

INSTALLATION GUIDE • APRIL 1996

Endless PL/I for POSIX Systems

This guide contains instructions for installing Endless PL/I on Alpha processors running the Digital UNIX operating system.

OPERATING SYSTEM AND VERSION

Digital UNIX Version 3.2 and higher

SOFTWARE VERSION

Endless PL/I for POSIX Systems Version 2.0

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Preface

This guide describes how to install the Endless PL/I[™] for POSIX Systems compiler on Alpha systems that are running the Digital UNIX operating system.

The installation procedure creates Endless PL/I for POSIX Systems file systems subordinate to the `/usr/man` and `/usr/opt/plicmp120` directories and loads PL/I software subsets.

1. Intended Audience

This guide is intended for:

- System managers who manage node-specific systems
- Diskless Management Services (DMS) managers who manage DMS server areas
- Remote Installation Services (RIS) managers who manage RIS server areas
- System managers who expect to do Endless PL/I for POSIX Systems client installations from the server area of a remote system

2. Structure of this Guide

This manual is divided into the following sections:

- See [Chapter 1, *Preparing for Endless PL/I for POSIX Systems Installation*](#)
- See [Chapter 2, *Installing on Linux Systems*](#)
- See [Chapter 3, *Installing on macOS*](#)
- See [Chapter 4, *Installing on Tru64 UNIX*](#)
- See [Appendix A, *Sample Installation*](#)
- See [Appendix A, *Sample Installation*](#), [Appendix B, *Files Installed On Your System*](#)

3. Where to Find More Information

The Endless PL/I for POSIX Systems Reference Manual contains a complete definition of Endless PL/I for POSIX Systems, with detailed reference information on all supported PL/I language elements.

The Endless PL/I for POSIX Systems User's Manual contains information on program development with the system-specific command language, the extensive I/O capabilities provided in PL/I, and programming techniques available to PL/I programs executing under the exclusive control of the operating system.

The manpages contain information on using the `p11` and `dbg` commands.

The Digital UNIX documentation set gives complete information on the operating system.

4. Conventions

For the purposes of this manual, the term PL/I refers to Endless PL/I for POSIX Systems, which runs on Linux, macOS, Tru64 UNIX and other POSIX systems.

All descriptions of the effects of executing statements and evaluating expressions assume that the initial procedure activation of the program is through an entry point with OPTIONS(MAIN).

It is further assumed that any non-PL/I procedures called by the program follow all conventions of the PL/I run-time environment.

Table 1. Documentation Conventions Table

Conventions	Meaning
Return	This symbol represents a single stroke of the RETURN key on the keyboard.
Ctrl+X	This symbol represents a control key combination. The letter X can be any keyboard character. To generate a control key combination, hold down the CTRL key while pressing the specified letter.
command	System text and code in examples and in text appears in the Courier typeface. Since the UNIX operating system differentiates between lowercase and uppercase characters, literal strings in examples and text must be entered exactly as shown.
bold	User input in interactive examples appears in the bold Courier typeface.
bold	Bold words in text indicate the first use of a new term.
italic	File and variable names appear in italics.
:	Vertical ellipses indicate that irrelevant parts of the program text or program output have been omitted.
quotation mark apostrophe	The term quotation mark is used only to refer to the double quotation mark character ("). The term apostrophe is used to refer to the single quotation mark character (').
#	A # symbol is used in some contexts to indicate a single ASCII space character.)
p11(1)	Specifies a manual page. For more information, type: man section page
	This margin icon indicates that the paragraph contains important information to which you should pay close attention.
SYNTAX	Syntax (format) diagrams appear in the Helvetica typeface.
...	Horizontal ellipses indicate that additional parameters, options, or values can optionally be entered. When a comma precedes an ellipsis, it indicates that successive items must be separated by commas. Used in syntax diagrams.
[]	Square brackets indicate that a syntactic element is optional and you need not specify it. Used in syntax diagrams
[LIST] [EDIT]	Brackets surrounding two or more stacked items indicate conflicting options, one of which can optionally be chosen. Used in syntax diagrams

Conventions	Meaning
{ EXTERNAL } { INTERNAL }	Braces surrounding two or more stacked items indicate conflicting options, one of which must be chosen. Used in syntax diagrams
FILE (file-reference)	An uppercase word or phrase indicates a keyword that must be entered as shown; a lowercase word or phrase indicates an item for which a variable value must be supplied. This convention applies to syntax diagrams, not to code examples.

