

Professional™
300series

**PRO/DECnet Tool Kit
Installation Guide**

Order No. AA-AV70A-TK

Developer's Tool Kit

digital
software

PRO/DECnet Tool Kit Installation Guide

Order No. AA-AV70A-TK

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This document details procedures for installing the PRO/DECnet Tool Kit either on an RSX-11M/M-PLUS or a VAX/VMS host system, or on a Professional 350 personal computer. It also provides information on how to customize Professional systems as PRO/DECnet nodes.

SUPERSESSION/UPDATE INFORMATION: This is a new manual.

OPERATING SYSTEM AND VERSION: RSX-11M V4.1
RSX-11M-PLUS V2.1
VAX/VMS V3.4
P/OS V2.0

SOFTWARE VERSION: PRO/DECnet Tool Kit V1.0

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CONTENTS

PREFACE

CHAPTER 1 INSTALLING THE PRO/DECnet TOOL KIT ON THE PRO/TOOL KIT

1.1	Requirements	1-1
1.2	PRO/DECnet Tool Kit Distribution	1-1
1.3	Installing the PRO/DECnet Tool Kit	1-3
1.4	Locating Files after Installation	1-3
1.5	Removing the PRO/DECnet Tool Kit.	1-4
1.6	An Error Condition	1-4

CHAPTER 2 INSTALLING THE PRO/DECnet TOOL KIT ON A HOST

2.1	PRO/DECnet Tool Kit Distribution	2-1
2.2	Installing the PRO/DECnet Tool Kit	2-2
2.2.1	Transferring Files to an RSX-11M/M-PLUS Host System	2-3
2.2.2	Transferring Files to a VAX/VMS Host System	2-3
2.3	Removing the PRO/DECnet Tool Kit.	2-3

CHAPTER 3 PRECONFIGURATION UTILITY (PCU)

3.1	PCU Function and Environment	3-1
3.2	Getting Started with PCU	3-2
3.2.1	Using an RSX Host System.	3-2
3.2.2	Using a VMS Host System	3-3
3.2.3	Using a Professional 350.	3-4
3.3	Creating a New PRO/DECnet Configuration File	3-5
3.4	PRO/DECnet Configuration File Backups	3-5

CHAPTER 4 PCU COMMANDS

4.1	General Command Format	4-1
4.2	HELP Facility	4-2
4.3	Using PCU Indirect Command Files	4-3
4.3.1	Invoking a PCU Indirect Command File.	4-3
4.4	DEFINE EXECUTOR Commands.	4-5
4.4.1	DEFINE EXECUTOR ADDRESS.	4-6
4.4.2	DEFINE EXECUTOR BUFFER SIZE	4-7
4.4.3	DEFINE EXECUTOR DESCRIPTION.	4-8
4.4.4	DEFINE EXECUTOR MAXIMUM ALIASES.	4-9
4.4.5	DEFINE EXECUTOR MAXIMUM LARGE BUFFERS	4-10
4.4.6	DEFINE EXECUTOR MAXIMUM LINKS	4-11
4.4.7	DEFINE EXECUTOR MAXIMUM NODE NAMES	4-12
4.4.8	DEFINE EXECUTOR NAME.	4-13
4.4.9	DEFINE EXECUTOR SEGMENT BUFFER SIZE	4-14
4.5	DEFINE ALIAS	4-15
4.5.1	Foreign Syntax for Remote File Access.	4-16
4.6	DEFINE NODE NAME	4-17
4.7	LIST Commands	4-18
4.7.1	LIST ALIASES	4-19
4.7.2	LIST ALL	4-20
4.7.3	LIST EXECUTOR.	4-21
4.7.4	LIST NODES.	4-22
4.8	PURGE ALIAS Command	4-23
4.8.1	PURGE ALIAS ALL.	4-24
4.9	PURGE NODE Commands	4-25
4.9.1	PURGE NODE ALL (<i>node name</i>)	4-26
4.9.2	PURGE NODE ALL (<i>node address</i>).	4-27
4.10	EXIT and QUIT Commands	4-28

APPENDIX A PCU COMMAND SUMMARY

APPENDIX B PCU ERROR MESSAGES

B.1	Message Types	B-1
B.2	PCU Error Message Definitions	B-1

PREFACE

MANUAL OBJECTIVES

The *PRO/DECnet Tool Kit Installation Guide* introduces the PRO/DECnet networking environment. The manual describes how to install the PRO/DECnet Tool Kit on a Professional or a host system running VAX/VMS or RSX-11M/M-PLUS. It provides detailed information on configuring Professional systems as PRO/DECnet nodes.

INTENDED AUDIENCE

This manual is designed for application developers and network managers who are responsible for Professional 300 systems within a DECnet environment.

STRUCTURE OF THE MANUAL

This manual contains 4 chapters and 2 appendices:

- ☐ **Chapter 1** details the procedures for installing the PRO/DECnet Tool Kit on a Professional system.
- ☐ **Chapter 2** outlines the procedures for installing the PRO/DECnet Tool Kit on a host system.
- ☐ **Chapter 3** introduces the Preconfiguration utility (PCU) which is used for configuring PRO/DECnet nodes.
- ☐ **Chapter 4** provides detailed instructions on how to modify node parameters for PRO/DECnet installations.

This manual also contains 2 appendices:

- ☐ **Appendix A** summarizes PCU commands and their specific parameter(s).
- ☐ **Appendix B** lists error messages which can be encountered during a PCU session.

