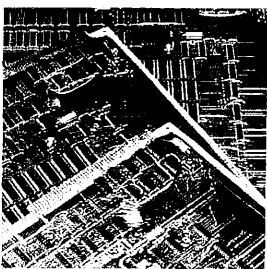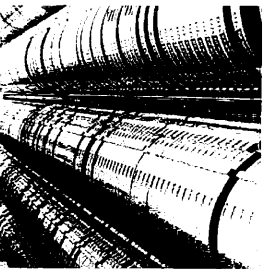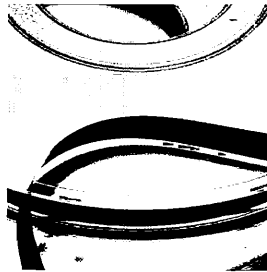Prime Computer, Inc.

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PRIME/SNA™
Operator's Guide
Release 1.0

PRIME/SNA™
Operator's Guide

First Edition

by

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and

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Contents

About
This Book

The PRIME/SNA™ Operator's Guide describes the tasks involved in controlling the PRIME/SNA Server and Interactive Subsystems, and provides information on the PRIMOS external commands used for performing these tasks.

This book is intended for those persons who are responsible for the daily operation of a Prime system on which PRIME/SNA software has been successfully installed. At some organizations, the PRIME/SNA operator will be a Prime System operator who is working under the direction of a PRIME/SNA Administrator. At other organizations the duties of the PRIME/SNA Administrator may include operation of the system that is running PRIME/SNA.

ORGANIZATION OF THE BOOK

This guide is organized into five chapters and five appendixes, as follows:

- Chapter 1 presents background information on PRIME/SNA components and their functions.

- Chapter 2 introduces the various tasks involved in running PRIME/SNA software and the commands used for each task.

- Chapter 3 gives details on using the SNA_SERVER command and its options to control the PRIME/SNA Server Subsystem.

- Chapter 4 provides details on using the SNA_3270 command and options to control the PRIME/SNA Interactive Subsystem.

- Chapter 5 describes how to control Interactive Printer Emulation with the SNA_PRINT command and its subcommands.

- Appendix A contains problem determination and troubleshooting information.

- Appendix B lists and explains event messages that are logged in the Server event log files.

- Appendix C lists and explains event messages that are logged in the 3270 LU Manager event log files.

- Appendix D gives instructions for using the EDIT_EFU forms editing utility.

- Appendix E contains a PRIME/SNA Commands Quick Reference card.

HOW TO USE THIS GUIDE

This book assumes a basic understanding of operating procedures for a Prime system, but not necessarily a familiarity with the features of PRIME/SNA. If you are unfamiliar with PRIME/SNA components and their functions, begin by reading Chapter 1 for the required background information. If you are already familiar with PRIME/SNA, begin with Chapter 2.

Chapters 3 through 5 contain both tutorial and reference information. An initial reading through these chapters, in order, will give you an overview of their content. Then you can easily refer back to specific command options, instructions, and other information as questions arise when you are operating PRIME/SNA.

Appendix A provides problem determination and trouble-shooting information on common problems related to PRIME/SNA installation, configuration, security, and memory requirements.

Appendixes B and C contain messages that are logged in the Server and Interactive LU Manager log files when various subsystem events occur. Some of these messages also appear at the system terminal. Thus, the PRIME/SNA operator can refer to Appendixes B and C for additional information on those messages that are displayed at the system terminal. In addition, the PRIME/SNA Administrator can use these appendixes to interpret the contents of the various log files.

Appendix D describes how to use the EDIT_EFU command for creating or modifying the forms files used with PRIME/SNA Interactive Printer Emulation.

Appendix E provides a summary of all the PRIME/SNA commands.

OTHER USEFUL PUBLICATIONS

Users of this guide should have the following Prime publications available for reference:

- Operator's System Overview (DOC9298-1LA)

- Operator's Guide to the Spooler Subsystem (DOC9303-1LA)

- Operator's Guide to System Commands (DOC9304-1LA)

- PRIMENET Guide (DOC3710-193P)

Other books in the PRIME/SNA document set include:

- PRIME/SNA Administrator's Guide (DOC8908-1LA), which includes detailed information on PRIME/SNA architecture, installation, and configuration.

- PRIME/SNA Interactive Terminal User's Guide (DOC8910-1LA), which describes how to use the Prime PT200 terminal as an emulated IBM 3278 Display Station.

PRIME DOCUMENTATION CONVENTIONS

The following conventions are used in command formats, statement formats, and in examples throughout this document. Examples illustrate the uses of these commands and statements in typical applications. Terminal input may be entered in either uppercase or lowercase.

Convention	Explanation	Example
UPPERCASE	In command formats, words in uppercase indicate the actual names of commands, statements, and keywords. They can be entered in either uppercase or lowercase.	SLIST
lowercase	In command formats, words in lowercase indicate items for which the user must substitute a suitable value.	LOGIN user-id

Abbreviations	If a command or statement has an abbreviation, it is indicated by underlining. In cases where the command or directive itself contains an underscore, the abbreviation is shown below the full name, and the name and abbreviation are placed within braces.	<u>LOG</u>OUT $\left\{\begin{array}{l}\text{SET\_QUOTA}\\ \text{SQ}\end{array}\right\}$
<u>Underlining</u> <u>in</u> examples	In examples, user input is underlined but system prompts and output are not.	OK, <u>RESUME MY_PROG</u> This is the output of MY_PROG.CPL OK,
Brackets	Brackets enclose a list of two or more optional items. Choose none, one, or more of these items.	SPOOL $\left[\begin{array}{l}\text{-LIST}\\ \text{-CANCEL}\end{array}\right]$
Braces	Braces enclose a list of items. Choose one and only one of these items.	CLOSE $\left\{\begin{array}{l}\text{filename}\\ \text{ALL}\end{array}\right\}$
Ellipsis ...	An ellipsis indicates that the preceding item may be repeated.	item-x[,item-y]...
Parentheses ( )	In command or statement formats, parentheses must be entered exactly as shown.	DIM array (row,col)
Hyphen -	Wherever a hyphen appears as the first character of an option, it is a required part of that option.	SPOOL -LIST

1

PRIME/SNA
Overview

This chapter provides the following background information you need to know before you begin using PRIME/SNA:

- A few facts about PRIME/SNA

- How PRIME/SNA communicates with an IBM SNA (Systems Network Architecture) host system

- A few facts about PRIME/SNA commands

- The purpose and contents of the SNA configuration file

- Some basic concepts about how you use PRIME/SNA to establish and maintain communications with an IBM SNA host system

INTRODUCING PRIME/SNA

PRIME/SNA is a group of subsystems that allows Prime users to access application programs running on one or more IBM host systems in an SNA network.

The two main components of PRIME/SNA are:

- The Server Subsystem

- The Interactive Subsystem

First Edition

The Server Subsystem, or simply the Server, manages the communication between an IBM host and the PRIME/SNA Interactive Subsystem. The Interactive Subsystem relies on the support of the Server. Before users can access IBM host applications, you must start the Server Subsystem.

The Interactive Subsystem manages logical devices (defined as CRTs and printers) that are used by PRIME/SNA users to communicate with applications programs on an IBM host. The Interactive Subsystem has three parts:

- The 3270 LU Manager — the main component of the Interactive Subsystem. The 3270 LU Manager provides services for Terminal Emulation and Printer Emulation and manages the Interactive Subsystem.

- Terminal Emulation — allows PT200 terminal users on a Prime system to interact with applications on an IBM host system. Terminal Emulation makes the PT200 emulate an IBM 3278 Display Station.

- Printer Emulation — accepts data from an IBM host system, converts the data's format, and sends the data to the Prime Spooler. Printer Emulation emulates both the IBM 3287 and 3289 printers.

Figure 1-1 illustrates the relationship between a system running PRIME/SNA software and two IBM host systems in an SNA network.

SNA (Systems Network Architecture) can be thought of as IBM's version of PRIMENET in that SNA allows different types of computers and devices that support a common architecture to communicate, to share resources, and to share application programs.

SNA defines sets of rules (a protocol), that govern how data is transported through an SNA network. Because SNA makes it possible for many different types of computers and devices to communicate, SNA is very complex. PRIME/SNA implements a subset of SNA that allows Prime users to access SNA network applications using the IBM 3270 Information Display System protocols. The PRIME/SNA Server and Interactive Subsystems make it unnecessary for you to understand or become involved with SNA and 3270 protocol.

COMMUNICATING WITH AN IBM HOST

Using PRIME/SNA commands, you establish and maintain connections with one or more IBM host systems. The physical part of the connection, the actual passing of bits across a communications medium (for example, microwave link and dialup lines) is handled by communications controllers at each end of the communications link. PRIME/SNA uses the ICS2 (Intelligent Communications Subsystem II) I/O controller to transmit and receive data across a physical link.
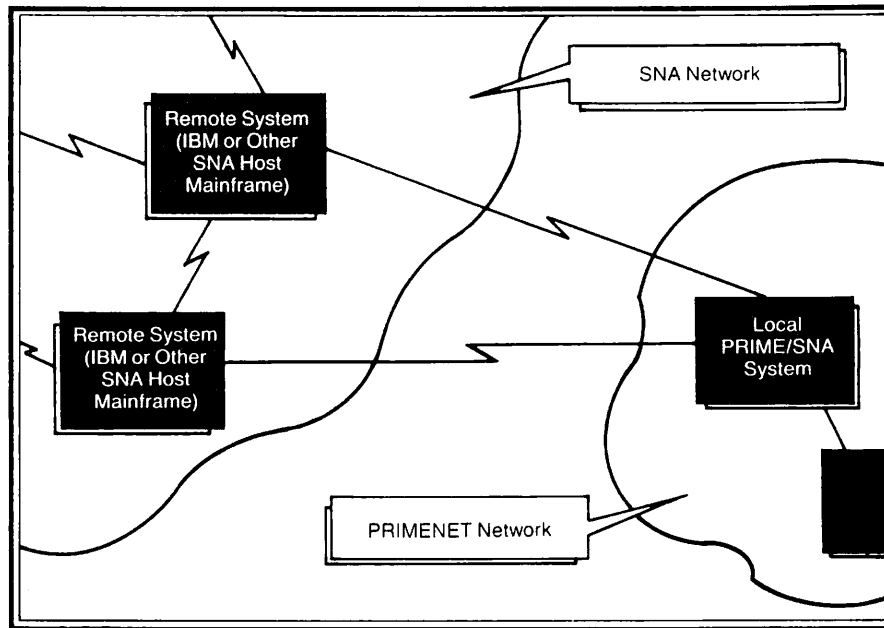
PRIME/SNA and an SNA Network
Figure 1-1

SNA usually uses a protocol called SDLC (Synchronous Data Link Control), for communications across a physical link. SDLC software, resident in the ICS2, passes data received from an IBM host to the PRIME/SNA Server. This data consists of control information (used by the Server and its counterpart on the IBM host to manage the connection) and user data (from an application being run by one of the PRIME/SNA users on your system).

The Server passes user data and some control information from the Server to the PRIME/SNA Interactive Subsystem. The 3270 LU Manager, in turn, as part of the Interactive Subsystem, passes the user data to the Terminal or Printer Emulation program. Terminal Emulation handles user data for logical devices defined as CRTs; Printer Emulation handles user data for logical devices defined as printers. These logical devices are mapped to PT200 terminals or physical printers (via the PRIMOS spool queue) on the Prime system. When sending data to the IBM host, the flow is reversed.

In a typical PRIME/SNA environment several PRIME/SNA users (PT200 terminal users or printers) are communicating with IBM host applications concurrently through logical devices. The logical devices are in session with the IBM host and act as conduits for PRIME/SNA user data. PRIME/SNA takes care of the delivery of user data from a logical device to an end-user, such as a person at a terminal or a printer.

For example, when Joe Clerk wants to run an inventory control program on an IBM host, he runs the Terminal Emulation program by invoking the SNADSC command. The Terminal Emulation program requests a logical device from a pool of logical devices managed by the 3270 LU Manager.

First Edition

If the 3270 LU Manager has a free logical device available, it gives it to the Terminal Emulation program and Joe Clerk can log on to the IBM host.

Joe Clerk may also require the services of a printer to print out inventory lists. When he enters a print command (as part of the inventory program), the IBM host might then request the services of a logical printer. The request is processed by the Server and passed to the 3270 LU Manager. The 3270 LU Manager checks the pool of logical devices for a free logical printer. If one is available, the host is informed and Printer Emulation is given the logical device. When the host begins sending data, Printer Emulation receives the data and spools the output to the spool queue on the local Prime system (or a spool queue on another designated Prime system).

In summary, the PRIME/SNA Server performs almost all of the SNA processing. The PRIME/SNA Interactive Subsystem manages the passing of data to and from PRIME/SNA users and the IBM host.

Figure 1-2 illustrates the basic components of PRIME/SNA architecture and how they relate to SNA architecture. The 3270 LU Manager, Terminal and Printer Emulation, and logical devices are components of the Interactive Subsystem.
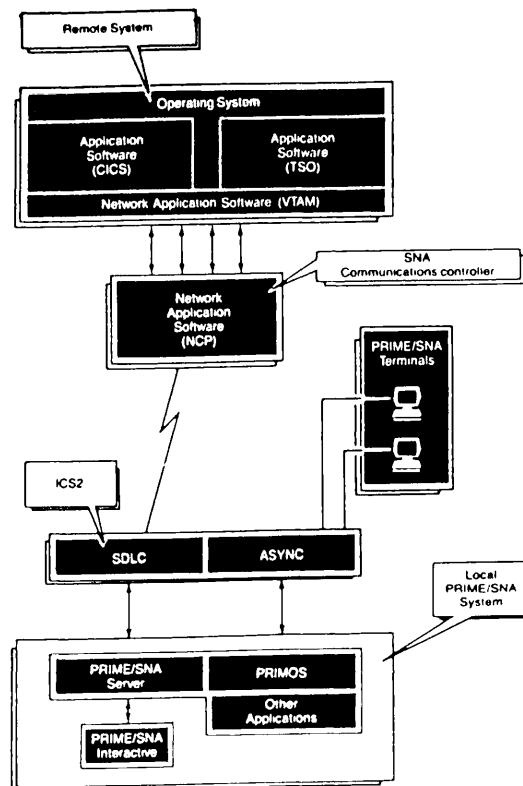
PRIME/SNA Architecture
Figure 1-2

PRIME/SNA COMMANDS

An SNA host system is referred to in PRIME/SNA terminology as a remote system. You use PRIME/SNA operator commands to manage connections with one or more remote systems.

PRIME/SNA operator commands and their main functions are as follows:

Command	Description
SNA_SERVER	Invokes the Server Subsystem, starts and stops the local PRIME/SNA support for connections with one or more remote systems, and provides status information on the Server and remote system connections.
SNA_3270	Invokes the 3270 LU Manager, starts and stops the local PRIME/SNA support for Terminal and Printer Emulation, and provides status information for the 3270 LU Manager and logical devices configured for terminal and printer emulation.
SNA_PRINT	Invokes Printer Emulation, starts and stops logical devices that have been configured as printers and provides status information for logical printers being supported.

In addition, you may be required to use the PRIME/SNA Administrator commands, SNA_SERVER_CONFIG and SNA_3270_CONFIG, to examine and alter information in the SNA configuration file (described below).

THE SNA CONFIGURATION FILE

The SNA Configuration file is a SEGSAM file created and maintained by your PRIME/SNA Administrator. It has a main section containing line, remote system, and LU (logical unit) port information used by the Server. Appended to the main section of the file are subfiles (referred to as Interactive configuration entries) that define logical devices and associated characteristics. Each Interactive configuration entry is identified by an entry ID and represents a different configuration of logical devices.

For example, Figure 1-3 shows the information contained in a typical SNA configuration file. In this example, PRIME/SNA is configured to allow PRIME/SNA users to access applications in two remote systems using two communications lines.

Application 1 is an interactive data entry program that requires periodic printing of standard forms by several users sharing a single printer.

First Edition

For these users, the PRIME/SNA Administrator has defined five LU ports in the SNA configuration file — four of the ports as CRTs, and one port as a printer.

Application 2 is an interactive data entry program that requires periodic printing of a variety of forms by one user on several printers. Thus, the SNA configuration file defines four LU ports — one port as a CRT and three ports as printers.

LINE1	LINE2
Line characteristics	Line characteristics
REMSYS1	REMSYS2
Remote system characteristics	Remote system characteristics
PORT2 (CRT)	PORT2 (CRT)
Logical device characteristics	Logical device characteristics
PORT3 (CRT)	PORT3 (Printer)
Logical device characteristics	Logical device characteristics
PORT4 (CRT)	PORT4 (Printer)
Logical device characteristics	Logical device characteristics
PORT5 (CRT)	PORT5 (Printer)
Logical device characteristics	Logical device characteristics
PORT6 (Printer)	
Logical device characteristics	

Sample Configuration
Figure 1-3

PRIME/SNA defines the following entities in the SNA configuration file:

- Line

- Remote system

- LU port

- Device

Line

A PRIME/SNA line consists of the hardware and software support required for PRIME/SNA to communicate with a remote system over a physical communications medium. The hardware consists of a line adapter card (LAC) that supports synchronous protocol, an RS232 or V.35 interface, and cabling to support either modems or direct connections. The software is resident in the ICS2 and consists of the set of functions necessary to support the line using the SDLC protocol.

The characteristics of each line are defined in the SNA configuration file.

Lines can be assigned to groups to make it easier to start and stop several lines at once. Line group assignments are defined by your PRIME/SNA Administrator in the SNA configuration file.

The example in Figure 1-3 shows a configuration of two lines with one remote system defined for each line.

Remote System

A remote system is the PRIME/SNA term for an IBM host system. You use Server commands to start (and stop) local PRIME/SNA support for one or more connections with one or more remote systems. When you start a remote system you are not actually starting the connection between your Prime system and an IBM host. You are asking the Server to make the resources on your system available to the IBM host. The Server must wait for the IBM host system to request a connection with your system. The connection is established through a dialogue between the Server and the IBM host system.

A remote system is the fundamental resource of the Server. Although requests can be specified for lines, a line is simply a collection of one or more remote systems.

First Edition

Remote systems can be assigned to groups to make it easier to start and stop several remote systems at once. Remote system group assignments are defined in the SNA configuration file.

The example configuration shown in Figure 1-3 has two remote systems, REMSYS1 and REMSYS2.

LU Port

An LU (Logical Unit) port is the logical access through which host applications communicate with PRIME/SNA terminal users and printers. Your PRIME/SNA Administrator determines the number of LU ports that are required by PRIME/SNA users for each remote system and defines LU ports in the SNA configuration file. LU ports are assigned numbers and optional names. (LU port number one is reserved.)

Your PRIME/SNA Administrator also must define the type and characteristics of the logical device assigned to each LU port. LU ports are defined in an Interactive configuration entry as CRTs or printers.

When a remote system connection is activated by the host system, the host system also activates the LU ports configured for that remote system. To allow the host system to communicate with the logical devices configured for these LU ports, you direct the 3270 LU Manager to start the logical devices.

In the sample configuration shown in Figure 1-3, five LU ports are configured for REMSYS1 (remote system 1) as follows:

Port Number	Port Name
2	LINE1.REMSYS1.PORT2
3	LINE1.REMSYS1.PORT3
4	LINE1.REMSYS1.PORT4
5	LINE1.REMSYS1.PORT5
6	LINE1.REMSYS1.PORT6

When creating the Interactive configuration entry, your PRIME/SNA Administrator defines the logical device assignment for each port. In this example, the LU ports are defined as follows:

Port Number	Device Type
2	CRT
3	CRT
4	CRT
5	CRT
6	PRINTER

Device

A PRIME/SNA device is a logical device that is defined in the Interactive configuration entry as a CRT or printer. Logical devices correspond to LU ports in the SNA configuration file and are started by the 3270 LU Manager.

The characteristics of each logical device are defined in the Interactive configuration entry to correspond with the requirements of the remote system applications that they will communicate with.

A CRT has the following characteristics associated with it:

Characteristic	Description
Default Screen Size	The maximum physical default display size of the CRT screen used to emulate an IBM 3278 Display Station.
Alternate Screen Size	The maximum alternate display size of the CRT screen used to emulate an IBM 3270 Display Station.
Local Copy to Printer Allowed	Indicates whether or not output to the CRT can be directed to a local printer.
Local Copy Print Destination	The print destination for the local copy operation using the options and arguments of the PRIMOS SPOOL command.
Local Copy to File Allowed	Indicates whether or not the screen image contents can be copied to a file.
Local Copy File Destination	The PRIMOS pathname for a local copy file operation.

A printer has the following characteristics associated with it:

Characteristic	Description
Print Stream Support	Whether the printer has SCS (SNA Character String) print capability, 3270 (3270 Data Stream) print capability, or both. In SCS mode, print formatting is controlled by SCS control codes in the data stream sent from the host system.

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Default Buffer Size   The default buffer size allocated
for the printer.

Alternate Buffer Size   The alternate buffer size allocated
for the printer.

Devices can be assigned to groups so that logical devices with similar charcteristics can be grouped together. Device group assignments are defined in the Interactive configuration entry.

THE OPEN FOR BUSINESS CONCEPT

When you activate the PRIME/SNA subsystems, it is like opening up a department store for business in the morning. By opening the doors, the management is encouraging customers to enter and begin business transactions at the various counters in the store. At various times during the day it may become necessary to close down some counters (such as during lunchtime or coffee breaks).

At the end of the business day, the store is closed in an orderly fashion; individual counters in each department are closed, departments are closed, and finally the entire store is closed.

In a PRIME/SNA environment, you "open the doors" to host systems with which PRIME/SNA will communicate by starting the Server Subsystem and specifying lines and remote systems configured in the SNA configuration file. You also start the components of the Interactive Subsystem (the 3270 LU Manager and Printer Emulation) in order to make available the logical devices required by the individual applications your PRIME/SNA users will be running during the day.

Typically, once you have established a connection with a host system, the connection remains active until some external event (such as a line going down or a problem at the host) breaks the connection and requires it to be reestablished. Most likely you will be starting and stopping logical devices associated with remote systems much more frequently.

However, some installations may require a more predictable operation. In these cases your PRIME/SNA Administrator will consult with personnel at the various host systems to establish a regular schedule for starting and stopping connections during the normal working day. This eliminates unnecessary overhead during idle hours when PRIME/SNA users are not active or when a host system does not allow connections to exist.

2
Summary of Operator Tasks

This chapter introduces the system operator duties and the PRIME/SNA commands involved in managing PRIME/SNA software and PRIME/SNA network resources. The following operator tasks are described in this chapter:

- Using PRIME/SNA commands

- Monitoring the PRIME/SNA* directory

- Starting and stopping PRIME/SNA services

- Obtaining status information on PRIME/SNA resources

- Controlling the writing of PRIME/SNA statistics to disk

- Controlling message logging for PRIME/SNA

- Handling problems

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USING PRIME/SNA COMMANDS

There are three external PRIMOS commands you use to perform the tasks required to manage PRIME/SNA:

- SNA_SERVER

- SNA_3270

- SNA_PRINT

The SNA_SERVER and SNA_3270 commands have options that you specify to perform various operator tasks. Most of the options for both commands are similar.

For example, -START is a valid option for both commands. SNA_SERVER -START starts the Server as a phantom process and activates local PRIME/SNA support for lines and remote systems. SNA_3270 -START starts the 3270 LU Manager as a phantom process and activates local support for logical devices.

The SNA_PRINT command on the other hand, uses subcommands. When you issue the SNA_PRINT command, Printer Emulation is started and the following prompt is displayed on your screen:

```
[SNA_PRINT Revision 1.0 - 19.4]
Logfile: LOG.030.28-FEB-85.09.14.46

Command:
```

You then enter subcommands to control the operation of logical printers.

Detailed information on the format and usage of these commands is included in Chapters 3 through 5.

MONITORING THE PRIME/SNA* DIRECTORY

PRIME/SNA* is a top-level directory that contains all the files needed to run PRIME/SNA software, including event-logging and statistics files.

To check the size and contents of the PRIME/SNA* directory, use the ATTACH and LD commands to list the directory at your terminal, or use the COMOUTPUT command to write the directory listings to a file.

The following example shows the contents of a typical PRIME/SNA* directory.

OK, <u>A PRIME/SNA*</u>
OK, <u>LD</u>

<SNASRV>PRIME/SNA* (ALL access)
1304 records in this directory, 2448 total records out of quota of 0.

14 Files.

CONFIG.CPL	PRINT_MESSAGES	SNA_3270_ADMIN_MSGS
SNA_3270_CONFIG_MSGS		SNA_3270_LOG_MSGS
SNA_3270_PROCESS.CPL		SNA_3270_PROCESS.RUN
SNA_SERVER_ADMIN_MSGS		SNA_SERVER_CLUP.RUN
SNA_SERVER_CONFIG_MSGS		SNA_SERVER_LOG_MSGS
SNA_SERVER_PROCESS.CPL		SNA_SERVER_PROCESS.RUN

1 Segment Directory.

SNA.CONFIG

4 Directories.

SNA_3270_LOGS   SNA_PRINT_LOGS   SNA_SERVER_LOGS   SNA_SERVER_STATS

2 Access categories.

INTERACTIVE_ADMIN.ACAT   SERVER_ADMIN.ACAT

Deleting Event Logging Files

The PRIME/SNA* directory includes three subdirectories that contain
event logging files for PRIME/SNA. As shown in the example above,
these directories are: SNA_SERVER_LOGS, SNA_3270_LOGS, and
SNA_PRINT_LOGS. If these subdirectories are allowed to grow
indefinitely, they can consume large amounts of disk space. You can
save space by periodically printing out the event logging files in each
subdirectory (and/or saving them on tape), and then deleting the files
from the subdirectory.

STARTING AND STOPPING PRIME/SNA SERVICES

This section provides an overview of the tasks involved in starting and
stopping the Server, the 3270 LU Manager, and Printer Emulation.

Starting and Stopping the Server

You use the following command options to start and stop the Server and
its associated resources (lines and remote systems).

- SNA_SERVER -START

- SNA_SERVER -STOP

These options and their arguments are described in detail in Chapter 3.

Using SNA_SERVER -START: When you issue SNA_SERVER -START, you specify
an SNA configuration file (or accept the default file
PRIME/SNA*>SNA.CONFIG). If the Server phantom process does not exist,
a Server phantom process is created. In addition, the file you specify
is designated by the Server as the current SNA configuration file.

When you start the Server, a message is displayed that indicates the
revision number of the PRIME/SNA software and the user number that
PRIMOS has assigned for the phantom process. This sequence is shown in
the following example:

    OK, SNA_SERVER -START
    [SNA_SERVER Revision 1.0 - 19.4]

    The request is being processed....

    The SNA Server phantom has been started as user 82.

While the Server is running, you can issue SNA_SERVER -STOP and
SNA_SERVER -START at any time to stop and start remote systems defined
in the current SNA configuration file.

When you start a remote system, the Server retrieves information from
the SNA configuration file that it uses to activate the local PRIME/SNA
support required to establish a connection with a host system.
However, a connection is not established until a host system requests a
connection with PRIME/SNA. Thus the Server must wait until the host
system requests a connection.

SNA_SERVER -START informs you that local PRIME/SNA support has been
started, but not when a successful connection has been established by
the host system. You must use the SNA_SERVER -STATUS option to
determine if a connection with the host system has been established.
SNA_SERVER -STATUS is described later in this chapter.

Using SNA_SERVER -STOP: The -STOP option shuts down the local
PRIME/SNA support for active remote systems. When issuing SNA_SERVER
-STOP, you also supply a stop-action argument. This argument
determines the level of control and degree of immediacy of the
termination.

For example, the IDLE stop-action argument is the most controlled and
orderly mode of deactivation. With IDLE, the Server waits for activity

between terminal users, printers, and a host system to go idle. Then the Server waits for the host system to deactivate the connection.

In the most extreme case, the KILL argument immediately terminates the connection with the host. The Server initiates the termination and, along with the 3270 LU Manager, frees up the local PRIME/SNA resources allocated for the connection.

Starting and Stopping the 3270 LU Manager

The following command options enable you to start and stop the 3270 LU Manager and the logical devices defined in the current SNA configuration file:

- SNA_3270 -START

- SNA_3270 -STOP

Chapter 4 provides detailed descriptions of these options.

Using SNA_3270 -START: The 3270 LU Manager executes as a phantom process. When you invoke the 3270 LU Manager, it starts the logical devices defined in the Interactive configuration entry of the current SNA configuration file. While the 3270 LU Manager is running, you can start and stop local PRIME/SNA support for logical devices to make them available for sessions with host systems to which PRIME/SNA is connected.

If you recall, logical devices are defined as CRTs and printers in the current SNA configuration file. When sessions are established with logical devices configured as CRTs, your users can access host application programs by logging on to these applications from their terminals.

In order for host application programs to send data to be printed on your system, the host system must establish sessions with logical devices configured as printers. In addition, logical printers must be started using the SNA_PRINT command (described later in this chapter).

The message displayed after you issue SNA_3270 -START informs you only that local PRIME/SNA support has been started. You use the SNA_3270 -STATUS option to determine the status of devices associated with started remote systems.

