          /
  ASCII code-set            [ascii_code-set]
* EBCDIC code-set           [ebcdic_code-set]
* Number of QUEUE DEVICES   [#qdevices]             #
```

Figure 223. PSF for AIX Printer Guidelines

Printer NAME

The name you choose must match the SNA Server/6000 LU 6.2 Side Information Profile name.

ASCII code-set

Specify the ASCII code-set in which attributes such as class, forms, and destination are specified on your AIX system. Before sending the attributes to the host server program, PSF for AIX converts the attributes from the specified ASCII code-set to the specified EBCDIC code-set.

If you do not specify an ASCII code set, PSF for AIX uses the current code set on your AIX system.

EBCDIC code-set

Specify the EBCDIC code-set used on the host system to which print files are sent and spooled. Before sending the attributes to the host server program, PSF for AIX converts attributes such as class, forms, and destination from the specified ASCII code-set to the specified EBCDIC code set.

Number of QUEUE DEVICES

Specify the number of queue devices to be created for the PSF for AIX printer. Multiple queue devices allow PSF for AIX to simultaneously send one file while converting the next file.

You can define up to nine queue devices. However, note that PSF for AIX requires more RISC System/6000 memory for each queue device.

Specifying the SNA Server/6000 Profiles

This section contains guidelines on configuring the SNA Server/6000 Profiles. Configure these profiles through the System Management Interface Tool (SMIT) panels. Examples of these panels and the hierarchical paths to each SNA definition are illustrated in "SNA Server/6000 Configuration Profile Examples" on page 183.

Note: You must have **root** authority to add or change SNA Server/6000 configuration profiles. After you add or change SNA Server/6000 configuration profiles, you must **verify** and **update** them. For more information about performing this task, see "Verifying and Updating SNA Server/6000 Configuration Profiles" on page 24.

Specifying the SNA Node Profile for AFP Upload: AFP Upload requires no modifications to the SNA Node profile.

Specifying the Control Point Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the Control Point Profile. Note that all values refer to Figure 224.

```
XID node ID                     [*]
Control Point (CP) name         [cp_name]
Control Point type              appn_end_node        +
```

Figure 224. Control Point Profile Guidelines

XID node ID
   Pertains to switched protocols. The **XID Node ID** value is not relevant in non-switched line configurations.

Control Point (CP) name
   Pertains to switched protocols. The **Control Point (CP) name** value is not relevant in non-switched line configurations. By convention, however, the **Control Point (CP) name** value is usually the same as the PU name value.

Control Point type
   Specify either appn_end_node or appn_network_node.

Specifying the SDLC SNA DLC Profile for AFP Upload: The following displays how to
specify the values AFP Upload requires in the SDLC SNA DLC Profile. Note that all values refer to
Figure 225.

There are several varieties of SDLC SNA DLC profile, for example EIA232D, V.35, V.25, and many others.
A similar set of configuration parameters is pertinent in most of the varieties.

```
* Profile name                    [profile_name]
  Data link device name           [mpqn]              +
  Serial encoding                   xxxx               +
  Request to send (RTS)             xxxx               +
  DTR control                       xxxx               +
  Bit clocking                      xxxx
     If internal, Transmit rate
     (600-38400)                   [nnnn]               #
  Network type                     nonswitched         +
  Answer mode                      automatic           +
```

Figure 225. SDLC SNA DLC Profile Guidelines

Profile name
   Choose any meaningful value.

Data link device name
   Select one of the available adapters.

Serial encoding
   The value you select must be consistent with the NRZI value on the NCP LINE statement.

   Select nrzi (non-return to zero inverted) if the NRZI value is YES. The NRZI value defaults to YES for
   an SDLC LINE statement. Select nrz (non-return to zero) if the NRZI value is NO.

Request to send (RTS)
   Indicates whether SNA Server/6000 activates and deactivates the RTS signal (controlled) or holds it
   active at all times (continuous).