ASSOCIATED DOCUMENTS

Users of this manual should have the following Digital documents available for reference:

Professional Host Tool Kit Installation Guide and Release Notes,
Order No. AA-N616C-TK

PRO/Communications Manual,
Order No. AA-N602B-TH

PRO/RMS-11 Macro Programmer's Guide,
Order No. AA-P099A-TK

PRO/Tool Kit Installation Guide and Release Notes,
Order No. AA-X911A-TH

RMS-11 MACRO-11 Reference Manual,
Order No. AA-H683A-TC

VAX-11 Record Management Services Reference Manual,
Order No. AA-D031D-TE

GRAPHIC CONVENTIONS

Throughout this manual, the following documentation conventions are used to describe keyboard inputs:

RUN PCU	Uppercase letters indicate command verbs and keywords that must be entered as shown.
DEFINE BUFFER SIZE <i>number</i>	Arguments are shown in command lines as lowercase italic letters. You would replace the argument with the precise information required by the command.
PCU>EXIT	All output lines and command prompts are displayed in black letters. All user-supplied information is displayed in red letters.
\$	A dollar sign indicates a system prompt for a VMS system or a native PRO/Tool Kit.
>	An angle bracket indicates a system prompt for an RSX system.
CTRL/x	The expression CTRL/x refers to a control character keying sequence. The key labeled CTRL and the relevant character key should be pressed simultaneously.
RET	A symbol with a 1- to 3-character abbreviation indicates that you press the corresponding function key on the terminal.
{ }	Braces enclose optional parameters for a command. You may be required to select one or more parameters when executing a specific PCU command. Braces are only logical symbols and should not be included in the input.

CHAPTER 1

INSTALLING PRO/DECnet TOOL KIT ON THE PRO/TOOL KIT

1.1 REQUIREMENTS

The PRO/DECnet Tool Kit uses the following hardware:

- ☐ Professional 350
- ☐ RD51 hard disk (10 mb)
- ☐ (512 kb memory)

In addition, your Professional must be running the P/OS Hard Disk operating system V2.0. The PRO/DECnet Tool Kit requires approximately 400 free blocks of disk space.

1.2 PRO/DECnet TOOL KIT DISTRIBUTION

The PRO/DECnet Tool Kit is contained on a single RX50 diskette. This diskette can be identified by its volume label NETTK. The following files are on the distribution diskette:

NETLIB.MLB

The NETLIB.MLB file contains the MACRO-11 macro definitions required for task-to-task communications.

NETSUB.OLB

The NETSUB.OLB file contains the subroutine object modules used by high level language DECnet tasks.

NETDEF.PAS

The NETDEF.PAS file contains the various definitions needed to perform network programming activities in PASCAL.

NFT.TSK

The NFT.TSK file is a task image which allows you to use node names in conjunction with specific PRO/Tool Kit commands. These commands are:

- ☐ APPEND
- ☐ COPY
- ☐ CREATE
- ☐ DELETE
- ☐ DIRECTORY
- ☐ TYPE

NOTE

In order to use these commands, NFT.TSK must first be installed on the system. During installation, appropriate commands, referencing NFT.TSK, are included in two indirect command files — APPL\$DIR:START.CMD and APPL\$DIR:EXIT.CMD. These two files install and remove tasks that you will need for developing applications for your Professional.

PCU.TSK

The Preconfiguration utility task allows you to modify various parameters for PRO/DECnet nodes.

1.3 INSTALLING THE PRO/DECnet TOOL KIT

The following set of instructions assume that you are familiar with the Professional. Before you can install the PRO/DECnet Tool Kit on your Professional, you must first install the PRO/Tool Kit. For a generic description of the installation procedure, see the *PRO/Tool Kit Installation Guide and Release Notes*.

If you want to install the PRO/DECnet Tool Kit, you should follow these steps:

1. Invoke the PRO/Tool Kit from the appropriate applications menu.
2. Insert the diskette labeled NETTK in drive 1.
3. Type @NETTK:[NETTK]INSTALL.
4. When the installation is complete, a success message will be displayed on the screen. You should then remove the diskette and store it in a safe place. All required PRO/DECnet Tool Kit files have been properly copied to your hard disk.

1.4 LOCATING FILES AFTER INSTALLATION

After the PRO/DECnet Tool Kit is installed on your Professional, the following files can be found on the hard disk:

File name	Directory
NETLIB.MLB	LB:[1,5]
NETSUB.OLB	LB:[1,5]
NETDEF.PAS	LB:[1,5]
NFT.TSK	APPL\$DIR:
PCU.TSK	APPL\$DIR:

NOTE

LB:[1,5] is the PRO/Tool Kit system library account. APPL\$DIR: is the PRO/Tool Kit applications directory. This directory is defined only when the PRO/Tool Kit is active.

You can individually delete any files which are not required by your programs. This action can reclaim additional space on the hard disk. For example, you can delete the NETDEF.PAS file if you are not programming in PASCAL.

1.5 REMOVING THE PRO/DECnet TOOL KIT

If you want to remove the PRO/DECnet Tool Kit, you should follow these steps:

1. Invoke the PRO/Tool Kit from the appropriate applications menu.
2. Insert the diskette labeled NETTK in drive 1.
3. Type @NETTK:[NETTK]REMOVE.
4. If you have previously deleted any PRO/DECnet Tool Kit files, you may see error messages indicating deletion failures displayed on the screen. You should ignore these messages.
5. When the removal is complete, a success message will be displayed on the screen. You should then remove the diskette and store it in a safe place. All PRO/DECnet Tool Kit files have been properly deleted from your hard disk.

NOTE

Before you remove PRO/DECnet from the PRO/Tool Kit, you must first remove all references to NFT.TSK in APPL\$DIR:START.CMD and APPL\$DIR:EXIT.CMD. You can make these deletions by using EDIT.

1.6 AN ERROR CONDITION

A **Copy** error message may be displayed on your screen during the installation procedure. This particular message type indicates a possible problem with your hard disk or diskette. If such an error condition occurs, you should take the appropriate corrective action.

CHAPTER 2

INSTALLING THE PRO/DECnet TOOL KIT ON A HOST

OVERVIEW

The PRO/DECnet Tool Kit contains software tools for building network applications for Professional 350 computers. It is supported on the following host operating systems:

- ☐ RSX-11M Version 4.1
- ☐ RSX-11M-PLUS Version 2.1
- ☐ VAX/VMS Version 3.4

2.1 PRO/DECnet TOOL KIT DISTRIBUTION

To install the PRO/DECnet Tool Kit on your host system, you must copy several files from the distribution diskette labeled NETTK.