Using SNA_3270 -STOP: Issuing the -STOP option with the SNA_3270 command shuts down the local PRIME/SNA support for the logical devices started with SNA_SERVER -START. As with the SNA_SERVER -STOP command, you supply a stop-action argument which determines how local support is terminated.

First Edition

Starting and Stopping Printer Emulation

The SNA_PRINT command and its QUIT subcommand enable you to start up and shut down Printer Emulation. While the Printer Emulation process is running, you use the START and STOP subcommands of SNA_PRINT to start and stop individual logical printers.

Printer Emulation acts as an intermediary between the 3270 LU Manager and the PRIMOS spool queue. When a print request is generated by a PRIME/SNA user, Printer Emulation puts the print requests in the PRIMOS spool queue.

The following paragraphs provide an overview of Printer Emulation startup and shutdown procedures. For further details, see Chapter 5.

Starting Printer Emulation: You issue the SNA_PRINT command to invoke Printer Emulation. Printer Emulation controls the logical devices that are configured as printers in the Interactive configuration entry. Printer Emulation handles print requests generated by PRIME/SNA users in session with host applications.

SNA_PRINT can be invoked on any terminal or can be run as a phantom COMINPUT or CPL process. Each invocation of SNA_PRINT allows four logical printers to be started. To start a fifth logical printer, you must invoke SNA_PRINT at another terminal or as another phantom process.

If SNA_PRINT is run on a terminal, that terminal remains dedicated to Printer Emulation until you exit from Printer Emulation.

If you run SNA_PRINT as a phantom, you cannot use any of the SNA_PRINT commands interactively. Thus you cannot stop and start the logical printers or display status interactively. The phantom process requires a forced logout to stop logical printers and to exit Printer Emulation.

Using the START Subcommand: The SNA_PRINT START subcommand activates the local PRIME/SNA support required to establish a logical printer session with an IBM host. START also maps logical printers to physical printers on your system.

Along with the START subcommand, you enter a printer-name argument, which refers to the logical printer name as defined in the Interactive configuration entry. You may also include certain SPOOL options with the START subcommand, if you need to specify a particular format or physical printer for the print operation. (See Chapter 5 for more details.)

After a logical printer session is established, output from host application programs run by your users can be sent to the PRIMOS spooler.

Using the STOP Subcommand: You use the SNA_PRINT STOP subcommand to stop one or more of the logical printer sessions. You use the printer-name argument to stop a particular logical printer.

Unlike the -STOP options of the SNA_SERVER and SNA_3270 commands, the SNA_PRINT STOP subcommand does not take a stop-action argument. However, you can cause all specified sessions to stop immediately by including the -NOW option with STOP. When STOP is entered without -NOW, all active print jobs are completed before the specified sessions are stopped.

Using The QUIT Subcommand: Entering the QUIT subcommand, terminates the SNA_PRINT process and returns you to PRIMOS command level, after all logical printers have been stopped.

OBTAINING STATUS INFORMATION ON PRIME/SNA RESOURCES

The SNA_SERVER, SNA_3270, and SNA_PRINT commands have options or subcommands that enable you to display status information for PRIME/SNA resources on your terminal screen. PRIME/SNA resources include lines, remote systems, and logical devices.

Displaying Status Information for the Server and Interactive Subsystems

Entering the -STATUS option with the SNA_SERVER command displays the current status of PRIME/SNA lines, remote systems, and LU ports.

Entering -STATUS with the SNA_3270 command displays the current status of logical devices defined for started remote systems.

Displaying Status Information for Printer Emulation

Entering the STATUS subcommand of the SNA_PRINT command displays a list of started logical printers, their states, and associated spool options. You can display status information for a specific printer by including the device name with the STATUS subcommand. The device name corresponds to the name of the logical printer defined in the Interactive configuration entry.

CONTROLLING THE WRITING OF PRIME/SNA STATISTICS TO DISK

You use the -STATISTICS and -NO_STATISTICS options of the SNA_SERVER command to enable and disable statistics collection, respectively. You can also change the file to which statistics are logged by the Server.

Chapter 3 includes a detailed discussion of the -STATISTICS and -NO_STATISTICS options of the SNA_SERVER command.

CONTROLLING MESSAGE LOGGING FOR PRIME/SNA

PRIME/SNA includes event logging facilities for the Server and Interactive Subsystems. This section describes the procedures and command options used for controlling these facilities. Server log messages and their meanings are listed in Appendix B; Interactive LU Manager log messages are listed in Appendix C.

Setting Logging Levels for the Server and Interactive Subsystems

Whenever the Server and Interactive Subsystems are started, event log files are opened in the PRIME/SNA* directory for recording of messages about subsystem events. These messages are divided into three categories: brief, medium, and detailed. Messages in the brief category are always logged.

If you need to record more detailed information in the event log files, use the -MESSAGE_LEVEL option with the SNA_SERVER and the SNA_3270 commands. Along with the -MESSAGE_LEVEL option, you enter a message-level argument of BRIEF, MEDIUM, or DETAILED.

- BRIEF logs only messages that are in the brief category.

- MEDIUM logs messages that are in both the brief and medium categories.

- DETAILED logs messages that are in all three categories.

For additional information on setting message logging levels see Chapters 3 and 4.

Enabling and Disabling Message Logging for Printer Emulation

The SNA_PRINT command has a -NO_LOG option that you can include on the command line to disable message logging. If you start up Printer Emulation without the -NO_LOG option, an event logging file is automatically opened in PRIME/SNA*>SNA_PRINT_LOGS for recording Printer Emulation event messages.

See Chapter 5 for additional information on message logging for Printer Emulation.

HANDLING PROBLEMS

During your operation of PRIME/SNA software, you may occasionally encounter a problem that prevents proper functioning of one or both of the PRIME/SNA subsystems. When this happens, an error or informational message is usually sent to your terminal. In addition, one or more event messages that relate to the problem are usually logged in the event log file for each affected subsystem. (For certain event messages, the first line of the message is also displayed at the system console.)

Messages that indicate simple problems (such as incorrect command line entries) are usually self-explanatory and provide all the information you need to diagnose and correct the problem. Messages that indicate more complex problems (such as hardware or software problems) may require intervention by the PRIME/SNA Administrator or your Prime Customer Service representative. Additional information on identifying and interpreting such messages is included in the appendix section of this book, as follows:

* Appendix A provides problem determination guidelines for common problems related to installation, configuration, security, and memory requirements. The appendix includes lists of the messages that are displayed when such problems occur.

* Appendixes B and C give further information on PRIME/SNA event messages. Server log messages are described in Appendix B and Interactive LU Manager log messages are described in Appendix C. These appendixes include lists of the event messages that are logged when problems occur, descriptions of their meanings, and suggestions for correcting them.

3

Controlling
Remote Systems
Using
SNA_SERVER

This chapter describes how to manage PRIME/SNA remote systems using the options of the SNA_SERVER command. As mentioned previously, the remote system is the fundamental resource of the Server. Almost all of the messages that are logged specify a specific remote system with which the logged event is associated. Therefore, the result of starting or stopping lines, remote systems, and/or groups is presented in this chapter on a remote system basis.

The first section of the chapter describes the command line format for SNA_SERVER and discusses the types of options available. The remaining sections give detailed information on each of the main options.

SNA_SERVER COMMAND LINE FORMAT AND INVOCATION

The general format for the SNA_SERVER command is as follows:

     SNA_SERVER [config-pathname] main options [resource options]

SNA_SERVER must be invoked with at least one main option. The config-pathname argument, which specifies the pathname of the SNA configuration file, can only be used if the main options include the -START option. The config-pathname argument specifies the pathname of the SNA configuration file. If -START is used without config-pathname, the default pathname PRIME/SNA*>SNA.CONFIG is used.

Main Options for the SNA_SERVER Command

You use main options to perform tasks that are required to maintain PRIME/SNA. Main options can be combined with PRIME/SNA resource options and other main options. Main options and their actions are summarized in the following list. Each option is discussed in greater detail later in this chapter.

Main Option	Description
-START	Starts the Server Subsystem and enables support for connections to the selected remote systems.
-STOP	Deactivates support for connections between the Server Subsystem and the selected remote systems.
-STATUS	Displays information about the status of connections between the Prime system and remote systems and the status of the Server.
-NO_WAIT -NW	Disables pagination (used only with -STATUS).
-MESSAGE_LEVEL -MSGL	Sets the level of message logging for the Server Subsystem.
-STATISTICS	Specifies the file to which Server statistics are written, and/or enables statistics writing if it had been disabled.
-NO_STATISTICS -NST	Disables the writing of Server statistics.
-HELP	Displays the help message for SNA_SERVER that is contained in the HELP* directory.

The -START, -STOP, -STATUS, and -MESSAGE_LEVEL options can. be combined with PRIME/SNA resource options (described below) to specify particular lines and remote systems that are to be acted upon.

The -MESSAGE_LEVEL option and either the -STATISTICS or -NO_STATISTICS option can be issued on the same command line with the -START option. These three options can also be issued independently.

The -NO_WAIT option can only be used with the -STATUS option.

The -HELP option can only be used alone.

Resource Options for the SNA_SERVER Command

PRIME/SNA resource options designate lines, remote systems, and groups defined in the SNA configuration file that are to be acted on by a main option.

Resource options are listed below, along with their abbreviations, arguments, and actions.

Resource Option	Description
-LINE lname	Specifies the line to which a main option applies. lname must be identical to a line name in the specified SNA configuration file.
{ -LINE_GROUP } lgname { -LG }	Specifies the line group to which a main option applies. lgname must be identical to a line group name in the specified SNA configuration file.
{ -REMOTE_SYSTEM } rsname { -RS }	Specifies the remote system to which a main option applies. rsname must be identical to a remote system name in the specified SNA configuration file.
{ -REMOTE_SYSTEM_GROUP } rsgname { -RSG }	Specifies the remote system group to which a main option applies. rsgname must be identical to a remote system group name in the SNA configuration file.

Resource options cannot be specified independently. Resource options can only be issued jointly with the -START, -STOP, -STATUS, or -MESSAGE_LEVEL main options to specify a particular line, remote system, or group.

For example, when you issue the -START option, you can include a specific remote system with the command, as follows:

OK, SNA_SERVER -START -REMOTE_SYSTEM BOSTON-NY-CICS

You can enter resource options in any combination. The Server can handle duplicate requests in the same command line.

THE -START OPTION

Use the -START main option to start the Server and activate local PRIME/SNA support for lines and remote systems.

The format of the SNA_SERVER -START option is as follows:

```
                      ⎡ -LINE lname            ⎤
 [config-             | -LINE_GROUP lgname     |  ⎡ ⎧ -STATISTICS   ⎫ ⎤
  pathname]   -START  | -REMOTE_SYSTEM         |  | ⎨ [stats-file]  ⎬ |
                      |   rsname               |  | ⎩ -NO_STATISTICS ⎭ |
                      | -REMOTE_SYSTEM_GROUP   |  | -MESSAGE_LEVEL    |
                      ⎣   rsgname              ⎦  ⎣                   ⎦
```

Starting Remote Systems With the -START Option

The -START option activates one or more remote systems, depending on the resource options you specify. You may either enter an SNA configuration file pathname or accept the default pathname, PRIME/SNA*>SNA.CONFIG. If you specify resource options, you must give line, remote system, or group names that are identical to those defined within the specified SNA configuration file. If there are multiple resource names and some are incorrect, the command will still be processed for the correct ones.

When you invoke the SNA_SERVER -START command, the Server opens the SNA configuration file and verifies that the configuration file is valid. The Server also verifies that the lines, remote systems, and/or groups that you specified are defined in the file.

If you do not specify resource options when you enter SNA_SERVER -START, the Server attempts to start all remote systems that are defined in the SNA configuration file.

If you specify a file name without a suffix, the Server automatically searches for a file with the .CONFIG suffix. If two files are present with identical root file names, such as EXAMPLE and EXAMPLE.CONFIG, the Server uses EXAMPLE.CONFIG.

After finding the required information, the Server attempts to start the local PRIME/SNA support for the specified remote systems. As the Server activates support for each remote system, it displays a message indicating that support for the remote system is being started, as shown in the following example.

```
Remote system being started        : BOS-NY/CICS
Remote system being started        : BOS-PHILLY/TSO
Remote system being started        : BOS-CHICAGO/CICS
```

PRIME/SNA*>SNA_SERVER_STATS>STATS.05-JAN-84
        has been opened to collect SNA/SDLC statistics.

In the example above, local PRIME/SNA support has been started to
enable three host systems to establish connections to PRIME/SNA.   Once
these remote systems have been started, the Server waits for the host
systems to request a connection. The Server processes these requests
and attempts to establish connections with the host systems.

Typically, remote systems will be waiting to establish connections when
you start the Server. The establishment of the connection is part of
SNA protocol and is handled transparently by the PRIME/SNA Server.

You use the -STATUS option (described below) to determine if the
connection has been established. If the connection is not established
as expected, refer to Appendix A for problem determination
instructions.

Note that a statistics file has been opened in the above example. The
Server opens a default file if the -STATISTICS or -NO_STATISTICS option
is not specified.

The Connect Time Limit Parameter

The Connect Time Limit parameter is an integer value from zero through
1440 minutes.   If a connection is not established with a remote system
within the specified time limit, the Server considers that the
connection attempt has failed, aborts the attempt, and logs a message
to the log file and to the system console. A value of zero indicates
that there is no time limit. (See Appendix A for further information
on this log message and on other messages that are logged when abnormal
conditions occur during startup.)

Your PRIME/SNA administrator can provide you with the connect time
limit values defined in the SNA configuration file.

Handling SNA_SERVER -START Failures

If one or more remote systems cannot be started, you are informed by
means of messages that are returned to the terminal where you invoked
SNA_SERVER -START.   These messages are described in Appendix A. This
appendix also includes problem determination and troubleshooting
instructions for SNA_SERVER -START failures.

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THE -STATUS AND -NO_WAIT OPTIONS

The -STATUS main option enables you to display information about the current status of active PRIME/SNA lines and remote systems on your terminal screen. The format of SNA_SERVER -STATUS is as follows:

$$
\text{-STATUS} \begin{bmatrix} \text{-LINE lname} \\ \text{-LINE\_GROUP lgname} \\ \text{-REMOTE\_SYSTEM rsname} \\ \text{-REMOTE\_SYSTEM\_GROUP rsgname} \end{bmatrix} [\text{-NO\_WAIT}]
$$

You can request the status of lines, remote systems, or groups. By default, you are given the status of all started remote systems.

Unless you include the -NO_WAIT option, the prompt "--More--" appears after 23 lines of text are displayed. Respond with N, NO, Q, QU, QUI, or QUIT to terminate the display immediately. Press RETURN to display the next 23 lines of text.

Invoking SNA_SERVER -STATUS

You can invoke SNA_SERVER -STATUS from any terminal that is logged into the PRIME system on which the PRIME/SNA software resides. If you invoke SNA_SERVER -STATUS when the Server Subsystem is not active, a message is displayed at your terminal, informing you that the PRIME/SNA Server is not started.

If you enter the SNA_SERVER -STATUS command without a resource option, the name of the current SNA configuration and statistics files and the status of all started remote systems is displayed as depicted in the following example:

OK, SNA_SERVER -STATUS
[SNA_SERVER Revision 1.0 - 19.4]

SNA SERVER STATUS
=================

SNA Configuration File: <SNASRV>PRIME/SNA*>SNA.CONFIG

Server Statistics File: PRIME/SNA*>SNA_SERVER_STATS>STATS.27-FEB-85

Remote System Name	Server Status	Name of Associated Line
BOS-NY/CICS	Connected	BOS-NY
BOS-PHILLY/TSO	Started	BOS-PHILLY
BOS-CHICAGO/CICS	Started	BOS-CHICAGO

In the above example, the status message indicates that the Server has successfully established a connection with remote system BOS-NY/CICS over line BOS-NY. It also indicates that the Server has activated remote systems BOS-PHILLY/TSO and BOS-CHICAGO/CICS, and is waiting for connection requests from the respective host systems.

The next example shows the line status information that is displayed when you invoke SNA_SERVER -STATUS with a -LINE resource option.

OK, SNA_SERVER -STATUS -LINE BOS-NY
[SNA_SERVER Revision 1.0 - 19.4]

                            SNA SERVER STATUS
                            ═══════════════════

SNA Configuration File: <SNASRV>PRIME/SNA*>SNA.CONFIG

Server Statistics File: PRIME/SNA*>SNA_SERVER_STATS>STATS.27-FEB-85

═══
Line BOS-NY

                Line group   : not in a group
                ICS2 controller number   : 10
                ICS2 LAC line number   : 004
                Signal encoding   : non-NRZI
                Line interface   : RS-232
                Clocking   : External clocking
                Data set control   : full-duplex
                Line connection   : point-to-point
                Connection type   : leased

Line BOS-NY — Remote System Information

Remote System Name   Server Status
-----------------------------   ---------------

BOS-NY   Connected

In the above example, information on the line is displayed, followed by a list of each remote system that is using the line (the Server supports multiple remote systems on a single line).

Invoking SNA_SERVER -STATUS with a -REMOTE_SYSTEM resource option displays the information shown in the following example.

OK, SNA_SERVER -STATUS -RS BOS-NY/CICS
[SNA_SERVER Revision 1.0 - 19.4]

SNA SERVER STATUS
================

SNA Configuration File: <SNASRV>PRIME/SNA*>SNA.CONFIG

Server Statistics File: PRIME/SNA*>SNA_SERVER_STATS>STATS.27-FEB-85

==
Remote system BOS-NY/CICS

SNA Server state	: Connected
Associated with line	: BOS-NY
Remote system group	: not in a group
Current SSCP ID	: 00006
Connection time limit	: no time limit
Automatic recovery	: no
System ID	: not defined
SDLC station address	: 01
Data mode	: half-duplex
Logging level	: detailed

Remote system BOS-NY/CICS -- LU Port Information

Num	Name	State	Usage
2	CRT1	Active/Not Opened	
3	CRT2	Active/Not Opened	
4	CRT3	Active/Not Opened	

In the above example, information on the remote system is displayed
followed by a list of the LU ports that are configured for the remote
system. The following fields are defined for LU ports:

Field	Description
Num	The LU port number as defined in the SNA configuration file
Name	The LU port name as defined in the SNA configuration file
State	The LU port state
Usage	When the LU port is being used by SNA_3270, this field contains "SNA_3270"; otherwise it remains blank

Interpreting Status Information

The status of a remote system can be one of following:

State	Meaning
Started	The Server has activated local PRIME/SNA support and is waiting for a connection request from the host system.
Connected	The host system has requested a connection, the necessary protocol has been exchanged, and the connection with the host system is active.
Being Quiesced	The SNA_SERVER -STOP command has been issued with a stop-action of IDLE or FINISH, to stop the local PRIME/SNA support, and the Server is waiting for local activity to terminate.
Being Stopped	Either the SNA_SERVER -STOP command has been issued and the host system has initiated the termination of the connection, or some external event (such as a line failure) has occurred and the Server is in the process of stopping local PRIME/SNA support.

The status of an LU port can be one of following:

State	Meaning
Configured	The LU port is defined in the SNA configuration file. However, the port is not being used by the Interactive Subsystem, nor is there an SNA session with the SNA host.
Active/Not opened	A session exists with the SNA host, but the LU port is not being used by the Interactive Subsystem.
Active/Being opened	A session exists with the SNA host, and the LU port is being opened for use by the Interactive Subsystem.
Active/Open	A session exists with the SNA host, and the LU port has been opened for use by the Interactive Subsystem.

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Active/Being Quiesced   A session exists with the SNA host and is being used by the Interactive Subsystem. However, the LU port will be closed when activity on the session has stopped.

Active/Being Closed   A session exists with the SNA host. However, the LU port is being closed and is not being used by the Interactive Subsystem.

Active/Cannot Open   A session exists with the SNA host. However, the LU port cannot be used by the Interactive Subsystem until the session is terminated then restarted by the SNA host.

Inactive/Being Opened   A session does not exist with the SNA host. However, the Interactive Subsystem has requested the use of the LU port when the session becomes available.

Inactive/Being Closed   A session no longer exists with the SNA host and the LU port is being closed.

THE -STOP OPTION

The -STOP option enables you to stop PRIME/SNA remote systems. The format for SNA_SERVER -STOP is as follows:

```
                 ⎡⎧ QUIT   ⎫⎤  ⎡ -LINE lname                      ⎤
                 ⎢⎪ IDLE   ⎪⎥  ⎢ -LINE_GROUP lgname               ⎥
   -STOP         ⎢⎨ FINISH ⎬⎥  ⎢ -REMOTE_SYSTEM rsname            ⎥
                 ⎢⎪ NOW    ⎪⎥  ⎢ -REMOTE_SYSTEM_GROUP rsgname     ⎥
                 ⎣⎩ KILL   ⎭⎦  ⎣                                 ⎦
```

If no resource options are given, all remote systems connections are deactivated.

Using Stop-action Arguments

The stop-action arguments (QUIT, IDLE, FINISH, NOW, or KILL) determine the level of control and degree of immediacy of the termination. If no stop-action argument is used, and if any remote system connections have active sessions, you are prompted for a stop-action, as shown in the following example.

```
OK, SNA_SERVER -STOP -REMOTE_SYSTEM SYDNEY
[SNA_SERVER Revision 1.0 - 19.4]

Remote system is active            : SYDNEY

The following actions are available for the active remote system(s):
     Q : (Quit)   Do not process the stop request for this remote system.
     I : (Idle)   Stop when all user sessions have terminated.
     F : (Finish) Stop when current user traffic has completed.
     N : (Now)    Stop without allowing current user traffic to complete.
     K : (Kill)   Stop immediately and terminate the remote system connection.

Specify option for stopping SYDNEY (Q, I, F, N, K) : q
```

The QUIT Argument: QUIT specifies that the -STOP option for the remote system is not to be processed if there is any local activity.

The IDLE Argument: IDLE represents the normal mode of deactivating a remote system. The Server waits for activity between terminal users, printers, and a host system to go idle. When all local activity is idle, the Server stops the remote system and waits for the host system to deactivate the connection.

The amount of time required to deactivate a remote system using IDLE may be considerable, because you must wait for all users to finish their sessions and logout from the host. You also must wait for all printers to finish their jobs. IDLE results in the Server putting the remote system in the Being Quiesced state. While the remote system is in this state, users are not allowed to start any new sessions.

For example, at the end of the normal working day (about 5 P.M.), you might shut down a remote system using SNA_SERVER -STOP IDLE. When local activity is idle, the Server shuts down the remote system (that is, local PRIME/SNA support for the connection with the host) and waits for the host to deactivate the connection.

The FINISH Argument: FINISH causes a more immediate disconnection than IDLE. The Server waits for current user transactions with the remote system to complete and then stops the remote system. FINISH results in the Server putting the remote system in the Being Quiesced state. While the remote system is in this state, users are not allowed to start any new sessions.

The NOW Argument: NOW forces all user connections to cease and the stops the remote system. However, the Server still waits for the host to deactivate the connection. Using NOW forces an abnormal termination without sending the host into a severe error recovery processing state.

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The KILL Argument: KILL is the most severe method of termination. The Server immediately terminates the connection with a host; that is, the Server requests SDLC to terminate the connection with the host.

Note

For most cases, use of the the SNA_SERVER -STOP option should be coordinated with the SNA_3270 -STOP command so that an orderly termination occurs. In other words, execute SNA_3270 -STOP and then SNA_SERVER -STOP.

THE -MESSAGE_LEVEL OPTION

Use the SNA_SERVER -MESSAGE_LEVEL main option to set the logging level for all event messages recorded by the Server or to vary the logging level on specific lines, remote systems, or groups. The logging level determines which event messages are sent to the current Server log file in the PRIME/SNA*>SNA_SERVER_LOGS subdirectory.

The format for SNA_SERVER -MSG_LEVEL is as follows:

$$
\text{-MESSAGE\_LEVEL} \quad \left[\left\{ \begin{array}{l} \text{BRIEF} \\ \text{MEDIUM} \\ \text{DETAILED} \end{array} \right\} \right] \quad \left[\begin{array}{l} \text{-LINE lname} \\ \text{-LINE\_GROUP lgname} \\ \text{-REMOTE\_SYSTEM rsgname} \\ \text{-REMOTE\_SYSTEM\_GROUP rsgname} \end{array} \right]
$$

Message Levels

Event messages are categorized as BRIEF, MEDIUM, or DETAILED. Messages in the BRIEF category identify the most important events, such as the activation or termination of a connection with a remote system. Some messages designated as BRIEF are sent both to the system console and the log file. BRIEF is the default level.

Messages in the MEDIUM category include BRIEF messages along with events of moderate importance. The DETAILED category encompasses all messages including events of lesser importance, such as the starting of a user's terminal connection with a remote system application.

Invoking SNA_SERVER -MESSAGE_LEVEL

The -MESSAGE_LEVEL option (or its abbreviatio, MSGL) can be invoked when an SNA_SERVER -START command is issued. It also can be invoked separately, as shown in the following example.

```
OK, SNA_SERVER -MSGL -MEDIUM
[SNA_SERVER Revision 1.0 - 19.4]
```

The message level has been set to MEDIUM

When the Server is started, a logging file is opened in the
PRIME/SNA*>SNA_SERVER_LOGS directory. The file name is a concatenation
of LOG. and the current day, month, and year, as follows:

    LOG.dd-mmm-yy

When the Server process is stopped, the logging file is closed. If the
date is different when the Server is started again, a new logging file
is opened. If the date is the same, the same file is used and logged
messages are concatenated.

The following sample listing of the SNA_SERVER_LOGS directory shows the
format of the log files:


```
OK, A PRIME/SNA*>SNA_SERVER_LOGS
OK, LD

<SNASRV>PRIME/SNA*>SNA_SERVER_LOGS (ALL access)
714 records in this directory, 714 total records out of quota of 0.

32 Files.

LOG.01-FEB-85      LOG.01-MAR-85      LOG.02-FEB-85      LOG.03-FEB-85
LOG.03-MAR-85      LOG.04-FEB-85      LOG.04-MAR-85      LOG.05-FEB-85
LOG.05-MAR-85      LOG.06-FEB-85      LOG.06-MAR-85      LOG.07-FEB-85
LOG.07-MAR-85      LOG.08-FEB-85      LOG.08-MAR-85      LOG.11-FEB-85
LOG.12-FEB-85      LOG.13-FEB-85      LOG.14-FEB-85      LOG.15-FEB-85
LOG.16-FEB-85      LOG.18-FEB-85      LOG.19-FEB-85      LOG.20-FEB-85
LOG.21-FEB-85      LOG.22-FEB-85      LOG.23-FEB-85      LOG.24-FEB-85
LOG.25-FEB-85      LOG.26-FEB-85      LOG.27-FEB-85      LOG.28-FEB-85
```


You should monitor the size of the current log file and the
SNA_SERVER_LOGS directory. See the section in Chapter 2 titled
MONITORING THE PRIME/SNA* DIRECTORY for details.

THE -STATISTICS AND -NO_STATISTICS OPTIONS

The -STATISTICS option enables you to change the file to which the
Server writes statistics data. The -STATISTICS option also enables
statistics writing when it has been disabled by using -NO_STATISTICS.

The format for the SNA_SERVER -STATISTICS and -NO_STATISTICS options is as follows:

```
{ -STATISTICS [stats-file] }
{ -NO_STATISTICS          }
```

If you invoke SNA_SERVER -START without using -STATISTICS or -NO_STATISTICS and the Server phantom is started, the Server writes statistics data to a default file. The Server continues to write to that file unless you issue the -STATISTICS option to switch data to a different file. The -NO_STATISTICS option may be used to switch off the writing of statistics data.

The -STATISTICS or -NO_STATISTICS options can be issued either with the -START option or separately. If the -STATISTICS or -NO_STATISTICS option is used alone, it may not be combined with resource options, because there is only one statistics file for all Server statistics. If -STATISTICS or -NO_STATISTICS is used on the same line with -START or -MESSAGE_LEVEL, -STATISTICS or -NO_STATISTICS ignores any resource specified on the command line.

Initially the Server creates a statistics file in the PRIME/SNA*>SNA_SERVER_STATS directory with a default name or a name you specify. The default file name is a concatenation of STATS. and the current day, month, and year, as follows:

STATS.dd-mmm-yy

If you supply your own file name, a file of that name is opened in the PRIME/SNA*>SNA_SERVER_STATS directory. If you do not wish to have a file opened, add -NO_STATISTICS to the SNA_SERVER -START command that starts the Server.

When the Server is stopped, it closes the statistics file. When the Server is started again in the same day and the default file is used, the Server opens the default file and appends newly collected data to it. Thus, even if the Server is started and stopped several times during a single day, all statistics data for that day is written to the default file, until you specify an alternate file or create a new one.

You can change the statistics file by issuing SNA_SERVER with the -STATISTICS option and specifying the name of a new or previously created file. Newly collected statistics data is then appended to this file.

The -NO_STATISTICS option disables statistics collection. You can enable and disable statistics collection any time the Server is running.

<div align="right">

4

Controlling
Logical Devices
Using SNA_3270

</div>

This chapter describes how to manage PRIME/SNA logical devices using the options of the SNA_3270 command. The first section of the chapter describes the command line format for SNA_3270 and discusses the types of options available. The remaining sections give detailed information on each of the main options.

