Chapter 1

# Preparing for Installation

Before you install the DECnet/SNA VMS Printer Emulator, referred to as PrE, you should prepare your system.

This installation involves writing to your system disk. Digital Equipment Corporation recommends that you make a backup copy of your system disk before you begin.

**NOTE**

Unless stated otherwise, the term Gateway refers to the DECnet/SNA Gateway or VMS/SNA when used in this manual.

## 1.1 Checking the Distribution Kit

Before beginning the installation, check that you have a complete distribution kit by comparing the kit against the bill of materials (BOM). If any part of the kit is missing, contact your Digital representative. Each PrE kit consists of one or more volumes of software media (depending on the media) and a set of documentation.

## 1.2 VMS System Requirements

This section discusses VMS requirements. Before you begin to install the PrE software, you need to know what software, system privileges, and disk space are required for your installation.

### 1.2.1 Installation Requirements

Table 1-1 lists the installation requirements that you must satisfy before you can begin to install the PrE software.

**Table 1–1: PrE Software Installation Specifications**

| Requirements | Specifications |
|---|---|
| Distribution media | TK50 tape cassette distribution kit, or<br>magnetic tape (1600 bpi) distribution kit |
| Required software | VMS V5.0 or V5.1<br>DECnet-VAX V5.0 or later |
| Privileges | System manager level |
| Disk space | 450 blocks minimum during installation<br>400 blocks minimum after installation |
| BYTCNT quota | 7000 bytes minimum |
| Estimated time to install | 5 to 15 minutes |
| PAK | Product Authorization Key for SNA-PRE |
| Associated documents | The *Guide to VMS Software Installation* contains general installation information.<br><br>The *VMS System Manager's Reference Manual* contains information on setting recommended user account quotas. |

#### 1.2.1.1 VAX Supported Processors

Refer to the Software Product Description (SPD) for the latest official list of supported processors.

#### 1.2.1.2 VMS/SNA and Gateway Support

Refer to the Software Product Description (SPD) or the System Support Addendum (SSA) for the latest official list of supported versions of VMS/SNA software, and Gateway software and hardware.

### 1.2.2 VMS License Management Facility Requirements

Before you install PrE, you should register and load your Product Authorization Key (PAK) with the License Management Facility (LMF). The PAK, which contains information about the license, is a paper certificate shipped with the product.

During the installation, you are asked if you have registered the PrE license and loaded the appropriate PAK. If you have not already done so, you can complete the installation. However, PrE and the IVP will not run if you have not registered the license or loaded the PAK. Once you perform the license registration and have loaded the PAK, you will be able to run PrE and the IVP.

To register and load the license, log in to the system manager's account. Then type the following:

```
@SYS$UPDATE:VMSLICENSE.COM
```

When you are prompted for information, enter the data from your PAK. For more information on LMF, see the *VMS License Management Utility Manual* in the VMS documentation set.

### 1.2.3 VMS Tailor Requirements

The required classes are: VMS Required Save Set, Network Support, Secure Users, and Utilities. Be certain these classes are installed on your system before installing the product. Refer to the VMS Tailor documentation in the VMS documentation set for more information.

## 1.3 Checking the background process

If PrE is already installed, use the VMS SHOW SYSTEM command to make sure the background process (SNAPREDET) is not running. If it is, set your privilege to WORLD and stop the process with the STOP/IDENTIFICATION=*pid* command, where *pid* is the process identity of SNAPREDET.

## 1.4 IVP Requirements

If you choose to run IVP, make sure you know the following values:

- The Gateway node name (the name must be of a Gateway that is running)
- The access name
- The circuit name
- The session address

**NOTE**

The VMS Software Installation Guide suggests you shut down DECnet before running VMSINSTAL. Note, however, that to run the IVP, DECnet must be running.

## 1.5 VMSINSTAL Requirements

Installing PrE on a VMS system involves running the VMSINSTAL procedure. The dialogue is self-explanatory. The system tells you to answer questions and waits for you to tell it to continue. Most questions require a simple YES (Y) or NO (N) answer. The questions display default answers (where applicable) in the following way:

```
[YES]:
```

To answer a question with the default YES, press <RET>.