   The appropriate setting depends upon the modem's requirements.

DTR control
   Indicates how SNA Server/6000 operates the Data Terminal Ready (DTR) signal. The appropriate
   setting depends upon the modem's requirements.

Bit clocking
   Indicates whether the modem provides clocking (external) or the RISC System/6000 provides
   clocking (internal).

If internal, Transmit rate (600-38400)
   In cases where **Bit clocking** is internal, indicates the transmission rate in bits per second.

Network type
   Select nonswitched.

Answer mode
   Select automatic.

Specifying the SDLC Link Station Profile for AFP Upload: The following displays how to specify the values AFP Upload requires in the SDLC Link Station Profile. Note that all values refer to Figure 226.

There are several varieties of SDLC Link Station profile, for example EIA232D, V.35, V.25, etc. A similar set of configuration parameters is pertinent in most of the varieties.

```
* Profile name                                  [profile_name]
* SNA DLC Profile name                           [DLC_profile_name]
  Stop link station on inactivity?               no
  LU address registration?                       no
  Local secondary station address               [nn]
  Station type                                    secondary

  Adjacent Node Identification Parameters
     Verify adjacent node?                        no

  Link Activation Parameters
     Solicit SSCP sessions?                       yes
     Initiate call when link station is activated? no
     Activate link station at SNA start up?       yes                    +

  Restart Parameters
     Restart on normal deactivation?              yes
     Restart on abnormal deactivation?            yes
```

Figure 226. SDLC SNA DLC Profile Guidelines

Profile name
   Choose any meaningful value.

SNA DLC Profile name
   Select the name of the SNA DLC profile.

Stop link station on inactivity?
   Select no.

LU address registration?
   Select no.

Local secondary station address
   This value must equal the ADDR value on the NCP PU statement.

   Note: The ADDR keyword uses hexadecimal notation while the **Local secondary station address** uses decimal notation. For example, if ADDR=C1 then the **Local secondary station address** must be 193.

Station type
   Select secondary.

Adjacent Node Identification Parameters - Verify adjacent node?
   Select no.

Local or Remote 37xx SDLC

Link Activation Parameters - Solicit SSCP sessions?
   Select yes.

Link Activation Parameters - Initiate call when link station is activated?
   Select no.

Link Activation Parameters - Activate link station at SNA start up?
   Select yes.

Restart Parameters - Restart on normal deactivation?
   Select yes.

Restart Parameters - Restart on abnormal deactivation?
   Select yes.

Specifying the LU 6.2 Local LU Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the LU 6.2 Local LU Profile. Note that all values refer to Figure 227.

```
* Profile name                            [profile_name]
  Local LU name                           [lu_name]
  Local LU alias                          [lu_alias]
  Local LU is dependent?                   no                        +
        If yes,
            Local LU address (1-255)    [ ]                              #
            Link Station Profile name   [ ]                         +
```

Figure 227. LU 6.2 Local LU Profile Guidelines

Profile name
Choose any meaningful value.

Local LU name
This value must match the name on the LU statement in the NCP definitions.

Local LU alias
Choose any meaningful value.

Local LU is dependent?
The logical unit can be either dependent (yes) or independent (no). Dependent logical units are managed by an SSCP. In general, independent logical units offer more flexibility.

For dependent logical units, the LOCADDR value in the NCP LU statement is non-zero. For independent logical units, LOCADDR=0.

If yes, Local LU address (1-255)
If the logical unit is dependent, the **Local LU address** parameter must match the LOCADDR value in the NCP LU statement.

If yes, Link Station Profile name
If the logical unit is dependent, select the profile name of the link station through which SNA Server/6000 communicates with the host system.

Specifying the LU 6.2 Side Information Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the LU 6.2 Side Information Profile. Note that all values refer to Figure 228.