Preparing for Endless PL/I for POSIX Systems Installation

Before starting the installation procedure in [Chapter 2, *Installing on Linux Systems*](#), [Chapter 3, *Installing on macOS*](#) or [Chapter 4, *Installing on Tru64 UNIX*](#), you should complete the preparation requirements outlined in this chapter.

The sections in this chapter provide the necessary information to make your installation run smoothly. You will need to know about and be aware of your installation options and information related to the installation procedure. This chapter will help you determine the following:

- How to access the Release Notes
- Whether you are installing PL/I from distribution media or using the Remote Installation Service (RIS)
- Whether you are installing PL/I locally or into a Diskless Management Services (DMS) server area for diskless clients
- How to register Endless PL/I for POSIX Systems
- If installing PL/I from media, whether your distribution kit includes all the components listed on the Bill of Materials (BOM)
- Whether the system on which you will install PL/I meets the PL/I hardware, software, and disk space requirements
- Which optional PL/I subsets you should install
- How much disk space you will need
- Whether you have to back up your system disk (this is always recommended)

1.1. Release Notes

PL/I provides on-line release notes. Endless Software Solutions strongly recommends that you read the release notes before using the product. The release notes may contain information about changes to the product.

During installation, the release notes are placed in the directory:

```
/usr/opt/PLICMP120
```

The file is `release_notes.txt`, which is an ASCII text file.

This release notes document provides important information that you need to know before installing PL/I, and that may not be included in the installation guide. Please read this document before installing PL/I.

1.2. Installing Endless PL/I for POSIX Systems Into a Server Area

If you manage a Diskless Management Services (DMS) or Remote Installation Services (RIS) server area and intend to install PL/I into your server area, read the following sections of this guide:

- [Section 1.5, “Checking the Media Software Distribution Kit”](#) contains information about contents of the media kit.
- See [Section 1.6, “Installation Procedure Requirements”](#) for hardware and software requirements, describes the software subsets and for disk space requirements.
- [Chapter 4, *Installing on Tru64 UNIX*](#) explains the displays and prompts that are specific to PL/I installations.

To start a RIS installation procedure use the `ris` utility (see [Chapter 4, *Installing on Tru64 UNIX*](#)). Do not use the `setld` command.

To start a DMS installation procedure use the `dms` utility (see [Chapter 4, *Installing on Tru64 UNIX*](#)). Do not use the `setld` command.

Note

The diskless server area does not provide PL/I software to users logged in to the server system itself. Installing PL/I into the diskless environment provides PL/I software only to client systems. Therefore, if users at your site need to use PL/I when logged in to the local server system, you must perform a local (node-specific) installation of PL/I in addition to the diskless installation.

1.3. Using RIS or DMS for Client Installations

If you expect to use PL/I subsets from a RIS or a DMS server area of a remote system for installation on your local system, first check with your site system administrator to make sure that:

- A PL/I kit is installed in the server area and is available for use
- Your system is registered as a client for your server

If PL/I subsets are available to you on a server system, you will need the name of that system to start the installation procedure described in this guide.

1.4. License Registration

PL/I includes software to obtain licensing information and to install your license. You must follow the procedure described in this section to use PL/I on your machine.