When you invoke VMSINSTAL, it checks that:

- You are logged in to a privileged account.
- You have adequate quotas for installation.
- All users are logged off.
- DECnet is shut down.

If VMSINSTAL detects any violations to these conditions at the beginning of the installation, it notifies you and asks if you want to continue the installation. In some instances, you can enter YES to continue. To stop the installation process, enter NO or press <RET>. Then change the condition and restart the installation.

### 1.5.1 Privileges

Installation of PrE requires that you have the privileges necessary to run VMSINSTAL. Log in to system manager's account to install the PrE software.

### 1.5.2 Disk space

Make sure that you have adequate disk space before you install the PrE software. You can check your available disk space by entering the following command:

```
$  SHOW DEVICE system-disk
```

where *system-disk* refers to the device name of the system disk. For more information about the SHOW DEVICE command, refer to the *VMS DCL Dictionary*.

## 1.6 Accessing the On-line Release Notes

This product provides on-line release notes. You should review the release notes before installing the product. They contain the latest enhancements to the product, which may include changes to the installation procedure. If you specify OPTIONS N with VMSINSTAL, you are prompted for how you would like to see the release notes. After installing the product, you can read the release notes in the SYS$HELP:SNAPRE$*vvu*.RELEASE_NOTES, where *vv* is the major software version number and *u* is the update software version number. For example, SNAPRE$012 is version 1.2.

Chapter 2

# Installing the PrE Software

This chapter describes how to install DECnet/SNA VMS Printer Emulator, which this chapter refers to as PrE. It contains a step-by-step description of the installation considerations. The final section includes an actual system installation log using PAK information and VMSINSTAL.

## 2.1 The Installation Procedure

The PrE installation consists of a series of questions and informational messages. The process takes 5 to 15 minutes to complete.

### 2.1.1 Running VMSINSTAL

Digital recommends that you use a hard-copy terminal for installing PrE if you would like a copy of the installation process. If you don't have a hard-copy terminal, you can produce a copy of the installation procedure in a file by typing:

```
$ SET HOST 0/LOG=filename
```

where:

*filename* is the name of the file in which you want the log file stored.

### Step 1: Log in to system manager's account.

To start the installation, invoke the VMSINSTAL command procedure from a privileged account, such as the SYSTEM account.

```
Username: SYSTEM [RET]
Password:        [RET]
```

### Step 2: Invoke VMSINSTAL.

Use the following syntax to invoke VMSINSTAL:

```
$ @SYS$UPDATE:VMSINSTAL SNAPREnnn ddcn: OPTIONS N
```

Replace *nnn* in the product name with the version number of the software, for example, SNAPRE012.

Replace *ddcn* with the name of the device on which you plan to mount the media, where *dd* is the device name, *c* is the controller ID, and *n* is the unit number.

OPTIONS N is an optional parameter that indicates you want to be prompted to display or print the release notes, or copy them to SYS$HELP. If you do not include the OPTIONS N parameter, VMSINSTAL does not prompt you to display, print, or copy the release notes. Please read the release notes before proceeding with this installation. The following message displays:

```
            VAX/VMS Software Product Installation Procedure Vn.n

It is dd-mmm-yyyy at hh::mm.
Enter a question mark (?) at any time for help.
```

### Step 3: Choose to continue the installation.

DECnet should be shut down before beginning the installation. A DECnet warning message displays if DECnet software is running.

```
%VMSINSTAL-W-DECNET, Your DECnet network is up and running.
* Do you want to continue anyway [NO]? YES
```

### Step 4: Check your system disk backup.

Verify that you are satisfied with the backup copy of your system disk before continuing with the installation.

