VMS/SNA Installation

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Preface

VMS/SNA is a Digital Equipment Corporation software product that enables a VMS user to communicate with programs running on an IBM SNA networked system. These systems must be part of a network configuration designed according to IBM′s Virtual Telecommunication Access Method (VTAM) and Advanced Communications Function for Network Control Program (ACF/NCP).

This manual presents the information needed to install and configure VMS/SNA on VAX systems that use the VMS V5.0 (or later) operating system.

Intended Audience

This manual is intended for VAX system managers or users who are going to install and configure the VMS/SNA software. You should be familiar with installation concepts, and you must have knowledge of IBM's ACF/NCP and VTAM or have access to someone with this knowledge.

Keep this document with your distribution kit, or insert it into the binder that is provided with *VMS/SNA Management*. You will need to refer to it again if you receive any maintenance updates or need to reinstall VMS/SNA.

Structure

VMS/SNA Installation is divided into two chapters and one appendix.

Chapter 1	Provides introductory information about VMS/SNA, describes all required and optional VMS/SNA components, describes the IBM parameters with which you must be familiar, and describes access names.
Chapter 2	Describes the installation and configuration process.
Appendix A	Shows the files installed during installation.
Appendix B	Provides a sample installation procedure and a sample configuration procedure.

Associated Documents

The documentation for a VMS/SNA system consists of the following sets of manuals:

- Communications hardware manuals
- VMS/SNA software manuals
- Access routine manuals

Communications Hardware Manuals

The following manuals on the various Digital communications devices might be helpful:

- *DMB32 User's Guide* (DMB32 users only)
- *DMB32 Technical Description* (DMB32 users only)
- *MicroVAX 2000 Hardware Owner's Manual Addendum: DST32 Synchronous Serial Line Option* (DST32 users only)
- *QMA DPV11 Serial Synchronous Interface Technical Manual* (DPV11 users only)
- *QMA DPV11 Serial Synchronous Interface User's Guide* (DPV11 users only)
- *VAXstation 2000 and MicroVAX 2000 Hardware Maintenance Guide Addendum: DST32 Synchronous Serial Line Option* (DST32 users only)

- *VAX Wide Area Network Device Drivers Installation Guide*

VMS/SNA Software Manuals

The following manuals are part of the VMS/SNA documentation kit:

- *VMS/SNA Guide to IBM Parameters*
- *VMS/SNA Installation*
- *VMS/SNA Management*
- *VMS/SNA Problem Solving*

Figure 1 lists the VMS/SNA manuals according to the major tasks they describe. The arrows indicate the suggested order in which you use the manuals. The shaded book indicates the manual you are currently using.

Figure 1: VMS/SNA Manuals

LKG-2669-89I

In addition to the VMS/SNA base communication system, Digital Equipment Corporation provides the following access routine products that run on VMS and use VMS/SNA to access IBM systems:

- **Bulk Data Transfer**
  - — DECnet/SNA Data Transfer Facility
  - — DECnet/SNA VMS Remote Job Entry
  - — DECnet/SNA VMS Printer Emulator
- **Programming Interface**
  - — DECnet/SNA VMS APPC/LU6.2 Programming Interface
  - — DECnet/SNA VMS 3270 Data Stream Programming Interface
  - — DECnet/SNA VMS Application Programming Interface

- **Interactive Access**
  - — DECnet/SNA VMS 3270 Terminal Emulator
- **Office Information Transfer**
  - — DECnet/SNA VMS DDXF
  - — External Document Exchange with IBM DISOSS
  - — VAX Message Router/P Gateway
  - — VAX Message Router/S Gateway

For a list of the documentation for the preceding products, see *VMS/SNA Management*.

If you are communicating with the IBM host over an X.25 Packet Switched Data Network (PSDN), you might find the following VAX Packetnet System Interface (PSI) manuals useful:

- *VAX P.S.I. Installation Procedures*
- *VAX P.S.I. Introduction*
- *VAX P.S.I. Management Guide*
- *VAX P.S.I. Problem Solving Guide*

You might find the following VMS manuals useful.

- *VMS Networking Manual*
- *VMS Network Control Program Manual*
- *VMS Install Utility Manual*
- *VMS System Messages and Recovery Procedures*
- *Guide to Maintaining a VMS System*
- *Guide to VMS System Security*
- *VMS Authorize Utility Manual*

You might also find the following IBM documents useful:

- *SNA System Problem Determination Guide* (IBM Order No. G320-6016)
- *Advanced Communication Functions for VTAM, Operations* (IBM Order No. ST27-0612)
- *Advanced Communication Functions for VTAM, Diagnosis* (IBM Order No. ST27-0615)
- *ACF/VTAM Diagnosis Reference* (IBM Order No. SC27-0621)

- *ACF/SNA System Problem Determination Guide, Vol 1* (IBM Order No. GG24-1514)
- *ACF/SNA System Problem Determination Guide, Vol 2* (IBM Order No. GG24-1523)
- *Systems Network Architecture Formats* (IBM Order No. GA27-3136)
- *CICS/OS/VS Version 1 Release 7 Problem Determination Guide* (IBM Order No. SC33-0242)
- *CICS/OS/VS Version 1 Release 7 Data Areas* (IBM Order No. LY33-6035)
- *CICS/VS Version 1 Release 7 Diagnosis Reference* (IBM Order No. LC33-0243)
- *Network Problem Determination Application User Reference* (IBM Order No. SC34-2114)

The following IBM documents should be available for reference:

- *ACF for Network Control Program, ACF for Systems Support Programs, Version 3, Installation and Resource Definition Guide*, IBM Order No. SC30-3253
- *ACF for Network Control Program, Versions 3 and 4, ACF for Systems Support Programs, Version 3: Resource Definition Reference*, IBM Order No. SC30-3254
- *Systems Network Architecture Concepts and Products*, IBM Order No. GC30-3072
- *Systems Network Architecture Formats*, IBM Order No. GA27-3136
- *Systems Network Architecture Technical Overview*, IBM Order No. GC30-3073

Conventions

The following acronyms are used throughout this manual:

Acronym	Meaning
ACF/NCP	IBM′s Advanced Communications Facility/Network Control Program
DCE	Data-circuit terminating equipment
DCL	Digital Command Language

DTE	Data terminal equipment
LU	Logical unit
NCP	Network Control Program
NPSI	IBM's X.25 NCP Packet Switching Interface
PLU	Primary logical unit
PSDN	Packet switching data network
PSI	VAX Packetnet System Interface software
PU	Physical unit
QLLC	Qualified Logical Link Control
SDLC	Synchronous data link control
SLU	Secondary logical unit
SNA	Systems Network Architecture
SNANCP	VMS/SNA Network Control Program
SNATRACE	SNA Protocol Trace utility
SSCP	System Services Control Point
SVC	Switched virtual circuit
TRACE	VMS/SNA Trace utility
VAX	Refers to any one of the systems listed in the Software Product Description (SPD) but not to a particular system.
VTAM	IBM's Virtual Telecommunications Access Method
X.25	CCITT Recommendation for DTE/DCE interface for PSDNs

This manual uses the following conventions for SNANCP and NCP commands:

Convention	Meaning
`SNANCP> SET LINE line-id`	Command examples show system output in black monospaced type. This document uses red monospaced type to indicate user input. In both command and syntax examples, uppercase letters represent text that you must enter exactly as shown. Lowercase letters in italics represent variables for which you must substitute specific information.
[*opt-arg*]	Square brackets enclose optional parts of a command.
{ ACTIVE LINES KNOWN LINES LINE *line-id* }	Braces indicate that you must choose only one of the command words or arguments in the list.
RET	Unless otherwise specified, every command line is terminated by pressing the RETURN key.
CTRL/*x*	This symbol indicates that you press and hold down the key labeled CTRL while simultaneously pressing another key (for example, CTRL/C or CTRL/T).
circuit-id	A string of characters whose exact syntax is that for an SNA circuit identification. SDLC circuits are identified by a string in the form SDLC-*n*, where *n* indicates the number of the circuit. QLLC circuits are identified by a string in the form QLLC-*n*, where *n* indicates the number of the circuit.

Convention	Meaning
line-id	A string of characters whose exact syntax is that for an SNA line identification. A line is identified in the following form: *dev-c[-u]* *dev* — A device name. *c* — A decimal number (0 or a positive integer) designating the device's hardware controller. *u* — A decimal number (0 or a positive integer) designating a unit on the device's hardware controller, if the controller supports more than one unit. The default is 0.
lu-id	A string of characters whose exact syntax is that for logical unit (LU) identification. An LU is identified in the form SNA-*nnn.mmm*, where *nnn* is the number of the PU and *mmm* is the number of the LU.
node-id	Either a *node-name* or a *node-address*.
node-name	A string of up to 6 alphanumeric characters containing at least 1 alphabetic character.
pu-id	A string of characters whose exact syntax is that for physical unit (PU) identification. A PU is identified in the form SNA-*nnn*, where *nnn* is the number of the PU.

When you issue NCP and SNANCP commands, many component names, parameters, and qualifiers require additional information. In most cases, the syntax of this additional information follows a standard set of rules. (Exceptions to these rules are noted where appropriate.) All numeric values are in decimal and have a range of 0 to 65,535 unless otherwise specified.

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Chapter 1

Preparing for Installation

The VMS/SNA software is a set of programs and routines that implements the IBM SNA network protocol for programs running on a Digital VAX system under the VMS operating system. DECnet/SNA VMS access routines, such as the DECnet/SNA VMS 3270 Terminal Emulator, use VMS/SNA to access applications and programs on the IBM system.

This chapter describes the preparations you must make before you install and configure VMS/SNA.

VMS/SNA supports two configurations. Figure 1–1 shows a VMS system connected to an IBM host through an SDLC leased or dial-up line. Figure 1–2 shows a VMS system connected to an IBM host through a Packet Switched Data Network (PSDN).

Figure 1–1: Configuration With an SDLC Line

Figure 1–2: Configuration With a Packet Switched Data Network (PSDN)

1.1 Checking the Distribution Kit

The Software Bill of Materials (BOM) included with your distribution kit should specify the contents of the distribution kit. You should carefully compare the items you received with the items listed in the BOM. If any components are missing or damaged, contact your Digital representative before continuing with the installation.

1.2 SNA Concepts

An IBM SNA network perceives all communications with VMS/SNA in terms of logical connections called sessions. An application running on a VAX system and an application running on an IBM host—linked together in a session—are identified as logical units (LUs). When a session is established, the IBM host designates one LU as the primary logical unit (PLU) and one as the secondary logical unit (SLU). The SLU resides on your VAX system; the PLU resides on the IBM host.

Communication between a VMS/SNA SLU and an IBM PLU is accomplished by means of a software component in VMS/SNA known as a physical unit (PU).

1.3 Preparing the IBM Environment

IBM SNA software components must be configured before you can use the VMS/SNA communications software.

