IBM AIX Parallel Environment
Installation, Administration, and Diagnosis

SH26-7231-1

Release 2.0

IBM

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Note

Before using this information and the product it supports, be sure to read the general information under “Notices” on page v.

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About This Book

This book is designed to help you install the IBM* AIX* Parallel Environment program product (PE) on the IBM Scalable POWERparallel Systems* 9076 SP1* and 9076 SP2*, or a networked cluster of RISC System/6000* processors.

For those using a networked cluster of RISC System/6000 processors, this book also describes how to install the Parallel Client Function (PCF). The PCF software is a subset of the PE software that allows you to execute, but not create or initiate, parallel programs on machines in the cluster.

This book also describes how to diagnose and solve PE-related problems, and provides a listing of PE messages.

This book assumes that AIX and the X-Windows system** are already installed. For information on installing AIX and X-Windows, consult *IBM AIX for RISC System/6000: Installation Guide*, (SC23-2341).

Who Should Use This Book

This book is designed for system programmers and administrators, but should be used by anyone responsible for installing, or diagnosing problems related to, the PE. If using this book, you should be familiar with the AIX operating system. Where necessary, some background information relating to AIX is provided. More commonly, you are referred to the appropriate documentation.

How to Use This Book

Overview of Contents

This book contains the following information:

- Chapter 1, “Introduction” on page 1 is an overview of the PE, describing how its various software components work together. This introduction also describes some installation considerations based on your system's configuration.
- Chapter 2, “Planning to Install the Parallel Environment Software” on page 3 contains the planning information you need to consider before installing PE. Included are descriptions of node resources, file systems, and userid administration. For those users migrating from Release 1 to Release 2, there is also an overview of migration.
- Chapter 3, “Installing the Parallel Environment (PE) Software” on page 9 contains the step-by-step procedure you need to follow to install PE. In addition, it outlines software, disk space, and other requirements that need to be met before installation. This chapter also lists, and describes, the product directories created and the links established by the installation process.
- Chapter 4, “Installing the Parallel Client Function Software” on page 31 contains the step-by-step procedure you need to follow to install the PCF – a subset of the PE. The PCF is provided for those using a RISC System/6000 network cluster. It contains just the files needed to execute parallel

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applications built and initiated using the PE software. This chapter outlines the software, disk space, and other requirements that need to be met before installing the PCF. It also lists the product directories created and the links established by the installation process.

- Chapter 5, “File Formats” on page 37 describes the format of PE configuration files that are created and modified by the system administrator.
- Chapter 6, “Diagnosing Problems” on page 39 is designed for anyone encountering problems while using the PE software. This chapter lists all the error messages generated by the PE software components, and describes likely solutions. For persistent problems, this chapter describes the procedure for getting in touch with IBM Support.

Document Conventions

This manual uses visual cues to help you locate and identify information quickly and easily. The highlighting conventions used in this book are outlined in the table below.

Type Style	Used For
bold	Command names, program names, file names, flag names, directory names, path names, and any text that you must type exactly as it appears.
italic	Parameters and variables. You substitute the text for items shown in italic. For example, when you have to enter a variable called *filename*, you must type the name of the appropriate file in place of *filename*. In addition, italic type is used to introduce new terms, to indicate book titles, and to add emphasis.
`monospace`	Examples and system prompts or responses that appear on the screen.

In addition to the highlighting conventions, this manual uses the following conventions when describing how to perform tasks. User actions appear in uppercase boldface type. For example, if the action is to enter the **smit** command, this manual presents the instruction as:

ENTER smit

The system response to an action follows a triangle (▲). So the system's response to entering the **smit** command would read:

▲ The System Management Interface Tool's main window opens.

Related PE Publications

IBM AIX Parallel Environment: General Information, (GH26-7229)

IBM AIX Parallel Environment: Programming Primer, (SH26-7223)

IBM AIX Parallel Environment: Parallel Programming Subroutine Reference, (SH26-7228)

IBM AIX Parallel Environment: Operation and Use, (SH26-7230).

Related AIX Publications

AIX for RISC System/6000: Commands Reference, (GBOF-1802)

AIX for RISC System/6000: Installation Guide, (SC23-2341)

AIX for RISC System/6000: General Programming Concepts, (SC23-2205)

AIX for RISC System/6000: Communications Concepts and Procedures, (GBOF-1524)

Other Related Publications

Note: The following is related to this book only if you run parallel programs on the IBM 9076 SP1* and 9076 SP2*. It is not related if you use a RISC System/6000 network cluster.

IBM 9076 SP2 Scalable POWERparallel Systems: Administration Guide, (SA23-2486)

Ordering Additional Copies of This Book

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Chapter 1. Introduction

The IBM* AIX* Parallel Environment program product (PE) is a set of programs designed to support the development of parallel FORTRAN, C, or C++ programs for execution on the IBM Scalable POWERparallel Systems* 9076 SP1* and 9076 SP2*, or a networked cluster of RISC System/6000* processors.

Note: If you are installing on a RISC System/6000 network cluster, this book describes how to install two separate features – the PE feature and the Parallel Client Function (PCF) feature. The PE feature contains all the components in the following list. The PCF feature contains just a subset of the components in the following list. See Chapter 4, “Installing the Parallel Client Function Software” on page 31 for more information. Installing PCF on a processor node in your cluster allows you to execute, but not create or initiate, parallel programs on that node.

Before following the instructions in this book on how to install the PE software, you should have a basic idea of the components that make up PE and how they fit together. The PE consists of five components which help you develop, debug, analyze, and run parallel programs. These components are discussed in *IBM AIX Parallel Environment: Operation and Use*. They are:

- **Message Passing and Collective Communication Application Programming Interface (API) Subroutine Libraries**.

  These libraries contain subroutines which help application developers parallelize their code, and are described in *IBM AIX Parallel Environment: Parallel Programming Subroutine Reference* (SH26-7228).

- **Parallel Operating Environment (POE)**.

  This is software that helps ease your transition from serial to parallel processing by hiding many of the differences and allowing you to continue using standard AIX tools and techniques. When you start a parallel job, the POE Partition Manager contacts the remote nodes, starts your code running, and oversees its execution.

  The POE has both a command-line and an AIXwindows* Desktop interface. The AIXwindows Desktop interface is called Parallel Desktop. The POE also contains two X-Windows analysis tools – the Program Marker Array and the System Status Array. The Program Marker Array is a run-time analysis tool that lets you monitor a program's execution. The System Status Array lets you monitor the operational status and CPU utilization of processor nodes.

- **Parallel Environment's Debugging Facility**.

  This facility is based on the **dbx** debugger, but adds additional functions specific to parallel debugging. It has both a command-line interface (the **pdbx** debugger) and an X-Windows interface (the **xpdbx** debugger).

- **parallel profiling capability**.

  This capability enables the use of the AIX commands **prof** and **gprof** on parallel programs. It is exercised through the Parallel Operating Environment.