If you are installing prerequisite or optional software along with PL/I, review the license status for any prerequisite or optional software before you install PL/I. You may need to install licenses, such as Digital Equipment Corporation's License Product Authorization Keys (License PAKs), for prerequisite software.

To obtain and install a license for Endless PL/I for POSIX Systems, do the following:

1. Install Endless PL/I for POSIX Systems on your machine.

2. Run the program `/usr/opt/PLICMP120/machine_id` to obtain a unique id for your machine. This program gives you the machine id, which is tied to the ethernet address, as shown in the following example:

```
% machine_id
This Machine Id = '08009be7ab4f'
```

You must run `machine_id` on the machine where you intend to run PL/I. If the `machine_id` program fails for any reason, contact Endless Software Solutions for assistance.

If you are installing on a network, you can install Endless PL/I for POSIX Systems on one system and access it from many machines. Each machine on the network requires a license if you want to run Endless PL/I for POSIX Systems on that machine, and each license is unique. To license several machines on a network, run `machine_id` on each of the machines on which you want to run Endless PL/I for POSIX Systems.

1. Contact Endless Software Solutions. Have the following information available:
 - The information you just acquired from the `machine_id` program.
 - The product you want to license, including the dialect. Endless PL/I for POSIX Systems is the product in this case, and the dialect is either IBM or Digital.

Endless Software Solutions will provide you with a license code. We can provide this either by electronic mail, fax, or postal service mail. We suggest electronic mail, if possible, so you can cut and paste the code and avoid typographic errors.

Keep the license code information somewhere safe. You will need it if you decide to move your license from one machine to another.

2. Log in as root on any machine with write permission to the disk where the compiler is installed. In a diskless environment, log in on the server where you installed PL/I.
3. Run the program `/usr/opt/PLICMP120/install_license`, providing the license code when prompted. For example:

```
% install_license
This Machine ID:      '08009be7ab4f'
Enter Machine ID [ 08009be7ab4f ]: 08009be7ab4f
Enter License Code: TTuNnuKiconuYhrATpYAgUKrioApIrNaD eTaEdoTcrysItpymYdUfmTprYLEHwZqeNov
License has been successfully installed.
%
```

If you ever need to move your Endless PL/I for POSIX Systems license from one machine to another, Endless Software Solutions provides the following simple procedure for doing so:

1. Log in as root on any machine with write permission to the disk where the compiler is installed. In a diskless environment, log in on the server where you installed PL/I.
2. Run the program `/usr/opt/PLICMP120/remove_license`. You will need to supply the license code that you used on the machine, and the machine id. The program supplies a removal key. For example:

```
% remove_license
This Machine ID:      08009be7ab4f
```

```
Enter Machine ID [ 08009be7ab4f ]: 08009be7ab4f
Enter License Code: TTuNnuKiconuYhrATpYAgUKrioApIrNaD
eTaEdoTcrysIt pymYdUfmTprYLEHwZqeNov

License has been successfully removed
Removal Key: mYTSAzqqApoUAfiuhEMhHunDpyqziTdJsYnFNiRB
RBNouaDENibCnDHwseyAllHwENov
%
```

1. Run the program `/usr/opt/PLICMP120/machine_id` on the machine where you want to license PL/I.
2. Contact Endless Software Solutions. Have the removal key and the new machine id available. Endless Software Solutions will give you a new license code, as described in the proceeding instructions.
3. Run the program `/usr/opt/PLICMP120/install_license` on the new machine, providing the license code and other information at the prompts.

1.5. Checking the Media Software Distribution Kit

If you are installing the software from media, use the Bill of Materials (BOM) to check the contents of your software distribution kit.

The kit includes this installation guide and a 4mm DAT tape, labeled Endless PL/I V1.3 for Digital UNIX.

Your distribution kit includes a letter titled Read Before Installing or Using Endless PL/I for POSIX Systems Version 1.3 This letter provides information that is important for you to know before installing PL/I. This information might not be included in this installation guide. Please find the letter and read it now.