SNA_3270 COMMAND LINE FORMAT AND INVOCATION

The general format for the SNA_3270 command is as follows:

    SNA_3270 [config-pathname] main options [resource options]

SNA_3270 must be invoked with at least one main option. The config-pathname argument can only be used if the main options include the -START option. The config-pathname argument specifies the pathname of the SNA configuration file. If -START is used without config-pathname, the default pathname PRIME/SNA*>SNA.CONFIG is used.

Main Options for the SNA_3270 Command

You use main options to perform tasks that are required to maintain PRIME/SNA. Main options can be combined with PRIME/SNA resource options and other main options. Main options and their actions are

summarized in the following list.   Each option is discussed in greater
detail later in this chapter.

Main Option	Description
{ -ENTRY_ID } { -EID }	Specifies the entry id of the Interactive configuration entry.
-START	Starts the 3270 LU Manager and enables logical device support for the selected remote systems.
-STOP	Deactivates logical device support for the selected remote systems.
-STATUS	Displays information about the current status of the selected logical devices for the selected remote systems.
{ -NO_WAIT } { -NW }	Disables pagination, when used with -STATUS.
{ -MESSAGE_LEVEL } { -MSGL }	Sets the level of message logging for the 3270 LU Manager.
{ -AUTO_STOP } { -ASTOP }	Enables the automatic logout of the 3270 LU Manager when no user sessions are active.
{ -NO_AUTO_STOP } { -NASTOP }	Disables -AUTO_STOP.
-HELP	Displays the help message for SNA_3270.

The -START, -STOP, and -STATUS options can be combined with PRIME/SNA
resource options (described below) to specify particular remote systems
that are to be acted upon.

The -ENTRY_ID and -MESSAGE_LEVEL option and either the -AUTO_STOP or
-NO_AUTO_STOP option can be issued on the same command line with the
-START option.   The -ENTRY_ID option can only be used with -START.   The
-NO_WAIT option can only be used with the -STATUS option.   All other
options can be issued independently.

The -HELP option can only be used alone.

PRIME/SNA Resource Options for the SNA_3270 Command

PRIME/SNA resource options designate the remote systems and remote
system groups defined in the Interactive configuration entry that are
to be acted on by a main option.

Resource options are listed below, along with their abbreviations,
arguments, and actions.

Resource Option	Description
⎰ -REMOTE_SYSTEM ⎱ rsname ⎱ -RS ⎰	Specifies the remote system to which a main option applies. rsname must be identical to a remote system name in the specified Interactive configuration entry.
⎰ -REMOTE_SYSTEM_GROUP ⎱ rsgname ⎱ -RSG ⎰	Specifies the remote system group to which a main option applies. rsgname must be identical to a remote system group name in the Interactive configuration entry.

Resource options cannot be specified independently. Resource options
can only be issued jointly with the -START, -STOP, or -STATUS main
options to specify a particular remote system or remote system group.
For example, when you issue the -START option, you can include a
specific remote system with the command, as follows:

OK, SNA_3270 -START -REMOTE_SYSTEM BOSTON-NY

The 3270 LU Manager responds by starting the logical devices associated
with remote system BOSTON-NY, as follows:

    [PRIME/SNA SNA_3270 Revision 1.0 - 19.4]

    The SNA_3270 LU Manager has been started as user 86

    The request is being processed.....

    Remote System being started   : BOSTON-NY

You can use multiple resource options on the same command line, as
shown in the following example.

PRIME/SNA Operator's Guide

OK, <u>SNA_3270 -START -RS BOSTON-NY -RSG GROUPNRTHEST</u>

In this example, remote system BOSTON-NY could be a member of remote system group GROUPNRTHEST.

THE -START OPTION

You use the -START main option to start the 3270 LU Manager and activate local PRIME/SNA support for logical devices. The format of the SNA_3270 -START option is as follows:

[config-
pathname] -START
[-ENTRY_ID
entry_id]
⎡-REMOTE_SYSTEM   ⎤ ⎡⎧-AUTO_STOP   ⎫⎤
⎢ rsname   ⎥ ⎢⎨ delay-time   ⎬⎥
⎢-REMOTE_SYSTEM_GROUP ⎥ ⎢⎩-NO_AUTO_STOP ⎭⎥
⎣ rsgname   ⎦ ⎢-MESSAGE_LEVEL ⎥
                        ⎣ msg-level   ⎦

Starting Logical Devices With the -START Option

The SNA_3270 -START command starts the 3270 LU Manager and activates logical devices (LU ports) defined for remote systems in a Interactive configuration entry.

The 3270 LU Manager must use the same configuration file as the Server. If the Server is using the default file, PRIME/SNA*>SNA.CONFIG, there is no need to specify a configuration file pathname. If the Server is not using the default file, you must specify the pathname of the configuration file that is currently running with the Server.

You also must specify a valid entry_ID (the name of an Interactive configuration entry) or accept the default, SNA_3270.CONFIG. If the entry_id you specify is not a valid interactive entry, the 3270 LU Manager displays a warning message and terminates.

If you specify a SNA configuration file name without a suffix, the 3270 LU Manager automatically searches for a file with the .CONFIG suffix. If two files are present with identical root file names, such as EXAMPLE and EXAMPLE.CONFIG, the 3270 LU Manager uses EXAMPLE.CONFIG.

After you issue the -START command, the 3270 LU Manager extracts the information required to enable support for the logical devices associated with the remote systems you specified with the command. If you omit the remote system or group name, the 3270 LU Manager activates all the devices for all remote systems defined in the Interactive configuration entry.

You can enter remote systems and groups in any combination. You can start an individual remote system and a remote system group in the same command line.

In addition, the 3270 LU Manager can handle duplicate requests in the
same command line. For example, you might issue an SNA_3270 -START
command specifying a remote system and a remote system group, not
realizing that the remote system is also defined as part of the group.

The SNA_3270 -START option can be combined with the
-AUTO_STOP/NO_AUTO_STOP and -MESSAGE_LEVEL options. These options are
described later in this chapter.

Once the logical devices have been started by the 3270 LU Manager,
users at terminals on your system will be able to log on to host system
applications.

THE -STATUS AND -NO_WAIT OPTIONS

The -STATUS main option enables you to display information about the
current status of started logical devices on your terminal screen. The
format of SNA_3270 -STATUS is as follows:

    -STATUS   ⎡ -REMOTE_SYSTEM rsname   ⎤   [-NO_WAIT]
                  ⎣ -REMOTE_SYSTEM_GROUP rsgname ⎦

Unless the -NO_WAIT option is included, the prompt "--More--" appears
after 23 lines of text are displayed. Respond with N, NO, Q, QU, QUI,
or QUIT and press RETURN to terminate the display immediately. Press
RETURN or any other character-key to display the next 23 lines of text.

Invoking SNA_3270 -STATUS

You can invoke SNA_3270 -STATUS from any terminal that is logged into
the PRIME system on which the PRIME/SNA software resides.

You can enter remote systems and remote system groups in any
combination. The 3270 LU Manager can handle multiple requests in the
command line. If you enter the SNA_3270 -STATUS command without a
remote system or group, the status of all logical devices on all active
remote systems is displayed, as shown in the following example.

OK,<u>SNA_3270 -STATUS</u>

[PRIME/SNA SNA_3270 Revision 1.0 - 19.4]

The request is being processed.....

SNA_3270 STATUS
═══════════════

SNA Configuration file : <SNASRV>PRIME/SNA*>SNA.CONFIG

Interactive Entry_id   : SNA_3270.CONFIG

Message Level : DETAILED

Auto-Stop not enabled

Status information for all started devices

Device name	Status	User Name	No.
BOS-NY-CRT1	ACTIVE	MOBYDICK	2
BOS-NY-CRT2	INACTIVE		
BOS-NY-CRT3	INACTIVE		
BOS-NY-PRINTER1	INACTIVE		
BOS-PHILLY-CRT1	ACTIVE	CAPAHAB	31
BOS-PHILLY-CRT2	INACTIVE		
BOS-PHILLY-PRINTER	ACTIVE	ISHMAEL	17
BOS-PHILLY-PRINTER	INACTIVE		
BOS-CHICAGO-CRT1	INACTIVE		
BOS-CHICAGO-CRT2	ACTIVE		
BOS-CHICAGO-CRT3	ACTIVE		
BOS-CHICAGO-CRT4	INACTIVE		
BOS-CHICAGO-PRINTER	INACTIVE		

<u>Interpreting Status Information</u>

Logical devices can be in the following states:

State	Meaning
Inactive	A host system is not in session with that logical device. PRIME/SNA users cannot use that logical device.
Pending	A device is being activated with the Server.
Starting	A device is being started for a session for the named user.

Allocated   A device has been allocated to the named user.

Active   If a user number is present, a user at a
                 terminal or a printer is using the logical
                 device to communicate with a host system.
                 If a user number is not present, it means
                 that the device is available for use.

Suspended   A device has been allocated to the named user,
                 and the user has suspended the session
                 associated with the device.

Connected   A device has been used at some time in the
                 past and is available for use.

Stopping   A device is being shut down by the 3270
                 LU Manager.

Closing   A device is being deactivated, and the
                 LU Port is being returned to the Server.

Shutdown   A device is being shutdown as a result of the
                 execution of an SNA_3270 -STOP command.

Busy   A device is temporarily unavailable.

In the preceeding example, three of the logical devices associated with
remote systems BOS-NY and BOS-PHILLY have been activated.   Logical
devices BOS-NY-CRT1, BOS-PHILLY-CRT1, and BOS-PHILLY-PRINTER1 are being
used by PRIMOS users MOBYDICK, CAPAHAB, and ISHMAEL, respectively.
PRIMOS has assigned them user numbers 2, 31, and 17, respectively.

Logical devices BOS-CHICAGO-CRT2 and BOS_CHICAGO-CRT3, associated with
remote system BOS-CHICAGO, are active and available for use. You can
tell that neither device is currently being used because no user   name
or user number is displayed.

THE -STOP OPTION

The -STOP option enables you to deactivate the logical devices defined
for one or more remote systems. The 3270 LU Manager does not allow you
to deactivate individual devices.

The format for SNA_3270 -STOP is as follows:

```
                  ⎡ ⎧ QUIT   ⎫ ⎤
                  ⎢ ⎪ IDLE   ⎪ ⎥
      -STOP       ⎢ ⎨ FINISH ⎬ ⎥    ⎡ -REMOTE_SYSTEM rsname       ⎤
                  ⎢ ⎪ NOW    ⎪ ⎥    ⎣ -REMOTE_SYSTEM_GROUP rsgname ⎦
                  ⎣ ⎩ KILL   ⎭ ⎦
```

Invoking the -STOP Option

The -STOP option deactivates all devices that have been started or all the logical devices for selected remote systems that were specified when you issued the command.

To stop all started logical devices, issue the -STOP option without a PRIME/SNA resource option, as follows:

OK,<u>SNA_3270 -STOP</u>

[PRIME/SNA SNA_3270 Revision 1.0 - 19.4]

The request is being processed.....

All started devices being stopped.

When each remote system's logical devices are stopped, the 3270 LU Manager sends the following messages:

[PRIME/SNA SNA_3270 Revision 1.0 - 19.4]

The request is being processed.....

Waiting for LU Manager response.

Remote System being stopped   : BOS-NY/CICS

After the 3270 LU Manager stops all logical devices, it logs itself out (the phantom process).

If you issue the -STOP option when the 3270 LU Manager is not running (the phantom process has not been started), a message is displayed to inform you that PRIME/SNA Interactive has not been started.

Using Stop-action Arguments

The stop-action argument (QUIT, IDLE, FINISH, NOW, or KILL) determines the level of control and degree of immediacy of the termination. If no stop-action argument is used, and if any devices being stopped are active, you are prompted for a stop-action argument, as shown in the following example.

```
OK, SNA_3270 -STOP
[PRIME/SNA SNA_3270 Revision 1.0 - 19.4]

Remote system is active              : BOS-NY/CICS
The following actions are available for the active remote system(s):

     Q : (Quit)    Do not process the stop request for this remote system.
     I : (Idle)    Stop when all user sessions have terminated.
     F : (Finish)  Stop when current user traffic has completed.
     N : (Now)     Stop without allowing current user traffic to complete.
     K : (Kill)    Stop immediately and terminate the remote system connection

Specify option for stopping BOS-NY/CICS (Q, I, F, N, K) :
```

Using the QUIT Argument: QUIT specifies that a stop-action is not to be processed if any logical devices are currently involved in active user sessions with a host. QUIT allows you to issue a conditional stop.

For example, you may want to stop only remote systems that have no active user sessions in order to save resources on your system. You can issue QUIT for several remote systems without knowing the current status.

Suppose you issue -STOP with QUIT for three remote systems, REMOTE1, REMOTE2, and REMOTE3. Logical devices for REMOTE1 and REMOTE2 have no active user sessions; REMOTE3 has several active user sessions. The 3270 LU Manager will only deactivate the logical devices for REMOTE1 and REMOTE2.

Using the IDLE Argument: IDLE represents the normal mode of deactivating the logical devices for a remote system. The 3270 LU Manager waits for activity between terminal users, printers, and a host system to go idle. When all local activity is idle, the 3270 LU Manager stops all logical devices (local PRIME/SNA support) configured for a remote system.

The amount of time required to deactivate a logical device using IDLE may be considerable, because you must wait for all users to finish their sessions and log out from the host. You also must wait for all printers to finish their jobs. Users are not allowed to start any new sessions.

For example, at the end of the normal working day (about 5 P.M.), you might shut down a logical device using IDLE (SNA_3270 -STOP IDLE). When local activity is idle, the 3270 LU Manager shuts down all the logical devices associated with the remote system.

Using the FINISH Argument: FINISH is a more immediate disconnection method than IDLE. The 3270 LU Manager waits for current data for each user connection to complete its flow to or from the host and then stops the logical devices of the remote system. Users are not allowed to start any new sessions.

Using the NOW Argument: NOW forces all user connections to cease and
deactivates the logical devices of a remote system. This does not send
the host into a severe error recovery processing state.

Using the KILL Argument: KILL is the most severe method of
termination. KILL causes the 3270 LU Manager to immediately terminate
logical sessions with a remote system.

THE -MESSAGE_LEVEL OPTION

The -MESSAGE_LEVEL option enables you to set the logging level for all
event messages recorded by the 3270 LU Manager. The logging level
determines which event messages are sent to the current Interactive log
file in the PRIME/SNA*>SNA_3270_LOGS subdirectory.

The format for SNA_3270 -MSG_LEVEL is as follows:

$$-\text{MESSAGE\_LEVEL} \quad \left[\left\{ \begin{array}{l} \text{BRIEF} \\ \text{MEDIUM} \\ \text{DETAILED} \end{array} \right\} \right] \quad \left[\begin{array}{l} -\text{REMOTE\_SYSTEM rsname} \\ -\text{REMOTE\_SYSTEM\_GROUP rsgname} \end{array} \right]$$

Message Levels

Event messages are categorized as BRIEF, MEDIUM, or DETAILED. Messages
in the BRIEF category identify the most important events such as the
activation of remote system logical devices. Some of the messages
designated as BRIEF are sent to both to the system console and the log
file. BRIEF is the default level.

Messages in the MEDIUM category include BRIEF messages along with
events of moderate importance. The DETAILED category encompasses all
messages, including events of lesser importance, such as session
startup and shutdown, minor data errors, and line errors.

Invoking SNA_3270 -MESSAGE_LEVEL

The -MESSAGE_LEVEL option can be invoked when a SNA_3270 -START command
is issued, or it can be invoked separately, as follows:

OK, SNA_3270 -MESSAGE_LEVEL MEDIUM

When the 3270 LU Manager is started, it opens a logging file called
PRIME/SNA*>SNA_3270_LOGS>LOG.date, where "date" is the current date and
time. When the 3270 LU Manager is stopped, the logging file is closed.
If the date is different when the 3270 LU Manager is started again, a
new logging file is opened. If the date is the same, the same logging
file is used and messages are appended to this file.

The following sample listing of the SNA_3270_LOGS directory shows the format of the log files:


```
OK, A PRIME/SNA*>SNA_3270_LOGS
OK, LD

<SNASRV>PRIME/SNA*>SNA_3270_LOGS (ALL access)
121 records in this directory, 121 total records out of quota of 0.

26 Files.

LOG.01-FEB-85     LOG.02-FEB-85     LOG.03-FEB-85     LOG.04-FEB-85
LOG.04-MAR-85     LOG.05-FEB-85     LOG.05-MAR-85     LOG.06-FEB-85
LOG.06-MAR-85     LOG.07-FEB-85     LOG.07-MAR-85     LOG.08-FEB-85
LOG.08-MAR-85     LOG.11-FEB-85     LOG.12-FEB-85     LOG.13-FEB-85
LOG.14-FEB-85     LOG.15-FEB-85     LOG.18-FEB-85     LOG.19-FEB-85
LOG.20-FEB-85     LOG.21-FEB-85     LOG.22-FEB-85     LOG.27-FEB-85
LOG.28-DEC-84     LOG.28-FEB-85
```


You should monitor the size of the current log file and the SNA_3270_LOGS directory. To conserve space on your system, you may want to copy some or all of the log files to tape or make hardcopies of them. For further details, see the section in Chapter 2 titled MONITORING THE PRIME/SNA* DIRECTORY.

THE -AUTO_STOP AND -NO_AUTO_STOP OPTIONS

The -AUTO_STOP option logs out the 3270 LU Manager process if no user sessions are active. This feature of the Interactive Subsystem saves resources on your system.

The -NO_AUTO_STOP option disables the -AUTO_STOP option.

The format of SNA_3270 -AUTO_STOP and -NO_AUTO_STOP is as follows:


```
| -AUTO_STOP delay-time |
| -NO_AUTO_STOP         |
```


The delay-time argument specifies the number of minutes to delay automatic logout of the Interactive Subsystem when no user sessions are active.

When you start the 3270 LU Manager, the auto-stop feature is disabled by default. You can immediately enable the auto-stop feature by entering -AUTO_STOP on the same command line as -START. -AUTO_STOP can also be used alone on the command line.

5
Controlling
Logical Printers
Using SNA_PRINT

This chapter describes how to manage PRIME/SNA logical printers using the SNA_PRINT command. This command starts the Interactive Printer Emulation facility.

You use SNA_PRINT to manage logical printer sessions so that data from an IBM SNA host system can be printed on a Prime system. After a logical printer session is established, output from host application programs run by your users is sent to the PRIMOS Spooler. Printer Emulation acts as an intermediary between the Interactive Subsystem and a PRIMOS spool queue. When a print request is generated by a PRIME/SNA user, Printer Emulation puts the print requests in a PRIMOS spool queue.

Before you run SNA_PRINT, you should do the following:

- Run the Revision 19.4 Spooler.

- Use the PRIMOS PROP command to start one or more physical printers that will be used by PRIME/SNA.

- Use the SNA_SERVER and SNA_3270 commands to activate the PRIME/SNA resources that are required to support the logical printers you will be starting.

INVOKING SNA_PRINT

When you issue the SNA_PRINT command, the Interactive Printer Emulation facility is started. Once Printer Emulation has been invoked, you enter the subcomand level and are requested to enter a command, as shown below:

    [SNA_PRINT Revision 1.0 - 19.4]
    Logfile: LOG.030.28-FEB-85.09.14.46

    Command:

You remain at the subcommand level until you enter the QUIT subcommand or the process is force-logged out.

SNA_PRINT can be invoked on any terminal or can be run as a phantom COMINPUT or CPL process. Each invocation of SNA_PRINT allows four logical printers to be started. To start a fifth logical printer, you must invoke SNA_PRINT at another terminal or as another phantom process.

If SNA_PRINT is run on a terminal, that terminal remains dedicated to Printer Emulation until you exit from Printer Emulation.

If you run SNA_PRINT as a phantom, you cannot use any of the SNA_PRINT commands interactively. Thus you cannot stop and start the logical printers or display status interactively. The phantom process requires a forced logout to stop logical printers and exit Printer Emulation.

The format of the SNA_PRINT command is as follows:

    SNA_PRINT $\left[\left\{ \begin{array}{l} -HELP \\ -NO\_LOG \end{array} \right\} \right]$

The -HELP option displays the help message for SNA_PRINT which is contained in the HELP* directory.

The -NO_LOG option disables message logging. Messages are logged to a logfile located in the PRIME/SNA*>SNA_PRINT_LOGS subdirectory.

SCS Data Stream Printers

PRIME/SNA supports two types of printing capabilities — 3270 Data Stream and SCS Data — for the IBM 3287 and 3289 classes of printer Stream. One feature of SNA_PRINT is the ability to handle print requests from SCS (SNA Character String) printers.

SCS Data Stream allows for more complex formatting of printer output than 3270 Data Stream. For this reason PRIME/SNA users can use the EDIT_EFU utility to create .FORM files for use with logical printers that support SCS data stream. EDIT_EFU is described in Appendix D.

EBCDIC TO ASCII CHARACTER TRANSLATION

Certain EBCDIC characters from the host are printed as ASCII characters, as shown in the following table. Any unsupported characters from the host are printed as a hyphen (-).

HEX	EBCDIC	PRIME ASCII
4A	¢	[
5F	¬	^
6A	¦	]

SNA_PRINT SUBCOMMANDS

While using SNA_PRINT, you control logical printers by entering the following subcommands interactively:

- STARP

- STATUS

- STOP

- DISPLAY

- CANCEL

- PA1/PA2

- HELP

- QUIT

The START Subcommand

The format of the START subcommand is as follows:

    START printer-name [spool-options]

The argument printer-name specifies the device name defined in the
Interactive configuration entry. spool-options are a subset of PRIMOS
SPOOL command options, as described below.

The START subcommand activates the local PRIME/SNA support required to
establish a printer emulation session with an IBM host. START also
maps logical printers to physical printers on your system.

When you start a logical printer using START, you can specify one or
more of the spool options valid for Printer Emulation. While Printer
Emulation is running, PRIME/SNA users can generate print requests,
which SNA_PRINT puts in a PRIMOS spool queue. The PRIMOS Spooler then
processes the requests, providing the services specified by the spool
options.

SNA_PRINT Spool Options: SNA_PRINT supports the following subset of
PRIMOS SPOOL command options with the START subcommand:

Option	Description
-AS alias	Replaces the pathname on the file header and in SPOOL -LIST displays with alias.
-AT destination	Denotes the printer (or printers) that can print the file.
-COPIES n	Specifies the number of times the file is to be printed.
-DEFER time	Defers printing of the file to the time specified. time is entered in the format: HH:MM[AM/PM].
-DISK { disk-name } { dev-number }	Specifies the spool queue on another disk. dev-number is the logical device number of the disk.
-FORMAT { none } { page }	Enables (page) or disables (none) pagination and header generation. page is the default mode.
-FORM type	Specifies a form file created by EDIT_EFU, or, if a form file does not exist, an environment FORM in a file created using the PRIMOS PROP command.
-NOHEAD	Supresses printing of both banner and trailer pages.
{ -NO_PAGE_HEADER } { -NPHDR }	Removes one-line page headers.

Invoking START: A sample invocation of the START subcommand is shown in the following example.

OK, SNA_PRINT

[SNA_PRINT Revision 1.0 - 19.4]
Logfile: LOG.030.28-FEB-85.09.14.46

Command: START PRINTER1 -AT BUILDING1 -AS SNAFILE1 -NO_PAGE_HEADER

In this example, a logical printer, PRINTER1, has been started. It will print with the filename SNAFILE1 on a printer in Building 1, and the hardcopy will have no page headers.

The STATUS Subcommand

The format of the STATUS subcommand is as follows:

STATUS [printer-name]

When used alone, the STATUS subcommand displays a list of all the started logical printers, their states, and associated spool options. You can display status information for a specific printer by including printer-name when you issue the STATUS subcommand. The printer name must correspond to a device name defined as a logical printer in the Interactive configuration entry.

The STATUS subcommand indicates that a logical printer is in one of the following states:

State	Meaning
Starting	Waiting for a response to a START command from a host system.
Ready	A logical printer session has been established. The logical printer is waiting for the host to send data to be printed.
Active	Non-SCS host data is being processed.
Active-SCS	SCS host data is being processed.
Stopping	A STOP subcommand has been issued. The logical printer is waiting for the host to stop the session.

First Edition

If no logical printers have been started, the following message is displayed on your terminal:

        No logical printer sessions are established.

You can only display status information if you are running SNA_PRINT on a dedicated terminal. Status information cannot be displayed if you are running SNA_PRINT as a phantom.

Invoking STATUS: A sample of STATUS output is shown below.


```
Command: STAT
17-JAN-85 16:26:57.97 SNA_PRINT STATUS
logical printer                       state        print options
-----------------------------------   -----------  -----------------------------
PRINTER1                              READY        -no_page_header
PRINTER2                              STARTING
PRINTER3                              ACTIVE       -form insurance -at bld1
PRINTER4                              STOPPING
```


The STOP Subcommand

The format of the STOP subcommand is as follows:

        STOP [printer-name] [-NOW]

When used alone, the STOP subcommand stops all the logical printer sessions. Before stopping, SNA_PRINT completes the processing of any active print jobs, unless the -NOW option is specified. -NOW causes either all or the specified sessions to stop immediately. You can stop a specific printer by including printer-name when you issue the STOP subcommand. The printer name must correspond to a device name defined as a logical printer in the Interactive configuration entry.

Invoking the STOP Subcommand: In the following example three printers are stopped using a single STOP subcommand.

```
Command: STATUS
10-FEB-85 12:06:22.68 SNA_PRINT STATUS
logical printer                        state         print options
─────────────────────────────────      ──────────    ──────────────────
PRINTER1                               READY         -AT WINE
PRINTER2                               READY         -AT WINE
PRINTER3                               READY         -NOHEAD

Command: STOP
28-FEB-85 12:06:42.53 STOP requested for "PRINTER1".
28-FEB-85 12:06:42.78 STOP requested for "PRINTER2".
28-FEB-85 12:06:42.82 STOP requested for "PRINTER3".

Command:
28-FEB-85 12:06:43.33 "PRINTER1" STOPPED.

Command:
28-FEB-85 12:06:43.72 "PRINTER2" STOPPED.

Command:
28-FEB-85 12:06:46.54 "PRINTER3" STOPPED.

Command:
```

The DISPLAY Subcommand

The DISPLAY subcommand (or its abbreviation, DP) displays the names and
types of all the logical printers configured in the current Interactive
configuration entry, as shown in the following example:

```
Command: DP
11-DEC-84 13:59:05.40 DISPLAY requested.

Command:
11-DEC-84 13:59:05.78 CONFIGURED LOGICAL PRINTERS
logical printer                        type
─────────────────────────────────      ──────────────
PRINTER1                     ..        3270DS only
PRINTER2                               3270DS only
PRINTER3                               SCS only
PRINTER4                               3270DS or SCS
PRINTER5                               SCS only
PRINTER6                               SCS only
* means logical printer in use
```

The CANCEL Subcommand

The format of the CANCEL subcommand is as follows:

    CANCEL printer-name

The CANCEL subcommand emulates the CANCEL switch on the IBM 3287 and 3289 printers. CANCEL is only used with SCS mode logical printers. CANCEL terminates the print job for printer-name and spools the portion that has already been processed, without ending the printer emulation session.

When invoking CANCEL, you must supply the name of an SCS logical printer in the ACTIVE state.

The PA1 and PA2 Subcommands

The format for the PA1 and PA2 subcommands is as follows:

    { PA1 }   printer-name
    { PA2 }

The PA1 and PA2 subcommands emulate the Program Attention switches, PA1 and PA2, on IBM 3287 and 3289 printers. PA1 and PA2 are used with SCS mode logical printers to send an attention signal to the remote system.

When invoking PA1 or PA2, you must supply the name of an SCS logical printer in the ACTIVE state.

The functions of the PA1 and PA2 keys are defined by the host application program that is running.

For example, in TSO, PRIME/SNA users enter the DSPRINT command to print a file. By pressing the PA1 key, users can have the host resend the print job from the beginning. By pressing the PA2 key they can have the host resend the preceding page.

The HELP Subcommand

Entering the HELP subcommand (or its abbreviation, H) displays a list of the SNA_PRINT subcommands and their formats.

The QUIT Subcommand

Entering the QUIT subcommand (or its abbreviation, Q) terminates the SNA_PRINT process and returns you to PRIMOS command level. Prior to invoking the QUIT subcommand, you must stop all Printer Emulation sessions with the STOP subcommand. If sessions are still active when you enter the QUIT subcommand, SNA_PRINT reminds you that all logical printers must be stopped before quitting.

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APPENDIXES

A
Problem
Determination

This appendix provides the PRIME/SNA Administrator and/or operator with guidelines for diagnosing and resolving problems that can arise during the daily operation of PRIME/SNA. The appendix concentrates on how to perform problem determination by interpreting information from the following sources: the SNA_SERVER command, PRIME/SNA Server log files, the SNA configuration file, and the PRIME/SNA Server statistics files.

The material in this appendix reflects the experience of the PRIME/SNA developers, and deals with the more common problems you may encounter.

The appendix is divided into five sections. The first four sections correspond to the following problem categories:

- Communications cannot be established with a remote system.