The *VMS/SNA Guide to IBM Parameters* discusses the IBM parameters required for successful communication between the IBM system and your VAX system. Your IBM systems programmer should pay special attention to the following macros and operands:

- ACF/NCP GROUP Macro

  DIAL
  LNCTL
  REPLYTO

- ACF/NCP LINE Macro

  DUPLEX
  NRZI
  PAUSE
  SPEED

- ACF/NCP PU Macro

  ADDR
  DATMODE
  MAXDATA

PUTYPE

- ACF/NCP LU Macro

  BATCH
  LOCADDR
  PACING

- X.25 NPSI Macros (for X.25 communication)

- VTAM Operands PATH Statement (for X.25 communication)

  DIALNO
  GRPNM

- VTAM Operands GROUP Statement

  ANSWER
  CALL
  DIAL
  DLOGMOD
  MODETAB

- VTAM Operands PU Macro

  ADDR
  DLOGMOD
  IDBLK
  IDNUM
  MAXDATA
  MAXOUT
  MODETAB
  PACING
  PUTYPE

- VTAM Operands LU Macro

  DLOGMOD
  LOCADDR
  MODETAB
  PACING

- VTAM Logon Mode Table

  LOGMODE
  RUSIZE

You should regard the Digital documentation as an adjunct to the IBM documentation; the IBM documentation remains the authoritative source for IBM software concepts and procedures. In most cases, the IBM parameters you use with the VMS/SNA software are compatible with the DECnet/SNA Gateway software.

1.4 Installation Requirements

The following sections discuss the various requirements for installing VMS/SNA.

1.4.1 Disk Space

Installing VMS/SNA requires a certain amount of free storage disk space during the installation. Once VMS/SNA is installed, less storage space is required. Table 1–1 summarizes the storage requirements.

Table 1–1: Disk Space Requirements

Kit	Blocks During Installation	Blocks After Installation
VMS/SNA V2.0	3,300	2,300

1.4.2 Privileges

To install VMS/SNA you must be logged in to an account that has SETPRV or at least the following privileges:

- ACNT
- CMKRNL
- DETACH
- EXQUOTA
- LOG_IO
- OPER
- PHY_IO
- PRMMBX
- SYSNAM
- SYSPRV
- WORLD

1.4.3 Dynamic Nonpaged Memory

You must ensure that your system has enough dynamic nonpaged pool space allocated before installing and starting VMS/SNA. Table 1–2 provides an estimate of the amount of system nonpaged pool resources required.

Table 1–2: Required Nonpaged Pool Resources

Task or Object	Memory Required
Load, configure, and start VMS/SNA	180 KB[1]
Each access name	192 bytes
Receive buffers[2]	number of receive buffers*(864 bytes + PU segment size)
Each "active" LU	1 KB

[1]If using VAX PSI for X.25 communication, subtract 28 KB. If using a DPV device, add 5 KB.

[2]For SDLC lines only. Use SNANCP to display or modify this value

Table 1–2 (Cont.): Required Nonpaged Pool Resources

Task or Object	Memory Required
Each "in session" LU	10 KB
Each LU authorization record	272 bytes

To see the current dynamic nonpaged pool resources, run the SYSGEN utility and use the SHOW NPAGEDYN command:

```
$  RUN SYS$SYSTEM:SYSGEN
SYSGEN>  USE CURRENT
SYSGEN>  SHOW NPAGEDYN
Parameter Name          Current   Default   Minimum   Maximum Unit  Dynamic
--------------          -------   -------   -------   ------- ----  -------
NPAGEDYN                2050000    300032     16384        -1 Bytes
```

1.4.3.1 Changing the Value for Nonpaged Pool

To install and run VMS/SNA you must increase the value of the NPAGEDYN system parameter. Using the guidelines specified in Table 1–2, calculate the value to increase NPAGEDYN. If you have installed a previous version of VMS/SNA on your system, you might use a value less than the calculated value.

For example, a system with 64 active LUs, 16 "in session" LUs, and a receive buffer size of 521 bytes needs approximately 450 KB of nonpaged pool. This amount increases as you increase the number of access names and authorized users.

To increase the NPAGEDYN system value, use the AUTOGEN command procedure. AUTOGEN automatically adjusts values for parameters associated with the ones you reset manually. To change system parameters with AUTOGEN, edit the the following file:

```
SYS$SYSTEM:MODPARAMS.DAT
```

For example, to change the setting for the NPAGEDYN system parameter, add this line to the file:

```
ADD_NPAGEDYN = nnn
```

where *nnn* is the amount you calculated.

Now, run the AUTOGEN procedure to recalculate your system parameters. Enter the following command at the DCL prompt:

```
$  @SYS$UPDATE:AUTOGEN GETDATA REBOOT
```

AUTOGEN performs an automatic system shutdown and reboots when it has finished. Rebooting your system makes the new parameter values active. Also, on VMS V5.x systems you might wish to add the [NO]FEEDBACK parameter to the AUTOGEN command line. For more information about using AUTOGEN, see the instructions on modifying system parameters in the VMS documentation on system management and operations.

1.4.4 Process Account Quotas

To install VMS/SNA, the account you use must have sufficient quotas. Table 1–3 summarizes the process quotas required to perform the installation.

Table 1–3: Process Account Quotas for the Installing Account

Account Quota	Value
ASTLM	24
BIOLM	18
BYTLM	18,000
DIOLM	18
ENQLM	30
FILLM	20

Use the VMS Authorize Utility (AUTHORIZE) to compare the current values of these quotas with the requirements for VMS/SNA. For example, the account used in the following example is the SYSTEM account:

```
$  SET DEFAULT SYS$SYSTEM RETURN
$  RUN AUTHORIZE RETURN
UAF>  SHOW SYSTEM RETURN
```

To change the values of these quotas, use the VMS Authorize Utility's MODIFY command. For more information, see the *VMS Authorize Utility Manual*.

1.5 VMS License Management Facility

Before installing VMS/SNA you must register your software license. The license registration information is contained in the Product Authorization Key (PAK) that is shipped with VMS/SNA. The PAK is a paper certificate that contains information about the license you need to run a particular piece of software.

You should register your VMS/SNA license before you perform the installation, configuration, and startup. During the installation, you are asked if you have registered the VMS/SNA license and loaded the appropriate authorization key. If you have not registered and loaded the PAK information, you can complete the installation; however, you will not be able to start the product or run the Installation Verification Program (IVP). After you register the license and load an authorization key, you can start the product and run the IVP.

Register the license information by using either the VMS License command procedure (VMSLICENSE) or the LICENSE REGISTER command, as described in the *VMS License Management Utility Manual*. When registering the VMS/SNA PAK information, use the product name SNA-VMS.

1.6 Hardware Requirements

Your single VAX system is attached to the SNA network through a Digital hardware communications device, a communications line, an IBM communications controller, and modems (if not directly attached to the IBM communications controller). The following sections discuss only the Digital communications device and modem requirements.

1.6.1 Digital Communications Devices

Digital communications devices support half-duplex point-to-point, half-duplex multipoint, full-duplex point-to-point, and full-duplex multipoint SDLC communications.

NOTE

The words multipoint and multidrop have the same meaning and are used interchangeably in this manual.

Transmission characteristics (such as speed and mode of operation) can vary to satisfy different performance requirements. For a list of supported communications devices and characteristics, see the Software Product Description (SPD) for the current version of VMS/SNA.

1.6.2 Modems

If your VAX system is not directly attached to the IBM communications controller, the communications line between your VAX system and the IBM host system requires a pair of synchronous modems or a modem eliminator (hardware that performs the function of two modems if the communicating systems are in close proximity). Modems can be full-duplex or half-duplex. The type of modem or modem eliminator that you need for each VMS/SNA line depends on the data transfer rate. The modem you select should also have the following characteristics:

- RS-232-C, or EIA-232-D (CCITT V.24) interface—for DPV11 device
- EIA-232-D (CCITT V.24) interface—for DSH32 and DST32 device
- EIA-232-D (CCITT V.24), or CCITT V.35 interface—for all other devices
- Synchronous communication
- Full-duplex or half-duplex
- Leased or dial-up lines

NOTE

The EIA-232-D interface replaces the RS-232-C interface. If you are using RS-232-C modem eliminators, you need a special adapter. See the VMS/SNA release notes for additional information.

For a complete range of modem options or for help in selecting a modem, consult your Digital network specialist.

1.7 Software Requirements

VMS/SNA product installation requires the following software components:

- VMS operating system software
- VMS/SNA software distribution kit
- VAX Wide Area Network Device Drivers software kit
- VAX Packetnet System Interface software distribution kit (if communicating through an X.25 network)

When VMS/SNA installation is complete, you can add one or more DECnet/SNA VMS access routines, if not already installed.

1.7.1 VMS Software

You must have the required version of the VMS operating system software on your VAX system (see the title page for the correct version of VMS). If you do not have the required version, you must install it before you install the VMS/SNA software. For information on how to install VMS software, refer to the *VMS Install Utility Manual*.

VMS/SNA also requires the Network class in addition to the VMS Required Saveset class.

When you are installing VMS/SNA software on a VMS system, you must enable OPCOM in order to receive information about circuit changes that occur during VMS/SNA startup. If OPCOM is not enabled, you will not receive information needed to resolve problems. See *VMS/SNA Problem Solving* for information about event messages logged by OPCOM.

To enable OPCOM when using a VMS system, edit the SYS$MANAGER:SYSTARTUP_V5.COM file and remove the comment character (!) in front of the @SYS$SYSTEM:STARTUP OPCOM command. After you remove the comment character, restart the system or run the commands in SYS$MANAGER:SYSTARTUP_V5.COM by issuing the following command:

```
$ @SYS$SYSTEM:STARTUP OPCOM RET
```

1.7.2 Communications Device Software

If you choose to use a communications device other than the DPV11, the appropriate device driver software must be installed before VMS/SNA installation. The device driver is part of a separate Digital product, VAX Wide Area Network Device Drivers (WANDD) and is not part of the VMS/SNA software. See the *VAX Wide Area Network Device Drivers Installation Guide* for additional information.

1.7.3 DECnet/SNA VMS Access Routines

DECnet/SNA VMS access routines allow you to communicate with programs running on the IBM system. Each access routine is installed separately. This manual provides instructions for installing only the base VMS/SNA communications software. For a complete list of access routines and individual user guides containing product installation information, see the SPD for the current version of VMS/SNA and *VMS/SNA Management.*

1.8 Considerations for VAXcluster Systems

A VAXcluster is a group of VAX systems that communicate over a high-speed communications connection. VAXcluster systems have all the functions of single-node VAX systems and have the ability to share CPU resources, queues, and disk storage.

To install VMS/SNA software on a VAXcluster system, use the following guidelines:

- Install VMS/SNA once for the entire cluster.
- For SDLC circuits, install a hardware communications device on each node that is to have the VMS/SNA software configured and used.

  A hardware communications device can be used only by the node on which it is installed. That is, a DECnet/SNA VMS access routine on one node cannot use a communications hardware device installed on another node.