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- **Visualization Tool (VT).**

  This tool consists of a trace generation facility and a trace display system which allow you to visualize performance characteristics of your program and system. You can use VT to play back traces recorded during a program's run (trace visualization) or as an on-line monitor of system activity (performance monitoring).

Chapter 2. Planning to Install the Parallel Environment Software

When you plan for installation of the PE Software, you need to think about what your programming environment will be and the strategy for using that environment. The following section helps you to consider what is important for your system installation.

Node Resources

On the POWERparallel* system, the system administrator partitions nodes into *pools*, and assigns numbers and other information to these pools. The pools are managed by the Resource Manager. The system administrator tells the PE Partition Manager which pools to use. The Partition Manager requests nodes from these pools from the Resource Manager. Parallel jobs must be compiled and started from workstations with full PE installed. These workstations are called *home nodes*. For more information on the Resource Manager and setting up pools, see the *IBM 9076 SP2 Scalable POWERparallel Systems: Administration Guide*, (SA23-2486-00).

On a RISC System/6000 network cluster, you decide which workstations (machines) will be used:

- to develop and compile applications
- as home nodes to run the Partition Manager (POE)
- to execute applications in the parallel environment.

With regard to execution nodes, you need to identify these workstations by name in a host list file.

Prerequisite Libraries

On the POWERparallel system, the AIX Parallel System Support Programs (PSSP) (5765-296), need to be installed before the Parallel Environment is installed.

On the RISC System/6000 network cluster, PE includes the subset of the PSSP libraries that are required for stand-alone operation, or for starting POWERparallel system parallel partitions from a RISC System/6000 workstation. See Chapter 3, “Installing the Parallel Environment (PE) Software” on page 9 for more information on prerequisites.

Shared vs. Local File Systems

The concept of shared file systems is supported on both the POWERparallel system and RISC System/6000 network cluster. The implications of this to installing PE are important in understanding where files and libraries are installed and executed from.

Most of the files in an installation of PE are intended to go in the /**usr** file system, which can either be *shared* (exported, mounted) or *local*(private). The libraries and executables for PE belong to /**usr**.

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In addition, the PE installation process makes changes to several files in /**etc** under the **root** file system, which must be local. This means that each node will have a **root** file system to which these changes are made.

Further implications of a local and shared file system are:

- If /**usr** is shared on a POWERparallel system, then a single installation of PE software on the control workstation may be adequate. If /**usr** is local on a POWERparallel system, then an install of PE software is required on each node with /**usr** where you want to execute PE. The *IBM 9076 SP2 Scalable POWERparallel Systems: Administration Guide* discusses some of the tools that can make this job easier.
- On a RISC System/6000 network cluster, an install of PE is recommended on each workstation to be used for compiling or starting parallel jobs, or on any workstations on which the debugger (pdbx, xpdbx) of Visualization Tool (VT) is to be run.

The installation scenario of installing PE where /**usr** is local or shared is discussed in further detail in the “PE Installation Overview” section of Chapter 3.

Note: The visualization trace file generated during program execution must be in a shared file system writable by all nodes.

There is also the question of the user's executable files. If they are in a shared file system, they are automatically known to all the remote nodes that are going to run them. If they are in a private file system, then you need to arrange to have them copied to the other nodes. To copy them, there are two scripts that the Parallel Environment provides: **mprcp** and **mpmkdir**. For more information on copying the file system and these scripts, see *IBM AIX Parallel Environment: Operation and Use*, (SH26-7230-01).

Also, you can declare these files part of a file collection. File collections are propagated via /**cron** on an hourly basis. Every time you change the file on the control workstation, the change occurs at all the other places where the file was copied. For more information about this file collection, see the *IBM 9076 SP2 Scalable POWERparallel Systems: Administration Guide*.

You also need to consider the fact that loading an executable from a shared file system can take longer than loading it from a private file system.

Userids on Remote Nodes

The system administrator must set up a userid, other than a root id, for each user on each remote node.

Userid Authorization

Each node needs to be set up so each userid is authorized to access that node or remote link from the initiating workstation home node. This is accomplished in the same way that the userid is authorized for remote login. If the combination of the home node machine and user name is authorized in /**etc**/**hosts.equiv** on the remote node, the user is authorized to run parallel tasks there.

If the combination of the home node machine and user name is disallowed in /**etc**/**hosts.equiv** on the remote node, the user may not run parallel tasks there.

If the combination of the home node machine and user name does not appear in /**etc**/**hosts.equiv**, then the combination is checked in the file *.rhosts* in the home directory on the remote node. If the user name and the home node machine combination appears in **.rhosts**, the user is authorized to run parallel tasks on the remote node.

Note: The POWERparallel system management software supports access control to the POWERparallel system. As system administrator, you need to ensure your user's jobs have the proper Resource Manager access to the allocated nodes.

For more information on standard authorization and access control see the chapter on "Managing Jobs" in the *IBM 9076 SP2 Scalable POWERparallel Systems: Administration Guide*.

Miscellaneous

When PE is installed, it adds entries to the /**etc**/**services** and /**etc**/**inetd.conf** files. When PE is executed, a copy of the Partition Manager daemon is run on each remote node, and is identified by these files.

You need to insure that manual changes to either file are imported into the AIX Object Data Manager by using the command **inetimp**. Also, you must refresh the **inet** daemon as well. For more information on **inetimp**, see the *AIX for RISC System/6000: Commands Reference*.

Note: If you are using NIS or another master server for /**etc**/**services**, you need to create updates with the same information that is put into the individual files.

The Parallel Client Facility (PCF) is a subset of PE designed for RISC System/6000 network cluster nodes to be used only as members of a parallel partition. Parallel jobs must be compiled and started from workstations with full PE installed.

Installation of PCF consists of installing it on one machine, then executing the **pcfpmsetup** script and **pcfvtsetup** script to replicate the installation process on the remaining licensed machines.

Release 1 to Release 2 Migration

This section is intended for existing Release 1 customers who are migrating to Release 2. It contains specific information on some differences between Release 1 and Release 2 that may need to be considered prior to using Release 2.

Installation

No Kernel Extensions: Release 2 no longer uses kernel extensions.

Renaming libraries: When upgrading to the Release 2 libraries, the new libraries will replace those from Release 1. When you run **installp**, it writes over the Release 1 libraries. At this point, **we strongly recommend against the coexistence of both Release 1 and Release 2** on the same system.

However, for installation and testing purposes, if you want to keep the previous libraries, rename /**usr**/**lpp**/**poe** to /**usr**/**lpp**/**poe1** and relink /**etc**/**pmd** to /**usr**/**lpp**/**poe1**/**bin**/**pmd**. Follow the same pattern for pdbx and xpdbx. The symbolic links from /**usr**/**bin** will point to the newly installed version. If you wish to

execute Release 1 poe programs, add /**usr**/**lpp**/**poe1**/**bin** to your PATH preceding /**usr**/**bin**.