- Communications can be established with a remote system, but LU ports necessary for establishing connections with host applications are not available.

- LU ports are available, but connections with host applications cannot be established.

- Communications with a remote system is abnormally terminated.

The last section of the appendix provides information on the ICS2 bit mask.

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CANNOT ESTABLISH A CONNECTION WITH A REMOTE SYSTEM

This section discusses the two main types of connection failures:

- Failures when local support has been started

- SNA_SERVER -START failures

Each type of failure is described in terms of its symptoms, possible feedback to the operator, and suggested remedial action.

Failures When Local Support Has Been Started

When an SNA_SERVER -START command is issued, the Server attempts to start the local support necessary to support the connection with the remote system. Since the connection may not actually be established for a long time (or never), the Server can only report to the operator whether or not it was able to establish the local support. If the -START is completed successfully, the following message is returned to the operator:

    Remote system being started   : \<remote-system-name\>

Issuing an SNA_SERVER -STATUS command will show that the status or state for the remote system connection is "Started". If an abnormal condition does not occur, and if the connect time limit for the remote system connection is infinite, the status will remain as "Started" until either the remote system activates the connection or until an SNA_SERVER -STOP for the remote system is issued.

If an abnormal condition occurs, message PRIME/SNA0053, PRIME/SNA0054, PRIME/SNA0058, or PRIME/SNA0059 will be logged. If a finite connect time limit is specified, message PRIME/SNA0060 will be logged when the time limit expires. See Appendix B for descriptions of these messages.

When local support has been started, but a connection cannot be established with the remote system, the reason for the failure cannot be reported to the operator as a response to the -START. To determine the reason for the failure in such cases, check the list of possible reasons given below. You may need to use one or more of the following problem determination methods to obtain further information:

- Check the Server log file.

- Use a communications line monitor.

- Review the configuration for the PRIME/SNA support and for the host system.

- Contact network operations personnel at the host site.

Possible Causes of Connection Failure: There are three main reasons for a connection failing to get established although the local support has been started:

- The connection requires activation at the remote system site.

- The configuration for NRZI/non-NRZI is not the same for PRIME/SNA as it is for the host.

  This will result in the ICS2 not recognizing the SDLC station address that is sent by the remote system as one intended for PRIME/SNA.

- The SDLC address specified in the SNA configuration file is not the same as the SDLC address specified at the host.

  This will result in the ICS2 not recognizing the SDLC station address that is sent by the remote system as one intended for PRIME/SNA. Another manifestation of this type of error is that the SDLC address that is in the SNA configuration file may be for another SDLC station physically attached to the line (that is, it is a multipoint line). In this case, the ICS2 would be passing information to the Server that is intended for the other station. Since both PRIME/SNA and the other station would be answering polls from the host for the same SDLC station address, unpredictable behavior of data flow on the line would occur.

SNA_SERVER -START Failures

Since multiple remote systems can be started with a single invocation of the SNA_SERVER command, there are two different classes of -START failures:

- Failures that affect all remote systems

- Failures that affect a particular remote system

In the first case, no remote system can be started. In the second case, the failure is specific to a particular remote system, and does not affect other remote systems for which the -START may apply.

For both classes of SNA_SERVER -START failures, the operator is informed of the reason for the connection failure at the time SNA_SERVER -START is invoked for the remote system.

The following paragraphs describe the messages and feedback returned by SNA_SERVER -START for each class of -START failure. Most of the messages are self-explanatory, and include sufficient information for problem determination. Further explanation is provided with those messages that require it.

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Failures That Affect All Remote Systems: When no remote system can be
started, two messages are issued, using the following format:

    Request failed because <reason>

    No remote systems were started thus no other options were processed.

The second message reports the failure. The first message contains
variable text that describes the reason for the failure. The possible
reasons are listed below, along with further explanation, where needed.

● Request failed because the specified file is not
        the one that was used when the SNA Server phantom was started.

● Request failed because not authorized to use the SNA_SERVER command.

● Request failed because not authorized to use the -START option.

● Request failed because the SNA Server phantom is terminating.

The -START request was issued while the Server is cleaning up its
resources in preparation for termination. Because this takes a
relatively short time, this message is not typically seen. If the
message is displayed, simply reissue the SNA_SERVER -START command.
The fact that the Server was terminating while trying to start a remote
system may imply (1) that the Server terminated due to the abnormal
termination of previously-started remote systems, or (2) that another
operator has independently issued an SNA_SERVER -STOP that has resulted
in the termination. In either case, investigation may be desirable to
determine why the Server was terminated.

● Request failed because there is no controller with address
    <address>.

The controller number specified in the SNA configuration file does not
correlate to any of the installed ICS2s' device addresses.

● Request failed because there is insufficient ICS2 memory to
    support SDLC.

The ICS2 must have 128K words (256K bytes) of storage to support SDLC.

● Request failed because there are insufficient ICS2 buffers to support SDLC.

Although the ICS2 may have 128K words of storage, there may not be sufficient ICS2 buffers to support the remote system connection.

● Request failed because of an incompatibility between the Server and SDLC.

The revisions of the Server and SDLC are not compatible. Message PRIME/SNA0998 in the Server log file will contain the required and installed revision numbers for the SDLC support.

● Request failed because the SDLC support is currently stopping.

This can indicate either a problem with the SDLC support stopping while the Server is attempting to start a connection (in other words, a timing window), or a problem with the support in the ICS2. In the first case, reissuing the SNA_SERVER -START should solve the problem. In the case of an ICS2 problem, a warmstart will be necessary to reset the ICS2. Contact Prime personnel if the second case occurs.

● Request failed because the Server and SDLC are not in synch.

The Server is attempting to establish its first connection with the ICS2 controller, but SDLC already has one or more connections with the Server for the controller. Therefore, there is an error in either the Server or the ICS2 support, and a warmstart will be necessary to reset the ICS2. Contact Prime personnel if this problem occurs.

● Request failed because the Server was unable to set a warmstart on-unit.

This condition should not occur. If it does, contact Prime personnel.

● Request failed because the Server was unable to perform its initialization.

Check the Server log file for further information on this condition. If the log file message indicates an abnormal condition, contact Prime personnel.

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<u>Failures That Affect a Particular Remote System</u>: When a particular
remote system cannot be started, a message is returned that includes
the remote system name and the reason for the failure. (The format for
this message is similar to that of the message for a successful
-START.) Possible messages are as follows:

Remote system already being started   : <remote-system-name>

Remote system already started   : <remote-system-name>

Remote system being quiesced   : <remote-system-name>

Remote system being stopped   : <remote-system-name>

Remote system cannot be started   : <remote-system-name>

When the last message in the above list is displayed, a second line of
variable text is also displayed, using the following format:

Remote system cannot be started   : <remote-system-name>
    -- <reason>

<reason> consists of a specific reason for the failure. Possible
reasons are listed below (in alphabetical order), along with
descriptions of their meanings and suggestions for further action.

● cannot establish line signals

The ICS2 could perform the necessary handshake with the local modem,
but the modem could not perform the necessary handshake with the remote
modem. Typically, this problem occurs when the line between the modems
is not functioning, the remote modem is not powered on, or the remote
modem is not functioning correctly.

● cannot get a QCB

This failure should not occur. If the problem persists, contact Prime
personnel.

● cannot raise line signals

The ICS2 could not perform the necessary handshake with the local
modem. Typically, this problem occurs when the cable between the
bulkhead and the modem is not properly connected, the modem is not
powered on, or the ICS2 or modem is not functioning correctly.

- dequeue from the Server failed

This failure should not occur. If the problem persists, contact Prime personnel.

- enqueue to ICS2 failed

This failure should not occur. Contact Prime personnel.

- enqueue to the Server failed

This failure should not occur. If the problem persists, contact Prime personnel.

- fatal error occurred — code <nnnn>

The Server does not have a specific mapping for the type of failure that occurred; as a result, the code associated with the failure is displayed. In most cases, you should contact Prime personnel when this message is displayed. In some cases, the Server adds the value 1000 or 2000 to the code to help identify the failure to Prime personnel. Codes in the range 1150 through 1163 indicate fatal ICS2 errors. The following list gives the type of error for each of these codes.

    1150   LAC bus address parity error

    1151   LAC bus data parity error

    1152   invalid IBC PC error

    1153   invalid protocol ID

    1154   unmapped LAC bus interrupt

    1155   unknown IBC status function

    1156   unknown IBC error status

    1157   unknown IBC data channel status

    1158   invalid IBC command function

    1159   hardware initialization error

    1160   system status lost

    1161   logical interrupts lost

    1162   protocol status on foreign line

    1163   SDLC status lost

Many of the above errors (especially 1159) indicate possible bad ICS2 hardware or incorrectly installed hardware. In these cases, run T&M diagnostics in an attempt to isolate the failure.

● incompatible clocking

The clocking specified in the SNA configuration is incompatible with clocking being used for an already-started remote system. Also, the SNA configuration file has been edited since the other remote system was started (otherwise SNA_SERVER_CONFIG would not have allowed the inconsistency to exist).

● incompatible data set control

The data set control specified in the SNA configuration is incompatible with the data set control being used for an already-started remote system. Also, the SNA configuration file has been edited since the other remote system was started (otherwise SNA_SERVER_CONFIG would not have allowed the inconsistency to exist).

● incompatible ICS2 controller

The controller specified in the SNA configuration is incompatible with the controller being used for an already-started remote system. Also, the SNA configuration file has been edited since the other remote system was started (otherwise SNA_SERVER_CONFIG would not have allowed the inconsistency to exist).

● incompatible LAC line number

The LAC number specified in the SNA configuration is incompatible with the LAC number being used for an already-started remote system. Also, the SNA configuration file has been edited since the other remote system was started (otherwise SNA_SERVER_CONFIG would not have allowed the inconsistency to exist).

● incompatible line interface

The line interface specified in the SNA configuration is incompatible with the line interface being used for an already-started remote system. Also, the SNA configuration file has been edited since the other remote system was started (otherwise SNA_SERVER_CONFIG would not have allowed the inconsistency to exist).

● incompatible link protocol

The link protocol specified in the SNA configuration is incompatible with the link protocol being used for an already-started remote system.

Also, the SNA configuration file has been edited since the other remote system was started (otherwise SNA_SERVER_CONFIG would not have allowed the inconsistency to exist).

● incompatible signal encoding

The signal encoding specified in the SNA configuration is incompatible with the signal encoding being used for an already-started remote system. Also, the SNA configuration file has been edited since the other remote system was started (otherwise SNA_SERVER_CONFIG would not have allowed the inconsistency to exist).

● incompatible use of auto-answer

The auto-answer type specified in the SNA configuration is incompatible with the auto-answer type being used for an already-started remote system. Also, the SNA configuration file has been edited since the other remote system was started (otherwise SNA_SERVER_CONFIG would not have allowed the inconsistency to exist).

● incompatible use of auto-disconnect

The auto-disconnect idle time specified in the SNA configuration is not the same as the idle time being used for an already-started remote system. Also, the SNA configuration file has been edited since the other remote system was started (otherwise SNA_SERVER_CONFIG would not have allowed the inconsistency to exist).

● incompatible use of leased and switched

The line type specified in the SNA configuration is incompatible with the line type that is being used for an already-started remote system. Also, the SNA configuration file has been edited since the other remote system was started (otherwise SNA_SERVER_CONFIG would not have allowed the inconsistency to exist).

● incompatible use of point-point and multipoint

The use of point-to-point or multipoint specified in the SNA configuration is incompatible with what is being used for an already-started remote system. Also, the SNA configuration file has been edited since the other remote system was started (otherwise SNA_SERVER_CONFIG would not have allowed the inconsistency to exist).

● insufficient ICS2 receive buffers

The ICS2 does not have sufficient resources to support the remote system connection.

● insufficient SDLC memory

The ICS2 does not have sufficient resources to support the remote system connection.

● insufficient SDLC table memory

The ICS2 does not have sufficient resources to support the remote system connection.

● invalid LAC type (RS-232 or V.35)

Either the LAC is for RS-232n and V.35 was configured, or the LAC is for V.35, and RS-232 was configured.

● line is not available

Having been informed by the ICS2 that a fatal line error has occurred, the Server is currently in the process of terminating all present support for the line. During the termination processing, the Server rejects all requests to start another remote system for the line. When all processing has completed, the Server will accept requests for starting remote systems on the line. However, because a fatal line error occured, there is the chance that a subsequent start will fail. If the start fails, the reason returned with the error message may help indicate why the fatal line error occurred.

● no buffer to perform DMQ

There is a shortage of wired buffers for transferring data over the I/O channel between the Prime CPU and the ICS2. Because starting another connection can add more demand for buffers, the -START request is rejected. The shortage may be temporary; thus, attempting to start the remote system again may be successful.

● non-unique local system ID

The local system ID specified in the SNA configuration is the same as the local system ID being used for an already-started remote system. Also, the SNA configuration file has been edited since the other remote system was started (otherwise SNA_SERVER_CONFIG would not have allowed the inconsistency to exist).

● non-unique SDLC address

The SDLC address specified in the SNA configuration is the same as the SDLC address being used for an already-started remote system. Also, the SNA configuration file has been edited since the other remote

system was started (otherwise SNA_SERVER_CONFIG would not have allowed
the inconsistency to exist).

● no SDLC connections are available

No communications paths are available between the Server and the SDLC
support in the ICS2. This problem should not happen. If it does,
contact Prime personnel.

● SDLC didn't respond

This indicates an error in either the Server or ICS2 support. To get a
successful start, a warmstart is probably necessary. Contact Prime
personnel.

● the LAC cable is not connected

The cable that plugs into the back of the LAC card and extends to the
bulkhead is not properly connected.

● the LAC line does not exist

No LAC is in the slot designated by the LAC number in the SNA
configuration.

● the line has dropped

A fatal line error occurred while attempting to start the remote
system. Check message PRIME/SNA0087 in the Server log file; it will
contain information on the line error.

● the line is already being used

The line has been designated for use by another protocol such as
asynch.

● warmstart occurred

A warmstart occurred while the start request was being processed.

● unable to communicate with the ICS2

The Server was unable to communicate with the ICS2. Contact Prime
personnel.

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LU PORTS NOT AVAILABLE

LU ports (or SSCP-LU sessions, in SNA terminology), make it possible to initiate connections with host applications. There are basically four reasons why an LU port may not be available:

- The LU ports defined in the SNA configuration file do not match the LUs defined at the host system.

  This will result in the remote system sending activation requests for the LU ports; the requests will be rejected by the Server because the LU port numbers will not be configured. Similarly, the host system will not send activation requests for LU port numbers which are configured for PRIME/SNA but not at the host system. The PRIME/SNA Administrator will need to resolve this problem (possibly in concert with remote system site personnel).

- There are not enough LU ports configured to satisfy the number of users.

  This requires that additional LU ports be specified in the SNA configuration file and the associated LUs added to the host configuration.

- The LU port requires activation at the remote system site.

  Request remote system site personnel to activate the appropriate LU.

- The LU port requires deactivation then reactivation at the remote system site.

  This condition can be determined by using the SNA_SERVER -STATUS -RS command and naming the remote system with which the LU port is associated. On the screen(s) showing the status of the LU ports, any port that has a state of "Active/Cannot Open" requires that the associated LU at the host system be deactivated then reactivated.

  This condition arises if the LU Subsystem closes the LU port but the host does not deactivate it. The Server does not allow an LU Subsystem to subsequently open the LU port until it has been deactivated. This is done for security reasons; the Server will not make the port available because an LU Subsystem different from the original LU Subsystem may try to open the port (the Server does not distinguish between different LU Subsystems). Thus, the Server will not make the port available while the "old" SNA SSCP-LU session is active.

HOST APPLICATION CONNECTIONS CANNOT BE ESTABLISHED

An LU port enables a user to connect to a host application.   Although the LU port may be available, attempts to connect (to LOGON) to a host application may fail. This section describes the one failure that is directly related to PRIME/SNA support — rejection of a BIND command by either the Server or the LU Subsystem.

Note

Failures that are not the result of PRIME/SNA support (when the user is not authorized at the host to use the application, when the application is not available, and so on) are beyond the scope of this section.

A BIND is the SNA message that flows from the host system to PRIME/SNA to activate an LU-LU session between the host application and the PRIME/SNA user.

A BIND is constructed in the host system in various ways depending upon the host application involved. The construction includes using information specified in the NCP GEN, LOGMODE table entries, CICS TCT tables, and other sources. A BIND will typically be rejected because the information specified at the host and placed in the BIND either (1) is not acceptable to the Server or the LU Subsystem, or (2) is not consistent with what has been configured for the LU Subsystem's use of the LU-LU session (for example, device configuration for SNA_3270).

When the Server rejects a BIND, it logs message PRIME/SNA0261, PRIME/SNA0262, PRIME/SNA0263, or PRIME/SNA0264. The message is only logged if the message level is medium or detailed; in addition, the message is not sent to the system console. Therefore, there is the possibility that there will be no indication that a BIND was rejected.

Since the message that is logged also includes the SNA sense code that is sent back to the remote system when the BIND is rejected, it is advisable to have the message logging set to either medium or detailed when attempts are being made to log on to host applications for the first time. The SNA sense code can be used to determine which field in the BIND caused the BIND rejection. Once the reason for the rejection has been determined, either the SNA configuration or the host configuration can be changed so that the BIND will be accepted.

THE CONNECTION WITH A REMOTE SYSTEM TERMINATES ABNORMALLY

When the connection with a remote system terminates abnormally, an event message describing the reason for the termination is logged in the Server log file. Messages that record an abnormal termination are: PRIME/SNA0080 through PRIME/SNA0087, PRIME/SNA0090, PRIME/SNA0094, and PRIME/SNA0099.

To determine the cause of the failure, first check the Server log file to see which of these messages was logged. Then look up the description of the message in Appendix B.

For cases such as a line failure, you may need to contact remote system site personnel in order to determine the underlying reason for the line failure. Another source of information that may be helpful is the Server statistics file. Some of the statistics (such as retransmissions or bad FCS) may indicate a bad line is involved.

ICS2 BIT MASK

Under some conditions, the ICS2 returns a bit mask that the Server logs in some messages. The bit mask is logged as a set of 16 0s and 1s. The following table provides an interpretation of the bit mask. Bit number refers to the position in the mask, with bit number 1 being the left-most value and 16 being the right-most value. Meaning applies if the position in the mask contains a 1. Note that for bit numbers 6 through 16, a 1 implies that the signal is high or on.

Bit Number	Meaning
1	A hardware error has occurred.
2	Not used.
3	Not used.
4	The LAC cable has become disconnected.
5	Not used.
6	Speed select.
7	Request to send.
8	Data terminal ready.
9	Last ring indicator.
10	Last data carrier detect.
11	Last clear to send.
12	Last data set ready.
13	Current ring indicator.
14	Current data carrier detect.
15	Current clear to send.
16	Current data set ready.

B

Server
Log Messages

This appendix lists the event messages that are logged by the PRIME/SNA Server. These messages provide information that enables the PRIME/SNA Administrator and/or operator to do the following:

- Verify that the SNA configuration file and the SNA host configuration are compatible.

- Perform problem determination when communication with the SNA host cannot be started, when communications with the host is lost, or when the use of some LU ports is lost. (This is typically done after an SNA_SERVER -STATUS command reveals that connections and/or ports have been lost.)

- Obtain historical data such as when the message level or statistics file was changed.

The next two sections of the appendix explain the message numbering and formatting conventions used for the message headers and text, and the organization of the appendix. The remaining seven sections contain the messages and details on their meaning and occurrence.

MESSAGE NUMBERING AND FORMATTING CONVENTIONS

The messages in this appendix are shown as they appear on a display or in a listing of the file to which they are logged. (Some messages have been reformatted slightly to fit within the margins of this document.) Most Server messages consist of multiple lines of text.

The header is at the beginning of the first (or only) line of text, and
always has the format:

PRIME/SNAOxxx dd-mmm-yy hh:mm:ss.ss

xxx is the specific Server message number; dd-mmm-yy is the PRIME/SNA
standard date convention (for example, 21-APR-85); and hh:mm:ss.ss is
the standard time convention with hundredths of a second.

If the event that occurred was associated with a remote system, the
string "-RS <remote-system-name>" is placed on the first line. -RS is
the abbreviation that is used for -REMOTE_SYSTEM on the SNA_SERVER
external command line. remote-system-name is the remote system name
configured in the SNA configuration file when the SNA_SERVER -START
command was issued for the remote system.

Server event messages are numbered according to the class of event they
indicate. The following numbering scheme is used for the PRIME/SNA
number that appears at the beginning of the message header:

Message Number	Event Type Indicated
0001 - 0049	Normal processing of connections with remote systems and Server support.
0050 - 0099	Abnormal or error conditions concerning Server support or processing of connections with remote systems.
0100 - 0149	Events passed between LU Subsystems and the Server for the normal allocation and deallocation of Server resources.
0150 - 0199	Events passed between LU Subsystems and the Server that indicate unsuccessful or invalid attempts to allocate Server resources, invalid attempts to deallocate Server resources, or abnormal deallocation of Server resources.
0200 - 0249	Normal SSCP-LU and LU-LU session activation and termination processing that has occurred between the Server and the remote system.
0250 - 0299	Abnormal or unsuccessful SSCP-LU and LU-LU session activation and termination processing that has occurred between the Server and the remote system.
0900 - 0999	Conditions that prevent the Server from being started.

Most of the messages include variable data which is inserted at the time that a message is issued. Possible variables and their data types are as follows:

Variable	Data Type
##	Controller number (octal)
###	Physical line number (octal)
sa	SDLC station address (hexadecimal)
sscp	SSCP identification (decimal)
id	LU or Session ID (decimal)
xxx	LU port number (decimal)
yyy	LU port index (decimal)
xid	XID (decimal)
nnnn	SNA sense data (hexadecimal)
code	Message-specific data
user	PRIMOS user number

The variables ##, ###, sa, and sscp are specified through SNA_SERVER_CONFIG and passed to the Server when an SNA_SERVER -START command is issued.

id is a value assigned by the Server that identifies a Server resource being used by an LU Subsystem.

xxx is the DAF' portion of a DAF'/OAF' SNA session address pair for SNA activation and deactivation messages that are received from the remote system. This value can be correlated with the definition of LU ports in the SNA configuration for the remote system.

yyy is the OAF' portion of an DAF'/OAF' SNA session address pair for SNA activation and deactivation messages that are received from the remote system.

nnnn is SNA sense data; it is used to specify the reason that the Server has rejected an SNA activation message that has been received from the remote system. In order to understand the sense data, the Administrator may need to contact personnel at the remote system site.

code is a value that is used in a message to specifically identify the reason that the message was logged. To understand the reason, the administrator can look up the code in the documentation for the message.

user is the PRIMOS user number of a requester of a Server function.

ORGANIZATION OF THIS APPENDIX

The messages in this appendix are listed in numerical order, according to the PRIME/SNA number that appears at the beginning of the message header. In addition to the message header and text, the following descriptive information is provided:

Message Level	Indicates at which message level setting the message is logged (Brief, Medium, or Detailed).
System Console	Indicates whether or not the first line of the message is diplayed at the system console (Yes or No).
Meaning	Describes the event indicated by the message.
Response	Describes user action that can be taken when the event occurs.
Discussion	Provides further details on the event.

PRIME/SNA0001 - PRIME/SNA0049

Messages PRIME/SNA0001 through PRIME/SNA0049 provide information about the Server support and about normal processing of connections with remote systems.

PRIME/SNA0001 dd-mmm-yy hh:mm:ss.ss   PRIME/SNA Server [dd.ee.ff]
                                       started.
            [SNA_SERVER_PROCESS Revision 1.0 - 19.4] is PRIMOS
            user <user>.
            Using SNA Configuration File
            <configuration-file-pathname>.

            Message Level: Brief   System Console: Yes

            Meaning: An SNA_SERVER -START command has resulted in
            the creation of the SNA Server phantom (PRIMOS user name
            is SNA_SERVER).

            Response: No action is required on behalf of this
            message; it is simply an indicator that processing is
            continuing normally.

PRIME/SNA0002 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
              Local support has been started using SDLC [dd.ee.ff].
              CONTROLLER: <###>, LINE: <###>, STATION ADDRESS: <sa>

              <u>Message Level</u>: Brief   <u>System Console</u>: Yes

              <u>Meaning</u>: An SNA_SERVER -START for the remote system has
              been accepted, the local system support for the
              connection with the remote system has been initialized,
              and PRIME/SNA is waiting for the connection to be
              established.

              <u>Response</u>: No action is required on behalf of this
              message; it is simply an indicator that processing is
              continuing normally. Message PRIME/SNA0003 will be
              logged if and when the connection is established.

              <u>Discussion</u>: Because an SNA_SERVER -START command can
              specify multiple remote systems to be started, there is a
              difference between the completion of <u>SNA_SERVER -START</u>
              <u>for a remote system</u> and the completion of the<u>SNA_SERVER</u>
              <u>-START command</u>.

              The completion of an <u>SNA_SERVER -START for a remote</u>
              <u>system</u> occurs when the local system support has been
              started or could not be started. This message is logged
              to indicate that the support was started; there are
              other messages defined that are logged to indicate why
              the support could not be started. This implies that, if
              multiple remote systems are specified in the SNA_SERVER
              -START command, there can be some remote systems for
              which the SNA_SERVER -START is successful and others for
              which the SNA_SERVER -START is unsuccessful. A separate
              message is logged for each remote system being started.

              The completion of the <u>SNA_SERVER -START command</u> occurs
              when all specified remote systems have had the local
              system support started or the support could not be
              started. There is no message logged to indicate the
              completion to the SNA_SERVER -START command.

              The starting of the local system support for a remote
              system does not guarantee that a connection will be
              established. The remote system may never initiate the
              connection or the connection attempt may fail for various
              reasons.

              If a connect time limit is configured for the remote
              system, but the remote system does not initiate the
              connection, the Server terminates the local system
              support when the time limit expires. Message
              PRIME/SNA0060 is logged to indicate the expiration of the
              time limit. If no time limit is configured and the
              remote system does not initiate the connection, an

SNA_SERVER -STOP will have to be issued in order to terminate the local system support.

If the connection attempt should fail, a message will be logged that indicates the reason for the failure.

PRIME/SNA0003 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
Connection established.
[The remote system's SSCP ID is <sscp>.   ]
[The remote system did not send an SSCP ID.]

Message Level: Brief   System Console: Yes

Meaning: A connection now exists between the Server and the remote system, and connections can be established between LU Subsystems and the remote system.

Response: No action is required on behalf of this message; it is simply an indicator that the connection has been successfully established.

Discussion: A successful connection between the Server and the remote system can result from either of the following actions:

● The connection was established as the result of an SNA_SERVER -START issued for the remote system.

● The connection had been previously established then terminated, but the local system support was never stopped. The connection has now been established again. The previous connection may have been terminated normally or abnormally; in either case, the connection has been reestablished.

  If the previous termination had caused abnormal termination of user data traffic, recovery of the data traffic on the newly-established connection depends upon the LU Subsystem associated with the data traffic.

Because PRIME/SNA is dependent upon the remote system initiating the connection, there is no guarantee that a connection will even be attempted (that is, the remote system's version of SNA_SERVER -START is never invoked). This applies to an intial connection or after an abnormal termination.

PRIME/SNA0004 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
              Connection terminated normally.

    Message Level: Brief   System Console: Yes

    Meaning: A normal disconnection has occurred. This
    messages does not indicate that the local system support
    for the remote system connection has been stopped; this
    is indicated by message PRIME/SNA0005. (This message is
    only issued if the remote system performs a complete and
    orderly termination that includes sending an SDLC DISC
    request. If the DISC request is not received, this
    message will not be logged.)

    Response: No action is required on behalf of this
    message. However, if the Administrator wishes to
    terminate the local support, an SNA_SERVER -STOP must be
    issued. If the local system support is not stopped, it
    is possible that the connection can be reestablished.
    This is because the local system support functions as a
    monitor in case the remote system tries to reconnect.

PRIME/SNA0005 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
              Local support has been stopped.

    Message Level: Brief   System Console: Yes

    Meaning: An SNA_SERVER -STOP (or the equivalent of a
    -STOP) for the remote system was performed. If there are
    no other remote systems for which the local system
    support has been started, PRIME/SNA0006 will be the next
    message that is logged.

    Response: No action is required on behalf of this
    message unless the operator wishes to reconnect to the
    remote system. In this case, an SNA_SERVER -START for
    the remote system will have to be issued.

    Discussion: The equivalent of a -STOP implies that if an
    abnormal termination of the connection occurs, the Server
    stops the local support and logs the message. The only
    case when an abnormal termination does not result in the
    support being automatically stopped is when automatic
    recovery is configured for the remote system and the type
    of abnormal termination is applicable to automatic
    recovery (see the description of message PRIME/SNA0007).

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PRIME/SNA0006   dd-mmm-yy hh:mm:ss.ss   PRIME/SNA Server terminated.

   <u>Message Level</u>: Brief   <u>System Console</u>: Yes

   <u>Meaning</u>: The Server support has been terminated. The
   termination was the result of an SNA_SERVER -STOP or an
   abnormal termination being performed for the last remote
   system, where the last remote system implies that all
   previously-started remote systems have been stopped.

