

VAX P.S.I. (Packetnet System Interface) Installation Procedures

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How to Use This Manual

Manual Objectives

This manual explains how to install VAX PSI and VAX PSI Access. The manual also explains how to build a Combination system. Information about how to configure and test your VAX PSI system is contained in the *VAX P.S.I. Management Guide*.

Intended Audience

This manual provides information for system managers and DIGITAL software specialists. The manual assumes that readers understand and also have some experience of:

- Installation of software products on VAX/VMS
- Local Area Networks (LANs)
- Wide Area Networks (WANs)
- DECnet-VAX
- Packet switching
- DIGITAL's VAX PSI product

The manual also assumes that readers have read the *P.S.I. Introduction*.

NOTE

This product has been designed for installation by DIGITAL's Software Services Specialists.

Structure of the Manual

This manual consists of four chapters and four appendixes.

Chapter 1 describes the VAX PSI products and gives the information you will need before the software can be installed. **Read this chapter before installing any of the VAX PSI products.**

Chapter 2 describes the procedures for installing a Native or a Multi-host PSI system.

Chapter 3 describes the procedures for installing VAX PSI Access.

Chapter 4 describes how to build a Combination VAX PSI system.

Appendix A gives an example of a Native or Multi-host VAX PSI installation.

Appendix B gives an example of a VAX PSI Access installation.

Appendix C gives an example of a Combination system installation.

Appendix D describes the contents of the distribution kits for the VAX PSI products.

Associated Manuals

The other manuals in the VAX PSI documentation set are:

P.S.I. Introduction - This manual introduces PSDNs, the X.25 and X.29 interfaces, and the PSI product.

VAX P.S.I. X.25 Programmer's Guide - This manual explains how to use the VAX PSI programming facilities to communicate with remote systems.

VAX P.S.I. X.29 Programmer's Guide - This manual explains how to use X.29 facilities provided by VAX PSI to communicate with a remote host.

VAX P.S.I. Problem Solving Guide - This manual explains how to detect and solve problems that may occur when using VAX PSI.

VAX P.S.I. PAD and MAIL Utilities Manual - This manual explains how to use the PSI-specific commands, SET HOST/X29, SET TERMINAL/X29, SHOW TERMINAL/X29 and PSI MAIL.

VAX P.S.I. Management Guide - This manual explains the PSI-specific utilities that enable the network manager to manage PSI.

Public Network Information. This manual provides details of the individual public networks on which DIGITAL supports the use of PSI.

Further reference information can be found in the VMS manual set.

VMS Software Installation Guide.

VMS Network Control Program Manual.

VMS Networking Manual - This manual describes the concept of DIGITAL networks and explains how to configure, control, and monitor DECnet-VAX and the VAX PSI product.

For information on the rest of the VMS manual set, see the *Overview of VMS Documentation.*

Manual Conventions

| | |
|-----------------------------|--|
| <code><xxx></code> | This 1- to 3-character symbol indicates that you press a key on the terminal. For example: <RET> indicates the RETURN key <ESC> indicates the ESCAPE key |
| <code><CTRL/x></code> | This symbol indicates that you press the CTRL key at the same time as you press another key; for example, <CTRL/C>, <CTRL/Y>, and so on. |
| Red print | indicates commands and data that you enter. |
| <i>Italics</i> | indicate variable information. |

VAX PSI Installation Guidelines

VAX PSI supports three modes of operation, as follows:

- Native mode PSI
- Multi-host PSI
- Access mode PSI

In addition, a Combination system may be built which combines Access mode with one or both of the other modes. The software is supplied on two kits:

- The VAX PSI V4.2 kit supplies the software for configuring a Native mode or a Multi-host PSI system.
- The VAX PSI Access V4.2 kit supplies the software for configuring Access mode PSI on VAX/VMS hosts that have DECnet-VAX installed.

If you want to create a Combination system, you will need both kits. To install a Combination system, follow the instructions given in Chapter 4. For all VAX systems, if you want to use DECnet for communications, you will also need to install a DECnet license, preferably before you install VAX PSI.

A full description of the VAX PSI products, PSDNs and the X.25 and X.29 interfaces is given in the *P.S.I. Introduction*. **READ THIS MANUAL BEFORE INSTALLING ANY OF THE VAX PSI PRODUCTS.**

1.1 Native Mode PSI

When you install Native mode PSI, the installation procedure sets up several databases. These are:

- The X25-PROTOCOL database, which defines the PSDN(s) to which the node is connected and the subscription characteristics that relate to each PSDN: for example, the protocol options, DTE address, window size, packet size.
- The X25-SERVER database, which defines the destinations on the local node, such that incoming calls from the PSDN can be directed to the appropriate destinations; these destinations are user processes or objects such as MAIL.
- The X29-SERVER database, which defines the destinations on the local node for incoming X.29 calls.

To install Native mode PSI, follow the installation procedures described in Chapter 2. An example of a VAX PSI installation is given in Appendix A.

1.2 Multi-host PSI

Multi-host PSI extends access to the PSDN to other users of DECnet-VAX host systems that have VAX PSI Access installed. The Multi-host PSI node must have DECnet-VAX installed to set up DECnet logical links to the VAX PSI Access node.

NOTE

You should take particular note of the following two terms.

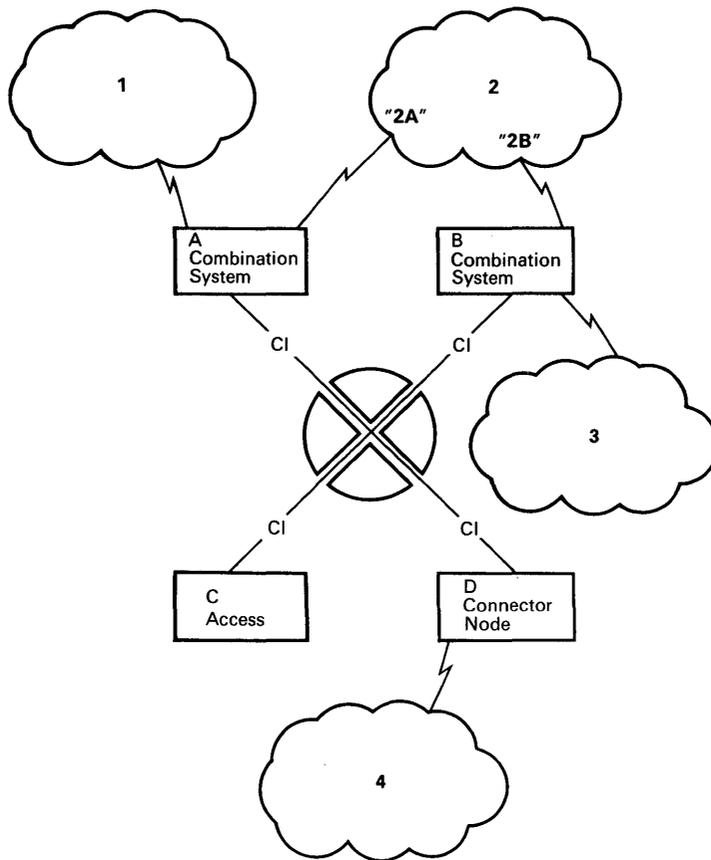
1. Host - for simplicity, this manual will use the term 'host' to mean any VAX/VMS system which has both DECnet-VAX and VAX PSI Access installed.
2. Connector node - a connector node serves as a gateway to allow other VAX PSI nodes access to a PSDN. For example, both a VAX PSI Multi-host node and an X25router node are connector nodes. This manual will use the term connector node when connection to a PSDN can be made through either a VAX PSI Multi-host node or an X25router node.

If you have more than one connector node in your DECnet network, each one can connect to the same (or different) PSDNs. Host systems with VAX PSI Access installed can connect to any connector node, and thus to any PSDN. Your network may also be either a Local Area Network, a Wide Area Network, or a combination of the two.

VAX PSI can also be used within a VAXcluster. For example, one node is connected to the PSDN and is set up as a Multi-host PSI node. The other nodes in the VAXcluster from which you want to access the PSDN have VAX PSI Access installed. Refer to Section 1.6.1 for details of installing VAX PSI on a VAXcluster.

Figure 1-1 shows the various modes of operation you can use with VAX PSI.

Figure 1-1 VAX PSI Modes



RE3918

Figure 1-1 shows a VAXcluster connected to four PSDNs. Nodes A and B are Combination systems, Node C is running VAX PSI Access and Node D is running VAX PSI Multi-host and is therefore a connector node. PSDN 2 is known to PSI under two different network names: "2A" and "2B". Node A can use Networks 1 and 2 in Native mode. In Access mode, Node A can use Network 3 via Node B and Network 4 via Node D. It can also use Network 2 via Node B under the network name "2B".

Node B can use Networks 2 and 3 in Native mode. By running in Access mode, Node B can use Network 1 via Node A and Network 4 via Node D. It can also use Network 2 via Node A under the network name "2A".

Node C can use all the networks via the other nodes and, given the different network names, can also use Network 2 simultaneously via Node A or Node B.

Node D can only use Network 4.

NOTE

If Network 2 were not given two different network names, Node A would not be able to access Network 2 via Node B, and vice versa.

The installation procedure is the same for both Native mode and Multi-host PSI. To install Multi-host PSI, follow the procedures to install a Native mode PSI system, and then configure the system to support Multi-host access.

The Native mode part of the installation creates the X25-SERVER, X29-SERVER, and X25-PROTOCOL databases and the Multi-host part adds host destinations to the X25-SERVER database. These host destinations enable incoming calls from the PSDNs to be sent to destinations on the host systems that have VAX PSI Access installed.

To install Multi-host PSI, follow the installation procedures described in Chapter 2. An example of a VAX PSI installation is given in Appendix A.

1.3 VAX PSI Access

VAX PSI Access allows users on host systems to access the PSDNs via one or more connector nodes. The VAX/VMS host system uses a DECnet logical link to connect to each connector node. VAX PSI Access uses the link to transmit X.25/X.29 messages between the connector node and the VAX host. An example of a VAX PSI Access installation is given in Appendix B.

1.4 Combination Systems

You can set up a VAX PSI Combination system by installing VAX PSI followed by VAX PSI Access. Refer to Chapter 4 for details. A Combination system allows you to access one or more PSDNs directly by running VAX PSI, and permits indirect access to other PSDNs by running VAX PSI Access. Refer to the *P.S.I. Introduction* for full details of VAX PSI Combination systems. An example of a VAX PSI Combination installation is given in Appendix C.

1.5 Use of Network Name for VAX PSI and VAX PSI Access

Each PSDN connected to Native VAX PSI or a connector node is identified by a unique "network name". This unique identifier is used by both VAX PSI and VAX PSI Access, and is needed for two reasons:

1. When using VAX PSI, you may be connected to more than one PSDN.
2. If you are using VAX PSI Access, you need to know which PSDN is connected to which connector node.

1.5.1 Selection of Network Name

A network name may be made up of a combination of 1 to 16 letters, digits and underscore characters, and must be unique across ALL your PSI systems. (Note, however, that the same name(s) will be used by any Access systems you run.)

1.5.2 Profile Name

The Native VAX PSI node/connector node connection to the PSDN has the following associated with each network name:

- A profile name
- One or more DTE addresses
- One or more devices connected to the PSDN

The profile name relates to the actual PSDN, and informs VAX PSI of the characteristics of that network. The profile name for public PSDNs appears in the *Public Network Information* manual, and is usually the same as the network name. In cases where several PSDNs have the same name (for example, Datapak) additional identifying characters are appended to the profile name to make it unique. You must use the correct profile for your network. Use of the incorrect profile invalidates DIGITAL's VAX PSI support.

Figure 1–2 Network and Profile Names

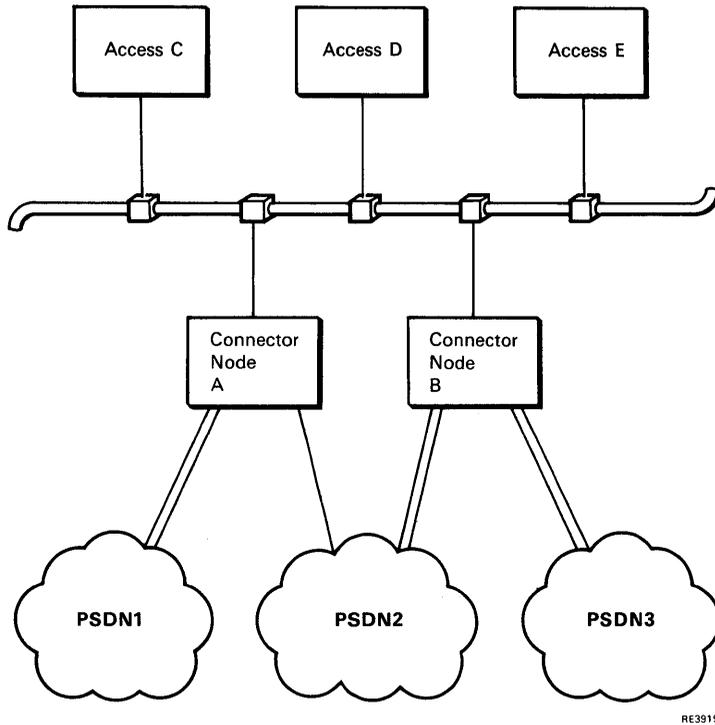


Figure 1–2 shows how network and profile names are defined for an installation. Connector node A is defined as follows:

- Network PSDN1, with 2 lines using profile PSDN1
- Network PSDN2_A, with 1 line using profile PSDN2

Connector node B is defined as follows:

- Network PSDN2_B, with 2 lines using profile PSDN2
- Network PSDN3, with 2 lines using profile PSDN3

Access nodes C, D and E are defined as follows:

- Network PSDN1, using connector node A
- Network PSDN2_A, using connector node A
- Network PSDN2_B, using connector node B
- Network PSDN3, using connector node B

1.6 The Installation Procedures

This section introduces the procedures you use when installing VAX PSI and VAX PSI Access. The procedures for installing VAX PSI and VAX PSI Access are automated as far as possible. Throughout an installation, the procedures prompt you with questions that require a simple answer such as Yes or No. In many cases defaults have been set up. These are indicated in square brackets. To accept the default, enter <RET>.

NOTE

If you do not understand a prompt or are uncertain about the the information required at any point during the installation, enter a question mark (?) in answer to the prompt. You will be provided with on-line help about that prompt and about the information you should enter.

Installation involves the following steps:

1. Executing VMSINSTAL.COM to copy the PSI files from the distribution kit to the installation disk.
2. Executing PSI_SET_UP.COM which:
 - Sets up the devices and creates the LOAD_PSI042.COM command file needed to start PSI.
 - Defines the PSDN and sets up the X25-PROTOCOL database.
 - For Multi-host installations, sets up Native mode VAX PSI with Multi-host access, and creates the X25-SERVER database.
3. Updating the SYSGEN parameters and bootstrapping the system. Note that if a previous installation of VAX PSI exists on the system, the SYSGEN values may already be correct.
4. Invoking STARTNET.COM to start up DECnet-VAX and VAX PSI.

Before installing the VAX PSI software, you must be familiar with the information contained in the *VMS Network Control Program Manual*.

1.6.1 Installing VAX PSI on a Cluster

In the case of a VAXcluster, VAX PSI must be installed on each node wishing to use the software. One way to achieve this is to install VAX PSI Multi-host on any systems that are connected to the PSDN, and VAX PSI Access on the other VAX systems in the cluster.

NOTE

Before you install VAX PSI or VAX PSI Access on any system in the cluster, you **MUST** ensure that VAX PSI or VAX PSI Access are not running on any of the other VAXcluster systems during the installation. When you have finished installing the software on all the relevant nodes, you can start PSI.

If you install a VAX PSI option, for example X.29 support, on one of the systems in your VAXcluster, you must install the same option on all the systems in the VAXcluster. Refer to Appendix D for details of which files are installed in the system-specific root area and which are installed in the system common root area.

1.6.2 VAX PSI Support of the License Management Facility

VAX PSI and VAX PSI Access now support the VMS License Management Facility (LMF). This means that before VAX PSI or VAX PSI Access can be run on a system, you must license the system by running the LMF procedure. LMF has two classes of license, **Availability** and **Capacity**. VAX PSI and VAX PSI Access use **Availability** licensing; this means that once VAX PSI or VAX PSI Access is licensed on a system or on a node within a cluster, any user on that system or cluster can use it.

To license your system, you enter the information given on the Product Authorization Key (PAK). The PAK contains all the information you need to enter during the LMF procedure.

You are recommended to license VAX PSI or VAX PSI Access before you install it. If you do not do this, the following message will be displayed after the VAX PSI V4.2 files have been installed:

```
%PSI-W-NOLICENSE, P.S.I. has not been licensed to run on this
system
```

If you install VAX PSI Access before it is licensed the following message will be displayed after the VAX PSI Access V4.2 files have been installed:

```
%PSI-W-NOLICENSE, P.S.I.-Access has not been licensed to run on
this system
```

For both VAX PSI and VAX PSI Access the procedure then displays a series of instructions telling you what to do to complete the installation. If a license is required for VAX PSI the procedure displays the following instruction:

- Install the P.S.I. Product License.

If a license is required for VAX PSI Access, the procedure displays this instruction:

- Install the P.S.I.-Access Product License.

1.6.3 Entering the PAK

To start the license procedure, enter this command:

```
$ @SYS$UPDATE:VMSLICENSE
```

You will then be prompted for details the details contained in the P.S.I. or P.S.I.-Access PAK. Each question corresponds to a heading in the PAK.

If you are installing on a cluster you only need to enter this command on one node. Then enter the following command on each of the other nodes in the cluster:

```
$ LICENSE LOAD P.S.I.
```

If you are licensing VAX PSI Access, enter the following command:

```
$ LICENSE LOAD P.S.I.-ACCESS
```

You can then install VAX PSI or VAX PSI Access on the other nodes in the cluster as required. Refer to the VMS Release notes for further details on using VMSLICENSE.

If you have not licensed VAX PSI or VAX PSI Access, and you try to start PSI, the product will fail to start and an LMF error message will be displayed stating that the product is not licensed. You should therefore install the license as detailed above and then start the product.

If you have a combination system which has not been fully licensed. you will only see one LMF error message. Check that both licenses have been applied and loaded by issuing the following commands:

```
$ LICENSE LIST
```

to see if the license is in the license database (which is cluster-wide)

and

```
$ SHOW LICENSE
```

to see if the license has been loaded on to the system.