Diskless Workstations: Diskless workstations are no longer supported in Release 2.

/etc/services and /etc/inetd.conf files: The install process adds the appropriate lines to these files. There is no need to remove the entries for Release 1.

Operations and Use

Coexistence: It is strongly recommended that all existing Release 1 application programs be converted and recompiled in Release 2, rather than having both Release 1 and Release 2 applications coexisting in the same system. Programs compiled in Release 1 **will not run** in Release 2 and vice versa, without a recompile.

Use the "us" option instead of "lsp": The **lsp** option and **lsp** protocol are not supported. Use the **us** option instead. Some message passing applications will work differently than in Release 1; especially those that depend on system-supplied message buffering or receiving out-of-order messages.

Environment variables and command line options: Environment variables from Release 1 are supported in Release 2. There are more variables and options, more levels of control, and more defaults for Release 2. These can effect the behavior of POE and its applications, depending on what options are specified or defaulted. You should review Appendix B of the *IBM AIX Parallel Environment: Operation and Use*, (SH26-7230-01), for a detailed set of tables and explanations about the interactions of environment variable and command option values have on program execution.

Resource Manager pool: There is no longer a "don't care" Resource Manager pool. See the environment variables and command options in Appendix B of the *IBM AIX Parallel Environment: Operation and Use*, (SH26-7230-01), for more information.

vt trace files are incompatible: Release 1 vt trace files are NOT compatible with Release 2 of vt, and vice versa. Trace files must be regenerated. However, there is a significant amount of documentation provided about the vt trace file format, should one want to attempt to write their own conversion program.

Host list file: The host list file is upwardly compatible from Release 1 to Release 2.

mp_load: The **mp_load** function from Release 1 no longer exists. The function is now provided by the **poe** command with the MPMD programming model option.

Program command execution: Release 2 of POE is designed such that program execution should be initiated by invoking the **poe** executable followed by the program name, i.e. "**poe** hello_world". However, for Release 1 compatibility, execution by way of specifying just the program name is supported.

Dynamic loading: There is now a choice to execute and compile parallel programs with and without dynamic loading of the message passing libraries. See the *IBM AIX Parallel Environment: Operation and Use* for options to do so.

Application Profiling: Profiling is now linked in dynamically. You will need to add */usr/lib/profiled* to the library path to get counts of profiled system routines. See the *IBM AIX Parallel Environment: Operation and Use* for options to do so.

pdbx Command Line Options: In Release 2, pdbx supports command line syntax which is generally identical to poe. pdbx command line flags which are similar to their dbx counterparts, may be mixed with the full range of poe flags. In Release 1, poe options were only available via the environment variables. The pdbx command line syntax is summarized in the man pages and in *IBM AIX Parallel Environment: Operation and Use*.

Application Programming

Unsafe programs: In Release 2, the underlying communications mechanisms are different than Release 1. You should understand the topic of unsafe programs, as described in the *IBM AIX Parallel Environment Programming Primer.*

Program structure differences: In Release 1, the Partition Manager functions were bound with the user's executable. In Release 2, they are contained in the poe executable. Release 1 executables require rebinding by **mpcc** or **mpxlf** before running them with Release 2.

Exit processing: In Release 1, the exit process did a message passing **mp_sync**. Release 2 no longer does this. Tasks are synchronized without using the message passing library, so an existing program from Release 1 that depended on POE to synchronize on exit may hang. Such programs should do an explicit **mp_sync** or **mp_stopall** prior to exiting.

Diagnostic Information

More diagnostic information: Release 2 provides more extensive and more descriptive diagnostic information over Release 1. The *IBM AIX Parallel Environment: Operations and Use* describes the various levels of error message and program debug capability now available.

New error message numbers: Release 2 now employs the use of AIX message catalogs for nearly all error messages. The error message number identifiers have changed in from what they were in Release 1. You may want to review Chapter 6, “Diagnosing Problems” on page 39 to become more familiar with the new error messages.

Chapter 3. Installing the Parallel Environment (PE) Software

This chapter describes how to install the Parallel Environment (PE) software. It describes the hardware, software, and disk space requirements for running the PE software, and provides step-by-step installation instructions.

"How Installation of PE Alters Your System" on page 25 details the directories and files created, the daemon processes that are created, and the links that are established by the installation process.

PE Installation Requirements

This section describes the system requirements for installing and running the PE software. It is divided into:

- hardware requirements
- software requirements
- disk space requirements

PE Hardware Requirements

The PE software is designed to run on:

- Any configuration of the POWERparallel system.
- A RISC System/6000 network cluster. The cluster should support TCP/IP.

PE Software Requirements

Whether you are installing the PE software on the POWERparallel system or a RISC System/6000 network cluster, the following is required:

- AIX Version 3.2.5 or later
- TCP/IP
- Network File System (NFS**)
- Motif** Version 1.2.3 or AIX Motif 1.2 library (libXm.a)
- AIXwindows Desktop, if you are going to run the Parallel Desktop

The following is required on any node running Program Marker Array, System Status Display, Parallel Desktop, xpdbx, or vt:

- AIXwindows Version 1.2.3 or later (Alternatively, you could use X-Windows Version 11, Release 5 or later)

PE can also be used with one or more of the following:

- IBM AIX XL FORTRAN Compiler/6000 (5765-018) Version 2 Release 3, or subsequent releases
- IBM AIX XL FORTRAN Compiler/6000 (5765-176) Version 3 (see note below)
- IBM AIX C Compiler
- IBM C Set + + for AIX/6000 (5765-186) Version 2.0, or subsequent releases.

Note: The debugging support within IBM AIX Parallel Environment for the Fortran 90 extensions to Fortran 77 depends on the AIX/dbx support of these extensions.

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On the POWERparallel system, the AIX Parallel System Support Programs (PSSP) must be installed; the Communication Subsystem (CSS) libraries, Resource Manager, and System Data Repository (SDR) client libraries must be available in their default locations.

In order to use VT on a RISC System/6000 network cluster, you should synchronize the clocks on all machines using any available Internet host /server utility. On the POWERparallel system, the Network Time Protocol (NTP) utility is distributed and may be used. If the high-performance switch is installed, VT uses it for common time on each node, and no additional synchronization software is required.

The PE software is distributed on:

- 8mm cartridge (feature # 5911)
- 1/4-inch tape in QIC120 format (feature # 5814)
- 1/4-inch tape in QIC525 format (feature # 5803)

This distribution medium contains separately installable product options of PE in backup file format. You can do a partial install and selectively choose any of the options on the distribution medium. However, some components of the PE are dependent on others in order to run. The following table lists the names of the separately-installable product options shipped on the installation media, describes their contents, and lists any dependencies on other PE software. For additional information on the components which make up each product option, see Chapter 1, “Introduction” on page 1.