```
 * Profile name                              [profile_name]
   Local LU or Control Point alias           [lu_alias]                          +
   Provide only one of the following:
      Partner LU alias                        []                                 +
      Fully qualified partner LU name         [network_id.partner_lu_name]
   Mode name                                  [#INTER]                           +
   Remote transaction program name (RTPN)     [remote_TP_name]                   +
   RTPN in hexadecimal?                        no                                +
```

Figure 228. LU 6.2 Side Information Profile Guidelines

Profile name
The name you choose must match the name of your PSF for AIX printer.

Local LU or Control Point alias
Select the local LU alias that you specified in the LU 6.2 Local LU profile.

Fully qualified partner LU name
Specifies the network identifier of the network in which the host server program resides (followed by a period), and the logical unit name used by the host server program.

The network identifier portion must match the NETID value in the VTAM start option list (ATCSTRxx).

The logical unit name portion must match an APPL statement name in a VTAM application program major node. It must also match an LUADD ACBNAME value in the APPC/MVS APPCPMxx member of SYS1.PARMLIB.

Mode name
Specify #INTER.

Remote transaction program name (RTPN)
The name you choose must match the TPNAME value in the APPC/MVS TP profile.

RTPN in hexadecimal?
Specify no.

Specifying the Partner LU 6.2 Location Profile for AFP Upload: The following describes how to specify the values AFP Upload requires in the Partner LU 6.2 Location Profile. Note that all values refer to Figure 229.

```
* Profile name                                     [profile_name]
  Fully qualified partner LU name                  [network_id.lu_name]
  Partner LU location method                        owning_cp                    +
  If owning_cp,
     Fully qualified owning Control Point (CP) name [network_id.cp_name]
     Local node is network server for LEN node?      no                          +
     Fully qualified network node server name        []
```

Figure 229. Partner LU 6.2 Location Profile Guidelines

Profile name
Choose any meaningful value.

Fully qualified partner LU name
Specifies the network identifier of the network in which the host server program resides (followed by a period), and the logical unit name used by the host server program.

The network identifier portion must match the NETID value in the VTAM start option list (ATCSTRxx).

The logical unit name portion must match an APPL statement name in a VTAM application program major node. It must also match an LUADD ACBNAME value in the APPC/MVS APPCPMxx member of SYS1.PARMLIB.

Partner LU location method
Select owning_cp.

If owning_cp, Fully qualified owning Control Point (CP) name
Specifies the network identifier of the network in which the host server program resides (followed by a period), and the name of the System Services Control Point (SSCP) for the host system.

The network identifier portion must match the NETID value in the VTAM start option list (ATCSTRxx).

The CP name portion must match the SSCPNAME value in the VTAM start option list (ATCSTRxx).

If owning_cp, Local node is network server for LEN node
Select no.

If owning_cp, Fully qualified network node server name
Leave blank.

Configuration Worksheet

Use the following worksheet to record values for SNA Server/6000 configuration parameters that are related to other configuration settings:

SNA Server/6000	Value	APPC/MVS	VTAM	NCP
Control Point: Control Point (CP) name				PU: name
SDLC Link Station: Local secondary station address				PU: ADDR
LU 6.2 Local LU: Local LU name				LU: name
LU 6.2 Local LU: Local LU is dependent?				LU: LOCADDR
LU 6.2 Local LU: Local LU address				LU: LOCADDR
LU 6.2 Partner LU: Fully qualified partner LU name		APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name	
LU 6.2 Side Information: Remote transaction program name (RTPN)		TP profile: TPNAME		
Partner LU 6.2 Location: Fully qualified partner LU name		APPCPMxx: LUADD ACBNAME	ATCSTRxx: NETID APPL: name	
Partner LU 6.2 Location: Fully qualified owning Control Point (CP) name			ATCSTRxx: NETID ATCSTRxx: SSCPNAME	

Figure 230. Configuration Worksheet

Glossary

This glossary includes terms and definitions from:

- The *American National Dictionary for Information Systems*, ANSI X3.172-1990, copyright 1990 by the American National Standards Institute (ANSI). Copies can be purchased from the American Standards Institute, 11 West 42nd Street, New York, New York 10036. Definitions are identified by the symbol (A) after the definition.