1.7 Preinstallation Preparations

Before you start to install the VAX PSI software, you should install the WAN Synchronous Drivers kit on your system: this will ensure that the level 2 software and device drivers are installed. You will also need to gather information about your VAX PSI system and the network you intend to use. Obtain the necessary information from your system manager, PTT representative and DIGITAL Software Support specialist. Complete Table 1-1 with the information about your VAX PSI system.

Table 1-1 Preinstallation Information

| | Default Value (if relevant) | Your Value |
|--|-----------------------------|------------|
| Native/Multi-host | | |
| Network name | | |
| Network profile name | Same as network name | |
| UNIBUS adapter (not MicroVAX) | UB0 | |
| Local DTE address | | |
| LCNs | | |
| Device name | | |
| Vector address (if not autoconfigured) | | |
| CSR address (if not autoconfigured) | | |
| Multi-host | | |
| Destination name | | |
| Destination node name | | |
| Destination priority | 200 | |
| Object identification | 36 | |
| Call mask | None | |
| Call value | None | |
| CUG | None | |
| Calling DTE | None | |
| Subaddress | None | |

Table 1-1 (Cont.) Preinstallation Information

| | Default Value (if relevant) | Your Value |
|-------------------------------|-----------------------------|------------|
| Access | | |
| Network name | | |
| Multi-host node name | | |
| Multi-host DTE address | | |
| Subaddress on Multi-host node | | |
| Object identification | 31 | |

1.7.1 Distribution Kits

VAX PSI can be installed from floppy disks and TK50s on to a MicroVAX, and from floppy disks, TK50 cassettes or magnetic tape on to other VAX systems. The tables below give details of the media needed to install VAX PSI and VAX PSI Access.

Table 1-2 Media used to install VAX PSI Native and Multi-host Modes

| Media | |
|----------------|----------------------|
| Floppies | 2 x RX33 or 8 x RX01 |
| TK50 cassettes | 1 x TK50 |
| Magnetic tapes | 1 x 2400' |

Table 1-3 Media used to install VAX PSI Access

| Media | |
|----------------|----------------------|
| Floppies | 2 x RX33 or 6 x RX01 |
| TK50 cassettes | 1 x TK50 |
| Magnetic tapes | 1 x 2400' |

The VAX PSI software kit for disks or cassettes is distributed in up to eight volumes with the following labels:

| VAX PSI | VAX PSI Access |
|----------------|-----------------------|
| PSI01 | PSI_AC01 |
| PSI02 | PSI_AC02 |
| PSI03 | PSI_AC03 |
| PSI04 | PSI_AC04 |
| PSI05 | PSI_AC05 |
| PSI06 | PSI_AC06 |
| PSI07 | |
| PSI08 | |

NOTE

For TK50s and magnetic tape kits, there is a single volume labeled "PSI" for installing VAX PSI and "PSI_AC" for installing VAX PSI Access. Ignore those sections of the installation procedures that refer to multiple volumes.

Before you install the VAX PSI products, check that the disk has enough space by entering the following command:

```
$ SHOW DEVICE SYS$SYSDEVICE
```

The information displayed includes the number of free blocks on the disk. Make sure that there is enough space to install your system by consulting Table 1–4 below. (If you try to install either of the VAX PSI products with too few free blocks, the installation procedure will fail.)

Table 1–4 gives details of how many free blocks of disk space you need to install Native or Multi-host VAX PSI on MicroVAX and other VAX systems.

Table 1–4 Disk Space Required to Install VAX PSI and VAX PSI Access

| Product Type | Native or Multi-host | Access |
|---|-----------------------------|---------------|
| Basic Product | 2100 | 1450 |
| Basic Product with X.29 support | 2500 | 1850 |
| Basic Product with Utilities support | 3100 | 2450 |
| Basic Product with X.29 and Utilities support | 3500 | 2850 |

1.8 Changing Your VAX PSI System

When you make any changes to your VAX PSI system, you may need to alter the authorization commands in your DTE Access Control Database by editing the `PSI_SECURITY.COM` command file. Refer to the *VAX P.S.I. Management Guide* for details of this database and the VAX PSI Security utility.

1.8.1 Migrating from Native Mode to Multi-host PSI

If you are migrating from Native mode to a Multi-host PSI system, do ONE of the following:

1. Execute `PSI_SET_UP.COM` to specify host destinations for incoming calls. Follow the appropriate procedure in Chapter 2.
2. Use NCP to add host destinations to the X25-SERVER database. See the *VAX P.S.I. Management Guide* for details.

Then start up VAX PSI. See Chapter 2, section 2.4.

1.8.2 Migrating from Multi-host to Native Mode PSI

If you are migrating from Multi-host to Native mode, you need to restrict access to local users of the system, and disable the through traffic of incoming and outgoing calls. To do this, use NCP to remove host destinations from the X25-SERVER database on the node that is running Multi-host PSI. See the *VAX P.S.I. Management Guide* for details.

1.8.3 Migrating from Access Mode to Native Mode or Multi-host PSI

If you are migrating from an Access mode PSI system to run Native mode PSI or Multi-host PSI, you need to install VAX PSI from the VAX PSI distribution kit. Prior to installing VAX PSI, you will have to arrange subscription to the PSDN(s) you wish to use. Refer to the *VAX P.S.I. Management Guide* for details of the preinstallation preparations. To install VAX PSI, follow the procedures described in Chapter 2.

1.8.4 Migrating from Native Mode or Multi-host PSI to Access Mode PSI

If you are migrating to an Access mode system you need to install VAX PSI Access from the VAX PSI Access distribution kit. You will no longer be connected directly to the PSDN(s), but will be able to use the PSDN(s) via a VAX PSI Multi-host node in your VAXcluster, or DECnet network. To install VAX PSI Access, follow the procedures described in Chapter 3.

1.8.5 Migrating from Native Mode or Multi-host PSI to a Combination System

If you are migrating to a Combination system, you need to install VAX PSI Access from the VAX PSI Access distribution kit. Follow the procedures described in Chapter 4.

1.8.6 Migrating from Access PSI to a Combination System

If you are migrating to a Combination system you need to install VAX PSI from the VAX PSI distribution kit, and then reinstall VAX PSI Access from the VAX PSI Access distribution kit. Follow the procedures described in Chapter 4.

1.8.7 Adding Further Multi-host PSI Systems to Your DECnet-VAX Network

If you have installed a Multi-host PSI system on your network, and wish to provide an alternative route via another Multi-host PSI node to the same PSDN, do the following:

1. Install VAX PSI in Multi-host mode on the VAX/VMS system designated as the new or alternative connector node. Follow the procedures described in Chapter 2.
2. Update the X25-ACCESS database on each of the host systems. See the *VAX P.S.I. Management Guide* for details.

1.8.8 Adding PSI Access Systems to a Network

If you wish other DECnet-VAX hosts to access the PSDN(s) connected via the existing Multi-host PSI system(s), do the following:

1. Install VAX PSI Access on each DECnet-VAX host system. Follow the procedures described in Chapter 3.
2. Update the X25-SERVER database for each of the Multi-host PSI systems on your DECnet network. See the *VAX P.S.I. Management Guide* for details.

1.8.9 Adding New Network Connections to a Native or Multi-host VAX PSI System

If you wish to add new network connections (either a new line, or a new DTE, or a connection to a new network) to your Native or Multi-host VAX PSI system, run `PSI_SET_UP.COM` to set up the devices. Reenter the information for all the lines you want to configure, including the one you are adding to the system. Then add the information about the new connection to the database.

Installing Native or Multi-host VAX PSI

This chapter explains how to install the VAX PSI software for Native mode and Multi-host mode systems. During the installation you will need to provide the information you supplied in Table 1-1 in Chapter 1 of this manual.

2.1 Installing VAX PSI Files from the Distribution Volumes

To install the VAX PSI software, you should install the WAN Synchronous Drivers kit on your system, then carry out the following procedure at the console terminal.

1. Log in to the system manager's privileged account.
2. Check that the disk that is to receive the VAX PSI software is the default. Typically, this is the system disk (with the logical name SYSSYSDEVICE).
3. Check that the disk has enough free space for the VAX PSI software to be installed. Refer to Table 1-4, Chapter 1, for details of how much free disk space you need on your system to install VAX PSI.

NOTE

You will need additional space if you want to install any of the PSI options; Table 1-4 in Chapter 1 gives full details of space requirements.

To start the installation procedure, enter the following command:

```
$ @SYS$UPDATE:VMSINSTAL PSI ddcu: OPTIONS N
```

ddcu: is the device name, where:

dd is the device code, *c* is the controller letter, and *u* is the unit number. For example, CSA1:.

The procedure displays:

```
VAX/VMS Software Product Installation Procedure V5.0
```

```
It is date at time.
```

Enter a question mark (?) at any time for help.

If DECnet is currently running on your system, the procedure warns you with the following message:

```
%VMSINSTAL-W-DECNET, Your DECnet network is up and running.
```

```
* Do you want to continue anyway [NO]?
```

As you do not have to turn DECnet off to install VAX PSI, you may answer YES to this question. The procedure continues with:

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

Make sure you have a good backup copy of the disk, as the installation will write to the system disk. If your system disk has not been backed up or you wish to make a fresh copy, answer NO. The procedure then exits without installing the PSI software. When you have backed up your system disk, you can start the installation procedure again.

If you answer YES, the procedure displays:

```
Please mount the first volume of the set on device
```

```
* Are you ready?
```

Load distribution volume 1 (PSI01) in the drive. Answer YES when you are ready to continue. If a console medium is not mounted, the following message appears:

```
%SYSTEM-F-DEVNOTMOUNT, device is not mounted.
```

The procedure displays:

```
%MOUNT-I-MOUNTED, PSI01 mounted on device
```

```
The following products will be processed:
```

```
PSI 4.2
```

```
Beginning installation of PSI V4.2 at time
```

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

NOTE

If you are installing VAX PSI from floppy disks you will be instructed to remove one distribution volume

and insert the next volume into the device as required.

You will then be asked about the Release Notes.

2.1.1 Release Notes

The procedure displays the options for printing and displaying the Release Notes. **You are recommended to print and read the Release Notes before continuing the installation.**

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]:

Select one of these options. DIGITAL recommends that you choose Option 2. If you select Option 1, the following is displayed:

```
VMI$ROOT:[SYSUPD.PSI042]PSI042.RELEASE_NOTES;1
```

The Release Notes are displayed on your terminal and will start scrolling on your screen.

If you select Option 2, you are asked on which queue you wish the file to be printed:

* Queue name [SYS\$PRINT]:

Enter <RET> or specify another print queue.

If you select Option 3, you are asked on which queue you wish the file to be printed and then the Release Notes will be displayed on your terminal. If you select option 4 the release notes are copied to the SYS\$HELP directory and not displayed.

When the Release Notes have been queued to a printer and/or displayed on your terminal or moved to SYS\$HELP, the procedure asks:

* Do you want to continue the installation [N]?

If you enter <RET>, you can stop the procedure and read the Release Notes. If you do this, the following message is displayed:

```
VMSINSTAL procedure done at hh:mm
```

While reading the Release Notes, check for any issues that are likely to affect the installation of the VAX PSI software. The VMSINSTAL procedure creates a file for the Release Notes called PSI042.RELEASE_NOTES in the SYS\$HELP: directory and the following message is displayed:

```
%VMSINSTAL-I-REMOVED, The products release notes have been
successfully moved to SYS$HELP.
```

If you stop VMSINSTAL to read the Release Notes, restart the procedure by entering the following command:

```
$ @VMSINSTAL PSI device-name
```

2.1.2 Tailoring the Installation

If you do not stop VMSINSTAL, or if you have restarted the procedure, VMSINSTAL will continue to install the VAX PSI software. The procedure then displays:

```
VAX PSI V4.2 installation procedures.
```

During the installation, the procedure checks the following:

1. That the operating system is VMS V5.0 or later. If the operating system is an earlier version of VMS, the procedure exits after displaying the following message:

```
This product requires VMS version V5.0 or later to install
```

```
%VMSINSTAL-E-INSFAIL, The installation of PSI V4.2 has failed
```

2. That there is sufficient space on your disk for the VAX PSI files. Refer to Table 1-4 in Chapter 1 for details of how many free blocks you need on your system to install VAX PSI. If there is not enough space, the procedure exits after displaying the following messages:

```
%PSI-E-NOSPACE, this installation requires nnnn blocks of
disk space.
```

```
%VMSINSTAL-E-INSFAIL, The installation of VAX PSI V4.2 has
failed.
```

Make sure your system has sufficient free blocks before trying to install VAX PSI again.

The procedure then asks if you want to install the VAX PSI options. If you do, you must answer YES (the default answer) to the question about the option you want.

NOTE

You cannot install the options at a later stage without reinstalling the complete VAX PSI product.

If you are installing VAX PSI on a VAXcluster with a common system root, every system in the cluster must be set up to support the same PSI options. You must therefore provide identical answers to the questions about options for each system. The procedure displays the following question:

* Do you want X.29 support [YES]?

Answer NO if you do not want support for X.29.

The procedure then asks:

* Do you want all the utilities [YES]?

Answer YES if you want all the utilities. DIGITAL recommends that you install all of the VAX PSI utilities. If you answer NO, you will be asked which utilities you want. If you do not want a particular utility, answer NO to the appropriate question.

If you already have PSI_SECURITY.COM installed in SYSS\$MANAGER on your system, the following message is displayed:

Attention.
=====

You have an existing PSI_SECURITY.COM file in SYSS\$MANAGER. If you choose not to have the VAX PSI security utility, by answering "NO" to the following question, the file will be deleted.

* Do you want the Security utility [YES]?

* Do you want the Accounting utility [YES]?

* Do you want the Trace utility [YES]?

* Do you want the KDA utility [YES]?

The procedure continues and displays the following messages.

There are no more questions to answer during this installation.

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

Saveset D is copied only if you have requested X.29 support. Saveset E is copied only if you have requested some or all of the utilities.

There may be a time delay of several minutes at this stage in the procedure. As you have now answered all the questions for this stage of the installation, there is no need to watch the output. You will be required to answer more questions after the "VMSINSTAL procedure done at *time*" message is displayed.

When the last saveset has been copied, the procedure copies the distribution files from the subdirectory of SYSS\$UPDATE to their respective directories. (See Appendix D for details of which files are installed into which directories.) You may, if you wish, remove the distribution media from the device at this stage.

If there are files from a previous VAX PSI or VAX PSI Access installation present on your disk, the procedure deletes the obsolete files and displays the following message:

```
Removing obsolete files from any previous VAX PSI installation.
```

If you decide to cancel the installation of VAX PSI at any time by entering <CTRL/Y>, after a short time delay, the following is displayed:

```
%VMSINSTAL-F-CTRLY, Installation cancelled via CTRL/Y.  
%VMSINSTAL-F-UNEXPECTED, Installation terminated due to unexpected  
event.
```

```
VMSINSTAL procedure done at time
```

If you enter <CTRL/Y> after the information message that the files are being moved to the target directories (see below), your system will have some new and (if previously installed) some old VAX PSI files. Therefore, you should reinstall the product.

The procedure then displays the following:

```
Installing VAX PSI V4.2 files.
```

If you have a previous installation of PSI on your system a series of messages may be displayed. These messages tell you which of the existing files will not be updated. If you do not have a previous installation of PSI these messages are not displayed.

The procedure then displays the following:

```
VAX PSI V4.2 files installed.
```

After displaying the above messages, the procedure checks that:

1. The PSI product license has been installed on the system. If the license has not been installed then the procedure warns you with the following message:

```
%PSI-W-NOLICENSE, P.S.I. has not been licensed to run on  
this system
```

2. The MAXBUF SYSGEN parameter is the correct size. If the MAXBUF parameter value is too small, the procedure warns you with the following message:

```
%PSI-W-SYSGEN, MAXBUF is too small, change from nnn to 1536.  
where nnn is the current value of the MAXBUF parameter.
```

Change the value of the MAXBUF SYSGEN parameter after you have installed VAX PSI. See section 2.3 for a description of the SYSGEN parameters, including changing the MAXBUF value.

3. No previous version of VAX PSI has been run on your system since the last system boot. If VAX PSI has been run, the procedure displays the following:

```
%PSI-W-PSIRUN, previous version of VAX PSI has been run since
the last system boot
```

The procedure then displays:

To complete the installation, follow the instructions below:

- Execute the command procedure SYS\$MANAGER:PSI_SET_UP.COM to produce a LOAD_PSI042.COM and set up the permanent database.

If a license is required, the procedure displays:

- Install the P.S.I. Product License.

refer to Section 1.6.3 for details on how to install the Product License.

If the SYSGEN parameters need updating, the procedure displays:

- Update the specified SYSGEN parameters.

If the system needs rebooting, the procedure displays:

- Reboot the system.

If the system does not require rebooting, the procedure displays:

- On a system which is running DECnet, execute the command procedure SYS\$MANAGER:STARTPSI.COM to bring up VAX PSI. On a system which is not running DECnet, execute the command procedure SYS\$MANAGER:STARTNET.COM to bring up DECnet and VAX PSI.

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

```
Installation of VAX PSI V4.2 completed at time
```

The procedure then displays:

Enter the products to be processed from the next distribution volume set.

* Products :

Press <CTRL/Z> to stop entering products and move on to the next prompt.

If you mounted the distribution kit on the console device, the procedure displays:

* Do you want to mount the console volume [NO]?

Answer YES and the procedure displays:

Please mount it on CSA1:.

Replace the console volume in the drive.

The procedure asks:

* Are you ready?

Answer YES to this question. The procedure continues with:

```
%MOUNT-I-MOUNTED, CONSOLE mounted on CSA1:
```

```
          VMSINSTAL procedure done at time
```

After installing the software, execute the PSI_SET_UP.COM procedure. Continue the installation procedure by entering the following commands:

```
$ SET DEFAULT SYS$MANAGER
$ @PSI_SET_UP
```

After running PSI_SET_UP.COM, update the SYSGEN parameters and reboot if necessary (see section 2.3). To check the installation, refer to the *VAX P.S.I Management Guide*.

