# PTY Installation Manual

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11 March 1988

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# Preface

## Intended Audience

This manual is intended for the VAX/VMS user with system management responsibility. This person needs to know how to install the PTY driver software and make any changes to the system startup command file.

# 1. Overview

This chapter is an overview of the PTY device driver software, its environment, and its software components. This manual covers the installation of PTY device driver software and its operation.

## 1.1. PTY Driver Environment

The PTY device driver provides pseudo terminals on VAX/VMS. Pseudo terminals (or Ptys) are virtual terminals in the system. Unlike normal terminals where the I/O is actually done with a physical device, Pty's I/O has no interface to any physical device. In this way they are much like mailboxes.

A pseudo terminal is actually a pair of devices. One of these is the terminal device, and the other is the control device. For example, if you assign a control device and write a carriage-return to it, you would get back a string of ‘‘Username:’’. Send some data to the control device and do another read and you might see a string with ‘‘Password:’’.

## 1.2. Additional Reading

To understand more about the devices on VAX/VMS, try the following documents.

*VAX/VMS System Services Reference Manual*, April 1986,
Digital Equipment Corporation

*VAX/VMS System Generation Utility Reference Manual*, September 1984,
Digital Equipment Corporation

*VAX/VMS CMU PTY Driver Reference Manual*, December 1987,
Dale Moore

# 2. Preinstallation Requirements

The PTY driver software can be installed on any VAX/VMS machine that meets certain hardware and software requirements.

## 2.1. Hardware Requirements

There are currently no requirements for the PTY driver software, other than a properly function VAX.

## 2.2. Software Requirements

The CMU PTYDRIVER software runs on VAX/VMS V4.5 or V4.6. It will probably run on subsequent releases (if there are any) of VMS V4. From the rumors I've heard of VMS V5, it will probably not run on subsequent major release without changes.

## 2.3. Required Disk Space

The installation of the PTYDRIVER software requires 100 blocks. If you wish to extract the sources from the installation kit that will require an additional 500 blocks. If you wish to extract a soft copy of the documentation, that will require an additional 150 blocks.

## 2.4. Installation Time

The time it takes to install the PTYDRIVER software depends on the speed of the distrubution medium, the speed of the processor, the amount of concurrent activity on the system, and how fast you can type.

Even with the slowest machines, you should be able to install the ACP in less than 10 minutes. If you want to extract the sources, then it may take over 25 minutes.

# 3. Installing the Software

This chapter describes the installation of the CMU PTY software using the VMSINSTAL procedure If you are not familiar with the VMSINSTAL utility, refer to the *Guide to VAX/VMS Software Installation*.

## 3.1. Installation Procedure

To start the installation, invoke the VMSINSTAL utility from the system managers account as follows:

```
$ @SYS$UPDATE:VMSINSTAL PTY047 device-id
```

VMSINSTAL will display its banner line, the date and time, and one or more warning messages. If DECnet is up and running, you will also get the following message:

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

Answer YES to continue. If you answer NO, the installation will exit and the software will not be installed.

You will then be asked:

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

If you answer NO, the installation procedure will exit and the software will not be installed.

Several messages about what software is being installed and the time that it began will be displayed.

The next question that the installation kit will ask you is:

```
* Do you want to install the software [YES]?
```

If you answer NO, the software will not be installed. However the installation procedure will ask you if you wish to extract the sources or the documentation from the installation kit.

If you answer YES, the software will be installed, and then the installation procedure will ask if you want sources or documentation.

The system logical name SYS$SYSROOT is used to describe where the various system files, images and libraries are located. On VAXCluster systems, SYS$SYSROOT is a search path that points first into SYS$SPECIFIC (for those files that are specific to that machine) and SYS$COMMON (for files that are common amongst all machines in the cluster).

You may wish to consider adding another, seperate area, to the SYS$SYSROOT search list, to hold the CMU software or software locally maintained. In that way, you can keep SYS$COMMON and SYS$SPECIFIC free of non-DEC software.

In the example below, SYS$SYSROOT is a search path for three places. First is the system specific area of SYS$SPECIFIC. Next is the common area SYS$COMMON. And lastly is the area where I keep our locally maintained software.

If your SYS$SYSROOT is not setup the same way mine was, don’t worry. If you want to put the PTY driver software in the normal SYS$SPECIFIC area, it should still work.

VMSINSTAL will prompt you for which area the software is to be placed:

```
There are several places that the PTY software can be placed.
Some of them are:

        SYS$SPECIFIC:
        SYS$COMMON:
        SYS$USER:[CMU_CS.]

* Where do you want the software installed? [SYS$SPECIFIC:]:
```

### 3.1.1. Sources

The VMSINSTAL procedure will ask whether you want to extract the sources from the installation kit:

```
* Do you want the sources [YES]?
```

If you answer YES, VMSINSTAL will respond with the following:

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

      The sources are in the backup save set SYS$UPDATE:IPDRIVER.SRC.
```

The file SYS$UPDATE:PTY.SRC is a backup save set. The backup utility is discussed in *VAX/VMS Backup Utility Reference Manual*.

The sources include all the source files necessary, to rebuild the PTY installation kit.

The sources include

- MACRO for generating executable code
- VMS Command files for installation
- DEC's MMS (Module Management System) files for rebuilding the pieces and
- SCRIBE manuscript source for this piece of documentation.

### 3.1.2. Documentation

The last thing that VMSINSTAL will ask you for is if you wish to extract the documentation from the installation kit:

```
* Do you want the documentation [YES] ?
```

The documentation includes the Scribe manuscript source for this document and the PostScript output from the Scribe document production software. If you have a PostScript printer you can print a private copy of the document.

If you answer YES, you will see the following:

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

     The Scribe MSS Source file is in SYS$HELP:PTY_INSTALL.MSS.
     The PostScript file is in SYS$HELP:PTY_INSTALL.PS.
```

VMSINSTAL then moves the files from their temporary locations to their permanet directories:

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

After the files have been moved, VMSINSTAL will terminate with:

```
        Installation of PTY V4.7 completed at hh:mm

        VMSINSTAL procedure done at hh:mm
$
```

# 4. PostInstallation Requirements

The following PTY driver related operations should be performed after the installation of the software.