- For QLLC circuits, you do not have to install a hardware communications device on each node that is to have the VMS/SNA software configured and used. For example, if you use PSI Access, you connect to the PSI Connector node that has the appropriate communications device installed (see *VAX P.S.I. Installation Procedures* for information).
- Configure the VMS/SNA software on each node that is to use the software. When configuring the VMS/SNA software, you must specify the name of the system on which to configure the VMS/SNA software.

1.9 Configuration Requirements

After VMS/SNA is installed, you configure the software by running the configuration procedure. Before configuring VMS/SNA, fill out the configuration questionnaires with the following information:

- Node name for VAXcluster system.
- Whether you are communicating with the IBM host through an X.25 network.
- Communications device information for the device you are using. This includes the line ID, how you want to load the communications device driver software, and the communications device hardware address(es). For additional information on the communications device at your site, refer to the VAX *Site Management Guide* or ask your field service representative.
- Line characteristics. For SDLC lines, defines the physical characteristics (such as line duplex and signalling) of the communications line connecting your VAX system to the IBM communications controller. The values for these parameters must match those used on the IBM system. Refer to the *VMS/SNA Guide to IBM Parameters* or your IBM systems programmer for additional information.

  For X.25 lines, line definition is done using the VAX PSI software product. The VAX PSI configuration must be compatible with your network subscription and the IBM NPSI configuration (see *VAX P.S.I. Management Guide*).

- Circuit characteristics. For SDLC lines, defines the characteristics of the SDLC circuit, such as tributary address and XID number. The values for these parameters must match those used on the IBM system. Refer to the *VMS/SNA Guide to IBM Parameters* or your IBM systems programmer for additional information.

  For X.25 lines, defines the characteristics of the X.25 virtual circuit, such as local and remote DTE, network name, type of calls and reverse charging. The values for these parameters must match those defined in VAX PSI and on the IBM system. Refer to the *VAX P.S.I. Management Guide*, *VMS/SNA Guide to IBM Parameters* and your IBM systems programmer for additional information.
- PU characteristics. Defines the characteristics of the VMS/SNA physical unit (PU), such as maximum session number and maximum segment size. The values for these parameters must match those used on the IBM system. Refer to the *VMS/SNA Guide to IBM Parameters* or your IBM systems programmer for additional information.
- Access names. Defines the session establishment parameters, such as IBM application name, LU used for sessions, logon mode table name, and user data. Refer to the *VMS/SNA Guide to IBM Parameters* or your IBM systems programmer for additional information.

1.9.1 Configuration Questionnaire

The configuration procedure asks you different questions depending on the type of communication line you choose. Figure 1–3 is a blank configuration questionnaire for you to copy and fill out if you are using SDLC lines. Figure 1–4 is a blank configuration questionnaire for you to copy and fill out if you are using X.25 lines. As they are discussed in the following pages, record the configuration parameters you will enter during the VMS/SNA configuration procedure.

Figure 1–3: Configuration Questionnaire (SDLC Lines)

Figure 1–4: Configuration Questionnaire (X.25 Lines)

1.9.2 Configuration Parameters for SDLC Lines

VAXcluster node name
If you are installing and configuring VMS/SNA on a system on a VAXcluster, write the node name of the system.

X.25 network
Write NO because you are using SDLC lines to communicate with the IBM host.

LU addresses available

Write the highest LU address that the IBM host can activate for the PU. The maximum session number is a decimal number in the range of 1 to 255. It must correspond to the LU address as defined in the IBM LU macro LOCADDR operand, following the PU that describes VMS/SNA. It does not refer to the maximum number of LU sessions that can run concurrently. Set the number only as high as you need. The higher the number you specify, the more VAX system resources you will use.

PU segment size

Write the maximum size of the SDLC frames, in bytes, that are sent between your VAX system and the IBM communications controller. This value must be greater than or equal to the IBM ACF/NCP PU macro MAXDATA parameter. The larger the size, the more system memory will be used.

Circuit duplex

Write FULL if the circuit will send and receive SDLC frames simultaneously.

Write HALF if the circuit will send frames after the IBM host finishes sending the frames.

The value you specify must correspond to the IBM ACF/NCP PU macro DATMODE parameter.

Station address

Write the SDLC station address for the PU. The station address value is a 2-digit hexadecimal number. It must correspond to the SDLC station address as defined in the IBM ACF/NCP PU macro ADDR parameter for leased lines, or in VTAM for dial-up lines). If you do not know what value to use, consult your IBM systems programmer.

Exchange ID

If you have a dial-up line, write the SDLC exchange ID (XID) associated with the circuit. The XID is exchanged between VMS/SNA and the IBM host before the PU is activated.

This value is an 8-digit hexadecimal number and corresponds to the value of the IDBLK and IDNUM parameters on the IBM VTAM PU macro together, in that order.

Line ID

Write the line ID for the communications device using the following format:

dev[-*c*[-*u*]]

dev

Represents the device name (DPV, DMB, DSB, DSH, DST, or DSV).

c

Represents the device's hardware controller number. The numbers 0, 1, and 2 correspond to VMS controllers A, B, and C, respectively.

u

Represents the device unit number.

The controller number and unit number are optional; they default to 0. Table 1–4 contains valid line IDs for the Digital communication devices.

Table 1–4: Communications Devices and Configuration Parameters

Communications Device	Device Name	Line ID	Duplex Values	Signalling Values
DPV11	UHA0:	DPV-0	HALF FULL	NORMAL
DSV11	SJA0: SJA1:	DSV-0-0 DSV-0-1	HALF FULL	NORMAL NRZI
DMB32	SIA0:	DMB-0	HALF FULL	NORMAL NRZI
DSB32	SLA0: SLA1:	DSB-0-0 DSB-0-1	HALF FULL	NORMAL NRZI
DSH32	ZSA0:	DSH-0	HALF FULL	NORMAL NRZI
DST32	ZSA0:	DST-0	HALF FULL	NORMAL NRZI

Line duplex

Write HALF if your line modem hardware and related line are configured for half-duplex. Half-duplex is typically found with dial-up lines.

Write FULL if the line is dedicated to point-to-point, two-way, simultaneous connections using full-duplex modem hardware.

Table 1–4 contains valid DUPLEX parameter values for the Digital communications devices.

NRZI signalling

Write YES if the SDLC communications line will operate in NRZI (non-return-to-zero-inverted) mode. That is, the signals are interpreted as NRZI. If the line will operate in NRZI mode, the modems must also support NRZI operation.

Write NO if the SDLC communications line will operate in normal (NRZ) mode.

The value you specify must correspond with the IBM ACF/NCP LINE macro, NRZI operand.

Table 1–4 contains valid SIGNALLING parameter values for the Digital communications.

Multidropped line

Write YES if your VMS/SNA system is a multidrop configuration (multiple SDLC stations on a physical line).

Write NO if your VMS/SNA system is the only device on the line.

Loading the device driver

There are three ways to configure a device using SYSGEN:

1. Autoconfigure the device at system startup. This is a valid method for all communications devices except the DPV11 communications device.

   NOTE

   In order to autoconfigure the DMB32 synchronous port and the DSB32, DSH32, DST32, and DSV11, the 50-pin external interface adapter cable (BC19) must be in place.

2. Load and configure the device at system startup. This method is valid for all devices.
3. Load and connect the device at VMS/SNA startup. This method is valid for all devices.

If you select method 1 or 2, write NO. When VMS/SNA starts, it assumes that the driver has already been loaded and does not attempt to load it.

If you select method 3, write YES. VMS/SNA will load the communications device driver software when it starts. (The DPV11 driver is supplied with the VMS/SNA distribution kit.)

Adapter number

For VAXBI systems, if you decide to have VMS/SNA load the device driver at startup, write the adapter number (in decimal). The adapter number is the nexus number for the device as displayed using the SHOW/ADAPTER command of the SYSGEN utility.

Control and status register (CSR) address

If you decide to have VMS/SNA load the DPV11 or DSV11 device driver at startup, write the CSR address (in octal). The CSR address is the physical address for a communications device.

Vector address

If you decide to load the DPV11 or DSV11 device driver during VMS/SNA startup, write the vector address (in octal).

1.9.3 Configuration Parameters for X.25 Lines

VAXcluster node name

If you are installing and configuring VMS/SNA on a system on a VAXcluster, write the node name of the system.

X.25 network

Write YES because you are using a packet switched data network (PSDN) to communicate with the IBM host.

LU addresses available

Write the highest LU address that the IBM host can activate for the PU (circuit). The maximum session number is a decimal number in the range of 1 to 255. It must correspond to the LU address as defined in the IBM LU macro LOCADDR operand, following the PU that describes VMS/SNA. It does not refer to the maximum number of LU sessions that can run concurrently. Set the number as high as you need but no higher. A higher number uses more VAX system resources.

PU Segment size

Write the maximum size of the SNA Path Information Units (PIU),in bytes, that are sent between your VAX system and the IBM communications controller. This value must be greater than or equal to the IBM VTAM PU macro MAXDATA parameter. The larger the size, the more system memory will be used.

Calling direction

Write INCOMING if the incoming X.25 virtual circuit will be used to establish a VMS/SNA QLLC circuit.

Write OUTGOING if the outgoing X.25 virtual circuit will be used to establish a VMS/SNA QLLC circuit.

X.25 network name

If defining the virtual circuit for incoming or outgoing calls, write the name of the PSDN to which the local DTE is connected. The network name can consist of 1 to 16 characters. The value you specify must match the parameter specified in the DECnet-VAX NCP SET/DEFINE MODULE X25-PROTOCOL command.

Local DTE address

If defining the virtual circuit for incoming or outgoing calls, write the network address of the local DTE. The DTE address value can consist of 1 to 16 characters. The DTE uses this address to make outgoing calls or receive incoming calls. The value you specify must match the Called DTE value in the IBM VTAM PATH definition statement DIALNO operand.

If you are using PSI Access, the local DTE address is the network address of the DTE used by the VAX PSI Multihost node or X25router node for connection to the PSDN.

You must specify either the local DTE address or the group name; you can also specify both.

Group name

If defining the virtual circuit for incoming or outgoing calls, write the name of the closed user group (CUG) to which the local DTE belongs. The group name value can consist of 1 to 16 characters. The value you specify must match the group parameter specified in the DECnet-VAX NCP SET/DEFINE MODULE X25-PROTOCOL command.

For incoming circuits, the X.25 Incoming Call Packet must contain the CUG selection facility in order for VMS/SNA to activate the QLLC circuit. Some PSDNs remove the CUG selection facility from the Incoming Call Packet under certain conditions. Consult your PSDN authority for more information.

You must specify either the local DTE address or the group name; you can also specify both.

Remote DTE address

If defining the virtual circuit for outgoing calls, write the network address of the remote DTE. The DTE address value can consist of 1 to 15 characters. The local DTE uses this value to make outgoing calls. The value you specify must match the Calling DTE value in the IBM VTAM PATH definition statement DIALNO operand.

Exchange ID

Write the QLLC exchange ID (XID) associated with the circuit. The XID is exchanged between VMS/SNA and the IBM host before the PU is activated.