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

### Step 5: Mount your media.

When installing from the distribution medium (not from copied savesets) VMSINSTAL checks that the device is mounted. Then you are prompted to mount the distribution volume, and asked if you are ready to continue the installation.

```
Please mount the first volume of the set on ddcn:
* Are you ready? YES
```

### Step 6: Product Installation Begins.

VMSINSTAL displays a message that the media containing PrE has been mounted on the specified device and that the installation has begun.

```
%MOUNT-I-MOUNTED, SNAPRE mounted on _ddcn:
The following products will be processed:
SNAPRE Vn.n

      Beginning installation of SNAPRE Vn.n at hh::mm

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

V*n.n* is automatically replaced with the version number of PrE, for example, V1.2.

### Step 7: Select a release notes option.

If you specified OPTIONS N when you invoked VMSINSTAL, the installation procedure prompts you for a release notes option.

```
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]:
```

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

If you select option 2 or 3, VMSINSTAL prompts you for a print queue name:

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

Enter a queue name or press RETURN to send the file to the default output print device, SYS$PRINT.

No matter which option you select, VMSINSTAL then asks you if you want to continue the installation. Answer YES to continue or NO to exit VMSINSTAL.

```
* Do you want to continue the installation? YES
%VMSINSTAL-I-RELMOVED, The products release notes have been successfully
moved to SYS$HELP.
```

### Step 8: Register the product with the License Management Facility.

The installation procedure prints out information specific to the particular license and asks if you have registered and loaded your PAK for PrE.

```
Product:              SNA-PRE
Producer:             DEC
Version:              n.n
Release Date:         dd-mmm-yyyy

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

If you have not registered and loaded your PAK, answer NO to this question. The installation reminds you to register the PAK before you run the product. The installation continues.

### Step 9: Choose to purge files.

You have the option to purge files from previous versions of the PrE that are superseded by this installation. Purging is recommended because it will save disk space.

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

### Step 10: Choose to run the IVP.

The system now asks if you want to have the IVP run automatically at the end of the installation. The IVP for PrE checks to be sure that the installation is successful. You should run the IVP immediately after installation.

```
* Do you want to run the IVP after the installation [YES]?
```

**Step 11: The IVP is run.**

If you answered YES to the IVP question, the IVP begins automatically. The following message displays:

```
Starting PrE Installation Verification Procedure (IVP)
```

When the IVP begins, you must supply the access name, gateway, and session address. It then performs the following:

1. Creates a characteristics file.
2. Displays the characteristics in this file.
3. Starts a connection.
4. Stops the connection.
5. Displays the even log file for that connection.

Make sure that the only messages in the event log file are the SNAPRE-CONNECT and SNAPRE-STOPEOS messages, and possibly the SNAPRE-SESACT and SNAPRE-SESNOLACT messages.

The following messages indicate that the entire installation procedure is complete:

```
Installation of SNAPRE Vn.n completed at hh::mm

VMSINSTAL procedure done at hh::mm
```

## 2.2 Postinstallation Considerations

Verification of the installation can be done either during installation through the VMSINSTAL utility or at any other time by running the SNAPRE$IVP.COM command procedure found in SYS$TEST. This command procedure verifies that the PrE has been installed correctly on your system. It does not verify connection between IBM and the DECnet/SNA Gateway or VMS/SNA. Section 2.2.2 shows the command procedure for running the IVP.

### 2.2.1 Files Created During Installation

During installation, the files listed below are placed on your system.

**Table 2–1: PrE Files**

| File Name | Description |
|---|---|
| SYS$HELP:SNAPRE$012.RELEASE_NOTES | Release Notes |
| SYS$HELP:SNAPREHLP.HLB | PrE help library |
| SYS$SYSTEM:SNAPRE.EXE | User interface |
| SYS$SYSTEM:SNAPREDET.EXE | Background process |
| SYS$STARTUP:SNAPRE$STARTUP.COM | Startup command file |
| SYS$STARTUP:SNAPRE$DETACHED.COM | Used by the Startup command file |
| SYS$MESSAGE:SNAPREMSG.EXE | PrE message file |
| SYS$TEST:SNAPRE$IVP.COM | PrE Installation Verification Procedure |

### 2.2.2 Running the Installation Verification Procedure

The Installation Verification Procedure (IVP) verifies the success of the installation. It starts the detached process, starts and stops a connection, and displays the log file. It is a first pass at problem detection. If a problem develops with PrE, run the IVP first. To run the IVP after you install the product, invoke the command:

```
$ @SYSTEST:SNAPRE$IVP
```

If the IVP fails, correct the situation, and run the IVP again.