   <u>Response</u>: An SNA_SERVER -START will have to be issued in
   order to start the Server support again.

PRIME/SNA0007   dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
                Automatic recovery being attempted.

   <u>Message Level</u>: Brief   <u>System Console</u>: Yes

   <u>Meaning</u>: The connection with the remote system was
   terminated abnormally and an attempt is being made to
   reestablish the connection. The cause of the abnormal
   termination was described in a message logged prior to
   this one for the same remote system. If and when the
   reconnection succeeds, message PRIME/SNA0003 is
   displayed.

   <u>Response</u>: No action is required on behalf of this
   message. However, if recovery is not desired, you should
   issue an SNA_SERVER -STOP for the remote system.

   <u>Discussion</u>:   To prevent a continual automatic
   reconnection for a connection that is experiencing
   repeated abnormal terminations, automatic recovery will
   be performed only three times over the lifetime of the
   SNA_SERVER -START for the remote system. On the fourth
   abnormal termination, the Server will terminate the local
   system support and log message PRIME/SNA0088.

   Automatic recovery is not performed for all abnormal
   cases. The descriptions of messages PRIME/SNA0050
   through PRIME/SNA0099 specify which conditions can be
   automatically recovered from and which cannot. These
   messages are logged when abnormal termination occurs.

   There is no guarantee that the connection will be
   reestablished. In addition, even if the connection is
   reestablished, it does not imply that recovery can be
   performed at the LU Subsystem level. This depends upon
   the recovery capabilities of the LU Subsystem. For the
   recovery capabilities of the LU Subsystem(s) which were
   using the remote system connection at the time of the
   disconnection, see the appropriate documentation.

PRIME/SNA0010 dd-mmm-yy hh:mm:ss.ss   -STATISTICS request
File <statistics-file>:
Opened for use as the statistics file.

Message Level: Medium   System Console: No

Meaning: The -STATISTICS option of the SNA_SERVER
external command was issued and the Server was able to
open the specified file. Until another -STATISTICS
option is issued specifying a different file, the Server
will use the file to write any statistics that are
collected.

Message PRIME/SNA0011 may be issued prior to this one.
This indicates that a different file was being used to
collect statistics when the -STATISTICS   option   was
issued. For this case, the Server closes the previous
file then opens the new file.

Response: No action is required, unless the operator
wishes to specify a different file for the writing of
statistics.

PRIME/SNA0011 dd-mmm-yy hh:mm:ss.ss   -STATISTICS/-NO_STATISTICS
                                      request
File <statistics-file>:
No longer being used as the statistics file.

Message Level: Medium   System Console: No

Meaning: The Server has closed the file that was being
used to collect Server statistics. This can occur for
one of the following reasons:

  ● The -NO_STATISTICS option was specified with the
    SNA_SERVER external command.

  ● The -STATISTICS option was specified with the
    SNA_SERVER external command and the file to be
    used for collecting statistics is different than
    the one currently being used. In this case, the
    Server closes the old file and opens the new one;
    thus message PRIME/SNA0010 will be issued after
    this message.

  ● The Server is terminating.

Response: No action is necessary, unless the operator
wishes to specify a different option or file.

PRIME/SNA0020 dd-mmm-yy hh:mm:ss.ss -RS <remote-system-name>
               [Message level changed from <level> to <level>.]
               [Message level remains at <level>.   ]

               Message Level: Brief   System Console: No

               Meaning: The -MSGL option of the SNA_SERVER external
               command was issued for the specified remote system.   The
               first text format shown above indicates that the message
               level was changed, with <level> identifying the message
               level in effect before and after the change. The second
               text format shown above indicates that the message level
               specified with the option was the same as the current
               message level setting, identified as <level>.   Possible
               values for <level> are Brief, Medium, or Detailed.

               Response: No action is required unless the operator
               wishes to specify a different message level than the
               message indicates.

PRIME/SNA0050 - PRIME/SNA0099

Messages PRIME/SNA0050 through PRIME/SNA0099 provide information about
abnormal or error situations concerning the Server support or
processing of connections with remote systems.

PRIME/SNA0050 dd-mmm-yy hh:mm:ss.ss -RS <remote-system-name>
               Unauthorized requester for a Server Administrator
                function.
               User requested option: <sna-server-option>

               Message Level: Brief   System Console: Yes

               Meaning: A user has attempted to use an option of the
               SNA_SERVER external command for which the user is not
               authorized. No other processing is performed other than
               to reject the command and log this message.
               <sna-server-option> identifies the option for which the
               requester is not authorized.

               Response: If the user is to be given authority to issue
               the option, the user's access rights for the SNA_SERVER
               command must be updated appropriately.

PRIME/SNA0051 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               Attempted to start a node that is being stopped.

               Message Level: Medium   System Console: No

               Meaning: The SNA_SERVER -START for the remote system has
               failed because the local system support for the remote
               system is being terminated. This is not an error
               condition; however, the message is logged because it may
               indicate that there is not enough administrative control
               over the use of SNA_SERVER -START and SNA_SERVER -STOP.

               Response: No action is required as far as issuing Server
               external commands. However, if the remote system is to
               be started, the SNA_SERVER -START will have to be
               reissued after the Server has finished stopping the local
               system support.

PRIME/SNA0052 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               Local support not started.
               Could not establish a connection with SDLC.

               Message Level: Medium   System Console: No

               Meaning: The SNA_SERVER -START for the remote system has
               failed because there were insufficient resources to
               support a connection with the remote system.

               Response: No action is required as far as issuing Server
               external commands. If this was the only remote system
               being started, and if the Server phantom was created as a
               result of the -START, message PRIME/SNA0006 will be
               subsequently logged, indicating that the Server process
               has terminated. Any other remote systems started or
               being started are independent of the processing for this
               remote system.

               Automatic recovery, if configured, does not apply for
               this condition.

               For each LU resource that was allocated at the time of
               the failure, the appropriate LU Subsystem is notified of
               the failure and that a CLOSE_LU is required. After all
               LU resources have been deallocated, this message is
               logged.

               Discussion: The Server and SDLC share a pool of storage
               for communicating with one another. During periods of
               heavy data traffic, the storage pool may become
               temporarily depleted. The heavy data traffic may result
               from a large SNA configuration, or from a period of
               unusually heavy traffic due to simultaneous transmission
               on several SNA sessions.

If a remote system is being started while the storage pool is depleted, the Server does not attempt to connect with the remote system since the connection would increase the potential for the depletion of the storage pool.

Since the depletion of the pool is transient in nature, issuing another SNA_SERVER -START for the remote system may be successful.

The depletion condition will probably occur more frequently when a large SNA configuration is being used (that is, many remote systems and/or many LU ports are configured), than when several sessions are simultaneously sending/receiving much data.

The solution to this condition (if it occurs frequently) requires an analysis of the performance capability of the Prime machine versus the PRIME/SNA configuration being used.

PRIME/SNA0053 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
Local support not started.
Invalid or inconsistent configuration data: <code>

Message Level: Brief   System Console: Yes

Meaning: The SNA_SERVER -START for the remote system has failed.

Response: No action is required as far as issuing Server external commands. If this was the only remote system being started, and if the Server phantom was created as a result of the -START, message PRIME/SNA0006 will be subsequently logged, indicating that the Server process has terminated. Any other remote systems started or being started are independent of the processing for this remote system.

Automatic recovery, if configured, does not apply for this condition.

For each LU resource that was allocated at the time of the failure, the appropriate LU Subsystem is notified of the failure and that a CLOSE_LU is required. After all LU resources have been deallocated, this message is logged.

For most cases, feedback provided to the operator when the SNA_SERVER -START command completes explains the reason for the failure. For those cases when no specific information is given, Prime personnel can use <code> to determine the reason for the failure.

PRIME/SNA0054 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
              Local support not started.
              Could not start line <###>:   <code>

              Message Level: Brief   System Console: Yes

              Meaning: The SNA_SERVER -START for the remote system has
              failed because of a condition which prevents the
              communications line from being activated.

              Response: No action is required as far as issuing Server
              external commands. If this was the only remote system
              being started, and if the Server phantom was created as a
              result of the -START, message PRIME/SNA0006 will be
              logged, indicating that the Server process has
              terminated. Any other remote systems started or being
              started are independent of the processing for this remote
              system.

              Automatic recovery, if configured, does not apply for
              this condition.

              For each LU resource that was allocated at the time of
              the failure, the appropriate LU Subsystem is notified of
              the failure and that a CLOSE_LU is required.   After all
              LU resources have been deallocated, this message is
              logged.

              For most cases, feedback provided to the operator when
              the SNA_SERVER -START command completes explains the
              reason for the failure. For those cases when the
              operator is not given specific information, <code> can be
              used by Prime personnel to determine the reason for the
              failure.

PRIME/SNA0056 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
              XID mismatch: <xid>

              Message Level: Medium   System Console: No

              Meaning: The Server received an XID from the remote
              system that is not a format 0 XID. The XID that the
              Server sends to the remote system is a format 0 XID.
              Therefore, there is a possibility that the remote system
              will terminate the connection with the remote system. If
              the connection should be terminated, this message may
              indicate the source of the problem.

              Response: No action is required as far as issuing Server
              external commands. This message does not indicate that
              the associated remote system connection has been
              terminated; therefore there is no other action taken by
              the Server in association with this message.

If the remote system is terminated after this message is logged, the problem may be in the mismatch of XIDs. Contact personnel at the remote system site to ensure that the correct XID format is sent.

PRIME/SNA0058   dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
                 Connection not established.
                 Invalid SSCP ID: <sscp>

Message Level: Brief   System Console: Yes

Meaning: The connection with the remote system was not established because the remote system's SSCP identification did not match any of the SSCP identification values specified in the SNA configuration for the remote system.

Response: No action is required as far as issuing Server external commands. If this was the only remote system being started, and if the Server phantom was created as a result of the -START, message PRIME/SNA0006 will be logged, indicating that the Server process has terminated. Any other remote systems started or being started are independent of the processing for this remote system.

For each LU resource that was allocated at the time of the failure, the appropriate LU Subsystem is notified of the failure and that a CLOSE_LU is required. After all LU resources have been deallocated, the Server stops the support for the local system and this message is logged.

Automatic recovery, if configured, does not apply for this condition.

Appropriate action must be taken if a connection with the SSCP is desired. Possible actions are as follows:

● Add the SSCPID shown in the message to the list of valid SSCP identifications in the SNA configuration for the remote system.

● Specify in the Server configuration for the remote system that no identification is required. This is done by not specifying any SSCP IDs.

● Change the SSCP identification specified at the remote system.

PRIME/SNA0059 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
              Connection not established.
              ACTPU rejected: SNA sense data <nnnn>

              Message Level: Brief   System Console: Yes

              Meaning: The connection with the remote system was not
              established because the SNA ACTPU received from the
              remote system was not acceptable to the Server.

              Response: No action is required as far as issuing Server
              external commands. If this was the only remote system
              being started, and if the Server phantom was created as a
              result of the -START, message PRIME/SNA0006 will be
              logged, indicating that the Server process has
              terminated. Any other remote systems started or being
              started are independent of the processing for this remote
              system.

              For each LU resource that was allocated at the time of
              the failure, the appropriate LU Subsystem is notified of
              the failure and that a CLOSE_LU is required. After all
              LU resources have been deallocated, the Server stops the
              support for the local system and this message is logged.

              Automatic recovery, if configured, does not apply for
              this condition.

              In order to get the proper ACTPU request transmitted, the
              problem must be discussed with personnel at the remote
              system site. <nnnn> is the SNA sense data that the
              Server sends back to the remote system.

PRIME/SNA0060 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
              Connection not established.
              The configured time limit, <limit> minutes, has expired.

              Message Level: Brief   System Console: Yes

              Meaning: The connection with the remote system was not
              established because the time limit configured for
              establishing the connection has expired.

              Response: No action is required as far as issuing Server
              external commands. If this was the only remote system
              being started, and if the Server phantom was created as a
              result of the -START, message PRIME/SNA0006 will be
              logged, indicating that the Server process has
              terminated. Any other remote systems started or being
              started are independent of the processing for this remote
              system.

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For each LU resource that was allocated at the time of the failure, the appropriate LU Subsystem is notified of the failure and that a CLOSE_LU is required. After all LU resources have been deallocated, the Server stops the support for the local system and this message is logged.

Automatic recovery, if configured, does not apply for this condition.

Appropriate action must be taken in order to get the connection established. Possible actions are as follows:

● Increase the time limit.

● Contact the remote system site in order to ensure that the necessary support has been activated at the remote system site.

PRIME/SNA0065 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
Connection reset: SNA sessions not reset.
SNRM received while SNA sessions active.

<u>Message Level</u>: Medium   <u>System Console</u>: No

<u>Meaning</u>: The connection with the remote system has been reset at the SDLC level, but the SNA sessions have not been affected. This implies that the connection exists but that, at the SDLC level, the connection was placed in the state that existed when the connection was first established.

<u>Response</u>: No action is required as far as issuing Server external commands. However, if the operator wishes to terminate the remote system connection, an SNA_SERVER -STOP command must be issued. Any other remote systems started or being started are independent of the processing for this remote system.

<u>Discussion</u>: For each LU or session resource that is allocated at the time of the reset, the resource's LU Subsystem is notified of the reset. Upon receiving the notification, an LU Subsystem can take whatever action is appropriate. Possible actions are (1) deallocating the resource, (2) doing nothing and letting the remote system initiate the next action, or (3) attempting to continue.

Architecturally, a reset at the SDLC level has no direct affect on the SNA sessions. Therefore, it is possible for an LU Subsystem to continue as if nothing had happened and let the remote system determine the action that will be taken, or to exchange information with its remote system counterpart in an attempt to recover the data traffic at some synchronization point.

However, many SNA implementations treat such a reset as
equivalent to the reset that occurs for an SNA DACTPU
command. That is, all SNA sessions are reset and must be
reactivated in order to use the connection.

The Server allows each LU Subsystem to proceed as is
appropriate for the LU Subsystem. Refer to the
appropriate documentation on the actions that will occur
for any particular LU Subsystem. Note that different LU
Subsystems sharing the same remote system connection can
perform different actions after this type of reset.

Automatic recovery, if configured, does not apply for
this condition since the remote system connection was
never terminated.

PRIME/SNA0066 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
Connection reset: SNA sessions reset.
ACTPU(cold) received while LU-LU/SSCP-LU sessions
 active.
[The remote system's SSCP ID is <sscp>.   ]
[The remote system did not send an SSCP ID.]

Message Level: Medium   System Console: Yes

Meaning: The connection with the remote system has been
reset at the SNA level because of receiving an
ACTPU(cold) while there are active SNA sessions. This
causes all SSCP-LU and LU-LU sessions using the
connection to be reset to the inactive state.

Response: No action is required as far as issuing Server
external commands. However, if the operator wishes to
terminate the remote system connection, an SNA_SERVER
-STOP command must be issued. Any other remote systems
started or being started are independent of the
processing for this remote system.

(This message indicates that the processing for the
remote system connection is in the same state as that
indicated by message PRIME/SNA0003; that is, the
connection exists and the Server is waiting for SNA
activation requests from the remote system. However, the
SSCP ID logged with this message may differ from the SSCP
ID logged with the original PRIME/SNA0003 message.)

Discussion: As with the reset described in message
PRIME/SNA0065, the affected LU Subsystem(s) determine
whether this condition is recoverable or not. However,
the ACTPU(cold) reset requires more synchronization,
because recovery requires that session reactivations be
performed.

(Recovery, if performed, only applies to getting back into synchronization for the allocation and use of the LU and session resources. Any attempt to recover data traffic that was terminated abnormally by the reset depends upon the LU Subsystems.)

Automatic recovery, if configured, does not apply for this condition because the remote system connection was never terminated.

PRIME/SNA0070 dd-mmm-yy hh:mm:ss.ss   -STATISTICS request
            File: <statistics-file>
            Already being used as the statistics file.

            Message Level: Medium   System Console: No

            Meaning: The file specified (either explicitly or through the default) with the -STATISTICS option of the SNA_SERVER external command is the file that is currently being used to hold statistics. No action is taken by the Server. This message is logged only to indicate that there may be a lack of coordination among multiple administrators involved in the collecting of statistics.

PRIME/SNA0071 dd-mmm-yy hh:mm:ss.ss   -STATISTICS request
            File: <statistics-file>
            Could not be opened: <code>

            Message Level: Medium   System Console: No

            Meaning: The file specified (either explicitly or through the default) with the -STATISTICS option of the SNA_SERVER external command could not be opened. <code> is the error code returned by the file management system from the attempt to open the file. Note that if statistics were being collected in a different file when the -STATISTICS option was issued, the previous file was closed prior to attempting to open the new file. Therefore, no file is being used for statistics.

            Response: If desired, another -STATISTICS request can be issued to open a file for statistics.

PRIME/SNA0072 dd-mmm-yy hh:mm:ss.ss   -STATISTICS request
            File: <statistics-file>
            Cannot write into the file: <code>

            Message Level: Brief   System Console: Yes

            Meaning: An error occurred while attempting to write data into the file being used to collect statistics.

<code> is the error code returned from the file management system. The Server closes the file thus statistics will not be collected until another -STATISTICS option is issued.

Response: If desired, another -STATISTICS request can be issued to open a file for statistics.

PRIME/SNA0073 dd-mmm-yy hh:mm:ss.ss   -STATISTICS/-NO_STATISTICS
                                       request
             File <statistics-file>:
             Cannot be closed: <code>

             Message Level: Medium   System Console: No

             Meaning: The Server could not close the statistics file when requested through the -NO_STATISTICS option or (if not requested) when the Server is terminating. The code that is logged is the error code returned from the file management system.

PRIME/SNA0074 dd-mmm-yy hh:mm:ss.ss   -NO_STATISTICS request
             Statistics are not being collected.

             Message Level: Medium   System Console: No

             Meaning: A -NO_STATISTICS option was issued but the Server was not collecting statistics. No action is taken by the Server. This message is logged only to indicate that there may be a lack of coordination among multiple administrators involved in the collecting of statistics.

PRIME/SNA0075 dd-mmm-yy hh:mm:ss.ss   -MSGL <resource> <resource-name>
             [The specified Server resource does not exist.]
             [No Server resources are active.   ]

             Message Level: Medium   System Console: No

             Meaning: The -MSGL option of the SNA_SERVER external command was issued but the Server has no information on the specified resource. That is, there is no active local support for remote systems specified directly or indirectly through <resource-name>. <resource> identifies the type of resource and can be one of the following:

                    Resource   Meaning

                    -LG   There is no remote system that has been
                           started for the specified line group.

-LINE   There is no remote system that has been started for the specified line.

-RSG   There is no remote system that has been started for the specified remote system group.

-RS   The specified remote system has not been started. <resource-name> is the resource that was specified on the SNA_SERVER command line.

-ALL   The Server was performing its termination processing when it received the -MSGL. (This resource type is used only with the second text format shown above.)

PRIME/SNA0080 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
Connection terminated abnormally.
DACTPU received while SNA sessions active.

Message Level: Brief   System Console: Yes

Meaning: An abnormal termination of the connection has occurred because of the remote system sending a DACTPU while there are active SNA sessions. This causes the SSCP-PU, SSCP-LU, and LU-LU sessions to be reset to the inactive state.

Response: No action is required as far as issuing Server external commands. However, if automatic recovery is configured for the remote system, but the operator wishes to terminate the local support, an SNA_SERVER -STOP command must be issued. Any other remote systems started or being started are independent of the processing for this remote system.

Discussion: All affected session and/or LU resources are deallocated.

If automatic recovery is configured, the local system support remains active and monitors the connection, in case the remote system should attempt to reestablish it. There is no guarantee that a reconnection will occur. This implies that an SNA_SERVER -STOP will have to be issued if the reconnection is not established.

If automatic recovery is not configured, the Server will perform the equivalent of an SNA_SERVER -STOP for the local support.

PRIME/SNA0081 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
              Connection terminated abnormally.
              SDLC DISC received while SNA sessions active.

       Message Level: Brief   System Console: Yes

       Meaning: An abnormal termination of the connection has
occurred because of the remote system sending an SDLC
DISC while there are active SNA sessions. This causes
the Server to reset the SSCP-PU, SSCP-LU, and LU-LU
sessions to the inactive state.

       Response: No action is required as far as issuing Server
external commands. However, if automatic recovery is
configured for the remote system, but the operator wishes
to terminate the local support, an SNA_SERVER -STOP
command must be issued. Any other remote systems started
or being started are independent of the processing for
this remote system.

       Discussion: All affected session and/or LU resources are
deallocated.

       If automatic recovery is configured, the local system
support remains active and monitors the connection, in
case the remote system should attempt to reestablish it.
There is no guarantee that a reconnection will occur.
This implies that an SNA_SERVER -STOP will have to be
issued if the reconnection is not established.

       If automatic recovery is not configured, the Server will
perform the equivalent of an SNA_SERVER -STOP for the
remote system.

PRIME/SNA0082 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
              Connection terminated abnormally.
              SDLC FRMR transmitted.

       Message Level: Brief   System Console: Yes

       Meaning: An abnormal termination of the connection has
occurred because of the SDLC support within the ICS2
sending a FRMR to the remote system. This causes the
Server to reset any SSCP-PU, SSCP-LU, and LU-LU sessions
to the inactive state.

       Response: No action is required as far as issuing Server
external commands. However, if automatic recovery is
configured for the remote system but the operator wishes
to terminate the remote system connection, an SNA_SERVER
-STOP command must be issued. Any other remote systems
started or being started are independent of the
processing for this remote system.

Discussion: All affected session and/or LU resources are deallocated. If automatic recovery is configured, the local system support remains active and monitors the connection, in case the remote system should attempt to reestablish it. There is no guarantee that a reconnection will occur. This implies that an SNA_SERVER -STOP will have to be issued if the reconnection is not established. If automatic recovery is not configured, the Server will perform the equivalent of an SNA_SERVER -STOP for local support.

PRIME/SNA0083 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
Connection terminated abnormally.
DATA OVERRUN occurred while SNA sessions active.

Message Level: Brief   System Console: Yes

Meaning: An abnormal termination of the connection has occurred because the remote system has sent an information frame which exceeds the maximum size that can be received by the SDLC support in the ICS2. The Server resets the SSCP-PU, SSCP-LU, and LU-LU sessions to the inactive state.

Response: No action is required as far as issuing Server external commands. However, if automatic recovery is configured for the remote system, but the operator wishes to terminate the local support, an SNA_SERVER -STOP command must be issued. Any other remote systems started or being started are independent of the processing for this remote system.

Discussion: All affected session and/or LU resources are deallocated. If automatic recovery is configured, the local system support remains active and monitors the connection, in case the remote system should attempt to reestablish it. There is no guarantee that a reconnection will occur. This implies that an SNA_SERVER -STOP will have to be issued if the reconnection is not established.

If automatic recovery is not configured, the Server will perform the equivalent of an SNA_SERVER -STOP for the local support.

Since the SDLC support in the ICS2 can support receiving up to 521 bytes of SNA data in a frame, this message indicates that the probable cause for the data overrun is that the remote system is configured to send SNA units that are greater than 521 bytes in length. Remote system personnel must be contacted in order to determine the exact cause and solution.

PRIME/SNA0084 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
              Connection terminated abnormally.
              Polling discontinued: <bit-mask>

              Message Level: Brief   System Console: Yes

              Meaning: An abnormal termination of the connection has
              occurred because the SDLC support in the ICS2 is no
              longer receiving polls from the remote system. The
              Server resets any SSCP-PU, SSCP-LU, and LU-LU sessions to
              the inactive state.

              Response: No action is required as far as issuing Server
              external commands. However, if automatic recovery is
              configured for the remote system, but the operator wishes
              to terminate the remote system connection, an SNA_SERVER
              -STOP command must be issued. Any other remote systems
              started or being started are independent of the
              processing for this remote system.

              <bit mask> is a possible problem determination aid, and
              is described in Appendix A.

              Discussion: All the affected session and/or LU resources
              are deallocated.

              If automatic recovery is configured, the local system
              support remains active and monitors the connection, in
              case the remote system should attempt to reestablish it.
              There is no guarantee that a reconnection will occur.
              This implies that an SNA_SERVER -STOP will have to be
              issued if the reconnection is not established.

              If automatic recovery is not configured, the Server will
              perform the equivalent of an SNA_SERVER -STOP for the
              local support.

              This message implies that the physical connection with
              the remote system is still available (otherwise, some
              other message, such as PRIME/SNA0085 or PRIME/SNA0086
              would have been logged), but that the SDLC support is no
              longer receiving SDLC-level messages from the remote
              system. Remote system personnel must be contacted to
              determine the cause and solution.

PRIME/SNA0085 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
              Connection terminated abnormally.
              Hardware timeout: <bit-mask>

              Message Level: Brief   System Console: Yes

              Meaning: An abnormal termination of the connection has
              occurred because the physical connection has been
              terminated. The Server resets any SSCP-PU, SSCP-LU, and
              LU-LU sessions to the inactive state.

              Response: No action is required as far as issuing Server
              external commands. However, if automatic recovery is
              configured for the remote system, but the operator wishes
              to terminate the local support, an SNA_SERVER -STOP
              command must be issued. Any other remote systems started
              or being started are independent of the processing for
              this remote system.

              <bit-mask> can be used to determine why the physical
              connection terminated abnormally. <bit-mask> is
              described in Appendix A.

              Discussion: All affected session and/or LU resources are
              deallocated.

              If automatic recovery is configured, the local system
              support remains active and monitors the connection, in
              case the remote system should attempt to reestablish it.
              There is no guarantee that a reconnection will occur.
              This implies that an SNA_SERVER -STOP will have to be
              issued if the reconnection is not established. If
              automatic recovery is not configured, the Server will
              perform the equivalent of an SNA_SERVER -STOP for the
              local support.

              This message indicates that the hardware condition may be
              transitory in nature, and probably involves communication
              hardware such as modems and telephone lines. More
              serious hardware conditions (such as bad ICS2 hardware)
              are usually reported through other messages such as
              PRIME/SNA0087.

              Since this message reports transitory problems, there is
              no specific problem resolution. Frequent occurrence of
              the message may indicate an unstable condition along the
              physical path between the Prime system and the remote
              system -- for example, a low-quality communications line
              (such as a switched public telephone line), or a bad
              connection at the modem cable interface.

              For further information on the types of actions that can
              be taken, see Appendix A.

PRIME/SNA0086 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
Connection terminated abnormally.
LAC cable for line <###> has become disconnected.

Message Level: Brief   System Console: Yes

Meaning: The cable that extends from the back of the LAC
(Line Adapter Card) to the bulkhead has become
disconnected. The Server resets any SSCP-PU, SSCP-LU,
and LU-LU sessions to the inactive state.

Response: No action is required as far as issuing Server
external commands. If this is the only started remote
system, message PRIME/SNA006 will subsequently be logged,
indicating that the Server process has terminated. Any
other remote systems started or being started are
independent of the processing for this remote system.

Automatic recovery, if configured, does not apply for
this condition.

Discussion: All affected session and/or LU resources are
deallocated.

This message indicates that the connection has become
loose or completely disconnected after the remote system
was started; otherwise, the operator would have been
informed that the local support could not be started, and
message PRIME/SNA0054 would have been logged. Therefore,
there is a good possibility that the cable plug was not
fastened down with the screws that are provided.

PRIME/SNA0087 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
Connection terminated abnormally.
ICS2 SDLC problem: <bit-mask>

Message Level: Brief   System Console: Yes

Meaning: An abnormal termination of the connection has
occurred because of a condition that has occurred with
the SDLC support within the ICS2. The Server resets the
SSCP-PU, SSCP-LU, and LU-LU sessions to the inactive
state.

Response: No action is required as far as issuing Server
external commands.

Discussion: All affected session and/or LU resources are
deallocated.

The condition that caused the termination is specified by
<bit-mask>.

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A mask of all 0s indicates that the Server was attempting to terminate the connection with SDLC for the specified remote system, but that SDLC failed to respond within the time limit expected by the Server. This failure might occur if the Prime CPU or the ICS2 had a high processing load; however, it usually indicates that communicaton with SDLC has been lost.

A mask that is not all 0s indicates that a fatal hardware or line error has occurred within the ICS2. For details on <bit-mask>, refer to Appendix A.

PRIME/SNA0088 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
Connection terminated abnormally.
Automatic recovery not performed.

Message Level: Brief   System Console: Yes

Meaning: An abnormal termination of the connection has occurred. Normally, an automatic recovery would be performed, since it was specified in the SNA configuration file for the remote system. However, automatic recovery has already been performed three times; therefore, the Server performs the equivalent of an SNA_SERVER -STOP for the remote system. See message PRIME/SNA0007 for more discussion.

Response: No action is required as far as issuing Server external commands. If you wish to reconnect to the remote system, issue an SNA_SERVER -START command. Any other remote systems started or being started are independent of the processing for this remote system.

Discussion: All the affected session and/or LU resources are deallocated.