1.6. Installation Procedure Requirements

This section discusses various requirements for installing PL/I.

A local, DMS server, or RIS server installation takes approximately 10 to 15 minutes, depending on your type of media and your system configuration. A client installation may take longer because it is dependent on network activity at the time you do the installation. If the network is not active, you should expect an installation time roughly equal to a local installation.

Installing PL/I and running the Installation Verification Procedure (IVP) on your target system takes 5 to 10 minutes.

1.6.1. Checking Login Privileges

You must be able to log in as superuser on the system where you are installing PL/I. Only when you are logged in as superuser do you have sufficient privileges to install the software.

1.6.2. Hardware Requirements

To perform the installation you need the following hardware:

- Software distribution device (if installing from media)

You need a distribution device that corresponds with the software distribution media. For example, if you have a 4mm DAT tape software kit, you need a 4mm DAT tape drive. The documentation for the tape or disk drive that you are using explains how to load the media on the drive.

- Terminal

You can use either a hardcopy or video terminal to communicate with the operating system and respond to prompts.

1.6.3. Software Requirements

PL/I Version 1.3 requires that Digital UNIX Version 3.2 or higher be installed. In addition, PL/I requires that the following ULTRIX software subset be loaded on the system where you install PL/I:

- OSFHWBASE320, which is named "BASE SYSTEM - Hardware Support - Required"

Before you can install the optional PL/I Reference Pages (manual pages), the following software subset must be installed on the system:

- OSFDCMT320, which is named "Doc Preparation Tools"

If you are installing PL/I in a local (node-specific) environment, perform the following steps to determine whether the preceding subsets are loaded:

1. Log in to the system where you plan to install PL/I.
2. Enter the following commands:

```
% /etc/setld -i | grep OSFHWBASE320
% /etc/setld -i | grep OSFDCMT320
```

Check the displayed rows for the relevant subset names and for any related patch names. The word installed appears in a row after the subset identifier code when a subset is loaded. If the word installed does not appear (the second column in a row is blank), the subset or patch is not loaded. In this case, you must load the missing Digital UNIX software before installing PL/I.

1.6.4. Determining Which Subsets to Load

You must choose the PL/I subsets you want to load. The PL/I subsets have the following titles:

- PLICMP120

This subset contains the PL/I compiler, run-time library and a special version of the interactive debugger, dbg.

- PLIMAN120

This subset contains on-line reference pages for PL/I.

1.6.5. Determining Disk Space Requirements

Table 1.1, "Subset Sizes (Kilobytes Required) on Alpha Processors" lists the approximate disk space requirements for loading PL/I software subsets on Alpha processors running the Digital UNIX operating

system. This table specifies disk space requirements by file system for the convenience of those doing installations on systems where these file systems are mount points for different disk partitions.

Note

Table 1.1, “Subset Sizes (Kilobytes Required) on Alpha Processors” lists the disk space occupied by files after installation. If you are extracting files from media using the ris utility only, the PL/I files are compressed during the extraction process and require only the following amount of space to be available in the RIS server area: 7,407Kb.

Table 1.1. Subset Sizes (Kilobytes Required) on Alpha Processors

Subset Title	Subset Name	Directory	Subset Size
PL/I Compiler	PLICMP120	/usr/opt/PLI120	14551Kb
PL/I Reference Pages	PLIMAN120	/usr/man	512Kb
Total:			(15063Kb)

Using the disk space requirements in Table 1.1, “Subset Sizes (Kilobytes Required) on Alpha Processors”, total the values for the subsets that you plan to load in each file system.

Compare the space required for subsets with the free space currently on the disks where PL/I files will reside.

To determine the current amount of free space for a directory path, log in to the system where you plan to install PL/I.