- The ANSI/EIA Standard--440-A, *Fiber Optic Terminology* Copies may be purchased from the Electric Industries Association, 2001 Pennsylvania Avenue, N.W., Washington, DC 20006. Definitions are identified by the symbol (E) after the definition.

- The *Information Technology Vocabulary*, developed by Subcommittee 1, Joint Technical Committee 1, of the International Organization for Standardization and the International Electrotechnical Commission (ISO/IEC JTC1/SC1). Definitions of published parts of this vocabulary are identified by the symbol (I) after the definition; definitions taken from draft international standards, committee drafts, and working papers being developed by ISO/IEC JTC1/SC1 are identified by the symbol (T) after the definition, indicating that final agreement has not yet been reached among the participating National Bodies of SC1.

- The Network Working Group Request for Comments: 1208.

References

The following cross references are used in this glossary:

Contrast with. This refers to a term that has an opposed or substantively different meaning.

Synonym for. This indicates that the term has the same meaning as a preferred term, which is defined in its proper place in the glossary.

Synonymous with. This is a backward reference from a defined term to all other terms that have the same meaning.

See. This refers the reader to multiple-word terms that have the same last word.

See also. This refers the reader to terms that have a related, but not synonymous, meaning.

Deprecated term for. This indicates that the term should not be used. It refers to a preferred term, which is defined in its proper place in the glossary.

A

ACF/NCP. Advanced Communications Function for the Network Control Program. Synonym for *NCP*.

ACF/VTAM. Advanced Communications Function for the Virtual Telecommunications Access Method. Synonym for *VTAM*.

Advanced Peer-to-Peer Networking (APPN). An extension to SNA featuring (a) greater distributed network control that avoids critical hierarchical dependencies, thereby isolating the effects of single points of failure; (b) dynamic exchange of network topology information to foster ease of connection, reconfiguration, and adaptive route selection; (c) dynamic definition of network resources; and (d) automated resource registration and directory lookup. APPN extends the LU 6.2 peer orientation for end-user services to network control and supports multiple LU types, including LU 2, LU 3, and LU 6.2.

advanced program-to-program communication (APPC). (1) The general facility characterizing the LU 6.2 architecture and its various implementation in products. (2) Sometimes used to refer to the LU 6.2 architecture and its product implementations as a whole, or to an LU 6.2 product feature in particular, such as an APPC application program interface.

APPC. Advanced program-to-program communication.

application transaction program. A program written for or by a user to process the user's application; in an SNA network, an end user of a type 6.2 logical unit. Contrast with *service transaction program*.

APPN. Advanced Peer-to-Peer Networking.

B

basic conversation. An LU 6.2 conversation type specified by the allocating transaction program. Transaction programs using basic conversation have available to them a wider variety of LU 6.2 functions, but they are responsible for more of their own error recovery and must manage details of the data stream used on the conversation. Contrast with *mapped conversation*.

basic information unit (BIU). In SNA, the unit of data and control information passed between help-session. It consists of a request/response header (RH) followed by a request/response unit (RU).

basic link unit (BLU). In SNA, the unit of data and control information transmitted over a link by data link control.

basic transmission unit (BTU). In SNA, the unit of data and control information passed between path control components. A BTU can consist of one or more path information units (PIUs). See also *blocking of PIUs*.

BF. Boundary function.

BIU. Basic information unit.

BIU segment. In SNA, the portion of a basic information unit (BIU) that is contained within a path information unit (PIU). It consists of either a request/response header (RH) followed by all or part of a request/response unit (RU), or of only a part of an RU.