### 2.2.3 Starting PrE

When VMSINSTAL has finished, run the command file SNAPRE$STARTUP.COM, which starts the background process.

Each time the system is rebooted, this command procedure must be run on the system where the PrE is installed. To do this, add the following command to the system startup file SYS$MANAGER:SYSTARTUP_V5.COM:

```
@SYS$STARTUP:SNAPRE$STARTUP parameter1 parameter2 parameter3
```

where:

| | |
|---|---|
| *first parameter* | defines the disk and directory (or directories) to contain PrE's characteristics files. |
| *second parameter* | defines the file or device to contain PrE's error stream. The error stream records error messages which cannot be sent to the event log file. |
| *third parameter* | when specified, closes the output file when the session ends. When not specified, closes the output file when PrE receives an End Bracket Indicator (EBI) |

For example, both the characteristics files and the error logging stream could be held on the system disk in a directory called [SNAPRE]. The error logging stream could be in a file called ERROR.OUT.

```
$@  SYS$STARTUP:SNAPRE$STARTUP SYS$COMMON:[SNAPRE] -
_$  SYS$COMMON:[SNAPRE]ERROR.OUT
```

**NOTE**

The characteristics files have the file type *file-name*.SCF. Do not use this file type for any other files in the same directory.

## 2.2.4 Retry feature for the START command

In addition to starting the background process, the startup command file defines the logicals shown in Table 2-2. If you are using the Retry feature, this is a good place to add the SNAPRE$RETRY_INTERVAL logical definition. For more information on the Retry feature, refer to the START command in chapter 3 Controlling PrE, in the *DECnet/SNA VMS Printer Emulator Use* manual.

The background defines the following logicals:

**Table 2–2: Defined Logicals**

| Logicals | Definition |
|---|---|
| SNAPRE$CHARACTERISTICS | Points to the directory that stores the characteristics files. |
| SNAPRE$ONE_FILE_PER_BRACKET | PrE interprets EBI (end bracket indicator) as the end of file, when defined to any valid system logical value. |

### 2.2.5 Testing the Product

When you have installed PrE and started the background process, run a test to make sure that the interconnect system, the link with the IBM host system and all hardware is working properly.

Ask somebody on the IBM host system to send some data to PrE. If you have any problems, refer to *DECnet/SNA VMS Printer Emulator Use*, which explains error messages, and the problem determination guide for your interconnect system.

### 2.2.6 Running PrE in a VAXcluster

To run PrE on multiple nodes of a VAXcluster, check to see that you have the appropriate software license. After installing PrE perform the following steps:

1. Issue the LICENSE LOAD command to activate the license on each node in the VAXcluster, as described in the VMS License Management Utility Manual.
2. Run the startup file SNAPRE$STARTUP on the node where you want SNAPREDET to run. Then run the startup file on all other nodes. Before beginning the process on all other nodes, SNAPREDET will wait until the process running on the first node stops.
3. Define the system executive logical SNAPRE$HOST to be the system where the background process will run. This enables SNAPRE to quickly locate the background process.
4. Ensure that each node has access to the directory containing the characteristics files.

After performing the above steps, all cluster users can access SNAPREDET and print files.

## 2.3 Error Recovery

If errors occur during the installation or when the IVP is running, VMSINSTAL displays error messages.

Errors can occur during the installation if any of the following conditions exist:

1. The operating system version is incorrect.
2. A prerequisite software version is incorrect.
3. Quotas necessary for successful installation are insufficient.
4. System parameter values for successful installation are insufficient.
5. The VMS help library is currently in use.
6. The product is not properly licensed.
7. Your system has insufficient disk space.

For descriptions of the error messages generated by these conditions, see the VMS documentation on system messages, recovery procedures, and VMS software installation. If any of these conditions exist, you should take the appropriate action as described in the message. (You might need to change a system parameter or increase an authorized quota value.) These requirements are part of the installation requirements in Chapter 1 of this manual.