You can check which file systems are mounted and where they are by displaying the file /etc/fstab. For example:

```
# more /etc/fstab
/dev/rd0a:/:rw:1:1:ufs::
/dev/rd0g:/usr:rw:1:2:ufs::
/usr/staff/r1/leslie@bigsys:/usr/staff/r1/leslie:rw:0:0:nfs:bg:
/usr/man@bigsys:/usr/man:ro:0:0:nfs:bg:
```

The previous display indicates that /usr (mounted to /dev/rd0g) is the only local mount point that affects where PL/I files will reside. The system has only one local disk drive and the /usr/opt/PLICMP120 file system resides in the g partition of the disk on that drive, while the /usr/man is a mount point mounted on a remote system (bigsys) via NFS.

Enter the df command to determine total space and free space for the one or two file systems where PL/I files will reside. Based on the previous display of the /etc/fstab file, which shows that only /usr is a local mount point, you would only need to inspect free space in the /usr file system.

For example:

```
# df /usr/opt/PLICMP120 /usr/man
Filesystem Total kbytes kbytes %
node kbytes used free used Mounted on
/dev/rd0g 122598 54447 55892 49% /usr
```

```
/usr/man@big5 455454 227727 227727 50% /usr/man
```

The previous display indicates that there are 55892Kb free on `/usr/opt/PLICMP120` and 227727Kb free on `/usr/man`. This free space must accommodate subset requirements listed in [Table 1.1, “Subset Sizes \(Kilobytes Required\) on Alpha Processors”](#) for both the `/usr/man` and `/usr/opt/PLICMP120` file systems.

1.6.5.1. Checking Disk Space for Installation into a Diskless Environment

For PL/I installations into the diskless environment, the disks where PL/I subsets reside are on a server system. Therefore, for installations into diskless environments, log in to the server system to check disk space requirements.

Inspect the free space in the following file systems; if you have only one diskless installation environment set up on your system, the file systems are rooted at the nodes `/dlenv0` and `/dlclient0` as follows:

```
/dlenv0/root0.alpha/usr (root area for Digital UNIX installations)
/dlclient0/client.root (client area)
```

For installations into a diskless environment, the disk space requirements specified in [Table 1.1, “Subset Sizes \(Kilobytes Required\) on Alpha Processors”](#) for the `/usr/opt/PLICMP120` file system are requirements for both the root area and each client area, while the disk space requirements noted for the `/usr/man` file system apply only to the root area. If multiple root areas serve the PL/I software, each root area requires space for all the installed subsets.

1.6.5.2. Increasing Disk Space Available for PL/I Installation

The PL/I installation procedure creates the following directories and loads files into subordinate directories:

```
/usr/man
/usr/opt/PLICMP120
```

If the `/usr/opt/PLICMP120` directory node in the previous paths does not exist, the installation procedure creates it. If the `/usr/opt/PLICMP120` node in the previous paths does exist, the installation procedure uses it. The same hold true for the `/usr/man` directory. If you find that there is insufficient disk space for the PL/I subsets, and know that you have additional space on alternative disks or disk partitions for your system, perform the following steps before installing PL/I:

1. Log in as superuser.
2. Create the directory `/usr/man`, `/usr/opt/PLICMP120`, or both.
3. Specify in the `/etc/fstab` file that one or more of the newly created directories are mount points to new disk partitions where there is additional space.
4. Enter the `mount -a` command so that the new mount points take effect.

1.7. Backing Up Your System Disk

Digital recommends that you back up your system disk before installing any software. For details on performing a system disk backup, see your UNIX documentation.

1.8. Stopping the Installation

You can stop the installation procedure any time by using Ctrl/C. However, files created up to this point are not deleted automatically. You must delete these files interactively. [Appendix A, *Sample Installation*](#) lists the files and directories created during the installation procedure.

1.9. Error Recovery

If errors occur during the installation, the system displays failure messages. If the installation fails due to insufficient disk space, the following message appears:

```
There is not enough file system space for subset PLICMP120
Endless PL/I for POSIX Systems (PLICMP120) will not be loaded.
```

Errors can occur during the installation if the operating system version is incorrect.