The required PRO/DECnet Tool Kit files are located on NETTK as follows:

[1,5]NETLIB.MLB

The NETLIB.MLB file contains the MACRO-11 macro definitions required for task-to-task communications.

[1,5]NETSUB.OLB

The NETSUB.OLB file contains the subroutine object modules used by high level language DECnet tasks.

2-2 INSTALLING THE PRO/DECnet TOOL KIT ON A HOST

[1,5]NETDEF.PAS

The NETDEF.PAS file contains the various definitions needed to perform network programming activities in PASCAL.

[APPLDIR]PCUHST.TSK

The Preconfiguration utility task allows you to modify various parameters for PRO/DECnet nodes.

2.2 INSTALLING THE PRO/DECnet TOOL KIT

There are two ways of installing the PRO/DECnet Tool Kit on your host system. Both sets of instructions assume that you are familiar with your host system. They are described below:

Method A

This method requires that DECnet be installed on both the Professional 350 and your host system.

1. Insert the diskette labeled NETTK in drive 1 of a Professional 350.
2. Log on your host system under a privileged account.
3. Invoke a network file transfer command to copy the required files. Use the COPY command for VMS host systems or the NFT utility for RSX host systems.
4. When the installation is complete, you should remove the diskette from the Professional and place it in a safe place. All required PRO/DECnet Tool Kit files have been properly copied to your host system.

Method B

This method requires that you invoke PRO/Communications for performing file transfer activities.

1. Insert the diskette labeled NETTK in drive 1 of a Professional 350.
2. Log on your host system under a privileged account, using PRO/COM. (See the *PRO/Communications Manual* for details.)
3. Invoke the Professional File Transfer program (PFT or command mode CFT) to transfer the required files from the Professional to your host.
4. When the installation is complete, you should remove the diskette and place it in a safe place. All required PRO/DECnet Tool Kit files have been properly copied to your host system.

2.2.1 Transferring Files to an RSX-11M/M-PLUS Host System

You can transfer the PRO/DECnet Tool Kit files to an RSX host system using one of the methods outlined in Section 2.2. During installation, the required files are copied from NETTK to the host as follows:

From NETTK	To an RSX Host
DZ1:[1,5]NETLIB.MLB	LB:[1,5]NETLIB.MLB
DZ1:[1,5]NETSUB.OLB	LB:[1,5]NETSUB.OLB
DZ1:[1,5]NETDEF.PAS	LB:[1,5]NETDEF.PAS
DZ1:[APPLDIR]PCUHST.TSK	LB:[1,54]PCU.TSK

NOTE

After you copy PCUHST.TSK to your host, you must rename it as PCU.TSK.

2.2.2 Transferring Files to a VAX/VMS Host System

You can transfer the PRO/DECnet Tool Kit files to a VMS host system using one of the methods outlined in Section 2.2. During installation, the required files are copied from NETTK to the host as follows:

From NETTK	To a VMS Host
DZ1:[1,5]NETLIB.MLB	LB:[1,5]NETLIB.MLB
DZ1:[1,5]NETSUB.OLB	LB:[1,5]NETSUB.OLB
DZ1:[1,5]NETDEF.PAS	LB:[1,5]NETDEF.PAS
DZ1:[APPLDIR]PCUHST.TSK	SYS\$SYSTEM:PCU.EXE

NOTE

After you copy PCUHST.TSK to your host, you must rename it as PCU.EXE.

2.3 REMOVING THE PRO/DECnet TOOL KIT

You can remove the PRO/DECnet Tool Kit from your host by individually deleting the files.

CHAPTER 3

PRECONFIGURATION UTILITY (PCU)

3.1 PCU FUNCTION AND ENVIRONMENT

The Preconfiguration utility (PCU) provides turnkey applications developers and network managers with a convenient way of customizing PRO/DECnet installation kits for an individual site. PCU should not be used for modifying an operational PRO/DECnet system.

PCU features simple network management capabilities. It runs as a task on a VAX running VMS or a PDP-11 running RSX-11M/M-PLUS. These systems are called Host Tool Kit systems. PCU can also run as a task on the PRO/Tool Kit. PCU is used to modify the contents of the PRO/DECnet configuration file, also known as DECNETCFG.BIN. This file contains a permanent data base of parameters for a PRO/DECnet node.

PCU serves as an interactive tool for modifying node parameters within a changing PRO/DECnet networking environment. A PCU user can change the characteristics of a future PRO/DECnet node using simple PCU commands. All revisions are automatically incorporated into a new PRO/DECnet configuration file. The updated file can then be moved from the host system or Professional 350 to a PRO/DECnet installation kit. Once the network is installed, it will operate under the new PRO/DECnet configuration file.

3.2 GETTING STARTED WITH PCU

Before you use PCU for manipulating network node parameters, you will need to know the procedures for starting PCU. The commands used to invoke PCU may appear to be different in format, but they perform the same functions whether they are used on an RSX or a VMS Host Tool Kit or on the PRO/Tool Kit.

NOTE

When you work on a host system which supports several PRO/DECnet systems or on the Professional 350, it may be convenient to rename the DECNETCFG.BIN file and still keep the extension as .BIN. You can enter a complete file specification for the configuration file name. If no device or directory is supplied, the default is the current device or directory. If no file name extension is supplied, it will default to ".BIN".

The following sections show the command sequences for RSX and VMS host systems and for the Professional 350.

3.2.1 Using an RSX Host System

After you have gained access to the RSX host system, you can enter one of these start-up command lines to begin the session:

1. If PCU has not been installed on the host system

```
>RUN PCU
```

2. After PCU is installed on the host system using

```
>INS PCU
```

You can run PCU by typing

```
>PCU
```

PCU then prompts you for the PRO/DECnet configuration file name:

```
Enter configuration file name: DECNETCFG.BIN
```

If PCU is invoked by simply using its name, the configuration file name can also be entered on the same line as shown below:

```
>PCU DECNETCFG.BIN
```

PCU then prompts you to enter a PCU command:

```
PCU>command
```

You can also use an indirect command file to enter a series of PCU commands:

```
PCU>@SETUP.COM
```

Refer to Section 4.3 for additional details on the use of an indirect command file.