Prior to this message, there will have been messages that described the reasons for the connection failures. These failures may have been all of the same type or of different types. Check the log file to determine if the problem is permanent in nature (requiring some sort of action to be taken) or of a transient nature (such as an excessively noisy telephone line resulting in failure) for which action may or may not be taken. Since this message is used to indicate an action taken by the PRIME/SNA Server to prevent an "endless loop" of recovery attempts, and since the PRIME/SNA Server does not distinguish the time period over which the failures occurred, it is possible that there is not actually an endless loop but rather some widely dispersed (over time) failures. This would typically happen if the remote system was started and not stopped for a long period of time (that is, days and/or weeks).

PRIME/SNA0089 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
              Connection terminated abnormally.
              Session and LU resources closed abnormally.

Message Level: Brief   System Console: Yes

Meaning: The Server was forced to terminate Server
resources being used by LU Subsystems because the
associated remote system was being stopped. This would
typically occur if the Prime CPU was heavily overloaded.
The Server, under some circumstances, sets a time limit
for the stopping of a remote system. If an LU Subsystem
cannot issue the appropriate requests to the Server in
time to return the resources, the Server will
automatically return the resources. If the system is not
heavily loaded, this may indicate a failure of the LU
Subsystem to return Server resources correctly.

PRIME/SNA0090 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
              Warm start has occurred.

Message Level: Brief   System Console: Yes

Meaning: A warm start has occurred. This message is
logged for each remote system that has been started so
that the administrator will know exactly what processing
has been affected by the warm start.

Response: For communications to be reestablished with a
remote system, an SNA_SERVER -START command must be
issued for the remote system. Appropriate action (if
any) must also be taken at the remote system.

Discussion: A warm start results in the ICS2 being
down-line loaded; therefore, the ICS2 is in the state
(after the down-line load) as when the Prime CPU was
cold-started. This implies that all communications with
remote systems have been terminated abnormally. When the
Server is informed of the warm start, it notifies all LU
Subsystems using Server resources. The LU Subsystems
then return the resources to the Server and the Server
automatically performs the equivalent of SNA_SERVER
-STOP(s) for the remote system(s).

PRIME/SNA0094 dd-mmm-yy hh:mm:ss.ss   Unexpected condition occurred.
              Communications with the ICS2 has been lost.

Message Level: Brief   System Console: Yes

Meaning: The Server can no longer communicate with the
ICS2, therefore all local support for started remote
systems is terminated.

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Response: No action is required as far as issuing Server external commands. However, this message indicates an error in the PRIMOS and the ICS2 support for process-to-process communications. Therefore, this condition should be reported to Prime personnel.

Discussion: All session and/or LU resources are deallocated.

PRIME/SNA0095 dd-mmm-yy hh:mm:ss.ss   Unexpected condition occurred. Communications with an LU Subsystem has been lost.

Message Level: Brief   System Console: Yes

Meaning: The Server can no longer communicate with the LU Subsystem, therefore all resources associated with the LU Subsystem are deallocated.

Response: No action is required as far as issuing Server external commands. However, this message usually indicates that the LU Subsystem terminated abnormally without informing the Server. (A less likely reason for the message is the occurrence of an error in the PRIMOS support for process-to-process communications.) Therefore, this condition should be reported to Prime personnel.

PRIME/SNA0096 dd-mmm-yy hh:mm:ss.ss   Unexpected condition occurred. Communications with the Server Administrator has been lost.

Message Level: Brief   System Console: Yes

Meaning: The Server can no longer communicate with the SNA_SERVER command therefore any current processing being performed on behalf of the invoked command cannot be reported to the administrator.

Response: This message usually indicates that a quit or forced logout occurred while the SNA_SERVER command was making requests to the Server and/or receiving responses from the Server. A less likely reason is that an error occurred in the PRIMOS support for process-to-process communications.

PRIME/SNA0097 dd-mmm-yy hh:mm:ss.ss   Unexpected condition occurred.
Message from undefined remote system received from the
ICS2.

Message Level: Brief   System Console: No

Meaning: The Server has received a message from SDLC for
a remote system that is not started. No processing is
performed except to ignore the message and log this
message.

Response: No action is required as far as issuing Server
external commands. This message usually indicates a
timing window between the Server and the ICS2; that is,
the Server could be terminating the local support for a
remote system (due to an SNA_SERVER -STOP KILL, for
example) at the same time that SDLC is passing some data
from the remote system. A less likely reason is that an
error has occurred in either the Server or the ICS2
support.

PRIME/SNA0098 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
Unexpected condition occurred.
Undefined message received from the ICS2.
Unknown message key: <key>

Message Level: Brief   System Console: No

Meaning: A message was received from the SDLC support;
the Server could not recognize the message that was
received. No processing is performed except to ignore
the message and log this message.

Response: No action is required as far as issuing Server
external commands. However, this message indicates an
error in either the Server or the ICS2 support since this
condition should never occur. Therefore, this condition
should be reported to Prime personnel. The key that is
logged is the key which the Server could not recognize.

PRIME/SNA0099 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
Unexpected condition occurred.
Local support has been abnormally stopped.
Condition <code> has occurred in SNA_SERVER_PROCESS.

Message Level: Brief   System Console: Yes

Meaning: An unexpected condition has occurred   which
prevents the connection with remote system from being
supported. <code> indicates the condition that   has
occurred.

Response: No action is required as far as issuing Server external commands. Any other remote systems started or being started are independent of the processing for this remote system.

All the affected session and/or LU resources are deallocated.

As this message implies a probable error in the Server support, Prime personnel should be contacted.

PRIME/SNA0100 - PRIME/SNA0149

Messages PRIME/SNA0100 - PRIME/SNA0149 provide information about processing events that occur between the Server and an LU Subsystem for the normal allocation and deallocation of Server resources. These messages are intended primarily for use in problem determination by Prime Personnel.

PRIME/SNA0100 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
             LU resource being opened: ID <id>

Message Level: Detailed   System Console: No

Meaning: An LU Subsystem has issued an acceptable OPEN_LU to the Server. An LU resource has been allocated to the LU Subsystem; however, it cannot be used until the associated SSCP-LU session has been activated. When the session is activated, the LU Subsystem is notified that the LU resource is available for use (see message PRIME/SNA0101). <id> is the LU ID for the allocated LU resource.

PRIME/SNA0101 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
             LU resource opened: ID <id>
             Port Number: <xxx>

Message Level: Detailed   System Console: No

Meaning: An LU Subsystem has issued a successful OPEN_LU to the Server (see message PRIME/SNA0100), and the LU resource is now available for use. This implies that there is a connection between the LU Subsystem and the remote system, and that the Server has issued the LU_OPEN unsolicited event to the LU Subsystem.

<id> is the LU ID for the opened LU. The SSCP-LU session that is being used for the connection is identified by an LU port number (DAF' in ACTLU command) of <xxx>. See messages PRIME/SNA0200 and PRIME/SNA0201 for information on the activation of the SSCP-LU session.

PRIME/SNA0102 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               Session resource being opened: ID <id>

               Message Level: Detailed   System Console: No

               Meaning: An   LU   Subsystem   has   issued   an   acceptable
               GET_SESSION to the Server. A session resource has been
               allocated to the LU Subsystem;   however, it cannot be
               used until the associated LU-LU   session   has   been
               activated.   When the session is activated, the LU
               Subsystem is notified that the session resource   is
               available for use (see message PRIME/SNA0103). <id> is
               the session ID for the allocated session resource.

PRIME/SNA0103 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               Session resource opened: ID <id>
               Port Number: <xxx>   Port Index: <yyy>

               Message Level: Detailed   System Console: No

               Meaning: An LU Subsystem has   issued   a   successful
               GET_SESSION to the Server (see message PRIME/SNA0102) and
               the session resource is now available for use. This
               implies that there is a connection between the   LU
               Subsystem and the remote LU, and that the Server has
               issued the SESSION_AVAILABLE unsolicited event to the LU
               Subsystem.

               <id> is the session ID for the obtained session. The
               LU-LU session that is being used for the   connection has
               an LU port number (DAF' in BIND command) of <xxx> and an
               LU port index (OAF' in BIND command) of <yyy>.   See
               messages PRIME/SNA0202 and PRIME/SNA0203 for information
               on the activation of the LU-LU session.

PRIME/SNA0104 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               Session resource closed: ID <id>
               Port Number: <xxx>   Port index: <yyy>

               Message Level: Detailed   System Console: No

               Meaning: An LU Subsystem has issued a RETURN_SESSION to
               the Server and the request could be processed in a normal
               manner since there was no LU Subsystem data traffic when
               the RETURN_SESSION was processed.

               The session resource is no longer available to the LU
               Subsystem; a GET_SESSION will have to be issued if the
               resource is required again. <id> was the session ID for
               the returned session resource.   The LU-LU session that
               was being used for the connection had an LU port number
               of <xxx> and an LU port index of <yyy>.

Discussion: This message does not imply that the associated SNA LU-LU session has been deactivated; messages PRIME/SNA0204 and PRIME/SNA0205 indicate the deactivation of the LU-LU session. The deactivation of the LU-LU session can occur before or after the RETURN_SESSION is processed.

PRIME/SNA0105 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
LU resource closed: ID <id>
Port Number: <xxx>

Message Level: Detailed   System Console: No

Meaning: An LU Subsystem has issued a CLOSE_LU to the Server and the request could be processed in a normal manner since there was no LU Subsystem data traffic when the CLOSE_LU was processed. The message also indicates that the LU Subsystem deallocated its resources in a normal manner. That is, the LU Subsystem had previously issued a RETURN_SESSION for the associated LU-LU session and received the completion prior to issuing the CLOSE_LU, or the associated OPEN_LU had been completed but a GET_SESSION was never issued.

The LU resource is no longer available to the LU Subsystem; an OPEN_LU will have to be issued if the resource is required again. <id> was the LU ID for the returned LU. The SSCP-LU session that was being used for the connection had an LU port number of <xxx>.

Discussion: This message does not imply that the associated SNA SSCP-LU session has been deactivated; messages PRIME/SNA0206 and PRIME/SNA0207 indicate the deactivation of the SSCP-LU session. The deactivation of the SSCP-LU session can occur before or after the CLOSE_LU is processed.

PRIME/SNA0150 - PRIME/SNA0199

Messages PRIME/SNA0150 - PRIME/SNA0199 provide information about processing events that occur between the Server and an LU Subsystem for abnormal or invalid allocation and deallocation of Server resources. These messages are intended primarily for use in problem determination by Prime personnel.

PRIME/SNA0150 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
             Unauthorized requester for an LU Subsystem function.
             User requested function: <function>

             Message Level: Brief   System Console: Yes

             Meaning: No other processing is performed other than to
             reject the request and log this message.   <function>
             identifies   the   request   that   was issued by the LU
             Subsystem.

             Response: If the LU Subsystem is to be given authority
             to issue the request, the LU Subsystem's access rights
             for communicating with the Server must be updated
             appropriately.

PRIME/SNA0151 dd-mmm-yy hh:mm:ss.ss
             A different revision of the Server is required.
             Required revision : [aa.bb.cc]
             Installed revision: [dd.ee.ff]

             Message Level: Brief   System Console: Yes

             Meaning: An LU Subsystem has specified a later revision
             of the Server than the currently installed revision.   No
             other processing is performed other than to reject the
             request and log this message. However, the Server will
             continue to reject any requests which require a later
             revision of the Server.

             Response: Install the specified revision of the Server.

PRIME/SNA0152 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
             LU resource not opened.
             The specified time limit, <limit> seconds, has expired

             Message Level: Medium   System Console: No

             Meaning: The requested LU port was not opened because
             the necessary ACTLU was not received from the remote
             system in the time limit specified by the LU Subsystem.

             Response: Appropriate action must be taken in order to
             get the LU port opened. Possible actions are as follows:

             • Increase the time limit.

             • Contact the remote system site in order to ensure
               that the LU port has been configured and activated
               at the remote system.

PRIME/SNA0160   dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
                Session resource closed: ID <id>
                Port Number: <xxx>   Port Index: <yyy>
                Initiated by LU Subsystem while data outstanding.

                Message Level: Medium   System Console: No

                Meaning: The LU Subsystem is closing a session resource
                while either (1) there is a request outstanding from the
                LU Subsystem to send or receive data, (2) the Server has
                LU Subsystem data which it has not yet sent to the remote
                system, or (3) the Server has received data from the
                remote system that is to be passed to the LU Subsystem,
                but the LU Subsystem did not issue a request to receive
                the data.

                This message is equivalent to message PRIME/SNA0104
                except that it indicates that data was outstanding.

PRIME/SNA0161   dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
                Session resource being closed: ID <id>
                Port Number: <xxx>   Port Index: <yyy>
                Initiated by SNA_SERVER -STOP.

                Message Level: Brief   System Console: No

                Meaning: The session resource is being closed because
                its associated remote system is being stopped. This
                message will be logged for each session resource that
                exists at the time that the -STOP option is processed by
                the Server.

PRIME/SNA0162   dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
                Session resource being closed: ID <id>
                Port Number: <xxx>   Port Index: <yyy>
                Initiated by SNA_SERVER -STOP while data outstanding.

                Message Level: Brief   System Console: No

                Meaning: The session resource is being closed because
                its associated remote system is being stopped. The -STOP
                was processed while either: (1) there is a request
                outstanding for the session resource to send or receive
                data, (2) the Server has data for the session resource
                which it has not yet sent to the remote system, or (3)
                the Server has received data from the remote system, but
                has not yet passed it to the session resource.

                This message is equivalent to message PRIME/SNA0161
                except that it indicates that data was outstanding.

PRIME/SNA0163 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               Session resource being closed: ID <id>
               Port Number: <xxx>   Port Index: <yyy>
               Connection terminated abnormally.

               Message Level: Brief   System Console: No

               Meaning: The session resource is being closed because an
               abnormal termination of the connection with its
               associated remote system has occurred. This message will
               be logged for each session resource that exists at the
               time that the abnormal termination occurred.

PRIME/SNA0164 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               LU resource closed: ID <id>
               Port Number: <xxx>
               Initiated by LU Subsystem while data outstanding.

               Message Level: Medium   System Console: No

               Meaning:ll The LU Subsystem is closing an LU resource
               while either (1) there is a request outstanding from the
               LU Subsystem to send or receive data, (2) the Server has
               LU Subsystem data which it has not yet sent to the remote
               system, or (3) the Server has received data from the
               remote system that is to be passed to the LU Subsystem,
               but the LU Subsystem did not issue a request to receive
               the data.

               This message is equivalent to message PRIME/SNA0105
               except that it indicates that data was outstanding.

PRIME/SNA0165 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               LU resource being closed: ID <id>
               Port Number: <xxx>
               Initiated by SNA_SERVER -STOP.

               Message Level: Brief   System Console: No

               Meaning: The LU resource is being closed because its
               associated remote system is being stopped. This message
               will be logged for each LU resource that exists at the
               time that the -STOP option is processed by the Server.

PRIME/SNA0166 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               LU resource being closed: ID <id>
               Port Number: <xxx>
               Initiated by SNA_SERVER -STOP while data outstanding.

               Message Level: Brief   System Console: No

               Meaning: The LU resource is being closed because its
               associated remote system is being stopped. The -STOP was
               processed while either (1) there is a request outstanding
               for the LU resource to send or receive data, (2) the
               Server has data for the LU resource which it has not yet
               sent to the remote system, or (3) the Server has received
               data from the remote system, but has not yet passed it to
               the LU resource.

               This message is equivalent to message PRIME/SNA0165
               except that it indicates that data was outstanding.

PRIME/SNA0167 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               LU resource being closed: ID <id>
               Port Number: <xxx>
               Connection terminated abnormally.

               Message Level: Brief   System Console: No

               Meaning: This message is logged under two circumstances:
               (1) The LU resource is being closed because an attempt
               to establish a connection with the remote system was not
               successful (LU resources can be requested before a
               connection has been established); (2) The LU resource is
               being closed because an abnormal termination of the
               connection with its associated remote system has
               occurred. In either case, this message will be logged
               for each LU resource that exists at the time.

PRIME/SNA0200 - PRIME/SNA0249

Messages PRIME/SNA0200 - PRIME/SNA0249 provide information about normal SSCP-LU and LU-LU session activation and termination processing that has occurred between the Server and the remote system.

PRIME/SNA0200   dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               SSCP-LU session activated.
               Port Number: <xxx>

               Message Level: Detailed   System Console: No

               Meaning: An SSCP-LU session now exists between the Server and the remote system, and the LU resource has been made available for use to the LU Subsystem that had previously issued the OPEN_LU for the LU resource. Message PRIME/SNA0101 is the next message logged.

               The SSCP-LU session that is being used for the connection is identified by an LU port number (DAF' in ACTLU command) of <xxx>.

PRIME/SNA0201   dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               SSCP-LU session activated.
               OPEN_LU required.
               Port Number: <xxx>

               Message Level: Detailed   SYSTEM CONSOLE: No

               Meaning: An SSCP-LU session now exists between the Server and the remote system, but the associated LU resource cannot be allocated to an LU Subsystem until the appropriate OPEN_LU is issued.

               The SSCP-LU session is identified by an LU port number (DAF' in ACTLU command) of <xxx>.

PRIME/SNA0202   dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               LU-LU session activated.
               Port Number: <xxx>   Port Index: <yyy>

               Message Level: Detailed   System Console: No

               Meaning: An LU-LU session now exists between the Server and the remote system, and the session resource has been made available for use to the LU Subsystem that had previously issued the GET_SESSION for the session resource. Message PRIME/SNA0103 is the next message logged. The LU-LU session is identified by an LU port number (DAF' in BIND command) of <xxx> and an LU port index (OAF' in BIND command) of <yyy>.

PRIME/SNA0203 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               LU-LU session activated.
               GET_SESSION required.
               Port Number: <xxx>   Port Index: <yyy>

               Message Level: Detailed   System Console: No

               Meaning: An LU-LU session now exists between the Server
               and the remote system, but the associated session
               resource cannot be allocated to the LU Subsystem until
               the appropriate GET_SESSION is issued. The message also
               implies that the Server has issued the ISSUE_GET_SESSION
               unsolicited event to the appropriate LU Subsystem.

               The LU-LU session is identified by an LU port number
               (DAF' in BIND command) of <xxx> and an LU port index
               (OAF' in BIND command) of <yyy>.

PRIME/SNA0204 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               LU-LU session deactivated.
               Port Number: <xxx>   Port Index: <yyy>

               Message Level: Detailed   System Console: No

               Meaning: An LU-LU session no longer exists between the
               Server and the remote system, and the LU Subsystem had
               previously deallocated the session resource associated
               with the LU-LU session. The LU-LU session was identified
               by an LU port number of <xxx> and an LU port index of
               <yyy>.

PRIME/SNA0205 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               LU-LU session deactivated.
               RETURN_SESSION required.
               Port Number: <xxx>   Port Index: <yyy>

               Message Level: Detailed   System Console: No

               Meaning: An LU-LU session no longer exists between the
               Server and the remote system, but the associated session
               resource is still allocated to an LU Subsystem.   The
               message also implies that the Server has issued the
               ISSUE_RETURN_SESSION unsolicited event to the appropriate
               LU Subsystem. Even if the LU-LU session is reactivated,
               it cannot be used by an LU Subsystem while the present
               GET_SESSION is still in effect; therefore, the
               RETURN_SESSION is required from the LU Subsystem to
               deallocate the session resource.

This message also indicates that there was no LU Subsystem data traffic at the time that the LU-LU session was deactivated. If there had been LU Subsystem data traffic, message PRIME/SNA0275 would have been logged. The LU-LU session was identified by an LU port number of <xxx> and an LU port index of <yyy>.

PRIME/SNA0206   dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
                 SSCP-LU session deactivated.
                 Port Number: <xxx>

Message Level: Detailed   System Console: No

Meaning: An SSCP-LU session no longer exists between the Server and the remote system, and the LU Subsystem had previously deallocated the LU resource associated with the SSCP-LU session.

The SSCP-LU session was identified by an LU port number of <xxx>.

PRIME/SNA0207   dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
                 SSCP-LU session deactivated.
                 CLOSE_LU required.
                 Port Number: <xxx>

Message Level: Detailed   System Console: No

Meaning: An SSCP-LU session no longer exists between the Server and the remote system, but the associated LU resource is still allocated to an LU Subsystem. The message also implies that the Server has issued the ISSUE_CLOSE_LU unsolicited event to the appropriate LU Subsystem. Even if the SSCP-LU session is reactivated, it cannot be used by an LU Subsystem while the present OPEN_LU is still in effect; therefore, the OPEN_LU is required from the LU Subsystem to deallocate the LU resource.

This message also indicates that there was no LU Subsystem data traffic at the time that the SSCP-LU session was deactivated. If there had been LU Subsystem data traffic, message PRIME/SNA0280 would have been logged.

The SSCP-LU session was identified by an LU port number of <xxx>.

                   First Edition

PRIME/SNA0250 - PRIME/SNA0299

Messages PRIME/SNA0250 through PRIME/SNA0299 provide information about abnormal or unsuccessful SSCP-LU and LU-LU session activation and termination processing that has occurred between the Server and the remote system.

PRIME/SNA0250 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
            SSCP-LU session not activated.
            ACTLU rejected: SNA sense data <nnnn>
            Port Number: <xxx>

            Message Level: Brief   System Console: Yes

            Meaning: An SSCP-LU session with the remote system was
            not established because the ACTLU received was   not
            acceptable to the Server.   The message also indicates
            that there is no LU resource   allocated   which   is
            associated with the SSCP-LU session.   Therefore, no
            notification can be made to an LU Subsystem of the ACTLU
            rejection.

            To get the proper ACTLU request transmitted, the problem
            must be discussed with personnel at the remote system
            site. <nnnn> is the SNA sense data that the Server sends
            back to the remote system.

PRIME/SNA0251 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
            SSCP-LU session not activated.
            LU resource not opened: ID <id>
            ACTLU rejected: SNA sense data <nnnn>
            Port Number: <xxx>

            Message Level: Brief   System Console: Yes

            Meaning: An SSCP-LU session with the remote system was
            not established because the ACTLU received was   not
            acceptable to the Server.   The message also indicates
            that there is an LU resource   allocated   which   is
            associated with the SSCP-LU session and that the Server
            has issued the ISSUE_CLOSE_LU unsolicited event to the
            appropriate LU Subsystem.   The CLOSE_LU is required to
            ensure that the LU Subsystem and the Server are in
            synchronization. Once the CLOSE_LU is processed, the
            Server does not preclude the LU Subsystem from issuing
            another OPEN_LU for the resource.

            To get the proper ACTLU request transmitted, the problem
            must be discussed with personnel at the remote system
            site. <nnnn> is the SNA sense data that the Server sends
            back to the remote system.

PRIME/SNA0252 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               SSCP-LU session not activated.
               The LU port is not configured.
               Port Number: <xxx>

               Message Level: Brief   System Console: Yes

               Meaning: The Server received an ACTLU associated with an
               LU port for which the Server has no configuration
               information. This implies a mismatch between the SNA
               configuration and the remote system configuration.

               Response: If the LU port is to be used, it should be
               added to the SNA configuration; if not, there is no need
               for the remote system to attempt to activate the LU port.

PRIME/SNA0253 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               LU-LU and/or SSCP-LU sessions reset.
               ACTLU(cold) received while SNA sessions active.
               Port Number: <xxx>

               Message Level: Brief   System Console: Yes

               Meaning: The connection with the SSCP-LU session has
               been reset to the initial active state. Also, if an
               active LU-LU session is associated with the SSCP-LU
               session, the LU-LU session is reset to the inactive
               state. Any LU Subsystem data traffic on the reset
               session(s) is terminated.

               Discussion: As with the reset described in message
               PRIME/SNA0066 [ACTPU(cold)], the affected LU Subsystem
               determines whether this condition is recoverable or not.
               However, the   ACTLU(cold)   reset   requires   more
               synchronization because recovery requires a reactivation
               of the LU-LU session. (Recovery, if performed, only
               applies to getting back into synchronization for the
               allocation and use of the LU and session resources.   Any
               attempt to recover data traffic that was terminated
               abnormally by the reset depends upon the LU Subsystem.)

PRIME/SNA0254 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               Traffic on the SSCP-LU session reset.
               ACTLU(erp) received.
               Port Number: <xxx>

               Message Level: Medium   System Console: No

               Meaning: The remote system has sent an ACTLU to reset
               any traffic flow on the associated SSCP-LU session. Data
               traffic for the LU-LU session (if it exists) associated
               with the SSCP-LU session is not affected.

PRIME/SNA0260 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               LU-LU session not activated.
               BIND rejected: SNA sense data <nnnn>
               Port Number: <xxx>   Port Index: <yyy>

               Message Level: Medium   System Console: No

               Meaning: An LU-LU session with the remote system was not
               established because the BIND received was not acceptable
               to the Server or to the LU Subsystem with which the BIND
               is associated.   The message also indicates that there is
               no session resource allocated which is associated with
               the LU-LU   session but that the Server has issued the
               INVALID_SESSION_PARAMETERS unsolicited event to the LU
               resource associated with the BIND processing.

               To get the proper BIND request transmitted, the problem
               must be discussed with personnel at the remote system
               site. <nnnn> is the SNA sense data that the Server sends
               back to the remote system. The code should be used to
               determine why the BIND was rejected.   (This requires
               knowledge of SNA sense codes.) For further information
               on possible reasons for the BIND being rejected, see the
               PRIME/SNA Administrator's Guide.

PRIME/SNA0261 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               LU-LU session not activated.
               Session resource not opened: ID <id>
               BIND rejected: SNA sense data <nnnn>
               Port Number: <xxx>   Port Index: <yyy>

               Message Level: Medium   System Console: No

               Meaning: An LU-LU session with the remote system was not
               established because the BIND received was not acceptable
               to the Server or to the LU Subsystem with which the BIND
               is associated. The message also indicates that there is
               a session resource allocated which is associated with the
               LU-LU session and that the Server has issued the
               INVALID_SESSION_PARAMETERS unsolicited event to   the
               appropriate LU Subsystem.

               To get the proper BIND request transmitted, the problem
               must be discussed with personnel at the remote system
               site. <nnnn> is the SNA sense data that the Server sends
               back to the remote system. The code should be used to
               determine why the BIND was rejected.   (See the IBM
               publication, Systems Network Architecture Reference
               Summary, (GA27-3136).) For further information   on
               possible reasons for the BIND being rejected, see the
               PRIME/SNA Administrator's Guide.

PRIME/SNA0262 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               LU-LU session not activated.
               Invalid BIND response from the LU Subsystem.
               Port Number: <xxx>   Port Index: <yyy>

               Message Level: Medium   System Console: No

               Meaning: An LU Subsystem has incorrectly formatted a
               response to a BIND that was received from a remote
               system. The Server converts the invalid response into a
               valid negative response then sends it to the remote
               system. This message indicates that there is a logic or
               code problem in the LU Subsystem. It also indicates that
               the LU Subsystem has not issued a GET_SESSION for the
               associated session resource; otherwise, PRIME/SNA0263
               would have been logged instead.

PRIME/SNA0263 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               LU-LU session not activated.
               Session resource not opened: ID <id>
               Invalid BIND response from the LU Subsystem.
               Port Number: <xxx>   Port Index: <yyy>

               Message Level: Medium   System Console: No

               Meaning: An LU Subsystem has incorrectly formatted a
               response to a BIND that was received from a remote
               system. The Server converts the invalid response into a
               valid negative response then sends it to the remote
               system. This message indicates that there is a logic or
               code problem in the LU Subsystem. It also indicates that
               the LU Subsystem has issued a GET_SESSION for the
               associated session resource; otherwise, PRIME/SNA0262
               would have been logged instead.

PRIME/SNA0265 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
               Data traffic not started.
               Session resource not opened: ID <id>
               SDT rejected: SNA sense data <nnnn>
               Port Number: <xxx>   Port Index: <yyy>

               Message Level: Medium   System Console: No

               Meaning: The Server had to reject the SDT because of
               insufficient resources to start the session. The LU
               Subsystem associated with the LU-LU session is informed
               of the rejection.

               <nnnn> is the SNA sense data that the Server sends back
               to the remote system.

PRIME/SNA0270 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
             LU-LU session abnormally quiesced.
             CLEAR received while data was outstanding.
             Port Number: <xxx>   Port Index: <yyy>

             Message Level: Medium   System Console: No

             Meaning: A CLEAR was received on an LU-LU session while
             (1) there is a request outstanding from the LU Subsystem
             to send or receive data, (2) the Server has LU Subsystem
             data which it has not yet sent to the remote system, or
             (3) the Server has received data from the remote system
             that is to be passed to the LU Subsystem, but the LU
             Subsystem did not issue a request to receive the data.
             If a CLEAR is received when no processing is being
             performed, no message is logged since this is the normal
             case for receiving a CLEAR.

             Discussion: The Server aborts the processing of the data
             and informs the associated LU Subsystem of the abnormal
             termination of the processing.   Typically, a CLEAR is
             followed by an UNBIND; however, it is possible for it to
             be used in conjunction with a subsequent SDT   to
             reinitialize an LU-LU session without using BIND. If
             this should occur, the Server informs the LU Subsystem
             (after the SDT is received) that processing can continue.