## 4.1. Updating the System Startup File

To load the IP device driver automatically upon each system reboot, modify the system startup command file SYS$MANAGER:SYSTARTUP.COM to include the following lines:

```
$ SYSGEN :== $SYSGEN
$ IF F$SEARCH("SYS$SYSTEM:TZDRIVER.EXE") .NES. "" THEN -
        SYSGEN CONNECT TZA0/NOADAPTER
$ IF F$SEARCH("SYS$SYSTEM:PYDRIVER.EXE") .NES. "" THEN -
        SYSGEN CONNECT PYA0/NOADAPTER
```

A common mistake is to mistype the above lines. The most common mistake is to mistype ‘‘TZA0’’ as ‘‘TZ0’’ or ‘‘TZA0:’’. Please don’t screw up.

## 4.2. System Tuning

Since the PTY device driver cosumes some of the system resources it may be necessary to adjust some of the system parameters. The easiest way to do the adjustment is with AUTOGEN. To find out more about the AUTOGEN facility and system tuning consult **Guide to VAX/VMS Performance Management** and **Guide to VAX/VMS System Management and Daily Operations**.

Most of the extra system resources that the PTY driver software consumes are in NPAGEDYN and IPRCOUNT. You may want to modify the file MODPARAMS.DAT to include the lines:

```
ADD_NPAGEDYN=100000
ADD_IRPCOUNT=100
```

Then rerun the AUTOGEN facility. You will have to keep a watch on system resources and judge for yourself which resources are being consumed.

# Appendix I
# Sample Installation Session

```
$ @sys$update:vmsinstal pty047 sys$User:[moore.exp.ptydriver]


        VAX/VMS Software Product Installation Procedure V4.6


It is 22-DEC-1987 at 15:42.
Enter a question mark (?) at any time for help.

%VMSINSTAL-W-DECNET, Your DECnet network is up and running.
%VMSINSTAL-W-ACTIVE, The following processes are still active:
        _WTA1:
        _TZA22:
        MOORE_1
        MOORE
* Do you want to continue anyway [NO]? y
* Are you satisfied with the backup of your system disk [YES]?


The following products will be processed:

  PTY V4.7


        Beginning installation of PTY V4.7 at 15:42

%VMSINSTAL-I-RESTORE, Restoring product saveset A...
%VMSINSTAL-I-RELMOVED, The products release notes have been successfully moved
to SYS$HELP.

        This is the CMU PTY installation kit.
        This kit only provides the PTY driver.

* Do you want to install the software [YES]?
%VMSINSTAL-I-RESTORE, Restoring product saveset B...
* Do you want to purge files replaced by this installation [YES]?
There are several places that the PTY image can be placed.
Some of them are:

        SYS$SPECIFIC:
        SYS$COMMON:
        SYS$USER:[CMU_CS.]

* Where do you want the image installed? [SYS$SPECIFIC:]: sys$user:[cmu_cs.]

    It will be necessary to add the following lines to your
    system startup command file.

        $ SYSGEN :== $SYSGEN
        $ IF F$SEARCH("SYS$SYSTEM:PYDRIVER.EXE") .NES. "" THEN -
                SYSGEN CONNECT PYA0 /NOADAPTER /DRIVER=PYDRIVER
        $ IF F$SEARCH("SYS$SYSTEM:TZDRIVER.EXE") .NES. "" THEN -
                SYSGEN CONNECT TZA0 /NOADAPTER /DRIVER=TZDRIVER


        The pseudo terminal device driver is not reloadable.
        It will be necessary to reboot your machine in order
        to install this version of the pseudo terminal driver.

* Do you want the sources  [YES]?
%VMSINSTAL-I-RESTORE, Restoring product saveset C...

        The sources are in the backup save set SYS$UPDATE:PTY.SRC.

* Do you want the Documentation  [YES]?
```

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

        The Documentation on how to use PTY is in SYS$HELP:PTY_MANUAL.MSS.
        For those with PostScript printers a PostScipt version
        is in SYS$HELP:PTY_MANUAL.PS.

        The Installation guide is in SYS$HELP:PTY_INSTALL.MSS.
        For thos with PostScript printers a PostScript verion
        is in SYS$HELP:PTY_INSTALL.PS.

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

        Installation of PTY V4.7 completed at 15:47


        VMSINSTAL procedure done at 15:47

$
```

# Appendix II
# New Files

During the installation, new files are created on the system.

| Files Created by PTY Installation | |
|---|---|
| PTY047.RELEASE_NOTES | SYS$HELP: |
| TZDRIVER.EXE | SYS$SYSTEM: |
| PYDRIVER.EXE | SYS$SYSTEM: |
| PTY.SRC | SYS$UPDATE: |
| PTY_INSTALL.PS | SYS$HELP: |
| PTY_INSTALL.MSS | SYS$HELP: |
| PTY_MANUAL.PS | SYS$HELP: |
| PTY_MANUAL.MSS | SYS$HELP: |

# Appendix III
# Trouble Shooting Procedures

Not yet finished.

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