3.2.2 Using a VMS Host System

After you have gained access to a VMS system, you can enter either one of the following start-up command lines:

1. When a logical command is not defined

```
$ RUN PCU
```

2. When a logical command is defined using

```
$ PCU :== MCR PCU
```

You can start PCU by typing

```
$ PCU
```

PCU then prompts you for the PRO/DECnet configuration file name:

```
Enter configuration file name: DECNETCFG.BIN
```

If PCU is invoked by simply typing its name, the configuration file name can also be entered on the same command line, as shown below:

```
$ PCU DECNETCFG.BIN
```

PCU then prompts you to enter a PCU command:

```
PCU>command
```

You can also use an indirect command file to enter a series of PCU commands:

```
PCU>@SETUP.COM
```

Refer to Section 4.3 for additional details on the use of an indirect command file.

3-4 PRECONFIGURATION UTILITY (PCU)

3.2.3 Using a Professional 350

The Professional 350 can also be used for modifying the PRO/DECnet configuration file with the help of PCU. The file called PCU.TSK is contained in the PRO/Tool Kit application directory APPL\$DIR:.

WARNING

When the PRO/Tool Kit is used for modifying the PRO/DECnet configuration file, you should be extremely careful not to modify the "live" DECNETCFG.BIN file which is resident on your Professional system. You should only modify the DECNETCFG.BIN file found on the DECnet installation diskette labeled DECNETV10X1. Both files are in the [ZZDECNET] directory, the "live" file on the hard disk and the other one on the installation diskette.

You can start PCU by typing

```
$ RUN $PCU
```

PCU then prompts you for the PRO/DECnet configuration file name:

```
Enter configuration file name: DECNETCFG.BIN
```

PCU then prompts you to enter a PCU command:

```
PCU>command
```

You can also use an indirect command file to enter a series of PCU commands:

```
PCU>@SETUP.COM
```

Refer to Section 4.3 for additional details on the use of an indirect command file.

3.3 CREATING A NEW PRO/DECnet CONFIGURATION FILE

You can create a completely new PRO/DECnet configuration file by appending the /CR switch to the file name. In this case, PCU supplies you with the initial values for all network parameters in the file. You can modify them using standard PCU commands. (Refer to Chapter 4 for a discussion of the initial parameter values supplied by the PCU commands.)

The following example illustrates how this task would be done using an RSX host system:

```
>RUN PCU
```

The system responds with:

```
Enter configuration file name: DECNETCFG/CR
```

The system responds with:

```
PCU>command
```

At this point, you can enter the required PCU commands for changing the initial network parameters.

3.4 PRO/DECnet CONFIGURATION FILE BACKUPS

PCU does not automatically delete old versions of the configuration file after a new file has been added to your directory. You are responsible for purging old files which contain outdated information.

If the system crashes before an EXIT or **CTRL/Z** command is entered, the configuration file will still contain the original parameter values. If the system crashes or a file error occurs while PCU is processing an EXIT or **CTRL/Z** command, you must check the configuration file for problems. This is done by executing a directory command to see if the file is locked. If the file appears to be useable, a LIST ALL command should be used to verify the file contents. After careful analysis, the file should be deleted only if it appears to have been corrupted by the system failure. An older version could then be used for resuming PCU processing.

CHAPTER 4

PCU COMMANDS

4.1 GENERAL COMMAND FORMAT

A PCU command has two parts: a command name and one or more specific parameter(s). For example:

Command Name	Specific Parameter(s)
DEFINE EXECUTOR ADDRESS	<i>adnum</i>

The commands describe specific functions which PCU can perform and are entered as either complete words or abbreviations of 3 or more characters. For example, DEFINE EXECUTOR ADDRESS can also be typed as DEF EXE ADD. You can also optionally select one or more specific parameter(s). Lower-case letters are used to indicate user-supplied variables.

Comments may be placed at the end of a command line by typing an exclamation mark (!) or a semicolon (;). Command lines which are blank or which contain only comments are ignored by PCU. Unless otherwise shown, spaces must separate items in a command string. The last item in a command string must be followed by a carriage return **RET**.

4-2 PCU COMMANDS

4.2 HELP FACILITY

When you use PCU for modifying PRO/DECnet configuration files, you may require some on-line help before you type a command. The on-line HELP routine is designed to provide you with information for each PCU command. This facility has several levels of detail. The general HELP command lists all basic commands and informs you that information is also available on command file usage.

To use the HELP facility, type:

```
PCU>HELP (RET)
```

The system responds with:

```
HELP is available for the following commands:
```

```
DEFINE  
LIST  
EXIT  
PURGE  
QUIT
```

```
HELP is also available for the following topics:
```

```
COMMAND FILES
```

If you want more information about one of these commands, type HELP followed by the command name. For instance:

```
PCU>HELP DEFINE (RET)
```

The displayed information includes a definition of the DEFINE command and tells you that more information is available on command keywords (e.g., DEFINE EXECUTOR or DEFINE EXECUTOR ADDRESS).

You may obtain more detailed information on a PCU command by specifying its specific parameter(s). For instance:

```
PCU>HELP DEFINE EXECUTOR (RET)
```

When you have finished using the HELP facility, the system responds once again with the PCU prompt and you can continue using PCU or return to other tasks.

4.3 USING PCU INDIRECT COMMAND FILES

The PCU utility allows you to execute PCU commands contained in an indirect command file. This file should contain all PCU commands in the exact way and sequence that they would be specified if typed directly into PCU. An indirect command file cannot specify the name of another indirect command file.

When you are ready to execute an indirect command file, you should type the "at" sign (@), followed by the file name. If the file name extension is not given, it is assumed to be .CMD.

4.3.1 Invoking a PCU Indirect Command File

There are two ways for specifying a PCU indirect command file. They are described below:

Method A

An indirect command file can be specified on the PCU start-up command line or in response to a request for the configuration file name. Here is an example using the RSX-11M/M-PLUS format:

```
>RUN PCU
```

The system responds with:

```
Enter configuration file name: @SETUP
```

- or -

```
>PCU @SETUP
```

At this point, PCU reads the configuration file name from the command file, and then executes the remaining commands found in the file.