PRIME/SNA0275 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
             LU-LU session abnormally deactivated.
             UNBIND received while data was outstanding.
             Port Number: <xxx>   Port Index: <yyy>

             Message Level: Medium   System Console: No

             Meaning: An UNBIND was received on an LU-LU session
             while (1) there is a request outstanding from the LU
             Subsystem to send or receive data, (2) the Server has LU
             Subsystem data which it has not yet sent to the remote
             system, or (3) the Server has received data from the
             remote system that is to be passed to the LU Subsystem,
             but the LU Subsystem did not issue a request to receive
             the data. The Server aborts the processing of the data
             and informs the associated LU Subsystem of the abnormal
             termination of the processing.   If no data is being
             processed when the UNBIND is received,   either
             PRIME/SNA204 or PRIME/SNA0205 is logged.

PRIME/SNA0280 dd-mmm-yy hh:mm:ss.ss   -RS <remote-system-name>
             LU-LU and/or SSCP-LU sessions abnormally deactivated.
             DACTLU received while data was outstanding.
             Port Number: <xxx>

             Message Level: Medium   System Console: No

             Meaning: A DACTLU was received on an SSCP-LU session
             while (1) there is a request outstanding from the LU
             Subsystem to send or receive data, (2) the Server has LU
             Subsystem data which it has not yet sent to the remote
             system, or (3) the Server has received data from the
             remote system that is to be passed to the LU Subsystem,
             but the LU Subsystem did not issue a request to receive
             the data.   The Server aborts the processing of the data
             and informs the associated LU Subsystem of the abnormal
             termination of the processing. If no data is being
             processed when the DACTLU is received,   either
             PRIME/SNA206 or PRIME/SNA0207 is logged.

PRIME/SNA0900 - PRIME/SNA0999

Messages PRIME/SNA0900 through PRIME/SNA0999 provide information about
conditions that prevent the Server from being started, or about general
abnormal conditions in the Server. Contact Prime personnel if any of
the messages listed in this section should occur.

PRIME/SNA0900 dd-mmm-yy hh:mm:ss.ss   Could not start the Server.
             Buffer initialization failed.
             PRIMOS error: <code>

PRIME/SNA0901 dd-mmm-yy hh:mm:ss.ss   Could not start the Server.
             Wired Buffer initialization failed.
             PRIMOS error: <code>

PRIME/SNA0910 dd-mmm-yy hh:mm:ss.ss   Could not start the Server.
             Inter-Process Communication initialization failed.

PRIME/SNA0911 dd-mmm-yy hh:mm:ss.ss   IPC Failure.
             Inter-Process Communication initialization failed.

PRIME/SNA0920 dd-mmm-yy hh:mm:ss.ss   Server Internal Failure.
             Scheduler queue reached warning limit.

PRIME/SNA0998 dd-mmm-yy hh:mm:ss.ss   Could not start the Server.
             A different revision of SDLC is required.
             Required revision :   [aa.bb.cc]
             Installed revision: [dd.ee.ff]

             Message Level: Brief   System Console: Yes

             Meaning: This message is logged when the Server attempts
             to communicate with the SDLC support in the ICS2 but an
             out of date revision of SDLC has been down-line loaded
             into the ICS2.   Since the Server requires SDLC support
             which does not exist in the down-line loaded version, the
             Server cannot execute.

             Response: To correct this condition, the appropriate
             down-line load file must be installed and a warmstart
             invoked.

PRIME/SNA0999 dd-mmm-yy hh:mm:ss.ss   Could not start the Server.
             Initialization failed: <code>

C

3270 LU Manager
Log Messages

This appendix lists the messages that are logged by the PRIME/SNA 3270 LU Manager. The first section of the appendix explains the message formatting conventions used for the message headers and text. The second section lists the messages in numerical order and provides details on their meaning and occurrence.

MESSAGE FORMATTING CONVENTIONS

The messages in this appendix are shown as they appear on a display or in a listing of the file to which they are logged. (Some messages have been reformatted slightly to fit within the margins of this document.) Each message has a header and one or more lines of text. The header is at the beginning of the first (or only) line of text, and always has the format:

        PRIME/SNA1xxx dd-mmm-yy hh:mm:ss.ss

xxx is the specific 3270 LU Manager message number, (for example, PRIME/SNA1225); dd-mmm-yy is the PRIME/SNA standard date convention (for example, 21-APR-85); and hh:mm:ss.ss is the standard time convention with hundredths of a second.

Many of the messages include variable data which is inserted at the time that a message is issued. Possible variables and their data types are as follows:

Variable	Data Type
num	Decimal
string	Character string
hex_num	Hexadecimal number

In addition to the message header and text, the following descriptive information is provided:

Message Level   Indicates at which message level
                             setting the message is logged
                             (Brief, Medium, or Detailed).

System Console   Indicates whether or not the first
                             line of the message is diplayed at
                             the system console (Yes or No).

Meaning   Describes the event indicated by
                             the message.

Response   Describes user action that can be
                             taken when the event occurs.

PRIME/SNA1000 - PRIME/SNA1255

PRIME/SNA1000 dd-mmm-yy hh:mm:ss.ss Unable to send previous message to
                             operator.
              Error = <num>

Message Level: Brief   System Console: No

Meaning: The mechanism used by the PRIME/SNA LU Manager
to forward messages to its operator was unable to
transmit a message that was targeted for its operator.
The value <num> indicates the reason for the failure and
is an error code as described in the PRIMOS ERRD.INS
file.

PRIME/SNA1001 dd-mmm-yy hh:mm:ss.ss PRIME/SNA SNA_3270 LU Manager
     started.
              Running as PRIMOS user <num>

Message Level: Brief   System Console: Yes

Meaning: The PRIME/SNA LU Manager was spawned as a
result of an SNA_3270 -START command being issued.

PRIME/SNA1002 dd-mmm-yy hh:mm:ss.ss Unable to obtain process name.
Assuming default of <string>

Message Level: Brief   System Console: Yes

Meaning: The PRIME/SNA LU Manager was spawned and the
phantom process that is the new LU Manager was unable to
successfully obtain its PRIMOS user name from a USER$
gate call. Under these circumstances the LU Manager will
internally assume a name specified by <string>. Note
that this does not cause the PRIMOS user name to be
changed.

PRIME/SNA1003 dd-mmm-yy hh:mm:ss.ss Validating User 1 as SNA_3270
administrator

Message Level: Medium   System Console: Yes

Meaning: No security has been set up for the
administration support of the PRIME/SNA SNA_3270 LU
Manager and an administration request has been received
from the System Console (User 1) for the LU Manager.

PRIME/SNA1004 dd-mmm-yy hh:mm:ss.ss Remote system start command
accepted,

Started Remote System <string>

Message Level: Medium   System Console: No

Meaning: The PRIME/SNA SNA_3270 LU Manager has received
and processed a start request. The value <string>
indicates which remote system was started.

PRIME/SNA1005 dd-mmm-yy hh:mm:ss.ss Remote system stop command
accepted,

Stopping Remote System <string>

Message Level: Medium   System Console: No

Meaning: The PRIME/SNA SNA_3270 LU Manager has received
and processed a stop request. This message is generated
to indicate that the remote system specified is no longer
available for use by new LU Manager users. This does not
mean that the remote system has been completely stopped
but only that the LU Manager has marked the system as
stopping. The stop request will eventually complete at
some future time. The value <string> indicates the
remote system so specified.

PRIME/SNA1006 dd-mmm-yy hh:mm:ss.ss SNA_3270 Configuration file set,
               File = <string>

               Message Level: Medium <u>System Console</u>: No

               <u>Meaning</u>: The LU Manager has set the configuration file
               from which support will occur. This will be the same
               configuration file as is currently supported by the
               running PRIME/SNA SNA_SERVER process.

PRIME/SNA1007 dd-mmm-yy hh:mm:ss.ss SNA_3270 Entry id subfile set,
               File = <string>

               <u>Message Level</u>: Medium   <u>System Console</u>: No

               <u>Meaning</u>: The PRIME/SNA SNA_3270 LU Manager has processed
               the very first start command and the appropriate SNA_3270
               configuration file is set.

PRIME/SNA1008 dd-mmm-yy hh:mm:ss.ss SNA_3270 Configuration filename
  not set at startup.

               <u>Message Level</u>: Medium   <u>System Console</u>: No

               Meaning:The PRIME/SNA LU Manager has discovered that the
               configuration file was not correctly set up   at
               initialization time.   This message   means   that   the
               PRIME/SNA Server and the PRIME/SNA 3270 LU Manager may be
               running from different configuration files.

PRIME/SNA1009 dd-mmm-yy hh:mm:ss.ss PRIME/SNA SNA_3270 LU Manager
  terminated.

               <u>Message Level</u>: Brief   <u>System Console</u>: Yes

               <u>Meaning</u>: The LU Manager has terminated normally.

PRIME/SNA1010 dd-mmm-yy hh:mm:ss.ss Unable to access Ring0 database.
               Error = <num>

               <u>Message Level</u>: Brief   <u>System Console</u>: Yes

               <u>Meaning</u>: The LU Manager process was unable to correctly
               map to the necessary information in RING0 at PRIME/SNA
               SNA_3270 LU manager initialization time. The value <num>
               is a PRIMOS error code (as described in ERRD.INS)
               indicating the problem. This should not occur if the LU
               Manager was started as a phantom process.

Response: If this message is logged when the PRIME/SNA SNA_3270 LU Manager is running as a phantom process, a problem report should be submitted to Prime Engineering through your local Customer Support channels. If this message occurs when the LU Manager is run from a terminal then the command environment for that terminal user process should be re-initialized.

PRIME/SNA1011 dd-mmm-yy hh:mm:ss.ss LU Manager dispatch list overflow.

Message Level: Brief   System Console: Yes

Meaning: The PRIME/SNA SNA_3270 LU Manager has filled its dispatch list. When this condition occurs the LU Manager will terminate abnormally.

Response: Submit a problem to Prime Engineering through your local Customer Support channels.

PRIME/SNA1015 dd-mmm-yy hh:mm:ss.ss Unauthorised administration
    request issued.
            User = <num>, Name = <string>

Message Level: Brief   System Console: Yes

Meaning: The PRIME/SNA SNA_3270 LU Manager has received an administration request from a user who is not authorized to issue administration requests. The values <num> and <string> indicate the PRIMOS user number and PRIMOS user name respectively of the PRIMOS user issuing the request.

PRIME/SNA1016 dd-mmm-yy hh:mm:ss.ss Unable to access security key.
            Error = <num>

Message Level: Brief   System Console: Yes

Meaning: An administration request has been made by a user and the PRIME/SNA Interactive administration security has not been installed or has been installed incorrectly. The absence of the security key implies that only User 1 is allowed to submit valid PRIME/SNA SNA_3270 LU Manager administration requests. The value <num> is a PRIMOS error code (as described in ERRD.INS) indicating the type of error.

PRIME/SNA1020 dd-mmm-yy hh:mm:ss.ss PRIME/SNA Server unavailable.

               Message Level: Brief   System Console: Yes

               Meaning: The PRIME/SNA Server is not currently available to support the PRIME/SNA 3270 LU Subsystem. This message is usually generated as a result of the PRIME/SNA Server not being started prior to the start of the PRIME/SNA 3270 LU Manager.

PRIME/SNA1021 dd-mmm-yy hh:mm:ss.ss Unknown IPQNM event - event ignored.

               Event = <num>

               Message Level: Medium   System Console: No

               Meaning: The 3270 LU Manager has received an event on its IPQNM connection with the Server. However, the event received is not a recognized or supported IPQNM event. <num> identifies the IPQNM event. The 3270 LU Manager ignores this event and continues normal processing.

               Response: Submit a problem report to Prime Engineering.

PRIME/SNA1022 dd-mmm-yy hh:mm:ss.ss PRIME/SNA Server refused connection request.

               Message Level: Brief   System Console: Yes

               Meaning: The PRIME/SNA 3270 LU Manager has attempted to establish a communications path with the PRIME/SNA Server, but the Server refuses to allow the establishment of the connection.

               Response: Examine the PRIME/SNA Server log file to determine the reason for the connection refusal.

PRIME/SNA1023 dd-mmm-yy hh:mm:ss.ss Unknown LU SHELL event - event ignored.

               Event = <num>

               Message Level: Medium   System Console: No

               Meaning: The PRIME/SNA 3270 LU Manager has received an event from the PRIME/SNA Server which is either not supported or not recognized by the 3270 LU Manager. <num> identifies the event received. The 3270 LU Manager ignores this event and continues normal processing.

               Response: Submit a problem report to Prime Engineering through your local Customer Support channels.

PRIME/SNA1024 dd-mmm-yy hh:mm:ss.ss PRIME/SNA Server connection
problem.

Error = <num>

Message Level: Brief   System Console: Yes

Meaning: An error has occurred on the IPQNM pipeline
established between the PRIME/SNA SNA_3270 LU Manager and
the PRIME/SNA Server. This condition will cause the LU
Manager to shutdown. The value <num> provides an
indication as to the problem.

Response: Submit a problem report to Prime Engineering
through your local Customer Support channels.

PRIME/SNA1025 dd-mmm-yy hh:mm:ss.ss PRIME/SNA Server connection   lost.

Message Level: Brief System Console: Yes

Meaning: The IPQNM pipeline with the PRIME/SNA Server
has been lost. This could be due to internal PRIMOS
problems or because the PRIME/SNA Server has chosen to
close   the   connection to the PRIME/SNA SNA_3270 LU
Manager. This condition will cause   the   PRIME/SNA
SNA_3270 LU Manager to shutdown.

Response: Check   the   PRIME/SNA   Server   log file   to
determine if there was a problem.

PRIME/SNA1040 dd-mmm-yy hh:mm:ss.ss Unknown Mate connection problem.
Mate = <num>

Message Level: Medium   System Console: No

Meaning: The PRIME/SNA SNA_3270 LU Manager   has
determined that there is a problem in establishing a
connection to an LU Mate. The problem will be on the LU
Mate side of the connection and no further information is
available to the PRIME/SNA SNA_3270 LU Manager to further
identify the problem.

Response: Submit a problem report to Prime Engineering
through your local Customer Support channels.

PRIME/SNA1041 dd-mmm-yy hh:mm:ss.ss Unable to create free pool.
              Pool = <num1>, Error = <num2>

              Message Level: Medium   System Console: No

              Meaning: The LU Manager has received a connection request from an LU Mate and has decided to support that LU Mate, but in the process of initializing the connection the LU Manager finds that it has a problem with creation of a new dynamic segment. The values identified by <num1> and <num2> will determine the pool number attempting to be created (which is the same as the PRIMOS user number of the LU Mate) and the PRIMOS error code for segment creation (as described in ERRD.INS).

              Respone: Submit a problem report to Prime Engineering through your local Customer Support channels.

PRIME/SNA1042 dd-mmm-yy hh:mm:ss.ss Mate has no available segment.
              Mate = <num>

              Message Level: Medium   System Console: No

              Meaning: An LU Mate has attempted to establish communications with the PRIME/SNA SNA_3270 LU Manager and it was discovered that the LU Mate had no more available dynamic segments for use by the segment mapping software.

              Response: This problem can be corrected by releasing some already allocated dynamic segments from the PRIMOS user space identified by <num> or by increasing the allocation of per-user dynamic segments (see EDIT_PROFILE for details).

PRIME/SNA1043 dd-mmm-yy hh:mm:ss.ss Mate segment already in use.
              Mate = <num>

              Message Level: Medium   System Console: No

              Meaning: The segment allocated to the LU Mate for its communication path with the LU Manager is in use by another user -- or, by the same user at a previous invocation of the LU Mate process. In either case this is a serious error and may indicate a security violation. The value <num> identifies the PRIMOS process that issued the connection request.

              Respone: Submit a problem report to Prime Engineering through your local Customer Support channels.

PRIME/SNA1044 dd-mmm-yy hh:mm:ss.ss Mate requested illegal access.
Mate = <num>

Message Level: Medium   System Console: No

Meaning: The LU Mate making a connection request has attempted to bypasss the security arrangements involved with the segment mapping facility. This is a serious error and indicates that PRIMOS security has been violated. <num> identifies the PRIMOS user process issuing the connection request.

Response: Submit a problem report to Prime Engineering through your local Customer Support channels.

PRIME/SNA1045 dd-mmm-yy hh:mm:ss.ss Unable to create free pool.
Session = <num1>, Error = <num2>

Message Level: Medium   System Console: No

Meaning: The 3270 LU Manager was unable to successfully create the dynamic segment required for data buffers for the LU Mate session identified by <num1> in the Session field. <num2> is a PRIMOS error code (as described in ERRD.INS) identifying the problem.

Response: Submit a problem report to Prime Engineering through your local Customer Support channels.

PRIME/SNA1050 dd-mmm-yy hh:mm:ss.ss Unable to obtain queue lock <num>

Message Level: Brief   System Console: No

Meaning: The 3270 LU Manager was unable to obtain the queue lock for queue <num>. This usually occurs when the queue lock is held by PRIMOS user <num>.

PRIME/SNA1051 dd-mmm-yy hh:mm:ss.ss Unable to queue event for Mate
<num1>
Block type = <num2>, Error = <num3>

Message Level: Brief   System Console: No

Meaning: The PRIME/SNA SNA_3270 LU Manager was unable to successfully queue an event for the identified LU Mate. The type of event queued is identified, as is the reason for the inability to queue the event for the specified LU Mate. The LU Manager will discard the event and continue normal processing. This means that the LU Mate has potentially lost data and is most certainly out of sync in talking to the PRIME/SNA SNA_3270 LU Manager.

Response: Shut down the LU Mate session and start again. A problem report should be submitted to Prime Engineering through your local Customer Support channels.

PRIME/SNA1052 dd-mmm-yy hh:mm:ss.ss Unable to dequeue event from
Mate <num1>

Error = <num2>

Message Level: Brief   System Console: No

Meaning: The PRIME/SNA SNA_3270 LU Manager was unable to dequeue an event passed to it from the identified LU Mate. The event will still be on the LU Mate queue and the error code <num2> will identify the reason for the inability to successfully dequeue the event. The LU Manager will continue normal processing and may attempt to dequeue the event again.

Response: Submit a problem report to Prime Engineering through your local Customer Support channels.

PRIME/SNA1055 dd-mmm-yy hh:mm:ss.ss Unable to obtain free pool lock.
Session = <num>.

Message Level: Brief   System Console: No

Meaning: The PRIME/SNA SNA_3270 LU Manager was unable to obtain the lock for the free pool of data buffers. Each session has its own free pool of data buffers and the value <num> identifies the session pool concerned. This message usually means that the lock is held by the LU Mate owning the session identified by <num>.

Response: This state can usually only be cleared by the host system shutting down the session concerned. If this message is logged, a problem report should be submitted to Prime Engineering through your local Customer Support channels.

PRIME/SNA1056 dd-mmm-yy hh:mm:ss.ss Unable to obtain block from
free pool <num1>

Block type = <num2>, Error = <num3>

Message Level: Brief   System Console: No

Meaning: The PRIME/SNA SNA_3270 LU Manager was unable to obtain an event block of type <num2> from the free pool for LU Mate <num1>. The reason for the failure is identified by the error code <num3>. This message could be logged due to transient conditions within the LU Manager.

Response: Should this message appear regularly in the log files or be followed by a message indicating that a more serious error has occurred, a problem report should be submitted to Prime Engineering through your local Customer Support channels.

PRIME/SNA1057   dd-mmm-yy hh:mm:ss.ss Unable to obtain free pool lock. Pool = <num>

Message Level: Brief   System Console: No

Meaning: The Lu Manager was unable to obtain the interlock that controls the allocation and deallocation of resources from the LECB free pools. The value <num> identifies the pool in question and also the PRIMOS user number of the LU Mate. This message will usually indicate that the LU Mate may lose data.

Response: Submit a problem report to Prime Engineering through your local Customer Support channels.

PRIME/SNA1058   dd-mmm-yy hh:mm:ss.ss Unable to return block to free
pool <numl>
                Block type = <num2>, Error = <num3>

Message Level: Brief   System Console: No

Meaning: The LU Manager was unable to return an LECB or data block to the appropriate free pool. The values <numl>, <num2> and <num3> indicate the free pool id, the type of event block concerned and an indication as to the reason for the failure respectively. This message indicates a potential problem about to occur, in that the free pools may eventually become empty.

Response: Submit a problem report to Prime Engineering through your local Customer Support channels.

PRIME/SNA1080   dd-mmm-yy hh:mm:ss.ss SNA_3270 Message level set to
Brief.

Message Level: Detailed   System Console: No

Meaning: The current LU Manager Message level has been successfully altered. The new level set is Brief.

PRIME/SNA1081 dd-mmm-yy hh:mm:ss.ss SNA_3270 Message level now set
to Medium.

Message Level: Detailed   System Console: No

Meaning: The current LU Manager Message level has been
successfully altered. The new level set is Medium.

PRIME/SNA1082 dd-mmm-yy hh:mm:ss.ss SNA_3270 Message level now set
to Detailed.

Message Level: Detailed   System Console: No

Meaning: The current LU Manager Message level has been
successfully altered. The new level set is Detailed.

PRIME/SNA1090 dd-mmm-yy hh:mm:ss.ss SNA_3270 Auto Stop enabled,
Idle time = <num> minutes.

Message Level: Detailed System Console: No

Meaning: An SNA_3270 command was successfully issued and
has now enabled auto-stop with a timeout value of <num>.

PRIME/SNA1091 dd-mmm-yy hh:mm:ss.ss SNA_3270 Auto Stop disabled.

Message Level: Detailed   System Console: No

Meaning: An SNA_3270 command was issued to turn off the
auto-stop facility.

PRIME/SNA1100 dd-mmm-yy hh:mm:ss.ss CD,^EB required for READ-type
commands,
Session = <num>,
Device = <string>

Message Level: Medium   System Console: No

Meaning: A READ-type command was received from the host
system, but the enclosing SNA envelope did not have
either change direction or end bracket set, and the Lu
Manager is consequently unable to correctly respond to
the host command. The LU Manager will respond negatively
to the host system indicating the reason for the failure
to process the request correctly. This is an
informational message only. It does not indicate any
error within the LU Manager. The values of <num> and
<string> identify the session and the device for which
the event occurred.

PRIME/SNA1101 dd-mmm-yy hh:mm:ss.ss Data follows READ-type command,
              Session = <num>,
              Device = <string>

              Message Level: Medium   System Console: No

              Meaning: The datastream from the host system had a READ
              command which was followed by data. The values <num> and
              <string> identify the session and the device for which
              the event occurred. This message does not indicate an
              error in the LU Manager, but rather that the host system
              has constructed an incorrect 3270 datastream for the LU
              Manager. The LU Manager will correctly reject the host
              datastream and send an appropriate reply to the host
              system.

PRIME/SNA1102 dd-mmm-yy hh:mm:ss.ss Incorrect state for outbound
    data (<num>).
              Mate = <num2>, Session = <num3>

              Message Level: Medium   System Console: No

              Meaning: The LU Manager received an outbound request
              when it was not in a state to process the request. This
              is not an error and the message is for information only.
              This type of event can occur when the host and the Mate
              choose to send simultaneously, under these circumstances
              the Mate has priority and the LU Manager will notify the
              host of the failure of its request and of the reason for
              the failure. The value <num> identifies the state that
              the LU Manager believes the session to be in, whilst
              <num2> and <num3> identifies the session and the owning
              LU Mate.

PRIME/SNA1103 dd-mmm-yy hh:mm:ss.ss Data follows EAU,
              Session = <num>,
              Device = <string>

              Message Level: Medium   System Console: No

              Meaning: An outbound datastream was not of the correct
              form. The LU Manager will correctly reject the
              datastream to the host system with an indication as to
              the reason for the failure. This is not an error in the
              LU Manager and this message is for information only. The
              values <num> and <string> identify the session and the
              device concerned.

PRIME/SNA1104 dd-mmm-yy hh:mm:ss.ss Data received on noncurrent
    session,
                 Mate = <num1>, Session = <num2>,
                 Device = <string>

                 Message Level: Medium   System Console: No

                 Meaning: Data was received for a session that is not a
                 currently active session. This usually occurs when data
                 is sent on the LU-LU session and the currently active
                 session is the SSCP-LU session. This is not an error and
                 the LU Manager will correctly   reject   the host stream
                 which an appropriate sense code.   This message is for
                 information   only.   The   values   <num2> and <string>
                 identify the session and the device for which the event
                 occurred and the   value <num1>   identifies   the LU Mate
                 owning the resources.

PRIME/SNA1105 dd-mmm-yy hh:mm:ss.ss LU_T3 does not support READs.
                 Device = <string>

                 Message Level: Medium   System Console: No

                 Meaning: A device bound as an LU.T3 received a 3270 READ
                 command. The host datastream will be rejected correctly
                 to the host with an indication as to the failure of the
                 request. The value <string> identifies the device in
                 question. This does not indicate an error in the LU
                 Manager, but rather a potential problem in the host or a
                 mismatch in configuration between the host and the LU
                 Manager.

PRIME/SNA1106 dd-mmm-yy hh:mm:ss.ss Unsupported 3270 command
    (<hex_num>),
                 Session = <num>,
                 Device = <string>

                 Message Level: Medium   System Console: No

                 Meaning: The LU Manager received a 3270   datastream
                 containing a command not recognized or supported by the
                 LU Manager. The value <hex_num> identifies the command
                 and the values <num> and <string> identify the session
                 and the device upon which the request was received. This
                 does not indicate an error in the LU Manager and is
                 provided for information only. The host request will be
                 correctly rejected back to the host system with an
                 indication as to the reason for the failure of the
                 request.

PRIME/SNA1107 dd-mmm-yy hh:mm:ss.ss Unsupported order (SFE, MF, SA
and GE).

Message Level: Medium   System Console: No

Meaning: The datastream being processed contains an
order which is not currently supported by the LU Manager.
The datastream will be rejected back to the host with an
appropriate indication as to the type of failure. This
message does not indicate a problem in the LU Manager,
but rather that the host application is trying to use
3270 features not supported by the LU Manager.

PRIME/SNA1108 dd-mmm-yy hh:mm:ss.ss SBA address out of range.

Message Level: Medium   System Console: No

Meaning: The Set Buffer Address command received from
the host does not specify an address which is valid for
the screen types supported by the LU Manager. The
datastream will be rejected back to the host with an
indication as to the reason for the failure. This
message does not indicate an error within the LU Manager.

PRIME/SNA1109 dd-mmm-yy hh:mm:ss.ss Incomplete SBA sequence.

Message Level: Medium   System Console: No

Meaning: A Set Buffer Address command was received from
the host system and the command was not completed in the
datastream. This does not indicate an LU Manager error
and is for information only.

PRIME/SNA1110 dd-mmm-yy hh:mm:ss.ss Incomplete SF sequence.

Message Level: Medium   System Console: No

Meaning: A Start Field command was detected in the
outbound datastream, but there was no attribute following
the command. This does not indicate an LU Manager error
and is included for information only.

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PRIME/SNA1111 dd-mmm-yy hh:mm:ss.ss Invalid RA character.

    Message Level: Medium   System Console: No

    Meaning: The Repeat to Address command was followed by an invalid character to be repeated. This does not indicate an LU Manager error and is included for information only.

PRIME/SNA1112 dd-mmm-yy hh:mm:ss.ss RA address out of range.

    Message Level: Medium   System Console: No

    Meaning: A Repeat to Address command was received from the host and the address specified was not a valid address for the supported screen types. This does not indicate an LU Manager error and is include for information only.

PRIME/SNA1113 dd-mmm-yy hh:mm:ss.ss Incomplete RA sequence.

    Message Level: Medium   System Console: No

    Meaning: A Repeat to Address command was received from the host system and the command was not completed in the outbound datastream. This does not indicate an LU Manager error and is for information only.

PRIME/SNA1114 dd-mmm-yy hh:mm:ss.ss EUA address out of range.

    Message Level: Medium   System Console: No

    Meaning: An Erase Unprotected to Address command was received form the host system and that the address specified in the command was not valid for the screens that are supported by the LU Manager. This message does not indicate a problem in the LU Manager but is for information purposes only.

PRIME/SNA1115 dd-mmm-yy hh:mm:ss.ss Incomplete EUA sequence.

    Message Level: Medium   System Console: No

    Meaning: An Erase Unprotected to Address command was received in the outbound datastream and that the command was incomplete. This does not indicate an error in the LU Manager but is included for information purposes only.

PRIME/SNA1201 dd-mmm-yy hh:mm:ss.ss Unexpected return code during
send.

    ERROR = <num>

    <u>Message Level</u>: Detailed   <u>System Console</u>: No

    <u>Meaning</u>: An unexpected error occurred while attempting
to send a data message to the PRIME/SNA Server. The LU
Manager cannot recover from this condition and will
abnormally terminate. The value of <num> represents the
SERVER return code.

PRIME/SNA1202 dd-mmm-yy hh:mm:ss.ss LU Manager is not compatible
with SERVER.

    <u>Message Level</u>: Brief   <u>System Console</u>: No

    <u>Meaning</u>: The version of the LU Manager is not compatible
with the version of the PRIME/SNA Server. The LU Manager
will terminate normally after logging this message.

    <u>Response</u>: Check the installed versions of PRIME/SNA 3270
and PRIME/SNA Server to verify that they are of the same
revision.