blocking of PIUs. In SNA, an optional function of path control that combines multiple path information units (PIUs) in a single basic transmission unit (BTU).

Note: When blocking is not done, a BTU consists of one PIU.

BLU. Basic link unit.

border node. An APPN network node that interconnects APPN networks having independent topology databases in order to support LU-LU sessions between these networks. See *extended border node* and *peripheral border node*.

boundary function. (1) In SNA, a capability of a subarea node to provide protocol support for attached peripheral nodes, such as: (a) interconnecting subarea path control and peripheral path control elements, (b) performing session sequence numbering for low-function peripheral nodes, and (c) providing session-level pacing support. (2) In SNA, the component that provides these capabilities.

boundary node (BN). In SNA, a subarea node with boundary function.

Note: A subarea node may be a boundary node, an intermediate routing node, both, or neither, depending on how it is used in the network.

BTU. Basic transmission unit.

C

chain. (1) A group of logically linked user data records processed by LU 6.2. (2) A group of request units delimited by begin-chain and end-chain. Responses are always single-unit chains. See *RU chain*.

class of service (COS). A set of characteristics (such as route security, transmission priority, and bandwidth) used to construct a route between session partners. The class of service is derived from a mode name specified by the initiator of a session.

communication controller. A type of communication control unit whose operations are controlled by one or more programs stored and executed in the unit. It manages the details of line control and the routing of data through a network.

control point (CP). (1) A component of an APPN or LEN node that manages the resources of that node. In an APPN node, the CP is capable of engaging in CP-CP session with other APPN nodes. In an APPN network node, the CP also provides services to adjacent end nodes in the APPN network. (2) A component of a node that manages resources of that node and optionally provides services to other nodes in the network. Examples are a system services control point (SSCP) in a type 5 subarea node, a network node control point (NNCP) in an APPN network node, and an end node control point (ENCP) in an APPN or LEN end node. An SSCP and an NNCP can provide services to other nodes.

conversation. A logical connection between two transaction programs using an LU 6.2 session. Conversations are delimited by brackets to gain exclusive use of a session.

conversation-level security. See *session-level security*. See also *end-user verification*.

COS. Class of service.

CP. Control point.

CP name. A network-qualified name of a control point (CP), consisting of a network ID qualifier identifying the network (or name space) to which the CP's node belongs, and a unique name within the scope of that network ID identifying the CP. Each APPN or LEN node has one CP name, assigned to it at system-definition time.

cross-domain. In SNA, pertaining to control or resources involving more than one domain.

D

data link control (DLC). A set of rules used by nodes on a data link (such as an SDLC link or a token ring) to accomplish an orderly exchange of information.

dependent LU. See *SSCP-dependent LU*.

DLC. Data link control.

E

Ethernet. A 10-Mbps baseband local area network that allows multiple stations to access the transmission medium at will without prior coordination, avoids contention by using carrier sense and deference, and resolves contention by using collision detection and transmission. Ethernet uses carrier sense multiple access with collision detection (CSMA/CD).

exchange identification (XID). A specific type of basic link unit that is used to convey node and link characteristics between adjacent nodes. XIDs are exchanges between link stations before and during link activation to establish and negotiate link and node characteristics, and after link activation to communicate changes in these characteristics.

H

half-duplex (HD, HDX). In data communication, pertaining to transmission in only one direction at a time. Contrast with *duplex*. See also *half-duplex operation* and *half-duplex transmission*.

half-duplex operation. A mode of operation of a data link in which data can be transmitted in both directions, one way at a time. (T)

half-duplex transmission. Data transmission in either direction, one direction at a time. (I) (A)

I

independent LU. See *SSCP-independent LU*.

L

link. The combination of the link connection (the transmission medium) and two link stations, one at each end of the link connection. A link connection can be shared among multiple links in a multipoint or token-ring configuration.