This value is an 8-digit hexadecimal number and corresponds to the value of the IDBLK and IDNUM parameters on the IBM VTAM PU macro together, in that order.

Reverse charging

If defining the virtual circuit for outgoing calls, write YES if the remote DTE will be charged for calls placed by the local DTE.

Write NO if the local DTE is charged for all outgoing calls to the remote DTE.

NOTE

To control the acceptance or rejection of reverse charging for any incoming calls, use VAX PSI security. See the *VAX P.S.I. Management Guide*.

1.9.4 Access Names

An access name is an optional name you define in the configuration file. Access name represents the session parameters required for access to an IBM system resource. Similar in function to a VMS logical name, an access name provides an easy way for DECnet/SNA VMS access routine users to establish an SNA session.

When an access name is specified by a DECnet/SNA VMS access routine, the corresponding session parameters are used to establish an SNA session; the access routine user must remember only the access name. An access routine can also specify an access name and explicit session parameter(s). In this case, the specified session parameters override the parameter values defined for the access name.

Access names are defined in the configuration file SNAVMS$CFG_*node-name*.COM or in any alternate configuration file that you create and specify at startup. When VMS/SNA is started, the access names and their parameters are read from the configuration file and added to the VMS/SNA database. An access name and parameters remain in the database until one of the following events occurs:

- You delete the access name by using the SNA Network Control Program (SNANCP) utility.
- You restart VMS/SNA. Restarting VMS/SNA modifies an access name if an existing access name and modified parameters are defined in the configuration file.
- You reboot the VMS operating system. Rebooting VMS deletes all access names. If the access name is defined in the configuration file, the name and parameters are added to the database.

1.9.5 Access Name Parameters

The configuration procedure asks you to supply information about access names. Figure 1–5 is a blank access name questionnaire for you to copy and fill in. Record the access name parameters you will enter during the VMS/SNA configuration procedure as they are discussed in the following pages.

If you do not enter an access name during the configuration procedure, you can add access names after configuration by editing the configuration file.

NOTE

The configuration procedure always creates one access name, SNAVP. Do not delete this access name because it is used by the VMS/SNA Installation Verification Program.

Figure 1–5: Configuration Questionnaire (Access Names)

The following list describes the access name keyword parameters; ACCESS NAME is the only required parameter.

ACCESS NAME

The access name represents a list of session establishment parameters. The access name is a string of up to 16 characters that can include alphanumeric characters and the following special characters: dollar sign ($) and underscore (_). Some DECnet/SNA access routines limit you to a maximum of 8 characters in an access name.

PU

The PU name identifies the PU that is used when establishing a session. For VMS/SNA, the PU name is always SNA-0.

LU LIST

The LU parameters represent a list of possible LUs that can be assigned to a DECnet/SNA access routine participating as a SLU in a session with an IBM host. When you establish a session, the first available session address is assigned. You can specify (in decimal) up to eight separate addresses, or ranges of addresses. Each address or range of addresses is separated from the next one by a comma (no space); for example; 9–10,1,11–24

The list you define should correspond with the list defined for the IBM PLU on the physical unit with which you are communicating. The values you supply must also be consistent with the LU LIST parameter to the SET PU command in the configuration file. You can specify up to 255 LUs for each access name. You can specify the same LU address under multiple access names. IBM addresses might be assigned to specific applications. Check with your IBM systems programmer for the correct ranges.

APPLICATION

The application name represents the VTAM application name of the program on the IBM system that you want to access. This name is identical to the PLU name on the IBM host. The application name is a string of up to 8 characters that can include alphanumeric characters and the following special characters: dollar sign ($), pound sign (#), and at sign (@). The first character in an application name should not be a numeral.

LOGON MODE

The logon mode name represents the name of the entry in the logon mode table defined on the IBM host. The name is sent to the IBM host to obtain redefined characteristics for the session being established. The logon mode name has the same format as the application name. See the *VMS/SNA Guide to IBM Parameters* or your IBM systems programmer for further information.

DATA

The data represents user access control information that is sent to the IBM host for the session being established. Typically, the data parameter contains privileged information, usually a password. The information you enter depends on the IBM application with which you are communicating.

The user data is a string of up to 32 characters that can include alphanumeric characters and the following special characters: dollar sign ($), pound sign (#), and at sign (@). If you need to specify characters other than those listed, you must enclose the characters in double quotation marks (for example, "&&").

NOTE

The use of the data field might compromise the security of your VMS/SNA-to-IBM connection. In the form of a password, user data provides access to a specified account.

NOTE

Specifies additional information (up to 30 characters) that is part of the SHOW SUMMARY display. You can use the note to provide information about the IBM application to which the access name refers. Specify the text of your note within double quotation marks.

You should confer with an IBM systems programmer to determine what values you need to specify for most of the access name parameters. Some IBM applications do not require you to specify all the parameters in order to connect to the IBM system. Once you have determined the values you need, keep a printed copy for future reference.

Chapter 2

Installing and Configuring VMS/SNA

This chapter explains how to install and configure your VMS/SNA software. You should not attempt the installation until you have installed the required hardware and software and prepared the IBM SNA environment. Complete the configuration questionnaire (see Section 1.9) before you attempt the configuration.

VMS/SNA installation and configuration should take no longer than 20 minutes, depending on the type of installation media you use. The estimated installation time does not include preparation time or time consumed by problems resulting from failure to prepare properly.

For general background information on installing optional software products on a VAX system, refer to the *VMS Install Utility Manual*.

2.1 Accessing the On-Line Release Notes

VMS/SNA provides on-line release notes. The prompt to display, print, or copy the release notes before installation appears in step 4 of the installation procedure when you run VMSINSTAL with the OPTIONS N parameter.

To obtain the release notes after installation, display or print the file SYS$HELP:SNAVMS$020.RELEASE_NOTES. On-line help also directs you to the release notes file. After installation, type the following:

```
$ HELP SNA_VMS RELEASE_NOTES RET
```

2.2 Using VMSINSTAL

After you log in to a privileged account to install VMS/SNA, set the default to SYS$UPDATE; then run VMSINSTAL, the command procedure that installs this product. An example of this procedure is shown in steps 1 and 2 (see Section 2.3).

```
$  SET DEFAULT SYS$UPDATE RET
$  @VMSINSTAL SNAVMS020 ddcu: [OPTIONS N] RET
```

The command parameters are described in the next paragraphs. If you do not supply the first two parameters, VMSINSTAL prompts you for the product and device names. If you want to be prompted for the product name, device name, and installation options, type the following:

```
$  @SYS$UPDATE:VMSINSTAL RET
```

ddcu:

Represents a device name where the distribution kit will be mounted for the VMS/SNA installation media, where *dd* is the device, *c* is the controller ID, and *u* is the unit number. It is not necessary to use the console drive to install VMS/SNA. If you do use the console drive, you should replace any media you removed from the drive. CSA1: is the device name used in examples in this document.

OPTIONS N

Is an optional parameter you should provide if you want to be prompted to display or print the release notes. If you do not include the OPTIONS N parameter, VMSINSTAL does not prompt you to display or print the release notes. Note that VMSINSTAL permits the use of several other options. For more information on the other options, refer to your processor-specific installation/operations guide.

When you run VMSINSTAL, it checks the following:

- Whether you logged in to a privileged account. Digital Equipment Corporation recommends that you install software from the system manager's account [SYSTEM] with your default device and directory set to SYS$UPDATE.

- Whether you have adequate quotas for installation. VMSINSTAL checks for the following quota values:
  - — ASTLM = 24
  - — BIOLM = 18
  - — BYTLM = 18000
  - — DIOLM = 18
  - — ENQLM = 30
  - — FILLM = 20
- Whether the following conditions exist:
  - — DECnet is up and running.
  - — Users are logged in to the system.

  If VMSINSTAL detects either of these conditions, you are asked whether you want to continue the installation. To continue, type YES. To stop the installation, press RET.

2.3 Installing VMS/SNA Software

This section contains excerpts from the installation procedure and explains each step. Default answers appear in brackets throughout the installation procedure. To accept a default answer, press RET in response to the question.

To abort the installation procedure at any time, press CTRL/Y. The installation procedure deletes all files it has created up to that point and then returns to DCL level. To retry the installation procedure after pressing CTRL/Y, you must start at step 2.

Step 1: Log in to a privileged account, and set your default device and directory to SYS$UPDATE.

```
RET
Username:  SYSTEM    RET
Password:  password  RET
$  SET DEFAULT SYS$UPDATE  RET
```

Make sure you have backed up the system disk and that you have more than 3300 free blocks on the system disk.

Step 2: Run VMSINSTAL.

```
$  @VMSINSTAL SNAVMS020 CSA1: OPTIONS N RET

      VAX/VMS Software Product Installation Procedure V5.0


It is 25-APR-1988 at 18:55.
Enter a question mark (?) at any time for help.

* Are you satisfied with the backup of your system disk [YES]?  RET
```

Before you proceed with an installation that will write to your system disk, make sure you have a good backup copy. If you are satisfied with the backup of your system disk, press RET. If you do not have a good backup copy, type NO and press RET to end the installation.

Step 3: Insert the first installation kit volume.

```
Please mount the first volume of the set on CSA1:.
* Are you ready?  YES RET
The following products will be processed:

  SNAVMS V2.0


    Beginning installation of SNAVMS V2.0 at 10:52

%VMSINSTAL-I-RESTORE, Restoring product saveset A...
```

To continue the installation, mount volume 1, type YES, and then press RET.

Step 4: Select a release notes option.

This step applies only if you specified OPTIONS N in step 2.

```
Release Notes Options:

    1. Display release notes
    2. Print release notes
    3. Both 1 and 2
    4. Copy release notes to SYS$HELP
    5. Do not display, print, or copy release notes

* Select option [2]:  RET
```

If you select option 1, VMSINSTAL displays the release notes on line immediately. You can terminate the display at any time by pressing CTRL/C.

If you select option 2, VMSINSTAL prompts you for a queue name. Either type a queue name, or press RET to send the file to the default output print device.

```
* Queue name [SYS$PRINT]:  RET
```

If you select option 3, VMSINSTAL displays the release notes on line immediately and then prompts you for a queue name.

For any of the first three options, VMSINSTAL also copies the release notes to SYS$HELP:SNAVMS$020.RELEASE_NOTES.

If you select option 4, VMSINSTAL just copies the release notes to SYS$HELP:SNAVMS$020.RELEASE_NOTES.

NOTE

This version of the release notes file installed by VMSINSTAL is labeled with the current product name and version number. Take care not to delete release notes for previous versions of VMS/SNA.

If you select option 5, VMSINSTAL does not display, print, or copy the release notes. The release notes remain on the installation media.

Next, VMSINSTAL displays the following prompt:

```
* Do you want to continue the installation [N]?:  YES  RET
```

To continue the installation, type YES and press RET. If you type NO or press RET, VMSINSTAL ends the installation. In either case, if you selected one of the first four release notes options, VMSINSTAL moves the release notes to SYS$HELP.

Step 5: Respond to LMF queries.