Here is a sample SETUP.CMD file:

```
!
!Set up initial configuration file
!
DECNETCFG
!
!Set initial parameters
!
DEFINE EXECUTOR ADDRESS 10
DEFINE EXECUTOR NAME DALLAS
EXIT
```

NOTE

In this case, the command file must specify the configuration file name as the first command in the file.

4-4 PCU COMMANDS

Method B

If the PCU command file is entered in response to a PCU prompt, the file contains only the individual commands. Here is an example using the RSX-11M/M-PLUS format once again:

```
>RUN PCU
```

The system responds with:

```
Enter configuration file name: DECNETCFG
```

The system responds with:

```
PCU>@SETUP
```

At this point, PCU executes the commands found in the file.

Here is a sample SETUP.CMD file:

```
!  
!Set initial parameters, but don't exit  
!  
SET EXECUTOR ADDRESS 10  
SET EXECUTOR NODE DALLAS  
LIST ALL
```

4.4 DEFINE EXECUTOR COMMANDS

You can use the DEFINE EXECUTOR commands to modify parameters in the DECNETCFG.BIN configuration file which controls the operation of the user's node on the network. The DEFINE EXECUTOR ADDRESS, DESCRIPTION and NAME commands are only used when a different copy of the DECNETCFG.BIN file is supplied for each PRO/DECnet node. In most cases, these three parameters are selected by the user at installation time. The other executor parameters such as buffer sizes can be preset and used by all the site's PRO/DECnet nodes. In this way, the same copy of the configuration file can be supplied to all users.

DEFINE EXECUTOR ADDRESS

4.4.1 DEFINE EXECUTOR ADDRESS

Format

DEFINE EXECUTOR ADDRESS *adrnum*

Specific Parameter

adrnum

defines your node's address. This number is used by all other nodes on the network for identifying your node. The valid range is 1-1023. If the address number is not set by PCU, it will be set when PRO/DECnet is installed on your Professional 350.

Example

```
PCU>DEFINE EXECUTOR ADDRESS 3
```

This command sets your node address to 3.

DEFINE EXECUTOR BUFFER SIZE

4.4.2 DEFINE EXECUTOR BUFFER SIZE

Format

DEFINE EXECUTOR BUFFER SIZE *bufsiz*

Specific Parameter

bufsiz

defines the physical size of the line communications buffers in bytes. The size must be the same for all nodes. It is initially set to 576. The valid range is 292-1484. The buffer size includes space for user data and overhead for DECnet protocol. It must be the same size for all nodes in the network.

CAUTION

If you decide to change the buffer size, you may also have to change the segment buffer size. When using DECnet, the buffer size must be greater than or equal to the segment buffer size.

Example

```
PCU>DEFINE EXECUTOR BUFFER SIZE 1000
```

This command sets the buffer size at 1000.

DEFINE EXECUTOR DESCRIPTION

4.4.3 DEFINE EXECUTOR DESCRIPTION

Format

DEFINE EXECUTOR DESCRIPTION *descriptive-string*

Specific Parameter

descriptive-string

defines the description of the network node. The string consists of 1 to 32 characters and is selected by the user. This value is initially set to "PRO/DEC-net V1.0".

Example

```
PCU>DEF EXE DESCRIP JEANNE SMITH, OFFICE MANAGER
```

This command describes the node as belonging to "JEANNE SMITH, OFFICE MANAGER".

DEFINE EXECUTOR MAXIMUM ALIASES

4.4.4 DEFINE EXECUTOR MAXIMUM ALIASES

Format

DEFINE EXECUTOR MAXIMUM ALIASES *alinum*

Specific Parameter

alinum

defines the maximum number of aliases which can be defined on your node. The initial value for this number is 5. The valid range for the maximum number of aliases is 0-50.

Example

```
PCU>DEFINE EXECUTOR MAXIMUM ALIASES 25
```

This command sets the maximum number of aliases which a user can set to 25.

DEFINE EXECUTOR MAXIMUM LARGE BUFFERS

4.4.5 DEFINE EXECUTOR MAXIMUM LARGE BUFFERS

Format

DEFINE EXECUTOR MAXIMUM LARGE BUFFERS *bufnum*

Specific Parameter

bufnum

defines the number of large network communications buffers to be used on the system. The value is initially set to 13. The valid range is 7-200.

CAUTION

Care should be exercised when modifying this number. As the number of buffers increases, the network throughput may increase but additional system memory will be required. As the number of buffers decreases, network traffic may also decrease, but more system memory may be freed up for user tasks. PRO/DECnet will prevent the buffer number from being set too low.

Example

```
PCU>DEF EXECUTOR MAXIMUM LARGE BUFFERS 12
```

This command sets the number of buffers at 12.

DEFINE EXECUTOR MAXIMUM LINKS

4.4.6 DEFINE EXECUTOR MAXIMUM LINKS

Format

DEFINE EXECUTOR MAXIMUM LINKS *Inknum*

Specific Parameter

Inknum

defines the maximum number of network logical links that the node can initiate and/or accept. This number should be increased only in cases where an application cannot run because of too few available logical links. The value is initially set to 10. The valid range is 3-25.

Example

```
PCU>DEF EXE MAX LINK 25
```

This command sets the maximum active logical link count at 25.

DEFINE EXECUTOR MAXIMUM NODE NAMES

4.4.7 DEFINE EXECUTOR MAXIMUM NODE NAMES

You should use the DEFINE EXECUTOR MAXIMUM NODE NAMES command for specifying the maximum number of node names which can be defined on your node. Node names are defined by issuing a DEFINE NODE NAME command.

Format

DEFINE EXECUTOR MAXIMUM NODE NAMES *namnum*

Specific Parameter

namnum

defines the maximum number of node names which can be defined on your node. The initial value for this number is 30. The valid range for the maximum number of node names is 5-1023.