PRIME/SNA1203 dd-mmm-yy hh:mm:ss.ss Retry in Progress.
    User = <num>

    <u>Message Level</u>: Detailed   <u>System Console</u>: No

    <u>Meaning</u>: An internal buffering failure has occurred and
the LU Manager is in the process of recovery. If
recovery is not successful then the message PRIME/SNA1204
will be logged and the LU Manager will continue normal
operation. The value <num> indicates the PRIMOS user
number for the device.

PRIME/SNA1204 dd-mmm-yy hh:mm:ss.ss Maximum retries exceeded,
sending neg rsp.
    User = <num>

    <u>Message Level</u>: Detailed   <u>System Console</u>: No

    <u>Meaning</u>: This message follows message PRIME/SNA1203 when
the number of buffer retries has exceeded a set value.
At this time the host data stream will be responded to
with an insufficient resources error. The value <num>
indicates the PRIMOS user number for the device.

PRIME/SNA1205 dd-mmm-yy hh:mm:ss.ss Bind rejected.
          LU = <num>.

          Message Level: Medium   System Console: No

          Meaning: Either the Server or the LU Manager has sent a
          negative response to an SNA BIND command. Error recovery
          for this condition is the host system's responsibility.
          <num> is the ID of the logical unit.

PRIME/SNA1206 dd-mmm-yy hh:mm:ss.ss Exception response received
          Session = <num>.

          Message Level: Detailed   System Console: No

          Meaning: A negative response was received for a data
          stream which the LU Manager has sent in exception
          response only mode. <num> is the ID of the session
          receiving the response.

PRIME/SNA1207 dd-mmm-yy hh:mm:ss.ss Negative response sent by
  SNA SERVER.
          Session = <num>.

          Message Level: Detailed   System Console: No

          Meaning: The PRIME/SNA Server has sent a negative
          response to a host data stream on behalf of the LU
          Manager for an SNA protocol error. <num> is the ID of
          the session receiving the response.

PRIME/SNA1208 dd-mmm-yy hh:mm:ss.ss Receive check error.
          Session = <num>.

          Message Level: Detailed   System Console: No

          Meaning: The Server has detected an error in a data
          stream sent from the host. The LU Manager may send a
          negative response to the host if the Server has not
          already done so. <num> is the Session ID number.

PRIME/SNA1209 dd-mmm-yy hh:mm:ss.ss Data rejected error.
          Session = <num>, Sense Codes = <hex_num>

          Message Level: Medium   System Console: No

          Meaning: A negative response was received for a data
          stream previously sent by the LU Manager. <num> and
          <hex_num> are the Session ID and error codes associated
          with this event.

PRIME/SNA1210 dd-mmm-yy hh:mm:ss.ss Node reset
               LU = <num>.

               <u>Message Level</u>: Medium   <u>System Console</u>: No

               <u>Meaning</u>: The SNA node has been reset by a new activation
               sequence from the host.   A series of session shutdown
               messages for all devices on this node will accompany this
               message. <num> is the device ID receiving the message.

PRIME/SNA1211 dd-mmm-yy hh:mm:ss.ss Session resource unavailable
               Session = <num>.

               <u>Message Level</u>: Medium   <u>System Console</u>: No

               <u>Meaning</u>: The PRIME/SNA Server support for this session
               is no longer available. This may occur due to a host
               deactivation sequence or   the   PRIME/SNA Server being
               stopped. The SNADSC user will be informed in detail of
               the reason for this event. <num> is the Session ID.

PRIME/SNA1212 dd-mmm-yy hh:mm:ss.ss Negative Rsp received for LUSTAT
               Session = <num>, Sense Codes = <hex_num>

               <u>Message Level</u>: Brief   <u>System Console</u>: No

               <u>Meaning</u>: A negative response was received for an LUSTAT
               data stream sent by the LU Manager. <num> and <hex_num>
               indicate the ID of the session receiving the response,
               and the error codes for the negative response.

PRIME/SNA1213 dd-mmm-yy hh:mm:ss.ss Negative Rsp received for SHUTC
               Session = <num>, Sense Codes = <hex_num>

               <u>Message Level</u>: Brief   <u>System Console</u>: No

               <u>Meaning</u>: A negative response was received for a SHUTC
               command sent by the PRIME/SNA Server. The values <num>
               and <hex_num> indicate the ID of the session receiving
               the response, and the error codes for the negative
               response.

PRIME/SNA1214 dd-mmm-yy hh:mm:ss.ss GET_SESSION error
               Error = <num>

               <u>Message Level</u>: Brief   <u>System Console</u>: No

               <u>Meaning</u>: A GET_SESSION request to the PRIME/SNA Server
               has failed.   The value of <num> is the Server reply code
               for the failure.

PRIME/SNA1215 dd-mmm-yy hh:mm:ss.ss OPEN_LU error
            Error = <num>

            <u>Message Level</u>: Brief   <u>System Console</u>: No

            <u>Meaning</u>: An OPEN_LU request to the PRIME/SNA Server has <u>failed</u>. The value of <num> is the Server reply code for the failure.   The LU Manager will continue to   run normally;   however, the device which has raised the error may not be usable depending on the type of error.

PRIME/SNA1216 dd-mmm-yy hh:mm:ss.ss Negative Response received.
            Session = <num>, Sense Codes = <hex_num>

            <u>Message Level</u>: Detailed   <u>System Console</u>: No

            <u>Meaning</u>: A negative response was received for data sent <u>by the</u> LU Manager.   The values <num> and <hex_num> indicate the ID of the session receiving the response, and the error codes for the negative response.

PRIME/SNA1217 dd-mmm-yy hh:mm:ss.ss Read/Write rejected
            Error = <num>

            <u>Message Level</u>: Detailed   <u>System Console</u>: No

            <u>Meaning</u>: A read or write event was rejected by the <u>PRIME/SNA</u> Server with an unexpected error code. The value of <num> represents the PRIME/SNA Server error code received.

PRIME/SNA1218 dd-mmm-yy hh:mm:ss.ss Node Unavailable
            Session = <num>.

            <u>Message Level</u>: Brief   <u>System Console</u>: No

            <u>Meaning</u>: The Server support for sessions for a remote system are no longer available. This may occur due to a host deactivation sequence or the Server being stopped. The SNADSC user will receive details on the reason for this event. <num> represents the Session ID.

PRIME/SNA1219 dd-mmm-yy hh:mm:ss.ss Unexpected reply code
            Error = <num>

            <u>Message Level</u>: Detailed   <u>System Console</u>: No

            <u>Meaning</u>: The PRIME/SNA Server reply code for a read or <u>write</u> event has indicated an unusual or unexpected error.

The LU Manager will abort the request and continue to operate normally for all other sessions. The session raising this error may suffer some data loss. The value <num> indicates the PRIME/SNA Server reply code in error.

Response: Submit a problem report to Prime Engineering.

PRIME/SNA1220 dd-mmm-yy hh:mm:ss.ss ACTPU received, reset in progress.

Message Level: Medium   System Console: No

Meaning: An ACTPU SNA command was received by the PRIME/SNA Server. All devices associated with this event will be deactivated.

PRIME/SNA1221 dd-mmm-yy hh:mm:ss.ss Unknown LECB event type
               Event = <num>

Message Level: Brief   System Console: No

Meaning: The LU Manager has discovered a control block with an unknown event type. This event will be ignored and the LU Manager will continue to run normally. <num> indicates the event type in error.

Response: Submit a problem report to Prime Engineering.

PRIME/SNA1222 dd-mmm-yy hh:mm:ss.ss Correlation Table full
               Event = <num>, Session = <num>.

Message Level: Brief   System Console: No

Meaning: The LU Manager's internal table of outstanding messages has become full. This condition will cause the LU Manager to abnormally terminate. The values of <num> are the current event and the Session ID for this event.

Response: Report this problem to Prime Engineering.

PRIME/SNA1223 dd-mmm-yy hh:mm:ss.ss GET_BUFFER failed
               User = <num>, Session = <num>, Event = <num>, Error = <num>

Message Level: Medium System Console: No

Meaning: A request for an internal buffer has failed. When this occurs, the LU Manager will attempt to recover from the failure. If recovery is unsuccessful, the LU Manager will abort the requested event with a possible loss of data.

The values of <num> represent the PRIMOS user number, the Session ID number, the LU Manager event type, and the LU Manager error code returned from the GET_BUFFER routine.

Response: Submit a problem report to Prime Engineering.

PRIME/SNA1224 dd-mmm-yy hh:mm:ss.ss Unrecognized SECB data category Error = <num>

Message Level: Medium   System Console: No

Meaning: The data category of a READ or WRITE event was not recognized by the LU Manager. This message may indicate problems with either the LU Manager or the Server. <num> is the data category code in error.

Response: Submit a problem report to Prime Engineering.

PRIME/SNA1225 dd-mmm-yy hh:mm:ss.ss Session Lookup Table full

Message Level: Brief   System Console: No

Meaning: The LU Manager's internal table of active sessions has become full. This condition will cause the LU Manager to terminate abnormally.

Response: Submit a problem report to Prime Engineering.

PRIME/SNA1226 dd-mmm-yy hh:mm:ss.ss No CT entry for positive
response
Session = <num>.

Message Level: Brief   System Console: No

Meaning: The LU Manager has attempted to send a positive response for an event for which it has no record. The value <num> indicates the Session ID number in error.

Response: Submit a problem report to Prime Engineering.

PRIME/SNA1228 dd-mmm-yy hh:mm:ss.ss No CT entry for negative
response
Session = <num>.

Message Level: Brief   System Console: No

Meaning: The LU Manager has attempted to send a negative response for an event for which it has no record. The value <num> indicates the Session ID number in error.

Response: Submit a problem report to Prime Engineering.

PRIME/SNA1232 dd-mmm-yy hh:mm:ss.ss Cannot get SERVER data buffer
Error = <num>

Message Level: Brief   System Console: No

Meaning: The LU Manager cannot acquire a buffer needed
to send a data stream to the PRIME/SNA Server. The LU
Manager will abort the Mate request and continue to run
normally. The value <num> indicates the PRIME/SNA Server
error code returned by the buffer manager.

Response: Submit a problem report to Prime Engineering
through your local Customer Support channels.

PRIME/SNA1233 dd-mmm-yy hh:mm:ss.ss Cannot copy from Server buffer
Error = <num>

Message Level: Brief   System Console: No

Meaning: The LU Manager cannot copy data from the
PRIME/SNA Server's buffers to the LU Manager's buffers.
The LU Manager will abort the request and continue to run
normally. The value <num> indicates the PRIME/SNA Server
error code returned by the buffer manager.

Response: Submit a problem report to Prime Engineering.

PRIME/SNA1234 dd-mmm-yy hh:mm:ss.ss Incorrect state for DFC request
Session = <num>, State = <num>, Request = <num>

Message Level: Medium System Console: No

Meaning: A DFC request to be sent to the host is not
valid for the current session state. The LU Manager will
abort the request and continue to run normally. The
values of <num> represent the session ID, the session
state, and the coded request type.

Response: Submit a problem report to Prime Engineering.

PRIME/SNA1235 dd-mmm-yy hh:mm:ss.ss Cannot copy to Server buffer
Error = <num>

Message Level: Brief System Console: No

Meaning: The LU Manager cannot copy data to the Server's
buffers. The LU Manager will abort the request and
continue to run normally. <num> indicates the Server
error code returned by the buffer manager.

Response: Submit a problem report to Prime Engineering.

PRIME/SNA1236 dd-mmm-yy hh:mm:ss.ss Return Server buffer failure
                Error = <num>

                Message Level: Medium   System Console: No

                Meaning: The LU Manager cannot return a data buffer to
                the Server. The LU Manager will ignore the error and
                continue to run normally. <num> indicates the Server
                error code returned by the buffer manager.

                Response: Submit a problem report to Prime Engineering
                through your local Customer Support channels.

PRIME/SNA1237 dd-mmm-yy hh:mm:ss.ss Invalid DFC request
                Session = <num>, Request = <num>

                Message Level: Medium   System Console: No

                Meaning: An unrecognized DFC request is received by the
                LU Manager. The LU Manager will send a negative response
                to the host for this session. The values of <num>
                represent the Session ID and the request in error.

PRIME/SNA1238 dd-mmm-yy hh:mm:ss.ss Data length too long.
                User = <num>, Session = <num>.

                Message Level: Detailed   System Console: No

                Meaning: The LU Manager has received a data stream which
                is too long to fit into its internal buffers. The data
                stream will be responded to negatively and the LU Manager
                will continue to run normally. The values of <num>
                represent the PRIMOS user number and the Session ID.

PRIME/SNA1239 dd-mmm-yy hh:mm:ss.ss Unknown SECB event type
                Event = <num>, Error = <num>

                Message Level: System Console: No

                Meaning: An unrecognized event type was received from
                the PRIME/SNA Server. The LU Manager will ignore this
                event and continue to run normally. The values of <num>
                represent the PRIME/SNA Server event type and the
                PRIME/SNA Server reply code.

                Response: Submit a problem report to Prime Engineering
                through your local Customer Support channels.

PRIME/SNA1240 dd-mmm-yy hh:mm:ss.ss No session active for event
               Event = <num>

               Message Level: Medium   System Console: No

               Meaning: An event wass received for a session which is
               not active. The event will be ignored and the LU Manager
               will continue to run normally. The value of <num>
               represents the PRIME/SNA Server event type.

               Response: Submit a problem report to Prime Engineering
               through your local Customer Support channels.

PRIME/SNA1241 dd-mmm-yy hh:mm:ss.ss Correlation Table error
               Error = <num>

               Message Level: Brief   System Console: No

               Meaning: An error was returned from the table management
               routines within the LU Manager. This error is not
               recoverable and the LU Manager will terminate abnormally.
               The value of <num> is the LU Manager return code from the
               table management routines.

               Response: Submit a problem report to Prime Engineering
               through your local Customer Support channels.

PRIME/SNA1242 dd-mmm-yy hh:mm:ss.ss Unknown shutdown state

               Message Level: Brief   System Console: No

               Meaning: The shutdown state value in the device control
               contains an invalid value. This condition will cause the
               LU Manager to abnormally terminate.

               Response: Submit a problem report to Prime Engineering
               through your local Customer Support channels.

PRIME/SNA1244 dd-mmm-yy hh:mm:ss.ss No SSCP-LU session for GET_SESSION

               Message Level: Medium   System Console: No

               Meaning: The support needed to establish an   LU-LU
               session with a host is not available. The request for a
               session will be aborted.

               Response: If this message occurs frequently, submit a
               problem report to Prime Engineering through your local
               Customer Support channels.

PRIME/SNA1245 dd-mmm-yy hh:mm:ss.ss No SCB found in clean-up

       Message Level: Detailed   System Console: No

       Meaning: There is no session control information for a session which is being shutdown. The LU Manager will complete the session shutdown and continue to run normally after this occurs.

       Response: If this message occurs frequently, submit a problem report to Prime Engineering through your local Customer Support channels.

PRIME/SNA1248 dd-mmm-yy hh:mm:ss.ss Unknown reason_code in
SECB_UNSOLICITED_EVENT
       Error = <num>

       Message Level: Brief   System Console: No

       Meaning: The reason code for an unsolicited event was not recognized by the LU Manager. This message may indicate problems with either the LU Manager or the Server. <num> indicates the reason code in error.

       Response: Submit a problem report to Prime Engineering.

PRIME/SNA1250 dd-mmm-yy hh:mm:ss.ss No CT entry for Event
       Event = <num>

       Message Level: Brief   System Console: No

       Meaning: There is no record of a request which has been completed by the Server. The LU Manager will ignore the completion and continue, however some data may be lost. <num> indicates the Server event type.

       Response: Submit a problem report to Prime Engineering.

PRIME/SNA1251 dd-mmm-yy hh:mm:ss.ss Cannot obtain SECB
       Error = <num>, Event = <num>

       Message Level: Brief   System Console: No

       Meaning: The LU Manager cannot obtain a Server control buffer. The LU Manager will abort the request and continue to run normally. The values of <num> are the Buffer manager error code and the request event type.

       Response: Submit a problem report to Prime Engineering.

PRIME/SNA1252 dd-mmm-yy hh:mm:ss.ss SSCP-LU session established.
User = <num>, Session = <num>.

Message Level: Detailed   System Console: No

Meaning: An SSCP-LU session with the host has been
successfully started. The values of <num> indicate the
PRIMOS user number and the ID of the SSCP-LU session.

PRIME/SNA1253 dd-mmm-yy hh:mm:ss.ss LU-LU session established.
User = <num>, Session = <num>.

Message Level: Detailed   System Console: No

Meaning: An LU-LU session with the host has been
successfully started. The values of <num> indicate the
PRIMOS user number and the ID of the LU-LU session.

PRIME/SNA1254 dd-mmm-yy hh:mm:ss.ss SSCP-LU session normal shutdown.
User = <num>, Session = <num>.

Message Level: Detailed   System Console: No

Meaning: An SSCP-LU session has been shutdown either by
the host system, or as a result of a PRIME/SNA 3270 or
PRIME/SNA Server STOP command. The values of <num>
indicate the PRIMOS user number and the ID of the SSCP-LU
session.

PRIME/SNA1255 dd-mmm-yy hh:mm:ss.ss LU-LU session normal shutdown.
User = <num>, Session = <num>.

Message Level: Detailed   System Console: No

Meaning: An LU-LU session has been shutdown. This event
maybe the result of a LOGOFF from the host or the result
of an PRIME/SNA 3270 or PRIME/SNA Server stop command.
The values of <num> indicate the PRIMOS user number and
the ID of the LU-LU session.

D

Using EDIT_EFU

This appendix gives instructions on using the EDIT_EFU forms editing utility. This utility enables the PRIME/SNA Administrator or operator to create and modify special forms definition files for use with PRIME/SNA Interactive Printer Emulation. These files are used with logical printers that support SCS (SNA Character String) data stream printing, when complex formatting of printer output is required. Files created with EDIT_EFU have the suffix .FORM, and are specified by using the -FORM option when starting a logical printer.

Note

A logical printer must be defined in the Interactive configuration entry as supporting SCS to take advantage of this feature of PRIME/SNA Interactive Printer Emulation.

USING A .FORM FILE WITH SNA_PRINT

To specify a .FORM file when starting a logical printer, use the -FORM option with the START subcommand, as follows:

    START printer-name -FORM [name]

If you include a name with the -FORM option, SNA_PRINT checks the current directory for a file name.form, that was created with EDIT_EFU.

If such a file is found, SNA_PRINT incorporates the formatting
definitions it contains into the print files sent to that logical
printer.

If no valid file name.form is found, or if you omit name, SNA_PRINT
uses a default .FORM file containing standard PRIMOS Spooler formatting
definitions, as shown in the following example:

```
OK, EDIT_EFU -DISPLAY
[EDIT_EFU Revision 1.0 - 19.4]
Format:  PAGE
Top margin:  1
Bottom margin:  66
Left margin:  1
Right margin:  132
Line truncing is enabled.
Channel#      Skips to line(s)#
      1     -     1
```

After incorporating the specified formatting definitions into the print
file, SNA_PRINT passes the print file and the -FORM option (and name,
if used) to the PRIMOS Spooler subsystem. The Spooler treats -FORM as
a form type (paper type) specification, and routes the print job to an
appropriate printer.

Note

When creating a .FORM file with EDIT_EFU, the filename you
select should match the name of a form type defined in an
existing printer environment. If you include the -FORM option
when you start up SNA_PRINT, and you include a name that does
not match an existing printer environment form type, a warning
message is displayed at your terminal, and your files remain in
the spool queue without being printed. Form types are defined
with the PROP command. For further information on PROP, see
the Operator's Guide to the Spooler Subsystem.

For example, suppose that you use EDIT_EFU to create a .FORM file
called BILLS.FORM that contains formatting characteristics for a
billing form. You know that a logical device defined in the
Interactive configuration entry is PRINTER1. You also know that
PRINTER1 is configured for a remote system that is accessed by your
users to run an billing application program.

You start PRINTER1 and specify the -FORM spool option as follows:

```
[SNA_PRINT Revision 1.0 - 19.4]
Logfile: LOG.066.09-MAR-85.18.32.40

Command: START PRINTER1 -FORM BILLS
```

When your PRIME/SNA users access that billing application, their print requests are spooled to a physical printer and printed in the appropriate output format.

THE EDIT_EFU COMMAND

EDIT_EFU is the PRIMOS external command that invokes the EDIT_EFU forms editing utility. Once the forms editor is started, you use a series of internal commands to create or modify a file of formatting parameters. The format of the EDIT_EFU command is as follows:

       EDIT_EFU [pathname] [options]

Pathname is the name of an existing form file. The file may be specified with or without the .FORM suffix. The command line options for EDIT_EFU are described below.

Option	Description
-DISPLAY	When entered alone, -DISPLAY lists the default formatting settings. When preceded by the pathname of a specific .FORM file, -DISPLAY lists the contents of the file in a readable format.
-HELP [internal-command]	When entered alone, the -HELP option displays a list of valid EDIT_EFU internal commands and their arguments. When entered with an internal command (described below), -HELP displays the syntax and usage for that command.

Internal Commands for EDIT_EFU

When you enter the EDIT_EFU command and press the RETURN key, EDIT_EFU displays a banner, and then prompts you for an internal command. For example:

       OK, EDIT_EFU
       [EDIT_EFU Revision 1.0 - 19.4]
       > _

Valid internal commands for this prompt are listed below. Commands may be entered in any order; however, the parameters they specify are displayed in the order shown in the following list.

Internal Command	Meaning
FORMAT type	Changes format command to type, where type is NONE or PAGE. FMT NONE disables pagination and header generation. FMT PAGE enables pagination and header generation.
TABS list	Sets tab stops. List is a list of integer tab stops. (For example, 5 10 15 20.) Up to 128 stops can be specified.
TAB_INTERVAL / TI n	Sets the tab interval to the number specified by n.
CLEAR_TABS / CLRTAB	Erases all tabs or the tab interval.
TOP_MARGIN / TM line	Sets the top margin to the line number specified by line.
BOTTOM_MARGIN / BM line	Sets the bottom margin to the line number specified by line. Attempting to print beyond this line will cause a page eject.
LEFT_MARGIN / LM column	Sets the left margin to the column number specified by column.
RIGHT_MARGIN / RM column	Sets the right margin to the column number specified by column.
CHANNEL n line	Sets the vertical channel skips. n specifies the channel number and line specifies the line number to skip to. Multiple channel commands can set more than one line per channel. Clear channels first if you wish to define a single line per channel.
CLEAR_CHANNEL / CLRCHAN	Erases all channel skips. (Always resets channel one to skip to line one.)
WRAP	Turns on line wrapping. Turns off line truncating.
TRUNC	Turns on line truncating. Turns off line wrapping.
DISPLAY	Displays EDIT_EFU parameter values.

HELP   Explains EDIT_EFU internal commands.

FILE [pathname]   Saves the current values in the file
                                        specified in pathname.

QUIT   Exits the EDIT_EFU utility.

HOW EDIT_EFU WORKS -- TWO EXAMPLES

Figure D-1 shows an example of an EDIT_EFU session for creating a new forms file. In this example, the user creates a forms file with side margin parameters for printing in a wide format, and with two tab stops. After entering the desired values, the user examines them with the DISPLAY command and then saves the file with the name WIDE.

Figure D-2 shows an example of an EDIT_EFU session for modifying an existing file. In this example, the user edits the file, WIDE.FORM, clearing the existing tab stops and adding three new tab stops. After displaying the new values, the user enters the QUIT command, without saving the new file. EDIT_EFU queries the user about this action, and the user saves the file. (EDIT_EFU adds the suffix .FORM.)

```
OK, EDIT_EFU
[EDIT_EFU Revision 1.0 - 19.4]
> FMT PAGE
> TAB 30 72
> TM 1
> BM 66
> LM 1
> n
RM 132
> TRUNC
> DP
Format: PAGE
Tab stops:
  30  72
Top margin: 1
Bottom margin: 66
Left margin: 1
Right margin: 132
Line truncing is enabled.
Channel#    Skips to line(s)#
     1    -    1
> FILE WIDE
OK,
```

Creating a New .FORM FILE
Figure D-1

```
OK, EDIT_EFU WIDE
[EDIT_EFU Revision 1.0 - 19.4]
> CLRTAB
> TAB 32 77 94
> DP
Format:  PAGE
Tab stops:
  32  77  94
Top margin:  1
Bottom margin:  66
Left margin:  1
Right margin:  132
Line truncing is enabled.
Channel#     Skips to line(s)#
     1    -    1
> Q
File modified, OK to quit? N
> FILE
WIDE.FORM
OK,
```

Modifying a .FORM File
Figure D-2

E

PRIME/SNA
Commands
Quick Reference

This appendix contains a quick reference card that includes information on the format, options, and usage of the following PRIME/SNA commands:

- SNA_SERVER

- SNA_3270

- SNA_PRINT

- SNADSC

- SNA_SERVER_CONFIG

- SNA_3270_CONFIG

PRIME/SNA COMMANDS QUICK REFERENCE

SNA_SERVER   Controls the Server Subsystem

```
Format:

  SNA_SERVER [config-pathname] main option(s) [resource option(s)]

Main Options:

  -START                              -MESSAGE_LEVEL, -MSGL  [msg-level]**
  -STOP [stop-action]*                -STATISTICS, -ST [stats-file]
  -STATUS, -STAT [-NO_WAIT, -NW]      -NO_STATISTICS, -NST
  -HELP, -H

Resource Options:

  -LINE lname                -REMOTE_SYSTEM, -RS rsname
  -LINE_GROUP, -LG lgname    -REMOTE_SYSTEM_GROUP, -RSG rsgname

Usage:  -START, -STOP, -STAT, and -MSGL can be combined with resource
        options.  -MSGL and -ST or -NST can be on the same line as -START.

  *   stop-action  =  Quit, Idle, Finish, Now, Kill
  **  msg-level    =  Brief, Medium, Detailed
```

SNA_3270   Controls the Interactive Subsystem

```
Format:

  SNA_3270 [config-pathname] main option(s) [resource option(s)]

Main Options:

  -START [-ENTRY_ID, -EID entry-ID]   -MESSAGE_LEVEL, -MSGL  msg-level**
  -STOP [stop-action]*                -AUTO_STOP, -ASTOP delay-time
  -STATUS, -STAT [-NO_WAIT, -NW]      -NO_AUTO_STOP, -NASTOP
  -HELP, -H

Resource Options:  -REMOTE_SYSTEM, -RS rsname
                   -REMOTE_SYSTEM_GROUP, -RSG rsgname

Usage:  -START, -STOP, -STAT, and -MSGL can be combined  with -RS and -RSG.
        -EID, -MSGL, and -ASTOP/-NASTOP can be on the same line as -START.

  *   stop-action =  Quit, Idle, Finish, Now, Kill
  **  msg-level   =  Brief, Medium, Detailed
```

SNA_PRINT   Controls Interactive Printer Emulation

```
Format:

    SNA_PRINT  [{-HELP  }]
               [{-NO_LOG}]

Usage and Subcommands:  After invoking SNA_PRINT, type the following
                        subcommands in response to SNA_PRINT's prompt:

    START printer-name [spool-options]*    QUIT, Q
    STOP [printer-name] [-NOW]             CANCEL printer-name
    STATUS, STAT [printer-name]            {PA1 | PA2} printer-name
    DISPLAY, DP                            HELP, H

  *  spool-options = -AS alias, -AT destination, -COPies n, -DeFer time,
                     -DISK {disk-name|dev-num}, -ForMat {none|page},
                     -FOrm [type], -NOHead, -No_Page_HeaDeR
```

SNA_SERVER_CONFIG   Invokes the Server configurator

```
Format:

    SNA_SERVER_CONFIG [config-pathname] [options]

Options:

  -CREATE, -CR      -DISPLAY, -DP [-NO_WAIT, -NW]      -TERMINAL_TYPE, -TTP
  -EDIT, -ED        -LISTING, -L [listing-pathname]       terminal-type**
  -HELP, -H         -SPOOL [spool-options]*

  -CREATE, -EDIT, -HELP, -DISPLAY, -LISTING, and -SPOOL are mutually
  exclusive.

  *  spool-options = -AS alias, -AT destination, -COPies n, -DEFer time,
                     -FOrm [type], -LNUM, -NOHead

  ** terminal-type = PT200, PST100, PT45, TTY
```

SNA_3270_CONFIG   Invokes the Interactive configurator

```
Format:

    SNA_3270_CONFIG [config-pathname] [-ENTRY_ID entry-id] [options]

Options:

  -CREATE, -CR      -DISPLAY, -DP [-NO_WAIT, -NW]      -TERMINAL_TYPE, -TTP
  -EDIT, -ED        -LISTING, -L [listing-pathname]       terminal-type**
  -HELP, -H         -SPOOL [spool-options]*

  -CREATE, -EDIT, -HELP, -DISPLAY, -LISTING, and -SPOOL are mutually
  exclusive.

  *  spool-options = -AS alias, -AT destination, -COPies n, -DEFer time,
                     -FOrm [type], -LNUM, -NOHead

  ** terminal-type = PT200, PST100, PT45, TTY
```

SNADSC   Invokes Interactive Terminal Emulation

```
Format:

    SNADSC {[station-name] [-LOGON logon-command] [-TERMINAL_TYPE PT200]}
           {[-HELP]}
```

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SURVEY

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