For descriptions of error messages generated by this condition, see the Digital UNIX documentation on system messages, recovery procedures, and Digital UNIX software installation. For information on system software requirements, see [Section 1.6.3, “Software Requirements”](#).

If an error occurs while using PL/I and you believe the error is caused by a problem with PL/I, contact your sales representative.

If you find an error in the PL/I documentation, please send electronic mail to support@es.solutions. Include the chapter and page number where you found the error.

Installing on Linux Systems

This chapter describes how to install Endless PL/I for POSIX Systems on Linux. It is to be written.

2.1. Requirements

To be written: lThe versions of Linux supported, and the software and disk space needed.

2.2. Installing the Software

To be written: lThe installation procedure, with sample output.

2.3. Verifying the Installation

To be written: lHow to check that the compiler and run-time library are installed and work.

2.4. Removing the Software

To be written: lHow to remove Endless PL/I for POSIX Systems.

Installing on macOS

This chapter describes how to install Endless PL/I for POSIX Systems on macOS. It is to be written.

3.1. Requirements

To be written: lThe versions of macOS supported, and the software and disk space needed.

3.2. Installing the Software

To be written: lThe installation procedure, with sample output.

3.3. Verifying the Installation

To be written: lHow to check that the compiler and run-time library are installed and work.

3.4. Removing the Software

To be written: lHow to remove Endless PL/I for POSIX Systems.

Installing on Tru64 UNIX

This chapter describes how to install Endless PL/I for POSIX Systems on Tru64 UNIX. It is to be written. Until then, [Chapter 1, *Preparing for Endless PL/I for POSIX Systems Installation*](#) and [Appendix A, *Sample Installation*](#) describe the set1d installation of the 1996 kit for Digital UNIX, the earlier name of Tru64 UNIX.

4.1. Requirements

To be written: lThe versions of Tru64 UNIX supported, and the software and disk space needed.

4.2. Installing the Software

To be written: lThe installation procedure, with sample output.

4.3. Verifying the Installation

To be written: lHow to check that the compiler and run-time library are installed and work.

4.4. Removing the Software

To be written: lHow to remove Endless PL/I for POSIX Systems.

Sample Installation

This appendix provides a sample listing for an installation of PL/I on an Alpha system using tape media.

A.1. Sample Installation

```
# setld -l /home/jj/kit/kits
```

The subsets listed below are optional:

There may be more optional subsets than can be presented on a single screen. If this is the case, you can choose subsets screen by screen or all at once on the last screen. All of the choices you make will be collected for your confirmation before any subsets are installed.

- 1) Endless PL/I for POSIX Systems Version 1.3 Online Documentation
- 2) Endless PL/I for POSIX Systems Version 1.3

Or you may choose one of the following options:

- 3) ALL of the above
- 4) CANCEL selections and redisplay menus
- 5) EXIT without installing any subsets

Enter your choices or press RETURN to redisplay menus.

Choices (for example, 1 2 4-6): 3

You are installing the following optional subsets:

Endless PL/I for POSIX Systems Version 1.3 Online Documentation
Endless PL/I for POSIX Systems Version 1.3

Is this correct? (y/n): y

Checking file system space required to install selected subsets:

File system space checked OK.

Endless PL/I for POSIX Systems Version 1.3
Copying from /home/jj/kit/kits (disk)
Verifying

Endless PL/I for POSIX Systems Version 1.3 Online Documentation
Copying from /home/jj/kit/kits (disk)
Verifying

```
PLI installation succeeded
```

```
Configuring "Endless PL/I for POSIX Systems Version 1.3" (PLICMP120)
```

```
Configuring "Endless PL/I for POSIX Systems Version 1.3 Online Documentation" (PLIMAN120)
```

```
#
```

Files Installed On Your System

Table B.1, “Files Installed by Endless PL/I for POSIX Systems” describes the contents of Endless PL/I for POSIX Systems directories.