Example

```
PCU>DEFINE EXECUTOR MAXIMUM NODE NAMES 100
```

This command sets the maximum number of node names which a user can set to 100.

DEFINE EXECUTOR NAME

4.4.8 DEFINE EXECUTOR NAME

Format

DEFINE EXECUTOR NAME *nodnam*

Specific Parameter

nodnam

defines a node's network name. This string consists of 1 to 6 alphanumeric characters with at least one alphabetic character. If the node name is not set by PCU, it will be set when PRO/DECnet is installed on your PRO 350.

Example

```
PCU>DEFINE EXECUTOR NAME SMITH
```

This command defines the node's network name as SMITH.

DEFINE EXECUTOR SEGMENT BUFFER SIZE

4.4.9 DEFINE EXECUTOR SEGMENT BUFFER SIZE

Format

DEFINE EXECUTOR SEGMENT BUFFER SIZE *segsiz*

Specific Parameter

segsiz

defines the size of the segment buffers in bytes. These buffers are used for transmitting DECnet messages. The segment buffer size must be less than or equal to the buffer size. This size must be the same for all nodes in the network. This number is initially set to 576. The valid range is 292-1484.

CAUTION

If you decide to change the segment buffer, you may also have to change the buffer size. When using DECnet, the segment buffer size must be less than or equal to the buffer size.

Example

```
PCU>DEF EXE SEG BUF SIZE 386
```

This command sets the size of the segment buffer at 386 for PRO/DECnet.

DEFINE ALIAS

4.5 DEFINE ALIAS

You can use the DEFINE ALIAS command for specifying a pseudonym for a remote network node. An alias contains the remote node name and associated access control information. The use of an alias simplifies remote node identification. It provides a convenient way for accessing remote data bases on the same node, executing privileged functions and performing remote file access.

Before you can access files on a remote node using an alias, it may be necessary for you to supply other information about your user ID, password, and account number. If an alias already exists, the access information will either be added or changed at the time that you issue this command.

Format

```
DEFINE ALIAS alinam { NODE nodnam      USER usrnam
                       PASSWORD paswrđ  ACCOUNT accnum }
```

Specific Parameters

alinam

defines a pseudonym for a remote node. An alias can consist of 1 to 6 alphanumeric characters with at least one alphabetic character.

nodnam

defines the actual name of the remote node. The alias and actual name may be the same or different. A node name has a maximum of 6 alphanumeric characters with at least one alphabetic character.

usrđ

identifies a user name or log-in ID on the remote system. The user ID and password set the access privileges for a user in regards to a remote system's resources or files. A user ID has a maximum of 16 characters.

paswrđ

defines a user's password which is associated with the *usrđ*. A user's password has a maximum of 8 characters.

accnum

identifies a billing account number which is used with the user ID and password information on some systems. A user's account number has a maximum of 16 characters.

4.5.1 Foreign Syntax for Remote File Access

1. If the *usrid*, *paswr*d and *accnum* argument strings contain spaces, tabs or quotes, the entire argument string must be enclosed in quotes. For example:

```
PCU>DEF ALI DALLAS PASSWORD " DEMO 1 "
```

2. If quotes are part of an argument string, you must set them off by inserting two quotes for every single quote placed in the middle of the string. For example, to define "JAMIE", you can use:

```
PCU>DEF ALI BOSTON PASSWORD "" "JAMIE" ""
```

3. A defined field can be made null again by using two quotes. For example:

```
PCU>DEF ALI TEST1 PASSWORD " "
```

4. An alias definition can be spread over more than one command line. The first line should contain the *nodnam* argument and all subsequent command lines should specify the same alias. For instance:

```
PCU>DEF ALI BOSS NODE BIGSYS  
PCU>DEF ALI BOSS USER JOHN
```

DEFINE NODE NAME

4.6 DEFINE NODE NAME

You can use the DEFINE NODE NAME command to modify node names and numbers in the PRO/DECnet configuration file. A list of remote nodes for each user can be preset with this command.

If a user attempts to define a remote node with a name or number already preset for the Executor node, PCU will issue an error message.

A remote node must have a defined node name in order for tasks running on the local node to connect to tasks on the remote node. In contrast, a remote node name is not required when you wish to connect tasks running on a remote node to object tasks (background applications) running on your local node.

Format

DEFINE NODE *nodnum* NAME *nodnam*

Specific Parameters

nodnum

identifies a remote node by its network address. The valid range for a node number falls between 1–1023.

nodnam

specifies a name for a remote node on the network. The name is entered into the configuration data base as a new entry. The node name can have 1 to 6 alphanumeric characters with at least one alphabetic character.

Example

```
PCU>DEF NOD 2 NAM SMITH
```

This command identifies a remote node at address 2 with a node name of SMITH.

4.7 LIST COMMANDS

You can use the LIST commands to display and verify information from the PRO/DECnet configuration file.

LIST ALIASES

4.7.1 LIST ALIASES

This command shows all alias definitions set for the node. When you use this command, relevant passwords will not be listed in the display.

Example

```
PCU>LIST ALIASES
```

The system responds with:

Alias	Node	User ID	Account
MEMOS	CENTER	JONES	30A4
MAIL	CENTER	FYRE	

There are 2 aliases defined out of a maximum of 5.

LIST ALL

4.7.2 LIST ALL

This command lists all information pertaining to the PRO/DECnet system. The display contains data on the Executor node, node names and aliases.

LIST EXECUTOR

4.7.3 LIST EXECUTOR

This command shows local node information from the PRO/DECnet configuration file. The information includes local node address, name and description; buffer sizes and maximum number of buffers; and the number of links, node names and aliases.

Example

```
PCU>LIST EXECUTOR
```

The system responds with:

```
Executor name: DALLAS      Executor address: 23
```

```
Description: Office Systems Group
```

```
There are 13 large data buffers, buffer size 576, segment  
size 576.
```

```
A maximum of 10 logical links are allowed
```

```
A maximum of 30 node names and 5 aliases may be defined
```

LIST NODES

4.7.4 LIST NODES

This command displays all the node name definitions set for the node.