Table 1. The PE Product Options

This product option:	Contains the:	Stand-alone/dependencies:
poe	• Partition Manager • Message passing subroutine libraries • Program Marker Array • System Status Array • Parallel Desktop • The **pdbx** debugger. This is the command-line interface of the PE debugging facility • Parallel Utility Library • Parallel compilation scripts • Message catalogs for poe, vt, pdbx.	Can be run, mostly, stand-alone. In order to use the System Status Array, the vt product option must be installed. Also, in order to access help information and manual pages, the pedocs product option must be installed.
xpdbx	The **xpdbx** debugger. This is the X-Windows interface of the PE debugging facility	Is dependent on the Partition Manager, so you must install the poe product option. In order to access help information, the pedocs product option must be installed.
vt	Visualization Tool	Can be run stand-alone for trace visualization, provided you have already generated trace files it can play back. If you need to generate trace files, you need to install the poe product option. In order to access help information, the pedocs product option must be installed. For more information on trace visualization and performance monitoring with VT, see *IBM AIX Parallel Environment: Operation and Use*, SH26-7230.
pedocs	PE documentation in InfoExplorer* format. All of the PE X-Windows tools use these InfoExplorer books to provide help information. Also included are manual pages and PostScript files for the PE documents.	Not Applicable. These files are not executable.

PE Disk Space Requirements

The following tables detail the amount of disk space you need for each of the separately-installable product options of the PE. The tables list the amount of disk space needed by directory after installation.

If you plan to install the PE software on a RISC System/6000 network cluster, each machine in the cluster you install it on must meet these disk space requirements.

You have the option on a network cluster to install the PCF – a subset of the PE – on individual machines rather than installing the entire PE. The PCF allows you to execute, but not create, parallel programs on a machine. Installation of PCF is outlined in Chapter 4, “Installing the Parallel Client Function Software” on page 31.

Table 2. poe Disk Space Requirements	
Directory	**Number of 512 Byte Blocks**
/usr/lpp/poe	11000
/usr/bin	+7
/usr/include	+5
/usr/lib	+8
/usr/etc	+5
/etc	+5
/usr/lib/nls/msg/En_US	+350

Table 3. xpdbx Disk Space Requirements	
Directory	**Number of 512 Byte Blocks**
/usr/lpp/xpdbx	15000
/usr/bin	+5

Table 4. vt Disk Space Requirements	
Directory	**Number of 512 Byte Blocks**
/usr/lpp/vt	35000
/usr/bin	+5

Table 5. pedocs Disk Space Requirements	
Directory	**Number of 512 Byte Blocks**
/usr/lpp/pedocs	30000
/usr/lpp/info/data	10000
/usr/man/cat1	500
/usr/man/cat3	1500

PE Installation Overview

The PE installation environment can be a complex one. Installation on a POWERparallel system is different than on a RISC System/6000 network cluster. The main difference is the POWERparallel system installation allows you to use the POWERparallel System Management functions to manage and maintain the system software, which are not available to a cluster of RISC System/6000 machines.

Additionally, within both environments, you can have added complexity in that the system may be configured with a mixture of nodes that have the /**usr** file system local or shared. The installation of PE is markedly different on systems with /**usr** than on those without /**usr**.

In either case, and in both environments, you need to first install PE on a single node. Once that installation is complete, you can then replicate the install image throughout the remaining nodes, using one of the suggested methods described in the following sections.

As a result, you potentially have three locations where PE will be installed:

1. Initial install on the POWERparallel system control workstation, or a node with /**usr** local on a RISC System/6000 cluster.
2. Nodes that have a local /**usr**.
3. Nodes that are served by /**usr**.

PE Installation on a POWERparallel system

The POWERparallel system management software can control and automate much of the software maintenance throughout your system. Of course, you can also choose to administer your system in other ways, besides relying on the system management software.

As a result, with the POWERparallel system, you can use one of the following three methods of installing PE:

1. Using the POWERparallel system management software, as described in the chapter on "Performing Software Maintenance" in the *IBM 9076 Scalable POWERparallel Systems: Administration Guide*.
2. Using the **PEinstall** script and **PEinstroot** script, depending on how /**usr** is configured:
   - For nodes with /**usr** local, use the **PEinstall** script supplied with PE, to install both the **user** and **root** portions of PE.
   - For nodes with /**usr** shared, use the **PEinstroot** script to install the **root** portion of PE.
3. By hand, on each node individually using **SMIT** or **installp**.

In any event, you must first install PE on at least one node of your system. Preferably, it should be on the control workstation to allow use of the system management software functions.

PE Installation on a RISC System/6000 Cluster

Installation on a RISC System/6000 network cluster is similar to that of the POWERparallel system, with the exception that there are no system management functions, leaving you two options:

1. Using the **PEinstall** script and **PEinstroot** script, depending on how /**usr** is configured:
   - For nodes with /**usr** local, use the **PEinstall** script supplied with PE, to install both the **user** and **root** portions of PE.
   - For nodes with /**usr** shared, use the **PEinstroot** script to install the **root** portion of PE.
2. By hand, on each node individually using **SMIT** or **installp**.

In either case, you need to first install PE on at least one node in your cluster. From there you can replicate the install image to your other nodes.

PE Installation Procedure

This section describes the steps you must follow to install the PE software on the POWERparallel system or a RISC System/6000 network cluster. The process of installing the PE software differs depending on the system you have.

Note: A discussion of SMIT options assumes that a fast path to the install software screen is installed. Otherwise follow the SMIT path to the custom install screen. For information on the correct SMIT path, see the *AIX for RISC System/6000: Installation Guide*, (SC23-2341).

To install the PE software:

1. Copy software to a hard disk from the install medium diskette or tape.
2. Run **installp** or SMIT to initially install PE.
3. Create lists for remaining nodes.
    a. Create the /**usr** local host list.
    b. Create the /**usr** shared host list.
4. Install PE on Other Nodes.
    a. Install PE using the install scripts.
    b. Install PE by hand.
5. Verify the POE installation.
6. Verify the VT installation.

The following steps combine the different procedures for installing the PE software on the POWERparallel system and a RISC System/6000 network cluster into a single set of instructions. Because the actual procedure does differ depending on the product option you are installing, your hardware, and other variables, pay close attention to the task variant tables at the beginning and end of each step. These tables may direct you to skip or return to certain steps.

Step 1: Copy Software to a Hard Disk For Installation Over a Network

If you are installing the PE software on the POWERparallel system:	If you are installing the PE software on a RISC System/6000 network cluster:
Copy the software to hard disk for installation.	Perform this step in order to do an install over the network. If any of the machines in your cluster do not have the proper installation device to read the distribution medium, you will need to do a network install. Perform this step on a /**usr** server.

Note: Before copying anything, be sure that /**usr**/**sys**/**inst.images** is an empty directory.

If any of the machines in your RISC System/6000 network cluster do not have the physical device needed to read the distribution medium, you will need to copy the installation images off the distribution medium and export the installation directory /**usr**/**sys**/**inst.images**. This makes the installation images available for mounting.

You also need to copy the installation images off the distribution medium and export the installation directory if **/usr** is not shared across the POWERparallel system.