This product supports the VMS License Management Facility (LMF). For more information on LMF, see the *VMS License Management Utility Manual*.

```
        Product:      SNA-VMS
        Producer:     DEC
        Version:      2.0
        Release Date: 01-DEC-1988

* Does this product have an authorization key registered and loaded?
Y  RET
```

If the Product Authorization Key (PAK) information is registered and loaded, type YES and press RET. If the information is not registered and loaded, type NO and press RET. In either case, the installation procedure continues.

NOTE

Be sure to register and load the PAK information before starting VMS/SNA.

Step 6: Select installation options.

```
* Will this installation of VMS/SNA use the DPV11 device for SDLC
  communications [NO]?  YES RET
```

Type YES press RET if you are using a DPV communications device. Type NO and press RET if you are using one of the other communications devices.

```
* Do you want to purge files replaced by this installation [YES]?
```
RET

The directories SYS$COMMON:[SNAVMS$], SYS$HELP, SYS$LIBRARY, SYS$MESSAGE, SYS$SYSTEM, SYS$LOADABLE_IMAGES, and SYS$COMMON:[SNACSV] could contain previous versions of VMS/SNA files. These files are replaced with new files during the installation, but the old files are not automatically purged. Purging is recommended. In response to the purging prompt, press RET to purge the files, or type NO to keep them. Either way, the installation continues.

VMSINSTAL then displays the following message:

```
%VMSINSTAL-I-RESTORE, Restoring product saveset B...
```

Step 7: Insert subsequent installation kit volumes.

```
%BACKUP-I-READYREAD, mount volume 2 on _CSA1: for reading

Enter "YES" when ready:  YES RET
```

VMSINSTAL prompts you to insert the next volume and waits for you to type YES after inserting it. If you type NO, VMSINSTAL displays the prompt again. This prompt is displayed only if your installation kit contains more than one volume.

Step 8: Read informational messages.

```
%SNAVMS-I-NOMORQUES, there are no more questions
%SNAVMS-I-PLEASE_WAIT, installation may take up to twenty minutes to complete
```

Then, the VMS/SNA installation procedure produces a number of informational messages that report on the progress of the installation.

The following message tells you that the installation was successful:

```
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
```

The SYS$HELP:HELPLIB.HLB file is updated to include the new versions of the SNAVMS HELP text.

If the installation procedure is successful, the new or modified files are moved to their target directories. Appendix A lists the files and their location.

If you typed YES in response to the prompt that requests a file purge (step 6), previous versions of the VMS/SNA files are now purged.

Step 9: End the installation procedure.

```
   Installation of SNAVMS V2.0 completed at 19:02

   VMSINSTAL procedure done at 19:02

$  LOGOUT  RET
SYSTEM     logged out at 25-APR-1988 19:03:00.00
```

When the product installation procedure is complete, you can install more products, run the VMS/SNA configuration program, or log out (as shown here.) If you removed any media from the console drive before the installation, you should replace it now. Appendix B contains a sample installation procedure.

VMSINSTAL deletes or changes entries in the process symbol tables during the installation. Therefore, if you are continuing to use the system manager's account and want to restore these symbols, log out and log in again.

2.4 Configuring VMS/SNA Software

After installation is complete, you then configure the VMS/SNA software. This section contains excerpts from the configuration procedure and explains each step. Default answers appear in brackets throughout the configuration procedure.

To abort the configuration procedure at any time, press CTRL/Z. When you press CTRL/Z, the configuration procedure returns you to DCL level. If you want to retry the configuration procedure after pressing CTRL/Z, you must proceed from step 2.

NOTE

If upgrading to a new version of VMS/SNA, you must run the configuration procedure.

Step 1: Log in to a privileged account, and set your default device and directory to SYS$COMMON:[SNAVMS$].

```
RET
Username:  SYSTEM   RET
Password:           RET
$  SET DEFAULT SYS$COMMON:[SNAVMS$]  RET
```

Step 2: Run the configuration procedure.

```
$  @SNAVMS$CONFIGURE  RET

    Command file to configure the VMS/SNA product
    Executing on 15-OCT-1988 10:54:32.42.
    Enter a question mark (?) at any time for help.
    Enter CONTROL-Z at any time to abort.
```

Step 3: Select configuration options. (SDLC lines)

The configuration procedure prompts you for site-specific information about the connection between your VMS/SNA node and the IBM SNA network. Use the information you entered on the configuration questionnaire (see Figure 1–3) as the responses to the following prompts.

```
Which VAXcluster member node will run VMS/SNA? [local system] :    RET
```

If you are installing VMS/SNA software on a VAXcluster system, the configuration procedure requires you to identify the node in the VAXcluster on which the communications device is installed and on which VMS/SNA will run. Press RET if the local system node name (the system you are currently logged in to) is correct, or type the node name of the system you want.

```
Will this node communicate over an X.25 network? [NO] :   RET
```

Press RET because your node will not communicate with the IBM host over an X.25 network.

```
How many LU addresses available to this PU?      [64] :   RET
```

Press RET if the number of LU addresses is correct, or type the correct number of LU addresses.

```
What is the PU segment size (decimal)?     [265] :   RET
```

Press RET if the segment size from VMS/SNA to the IBM host is correct, or type the correct segment size.

```
What is the circuit duplex (HALF, FULL)? [HALF] :   RET
```

Specify how the data is transferred over the circuit. Press RET if the default circuit duplex is correct, or type the correct circuit duplex.

```
What is the station address (2-digit hex)? [40] :   RET
```

Press RET if the station address is valid for the VMS/SNA PU, or type the correct station address.

```
What is the exchange ID (XID) number (8-digit hex)? [] :   RET
```

If you are using a point-to-point communications line, press RET.

If you are using a dial-up communications line, type the XID and press RET.

```
What is the line-id specification (dev-c-u)?  :  DPV-0-0  RET
```

Type the line ID of the communications device you choose to use (for example, DPV-0 or DMB-1) using the format *dev*[-*c*[-*u*]] and press RET.

```
What is the line duplex (HALF, FULL)? [HALF] :   RET
```

Specify the physical characteristics of the line connecting your VAX system to the IBM host. Press RET if the default line duplex is correct, or type the correct line duplex.

```
Is the line a multidropped line?    [NO] :   RET
```

The VMS/SNA software can communicate on the same line as other IBM devices. Type YES and press RET if VMS/SNA is multidropped on a line, or press RET if it is the only device on the line.

```
Is the line a NRZI-signalling line?          [NO] :    RET
```

Press RET if the line will not be operated in non-return-to-zero-inverted (NRZI) mode. Type YES if you are using NRZI signalling on the communications line. This question does not appear if you are using a DPV11 communications device.

```
Will VMS/SNA load the device driver when starting? [NO] :    RET
```

The VMS/SNA software can load your communications device driver software when it first starts. Type YES and press RET to have VMS/SNA load the device driver software. Type NO if the system autoconfigures the device or if you load the driver before you start VMS/SNA.

```
What is the CSR address of the device (octal)?  [760270] :    RET

What is the device vector address (octal)?      [300] :    RET
```

The CSR and vector address questions are displayed only if you are using a DPV or DSV device and only if you typed YES and pressed RET in response to the previous question (that is, when VMS/SNA starts, you want it to load the device driver software). Press RET if the default CSR and device vector addresses are correct, or type the correct ones for your system.

NOTE

If you decide to have VMS/SNA load the DSH32 or DST32 communications device driver at startup, you are not prompted to supply device information. The DSH32 and DST32 parameters are constant and automatically included in the SNAVMS$LOAD_DEVICE_*node-name*.COM file.

```
What is the adapter number (decimal)?        [7] :    RET
```

This question appears only if your system is a VAXBI system and only if you want VMS/SNA to load the corresponding device driver software. Press RET if the default adapter number for the device is correct, or type the correct adapter number.

Step 3: Select configuration options. (X.25 lines)

The configuration procedure prompts you for site-specific information about the connection between your VMS/SNA node and the IBM SNA network. Use the information you entered on the configuration questionnaire (see Figure 1–4) as the responses to the following prompts.

```
Which VAXcluster member node will run VMS/SNA [local system]    :
```
RET

If you are installing VMS/SNA software on a VAXcluster system, the configuration procedure requires you to identify the node in the VAXcluster on which the communications device is installed and on which VMS/SNA will run. Press RET if the local system node name (the system you are currently logged in to) is correct, or type the node name of the system you want.

```
Will this node communicate over an X.25 network? [NO] :  YES  RET
```

Type YES and press RET because your node will communicate with the IBM host over an X.25 network.

```
How many LU addresses available to this PU?      [64] :    RET
```

Press RET if the number of LU addresses is correct, or type the correct number of LU addresses.

```
What is the PU segment size (decimal)?     [265] :    RET
```

Press RET if the segment size from VMS/SNA to the IBM host is correct, or type the correct segment size.

```
Which calling direction (INCOMING,OUTGOING)?  [OUTGOING] :    RET
```

Press RET if the X.25 circuit will make outgoing calls. Type INCOMING and and press RET if the X.25 circuit will accept incoming calls.

```
What is the network name?                          [] :
```

Type the name of the X.25 network to which the VAX PSI DTE is attached, and press RET.

```
What is the address of the local DTE?       [] :
```

Type the network address of the local DTE making outgoing calls or receiving incoming calls, and press RET.

```
What is the group name for the local DTE?           [] :
```

Type the name of the closed user group (CUG) to which the local DTE belongs, and press RET.

```
What is the address of the remote DTE?          []     :
```

Type the address of the remote DTE you are calling, and press RET.

```
What is the exchange ID (XID) number (8-digit hex)? [] :
```

Type the correct XID to exchange with the IBM host when establishing a session, and press RET.

```
Will reverse charging be applied to outgoing calls?       [NO] :
```

Press RET if the local DTE will not make outgoing calls or if you want to charge the local DTE for outgoing calls. Type YES if you want to charge the remote DTE for outgoing calls from the remote DTE.

Step 4: Specify access name information.

Next, the configuration procedure displays the following message:

```
You may now enter any access names that you wish to create. Enter
RETURN at the ACCESS NAME prompt when finished.

Access name? (1-16 characters)                          [] :
```

Type an access name with which to associate a set of session establishment parameters, and press RET. If you are finished entering access names or do not want to enter any at this time, press RET. Either way, the configuration procedure continues.

```
Sessions for this access name? (numbers or ranges)  [1-64] :
```

Type the LUs available for the access name, and press RET. The LUs are numbers or ranges of numbers separated by commas; for example, 1-5,3,8,9-15.

Press RET if you do not want to designate specific LUs for this access name.

```
Application name? (1-8 characters)                        [] :
```

Type the application name for the access name, and press RET.

Press RET if you do not want to specify an application name for this access name.

```
Logon mode table? (1-8 characters)                        [] :
```

Type the name of the entry in the logon mode table for the access name, and press RET.

Press RET if you do not want to specify a logon mode table name for this access name.

```
User data? (quoted string, 1-32 characters)                [] :
```

Type any user data for the access name, and press RET. Enclose any user data in double quotation marks; for example, "PASSWORD".