Example

```
PCU>LIST NODES
```

The system responds with:

Node	Address
BOSTON	6
DALLAS	10

There are 2 nodes defined out of a maximum of 30

4.8 PURGE ALIAS COMMAND

You can use the PURGE ALIAS command to remove an alias name from the PRO/DECnet configuration data base.

PURGE ALIAS ALL

4.8.1 PURGE ALIAS ALL

Format

PURGE ALIAS *alinam* ALL

Specific Parameter

alinam

specifies the alias name to remove from the alias list.

Example

```
PCU>PURGE ALIAS BOSS ALL
```

In this case, the alias BOSS has been removed from the PRO/DECnet configuration data base.

4.9 PURGE NODE COMMANDS

You can use the PURGE NODE commands to remove node names from the PRO/DECnet configuration data base.

PURGE NODE ALL **(*node name*)**

4.9.1 PURGE NODE ALL (*node name*)

Format

PURGE NODE *nodnam* ALL

Specific Parameter

nodnam

specifies a remote node by its node name.

Example

```
PCU>PURGE NODE SMITH ALL
```

This command indicates that the network node definition for SMITH should be removed from the PRO/DECnet configuration data base.

PURGE NODE ALL
(*node address*)

4.9.2 PURGE NODE ALL (*node address*)**Format**

PURGE NODE *nodnum* ALL

Specific Parameter

nodnum

specifies a remote node by its node address.

Example

```
PCU>PURGE NODE 2 ALL
```

This command indicates that the network node definition for node address 2 should be removed from the PRO/DECnet configuration data base.

EXIT and QUIT

4.10 EXIT AND QUIT COMMANDS

Once you have completed making changes to your PRO/DECnet configuration file, you can end a PCU session by typing one of the following commands:

1. You can type EXIT or **CTRL/Z** to save all changes in an updated version of the configuration file. A new version will then show in your directory.
2. If you decide not to save any changes, you can type QUIT and PCU will not create a new version of the configuration file.

After you have executed one of these commands, the system responds with > or \$, indicating that the particular Tool Kit system is ready to begin a different task.

NOTE

An angle bracket > indicates a system prompt for the RSX-11M/M-PLUS Host Tool Kit. A dollar sign \$ indicates a system prompt for both the VAX/VMS Host Tool Kit and the PRO/Tool Kit systems.

APPENDIX A

PCU COMMAND SUMMARY

This appendix summarizes the PCU commands.

Command Name	Specific Parameter(s)
DEFINE EXECUTOR ADDRESS	<i>adnum</i>
DEFINE EXECUTOR BUFFER SIZE	<i>bufsiz</i>
DEFINE EXECUTOR DESCRIPTION	<i>descriptive-string</i>
DEFINE EXECUTOR MAXIMUM ALIASES	<i>alinum</i>
DEFINE EXECUTOR MAXIMUM LARGE BUFFERS	<i>bufnum</i>
DEFINE EXECUTOR MAXIMUM LINKS	<i>lnknum</i>
DEFINE EXECUTOR MAXIMUM NODE NAMES	<i>namnum</i>
DEFINE EXECUTOR NAME	<i>nodnam</i>
DEFINE EXECUTOR SEGMENT BUFFER SIZE	<i>segsiz</i>

Command Name	Specific Parameter(s)
DEFINE ALIAS <i>alinam</i>	$\left\{ \begin{array}{ll} \text{NODE } \textit{nodnam} & \text{USER } \textit{usrnam} \\ \text{PASSWORD } \textit{paswrđ} & \text{ACCOUNT } \textit{accnum} \end{array} \right\}$
DEFINE NODE	<i>nodnum</i> NAME <i>nodnam</i>
EXIT	
LIST ALIAS	
LIST ALL	
LIST EXECUTOR	
LIST NODE	
PURGE ALIAS	<i>alinam</i> ALL
PURGE NODE	<i>nodnam</i> ALL
PURGE NODE	<i>nodnum</i> ALL
QUIT	

APPENDIX B

PCU ERROR MESSAGES

B.1 MESSAGE TYPES

During a PCU session, you may see a PCU error message displayed on your screen. An error message may occur when you duplicate a network parameter or mistype a PCU command. It can also show when a problem has developed with the record management services routines. For this problem, an RMS error code will accompany the PCU error message. (RMS error codes are defined in the *RMS-11 Macro-11 Reference Manual* for RSX systems and the *VAX-11 Record Management Services Reference Manual* for VMS systems. They can also be found in the *PRO/RMS-11 Macro Programmer's Guide*.)

The general format for a PCU error message is **Error – Error Message Text**. For the purposes of simplicity, the word “Error” and the hyphen have been omitted from the error messages shown below.

B.2 PCU ERROR MESSAGE DEFINITIONS

Address already used as executor address

The specified node address is currently being used for the executor node's address.

Address already used as remote node address

The address being specified for the executor node already defines a remote node.

Attempt to define a duplicate node address

The node address already exists for another remote node.

Attempt to define a duplicate node name

The node name already exists for another remote node.

Buffer size less than segment size

The buffer size cannot be less than the segment size. The segment size must be changed before revising the buffer size by issuing the command - DEFINE EXECUTOR SEGMENT BUFFER SIZE.

Cannot create new configuration file

PCU could not create a new configuration file. Any partially initialized .BIN files were automatically deleted by the system.

Cannot delete corrupt configuration file

The corrupt PRO/DECnet configuration file can only be deleted by the user.

Cannot open old configuration file

PCU was unable to find the specified PRO/DECnet configuration file. The file may not exist, is corrupt or the /CR switch was missing from the file name.

Command file open error on *file name*

PCU cannot locate the specified command file. This file may not exist or is found to be corrupt.

Command file read error

The command file specified by the user was opened but could not be read.

Command file refers to second command file

The command file references the contents of a second file. PCU does not accept nested command files.

Configuration file close error

The PRO/DECnet configuration file could not be properly closed.

Configuration file read error

The PRO/DECnet configuration file was opened but could not be read by PCU. This error could be due to disk errors.

Configuration file write error

The PRO/DECnet configuration file was created but could not be updated by PCU. This error could be due to disk errors.