2.2 Tailoring VAX PSI

When you have reached this stage of the installation, you will have built a Native mode PSI system. The next steps are:

1. Set up devices - see section 2.2.1.
2. Define the connection to the PSDN(s) - see section 2.2.2
3. If you want a Multi-host PSI system, modify the Native mode PSI system - see section 2.2.3

Before tailoring the VAX PSI system, make sure you have the following information for each device in your configuration:

- CSR address
- Vector address

You also need to know the subscription options that have been taken out with each PSDN you are connecting to. These include:

- DTE address(es)
- Logical Channel Number range(s)

Refer to the completed Table 1-1 in Chapter 1 for the information you need to supply for your system. While running `PSI_SET_UP.COM`, you may enter a question mark (?) as a response to any question for help.

The procedure displays the following message:

```
This command procedure assists in configuring VAX PSI.
```

```
LOAD_PSI042.COM must be built before attempting to start VAX PSI.  
The load file from an earlier version of VAX PSI cannot be used.
```

```
Do you wish to build LOAD_PSI042.COM now [YES]?
```

Answer YES if you want to build `LOAD_PSI042.COM` now. Refer to section 2.2.1 for details of building `LOAD_PSI042.COM` and setting up devices.

The procedure asks:

```
Do you wish to add network, line or DTE entries to the database  
now [YES]?
```

Answer YES if you want to add new information to the database - see Section 2.2.2 for details.

The procedure then asks:

```
Do you wish to add VAX PSI Multi-host entries [YES]?
```

Answer YES if you require a Multi-host system - see Section 2.2.3 for details.

Answer NO if you require a Native mode PSI system, in which case you are now ready to load and start PSI and should refer to the procedures in section 2.4. The procedure asks:

Do you wish to load PSI now [NO]?

Answer YES if you want to load PSI. If you answer NO, PSI will not be loaded. Refer to section 2.4 for details of how to start up PSI.

If VAX PSI is already running on your system, the following is displayed.

A version of VAX PSI is already running on this system. In order to load the new configuration and device drivers, you need to reboot your system.

To check your installation after restarting VAX PSI refer to the VAX P.S.I. Management Guide.

If you do not need to reboot your system, and DECnet is already running, then you should answer YES if you want to load PSI.

NOTE

If you need to change the SYSGEN parameters, do so before attempting to load PSI or check the installation. After making the changes, reboot the system (see section 2.3). You will also have to reboot if you have a previous version of VAX PSI installed and wish to reload PSI or check the installation.

If VAX PSI fails to load, the following message is displayed:

```
Failed to load VAX PSI
```

If VAX PSI fails to start, the following message is displayed:

```
Failed to set up VAX PSI
```

For information on problem diagnosis and solving, refer to the *VAX P.S.I. Problem Solving Guide*.

To check your installation refer to the *VAX P.S.I. Management Guide*.

Your Native or Multi-host VAX PSI system is now ready to be started. Follow the procedures described in section 2.4.

2.2.1 Setting Up Devices

This section describes how to set up the devices used to communicate with the PSDN(s).

You can exit from this procedure at any time by typing <CTRL/Z> in response to a request for input. If you exit by typing <CTRL/Z>, no LOAD_PSI042.COM file is created.

The procedure displays the following message:

```
This command file assists in creating LOAD_PSI042.COM.
```

LOAD_PSI042.COM is a command file used to SYSGEN the VAX PSI supported devices and startup the ACP.

The procedure then asks:

```
Do you want to set up a default network [YES]?
```

If you answer NO, you will be given a further opportunity to specify a default network at a later stage. See the *VAX P.S.I. Management Guide* for details. If you answer YES, the procedure asks you to supply a network name to serve as a system-wide default:

```
Default network name                (network-id):
```

Enter the name of the network you want to set up as the default network for your system.

If you have a previous version of VAX PSI installed on your system, the procedure now displays:

```
Checking old configuration data.
```

Your previous installation detailed the following device(s). You will be given the option to keep, alter or delete each entry in turn, and then optionally add new devices.

Details of existing devices are displayed as in the following example:

```
Configuration data for line DUP-0-0
```

```
Device CSR is                %0760050
```

```
Device VECTOR is            %0000300
```

```
Device unibus adapter is    UB0
```

```
Do you want to Keep, Alter or Delete this entry (K, A, D) [K]?
```

Answer K if you want to keep the entry, D if you want to delete it, or A if you want to alter it. If you answer K, the following message is displayed:

```
Device device-name added to new configuration.
```

If you answer D, the following message is displayed:

```
Configuration data for device device-name has been deleted.
```

If you answer A, the procedure asks for the CSR, vector and adapter in the same way as for defining new lines (see below). The defaults will be the same as those for the previous installation, and each may be altered as necessary.

The procedure will ask you about each entry in your database from the previous installation. When each entry has been checked, the procedure asks:

```
Do you want to configure more lines [NO]?
```

Answer YES if you want to add more lines to your configuration and then answer the questions below.

If you have no devices defined from previous installations, or this is the first time VAX PSI is being installed on your system, answer the questions below in order to configure the devices for your system.

The procedure asks:

```
Device type (dev-c-u):
```

Enter the type of the first device to be configured. The permitted device types for Unibus systems are DMF, DUP, KMX, and KMY. If you enter any other device types, the procedure displays:

```
Error, unknown device type.
```

```
Supported devices are DMF, DUP, KMX, and KMY.
```

```
Examples:
```

```
DMF-0  
DUP-0  
KMX-0-1  
KMY-1
```

The permitted device type for BI systems is DMB. If you enter any other device types, the procedure displays:

```
Error, unknown device type.
```

```
Supported devices are DMB.
```

```
Example:
```

```
DMB-0
```

The permitted device types for Qbus systems are DPV and KMV. If you enter any other device types, the procedure displays:

Error, unknown device type.

Supported devices are DPV and KMV.

Examples:

DPV-0
KMV-0

The permitted device type for busless systems is DST. If you enter any other device types, the procedure displays:

Error, unknown device type.

Supported devices are DST.

Example:

DST-0

If you have entered a wrong device type, the procedure will ask again for a device.

If the device type is DMF, DMB, or DST the procedure displays:

SYSGEN autoconfigures the *device-name*,
no further information required.

Do you want to configure more lines [NO]?

If you have more lines to configure, answer YES, and the procedure asks again for the device type. Otherwise, answer NO, and the procedure completes by asking about PSI MAIL (see below).

For all device types except DMF, DMB, and DST, the procedure now asks for the CSR address and vector address of the device.

NOTE

If you are installing VAX PSI on a machine other than the MicroVAX, the procedure also asks for the adapter-type of the device.

The default values for these parameters are also displayed. Enter the required addresses and adapter-type, or choose the defaults by pressing <RET>. For example, for a KMX-0-0 device:

Default CSR address is %0764100
CSR address (octal): 764120

Default VECTOR is %0000700
Vector (octal): 720)

Default ADAPTER is UB0
Adapter (adapter-type): <RET>

The procedure now checks that the device has been set up correctly by displaying the values that you have selected, and also asks for confirmation that these are correct.

Configuration data for line KMX-0-0

Device CSR is %0764120

Device VECTOR is %0000720

Device UNIBUS adapter is UB0

Are these line parameters correct [YES]?

If the line parameters are wrong, answer NO, and the procedure asks again for the device type. Otherwise, answer YES and the procedure displays:

Device KMX-0-0 added to configuration.

Do you want to configure more lines [NO]?

If you answer YES, the procedure asks again for a device type. If you specify the same device again, the procedure warns you with:

Error, duplicate device name.

Otherwise, the procedure continues with:

The following NCP command may be used to configure the permanent database to support incoming X.29 terminals:

NCP define module X29-server state on

Do you want the database defined now [YES]?

If you answer YES, X.29 support is enabled. Answer NO, and support is unmodified from the previous state.

The procedure next asks:

Do you want to use PSI MAIL [YES]?

The PSI MAIL utility allows VAX/VMS MAIL to send mail over a PSDN to other VAX PSI V3.0 or later systems. If you want to be able to use this utility, answer YES.

If you answer NO to this question, the procedure continues and creates LOAD_PSI042.COM.

Otherwise it asks:

Do you want support for incoming PSI MAIL [YES]?

If you answer NO, you can still send PSI MAIL, but you cannot receive it.

The procedure displays:

The PSI_MAIL object needs to run in an account with the right to accept incoming X.25 calls.

If you answer YES, you must also define the username and password for PSI MAIL. The procedure displays:

Username [DECNET] ?

Password ?

Verification:

The username and password can be any that may accept incoming X.25 calls. Refer to the *VAX P.S.I. Management Guide* for details of setting up the system to accept X.25 calls. The default username is DECNET. (You will be asked to verify your password before being allowed to continue.)

The procedure continues with the following:

The following NCP commands may be used to configure the permanent database to support incoming PSI MAIL:

```
NCP define object psi_mail number 0 file -
    sys$system:psi$mail user USERNAME password -
    PASSWORD

NCP define module x25-server destination psi_mail -
    object PSI_MAIL -
    CALL MASK ffffffffffffffffffffffffffffffff -
    CALL VALUE ff00000056332E30204D41494C2D3131
```

The call mask is applied to the user-data field, and determines whether the incoming call is accepted. The call value specifies the string used to test incoming call data.

The procedure then asks:

Do you want the database defined now [YES]?

Answer YES if the NCP commands listed that will be used to configure the database are correct. Answer NO if any of the commands are incorrect, and then run PSI_SET_UP.COM again, or enter the NCP commands as a separate operation to configure the database.

The following message is displayed:

Purging any previous PSI_MAIL definitions. Please ignore any error messages.

There is a short delay while `LOAD_PSI042.COM` is created. Then the procedure displays:

```
Created SYSSYSROOT:[SYSMGR]LOAD_PSI042.COM
```

After this message is displayed, return to where you left section 2.2.

If your default directory is not `SYSS$MANAGER`, the procedure displays:

The VAX PSI startup file should be moved into `SYSS$MANAGER` to be used automatically by `STARTNET.COM`

```
Do you want LOAD_PSI042.COM moved to SYSS$MANAGER [YES]?
```

If you answer YES, the procedure moves `LOAD_PSI042.COM` into the `SYSS$MANAGER` directory and displays the following message before ending:

```
Created SYSSYSROOT:[SYSMGR]LOAD_PSI042.COM
```

If you answer NO, the procedure creates `LOAD_PSI042.COM` in your current directory, displays a message saying where the file is, and ends.

Return to where you left section 2.2 to continue your installation.

2.2.2 Configuring the Permanent Database

You can exit from this `PSI_DEFINE.COM` procedure at any time by typing `<CTRL/Z>` in response to a request for input. If you exit by typing `<CTRL/Z>`, some PSDN or DTE definitions may have been created. You can remove unwanted PSDN and DTE definitions by using the following commands:

```
NCP>PURGE MODULE X25-PROTOCOL KNOWN DTEs KNOWN NETWORKS ALL
NCP>PURGE MODULE X25-PROTOCOL KNOWN NETWORKS ALL
```

After the initial running of `PSI_SET_UP.COM` to define the DTE(s), you may either run this procedure again, or use `NCP DEFINE` commands to define each entity in the database and thus configure the VAX PSI system. See the *VMS Network Control Program Manual* for details.

The procedure displays:

This command procedure allows you to define the PSDN and DTE(s) associated with each network.)

The SPD for VAX PSI lists the public networks supported at the time of printing. Check with your Customer Support Representative for up-to-date information on new networks. You see the message

```
Do you want to define the X25-PROTOCOL database now [YES]?
```

Answer YES if you want to define the X25-PROTOCOL database to define the PSDN and DTE(s) associated with each network. The procedure continues:

You can use this procedure to purge the database to remove all DTEs and all X.25 protocol information before updating the permanent database. You can also use the procedure to remove the line information from the database. Note that if the line permanent database is purged then all DECnet lines along with PSI lines will be removed.

The following NCP commands will be used to purge the DTE and X.25 permanent database:

```
NCP purge module x25-protocol known networks all
NCP purge module x25-protocol known dtes known networks all
```

The following NCP commands will be used to purge the line permanent database:

```
NCP purge known lines all
```

Do you want the information in the X.25 and DTE permanent database purged [NO]?

If you wish to keep previous definitions for DTEs, answer NO. If you answer YES, the following is displayed:

Purging the X.25 and DTE database.

The procedure then asks:

Do you want the line information in the permanent database purged [NO]?

If you wish to keep previous definitions for lines, including DECnet lines, answer NO. Note that if you answer YES, all DECnet lines will be deleted along with PSI lines. If you answer YES, the following is displayed:

Purging the line database.

The procedure displays:

PSDN and profile names are defined here. You can define one or more PSDNs. For each PSDN you will be asked to provide the network name and the profile name for that network.

The procedure asks:

Network name (string):

Enter the network name that connects to the PSDN. Refer to section 1.5 in Chapter 1 for details of network and profile names.

Profile name (string) [NETWORK NAME]:

Enter the profile name of the PSDN to which the DTE will connect. The default name is the same as the network name.

The procedure then displays the command it will use to update the permanent database.

The following NCP command will be used to update the permanent database:

```
NCP define module x25-protocol network network-id -  
    profile profile-name
```

Do you want the information in the permanent database updated [YES]?

If you answer NO to this question, the NCP commands will not be executed. You may enter the commands yourself later if you wish. The procedure then continues and displays additional messages here, if it deletes any database entries.

Answer YES if you want to update the database. The procedure displays the following message:

DTEs are defined here. You can define one or more DTEs connected to this network. For each DTE you will be asked to provide the following information:

- . DTE address
- . Range of channels used by the DTE
- . Line associated with the DTE

Refer to the completed Table 1-1 in Chapter 1 for the information you need to supply for your system.

The procedure asks:

DTE address (number):

Enter your DTE address. For details on the format of this address, refer to the *Public Network Information* manual.

Channels range (list):

Enter the channels that the DTE will use for outgoing calls. Specify high-numbered channels before low-numbered channels. Each entry in the channels list can be either a single channel number or a channel range (with a hyphen separating the high and low numbers). The entries in the list must be separated by commas. For example:

Channels range (list):1555,1544-1540,1536

The PSDN authorities allocate channel ranges at subscription time. For details on the channel range allocated for your PSDN, refer to the *Public Network Information* manual.

The procedure now asks:

Line name (dev-c-u):

Enter the name of the line that the DTE will use. Specify a line-id in the form dev-c[-u]. For all device types except KMX, you need only specify line-id and the controller number, for example:

KMV-0

For the KMX, you must specify the line-id, controller number and the unit number, for example:

KMX-0-1

The procedure displays:

The following NCP commands will be used to update the permanent database:

```
NCP define line line-id network network-id protocol lapb -  
state on
```

```
NCP define module x25-protocol dte dte-address -  
network network-id -  
channels channel-list -  
line line-id state on
```

The procedure then asks:

Do you want to update the permanent database now [YES]?

If you answer NO to this question, the NCP commands will not be executed. You may enter the commands yourself later if you wish. The procedure then continues and displays additional messages here if it deletes any database entries.

If you answer YES, the procedure displays:

Updating database.

Do you want to define any more DTEs connected to this network [NO]?

Answer YES if more DTEs are required for this network. The procedure then repeats the questions to define a DTE. When you have finished defining all DTEs, answer NO.

The procedure then displays:

Do you want to define any more networks [NO]?

Answer YES if you want to define more networks. The procedure then repeats the questions to define DTE(s) for the next network.

When you have finished defining all networks, answer NO.

Return to where you left section Section 2.2 to continue your installation.

2.2.3 Setting up VAX PSI for Multi-host Working

If you intend using VAX PSI as a Multi-host system, you need to set up X25-SERVER destinations for those incoming calls destined for Access hosts. You can exit from this procedure at any time by typing <CTRL/Z> in response to a request for input.

Destinations will have been set up if you exit by typing <CTRL/Z> after the following message is displayed:

```
Updating the permanent database
```

You can delete the destinations by using the following command:

```
NCP>PURGE MODULE X25-SERVER KNOWN DESTINATIONS ALL
```

The procedure displays the following message:

```
X25-Server destinations are set up here. These permit incoming
calls received by this node to be redirected to the appropriate
host. This procedure asks for a list of hosts with VAX PSI
Access installed. This list of nodes will not include the node
you are currently working on.
```

Refer to the completed Table 1-1 in Chapter 1 for the destination names for your system.

The procedure then displays:

```
Destination name (string):
```

Destinations are used by the Multi-host PSI system to identify the destination of the incoming call so that it can be redirected to the correct host node. Enter a destination name as a string of up to 16 alphanumeric characters.

```
Destination node name (string):
```

Destination node is the node where the object, required by the incoming call, resides. Enter a node name of up to six alphanumeric characters.

Destination priority [200]:

Destination priority is the processing priority for the redirection of the incoming call to that destination. Priority is an integer number in the range 0 to 255.

The rest of the parameters are optional. If you do not specify them, they will not be checked when an incoming call arrives.

Call mask (2-32 hex) [None]:

The call mask is generally used in conjunction with a call value, and when applied to the user-data field determines whether the incoming call is accepted. Enter a hexadecimal value between 2 and 32 digits. If you do not specify a mask, the destination accepts all calls with any user data.

Call value (2-32 hex) [None]:

Call value specifies the string used to test incoming call data. If the call mask accompanying the user-data fields matches the call value, the incoming call is accepted. The call value for incoming calls should be set to 01.

Closed User Group (1-16 characters) [None]:

Closed user group specifies which user group (CUG or BCUG) has access to the destination.

Sending address (1-15 decimal) [None]:

This specifies which remote DTE address(es) has access to the destination. If none is specified, all call requests from remote DTEs are accepted. Wildcards (* and %) may be used in this address.

Subaddress range (decimal range) [None]:

Subaddress is used to determine whether an incoming call is to be accepted. If the subaddress of the incoming call is within the range specified, the call request is accepted. If no range is specified, call requests with any subaddress are accepted. Enter only one range, for example, 50-99 or 122 or 1010-1234.

Object identification (string) [36]:

Set this parameter as required by the destination node. VAX PSI requires a value of 36 for this parameter (the default value), so enter <RET>.

The procedure displays:

The destination will be set up as follows:

```
NCP> define module x25-server -  
  destination dest-name -  
  node dest-node -  
  [call mask call-mask] -  
  [call value call-value] -  
  [group cug-name] -  
  [sending address dte-address] -  
  [subaddress sub-address-range] -  
  [priority dest-prio] -  
  [object object-id]
```

Only the fields that you have specified will be displayed.

The procedure displays:

Do you want to define this destination now [YES]?

If you answer NO, the procedure will not execute the NCP command as displayed above.
If you answer YES, the procedure displays:

Updating the permanent database.