To copy the PE software off the distribution medium:

INSERT the distribution medium in the installation device on the **/usr** server. You must be logged in as **root**.

ENTER **smit instupdt_for_net**

▲ This command invokes SMIT, and takes you directly to the window for copying software to a hard disk for future installation over the network.

PRESS **List**

▲ A window opens listing the available INPUT devices and directories for software.

SELECT the installation device from the list of available INPUT devices.

▲ The window listing the available INPUT devices closes and the original SMIT window indicates your selection.

PRESS **Do**

▲ The SMIT window displays the default parameters for copying software to a hard disk.

TYPE IN **all** in the SOFTWARE name field.

TYPE IN **/usr/sys/inst.images** in the DIRECTORY for storing software field.

PRESS **Do**

▲ The system copies the PE software installation images to the directory **/usr/sys/inst.images**.

SELECT **Exit → Exit SMIT**

▲ The SMIT window closes.

To export the directory **/usr/sys/inst.images** so the machines in your cluster can install the PE installation images it contains:

ENTER **/usr/bin/mknfsexp -d /usr/sys/inst.images**

Step 2: Initially Installing PE

If you are installing the PE software on the POWERparallel system:	If you are installing the PE software on a RISC System/6000 network cluster:
Perform this step on the control workstation. You must login as **root**.	Perform this step on any machine in the cluster. You must login as **root**.

You can install the PE software using the **installp** command or the installation menus of the System Management Interface Tool (SMIT). “How Installation of PE Alters Your System” on page 25 describes the directories, files and daemon processes you create, and the links you establish when you receive the installation image. Should installation fail, a software product cleanup procedure is automatically called. The cleanup procedure removes any files that may have been restored from the distribution medium, and backs out of any post installation procedure that may have been started. To help ascertain the cause of a failed installation, refer to the installation status file. This file indicates how far installation

had progressed when the errors occurred. The status file is described in more detail in *AIX for RISC System 6000: General Programming Concepts*. If you can not ascertain the cause of a failed installation, contact IBM support as described in "Getting Help From IBM Support" on page 39.

Initially Installing the Installation Image Using the installp Command

To install the PE software using the **installp** command:

INSERT the distribution medium in the installation device unless you are installing over a network.

You can install all software components of the PE or individual ones, depending on what you want. The **-l** (capital i) option used in the examples below selects only the requested product option. Keep in mind, however, that some components of the PE depend on others to run. Table 1 on page 11 details these dependencies. Refer to it before doing a partial install.

To install:	ENTER
all software components	**installp -a -d** *devicename* **all**
just the poe product option	**installp -a -l -X -d** *devicename* **poe**
just the xpdbx product option	**installp -a -l -X -d** *devicename* **xpdbx**
just the vt product option	**installp -a -l -X -d** *devicename* **vt**
just the pedocs product option	**installp -a -l -X -d** *devicename* **pedocs**

▲ The system reads and receives the installation image off the distribution medium. The **-a** option applies the software products. The *devicename* variable should be the name of the installation device or directory.

Note: For more information on the **installp** command, refer to *AIX for RISC System/6000: Commands Reference* and *AIX for RISC System/6000: General Programming Concepts*.

Initially Installing the Installation Image Using SMIT

To install the PE software using SMIT:

INSERT the distribution medium in the installation device unless you are installing over a network.

ENTER **smit instupdt_install**

▲ This command invokes SMIT, and takes you directly to its window for installing software.

PRESS **List**

▲ A window opens listing the available INPUT devices and directories for software.

SELECT the installation device or directory from the list of available INPUT devices.

▲ The window listing the available INPUT devices and directories closes and the original SMIT window indicates your selection.

PRESS Do

▲ The SMIT window displays the default install parameters.

If you want to install:	Type this in the SOFTWARE to install field:
all the PE software	**all**
just the poe product option	**poe**
just the xpdbx product option	**xpdbx**
just the vt product option	**vt**
just the pedocs product option	**pedocs**

After installing the appropriate software, you may also want to change other options on the panel, as needed. For example, the panel asks whether or not you want to expand the file systems.

Note: Some components of the PE depend on others to run. Table 1 on page 11 details these dependencies. Refer to it before doing a partial install.

PRESS Do

▲ The system reads and receives the installation image.

Note: For more information on SMIT, refer to *AIX for RISC System 6000: General Programming Concepts*.

The initial installation of PE is now complete. If there are other nodes in your system that you need to install PE products on, continue with all of the remaining steps. Otherwise, do Steps 5 and 6, if desired.

Note: The VT installation process checks to see if the **dig** daemon is currently running. If it is not running, it will start the daemon. If it is running, it will not start it, and will tell you the daemon's process number, so you can kill it manually.

Step 3: Create Lists for Remaining Nodes

Note: This step is only for installing PE on other nodes.

If you are installing PE on the POWERparallel system:	If you are installing PE on a RISC System/6000 network cluster:
Perform this step from the control workstation as **root**.	Perform this step from a node with PE installed as **root**.

If you plan on installing PE on other nodes, as described in “PE Installation Overview” on page 12, you will want to run a shell script that will perform those actions on the nodes in your system. These scripts are described in Step 4. They rely on you to create a host list file of the node host names you want the script to run against.

You may need to set up separate host lists for your nodes that have /**usr** local and those where /**usr** is shared. It is best to use different files for each environment. Nodes in one list should not also be in the other.

Step 3a: Create the /usr Local Host List

This file is used for those nodes where /**usr** is local. By default, these scripts will look for a file named **host.list** in your current directory. However, you can name the host list file anything you want.

Create the host list file using any AIX text editor. Enter one name per line. For example:

```
hostname1
hostname2
hostname3
hostname4
hostname5
```

Step 3b: Create the /usr Shared Host List

This file is used for those nodes where /**usr** is shared. By default, these scripts will look for a file named *host.list* in your current directory. However, you can name the host list file anything you want.

You may need to set up separate host lists for your nodes that have /**usr** local and those where /**usr** is shared. It is best to use different files for each environment. Nodes in one list should not also be in the other.

Create the host list file using any AIX text editor. Enter one name per line. For example:

```
hostname1
hostname2
hostname3
hostname4
hostname5
```

Step 4: Installing PE on Other Nodes

If there are other nodes in your system on which you want to install PE, follow the instructions in this step. This section is important for customers with RISC System/6000 network clusters, as it is recommended that PE be installed on each node, rather than shared. For the POWERparallel system, it is the customer's decision whether or not PE is needed on each node, or shared from the control node.

In both environments, AIX 3.2 may be installed with the /**usr** file system either local to a node, or accessed via a /**usr** server. The installation of POE is different in these two environments.

At this point, you can choose to install PE in one of two ways:

1. Using the installation scripts supplied with PE.
2. Installing PE by hand.

In addition, installation of PE on a POWERparallel system can be done using the POWERparallel System Management software, as described in the chapter on "Performing Software Maintenance" in the *IBM 9076 Scalable POWERParallel Systems: Administration Guide* .