File system initialization failure

The RMS file system could not be properly initialized.

Illegal account number

An account number had an invalid syntax. An account number has a maximum of 16 characters.

Illegal buffer size

The range for a valid buffer size is 292 to 1484.

Illegal alias

An alias can have a maximum of 6 alphanumeric characters with at least one alphabetic character.

Illegal node address

The valid range for a node address is 1 to 1023.

Illegal node description string

A description string can only have a maximum of 32 characters.

Illegal node name

A node name can have a maximum of 6 alphanumeric characters with at least one alphabetic character.

Illegal number

A non-numeric character was typed in a place where a number was expected by PCU.

Illegal number of large buffers

The number of large buffers can range from 7 to 200.

Illegal number of links

The number of logical links can range from 3 to 25.

Illegal number of aliases

The number of aliases can range from 0 to 50.

Illegal number of node names

The valid range for the number of node names is 5 to 1023.

Illegal password

Passwords must have a maximum of 8 characters.

Illegal segment buffer size

A segment buffer size can range between 292 to 1484.

Illegal switch /switch

PCU detected an invalid switch appended to the PRO/DECnet configuration file name.

Illegal user ID

A user identification must have a maximum of 16 characters.

Name already used as executor name

The name being specified for a node already exists for the executor node.

Name already used as remote node name

The name being specified for the executor node already exists for a remote node.

No such alias defined

The specified alias does not exist.

No such node defined

The specified node name does not exist.

Segment size greater than buffer size

The segment buffer size cannot exceed the defined buffer size. The buffer size must be revised prior to redefining the segment buffer size by issuing the command - DEFINE EXECUTOR BUFFER SIZE.

There are already *number* aliases defined

Use the command PURGE ALIAS to delete the necessary number of aliases.

There are already *number* node names defined

Use the command PURGE NODE to delete the necessary number of node names.

There should be at least *number* buffers defined

This is a warning that the specified number of buffers falls below the optimal count for the PRO/DECnet system.

Too many arguments

Extra arguments were entered at the end of a command line.

Too many aliases, maximum = *number*

The number of aliases must be increased before defining additional aliases. This is done by typing the command - DEFINE EXECUTOR MAXIMUM ALIASES.

Too many node names, maximum = *number*

The number of node names must be increased before specifying more node names. This is done by typing the command - DEFINE EXECUTOR MAXIMUM NODE NAMES.

Unknown command

The command was not recognized by PCU.

INDEX

- Access control, 4-15
- Alias
 - defining with PCU, 4-15
 - purging with PCU, 4-23
- APPL\$DIR
 - developing applications, 1-2
 - indirect command files, 1-2
- Buffer
 - modifying maximum number using PCU, 4-10
 - modifying segment size using PCU, 4-14
- DECNETCFG.BIN
 - see PRO/DECnet configuration file
- Error message
 - during PRO/DECnet Tool Kit installation, 1-4
- Executor commands
 - buffer size, 4-7
 - maximum aliases, 4-9
 - maximum large buffers, 4-10
- Executor commands (Cont.)
 - maximum links, 4-11
 - maximum node names, 4-12
 - modifying node parameters, 4-5 to 4-14
 - node address, 4-6
 - node description, 4-8
 - node name, 4-13
 - segment buffer size, 4-14
- EXIT command, 4-28
- HELP facility
 - for PCU, 4-2
- Host Tool Kit system, 3-1
- Indirect command files
 - creating, 4-3
 - invoking PCU, 3-3, 3-4, 4-3 to 4-4
- Libraries
 - NETDEF.PAS, 1-2, 2-2
 - NETLIB.MLB, 1-1, 2-1
 - NETSUB.OLB, 1-2, 2-1
- NFT utility, 1-2
 - using P/OS applications directory, 1-2
- Node name
 - defining with PCU, 4-17
 - purging with PCU, 4-25
- Node number
 - defining with PCU, 4-17
 - purging with PCU, 4-27
- Node parameters
 - modifying with PCU, 3-1
- P/OS, 1-1
- PCU, 1-2, 2-2
 - error messages, see Appendix B
 - error message format, B-1
 - general description, 3-1
 - getting started with, 3-2
- PCU commands, 4-1 to 4-28
 - summary, see Appendix A
 - EXIT, 4-28
 - general format, 4-1
 - on-line help, 4-2
 - QUIT, 4-28
- Preconfiguration utility
 - see PCU
- PRO/DECnet, 3-1
- PRO/DECnet configuration file, 3-1
 - backup versions, 3-5
 - creating, 3-5
- PRO/DECnet network
 - and PCU, 3-1
- PRO/DECnet Tool Kit, 2-1
 - configuration requirements for, 1-1
 - distribution files, 1-1, 2-1
 - installing on a Professional 350, 1-3
 - operating systems supported on, 2-1
 - removing from a Professional 350, 1-4
- PRO/Tool Kit, 3-1
 - applications directory, 1-3
 - system library, 1-3

INDEX I-2

Professional 350 computer, 2-1
installing PRO/DECnet Tool Kit, 1-3
removing PRO/DECnet Tool Kit, 1-4
using an indirect command file, 3-4

QUIT command, 4-28

Remote file access
target system conventions, 4-16

RSX host system
installing the PRO/DECnet Tool Kit,
2-3

invoking PCU, 3-2
using an indirect command file, 3-3
RSX-11M/M-PLUS, 3-1

VAX/VMS, 3-1

VMS host system
installing the PRO/DECnet Tool Kit,
2-3
invoking PCU, 3-3
using an indirect command file, 3-3

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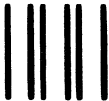
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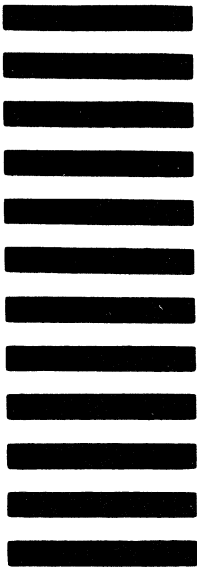
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