Do you want to define any more destinations [NO]?

If you answer YES, the procedure will repeat the above questions to allow further destinations to be set up.

When you have completed defining all destinations, answer NO.

Return to where you left section 2.2 to continue your installation.

2.3 Updating SYSGEN Parameters

If you have an earlier version of VAX PSI installed, you may not need to update the SYSGEN parameters, as sufficient pool space may already have been allocated. Otherwise, update the SYSGEN parameters to provide space for the data structures required by VAX PSI. These data structures require nonpaged dynamic pool space. Increase the amount of space to reflect the number of bytes being used.

Nonpaged dynamic pool space is required as follows:

1. At least 85K bytes for the tables and code of the basic VAX PSI software.
2. At least 13K bytes for the tables and code of the VAX PSI X.29 software.
3. At least 1K bytes for each local DTE.

4. At least 1.5K bytes for each virtual circuit. This value depends on the packet size and window size. If you are not using the default values, the virtual circuit value can be calculated (approximately) as follows:

$$2 * \text{window size} * (\text{packet size} + 96) + 700 \text{ bytes}$$
5. At least 12K bytes for each process running the TRACE utility.

NOTE

Always ensure that enough nonpaged dynamic pool space has been allocated. If there is insufficient non-paged pool space to load PSI, the following error message will appear:

%PSI-F-INSMEM, insufficient non-paged memory to run PSI

Use AUTOGEN to change the value of the NPAGEDYN parameter and thus specify the additional nonpaged dynamic pool space required. The new value of the NPAGEDYN parameter is the current value (that is, the value before VAX PSI is installed) plus an additional value calculated as described above.

Make sure that if you change NPAGEDYN, you also change NPAGEVIR to reflect the new value of NPAGEDYN. (The value of the NPAGEVIR parameter is the maximum size to which the nonpaged dynamic pool space can be increased.)

You can also use SYSGEN to change the value of the IRPCOUNT parameter to reflect the increased I/O load the system is now required to handle. If you decide to change this parameter, increase the current value by 2 for each concurrently active virtual circuit.

Make sure that the value of the MAXBUF parameter is set to at least 1536. If necessary, use SYSGEN to change this parameter.

Use the SYSGEN SHOW/MAJOR command to display the current values of the NPAGEVIR, NPAGEDYN, IRPCOUNT, and MAXBUF parameters. Use the SYSGEN SET NPAGEVIR, SET NPAGEDYN, SET IRPCOUNT, and SET MAXBUF commands to specify new values for these parameters. Log in under the system manager's account and then run SYS\$SYSTEM:SYSGEN. For example:

```
$ RUN SYS$SYSTEM:SYSGEN
SYSGEN>USE CURRENT
SYSGEN>SHOW/MAJOR
.
.
.
```

```
SYSGEN>SET NPAGEVIR number (see above)
SYSGEN>SET NPAGEDYN number (see above)
SYSGEN>SET IRPCOUNT number (see above)
SYSGEN>SET MAXBUF 1536
SYSGEN>WRITE CURRENT
SYSGEN>EXIT
$
```

NOTE

If you alter your SYSGEN parameters while installing VAX PSI, you must update MODPARAMS.DAT so that subsequent use of the Autogen procedure does not lose your changes. The Autogen procedures are described in the *Guide to Maintaining a VMS System*.

When you have changed the parameter values, reboot your system.

2.4 Starting up VAX PSI

If DECnet is running on your system, issue the following command to start VAX PSI:

```
$ @SYS$MANAGER:STARTPSI.COM
```

If STARTPSI.COM fails, after it has loaded VAX PSI successfully, the following message is displayed:

```
Failed to set up VAX PSI
```

This means that the Security or Trace utilities, and/or lines and DTEs may have been set up incorrectly. Reinstall VAX PSI, ensuring that the lines, DTEs and utilities are set up correctly.

If DECnet is not running on your system, issue the following command, which starts both DECnet and VAX PSI:

```
$ @SYS$MANAGER:STARTNET.COM
```

If you try to start PSI before DECnet is running with the STARTPSI command procedure, the following error message is displayed and the procedure ends.

```
DECnet must be running before attempting to start VAX PSI
```

NOTE

To restart DECnet and VAX PSI automatically when you reboot the system, edit the STARTNET command given above into SYS\$MANAGER:SYSTARTUP.COM.

If you wish to configure or modify your VAX PSI system refer to the *VAX P.S.I. Management Guide*.

DIGITAL recommends that you check the installation and configuration of your VAX PSI system. Follow the procedures described in the *VAX P.S.I. Management Guide*.

Finally, when you have installed and configured VAX PSI, and checked that the system is installed properly, back up the updated system disk and save the distribution kit for future updates.

Installing VAX PSI Access

This chapter explains how to install VAX PSI Access software. During the installation you will need to provide the information you supplied in Table 1-1 in Chapter 1 of this manual.

3.1 Installing VAX PSI Access Files from the Distribution Volumes

To install the VAX PSI Access software carry out the following procedure at the console terminal.

1. Log in to the system manager's privileged account.
2. Check that the disk that is to receive the VAX PSI Access software is the default. Typically, this is the system disk (with the logical name SYS\$SYSDEVICE).
3. Check that the disk has enough free space for the VAX PSI Access software to be installed. Refer to Table 1-4, Chapter 1, for details of how much free disk space you need on your system to install VAX PSI Access.

NOTE

You will need additional space if you want to install any of the PSI Access options; Table 1-4 in Chapter 1 gives full details of space requirements.

To start the installation procedure, enter the following command:

```
$ @SYS$UPDATE:VMSINSTAL PSI_AC ddcu: OPTIONS N
```

The format for the device name is *ddcu*, where:

dd is the device code, *c* is the controller letter, and *u* is the unit number. For example, CSA1:.

The procedure displays:

```
VAX/VMS Software Product Installation Procedure V5.0
      It is date at time.
```

Enter a question mark (?) at any time for help.

If DECnet is currently running on your system, the procedure warns you with the following message:

```
%VMSINSTAL-W-DECNET, Your DECnet network is up and running.
```

```
* Do you want to continue anyway [NO]?
```

As you do not have to turn DECnet off to install VAX PSI Access, you may answer YES to this question. The procedure continues with:

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

Make sure you have a good backup copy of the disk, as the installation will write to the system disk. If your system disk has not been backed up, answer NO to this question. If you answer NO, the procedure exits, and the PSI Access software will not be installed. When you have backed up your system disk, you can start the installation procedure again.

```
Please mount the first volume of the set on device.
```

```
* Are you ready?
```

Load distribution volume 1 (PSI_AC01) in the drive. Answer YES when you are ready to continue. If a console medium is not mounted, the following message appears:

```
%SYSTEM-F-DEVNOTMOUNT, device is not mounted.
```

The procedure displays:

```
%MOUNT-I-MOUNTED, PSI_AC01 mounted on device.
```

The following products will be processed:

```
PSI_AC    V4.2
```

```
      Beginning installation of PSI_AC V4.2 at time
```

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

NOTE

If you are installing VAX PSI Access from floppy disks you will be instructed to remove one distribution volume and insert the next volume into the device as required.

3.1.1 Release Notes

The procedure displays the options for printing and displaying the Release Notes. **You are recommended to print and read the Release Notes before continuing the installation.**

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]:

Select one of these options. DIGITAL recommends that you choose Option 2. If you select Option 1, the following is displayed:

```
VMI$ROOT:[SYSUPD.PSI_AC042]PSI_AC042.RELEASE_NOTES;1
```

The Release Notes are displayed on your terminal and will start scrolling on your screen.

If you select Option 2, you are asked on which queue you wish the file to be printed:

* Queue name [SYS\$PRINT]:

Enter <RET> or specify another print queue.

If you select Option 3, you are asked on which queue you wish the file to be printed and then the Release Notes will be displayed on your terminal. If you select Option 4, the release notes will be moved to the SYS\$HELP directory and not displayed.

When the Release Notes have been queued to a printer and/or displayed on your terminal or copied to SYS\$HELP, the procedure asks:

* Do you want to continue the installation [N]?

If you enter <RET>, you can stop the procedure and read the Release Notes. If you do this, the following message is displayed:

```
VMSINSTAL procedure done at hh:mm
```

While reading the Release Notes, check for any issues that are likely to affect the installation of the VAX PSI software. The VMSINSTAL procedure creates a file for the Release Notes called PSI_AC042.RELEASE_NOTES in the SYS\$HELP: directory and the following message is displayed:

```
%VMSINSTAL-I-REMOVED, The products release notes have been
successfully moved to SYS$HELP.
```

If you stop VMSINSTAL to read the Release Notes, restart the procedure by entering the following command:

```
$ @VMSINSTAL PSI_AC device-identifier
```

3.1.2 Tailoring the Installation

If you do not stop VMSINSTAL, or if you have restarted the procedure, VMSINSTAL will continue to instal the VAX PSI software. The procedure then displays:

```
VAX PSI Access V4.2 installation procedures.
```

During the installation, the procedure checks the following:

1. That the operating system is VMS V5.0 or later. If the operating system is an earlier version of VMS, the procedure exits after displaying the following messages:

```
This product requires VMS version V5.0 or later of VMS
%VMSINSTAL-E-INSFAIL, the installation of VAX PSI Access V4.2
has failed.
```

2. If there are any files from a previous VAX PSI or VAX PSI Access installation. If there is a set of VAX PSI V4.2 files present on the disk, the procedure asks:

```
Do you wish to install a combination system [NO]?
```

Answer NO if you wish to install only VAX PSI Access and the files will be deleted.

Answer YES if you want to set up a Combination system, and then follow the instructions given in Chapter 4.

3. That there is sufficient space on the disk for the VAX PSI Access files. Refer to Table 1-4 in Chapter 1 for details of how many free blocks you need on your system to install VAX PSI Access. If there is not enough space, the procedure exits after displaying the following messages:

```
%PSI-E-NOSPACE, this installation requires nnnn blocks of
disk space
%VMSINSTAL-E-INSFAIL, the installation of VAX PSI Access V4.2
has failed.
```

Make sure your system has sufficient free blocks before trying to install VAX PSI Access again.

The procedure then asks if you want to install the VAX PSI Access options. If you do, you must answer YES (the default answer) to the question about the option you want.

NOTE

You cannot install the options at a later stage without reinstalling the complete VAX PSI product.

If you are installing VAX PSI on a VAXcluster with a common system root, every system in the cluster must be set up to support the same PSI options. You must therefore provide identical answers to the questions about options for each system. The procedure displays the following question:

* Do you want X.29 support [YES]?

Answer NO if you do not want support for X.29.

* Do you want all the utilities [YES]?

Answer YES if you want all the utilities. DIGITAL recommends that you install all of the VAX PSI utilities. If you answer NO, you will be asked which utilities you want. If you do not want a particular utility, answer NO to the appropriate question.

If you already have PSI_SECURITY.COM installed in SYS\$MANAGER on your system, the following message is displayed:

Attention.
=====

You have an existing PSI_SECURITY.COM file in SYS\$MANAGER. If you choose not to have the VAX PSI security utility, by answering "NO" to the following question, the file will be deleted.

* Do you want the Security utility [YES]?

* Do you want the Accounting utility [YES]?

* Do you want the Trace utility [YES]?

* Do you want the KDA utility [YES]?

The procedure continues and displays the following messages.

There are no more questions to answer during this installation.

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

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

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

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

Saveset D is copied only if you have requested X.29 support. Saveset E is copied only if you have requested some or all of the utilities.

There may be a time delay of several minutes at this stage in the procedure. As you have now answered all the questions for this stage of the installation, there is no need to watch the output. You will be required to answer more questions after the "VMSINSTAL procedure done at *time*" message is displayed.

When the last saveset has been copied, the procedure copies the distribution files from SYSS\$UPDATE to their respective directories. See Appendix D for details of which files are installed into which directories. If you wish, you may remove the distribution media from the device at this stage.

If there are files from a previous VAX PSI or VAX PSI Access installation present on your disk, the procedure deletes the obsolete files and displays the following message:

```
Removing obsolete files from a previous VAX PSI installation.
```

If you decide to cancel the installation of VAX PSI at any time by entering <CTRL/Y>, after a short time delay, the following is displayed:

```
%VMSINSTAL-F-CTRLY, Installation cancelled via CTRL/Y.  
%VMSINSTAL-F-UNEXPECTED, Installation terminated due to unexpected  
event.
```

```
VMSINSTAL procedure done at time
```

If you enter <CTRL/Y> after the information message that the files are being moved to the target directories (see below), your system will have some new and (if previously installed) some old VAX PSI files. Therefore, you should reinstall the product.

The procedure then displays the following:

```
Installing VAX PSI Access V4.2 files.
```

If you have a previous installation of PSI on your system a series of messages may be displayed. These messages tell you which of the existing files will not be updated. If you do not have a previous installation of PSI these messages are not displayed.

The procedure then displays the following:

```
VAX PSI Access V4.2 files installed.
```

After displaying the above messages, the procedure checks that:

1. The PSI-Access product license has been installed on the system. If the license has not been installed the procedure warns you with the following message:

```
%PSI-W-NOLICENSE, P.S.I.-ACCESS has not been licensed to  
run on this system
```

2. That the MAXBUF parameter is the correct size. If the MAXBUF parameter value is too small, the procedure warns you with the following message:

```
%PSI-I-SYSGEN, MAXBUF is too small, change from nnn to 1536.
```

where *nnn* is the current value of the MAXBUF parameter.

Change the value of the MAXBUF parameter after you have installed VAX PSI Access. See section 3.3 for a description of the SYSGEN parameters, including changing the MAXBUF value.

3. No previous version of VAX PSI or VAX PSI Access has been run on your system since the last system boot. If VAX PSI or VAX PSI Access has been run, the procedure displays the following:

```
%PSI-W-PSIRUN, previous version of VAX PSI has been run since  
the last system boot
```

The procedure then displays:

To complete the installation, follow the instructions below:

- Execute the command procedure SYS\$MANAGER:PSI_SET_UP.COM to produce a LOAD_PSI042.COM and set up the permanent database.

If a license is required, the procedure displays:

- Install the P.S.I.-ACCESS Product License

refer to Section 1.6.3 for details on how to install the Product License.

If the SYSGEN parameters need updating, the procedure displays:

- Update the specified SYSGEN parameters

If the system needs rebooting, the procedure displays:

- Reboot the system

If the system does not require rebooting, the procedure displays:

- On a system which is running DECnet, execute the command procedure SYS\$MANAGER:STARTPSI.COM to bring up VAX PSI. On a system which is not running DECnet, execute the command procedure SYS\$MANAGER:STARTNET.COM to bring up DECnet and VAX PSI.

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

```
Installation of PSI_AC V4.2 completed at time
```

The procedure then displays:

Enter the products to be processed from the next distribution volume set.

* Products :

Press <CTRL/Z> to stop entering products and move on to the next prompt.

If you mounted the distribution kit on the console device, the procedure displays:

* Do you want to mount the console volume [NO]?

Answer YES and the procedure displays:

Please mount it on CSA1:.

Replace the console volume in the drive.

The procedure asks:

*Are you ready?

Answer YES to this question. The procedure continues with:

%MOUNT-I-MOUNTED, CONSOLE mounted on CSA1:

VMSINSTAL procedure done at *time*

After installing the software, execute the `PSI_SET_UP.COM` procedure. Continue the installation procedure by entering the following commands:

```
$ SET DEF SYS$MANAGER
```

```
$ @PSI_SET_UP
```

After running `PSI_SET_UP.COM`, update the `SYSGEN` parameters and reboot if necessary (see section 3.3), and then refer to the *VAX P.S.I. Management Guide* to check the installation.

3.2 Tailoring VAX PSI Access

When you have reached this stage of the installation, you will have built a VAX PSI Access system. The next steps are:

1. Create `LOAD_PSI042.COM` which is used to start PSI - see section 3.2.1.
2. Define the VAX PSI Access system - see section 3.2.2.

Before tailoring the VAX PSI Access system, make sure you have the following information for each network you want to add to the X25-ACCESS database:

- The network used by the connector node.
- The node-id of the connector node serving that network.

You will also need to know:

- Whether you want to set up a default network.
- Whether you want X.29 support.

Refer to the completed Table 1-1 in Chapter 1 for information about your system. While running `PSI_SET_UP.COM`, you may enter a question mark (?) as a response to any question for help.

The procedure displays the following message:

```
This command procedure assists in configuring VAX PSI.
```

```
LOAD_PSI042.COM must be built before attempting to start VAX PSI.  
The load file from an earlier version of VAX PSI cannot be used
```

```
Do you wish to build LOAD_PSI042.COM now [YES]?
```

Answer YES if you want to build `LOAD_PSI042.COM` now. Refer to section 3.2.1 for details of building `LOAD_PSI042.COM`.

The procedure asks:

```
Do you wish to add network entries to the database now [YES]?
```

Answer YES if you want add new information to the database. Refer to section 3.2.2 for details.

The procedure then asks:

```
Do you wish to load PSI now [NO]?
```

Answer YES if you want to load PSI.

If VAX PSI is already running on your system, the following is displayed.

A version of VAX PSI is already running on this system. In order to load the new configuration and device drivers you need to reboot your system.

To check your installation after restarting VAX PSI refer to the *VAX P.S.I. Management Guide*.

If you do not need to reboot your system, and DECnet is running on your system, then you should answer YES if you want to load PSI.

NOTE

If you need to change the SYSGEN parameters, you must do so before attempting to load PSI or test the installation. After making the changes, reboot the system (see section 3.3). You will also have to reboot if you have a previous version of VAX PSI installed and wish to reload PSI or test the installation.

If VAX PSI fails to load, the following message is displayed:

```
Failed to load VAX PSI
```

If VAX PSI fails to start, the following message is displayed:

```
Failed to set up VAX PSI
```

This means that the Security or Trace utilities may have been set up incorrectly. Reinstall VAX PSI Access, ensuring that the utilities are set up correctly. If PSI loads successfully and if PSI_SET_UP.COM is running, the following message is displayed:

To check out your installation after starting VAX PSI refer to the *VAX P.S.I. Management Guide*

Your VAX PSI Access system is now ready to be started. Follow the procedures described in section 3.4.

3.2.1 Creating LOAD_PSI042.COM

You can exit from this procedure at any time by typing <CTRL/Z> in response to a request for input. If you exit by typing <CTRL/Z>, no LOAD_PSI042.COM file is created. The procedure displays the following message:

```
This command file assists in creating LOAD_PSI042.COM.
```

```
LOAD_PSI042.COM is a command file used to SYSGEN the VAX PSI supported devices and startup the ACP.
```

The procedure then asks:

Do you want to set up a default network [YES]?