Note: Doing so will cause each node to reboot following installation. If this is a problem, you should consider using one of the other installation methods.

Step 4a: Install PE Using the Install Scripts

PEinstall

The **PEinstall** script is provided to install PE on all nodes with /**usr** local, through the use of the Remote Shell **(rsh)**. In order to run the **PEinstall** script, you must first set up a host list file of all nodes that you want PE installed on, and have /**usr** resident. The **PEinstall** script will either mount or copy the install image to each node in the list, and then execute the proper **installp** command to install the product.

The PEinstall script has one required parameter and two optional parameters. The syntax is:

```
PEinstall image_name [host_list_file] [-copy | -mount]
```

Where:

image_name is *required*, and represents the name of the file containing the installp image which PE is a part of.

host_list_file is *optional*, as the file containing the list of nodes you want to install PE on. The default file name is **host.list** in the current working directory. If a host list file cannot be found, the script exits with an error message.

Either **-copy** or **-mount** can be specified, to tell **PEinstall** to copy or mount the install image to each node. The default is **-copy**. The following sections describe the **-copy** and **-mount** parameters.

PEinstall will prompt you for the product to install. The choices are:

If you want to install:	Type this when prompted:
all the PE software	**all**
just the poe product option	**poe**
just the xpdbx product option	**xpdbx**
just the vt product option	**vt**
just the pedocs product option	**pedocs**

For each node in the node list, **PEinstall** will execute the following **installp** command.

```
installp -aFX -d /image_directory/image_name  product
```

This will install both the user and root portion of the product in the image specified. The value for “product” can be **poe**, **vt**, **xpdbx**, **pedocs**, or **all**.

If there is a problem in doing any of this for a node, an error message is issued and logged in the **PEnode.log** file, and the install continues for the remaining nodes.

Copying the Install Image

Using the **-copy** option (or allowing it as the default) will inform **PEinstall** to copy the named image to each node via **rcp**. You are prompted for the following information, when **-copy** is specified (or defaulted):

- The install image source directory. The default is /**usr**/**sys**/**inst.images**.
- The install image destination directory. This will be used for all nodes in the node list. The default is /**usr**/**sys**/**inst.images**.

  Note: If you need to have the image copied to different directories, you need to invoke **PEinstall** for each different location or set of locations. Your **host_list_file** should reflect only those nodes that you want to use with **-copy**.

The image is copied to the destination directory with the name specified as the **image_name** parameter. Naturally, you should ensure that there is enough space in the destination directory file system to copy the image. Each image occupies roughly five megabytes.

Mounting the Install Image

Specifying the **-mount** option will inform **PEinstall** to mount the named image to each node via **rsh**. You are prompted for the following information, when **-mount** is specified:

- The install image source directory. The default is /**usr**/**sys**/**inst.images**.
- The remote node mount point directory. This will be used for all nodes in the node list. The default is /**mnt**.

  Note: If you need to have the image mounted to different directories, you need to invoke **PEinstall** for each different location or set of locations. Your **host_list_file** should reflect only those nodes that you want to use with **-mount**.
- When mounting the image, **PEinstall** will also ask if you want it to create the remote mount directory. If your remote mount directory already exists, answer no to this prompt.

PEinstall will issue a **mkdir** command for the directory name specified, followed by a **chmod 777**. To execute the **installp** remotely on a mounted image, the directory containing the image needs to have this permission.

If this is a problem in your installation, you should not use the **-mount** option of **PEinstall**.

PEinstroot

For nodes served by /**usr** where you want PE products installed, you must use the **PEinstroot** script. This will perform only the **root** portion of the install, using the Remote Shell **(rsh)**. In order to run the **PEinstroot** script, you must first set up a host list file of all nodes that are served by /**usr** that you want the image installed on.

PEinstroot installs the root portion of all products in the install image. If you want to install only a single product, you need a separate image containing just that product.

PEinstroot has one required parameter and one optional parameter. The syntax is:

```
PEinstroot image_name [node.list]
```

Where:

image_name is REQUIRED, and represents the file name of the installp image. This file should contain the product(s) you want installed.

node.list is optional, as the file containing the list of nodes that are served by **/usr** that you want the root portion installed on. The default file name is **host.list** in the current working directory. If this file cannot be found, the script exits with an error message.

The install image will be copied to **/usr/sys/inst.images**. You will be prompted to specify the name of the source directory where the image is currently located. Also, the **.toc** in **/usr/sys/inst.images** will be removed, so the new image can be found.

For each node in the node list, **PEinstroot** will execute the following **installp** command:

```
installp -Or -agX image_name
```

This will install only the root portion of all the products in the image specified. If there is a problem installing on a node, an error message is issued and logged in a file named **PEnode.log** in the current working directory, and the install continues for the remaining nodes.

Errors During Installation

For the most part, **PEinstall** and **PEinstroot** will continue the install process for the list of nodes when errors are encountered. There are some severe errors that cause the install process to terminate completely. They are:

- A list of hosts cannot be found.
- No install image name was specified.

For other errors, a message may be displayed describing the error, and then processing will continue. The same message will be logged in a file named **PEnode.log** in the current working directory. If you see error messages, you should look in this file, as the node on which the error occured is always displayed and logged. This is helpful in that when an installation fails for a node, you can use this file's entries to know the nodes on which you won't have PE installed. Once you correct the error(s), you can then go back and rerun the **PEinstall** or **PEinstroot** script just for these nodes.

Removing an Install Image

During the installation process, you may decide to remove a product from the system. If you have already installed it on a number of nodes, using **PEinstall** or **PEinstroot**, or by hand with SMIT or **installp**, PE provides **PEdeinstall** and **PEdeinstroot** to efficiently remove a product installed in numerous places.

PEdeinstall will reject both the user and root portions of a product for a list of nodes. It should be used for those nodes with **/usr** local, previously installed with the **PEinstall** script. **PEdeinstroot** will reject only the root portion of an installed

product. It should be used for those nodes served by /**usr**, previously installed with the **PEinstroot** script.

Both scripts issue the proper **installp** command using the Remote Shell (**rsh**).

The scripts have the following syntax:

```
PEdeinstall  image_name [node.list]

PEdeinstroot image_name [node.list]
```

Where:

image_name is REQUIRED, and represents the file name of the installp image you want rejected.

node.list is optional, as the file containing the list of nodes that you want the image removed from. The default file name is **host.list** in the current working directory. If this file cannot be found, the script exits with an error message.

For each node, **PEdeinstall** will issue the following **installp** command:

```
installp -rgX image_name
```

This will reject both the user and root portions of all the products in the image specified.

PEdeinstroot will issue the following **installp** command:

```
installp -Or -rgX image_name
```

This will reject only the root portion of all the products in the image specified.

If there is a problem removing an install on a node, an error message is issued and logged in a file named **PEnode.log** in the current working directory, and the install rejections continue for the remaining nodes.