link connection. The physical equipment providing two-way communication between one link station and one or more other link stations; for example, a telecommunication line and data circuit-terminating equipment (DCE). Synonymous with *data circuit*.

link station. The hardware and software components within a node representing a connection to an adjacent node over a specific link. For example, if node A is the primary end of a multipoint line that connects to three adjacent nodes, node A will have three link stations representing the connection to the adjacent nodes. See also *adjacent link station*.

local address. In SNA, an address used in a peripheral node in place of a network address and transformed to or from a network address by the boundary function in a subarea node.

local area network (LAN). (1) A computer network located on a user's premises within a limited geographical area. Communication within a local area network is not subject to external regulation; however, communication across the LAN boundary may be subject to some form of regulation (T) (2) A network in which a set of devices are connected to one another for communication and that can be connected to a larger network. See also *Ethernet* and *token ring*. (3) Contrast with *metropolitan area network (MAN)* and *wide area network (WAN)*.

logical link control (LLC). The data link control (DLC) LAN sublayer that provides two types of DLC operation for the orderly exchange of information. The first type is connectionless service, which allows information to be sent and received without establishing a link. The LLC sublayer does not perform error recovery or flow control for connectionless service. The second type is connection-oriented service, which requires establishing a link prior to the exchange of information. Connection-oriented service provides sequenced information transfer, flow control, and error recovery.

logical unit (LU). A type of network accessible unit that enables end users to gain access to network resources and communicate with each other.

logical unit (LU) 6.2. A type of logical unit that supports general communication between programs in a distributed processing environment. LU 6.2 is characterized by (a) a peer relationship between session partners, (b) efficient utilization of a session for multiple transactions, (c) comprehensive end-to-end error processing, and (d) a generic application program interface (API) consisting of structured verbs that are mapped into a product implementation.

LU. Logical unit.

LU-LU session. A logical connection between two logical units (LUs) in an SNA network that typically provides communication between two end users.

LU type. The classification of an LU in terms of the specific subset of SNA protocols and options it supports for a given session, namely:

- The mandatory and optional values allowed in the session activation request

- The usage of data stream controls, function management headers (FMHs), request unit parameters, and sense data values.

- Presentation services protocols such as those associated with FMH usage

LU types 0, 1, 2, 3, 4, 6.1, 6.2, and 7 are defined.

LU type 6.2 (LU 6.2). A type of logical unit that supports general communication between programs in a distributed processing environment. LU 6.2 is characterized by (a) peer relationship between session partners, (b) efficient utilization of a session for multiple transactions, (c) comprehensive end-to-end processing, and (d) a generic application program interface consisting of structured verbs that are mapped into a product implementation.

LU 6.2. Logical unit 6.2.

LU 6.2 session. A session that is initiated by VTAM on behalf of a logical unit (LU) 6.2 application program, or a session initiated by a remote LU in which the application program specifies that VTAM is to control the session by using the APPCCMD macroinstruction.

M

MAC. Medium access control.

mapped conversation. An LU 6.2 conversation type specified by the allocating transaction program. Transaction programs using a mapped conversation can exchange messages of arbitrary format regardless of the underlying data stream. System-defined or user-defined mappers can perform data transformation for the transaction programs. See also *conversation*. Contrast with *basic conversation*.

medium access control (MAC). In LANs, the sublayer of the data link control layer that support medium-dependent functions and uses the services of the physical layer to provide services to the logical link control (LLC) sublayer. The MAC sublayer includes the method of determining when a device has access to the transmission medium.

MVS. Multiple Virtual Storage. Implies MVS/370, the MVS/XA product, and the MVS/ESA product.

N

NCP. Network Control Program.

Network Control Program (NCP). An IBM licensed program that provides communication controller support for single-domain, multiple-domain, and interconnected network capability.

network identifier. A 1- to 8-byte customer-selected name or an 8-byte IBM-registered name that uniquely identifies a specific subnetwork.