If your Local Area Network or DECnet network is connected to several PSDNs, or to one PSDN but via a choice of several Multi-host PSI nodes, you may specify one network for use as the default PSDN.

If you answer NO, you will be given a further opportunity to specify a default network at a later stage. See the *VAX P.S.I. Management Guide* for details. If you answer YES, the procedure asks you to supply a network name to serve as a system-wide default:

Default network name (network-id):

Enter the name of the network you want to set up as the default network for your system.

If you have requested X.29 support, the procedure continues:

The following NCP command may be used to configure the permanent database to support incoming X.29 terminals:

```
NCP define module X29-server state on
```

Do you want the database defined now [YES]?

If you answer YES, X.29 support is enabled. Answer NO, and support is unmodified from the previous state.

The procedure next asks:

Do you want to use PSI MAIL [YES]?

The PSI MAIL utility allows VAX/VMS MAIL to send mail over a PSDN to other VAX PSI V3.0 or later systems. If you want to be able to use this utility, answer YES.

If you answer NO to this question, the procedure continues and creates LOAD_PSI042.COM.

Otherwise it asks:

Do you want support for incoming PSI MAIL [YES]?

If you answer NO, you can still send PSI MAIL, but you cannot receive it.

The procedure displays:

The PSI_MAIL object needs to run in an account with the right to accept incoming X.25 calls.

If you answer YES, you must also define the username and password for PSI MAIL. The procedure displays:

Username [DECNET] ?

Password ?

Verification:

The username and password can be any that may accept incoming X.25 calls. Refer to the *VAX P.S.I. Management Guide* for details of setting up the system to accept X.25 calls. The default username is DECNET. (You will be asked to verify your password before being allowed to continue.) The procedure continues with the following:

The following NCP commands may be used to configure the permanent database to support incoming PSI MAIL:

```
NCP define object psi_mail number 0 file -
    sys$system:psi$mail.com user USERNAME password -
    PASSWORD
```

```
NCP define module x25-server destination psi_mail -
    object PSI_MAIL -
    CALL MASK ffffffffffffffffffffffffffffffff -
    CALL VALUE ff00000056332E30204D41494C2D3131
```

The call mask is applied to the user-data field, and determines whether the incoming call is accepted. The call value specifies the string used to test incoming call data. The procedure then asks:

Do you want the database defined now [YES]?

Answer YES if the NCP commands listed that will be used to configure the database are correct. Answer NO if any of the commands are incorrect, and then run `PSI_SET_UP.COM` again, or enter the NCP commands as a separate operation to configure the database.

The following message is displayed:

```
Purging any previous PSI_MAIL definitions. Please ignore any
error messages.
```

There is a short delay while `LOAD_PSI042.COM` is created. Then the procedure displays:

```
Created SYS$SYSROOT:[SYSMGR]LOAD_PSI042.COM
```

After this message is displayed, return to where you left section 3.2.

If your default directory is not `SYSS$MANAGER`, the procedure displays:

```
The VAX PSI startup file should be moved into SYSS$MANAGER to be
used automatically by STARTNET.COM
```

```
Do you want LOAD_PSI042.COM moved to SYSS$MANAGER [YES]?
```

If you answer YES, the procedure moves `LOAD_PSI042.COM` into the `SYSS$MANAGER` directory and displays the following message before ending:

```
Created SYSS$SYSROOT:[SYSMGR]LOAD_PSI042.COM
```

If you answer NO, the procedure creates `LOAD_PSI042.COM` in your current directory, displays a message saying where the file is, and ends.

Return to where you left section 3.2 to continue your installation.

3.2.2 Configuring the X25-ACCESS Database

You can exit from this `PSI_DEFINE.COM` procedure at any time by typing `<CTRL/Z>` in response to a request for input. If you exit by typing `<CTRL/Z>`, some X25-ACCESS definitions may have been created. You can remove unwanted definitions by using the following command:

```
NCP>PURGE MODULE X25-ACCESS KNOWN NETWORKS ALL
```

After running `PSI_SET_UP.COM` initially to define your database, you may either run this procedure again, or use `NCP DEFINE` commands to define each entity in the database and thus configure the VAX PSI system. See the *VMS Network Control Program Manual* for details.

The procedure displays the following messages:

```
You are assisted here in defining the X25-ACCESS database.
```

```
Do you want to define the X25-ACCESS database now [YES]?
```

Answer YES if you want to define (or update) the X25-ACCESS database.

The procedure displays:

```
This procedure can purge the database to remove all known
connector nodes information, before it updates the permanent
database.
```

```
The following NCP command will be used to purge the database
```

```
NCP>PURGE MODULE X25-ACCESS KNOWN NETWORKS ALL
```

```
Do you want the information in the permanent database purged
now [NO]?
```

If you answer NO, the information you supply will be added to the permanent database. If you answer YES, the information you supply will replace that already present in the permanent database and the following message is displayed:

Purging the database

You are then asked for the name of a PSDN to which your connector node will be connected. Next, the node identification of that connector node is requested. You can define more than one network and you can enter the networks in any order. During the PSI_SET_UP.COM procedure you can set up one of these networks to be the default (see section 3.2.1). The procedure displays:

Your VAX PSI Access system uses a connector node to communicate with one or more PSDNs. You will be asked for a network name for the connection to the connector system and the DECnet node name of that system. The network name you supply MUST be the same as the name of the network on the connector node that you wish to use.

The procedure asks:

Network name (network-id):

Enter the name of the network to which you want to connect.

If you define this network twice, the procedure will display:

Network, *network-id* has already been defined.

If you need to use different network names to connect to the same PSDN, use the convention: *name1,name2,.....namen* for the subsequent network name definition(s). For example, if the original connection to the PSDN was identified by the network name NETWORK, subsequent definitions should take the form NETWORK1, NETWORK2,.....NETWORK*n*. See the *VAX P.S.I. Management Guide* for further explanation of this convention.

The procedure then asks:

Connector node (node-id):

Enter the name or address number of the connector node which connects to the network you have specified. When you have entered this information the procedure displays:

Network = *network-id*
Connector node = *node-id*

Is the above information correct [YES]?

Answer YES to this question if the information is correct. If you answer NO you must enter the information again. The procedure then displays:

The following NCP command will be used to update the permanent database

```
NCP define module x25-access network network name node -  
nodename
```

Adding entry to the X25-ACCESS database for network *network*

The procedure then asks:

Are there any more NETWORKS to be defined [NO]?

Answer NO to this question if you have no more networks to add to the X25-ACCESS database. If you answer YES, the procedure asks you for the network name and node-id, so you can add another network to the X25-ACCESS database. You can define the same network twice provided two different network names and two different node-ids are defined. Refer to Chapter 1 for details of network and profile names.

When you have entered all the network information, return to where you left section 3.2 to continue the installation.

3.3 Updating SYSGEN Parameters

If you have an earlier version of VAX PSI Access installed, you may not need to update the SYSGEN parameters, as sufficient pool space may already have been allocated. Otherwise, update the SYSGEN parameters to provide space for the data structures required by VAX PSI Access. These data structures require nonpaged dynamic pool space. Increase the amount of space to reflect the number of bytes being used.

Nonpaged dynamic pool space is required as follows:

1. At least 40K bytes for the tables and code of the basic VAX PSI Access software.
2. At least 13K bytes for the tables and code of the VAX PSI Access X.29 software.
3. At least 1.5K bytes for each virtual circuit. This value depends on the packetsize. If you are not using the default (128) for this, the virtual circuit value can be calculated (approximately) as follows:
$$2 * (\text{packetsize} + 96) + 700 \text{ bytes}$$
4. At least 12K bytes for each process running the TRACE utility.

NOTE

Always ensure that enough nonpaged dynamic pool space has been allocated. If there is insufficient non-paged pool space to load PSI, the following error message will appear:

```
%PSI-F-INSMEM, insufficient nonpaged memory to run PSI
```

Use **SYSGEN** to change the value of the **NPAGEDYN** parameter, and thus specify the additional nonpaged dynamic pool space required. The new value of the **NPAGEDYN** parameter is the current value (that is, the value before **VAX PSI** is installed) plus an additional value calculated as described above.

Make sure that if you change **NPAGEDYN**, you also change **NPAGEVIR** to reflect the new value of **NPAGEDYN**. (The value of the **NPAGEVIR** parameter is the maximum size to which the nonpaged dynamic pool space can be increased.)

You can also use **SYSGEN** to change the value of the **IRPCOUNT** parameter to reflect the increased I/O load the system is now required to handle. If you decide to change this parameter, increase the current value by 2 for each concurrently active virtual circuit.

Make sure that the value of the **MAXBUF** parameter is set to at least 1536. If necessary, use **SYSGEN** to change this parameter.

Use the **SYSGEN SHOW/MAJOR** command to display the current values of the **NPAGEVIR**, **NPAGEDYN**, **IRPCOUNT**, and **MAXBUF** parameters. Use the **SYSGEN SET NPAGEVIR**, **SET NPAGEDYN**, **SET IRPCOUNT**, and **SET MAXBUF** commands to specify new values for these parameters. Log in under the system manager's account and then run **SYSS\$SYSTEM:SYSGEN**. For example:

```
$ RUN SYSS$SYSTEM:SYSGEN
SYSGEN>USE CURRENT
SYSGEN>SHOW/MAJOR
.
.
.
SYSGEN>SET NPAGEVIR number (see above)
SYSGEN>SET NPAGEDYN number (see above)
SYSGEN>SET IRPCOUNT number (see above)
SYSGEN>SET MAXBUF 1536
SYSGEN>WRITE CURRENT
SYSGEN>EXIT
$
```

NOTE

If you alter your SYSGEN parameters while installing VAX PSI Access, you must update MODPARAMS.DAT so that your changes are not lost when you next use AUTOGEN. The AUTOGEN procedures are described in the *Guide to Maintaining a VMS System*.

When you have changed the parameter values, reboot your system.

3.4 Starting up VAX PSI Access

If DECnet is running on your system, issue the following command to start VAX PSI Access:

```
$ @SYS$MANAGER:STARTPSI.COM
```

If STARTPSI.COM fails, after it has loaded VAX PSI Access successfully, the following message is displayed:

```
Failed to set up VAX PSI Access
```

This means that the Security or Trace utilities may have been set up incorrectly. Reinstall VAX PSI Access, ensuring that the utilities are set up correctly.

If DECnet is not running on your system, issue the following command, which starts both DECnet and VAX PSI:

```
$ @SYS$MANAGER:STARTNET.COM
```

If you try to start PSI with the STARTPSI command procedure before DECnet is running, the following error message is displayed and the procedure ends.

DECnet must be running before attempting to start VAX PSI

NOTE

To restart DECnet and VAX PSI Access automatically when you reboot the system, edit the above command into SYS\$MANAGER:SYSTARTUP.COM.

If you wish to configure or modify your VAX PSI system refer to the *VAX P.S.I. Management Guide*. DIGITAL recommends that you check the installation and configuration of your VAX PSI system. Follow the procedures described in the *VAX P.S.I. Management Guide*.

Finally, when you have installed and configured VAX PSI Access, and checked that the system is installed properly, back up the updated system disk and save the distribution kit for future updates.

Installing a VAX PSI Combination System

This chapter explains how to build a VAX PSI Combination system. A Combination system is built by doing the following:

1. Installing the VAX PSI distribution kit on your VAX/VMS system.
2. Installing the VAX PSI Access distribution kit on the same VAX/VMS system.
3. Running `PSI_SET_UP.COM` to configure and define your Combination system.
4. Checking that the installation and configuration has been successful.

4.1 Installing the Distribution Kits

Run `VMSINSTAL` to install the VAX PSI distribution kit. Follow the instructions given in Chapter 2, section Section 2.1.

DO NOT RUN `PSI_SET_UP.COM` AT THIS STAGE.

Then run `VMSINSTAL` again to install the VAX PSI Access distribution kit. Follow the instructions given in Chapter 3, section 3.1, answering YES in response to the question:

```
Do you wish to install a combination system [NO]?
```

After installing the software, execute the `PSI_SET_UP.COM` procedure. Continue the installation procedure by entering the following commands:

```
$ SET DEFAULT SYS$MANAGER
$ @PSI_SET_UP
```

After running `PSI_SET_UP.COM`, update the `SYSGEN` parameters and reboot if necessary (see section 4.3), and then check the installation. Details of how to check the installation are documented in the *VAX P.S.I. Management Guide*.

4.2 Tailoring Your Combination System

When you have reached this stage of the installation, you will have built a Combination system. The next steps are:

1. Set up devices - see section 4.2.1.
2. Define the connection to the PSDN(s) - see section 4.2.2.
3. Add support for Multi-host access - see section 4.2.3.

Before tailoring the VAX PSI system, make sure you have the following information for each device in your configuration:

- . CSR address
- . VECTOR address

You also need to know the subscription options that have been taken out with each PSDN you are connecting to. These include:

- . DTE address(es)
- . Logical Channel Number range(s)

You will need to know the following information for each network you want to add to the X25-ACCESS database:

- . The network name
- . The node-id of the Multi-host PSI system(s) serving that network

You will also need to know:

- . Whether you want to set up a default network
- . Whether you want X.29 support

Refer to Table 1-1 in Chapter 1 for the above information about your system. While running `PSI_SET_UP.COM`, you may enter a question mark (?) as a response to any question for help.

The procedure displays the following message:

```
This command procedure assists in configuring VAX PSI.  
LOAD_PSI042.COM must be built before attempting to start VAX PSI.  
The load file from an earlier version of VAX PSI cannot be used.  
Do you wish to build LOAD_PSI042.COM now [YES]?
```

Answer YES if you want to build `LOAD_PSI042.COM` now. Refer to Section 4.2.1 for details of building `LOAD_PSI042.COM` and setting up devices.

The procedure asks:

Do you wish to add network, line or DTE entries to the database now [YES]?

Answer YES if you want to add new information to the database - see Section 4.2.2 for details.

The procedure then asks:

Do you wish to add VAX PSI Multi-host entries [YES]?

Answer YES if you require a Multi-host system - see section 4.2.3 for details.

Answer NO if you require a Native mode PSI system, in which case you are now ready to load and start PSI. The procedure asks:

Do you wish to load PSI now [NO]?

Answer YES if you want to load PSI.

If VAX PSI is already running on your system, the following message is displayed:

A version of VAX PSI is already running on this system. In order to load the new configuration and device drivers you need to reboot your system.

To check out your installation after restarting VAX PSI refer to the *VAX P.S.I. Management Guide*.

If you do not need to reboot your system, and DECnet is running on your system, then you should answer YES if you want to load PSI.

NOTE

If you need to change the SYSGEN parameters, you must do so before attempting to load PSI or test the installation. After making the changes, reboot the system (see section 4.3). You will also have to reboot if you have a previous version of VAX PSI installed and wish to reload PSI or test the installation.

If VAX PSI fails to load, the following message is displayed:

Failed to load VAX PSI

If VAX PSI fails to start, the following message is displayed:

Failed to set up VAX PSI

This means that the Security or Trace utilities, and/or lines and DTEs may have been set up incorrectly. Reinstall VAX PSI, ensuring that the lines, DTEs and utilities are set up correctly.

The procedure displays the following message:

```
To check out your installation after starting VAX PSI refer to
the VAX P.S.I. Management Guide.
```

Your Combination VAX PSI system is now ready to be started. Follow the procedures described in section 4.4.

4.2.1 Setting up Devices

This section describes how to set up the devices used to communicate with the PSDN(s). You can exit from this procedure at any time by typing <CTRL/Z> in response to a request for input. If you exit by typing <CTRL/Z>, no LOAD_PSI042.COM file is created.

The procedure displays the following message:

```
This command file assists in creating LOAD_PSI042.COM.
```

```
LOAD_PSI042.COM is a command file used to SYSGEN the VAX PSI
supported devices and startup the ACP.
```

The procedure then asks:

```
Do you want to set up a default network [YES]?
```

If your Local Area Network or DECnet network is connected to several PSDNs or to one PSDN but via a choice of several connector nodes, you may specify one network to be used as the default. (A default network may also be used if your system is connected to more than one network.)

Answer YES if you want to set up a network name as a system-wide default for your system. (If you answer NO, you will be given a further opportunity to specify a default network at a later stage. See the *VAX P.S.I. Management Guide* for details.)

The procedure then asks you to supply the default network name:

```
Default network name (network-id):
```

Enter the name of the network you want to set up as the default network for your system.

Answer NO if you do not want to use the default network.

If you have a previous version of VAX PSI on your system, the procedure displays:

```
Checking old configuration data.
```

Your previous installation detailed the following device(s). You will be given the option to keep, alter or delete each entry in turn, and then optionally add new devices.

Details of existing devices are displayed as in the following example:

```
Configuration data for line DUP-0-0
```

```
Device CSR is           %0760050
Device VECTOR is       %0000300
Device unibus adapter is UB0
```

```
Do you want to Keep, Alter or Delete this entry (K, A, D) [K]?
```

Answer K if you want to keep the entry, D if you want to delete it, or A if you want to alter it. If you answer K, the following message is displayed:

```
Device device-name added to new configuration.
```

If you answer D, the following message is displayed:

```
Configuration data for device device-name has been deleted.
```

If you answer A, the procedure asks for the CSR, vector and adapter in the same way as for defining new lines (see below). The defaults will be the same as those for the previous installation, and each may be changed as necessary.

The procedure will ask you about each entry in your database from the previous installation. When each entry has been checked, the procedure asks:

```
Do you want to configure more lines [NO]?
```

Answer YES if you want to add more lines to your configuration and then answer the questions below.

If you have no devices defined from previous installations, or if this is the first time VAX PSI is being installed on your system, answer the questions below in order to configure the devices for your system.

The procedure asks:

```
Device type (dev-c-u):
```

Enter the type of the first device to be configured. The permitted device types for Unibus systems are DMF, DUP, KMX, and KMY. If you enter any other device types, the procedure displays:

```
Error, unknown device type.
```

```
Supported devices are DMF, DUP, KMX, and KMY.
```

```
Examples:
```

DMF-0
DUP-0
KMX-0-1
KMY-1

The permitted device type for BI systems is DMB. If you enter any other device types, the procedure displays:

Error, unknown device type.