Press RET if you do not want to specify user data for this access name.

Next, the configuration procedure displays the following message:

```
The configuration file SYS$COMMON:[SNAVMS$]SNAVMS$CFG_node-name.COM;1
was created on 15-OCT-1988 11:01:41.25
```

The configuration file was created.

Step 5: Clean up old versions of the configuration file.

During configuration, the files listed in Table 2–1 are placed on your system. You can find them in the indicated directory.

Table 2–1: File Locations After Configuration

File Name	Location	Description
SNAVMS$AUTHORIZE_*node-name*.DAT	SYS$COMMON: [SNAVMS$]	SNANCP and SNATRACE user authorization file.
SNAVMS$CFG_*node-name*.COM	SYS$COMMON: [SNAVMS$]	VMS/SNA configuration file, containing line, circuit, and access name specifications. This file is used by default when starting VMS/SNA.
SNAVMS$LOAD_DEVICE_*node-name*.COM	SYS$COMMON: [SNAVMS$]	Command procedure for loading the device driver software during VMS/SNA startup.

The value *node-name* is the VMS/SNA node name you typed in response to the first configuration prompt. In a non-VAXcluster environment, the value of *node-name* is 0.

If the SYSGEN parameter SCSNODE is changed any time after initially configuring VMS/SNA (for example, a stand-alone node is now a VAXcluster node), rerun the SNAVMS$CONFIGURE.COM procedure and type the correct node name. Alternatively, you can rename the configuration command procedure, load device command

procedure and authorization command procedure with the correct node name. For example, you might rename the file SNAVMS$CFG_0.COM file SNAVMS$CFG_*MYNODE*.COM. All three files must use the same value for *node-name*.

If previous versions of the SNAVMS$CFG_*node-name*.COM file are on your system, the following question is displayed:

```
Earlier versions of SYS$COMMON:[SNAVMS$]SNAVMS$CFG_node-name.COM exist.
Do you wish to purge these files [NO]?   RET
```

Press RET to keep the files, or type YES to purge them.

Next, VMS/SNA displays the following message to indicate that the command procedure to load the device driver was created:

```
The load file SYS$COMMON:[SNAVMS$]SNAVMS$LOAD_DEVICE_node-name.COM;1
was created on 15-OCT-1988 11:01:43.08
```

If previous versions of the SNAVMS$LOAD_DEVICE_*node-name*.COM file are on your system, the following question is displayed:

```
Earlier versions of SYS$COMMON:[SNACSV]SNAVMS$LOAD_DEVICE_node-name.COM
 exist.
Do you wish to purge these files [NO]?   RET
```

Press RET to keep the files, or type YES to purge them.

Next, VMS/SNA displays the following message to indicate that the authorization file was created:

```
The authorization file SYS$COMMON:[SNAVMS$]SNAVMS$AUTHORIZE_node-name.COM;1
was created on 15-OCT-1988 11:01:45.08
```

If a previous version of the SNAVMS$AUTHORIZE_*node-name*.COM file is on your system, the following message is displayed:

```
The authorization file SYS$COMMON:[SNAVMS$]SNAVMS$AUTHORIZE_node-name.COM
 exists; no new authorization file is created.
```

If versions of the configuration files are left over from previous versions of VMS/SNA, the following is displayed:

```
Configuration files from previous versions of VMS/SNA still exist.

Do you wish to delete all versions of:
 SYS$COMMON:[SNACSV]node-nameSNA.CFG?               [YES]:
 SYS$COMMON:[SNACSV]SNAVMS$node-name.CFG?          [YES]:
 SYS$COMMON:[SNACSV]SNAVMS$LOAD_DEVICE_node-name.COM [YES]:
```

Press RET to delete the files, or type NO to keep them.

This version of VMS/SNA uses the SYS$COMMON:[SNAVMS$] directory for most of the VMS/SNA files. The SYS$COMMON:[SNACSV] directory is not used. If you have any VMS/SNA files in the SYS$COMMON:[SNACSV] directory, you can delete them.

Next, the configuration procedure displays the following prompt:

```
Do you wish to start the VMS/SNA product now [YES]?:   RET
```

Press RET to start VMS/SNA if you:

- are running the configuration procedure from the SYSTEM account or are an authorized user (see the chapter on VMS/SNA security in *VMS/SNA Management*)
- are satisfied with the responses you gave to the previous questions
- have started DECnet
- configured and started VAX PSI and the DTE state is ON-RUNNING (for QLLC circuits only)

If you do not want to start VMS/SNA at this time, type NO and press RET; this ends the configuration procedure.

Step 6: Observe the VMS/SNA start-up procedure.

If you chose to start up VMS/SNA in step 5, the configuration procedure now calls the start-up procedure.

```
@SYS$COMMON:[SNAVMS$]SNAVMS$STARTUP.COM
VMS/SNA V2.0 Startup begins  : 15-OCT-1988 11:03:05.32
%SNAEVL-I-INIT, starting SNAEVL on node TREE
%RUN-S-PROC_ID, identification of created process is 0000002B
%LES-S-PROC_ID, identification of created process is 0000002C
%SNAACP-S-STARTED, VMS/SNA V2.0, device _SNA0: mounted
VMS/SNA V2.0 Startup complete: 15-OCT-1988 11:03:40.72
```

After VMS/SNA is started up, the configuration procedure asks the following question:

```
Do you wish to run the SNAVMS$IVP program now [YES]?  RET
```

The Installation Verification Procedure (IVP) runs tests; these check whether the installation and configuration procedures were successful and verify the connection between the VMS/SNA software and the IBM SNA network. Press RET to run the IVP. The IBM host must activate the VMS/SNA line, PU, and LUs before you can run the IVP.

If you do not want to run the IVP, type NO.

Step 7: Observe the Installation Verification Procedure.

If you chose to run the IVP in step 6, the configuration procedure now calls the IVP to verify the connection between the VMS/SNA software and the IBM SNA network.

```
@ SYS$TEST:SNAVMS$IVP

VMS/SNA V2.0 Installation Verification Procedure


  CONREQREJ

        The connection to VTAM was successful; however, the session was
        rejected because VTAM did not recognize the application selected.


The SNAVMS$IVP program ran successfully and connected to VTAM. Checking
of other DECnet/SNA access routine products should now proceed.
```

If the IVP does not run successfully, see Section 2.5.5.

Step 8: End the configuration procedure.

```
You should add the following command to SYS$MANAGER:SYSTARTUP_V5.COM:

    $ @SYS$COMMON:[SNAVMS$]SNAVMS$STARTUP

     Finished VMS/SNA product configuration
     At 15-OCT-1988 11:06:42.19

$  LOGOUT RET
SYSTEM     logged out at 15-OCT-1988 11:06:45.00
```

When the product configuration is complete, you can do other work, or you can log out (as shown here).

Figure 2–1 is a graphic summary of the VMS/SNA configuration. Table 2–2 describes the files used during the installation and configuration procedures. Appendix B contains two sample configuration procedures, one for SDLC lines and one for X.25 lines.

Figure 2–1: VMS/SNA Configuration

Table 2–2: Files Used During Installation and Configuration

File or Utility	Description
VMSINSTAL utility	Copies VMS/SNA files from the distribution media to the directory [SNAVMS$], [SYSTEST], SYS$SYSTEM, SYS$HELP, SYS$MANAGER, SYS$MESSAGE, SYS$LOADABLE_IMAGES, and SYS$LIBRARY.
SNAVMS$CONFIGURE.COM	Creates SNAVMS$LOAD_DEVICE_*node-name*.COM and SNAVMS$CFG_*node-name*.COM with installation-specific VMS/SNA parameters and creates SNAVMS$AUTHORIZE_*node-name*.COM. Optionally calls SNAVMS$STARTUP and SNAVMS$IVP.
SNAVMS$LOAD_DEVICE_*node-name*.COM	Command procedure that loads and connects the device driver for the physical communications device, if required.
SNAVMS$CFG_*node-name*.COM	Contains configuration start-up commands SET LINE, SET CIRCUIT, SET PU, and SET ACCESS NAME and associated parameters.
SNAVMS$STARTUP.COM	Initial start-up sequence: runs SNAVMS$AUTHORIZE_*node-nam* runs NETTRACE_SECURITY.COM; runs SNAVMS$LOAD_DEVICE_*node-name*.COM; runs EVL_STARTUP.COM; loads SNAVMS$SNDRIVER; creates LES$ACP ancillary control process; runs NETTRACE_INSTALL.COM; and runs SNAVMS$CFG_*node-name*.COM. Subsequent start-up sequence: runs SNAVMS$AUTHORIZE_*node-name*.COM; runs NETTRACE_SECURITY.COM; and runs SNAVMS$CFG_*node-name*.COM.
SNAVMS$IVP.COM	VMS/SNA Installation Verification Procedure.

2.5 After Installation and Configuration

VMS/SNA is now installed and configured and is available for use with the DECnet/SNA access routines.

After installation and configuration, you need to do the following tasks:

- Authorize users.
- Configure VMS/SNA for other nodes in the cluster.
- Update DCL tables for all nodes that have VMS/SNA configured.
- Start VMS/SNA, if not done during configuration or for other nodes in the cluster.
- Run the IVP, if not done during configuration or for other nodes in the cluster.
- Set user account quotas.

You might also perform other tasks:

- Edit the system startup file.
- Edit the configuration file.

2.5.1 Authorizing Users

VMS/SNA uses privileged usernames to control access to certain functions. See the chapter on VMS/SNA security in *VMS/SNA Management*.

2.5.2 Configuring VMS/SNA for Other Cluster Nodes

If you are going to use VMS/SNA on other nodes in a cluster, each node must have the following:

- a hardware communications device
- VMS/SNA configured
- at least one DECnet/SNA VMS access routine installed

See Section 2.4 for instructions on configuring the VMS/SNA software.

2.5.3 Updating DCL Tables

After installing VMS/SNA on a VAXcluster system, update the DCL tables on each node in the cluster that will run VMS/SNA. Type the following command line:

```
$   INSTALL REPLACE SYS$LIBRARY:DCLTABLES
```

2.5.4 Starting VMS/SNA

If you want to run the VMS/SNA start-up procedure separately, you must be:

- logged into the SYSTEM account or are an authorized user (see the chapter on VMS/SNA security in *VMS/SNA Management*)
- have started DECnet
- configured and started VAX PSI and the DTE state is ON-RUNNING (for QLLC circuits only)

Then type the following command line:

```
$   @SYS$COMMON:[SNAVMS$]SNAVMS$STARTUP.COM file-spec RET
```

file-spec
Represents
the name of the configuration file of your choice. The default file is SYS$COMMON:[SNAVMS$]SNAVMS$CFG_*node-name*.COM.

If you try to start VMS/SNA on a node in a VAXcluster other than the node on which the VMS/SNA hardware device is installed, the following error message is displayed:

```
VMS/SNA is not configured for this node.
Execute SNAVMS$STARTUP from these nodes: node-list
```

node-list
Refers to the node(s) on which the VMS/SNA communications hardware device and VMS/SNA software are installed.