Table B.1. Files Installed by Endless PL/I for POSIX Systems

Type	Size (bytes)	Path
dir	512	./usr/opt/PLICMP120
dir	512	./usr/opt/PLICMP120/bin
file	142	./usr/opt/PLICMP120/bin/PLICMP120/Add_Links
file	72	./usr/opt/PLICMP120/bin/PLICMP120/Del_Links
file	434,176	./usr/opt/PLICMP120/bin/as-2.5.2
file	548,864	./usr/opt/PLICMP120/bin/dbg
file	40,960	./usr/opt/PLICMP120/bin/driver
file	40,960	./usr/opt/PLICMP120/bin/dump_lines
file	24,576	./usr/opt/PLICMP120/bin/encode
file	1,949,696	./usr/opt/PLICMP120/bin/fpl1
file	253,952	./usr/opt/PLICMP120/bin/gnm
file	49,152	./usr/opt/PLICMP120/bin/install_license
file	688,128	./usr/opt/PLICMP120/bin/ld3.0
file	16,384	./usr/opt/PLICMP120/bin/machine_id
file	1,470	./usr/opt/PLICMP120/bin/remove_badlines
file	49,152	./usr/opt/PLICMP120/bin/remove_license
file	942	./usr/opt/PLICMP120/bin/shar
file	49,152	./usr/opt/PLICMP120/bin/show_license
file	5,755	./usr/opt/PLICMP120/bin/uas
file	1,752	./usr/opt/PLICMP120/bin/uased
file	7,375	./usr/opt/PLICMP120/bin/ulink
file	1,908,736	./usr/opt/PLICMP120/bin/upp
file	2,548	./usr/opt/PLICMP120/bin/uvpo
file	458,752	./usr/opt/PLICMP120/bin/vpo

Type	Size (bytes)	Path
dir	512	./usr/opt/PLICMP120/doc
file	6,207	./usr/opt/PLICMP120/doc/PLI100.release_notes
file	77,857	./usr/opt/PLICMP120/doc/pl1cmperr.doc
file	17,923	./usr/opt/PLICMP120/doc/pl1dbgerr.doc
file	5,555	./usr/opt/PLICMP120/doc/pl1drerr.doc
file	51,403	./usr/opt/PLICMP120/doc/pl1rmserr.doc
file	44,912	./usr/opt/PLICMP120/doc/pl1rterr.doc
file	6,541	./usr/opt/PLICMP120/doc/pli_bug
dir	512	./usr/opt/PLICMP120/include
file	417	./usr/opt/PLICMP120/include/pl1std.in
file	5,899	./usr/opt/PLICMP120/include/plidef.in
file	31,884	./usr/opt/PLICMP120/include/rmsdef.in
file	2,853	./usr/opt/PLICMP120/include/signaldef.in
file	27,933	./usr/opt/PLICMP120/include/ssdef.in
dir	512	./usr/opt/PLICMP120/lib
file	19,744	./usr/opt/PLICMP120/lib/dumpst.o
file	1,290,452	./usr/opt/PLICMP120/lib/libgen.a
file	25,332	./usr/opt/PLICMP120/lib/libpl1dec.a
file	159,218	./usr/opt/PLICMP120/lib/libpl1libm.a
file	4,964,356	./usr/opt/PLICMP120/lib/libpl1run.a
file	504	./usr/opt/PLICMP120/lib/mend.o
file	504	./usr/opt/PLICMP120/lib/mstart.o
file	56,135	./usr/opt/PLICMP120/lib/pl1.cat
file	102,656	./usr/opt/PLICMP120/lib/pl1error
file	24,536	./usr/opt/PLICMP120/lib/walk.o
file	1,805	./usr/man/man.1/dbg.1
file	7,243	./usr/man/man.1/pl1.1