Supported devices are DMB.

Example:

DMB-0

The permitted device types for Qbus systems are DPV and KMV. If you enter any other device types, the procedure displays:

Error, unknown device type.

Supported devices are DPV and KMV.

Examples:

DPV-0
KMV-0

The permitted device type for busless systems is DST. If you enter any other device types, the procedure displays:

Error, unknown device type.

Supported devices are DST.

Example:

DST-0

If you have entered a wrong device type, the procedure will ask again for a device.

If the device type is DMF, DMB or DST, the procedure displays:

SYSGEN autoconfigures the *device-name*, no further information required.

Are there more lines to configure [NO]?

If you have more lines to configure, answer YES, and the procedure asks again for the device type. Otherwise, answer NO, and the procedure completes by asking about PSI MAIL (see below).

For all device types except DMF, DMB and DST, the procedure now asks for the CSR address and vector address of the device.

NOTE

If you are installing VAX PSI on a machine other than a MicroVAX, the procedure also asks for the adapter-type of the device.

The default values for these parameters are also displayed. Enter the required addresses and adapter-type, or choose the defaults by pressing <RET>. For example, for a KMX-0-0 device:

```
Default CSR address is %0764100
      CSR address (octal): 764120
Default VECTOR is %0000700
      Vector (octal): 720
Default ADAPTER is UB0
      Adapter (adapter-type): <RET>
```

The procedure now checks that the device has been set up correctly by displaying the values that you have selected, and also asks for confirmation that these are correct.

```
Configuration data for line KMX-0-0
Device CSR is          %0764120
Device VECTOR is      %0000720
Device UNIBUS adapter is UB0
```

Are these line parameters correct [YES]?

If the line parameters are wrong, answer NO, and the procedure asks again for the device type. Otherwise, answer YES and the procedure displays:

Device KMX-0-0 added to configuration.

Do you want to configure more lines [NO]?

If you answer YES, the procedure asks again for a device type. If you specify the same device again, the procedure warns you with:

Error, duplicate device name.

Otherwise, the procedure continues with the question:

The following NCP command may be used to configure the permanent database to support incoming X.29 terminals:

```
NCP define module X29-server state on
```

Do you want the database defined now [YES]?

If you answer YES, X.29 support is enabled. Answer NO, and support is unmodified from the previous state.

The procedure next asks:

Do you want to use PSI MAIL [YES]?

The PSI MAIL utility allows VAX/VMS MAIL to send mail over a PSDN to other VAX PSI V3.0 or later systems. If you want to be able to use this utility, answer YES.

If you answer NO to this question, the procedure continues and creates LOAD_PSI042.COM.

Otherwise it asks:

Do you want support for incoming PSI MAIL [YES]?

If you answer NO, you can still send PSI MAIL, but you cannot receive it.

The procedure displays:

The PSI_MAIL object needs to run in an account with the right to accept incoming X.25 calls.

If you answer YES, you must also define the username and password for PSI MAIL. The procedure displays:

Username [DECNET] ?

Password ?

Verification:

The username and password can be any that may accept incoming X.25 calls. Refer to the *VAX P.S.I. Management Guide* for details of setting up the system to accept X.25 calls. The default username is DECNET. (You will be asked to verify your password before being allowed to continue.) The procedure continues with the following:

The following NCP commands may be used to configure the permanent database to support incoming PSI MAIL:

```
NCP define object psi_mail number 0 file -
    sys$system:psi$mail user USERNAME password -
    PASSWORD
```

```
NCP define module x25-server destination psi_mail -
    object PSI_MAIL -
    CALL MASK ffffffffffffffffffffffffffffffff -
    CALL VALUE ff00000056332e30204d41494c2d3131
```

The call mask is applied to the user-data field, and determines whether the incoming call is accepted. The call value specifies the string used to test incoming call data.

The procedure then asks:

Do you want the database defined now [YES]?

Answer YES if the NCP commands listed that will be used to configure the database are correct. Answer NO if any of the commands are incorrect, and then run PSI_SET_UP.COM again, or enter the NCP commands as a separate operation to configure the database.

The following message is displayed:

Purging any previous PSI_MAIL definitions. Please ignore any error messages.

There is a short delay while LOAD_PSI042.COM is created. Then the procedure displays:

```
Created SYS$SYSROOT:[SYSMGR]LOAD_PSI042.COM
```

After this message is displayed, return to where you left section 4.2 to continue your installation.

If your default directory is not SYS\$MANAGER, the procedure displays:

The VAX PSI startup file should be moved into SYS\$MANAGER to be used automatically by STARTNET.COM

Do you want LOAD_PSI042.COM moved to SYS\$MANAGER [YES]?

If you answer YES, the procedure moves LOAD_PSI042.COM into the SYS\$MANAGER directory and displays the following message before ending:

```
Created SYS$SYSROOT:[SYSMGR]LOAD_PSI042.COM
```

If you answer NO, the procedure creates LOAD_PSI042.COM in your current directory, displays a message saying where the file is, and ends.

Return to where you left section 4.2 to continue your installation.

4.2.2 Configuring the Permanent Database

This `PSI_DEFINE.COM` procedure allows you to set up the X.25 Access and Native/Multi-host information in the permanent database. You can exit from this procedure at any time by typing `<CTRL/Z>` in response to a request for input. If you exit by typing `<CTRL/Z>`, some PSDN or DTE definitions may have been created. You can remove unwanted PSDN and DTE definitions by using the following commands:

```
NCP>PURGE MODULE X25-PROTOCOL KNOWN DTES KNOWN NETWORKS ALL
```

```
NCP>PURGE MODULE X25-PROTOCOL KNOWN NETWORKS ALL
```

```
NCP>PURGE MODULE X25-ACCESS KNOWN NETWORKS ALL
```

After running `PSI_SET_UP.COM` initially to define your DTE(s), you may either run this procedure again, or use `NCP DEFINE` commands to define each entity in the database and thus configure the VAX PSI system. See the *VMS Network Control Program Manual* for details.

The procedure displays the following message:

```
You are assisted here in defining the X25-ACCESS database.
```

```
Do you want to define the X25-ACCESS database now [YES]?
```

Answer YES if you want to define (or update) the X25-ACCESS database, and refer to section 3.2.2 for details.

The procedure displays:

```
This procedure can purge the database to remove all known  
connector node information, before it updates the permanent  
database.
```

```
The following NCP command will be used to purge the database
```

```
NCP PURGE MODULE X25-ACCESS KNOWN NETWORKS ALL
```

```
Do you want the information in the permanent database purged  
now [NO]?
```

If you answer NO, the information you supply will be added to the permanent database. If you answer YES, the information you supply will replace that already present in the permanent database and the following message is displayed:

```
Purging the database
```

You are then asked for the name of a PSDN to which your connector node will be connected. Next, the node identification of that connector node is requested. You can define more than one network and you can enter the networks in any order. During the `PSI_SET_UP.COM` procedure you can set up one of these networks to be the default (see section 4.2.1). The procedure displays:

Your VAX PSI Access system uses a connector node to communicate with one or more PSDNs. You will be asked for a network name for the connection to the connector system and the DECnet node name of that system. The network name you supply **MUST** be the same as the name of the network on the connector node that you wish to use.

The procedure asks:

Network name (network-id):

Enter the name of the network to which you want to connect.

If you define this network twice, the procedure will display:

Network, *network-id* has already been defined.

If you need to use different network names to connect to the same PSDN, use the convention: *name1,name2,.....namen* for the subsequent network name definition(s). For example, if the original connection to the PSDN was identified by the network name NETWORK, subsequent definitions should take the form NETWORK1, NETWORK2,.....NETWORK*n*. See the *VAX P.S.I. Management Guide* for further explanation of this convention.

The procedure then asks:

Connector node (node-id):

Enter the name or address number of the connector node which connects to the network you have specified. When you have entered this information the procedure displays:

Network = *network-id*
Connector node = *node-id*

Is the above information correct [YES]?

Answer YES to this question if the information is correct. If you answer NO you must enter the information again. The procedure then displays:

The following NCP command will be used to update the permanent database

```
NCP define module x25-access network network name node  
      nodename
```

Adding entry to the X25-ACCESS database for network *network*

The procedure then asks:

Are there any more NETWORKS to be defined [NO]?

Answer **NO** to this question if you have no more networks to add to the X25-ACCESS database. If you answer **YES**, the procedure asks you for the network name and node-id, so you can add another network to the X25-ACCESS database. You can define the same network twice provided two different network names and two different node-ids are defined. Refer to Chapter 1 for details of network and profile names.

The next step is to set up the Native database.

The procedure displays:

```
This command procedure allows you to define one or more PSDN(s)
and one or more DTEs associated with each network.
```

The SPD for VAX PSI lists the public networks supported at the time of printing. Check with your Customer Support Representative for up-to-date information on new networks.

```
Do you want to define the X25-PROTOCOL database now [YES]?
```

Answer **YES** if you want to define the X25-PROTOCOL database to define the PSDN(s) and DTE(s) associated with each network. The procedure continues:

```
You can use this procedure to purge the database to remove
all DTEs and all X.25 protocol information before updating
the permanent database. You can also use the procedure to
remove the line information from the database. Note that if
the line permanent database is purged then all DECnet lines
along with PSI lines will be removed.
```

```
The following NCP commands will be used to purge the DTE
and X.25 permanent database:
```

```
NCP purge module x25-protocol known networks all
NCP purge module x25-protocol known dtes known networks all
```

```
The following NCP commands will be used to purge the line
permanent database:
```

```
NCP purge known lines all
```

```
Do you want the information in the X.25 and DTE permanent database
purged [NO]?
```

If you wish to keep previous definitions for DTEs, answer **NO**. If you answer **YES**, the following is displayed:

```
Purging the X.25 and DTE database.
```

The procedure then asks:

```
Do you want the line information in the permanent database
purged [NO]?
```

If you wish to keep previous definitions for lines, including DECnet lines, answer NO. Note that if you answer YES, all DECnet lines will be deleted along with PSI lines. If you answer YES, the following is displayed:

Purging the line database.

The procedure displays:

PSDN and profile names are defined here. You can define one or more PSDNs. For each PSDN you will be asked to provide the network name and the profile name for that network.

The procedure asks:

Network name (string):

Enter the network name that connects to the PSDN. Refer to section 1.5 in Chapter 1 for details of network and profile names.

Profile name (string) [NETWORK NAME]:

Enter the profile name of the PSDN to which the DTE will connect. The default name is the same as the network name.

The procedure then displays the command it will use to update the permanent database.

The following NCP command will be used to update the permanent database:

```
NCP define module x25-protocol network network-id -  
    profile profile-name
```

Do you want the information in the permanent database updated [YES]?

If you answer NO, the NCP commands will not be executed. You may enter the commands yourself later if you wish. The procedure then continues and displays additional messages here, if it deletes any database entries.

Answer YES if you want to update the database. The procedure displays the following message:

DTEs are defined here. You can define one or more DTEs connected to this network. For each DTE you will be asked to provide the following information:

- . DTE address
- . Range of channels used by the DTE
- . Line associated with the DTE

Refer to the completed Table 1-1 in Chapter 1 for the information you need to supply for your system. The procedure asks:

DTE address (number):

Enter your DTE address. For details on the format of this address, refer to the *Public Network Information* manual.

Channels range (list):

Enter the channels that the DTE will use for outgoing calls. Specify high-numbered channels before low-numbered channels. Each entry in the channels list can be either a single channel number or a channel range (with a hyphen separating the high and low numbers). The entries in the list must be separated by commas. For example:

Channels range (list):1555,1544-1540,1536

The PSDN authorities allocate channel ranges at subscription time. For details on the channel range allocated for your PSDN, refer to the *Public Network Information* manual.

Line name (dev-c-u):

Enter the name of the line that the DTE will use. Specify a line-id in the form dev-c[-u]. For all device types except KMX, you need only specify line-id and the controller number, for example:

KMV-0

For KMX, you must specify the line-id, controller number and the unit number, for example:

KMX-0-1

The procedure displays:

The following NCP commands will be used to update the permanent database:

```
NCP define line line-id network network-id protocol lapb
state on
```

```
NCP define module x25-protocol dte dte-address -
network network-id -
channels channel-list -
line line-id -
state on
```

The procedure then asks:

Do you want to update the permanent database now [YES]?

If you answer NO, the NCP commands will not be executed. You may enter the commands yourself later if you wish. The procedure then continues and displays additional messages here, if it deletes any database entries.

If you answer YES, the procedure displays:

Updating database.

Do you want to define any more DTEs connected to this network [NO]?

Answer YES if more DTE definitions are required for this network. The procedure then repeats the questions to define a DTE. When you have finished defining all DTEs, answer NO.

The procedure then displays:

Do you want to define any more networks [NO]?

Answer YES if you want to define more networks. The procedure then repeats the questions to define DTE(s) for the next network.

When you have finished defining all networks, answer NO.

Return to where you left section 4.2 to continue your installation.

4.2.3 Setting up VAX PSI for Multi-Host Operation

The X25-SERVER destinations need to be set up for the incoming calls which are destined for Access hosts. You can exit from this procedure at any time by typing <CTRL/Z> in response to a request for input. If you exit by typing <CTRL/Z> after the following message is displayed:

Updating the permanent database

destinations will have been set up. You can delete the destinations by using the following command:

```
NCP>PURGE MODULE X25-SERVER KNOWN DESTINATIONS ALL
```

The procedure displays the following message:

X25-Server destinations are set up here. These permit incoming calls received by this node to be redirected to the appropriate host. This procedure asks for a list of hosts with VAX PSI Access installed. This list of nodes will not include the node you are currently working on.

Refer to the completed Table 1-1 in Chapter 1 for the destination names for your system.

The procedure then displays:

Destination name (string):

Destinations are used by the Multi-host PSI system to identify the destination of the incoming call so that it can be redirected to the correct host node. Enter a destination name as a string of up to 16 alphanumeric characters.

Destination node name (string):

Destination node is the node where the object, required by the incoming call, resides. Enter a node name of up to six alphanumeric characters.

Destination priority [200]:

Destination priority is the processing priority for the redirection of the incoming call to that destination. Priority is an integer number in the range 0 to 255.

The rest of the parameters are optional. If you do not specify them, they will not be checked when an incoming call arrives.

Call mask (2-32 hex) [None]:

The call mask is generally used in conjunction with a call value and, when applied to the user-data field, determines whether the incoming call is accepted. Enter a hexadecimal value between 2 and 32 digits. If you do not specify a mask, the destination accepts all calls with any user data.

Call value (2-32 hex) [None]:

The call value specifies the string used to test incoming call data. If the call mask with the call data fields match the call value, the incoming call is accepted. The call value for incoming X.29 calls should be set to 01.

Closed User Group (1-16 characters) [None]:

Closed user group specifies which user group (CUG or BCUG) has access to the destination.

Sending address (1-15 decimal) [None]:

This specifies which remote DTE address(es) has access to the destination. If none is specified, all call requests from remote DTEs are accepted. Wildcards (* and %) may be used in this address.

Subaddress range (decimal range) [None]:

Subaddress is used to determine whether an incoming call is to be accepted. If the subaddress of the incoming call is within the range specified, the call request is accepted. If no range is specified, call requests with any subaddress are accepted. Enter only one range, for example, 50-99 or 122 or 1010-1234.

Object identification (string) [36]:

Set this parameter as required by the destination node. VAX PSI requires a value of 36 for this parameter (the default value), so enter <RET>.

The procedure displays:

The destination will be set up as follows:

```
NCP> define module x25-server -
  destination dest-name -
  node dest-node -
  [call mask call-mask] -
  [call value call-value] -
  [group cug-name] -
  [sending address dte-address] -
  [subaddress sub-address-range] -
  [priority dest-prio] -
  [object object-id]
```

Only the fields that you have specified will be displayed.

The procedure displays:

Do you want to define this destination now [YES]?

If you answer NO, the procedure will not execute the NCP command as displayed above.
If you answer YES, the procedure displays:

Updating the permanent database.

Do you want to define any more destinations [NO]?

If you answer YES, the procedure will repeat the above questions to allow further destinations to be set up.

When you have completed defining all destinations, answer NO.

Return to where you left section 4.2 to continue your installation.

4.3 Updating SYSGEN Parameters

If you have an earlier version of VAX PSI installed, you may not need to update the SYSGEN parameters, as sufficient pool space may already have been allocated. Otherwise, update the SYSGEN parameters to provide space for the data structures required by VAX PSI. These data structures require nonpaged dynamic pool space. Increase the amount of space to reflect the number of bytes being used.

Nonpaged dynamic pool space is required, as follows:

1. At least 90K bytes for the tables and code of the basic VAX PSI software.
2. At least 13K bytes for the tables and code of the VAX PSI X.29 software.
3. At least 1K bytes for each local DTE.
4. At least 1.5K bytes for each virtual circuit. This value depends on the packetsize and window size. If you are not using the default values, the virtual circuit value can be calculated (approximately) as follows:
$$2 * \text{window size} * (\text{packetsize} + 96) + 700 \text{ bytes}$$
5. At least 12K bytes for each process running the TRACE utility.

NOTE

Always ensure that enough nonpaged dynamic pool space has been allocated. If there is insufficient nonpaged pool space to load PSI, the following error message will appear:

```
%PSI-F-INSMEM, insufficient nonpaged memory to run PSI
```

Use SYSGEN to change the value of the NPAGEDYN parameter and thus specify the additional nonpaged dynamic pool space required. The new value of the NPAGEDYN parameter is the current value (that is, the value before VAX PSI is installed) plus an additional value calculated as described above.

Make sure that if you change NPAGEDYN, you also change NPAGEVIR to reflect the new value of NPAGEDYN. (The value of the NPAGEVIR parameter is the maximum size to which the nonpaged dynamic pool space can be increased.)

You can also use SYSGEN to change the value of the IRPCOUNT parameter to reflect the increased I/O load the system is now required to handle. If you decide to change this parameter, increase the current value by 2 for each concurrently active virtual circuit.

Make sure that the value of the MAXBUF parameter is set to at least 1536. If necessary, use SYSGEN to change this parameter.