Step 4b: Install PE by Hand

As a system administrator, you may want to have more control over the installation of PE, and install it by hand to other nodes, using SMIT or installp.

During Step 1 you should have created an install image that you can use to replicate the installation of PE on the other nodes of your system. By making this image available to the other nodes, either by copying or mounting the image file, you can use SMIT or **installp** to install the image.

The install image of PE does not require any special consideration. You should be able to use SMIT or **installp** as described in Step 2. You can also set up a host list file, from Step 3, and run **installp** via **dsh** (for POWERparallel systems only), or **rsh**, and install PE on multiple nodes.

When you complete your installation of PE, you should continue with the remaining steps in this chapter to run the poe and vt installation verification programs.

Step 5: Verify the POE Installation

Note: The POE installation verification program can only be run from nodes that have write permissions to /**usr**.

To test the initial installation of POE, an Installation Verification Program (IVP) is provided in /**usr**/**lpp**/**poe**/**samples**/**ivp**. The IVP tests to see if POE is able to:

- establish a remote execution environment
- compile and execute your program
- initialize the IP message passing environment.

At the control workstation (or other home node):

LOGIN as a user other than **root**, and start **ksh**.

ENTER **export LANG=En_US**

ENTER the following:

1. **cd /usr/lpp/poe/samples/ivp**
2. **ivp.script**

▲ This will run an installation verification test to check for successful execution of a message passing program using two tasks on this node. The output should resemble:

```
Verifying the location of the Libraries
Verifying the existence of the Binaries
Partition Manager daemon /etc/pmd2 is executable
POE files seem to be in order
Compiling the ivp sample program
Creating host.list file for this node
Setting the required environment variables
Executing the parallel program with 2 tasks

POE IVP: running as task 0 on node .....
POE IVP: there are 2 tasks running
POE IVP: all messages sent
POE IVP: running as task 1 on node .....
POE IVP: task   1 received <POE IVP Message Passing Text>

Parallel program return code was 0

If this test returns a return code of 0, POE IVP
 is successful.  To test 9076 message passing,
 run the tests in ../samples/poetest.bw and poetest.cast
End of IVP test
```

If errors were encountered, your output should contain messages that describe the nature of these errors. You can correct the errors, and run the **ivp.script** again, if desired.

Step 6: Verify the VT Installation

After VT has been installed, you should verify that it is operating correctly. At the control workstation:

ENTER **export LANG=En_US**

ENTER **vt -tracefile /usr/lpp/vt/tracefiles/vtsample.trc**

▲ This command starts VT.

PRESS **User Load Balance** under **Computation** on the VT View Selector Panel.

PRESS **Play** on the main control panel.

If the trace file plays to the end while updating the display, VT was installed successfully.

After POE has been installed, you should verify that the VT trace generation mechanism is operating correctly.

COPY either */usr/lpp/vt/tracefiles/vtsample.f* or */usr/lpp/vt/tracefiles/vtsample.c* into another directory.

COMPILE the one you choose under POE.

RUN the file with the option **-tracelevel 9**.

▲ This results in a file called *vtsample.trc* being generated in the directory from which you ran it.

If you are successful in examining this trace file with VT as described above, VT is operating correctly.

Installation of the vt product option is complete. You can now use VT as described in *IBM AIX Parallel Environment: Operation and Use*.

Message Catalog Customization

Message cataloging is used by all PE components for National Language Support. Each component has a message catalog installed in a directory located via the NLSPATH environment variable. The component message catalogs are installed in **/usr/lib/nls/msg/En_US** and are of the format **pe<component>.cat**.

Notes:

1. Before verifying the installation for POE and VT, the user should set the LANG environment variable to **En_US**.
2. If the message catalogs are installed in a directory other than **En_US**, then the administrator needs to modify **/etc/environment** to set the NLSPATH to the appropriate directory. The user's LANG environment variable also needs to be set appropriately.
3. For more information on message cataloging refer to the appropriate InfoExplorer documentation and the **catopen** subroutine description in particular.

How Installation of PE Alters Your System

This section describes how your system is altered when you install the various PE software product options as described in “Step 2: Initially Installing PE” on page 15. For each of the separately installable product options, it describes the directories and files created by the **installp** command and any symbolic links set up by the product option's **post_i** file. For more information on the **installp** command or the **post_i** file, see *AIX for RISC System/6000: General Programming Concepts*.

How Installing the poe Product Option Alters Your System

The poe product option includes all the components of the Parallel Operating Environment, and consists of the:

- Partition Manager
- API subroutine libraries (message passing and collective communication)
- Program Marker Array
- System Status Array
- Parallel Desktop
- **pdbx** debugger
- Parallel profiling capability
- Parallel Utility Library
- Parallel compilation scripts.

Installing this product option as described in “Step 2: Initially Installing PE” on page 15, does the following:

1. Creates the directories and files detailed in the following table.

Table 6 (Page 1 of 2). poe Directories/Files Installed

Directory/File	Description
/usr/lpp/poe/bin/mpcc	Shell script for compiling parallel C programs.
/usr/lpp/poe/bin/mpCC	Shell script for compiling parallel C++ programs.
/usr/lpp/poe/bin/mpxlf	Shell script for compiling parallel FORTRAN programs.
/usr/lpp/poe/bin/mputil	Shell script called by both mpcc and mpxlf shell scripts.
/usr/lpp/poe/bin/mprcp	Shell script for distributing files.
/usr/lpp/poe/bin/mpmkdir	Shell script for making directories.
/usr/lpp/poe/bin/poe	Partition Manager executable.
/usr/lpp/poe/bin/pmd2	An Internet daemon process that runs on each of your processor nodes.
/usr/lpp/poe/bin/pmarray	The Program Marker Array program.
/usr/lpp/poe/bin/poestat	The System Status Array program.
/usr/lpp/poe/bin/PEinstall	Shell script to complete the installation process where /usr is local.
/usr/lpp/poe/bin/PEinstroot	Shell script for installing PE on nodes where /usr is shared.
/usr/lpp/poe/bin/PEdeinstall	Shell script to reject an installation of PE where /usr is local.
/usr/lpp/poe/bin/PEdeinstroot	Shell script to reject an installation of PE where /usr is shared.
/usr/lpp/poe/lib/libjm_client.a	Archive library containing subroutines for job manager (RISC System/6000 network cluster only).
/usr/lpp/poe/lib/libSDR.a	Archive library containing subroutines for SDR (RISC System/6000 network cluster only).
/usr/lpp/poe/lib/libppe.a	Archive library containing subroutines for poe and vt.
/usr/lib/nls/msg/En_US/pepoe.cat	Message catalog for POE.
/usr/lib/nls/msg/En_US/pevt.cat	Message catalog for VT.