If VMS/SNA has been started and you want to restart it, run the start-up procedure.

If any error messages are displayed during startup, see *VMS/SNA Problem Solving* for a list of error messages and solutions. If you are unable to start the product, follow the troubleshooting steps in Chapter 2 of *VMS/SNA Problem Solving*.

2.5.5 Running the Installation Verification Procedure

The Installation Verification Procedure (IVP) is usually run at configuration. Digital recommends, however, that you run the IVP after you make changes to the physical connection (for example, adding new modems) or after the IBM systems programmer makes changes to the host system software. The program verifies the connection between the VMS/SNA software and the IBM SNA network. To run the IVP, type the following command:

```
$   @SYS$TEST:SNAVMS$IVP RET
```

If you receive either of the following messages, the verification program has completed successfully:

CONREQREJ CONREQREJ is a normal completion code for SNAVMS$IVP. It indicates that your line is active and that SNAVMS$IVP has succeeded in making a connection to VTAM.

The connect request is rejected because the default $DIGITAL application is selected, and no application named $DIGITAL is normally available on the IBM host. The application name $DIGITAL is the default application name used by SNAVMS$IVP.

NORMAL The connection to VTAM was successful and the application name used by the IVP was recognized by VTAM.

If the IVP is not successful, you must solve the problem before continuing with the installation. The following default values used by the IVP might be the source of your problem:

Parameter	Default Value
SESSION	1
APPLICATION	$DIGITAL
PU	SNA-0

Parameter	Default Value
ACCESS NAME	SNAVP

For example, if you receive an error message stating that a session is not available (SESNOTAVA), you might override the default value of 1 for a session in the IVP. In this case, perform the following steps:

1. Select a session number that you know has not been assigned, and change the session default with a logical name as follows:

   ```
   $ DEFINE SNA$VP_SESSION n RET
   ```

2. Run the IVP to see whether the session default change solved your problem.

You can also use logical names to change the default application name from $DIGITAL to another application name. To determine whether an application is available through VTAM, change the default name of $DIGITAL to the name of the application you want to check, as follows:

```
$ DEFINE SNA$VP_APPLICATION newname RET
```

Then run the IVP. If you receive a NORMAL message, you know that the application is available through VTAM. If you receive a CONREQREJ message, you know that the application is not available through VTAM.

If you are still unable to run the IVP successfully, refer to *VMS/SNA Problem Solving*.

2.5.6 User Account Quotas and Privileges

To use VMS/SNA, each DECnet/SNA access routine user must have TMPMBX and NETMBX privileges and the following minimum requirements:

- AST limit (ASTLM): 12
- Buffered I/O quota limit (BIOLM): 12
- Buffered I/O byte count quota limit (BYTLM): 23000
- Direct I/O quota limit (DIOLM): 6

Use the VMS Authorize Utility (AUTHORIZE) to compare the current values of these quotas with the requirements for VMS/SNA. For example, the account used in the following example is the SYSTEM account:

```
$  SET DEFAULT SYS$SYSTEM RETURN
$  RUN AUTHORIZE RETURN
UAF>  SHOW SYSTEM RETURN
```

To change the values of these quotas, use the VMS Authorize Utility's MODIFY command. For more information, see the *VMS Authorize Utility Manual*.

2.5.7 Editing the System Startup File

You must edit the system startup file to provide for automatic startup of VMS/SNA when your system is rebooted.

Add the command line that starts VMS/SNA to the system startup file, SYS$MANAGER:SYSTARTUP_V5.COM. You must position this new command line *after* the line that invokes the network startup command procedure. The following example shows the network startup command line followed by the startup command line for VMS/SNA:

```
$ @SYS$MANAGER:STARTNET.COM
      .
      .
      .
$ @SYS$COMMON:[SNAVMS$]SNAVMS$STARTUP.COM
```

2.5.8 Editing the Configuration File

You must edit the VMS/SNA configuration file to add information or to correct any errors that you discover during the configuration procedure. After you edit the configuration file, run the start-up procedure to start VMS/SNA. *VMS/SNA Management* describes the editing procedure, provides a sample configuration file, and discusses the reconfiguration and restart process.

Appendix A

Files Installed During Installation

Table A–1: Files Added During Installation

File Name	Location	Description
SNAVMS$CIRCUIT.EXE	SYS$COMMON:[SNAVMS$]	Internal module loaded by ACP
SNAVMS$CONFIGURE.COM	SYS$COMMON:[SNAVMS$]	Command procedure for configuring VMS/SNA
SNAVMS$CONFIGURE.TLB	SYS$COMMON:[SNAVMS$]	Configuration procedure HELP text file
SNAVMS$DR.EXE	SYS$COMMON:[SNAVMS$]	Internal module loaded by ACP
SNAVMS$EVC.EXE	SYS$COMMON:[SNAVMS$]	Internal module loaded by ACP
SNAVMS$EVL_STARTUP.COM	SYS$COMMON:[SNAVMS$]	Command procedure to start event log listener
SNAVMS$HS.EXE	SYS$COMMON:[SNAVMS$]	Internal module loaded by ACP
SNAVMS$LINE.EXE	SYS$COMMON:[SNAVMS$]	Internal module loaded by ACP
SNAVMS$LUSVC.EXE	SYS$COMMON:[SNAVMS$]	Internal module loaded by ACP
SNAVMS$NDM.EXE	SYS$COMMON:[SNAVMS$]	Internal module loaded by ACP

Table A–1 (Cont.): Files Added During Installation

File Name	Location	Description
SNAVMS$NML.EXE	SYS$COMMON:[SNAVMS$]	Internal module loaded by ACP
SNAVMS$PC.EXE	SYS$COMMON:[SNAVMS$]	Internal module loaded by ACP
SNAVMS$PUSVC.EXE	SYS$COMMON:[SNAVMS$]	Internal module loaded by ACP
SNAVMS$QLLC.EXE	SYS$COMMON:[SNAVMS$]	Internal module loaded by ACP
SNAVMS$SDLC.EXE	SYS$COMMON:[SNAVMS$]	Internal module loaded by ACP
SNAVMS$SES.EXE	SYS$COMMON:[SNAVMS$]	Internal module loaded by ACP
SNAVMS$SES_ALT.EXE	SYS$COMMON:[SNAVMS$]	Internal module loaded by ACP
SNAVMS$SNDRIVER.EXE	SYS$COMMON:[SNAVMS$]	VMS/SNA software driver
SNAVMS$STARTUP.COM	SYS$COMMON:[SNAVMS$]	Command procedure to start VMS/SNA
SNAVMS$TRACE.EXE	SYS$COMMON:[SNAVMS$]	Internal module loaded by ACP
SNAVMS$IVP.COM	SYS$COMMON:[SYSTEST]	Verification command procedure
SNAVMS$IVP.EXE	SYS$COMMON: [SYSTEST.SNAVMS$IVP]	Verification program
SNAVMS$IVP.HLB	SYS$COMMON: [SYSTEST.SNAVMS$IVP]	HELP library for verification program
SNAVMS$IVPMSG.EXE	[SYSTEST.SNAVMS$IVP]	Verification program message file
SNANCP.HLB	SYS$HELP	SNANCP HELP library
SNATRACE.HLB	SYS$HELP	SNATRACE HELP library
SNAVMS$020.RELEASE_NOTES	SYS$HELP	Release notes for VMS/SNA V2.0
TRACEHLP.HLB	SYS$HELP	NETTRACE HELP library
LES$ACP_CODE.EXE	SYS$LIBRARY	Internal module loaded by ACP

Table A–1 (Cont.): Files Added During Installation

File Name	Location	Description
NETTRACE$KEY.INIT	SYS$LIBRARY	NETTRACE key definitions
NETTRACE$QLLC_ANALYZE.EXE	SYS$LIBRARY	NETTRACE QLLC trace analyzer
NETTRACE$SDLC_ANALYZE.EXE	SYS$LIBRARY	NETTRACE SDLC trace analyzer
NETTRACE$PU_ANALYZE.EXE	SYS$LIBRARY	NETTRACE PU trace analyzer
SNATRAPRE.MAR	SYS$LIBRARY	Translation table prefix file
SNATRATBL.MAR	SYS$LIBRARY	ASCII-to-EBCDIC and EBCDIC-to-ASCII translation table template
SNAVMS$LIB.EXE	SYS$LIBRARY	Internal module loaded by ACP
LES$LES.EXE	SYS$LOADABLE_IMAGES	Internal module loaded by ACP
LES$TRACE.EXE	SYS$LOADABLE_IMAGES	Internal module loaded by ACP
LES$TRACE_MBX.EXE	SYS$LOADABLE_IMAGES	Internal module loaded by ACP
UHDRIVER.EXE	SYS$LOADABLE_IMAGES	DPV11 device driver for SDLC circuits (optional)
NETTRACE_SECURITY.COM	SYS$MANAGER	NETTRACE authorization file
NETTRACE_INSTALL.COM	SYS$MANAGER	NETTRACE image start-up procedure
LES$ACP_MESSAGES.EXE	SYS$MESSAGE	ACP message file
SNAEVLMSG.EXE	SYS$MESSAGE	Event log listener message file
SNANCPMSG.EXE	SYS$MESSAGE	SNANCP message file
SNATRCMSG.EXE	SYS$MESSAGE	SNATRACE message file
SNAVMS$LIBMSG.EXE	SYS$MESSAGE	VMS/SNA message file
LES$ACP.EXE	SYS$SYSTEM	Ancillary control process image for VMS/SNA
LES$STARTUP.EXE	SYS$SYSTEM	ACP start-up module
NETLTC.EXE	SYS$SYSTEM	NETTRACE trace collector image

Table A–1 (Cont.): Files Added During Installation

File Name	Location	Description
NETTRACE.EXE	SYS$SYSTEM	NETTRACE utility
SNAEVL.EXE	SYS$SYSTEM	Process image for event log listener
SNANCP.EXE	SYS$SYSTEM	SNA Network Control Program utility (SNANCP)
SNATRACE.EXE	SYS$SYSTEM	SNA Protocol Trace utility (SNATRACE)
SNAVMS$LES_CONTROL.DAT	SYS$SYSTEM	Internal module loaded by ACP

Appendix B

Sample Installation and Configuration

This appendix contains a sample VMS/SNA installation, a sample VMS/SNA configuration for SDLC lines, and a sample VMS/SNA configuration for X.25 lines. Sometimes the installation procedure and the configuration procedure are modified in maintenance updates of this product. Because this installation guide is not usually revised for maintenance updates, be sure to read the release notes before you install and configure this product. The release notes describe any significant changes in the installation and configuration that vary from these samples.