Use the `SYSGEN SHOW/MAJOR` command to display the current values of the `NPAGEVIR`, `NPAGEDYN`, `IRPCOUNT`, and `MAXBUF` parameters. Use the `SYSGEN SET NPAGEVIR`, `SET NPAGEDYN`, `SET IRPCOUNT`, and `SET MAXBUF` commands to specify new values for these parameters. Log in under the system manager's account and then run `SYS$SYSTEM:SYSGEN`. For example:

```
$ RUN SYS$SYSTEM:SYSGEN
SYSGEN>USE CURRENT
SYSGEN>SHOW/MAJOR
.
.
.
SYSGEN>SET NPAGEVIR number (see above)
SYSGEN>SET NPAGEDYN number (see above)
SYSGEN>SET IRPCOUNT number (see above)
SYSGEN>SET MAXBUF 1536
SYSGEN>WRITE CURRENT
SYSGEN>EXIT
$
```

NOTE

If you alter your `SYSGEN` parameters while installing `VAX PSI`, you must update `MODPARAMS.DAT` so that your changes are not lost when you next use `AUTOGEN`. The `AUTOGEN` procedures are described in the *Guide to Maintaining a VMS System*.

When you have changed the parameter values, reboot your system.

4.4 Starting up VAX PSI

If `DECnet` is running on your system, issue the following command to start the `VAX PSI` combination system:

```
$ @SYS$MANAGER:STARTPSI.COM
```

If `STARTPSI.COM` fails, after it has loaded `VAX PSI` successfully, the following message is displayed:

```
Failed to set up VAX PSI
```

This means that the Security or Trace utilities, and/or lines and DTEs may have been set up incorrectly. Reinstall `VAX PSI`, ensuring that the lines, DTEs and utilities are set up correctly.

If DECnet is not running on your system, issue the following command to start both DECnet and VAX PSI:

```
$ @SYS$MANAGER:STARTNET.COM
```

If you try to start PSI with the STARTPSI command procedure before DECnet is running, the following error message is displayed and the procedure ends.

DECnet must be running before attempting to start VAX PSI

NOTE

To restart DECnet and VAX PSI automatically when you reboot the system, edit the STARTNET command given above into SYS\$MANAGER:SYSTARTUP.COM.

If you wish to configure or modify your VAX PSI system refer to the *VAX P.S.I. Management Guide*. DIGITAL recommends that you check the installation and configuration of your VAX PSI system. Follow the procedures described in the *VAX P.S.I. Management Guide*.

Finally, when you have installed and configured VAX PSI, and checked that the system is installed properly, back up the updated system disk and save the distribution kit for future updates.

Example of a Native or Multi-host VAX PSI Installation

The following is an example of a Native or Multi-host installation.

```
$ @sys$update:vmsinstal psi msa0: options n
  VAX/VMS Software Product Installation Procedure V5.0
It is 29-APR-1988 at 09:36.
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]? y
* Are you satisfied with the backup of your system disk [YES]? <RET>

The following products will be processed:
  PSI V4.2
  Beginning installation of PSI V4.2 at 09:36
%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$PRINT]: <RET>
Job PSI042 (queue SYS$PRINT_CRC, entry 964) started on LX22_CRC
* Do you want to continue the installation? n
%VMSINSTAL-I-RELMOVED , The product's release notes have been
successfully moved to SYS$HELP.
  Installation of PSI V4.2 completed at 09:38

  VMSINSTAL procedure done at 09:38

$ @sys$update:vmsinstal psi msa0:'
```

VAX/VMS Software Product Installation Procedure V5.0

It is 29-APR-1988 at 09:42.

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]? y

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

The following products will be processed:

PSI V4.2

Beginning installation of PSI V4.2 at 09:43

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

%VMSINSTAL-I-REMOVED, The product's release notes have been successfully moved to SYS\$HELP.

VAX PSI V4.2 installation procedures.

* Do you want X.29 support [YES]? <RET>

* Do you want all the utilities [YES]? <RET>

There are no more questions to answer during this installation.

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

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

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

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

Removing obsolete files from any previous VAX PSI installation.

Installing VAX PSI V4.2 files.

VAX PSI V4.2 files installed.

To complete the installation, follow the instructions below:

- Execute the command procedure SYS\$MANAGER:PSI_SET_UP.COM to produce a LOAD_PSI042.COM and set up the permanent database.

- On a system which is running DECnet execute the command procedure SYS\$MANAGER:STARTPSI.COM, to bring up VAX PSI.
On a system which is not running DECnet, execute the command procedure SYS\$MANAGER:STARTNET.COM to bring up DECnet and VAX PSI.

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

Installation of PSI V4.2 completed at 10:20

VMSINSTAL procedure done at 10:22

\$ @sys\$manager:psi_set_up.com

This command procedure assists in configuring VAX PSI.

LOAD_PSI042.COM must be built before attempting to start VAX PSI.
The load file from an earlier version of VAX PSI cannot be used.

Do you wish to build load_psi042.com now [YES]? <RET>

```

This command file assists in creating LOAD_PSI042.COM.
LOAD_PSI042.COM is a command file used to SYSGEN the VAX PSI
supported devices and startup the ACP.
Do you want to set up a default network [YES]? <RET>
Default network name          (network-id): net1
Device type                   (dev-c-u): kmv-0
Default CSR address is %0760420
CSR address                   (octal): <RET>
Default VECTOR is %0000310
Vector                        (octal): <RET>
Configuration data for line KMV-0-0
Device CSR is                 %0760420
Device VECTOR is             %0000310
Do you want to Keep, Alter or Delete this entry
(K, A, D) [K]? <RET>
Device KMV-0-0 added to new configuration
Do you want to configure more lines [NO]? <RET>
The following NCP command may be used to configure the permanent
database to support incoming X.29 terminals:
NCP define module X29-server state on
Do you want the database defined now [YES]? <RET>
Do you want to use PSI MAIL [YES]? <RET>
Do you want support for incoming PSI MAIL [YES]? <RET>
The PSI_MAIL object needs to run in an account with the right to
accept incoming X.25 calls.
Username [DECNET]            (string): <RET>
Password                     (string): decnet
Verification                 (string): decnet
The following NCP commands may be used to configure the permanent
database to support incoming PSI MAIL:
NCP define object psi_mail number 0 file sys$system:psi$mail -
user DECNET password PASSWORD
NCP define module x25-server destination psi_mail object psi_mail -
call mask ffffffffffffffffffffffffffffffff -
call value ff00000056332e30204d41494c2d3131
Do you want the database defined now [YES]? <RET>
Purging any previous PSI_MAIL definitions. Please ignore any
error messages.

```

```
%NCP-I-SUCCESS, Success
Object = PSI_MAIL
%NML-I-RECDELET, Database entry deleted
%NCP-W-UNRCMP, Unrecognized component , Module
```

The VAX PSI startup file should be moved into SYS\$MANAGER to be used automatically by STARTNET.COM

Do you want LOAD_PSI042 moved to SYS\$MANAGER: [YES]? <RET>

Created SYS\$SYSROOT:[SYSMGR]LOAD_PSI042.COM

Do you wish to add network, line or DTE entries to the database now [YES]? <RET>

This command procedure allows you to define one or more PSDN(s) and one or more DTEs associated with each network.

Do you want to define the X25-PROTOCOL database now [YES]? <RET>

You can use this procedure to purge the database to remove all DTEs and all X.25 protocol information before updating the permanent database. You can also use this procedure to remove the line information from the database. Note that if the line permanent database is purged then all DECnet lines along with PSI lines will be removed.

The following NCP commands will be used to purge the DTE and X.25 permanent database:

```
NCP purge module x25-protocol known networks all
NCP purge module x25-protocol known dtes known networks all
```

The following NCP commands will be used to purge the line permanent database:

```
NCP purge known lines all
```

Do you want the information in the X.25 and DTE permanent database purged [NO]? <RET>

Do you want the line information in the permanent database purged [NO]? <RET>

PSDN and profile names are defined here. You can define one or more PSDNs. For each PSDN you will be asked to provide the network name and the profile name for that network.

```
Network name (string): net1
Profile name (string) [net1]: sonnet
```

The following command will be used to update the permanent database:

```
NCP define module x25-protocol network net1 -
    profile sonnet
```

Do you want the information in the permanent database updated [YES]? <RET>

DTEs are defined here. You can define one or more DTEs connected to this network. For each DTE you will be asked to provide the following information:

- o DTE address
- o Range of channels to be used by the DTE
- o Line associated with the DTE

DTE address (number): 2342123456789
Channels range (list): 1250-1150
Line name (dev-c-u): kmv-0

The following NCP commands will be used to update the permanent database.

```
NCP define line kmv-0 network net1 protocol lapb state on
NCP define module x25-protocol dte 2342123456789 -
network net1 -
channels 1250-1150 -
line kmv-0 -
state on
```

Do you want to update the permanent database now [YES]? <RET>

Updating database

Do you want to define any more DTEs connected to this network [NO]? <RET>

Do you want to define any more networks [NO]? <RET>

Do you wish to add VAX PSI Multi-host entries [YES]? <RET>

X25-Server destinations are set up here. These permit incoming calls received by this node to be redirected to the appropriate host. This procedure asks for a list of hosts with VAX PSI Access installed. This list of nodes will not include the node you are currently working on.

| | | | |
|------------------------|-------------------|--------|---------|
| Destination name | (string) | : | greta |
| Destination node name | (string) | : | greta |
| Destination priority | | [200] | : <RET> |
| Call mask | (2-32 hex) | [None] | : <RET> |
| Call value | (2-32 hex) | [None] | : <RET> |
| Closed user group name | (1-16 characters) | [None] | : <RET> |
| Sending address | (1-15 decimal) | [None] | : <RET> |
| Subaddress range | (decimal range) | [None] | : <RET> |
| Object identification | (string) | [36] | : <RET> |

The destination will be set up as follows:

```
NCP>define module x25-server -
destination greta -
node greta -
priority 200 -
object 36
```

Do you want to define this destination now [YES]? <RET>

Updating the permanent database

Do you want to define any more destinations [NO]? <RET>

Do you wish to load PSI now [NO]? <RET>

To check out your installation after starting VAX PSI refer to the Configuration Testing Chapter in the VAX PSI Management Guide.

Example of a VAX PSI Access Installation

The following is an example of a VAX PSI Access Installation.

```
$ @sys$update:vmsinstal psi_ac msa0: options n
      VAX/VMS Software Product Installation Procedure V5.0

It is 29-APR-1988 at 09:38.
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]? y
* Are you satisfied with the backup of your system disk
[YES]? <RET>

The following products will be processed:
  PSI_AC V4.2
  Beginning installation of PSI_AC V4.2 at 09:39
%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$PRINT]: <RET>
Job PSI_AC042 (queue SYS$PRINT_CRC, entry 965) started on LXY22_CRC
* Do you want to continue the installation? n
%VMSINSTAL-I-REMOVED , The product's release notes have been
successfully moved to SYS$HELP.
  Installation of PSI_AC V4.2 completed at 09:39

  VMSINSTAL procedure done at 09:39

$ @sys$update:vmsinstal psi_ac msa0:
      VAX/VMS Software Product Installation Procedure V5.0
```

It is 29-APR-1988 at 11:14.
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]? y
* Are you satisfied with the backup of your system
disk [YES]? <RET>

The following products will be processed:

PSI_AC V4.2
Beginning installation of PSI_AC V4.2 at 11:17
%VMSINSTAL-I-RESTORE, Restoring product saveset A ...
%VMSINSTAL-I-REMOVED , The product's release notes have been
successfully moved to SYS\$HELP.

VAX PSI Access V4.2 installation procedures.

* Do you want X.29 support [YES]? <RET>
* Do you want all the utilities [YES]? <RET>

There are no more questions to answer during this installation.

%VMSINSTAL-I-RESTORE, Restoring product saveset B ...
%VMSINSTAL-I-RESTORE, Restoring product saveset C ...
%VMSINSTAL-I-RESTORE, Restoring product saveset D ...
%VMSINSTAL-I-RESTORE, Restoring product saveset E ...

Removing obsolete files from any previous VAX PSI installation.

Installing VAX PSI Access V4.2 files.

VAX PSI Access V4.2 files installed.

%PSI_AC-W-PSIRUN, previous version of VAX PSI has been run
since the last system boot.

To complete the installation, follow the instructions below:

- Execute the command procedure SYS\$MANAGER:PSI_SET_UP.COM to
produce a LOAD_PSI042.COM and set up the permanent database.
- Reboot the system.

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

Installation of PSI_AC V4.2 completed at 12:01

VMSINSTAL procedure done at 12:03

\$ @sys\$manager:psi_set_up.com

This command procedure assists in configuring VAX PSI.

LOAD_PSI042.COM must be built before attempting to start VAX PSI.
The load file from an earlier version of VAX PSI cannot be used.

Do you wish to build load_psi042.com now [YES]? <RET>

This command file assists in creating LOAD_PSI042.COM.

LOAD_PSI042.COM is a command file used to SYSGEN the VAX PSI supported devices and startup the ACP.

Do you want to set up a default network [YES]? <RET>

Default network name (network-id): net1

The following NCP command may be used to configure the permanent database to support incoming X.29 terminals:

NCP define module X29-server state on

Do you want the database defined now [YES]? <RET>

Do you want to use PSI MAIL [YES]? <RET>

Do you want support for incoming PSI MAIL [YES]? <RET>

The PSI_MAIL object needs to run in an account with the right to accept incoming X.25 calls.

Username [DECNET] (string): <RET>

Password (string): decnet

Verification (string): decnet

The following NCP commands may be used to configure the permanent database to support incoming PSI MAIL:

```
NCP define object psi_mail number 0 file sys$system:psi$mail -
user DECNET password PASSWORD
```

```
NCP define module x25-server destination psi_mail object psi_mail -
call mask ffffffffffffffffffffffffffffffff -
call value ff00000056332e30204d41494c2d3131
```

Do you want the database defined now [YES]? <RET>

Purging any previous PSI_MAIL definitions. Please ignore any error messages.

%NCP-I-SUCCESS, Success

Object = PSI_MAIL

%NML-I-RECDELET, Database entry deleted

%NCP-I-SUCCESS, Success

%NML-I-RECDELET, Database entry deleted

The VAX PSI startup file should be moved into SYS\$MANAGER to be used automatically by STARTNET.COM

Do you want LOAD_PSI042 moved to SYS\$MANAGER: [YES]? <RET>

Created SYS\$SYSROOT:[SYSMGR]LOAD_PSI042.COM

Do you wish to add network entries to the database now [YES]? <RET>

You are assisted here in defining the X25-ACCESS database.

Do you want to define the X25-ACCESS database now [YES]? <RET>

This procedure can purge the database to remove all known connector nodes information before it updates the permanent database.

The following NCP command will be used to purge the database:

NCP PURGE MODULE X25-ACCESS KNOWN NETWORKS ALL

Do you want the information in the permanent database
purged now [NO]? <RET>

Your VAX PSI Access system uses a connector node to communicate
with one or more PSDNs. You will be asked for a network name for
the connection to the connector system and the node name of that
system. The network name you supply **MUST** be the same as the
network name on the connector node that you wish to use.

Network name (network-id): net1
Connector node (node-id): boris

Network = net1
Connector node = boris

Is the above information correct [YES]? <RET>

The following NCP command will be used to update the permanent
database:

```
NCP define module x25-access network net1 node boris
```

Adding entry to the X25-ACCESS database for network net1

Are there any more NETWORKS to be defined [NO]? <RET>

Do you wish to load PSI now [NO]? <RET>

To check out your installation after starting VAX PSI refer to the
Configuration Testing Chapter in the VAX PSI Management Guide.

Example of a VAX PSI Combination Installation

The following is an example of a VAX PSI Combination installation.

```
$ @sys$update:vmsinstal psi msa0: options n
      VAX/VMS Software Product Installation Procedure V5.0
It is 29-APR-1988 at 09:36.
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]? y
* Are you satisfied with the backup of your system
disk [YES]? <RET>

The following products will be processed:
  PSI V4.2
  Beginning installation of PSI V4.2 at 09:36
%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 PSI042 (queue SYS$PRINT_CRC, entry 964) started on LXY22_CRC
* Do you want to continue the installation? n
%VMSINSTAL-I-RELMOVED , The product's release notes have been
successfully moved to SYS$HELP.
      Installation of PSI V4.2 completed at 09:38

VMSINSTAL procedure done at 09:38
```

```
$ @sys$update:vmsinstal psi msa0:
```

```
VAX/VMS Software Product Installation Procedure V5.0
```

```
It is 29-APR-1988 at 09:42.
```

```
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]? y
```

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

```
The following products will be processed:
```

```
PSI V4.2
```

```
Beginning installation of PSI V4.2 at 09:43
```

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

```
%VMSINSTAL-I-REMOVED, The product's release notes have been  
successfully moved to SYS$HELP.
```

```
VAX PSI V4.2 installation procedures.
```

```
* Do you want X.29 support [YES]? <RET>
```

```
* Do you want all the utilities [YES]? <RET>
```

```
There are no more questions to answer during this installation.
```

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

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

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

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

```
Removing obsolete files from any previous VAX PSI installation.
```

```
Installing VAX PSI V4.2 files.
```

```
VAX PSI V4.2 files installed.
```

```
To complete the installation, follow the instructions below:
```

```
- Execute the command procedure SYS$MANAGER:PSI_SET_UP.COM to  
produce a LOAD_PSI042.COM and set up the permanent database.
```

```
- On a system which is running DECnet execute the command  
procedure SYS$MANAGER:STARTPSI.COM, to bring up VAX PSI.  
On a system which is not running DECnet, execute the command  
procedure SYS$MANAGER:STARTNET.COM to bring up DECnet and  
VAX PSI.
```

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

```
Installation of PSI V4.2 completed at 10:20
```

```
VMSINSTAL procedure done at 10:22
```

```
$ @sys$update:vmsinstal psi_ac msa0:
```

VAX/VMS Software Product Installation Procedure V5.0
It is 29-APR-1988 at 10:23.
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]? y
* Are you satisfied with the backup of your system
disk [YES]? <RET>

The following products will be processed:
PSI_AC V4.2
Beginning installation of PSI_AC V4.2 at 10:26

%VMSINSTAL-I-RESTORE, Restoring product saveset A ...
%VMSINSTAL-I-RELMOVED , The product's release notes have been
successfully moved to SYS\$HELP.

VAX PSI Access V4.2 installation procedures.

* Do you want to install a combination system [NO]? y
* Do you want X.29 support [YES]? <RET>
* Do you want all the utilities [YES]? <RET>

There are no more questions to answer during this installation.