## 2.4 Sample Installation on a VAX System with OPTIONS N

A sample of the entire installation procedure follows:

```
$ @SYS$UPDATE:VMSINSTAL SNAPRE012 MUA0 OPTIONS N

 VAX/VMS Software Product Installation Procedure A5.0-2


It is 13-MAR-1989 at 08:59.
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]?

Please mount the first volume of the set on  MUA0:.
* Are you ready? Y
%MOUNT-I-MOUNTED, SNAPRE mounted on _MUA0:
The following products will be processed:
  SNAPRE V1.2

 Beginning installation of SNAPRE V1.2 at 09:01

%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]: 4
* Do you want to continue the installation? Y
%VMSINSTAL-I-RELMOVED , The product's release notes have been
successfully moved to SYS$HELP.

        Product:      SNA-PRE
        Producer:     DEC
        Version:      1.2
        Release Date: 03-APR-89

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

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

You can verify the installation using the IVP. This starts and stops a
connection, then asks you to verify the contents of the event log file. To do
this, you need the values of the following parameters:

        * The DECnet/SNA gateway node name
        * The access name
        * The session address (secondary logical unit number)
```

```
The terms used above are explained in the User's Guide. Please read the
Software Limitations section of the Release Notes before running the IVP.

* Do you want to run the IVP after the installation [YES]?

%SNAPRE-I-ASKDONE, All installation questions have been asked.  No more input
-SNAPRE-I-ASKDONE, from the terminal will be required until the IVP runs.


To start the SNAPREDET background process at system startup the following line
must be added to the SYS$MANAGER:SYSTARTUP_V5.COM file:

     @SYS$STARTUP:SNAPRE$STARTUP char-acct err-log

char-acct is the directory where the PrE characteristic files are to be kept and
err-log is the file specification for the background process' error stream.

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

Starting PrE Installation Verification Procedure (IVP)


Starting the background process...

%SNAPRE-I-INIBRAK, close file when bracket encountered
%RUN-S-PROC_ID, identification of created process is 26400104
%SNAPRE-I-OK, DECnet/SNA PrE Background Process started OK

You will now be asked for the parameters needed to verify the installation

%SNAPRE-I-NEWCHAR, creating new characteristics file SNAPREIVP
Access_name []: TSO
Gateway []: NYWAY
Session_address [1]: 29

These are the connection's characteristics :

    SESSION ADDRESS:  29      PAGE LENGTH:   66          PAGE WIDTH: 132
    CASE:             MIXED   SPACING:     SINGLE       NOIMAGE
    ACCESS NAME:      TSO                               WAIT
    GATEWAY:          NYWAY
    OUTPUT STREAM:    SYS$SYSTEM:SNAPREIVP.LIS
    LOG_FILE:         SYS$SYSTEM:SNAPREIVP.LOG

The connection will now be started, then stopped:

%SNAPRE-S-CONNECT, connection started with IBM host using characteristics name
SNAPREIVP, SNAPRE V1.2
%SNAPRE-S-STOPPING, connection is stopping for characteristics name SNAPREIVP

The connection's event log file will now be displayed.


13-MAR-1989 09:04:38.29 %SNAPRE-CONNECT, connection started with IBM host using
characteristics name  SNAPREIVP, SNAPRE V1.2

13-MAR-1989 09:04:39.61 %SNAPRE-STOPPING, connection is stopping for
characteristics name SNAPREIVP
```

```
Please check that the event log file contains an SNAPRE-CONNECT message
followed by an SNAPRE-STOPPING message. It may also contain SNAPRE-SESACT
and SNAPRE-SESNOLACT messages. In either case all is well.

If any other messages are shown please consult the Users's Guide, Appendix B,
for their meaning.

Were the contents of the event log file OK? Y

Background process stopped.


SNAPRE-IVPSUCC, IVP ran successfully

 Installation of SNAPRE V1.2 completed at 09:05

 VMSINSTAL procedure done at 09:05

$
```