B.1 Sample Installation

```
$   SET DEFAULT SYS$UPDATE RET
$   @VMSINSTAL SNAVMS020 MUA0: OPTIONS N RET

        VAX/VMS Software Product Installation Procedure V5.0


It is 19-JAN-1989 at 14:07
Enter a question mark (?) at any time for help.

%VMSINSTAL-W-DECNET, Your DECnet network is up and running.
* Do you want to continue anyway [NO]?   YES RET
* Are you satisfied with the backup of your system disk [YES]?   RET

Please mount the first volume of the set on MUA0:.
* Are you ready?   YES RET
%MOUNT-I-MOUNTED, SNAVMS mounted on _MUA2:
```

```
The following products will be processed:

  SNAVMS V2.0

        Beginning installation of SNAVMS V2.0 at 14:17

%VMSINSTAL-I-RESTORE, Restoring product saveset A...

    Release Notes Options:

        1.  Display release notes
        2.  Print release notes
        3.  Both 1 and 2
        4.  Copy release notes to SYS$HELP
        5.  Do not display, print or copy release notes

* Select option [2]:    RET
* Queue name [SYS$PRINT]:    RET
Job SNAVMS$020 (queue SYS$PRINT, entry 142) started on LPA0
* Do you want to continue the installation?   YES  RET
%VMSINSTAL-I-RELMOVED, The product's release notes have been successfully
moved to SYS$HELP.

        Product:      SNA-VMS
        Producer:     DEC
        Version:      2.0
        Release Date: 01-DEC-1988


* Does this product have an authorization key registered and loaded?   YES  RET

* Will this installation of VMS/SNA use the DPV11 device for SDLC
communications [NO]?   YES  RET

* Do you want to purge files replaced by this installation [YES]?    RET

%VMSINSTAL-I-RESTORE, Restoring product saveset B...
%SNAVMS-I-NOMORQUES, there are no more questions
%SNAVMS-I-PLEASE_WAIT, installation may take up to twenty minutes to complete


        To install VMS/SNA V2.0, the configuration files and procedures must
        be placed in a directory. Directory SYS$COMMON:[SNAVMS$] is used
        for this purpose.

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SNAVMS$].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSTEST.SNAVMS$IVP].
%SNAVMS-I-CLEANUP, deleting previous versions of VMS/SNA files
%SNAVMS-I-INSTALL, adding new VMS/SNA files
```

```
    The VMS/SNA files have been copied to the system disk. If you have
    not installed the communication hardware for the connection to the IBM
    SNA network, please do so now. After the communication hardware has been
    installed, VMS/SNA V2.0 must be configured.

    You should execute the following command to configure VMS/SNA V2.0:

         @SYS$COMMON:[SNAVMS$]SNAVMS$CONFIGURE

    This creates the VMS/SNA configuration files, completing the
    installation. You can start VMS/SNA and execute the
    Installation Verification Procedure (SNAVMS$IVP) at
    the end of the configuration procedure; the procedure will prompt
    you.

    For current information about VMS/SNA V2.0, type or print the file
    SNAVMS$020.RELEASE_NOTES, which is supplied by this installation.

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
        Installation of SNAVMS V2.0 completed at 14:38

        VMSINSTAL procedure done at 14:39


$
```

B.2 Sample Configuration (SDLC lines)

The following is a sample VMS/SNA configuration for SDLC lines. The answers to each prompt are for demonstration purposes only and will probably differ from the answers that you supply during your configuration procedure.

```
$   SET DEFAULT SYS$COMMON:[SNAVMS$] RET
$   @SNAVMS$CONFIGURE RET

     Command file to configure the VMS/SNA product
     Executing on 19-JAN-1989 15:08:31:27.
     Enter a question mark (?) at any time for help.
     Enter CONTROL-Z at any time to abort.

Which VAXcluster member node will run VMS/SNA?     [APPLE] :  RET

Will this node communicate over an X.25 network?      [NO] :  RET

How many LU addresses available to this PU?           [64] :  RET
What is the PU segment size (decimal)?               [265] :  521 RET
```

```
What is the circuit duplex (HALF, FULL)?            [HALF] :  FULL  RET
What is the station address (2-digit hex)?            [40] :   RET
What is the exchange ID (XID) number (8-digit hex)?     [] :   RET

What is the line-id specification (dev-c-u)?               :  DPV-0-0  RET
What is the line duplex (HALF, FULL)?               [HALF] :  FULL  RET
Is the line a multidropped line?                      [NO] :  RET
Is the line a NRZI-signalling line?                   [NO] :  RET
Will VMS/SNA load the device driver when starting?   [YES] :  RET

What is the CSR address of the device (octal)  [760270]   :   RET
What is the device vector address (octal)      [300]      :   RET

You may now enter any access names that you wish to create. Enter
RETURN at the ACCESS NAME prompt when finished.

Access name? (1-16 characters)                          [] :  TSO  RET
Sessions for this access name? (numbers or ranges) [1-64] :  2-10  RET
Application name? (1-8 characters)                      [] :  TSO  RET
Logon mode table? (1-8 characters)                      [] :  DSILGMOD  RET
User data? (quoted string, 1-32 characters)             [] :  "ENTRY"  RET

Access name? (1-16 characters)                          [] :  RJE  RET
Sessions for this access name? (numbers or ranges) [1-64] :  9-12  RET
Application name? (1-8 characters)                      [] :  JE$2  RET
Logon mode table? (1-8 characters)                      [] :  RJ1024P0  RET
User data? (quoted string, 1-32 characters)             [] :  RET

Access name? (1-16 characters)                          [] :   RET

The configuration file SYS$COMMON:[SNAVMS$]SNAVMS$CFG_APPLE.COM;1
was created on 19-JAN-1989 15:13:34:18


The load file SYS$COMMON:[SNAVMS$]SNAVMS$LOAD_DEVICE_APPLE.COM;1
was created on 19-JAN-1989 15:13:35.68

The authorization file SYS$COMMON:[SNAVMS$]SNAVMS$AUTHORIZE_APPLE.COM;1
was created on 19-JAN-1989 15:13:37.44


Do you wish to start the VMS/SNA product now [YES]?   RET
@SYS$COMMON:[SNAVMS$]SNAVMS$STARTUP.COM
VMS/SNA V2.0 Startup begins  : 19-JAN-1989 15:13:52.61
%SNAEVL-I-INIT, starting SNAEVL on node APPLE
%RUN-S-PROC_ID, identification of created process is 0000002B
%LES-S-PROC_ID, identification of created process is 0000002C
%SNAACP-S-STARTED, VMS/SNA V2.0, device _SNA0: mounted
VMS/SNA V2.0 Startup complete: 19-JAN-1989 15:13:58.28

Do you wish to run the SNAVMS$IVP program now [YES]?   RET
@SYS$COMMON:[SYSTEST]SNAVMS$IVP.COM
```

```
VMS/SNA V2.0 Installation Verification Procedure


  CONREQREJ

        The connection to VTAM was successful; however, the session was
        rejected because VTAM did not recognize the application selected.


The SNAVMS$IVP program ran successfully and connected to VTAM. Checking
of other DECnet/SNA access routine products should now proceed.

You should add the following command to SYS$MANAGER:SYSTARTUP_V5.COM:

    $ @SYS$COMMON:[SNAVMS$]SNAVMS$STARTUP

    Finished VMS/SNA product configuration
    At  19-JAN-1989 15:30:00.21

$
```

B.3 Sample Configuration (X.25 lines)

The following is a sample VMS/SNA configuration for communication over a packet switched data network (PSDN). The answers to each prompt are for demonstration purposes only and will probably differ from the answers that you supply during your configuration procedure.

```
$   SET DEFAULT SYS$COMMON:[SNAVMS$] RET
$   @SNAVMS$CONFIGURE RET

     Command file to configure the VMS/SNA product
     Executing on 19-JAN-1989 14:45:47:85.
     Enter a question mark (?) at any time for help.
     Enter CONTROL-Z at any time to abort.

Which VAXcluster member node will run VMS/SNA?     [APPLE] :  RET

Will this node communicate over an X.25 network?      [NO] :  YES RET

How many LU addresses available to this PU?           [64] :  RET
What is the PU segment size (decimal)?               [265] :  521 RET

Which calling direction (INCOMING,OUTGOING)?    [OUTGOING] :  RET
What is the network name?                                [] :  TELENET RET
What is the address of the local DTE?                    [] :  12345 RET
What is the group name for the local DTE?                [] :  RET
What is the address of the remote DTE?                   [] :  023179 RET
What is the exchange ID (XID) number (8-digit hex)?      [] :  017DEC00 RET
Will reverse charging be applied to outgoing calls?    [NO] :  RET
```

```
You may now enter any access names that you wish to create. Enter
RETURN at the ACCESS NAME prompt when finished.

Access name? (1-16 characters)                          [] :  VM  RET
Sessions for this access name? (numbers or ranges) [1-64] :  2-10  RET
Application name? (1-8 characters)                      [] :  VM  RET
Logon mode table? (1-8 characters)                      [] :  RET
User data? (quoted string, 1-32 characters)             [] :  RET

Access name? (1-16 characters)                          [] :  PRINTER  RET
Sessions for this access name? (numbers or ranges) [1-64] :  16  RET
Application name? (1-8 characters)                      [] :  RET
Logon mode table? (1-8 characters)                      [] :  RET
User data? (quoted string, 1-32 characters)             [] :  RET

Access name? (1-16 characters)                          [] :  RET

The configuration file SYS$COMMON:[SNAVMS$]SNAVMS$CFG_APPLE.COM;1
was created on 19-JAN-1989 16:41:59:82


The load file SYS$COMMON:[SNAVMS$]SNAVMS$LOAD_DEVICE_APPLE.COM;1
was created on 19-JAN-1989 16:42:01.30

The authorization file SYS$COMMON:[SNAVMS$]SNAVMS$AUTHORIZE_APPLE.COM;1
was created on 19-JAN-1989 16:42:03.06


Do you wish to start the VMS/SNA product now [YES]?   RET
@SYS$COMMON:[SNAVMS$]SNAVMS$STARTUP.COM
VMS/SNA V2.0 Startup begins  : 19-JAN-1989 15:13:52.61
%SNAEVL-I-INIT, starting SNAEVL on node APPLE
%RUN-S-PROC_ID, identification of created process is 0000002B
%LES-S-PROC_ID, identification of created process is 0000002C
%SNAACP-S-STARTED, VMS/SNA V2.0, device _SNA0: mounted
VMS/SNA V2.0 Startup complete: 19-JAN-1989 15:13:58.28

Do you wish to run the SNAVMS$IVP program now [YES]?   RET
@SYS$COMMON:[SYSTEST]SNAVMS$IVP.COM

VMS/SNA V2.0 Installation Verification Procedure


  CONREQREJ

        The connection to VTAM was successful; however, the session was
        rejected because VTAM did not recognize the application selected.


The SNAVMS$IVP program ran successfully and connected to VTAM. Checking
of other DECnet/SNA access routine products should now proceed.

You should add the following command to SYS$MANAGER:SYSTARTUP_V5.COM:

    $ @SYS$COMMON:[SNAVMS$]SNAVMS$STARTUP
```

```
    Finished VMS/SNA product configuration
    At  19-JAN-1989 15:30:00.21

$
```

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