node. (1) Any device, attached to a network, that transmits and receives data. (2) An endpoint of a link or a junction common to two or more links in a network. Nodes can be processors, communication controllers, cluster controllers, or terminals. Nodes can vary in routing and other functional capabilities.

node type. A designation of a node according to the protocols it supports or the role it plays in a network. Node type was originally denoted numerically (as 1, 2.0, 2.1, 4, and 5) but is now characterized more specifically by protocol type (APPN network node, LEN node, subarea node, and interchange node, for example) because type 2.1 nodes and type 5 nodes support multiple protocol types and roles.

P

pacing. A technique by which a receiving component controls the rate of transmission of a sending component to prevent overrun or congestion. See *session-level pacing*, *send pacing*, and *virtual route (VR) pacing*. See also *flow control*.

pacing window. (1) The path information units (PIUs) that can be transmitted on a virtual route before a virtual-route pacing response is received, indicating that the virtual route receiver is ready to receive more PIUs on the route. (2) The requests that can be transmitted on the normal flow in one direction on a session before a session-level pacing response is received, indicating that the receiver is ready to accept the next group of requests. (3) Synonymous with *pacing group*.

path information unit (PIU). A message unit consisting of a transmission header (TH) alone, or a TH followed by a basic information unit (BIU) or a BIU segment. See also *transmission header*.

peripheral link. In SNA, a link between a subarea and a peripheral node. See also *route extension (REX)*.

peripheral node. A node that uses local addresses for routing and therefore is not affected by changes in network addresses. A peripheral node requires boundary-function assistance from an adjacent subarea

node. A peripheral node can be a type 1, 2.0, or 2.1 node connected to a subarea boundary node.

physical unit (PU). The component that manages and monitors the resources (such as attached links and adjacent link stations) associated with a node, as requested by an SSCP via an SSCP-PU session. An SSCP activates a session with the physical unit in order to indirectly manage, through the PU, resources of the node such as attached links. This term applies to type 2.0, type 4, and type 5 nodes only. See also *peripheral PU* and *subarea PU*.

PIU. Path information unit.

R

request header (RH). The control information that precedes a request unit (RU). See also *request/response header (RH)*.

request/response header (RH). Control information associated with a particular RU. The RH precedes the request/response unit (RU) and specifies the type of RU (request unit or response unit).

request unit (RU). A message unit that contains control information, end-user data, or both.

response header (RH). A header, optionally followed by a response unit (RU), that indicates whether the response is positive or negative and that may contain a pacing response. See also *negative response*, *pacing response*, and *positive response*.

response unit (RU). A message unit that acknowledges a request unit. It may contain prefix information received in a request unit. If positive, the response unit may contain additional information (such as session parameters in response to BIND SESSION). If negative, the response unit contains sense data defining the exception condition.

RH. Request/response header.

ring station. The functions necessary for connecting to the local area network and for operating with the token-ring protocols. These include token handling, transferring copied frames from the ring to the using node's storage, maintaining error counters, observing Medium Access Control (MAC) sublayer protocols (for address acquisition, error reporting, or other duties), and (in the full-function native mode) directing frames to the correct Data Link Control link station. A ring station is an instance of a MAC sublayer in a node attached to a ring.

RU. Request/response unit.

S

SDLC. Synchronous Data Link Control.

segmentation. A process by which path control (PC) divides basic information units (BIUs) into smaller units, called BIU segments, to accommodate smaller buffer sizes in adjacent nodes. Both segmentation and segment assembly are optional PC features. The support for either or both is indicated in the BIND request and response.

session. (1) In network architecture, for the purpose of data communication between functional units, all the activities which take place during the establishment, maintenance, and release of the connection. (T) (2) A logical connection between two network accessible units (NAUs) that can be activated, tailored to provide various protocols, and deactivates, as requested. Each session is uniquely identified in a transmission header (TH) accompanying any transmissions exchanged during the session.