%VMSINSTAL-I-RESTORE, Restoring product saveset B ...
%VMSINSTAL-I-RESTORE, Restoring product saveset C ...
%VMSINSTAL-I-RESTORE, Restoring product saveset D ...
%VMSINSTAL-I-RESTORE, Restoring product saveset E ...

Installing VAX PSI Access V4.2 files.

VAX PSI Access V4.2 files installed.

To complete the installation, follow the instructions below:

- Execute the command procedure SYS\$MANAGER:PSI_SET_UP.COM to
produce a LOAD_PSI042.COM and set up the permanent database.
- On a system which is running DECnet execute the command
procedure SYS\$MANAGER:STARTPSI.COM, to bring up VAX PSI.
On a system which is not running DECnet, execute the command
procedure SYS\$MANAGER:STARTNET.COM to bring up DECnet and
VAX PSI.

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their
target directories...
Installation of PSI_AC V4.2 completed at 11:03

VMSINSTAL procedure done at 11:05

\$ @sys\$manager:psi_set_up.com

This command procedure assists in configuring VAX PSI.

LOAD_PSI042.COM must be built before attempting to start VAX PSI.
The load file from an earlier version of VAX PSI cannot be used.

```

Do you wish to build load_psi042.com now [YES]? <RET>
This command file assists in creating LOAD_PSI042.COM.
LOAD_PSI042.COM is a command file used to SYSGEN the VAX PSI
supported devices and startup the ACP.
Do you want to set up a default network [YES]? <RET>
Default network name (network-id): net1
Device type (dev-c-u): kmv-0-0
Default CSR address is %0760420
CSR address (octal): <RET>
Default VECTOR is %0000310
Vector (octal): <RET>
Configuration data for line KMV-0-0
Device CSR is %0760420
Device VECTOR is %0000310
Do you want to Keep, Alter or Delete this entry
(K, A, D) [K]? <RET>
Device KMV-0-0 added to new configuration
Do you want to configure more lines [NO]? <RET>
The following NCP command may be used to configure the permanent
database to support incoming X.29 terminals:
NCP define module X29-server state on
Do you want the database defined now [YES]? <RET>
Do you want to use PSI MAIL [YES]? <RET>
Do you want support for incoming PSI MAIL [YES]? <RET>
The PSI_MAIL object needs to run in an account with the right to
accept incoming X.25 calls.
Username [DECNET] (string): <RET>
Password (string): decnet
Verification (string): decnet
The following NCP commands may be used to configure the permanent
database to support incoming PSI MAIL:
NCP define object psi_mail number 0 file sys$system:psi$mail -
user DECNET password PASSWORD
NCP define module x25-server destination psi_mail object psi_mail -
call mask ffffffffffffffffffffffffffffffff -
call value ff00000056332e30204d41494c2d3131
Do you want the database defined now [YES]? <RET>
Purging any previous PSI_MAIL definitions. Please ignore any
error messages.

```

```

%NCP-I-SUCCESS, Success
Object = PSI_MAIL
%NML-I-RECDELET, Database entry deleted
%NCP-I-SUCCESS, Success
%NML-I-RECDELET, Database entry deleted

The VAX PSI startup file should be moved into SYS$MANAGER to be
used automatically by STARTNET.COM

Do you want LOAD_PSI042 moved to SYS$MANAGER: [YES]? <RET>
Created SYS$SYSROOT:[SYSMGR]LOAD_PSI042.COM

Do you wish to add network, line or DTE entries to the
database now [YES]? <RET>

You are assisted here in defining the X25-ACCESS database.

Do you want to define the X25-ACCESS database now [YES]? <RET>

This procedure can purge the database to remove all known
connector nodes information before it updates the permanent
database.

The following NCP command will be used to purge the database:
NCP PURGE MODULE X25-ACCESS KNOWN NETWORKS ALL

Do you want the information in the permanent database
purged now [NO]? <RET>

Your VAX PSI Access system uses a connector node to communicate
with one or more PSDNs. You will be asked for a network name for
the connection to the connector system and the node name of that
system. The network name you supply MUST be the same as the
network name on the connector node that you wish to use.

Network name      (network-id): net2
Connector node    (node-id): bella

Network          = net2
Connector node   = bella

Is the above information correct [YES]? <RET>

The following NCP command will be used to update the permanent
database:
NCP define module x25-access network net2 node bella

Adding entry to the X25-ACCESS database for network net2
Are there any more NETWORKS to be defined [NO]? <RET>

This command procedure allows you to define one or more PSDN(s)
and one or more DTEs associated with each network.

Do you want to define the X25-PROTOCOL database now [YES]? <RET>

```

You can use this procedure to purge the database to remove all DTEs and all X.25 protocol information before updating the permanent database. You can also use this procedure to remove the line information from the database. Note that if the line permanent database is purged then all DECnet lines along with PSI lines will be removed.

The following NCP commands will be used to purge the DTE and X.25 permanent database:

```
NCP purge module x25-protocol known networks all
NCP purge module x25-protocol known dtes known networks all
```

The following NCP commands will be used to purge the line permanent database:

```
NCP purge known lines all
```

Do you want the information in the X.25 and DTE permanent database purged [NO]? <RET>

Do you want the line information in the permanent database purged [NO]? <RET>

PSDN and profile names are defined here. You can define one or more PSDNs. For each PSDN you will be asked to provide the network name and the profile name for that network.

```
Network name (string): net1
Profile name (string) [net1]: sonnet
```

The following command will be used to update the permanent database:

```
NCP define module x25-protocol network net1 -
      profile sonnet
```

Do you want the information in the permanent database updated [YES]? <RET>

DTEs are defined here. You can define one or more DTEs connected to this network. For each DTE you will be asked to provide the following information:

- o DTE address
- o Range of channels to be used by the DTE
- o Line associated with the DTE

```
DTE address (number): 2342123456789
Channels range (list): 1250-1150
Line name (dev-c-u): kmv-0
```

The following NCP commands will be used to update the permanent database.

```
NCP define line kmv-0 network net1 protocol lapb state on
NCP define module x25-protocol dte 2342123456789 -
    network net1 -
    channels 1250-1150 -
    line kmv-0 -
    state on
```

Do you want to update the permanent database now [YES]? <RET>

Updating database

Do you want to define any more DTEs connected to
this network [NO]? <RET>

Do you want to define any more networks [NO]? <RET>

Do you wish to add VAX PSI Multi-host entries [YES]? <RET>

X25-Server destinations are set up here. These permit incoming calls received by this node to be redirected to the appropriate host. This procedure asks for a list of hosts with VAX PSI Access installed. This list of nodes will not include the node you are currently working on.

```
Destination name      (string)           : greta
Destination node name (string)           : greta
Destination priority   [200]           : <RET>
Call mask              (2-32 hex)         [None] : <RET>
Call value             (2-32 hex)         [None] : <RET>
Closed user group name (1-16 characters) [None] : <RET>
Sending address        (1-15 decimal)     [None] : <RET>
Subaddress range      (decimal range)     [None] : <RET>
Object identification (string)           [36]   : <RET>
```

The destination will be set up as follows:

```
NCP>define module x25-server -
    destination greta -
    node greta -
    priority 200 -
    object 36
```

Do you want to define this destination now [YES]? <RET>

Updating the permanent database

Do you want to define any more destinations [NO]? <RET>

Do you wish to load PSI now [NO]? <RET>

To check out your installation after starting VAX PSI refer to the Configuration Testing Chapter in the VAX PSI Management Guide.

Contents of the VAX PSI Distribution Kits

When you install VAX PSI or VAX PSI Access on a VAXcluster, all files reside in the System Common Root area, except for the following which are copied to the System Specific area:

- PSI\$042.DAT
- PSI\$ACCESS_042.DAT
- PSI_SECURITY.COM

D.1 Contents of the VAX PSI Distribution Kit

For all systems, the images listed below are copied to the SYSS\$LOADABLE_IMAGES directory:

NWDRIVER.EXE
PSI\$L3CS.EXE
PSI\$L3NM.EXE
PSI\$NMR.EXE
LES\$DECNET.EXE
LES\$DECNET_ALT.EXE
LES\$DECNET_EVL.EXE
PSI\$GAP.EXE
LES\$LES.EXE
PSI\$042.DAT
PSI\$DR.EXE
PSI\$DRX.EXE
PSI\$L2.EXE
PSI\$L2NM.EXE
PSI\$L2E.EXE
PSI\$L2DM.EXE

PSI\$L3.EXE
PSI\$NETPRF.EXE

The following files are copied to the SYSS\$SYSTEM directory:

PSI\$MAIL.COM
PSI\$LES_CONTROL.DAT
LES\$STARTUP.EXE
LES\$ACP.EXE

The following files are copied to the SYSS\$MANAGER directory:

PSI_CONFIG.COM
PSI_DEFINE.COM
PSI_SET_UP.COM
STARTPSI.COM
PSI\$CONFIG_HELP.COM
PSI\$GET_CONFIG_DATA.COM
PSI_MULTI_HOST.COM

The following files are copied to the SYSS\$LIBRARY directory:

PSILIB.MLB
PSILIB.REQ
PSI_MAILSHR.EXE
PSI\$ACPCODESHR.EXE
PSI\$ACPDATASHR.EXE
LES\$ACP_CODE.EXE

The following files are copied to the SYSS\$LIBRARY directory if the corresponding language (shown in brackets) is present:

PSILIB.FOR (FORTRAN)
PSILIB.H (C)
PSILIB.L32 (BLISS)
PSILIB.PAS (PASCAL)

The following files are copied to the SYSS\$TEST directory:

PSI_ICP.COM
PSI\$XTR.COM
PSI\$XTR.EXE
PSI\$XTS.EXE
PSI\$PR.EXE
PSI\$CTP.EXE
PSI\$CTP.TLB
PSI\$CTP_NETOBJ.COM
PSI\$CTP_ADD_NETOBJ.COM
PSI\$CTP_REM_NETOBJ.COM

The following file is copied to the SYSS\$HELP directory:

PSI042.RELEASE_NOTES

The following files are copied to the SYSS\$MESSAGE directory:

PSI\$MESSAGES.EXE
LES\$ACP_MESSAGES.EXE

The following files are copied to the SYSS\$EXAMPLES directory:

PSI\$CHARGING.EXE
PSI\$CHARGING.MAR
PSI\$DLM_REDIRECT.MAR
PSI\$X25_SEND_BASIC.BAS
PSI\$X25_SEND_C.C
PSI\$X25_SEND_COBOL.COB
PSI\$X25_SEND_FORTRAN.FOR
PSI\$X25_SEND_MACRO.MAR
PSI\$X25_SEND_PASCAL.PAS
PSI\$X25_RECEIVE_BASIC.BAS
PSI\$X25_RECEIVE_C.C
PSI\$X25_RECEIVE_COBOL.COB
PSI\$X25_RECEIVE_FORTRAN.FOR
PSI\$X25_RECEIVE_MACRO.MAR
PSI\$X25_RECEIVE_PASCAL.PAS

The following images are NOT installed if you are loading VAX PSI on a MicroVAX.
These images are copied to the SYSS\$LOADABLE_IMAGES directory:

PSI\$KMXDIA.EXE
PSI\$KMXPDM.EXE
PSI\$KMXPRO.EXE
PSI\$KMYDIA.EXE
PSI\$KMYPDM.EXE
PSI\$KMYPRO.EXE
XNDRIVER.EXE
XSDRIVER.EXE
XWDRIVER.EXE

The following images are NOT installed if you are loading VAX PSI on a MicroVAX.
These images are copied to the SYSS\$TEST directory:

UETPSIDUP.COM
UETPSIDUP.EXE

The following images are only installed if you are loading VAX PSI on a MicroVAX,
and are copied to the SYSS\$LOADABLE_IMAGES directory:

PSI\$KMVPRO.EXE
UEDRIVER.EXE
UVDRIVER.EXE

If you request X.29 support, the following is copied into the SYSS\$LOADABLE_IMAGES directory:

NVDRIVER.EXE

If you request X.29 support, the following are copied into the SYSS\$SYSTEM directory:

PSIPAD.EXE
PSISETX29.EXE
PSISHOWX29.EXE

If you request X.29 support, the following is copied into the SYSS\$HELP directory:

PSIPADHLP.HLB

If you request X.29 support, the following is copied into the SYSS\$MESSAGE directory:

PSI\$PAD_MESSAGES.EXE

If you request X.29 support, the following are copied into the SYSS\$EXAMPLES directory:

PSI\$X29_DESTINATION_COM.COM
PSI\$X29_DESTINATION_MACRO.MAR
PSI\$X29_DESTINATION_C.C
PSI\$X29_DESTINATION_PASCAL.PAS
PSI\$X29_NETPROCESS_MACRO.MAR
PSI\$X29_OUTGOING_MACRO.MAR
PSI\$X29_OUTGOING_C.C
PSI\$X29_OUTGOING_PASCAL.PAS
PSI\$X29_TEMPLATES.MAR
PSI\$X29_USER_TEMPLATE.COM
PSI\$X29_SYSTEM_TEMPLATE.COM

If you request the VAX PSI utilities, the following are copied into the SYSS\$LOADABLE_IMAGES directory:

LES\$TRACE.EXE
LES\$TRACE_MBX.EXE

If you request the VAX PSI utilities, the following are copied into the SYSS\$SYSTEM directory:

PSIACC.EXE
PSIAUTHORIZE.EXE
PSIKDA.EXE
NETLTC.EXE
NETTRACE.EXE

If you request the VAX PSI utilities, the following are copied into the SYSS\$LIBRARY directory:

PSIAUTHORIZE.INIT
NETTRACE\$12_ANALYZE.EXE
NETTRACE\$12E_ANALYZE.EXE
NETTRACE\$13_ANALYZE.EXE
NETTRACE\$GAP_ANALYZE.EXE
NETTRACE\$GTW_ANALYZE.EXE
NETTRACE\$13_DDX76_ANALYZE.EXE
NETTRACE\$KEY.INIT
NETTRACE\$X29_ANALYZE.EXE

If you request the VAX PSI utilities, the following are copied into the SYSS\$HELP directory:

PSIAUTHORIZEHELP.HLB
TRACEHELP.HLB

If you request the VAX PSI utilities, the following is copied into the SYSS\$MESSAGE directory:

NETTRACE_MESSAGES.EXE

If you request the VAX PSI utilities, the following are copied into the SYSS\$MANAGER directory:

PSI_SECURITY.COM
PSIACCOUNTING.COM
NETTRACE_INSTALL.COM
NETTRACE_SECURITY.COM
PSI_TRACE_START.COM

LOAD_PSI042.COM is created by PSI_SET_UP.COM, and is copied to the system specific SYSS\$MANAGER directory.

PSIACCOUNTING.DAT is created when the Accounting utility is turned on in the system specific SYSS\$MANAGER directory.

D.2 Contents of the VAX PSI Access Distribution Kit

For all systems, the images listed below reside in the SYSS\$LOADABLE_IMAGES directory:

NWDRIVER.EXE
PSI\$L3CS.EXE
PSI\$L3NM.EXE
PSI\$NMR.EXE
LES\$DECNET.EXE
LES\$DECNET_ALT.EXE
LES\$DECNET_EVL.EXE
PSI\$GAP.EXE

LESSLES.EXE
PSI\$ACCESS_042.DAT
PSI\$GTR.EXE

The following files are copied to the SYSS\$SYSTEM directory:

PSI\$MAIL.COM
PSI\$LES_CONTROL.DAT
LESS\$STARTUP.EXE
LESS\$ACP.EXE

The following files are copied to the SYSS\$MANAGER directory:

PSI_CONFIG.COM
PSI\$CONFIG_HELP.COM
PSI_SET_UP.COM
PSI_DEFINE.COM
PSI\$GET_CONFIG_DATA.COM
STARTPSI.COM

The following files are copied to the SYSS\$LIBRARY directory:

PSILIB.MLB
PSILIB.REQ
PSI_MAILSHR.EXE
PSI\$ACPCODESHR.EXE
PSI\$ACPDATASHR.EXE
LESS\$ACP_CODE.EXE

The following files are copied to the SYSS\$LIBRARY directory if the corresponding language (shown in brackets) is present:

PSILIB.FOR (FORTRAN)
PSILIB.H (C)
PSILIB.L32 (BLISS)
PSILIB.PAS (PASCAL)

The following files are copied to the SYSS\$TEST directory:

PSI_ICP.COM
PSI\$XTR.COM
PSI\$XTR.EXE
PSI\$XTS.EXE
PSI\$PR.EXE
PSI\$CTP.EXE
PSI\$CTP.TLB
PSI\$CTP_NETOBJ.COM
PSI\$CTP_ADD_NETOBJ.COM
PSI\$CTP_REM_NETOBJ.COM

The following file is copied to the SYSS\$HELP directory:

PSI_AC042.RELEASE_NOTES

The following files are copied to the SYSS\$MESSAGE directory:

**PSI\$MESSAGES.EXE
LES\$ACP_MESSAGES.EXE**

The following files are copied to the SYSS\$EXAMPLES directory:

**PSI\$CHARGING.EXE
PSI\$CHARGING.MAR
PSI\$DLM_REDIRECT.MAR
PSI\$X25_SEND_BASIC.BAS
PSI\$X25_SEND_C.C
PSI\$X25_SEND_COBOL.COB
PSI\$X25_SEND_FORTRAN.FOR
PSI\$X25_SEND_MACRO.MAR
PSI\$X25_SEND_PASCAL.PAS
PSI\$X25_RECEIVE_BASIC.BAS
PSI\$X25_RECEIVE_C.C
PSI\$X25_RECEIVE_COBOL.COB
PSI\$X25_RECEIVE_FORTRAN.FOR
PSI\$X25_RECEIVE_MACRO.MAR
PSI\$X25_RECEIVE_PASCAL.PAS**

For VAX PSI Access, the files for X.29 support and utilities are installed in the same areas as for VAX PSI. See Section D.1 for details of which files are copied to which areas.

LOAD_PSI042.COM is created by **PSI_SET_UP.COM**, and is copied to the system specific SYSS\$MANAGER directory.

PSIACCOUNTING.DAT is created when the Accounting utility is turned on, and is copied to the system specific SYSS\$MANAGER directory.

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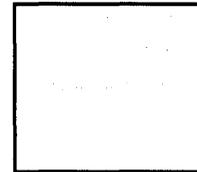
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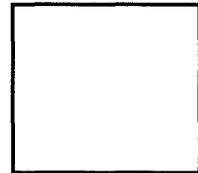
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Wide Area Communications Environment
PO Box 121 READING
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England