SNA. Systems Network Architecture.

SNA network. The part of a user-application network that conforms to the formats and protocols of Systems Network Architecture. It enables reliable transfer of data among end users and provides protocols for controlling the resources of various network configurations. The SNA network consists of network accessible units (NAUs), boundary function, gateway function, and intermediate session routing function components; and the transport network.

SSCP. System services control point.

SSCP-dependent LU. An LU that requires assistance from a system services control point (SSCP) in order to initiate an LU-LU session. It requires and SSCP-LU session.

SSCP-independent LU. An LU that is able to activate an LU-LU session (that is, send a BIND request) without assistance from an SSCP. It does not have an SSCP-LU session. Currently, only an LU 6.2 can be an independent LU.

SSCP-LU session. In SNA, a session between a system services control point (SSCP) and a logical unit (LU). The session enables the LU to request the SSCP to help initiate LU-LU sessions.

SSCP-PU session. In SNA, a session between a system services control point (SSCP) and a physical unit (PU); SSCP-PU sessions allow SSCPs to send requests to and receive status information from individual nodes in order to control the network configuration.

subarea. A portion of the SNA network consisting of a subarea node, attached peripheral nodes, and associated resources. Within a subarea node, all network accessible units (NAUs), links, and adjacent link stations (in attached peripheral or subarea nodes) that are addressable within the subarea share a common subarea address and have distinct element addresses.

system services control point (SSCP). A component within a subarea network for managing the configuration, coordinating network operator and problem determination requests, and providing directory services and other session services for end users of the network. Multiple SSCPs, cooperating as peers with one another, can divide the network into domains of control, with each SSCP having a hierarchical control relationship to the physical units and logical units within its own domain.

Systems Network Architecture (SNA). The description of the logical structure, formats, protocols, and operational sequences for transmitting information units through, and controlling the configuration and operation of, networks. The layered structure of SNA allows the ultimate origins and destinations of information, that is, the end users, to be independent of and unaffected by the specific SNA network services and facilities used for information exchange.

T

TH. Transmission header.

token ring. (1) According to IEEE 802.5, network technology that control media access by passing a token (special packet or frame) between media-attached stations. (2) A FDDI or IEEE 802.5 network with a ring topology that passes tokens from one attaching ring station (node) to another. (3) See also *local area network (LAN)*.

token-ring network. (1) A ring network that allows unidirectional data transmission between data stations, by a token passing procedure, such that the transmitted

data return to the transmitting station. (T) (2) A network that uses a ring topology, in which tokens are passed in a circuit from node to node. A node that is ready to send can capture the token and insert data for transmission.

TP. Transaction program.

transaction program. A program that processes transactions in an SNA network. There are two kinds of transaction programs: application transaction programs and service transaction programs. See also *conversation*.

transmission header (TH). Control information, optionally followed by a basic information unit (BIU) or a BIU segment, that is created and used by path control to route message units and to control their flow within the network. See also *path information unit*.

type 2.0 node. A node that attaches to a subarea network as a peripheral node and provides a range of end-user services but no intermediate routing services.

type 2.1 node. A node that can be an APPN network node, an APPN end node, or a LEN node. It can also attach as a peripheral node to a subarea boundary node in the same way as a type 2.0 node.

V

Virtual Telecommunications Access Method (VTAM). An IBM licensed program that controls communication and the flow of data in an SNA network. It provides single-domain, multiple-domain, and interconnected network capability.

VTAM. Virtual Telecommunications Access Method. Synonymous with *ACF/VTAM*.

W

XID. Exchange identification.

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Version 2.1

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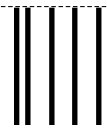**Readers' Comments — We'd Like to Hear from You**
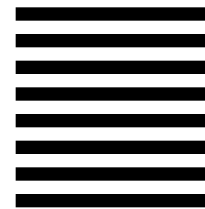S544-5422-01

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