Table 6 (Page 2 of 2). poe Directories/Files Installed

Directory/File	Description
/usr/lpp/poe/poe.README	Memo to users relating to this release.
/usr/lpp/poe/lib/libccl.a	Archive library containing subroutines for parallel application programs.
/usr/lpp/poe/lib/libeui1c.a	Archive library containing subroutines for parallel C programs.
/usr/lpp/poe/lib/libeui1f.a	Archive library containing subroutines for parallel FORTRAN programs.
/usr/lpp/poe/lib/ip/libcss.a	Message Passing Communication Subsystem library (RISC System/6000 network cluster only).
/usr/lpp/poe/bin/pmadjpri	Dispatching priority adjustment daemon.
/usr/lpp/poe/include	Directory of header files containing declarations used by other installed files.
/usr/lpp/poe/samples	Directory containing sample programs for the Program Marker Array and Parallel Desktop.
/usr/lpp/bin/pdbx	Executable to run the command-line interface of the PE Debugging Facility.
/usr/lpp/poe/lib/libpdbx.a	Archive library containing subroutines for the **pdbx** debugger.
/usr/lpp/poe/bin/jm_status	SP system management command for job resource allocation. See the *IBM 9076 SP2 Scalable POWERparallel Systems: Administration Guide*, for more information.
/usr/lpp/poe/bin/pcfpmsetup	POE PCF post installation shell script.
/usr/lpp/poe/lib/pm_poe.o	Object module containing main() subroutine for poe, for service application.
/usr/lpp/poe/lib/pm_pmd.o	Object module containing main() subroutine for pmd.
/usr/lpp/poe/lib/pdbx.o	Object module containing main() subroutine for pdbx.
/usr/lpp/poe/lib/libpm.a	Archive library containing subroutines for linking poe, pmd, and pdbx.
/usr/lpp/poe/lib/libpdbx.a	Archive library containing subroutines for linking pdbx.

Note: **pevt.cat** is a shared file between poe and vt. If you currently do not plan on installing vt at this time, we suggest that you rename **pevt.cat** to another file name. This is important if in the future you do install vt, or fixes to poe or vt, since it will avoid a potential execution problem caused by an older version of this file.

2. Once the **installp** command successfully restores the POE's files from the distribution medium, it looks at the **poe.post_i** file for post installation steps. As part of these post installation steps, **poe.post_i** sets up the following symbolic links:

This link:	To:
/usr/etc/pmd2	/usr/lpp/poe/bin/pmd2
/etc/pmd2	/usr/etc/pmd2
/usr/bin/mpcc	/usr/lpp/poe/bin/mpcc
/usr/bin/mpCC	/usr/lpp/poe/bin/mpCC
/usr/bin/mpxlf	/usr/lpp/poe/bin/mpxlf
/usr/bin/mputil	/usr/lpp/poe/bin/mputil
/usr/bin/mprcp	/usr/lpp/poe/bin/mprcp
/usr/bin/mpmkdir	/usr/lpp/poe/bin/mpmkdir
/usr/bin/pmarray	/usr/lpp/poe/bin/pmarray
/usr/bin/poestat	/usr/lpp/poe/bin/poestat
/usr/bin/pdbx	/usr/lpp/pdbx/bin/pdbx
/usr/bin/poe	/usr/lpp/poe/bin/poe
/usr/lpp/poe/lib/ip/libcss.a	/usr/lpp/ssp/css/libip/libcss.a (POWERparallel system only)
/usr/lpp/poe/lib/us/libcss.a	/usr/lpp/ssp/css/libus/libcss.a (POWERparallel system only)
/usr/lpp/poe/lib/libjm_client.a	/usr/lpp/ssp/css/lib/libjm_client.a (POWERparallel system only)
/usr/lpp/poe/lib/libSDR.a	/usr/lpp/ssp/css/lib/libSDR.a (POWERparallel system only)
/usr/lib/nls/msg/C/pepoe.cat	/usr/lib/nls/msg/En_US/pepoe.cat
/usr/bin/pmdadjpri	/usr/lib/poe/bin/pmdadjpri
/usr/lib/X11/app-defaults/PMarray	/usr/lpp/samples/marker/PMarray.ad
/usr/bin/jm_status	/usr/lpp/poe/bin/jm_status
/usr/sbin/PEinstall	/usr/lpp/poe/bin/PEinstall
/usr/sbin/PEinstroot	/usr/lpp/poe/bin/PEinstroot
/usr/sbin/PEdeinstall	/usr/lpp/poe/bin/PEdeinstall
/usr/sbin/PEdeinstall	/usr/lpp/poe/bin/PEdeinstall

How Installing the xpdbx Product Option Alters Your System

The **xpdbx** product option is the X-Windows interface of the PE Debugging Facility. Installing it, as described in “Step 2: Initially Installing PE” on page 15, does the following:

1. Creates the file described in the following table.

Table 7. xpdbx File Installed

File	Description
/usr/lpp/xpdbx/bin/xpdbx	Executable to run the X-Windows interface of the PE Debugging Facility.

2. Once the **installp** command successfully restores the **xpdbx** files from the distribution medium, it looks at the **xpdbx.post_i** file for post installation steps. As part of the post installation steps, **xpdbx.post_i** sets up the following symbolic link:

This link:	To:
/usr/bin/xpdbx	/usr/lpp/xpdbx/bin/xpdbx

How Installing the vt Product Option Alters Your System

The vt product option is the Visualization Tool. Installing it as described in “Step 2: Initially Installing PE” on page 15 does the following:

1. Creates the directories and files detailed in the following table.

Table 8. vt Directories/Files Installed

Directory/File	Description
/usr/lpp/vt/Bitmaps	Directory containing icon Bitmaps for each VT View. These icons appear in the View Selector window.
/usr/lpp/vt/CPBitmaps	Directory of user interface bitmaps used to create the Trace Visualization window.
/usr/lpp/vt/Config	Directory of configuration files used by the VT control code to initialize the Views for trace visualization.
/usr/lpp/vt/ConfigPM	Configuration files used by the VT control code to initialize the Views for performance monitoring.
/usr/lpp/vt/Resource/VT.ad	Defaults file for X-Windows and Motif resource variables.
/usr/lpp/vt/ViewSelect/System.PMView	Layout definition of View Selector Window for performance monitoring.
/usr/lpp/vt/ViewSelect/System.PView	Layout definition of View Selector Window for trace visualization.
/usr/lpp/vt/libvt/vt	The VT program.
/usr/lpp/vt/libvt/dug	Program used by VT during performance monitoring to communicate with the dig Statistics Collector daemon.
/usr/lpp/vt/libvt/Xetc/bitmaps	Directory containing user interface bitmaps used to create the Trace Visualization window.
/usr/lpp/vt/vtd/dig	Statistics Collector daemon used to collect AIX online and tracing kernel statistics. Daemon is initialized when the machine is booted.
/usr/lpp/vt/bin/rc.vtdig	Shell script invoked by inittab.
/usr/lpp/vt/include/pevt.cat	Message catalog for VT.
/usr/lpp/vt/bin/digq	Child process run when the Resource Manager is not used. Determines what nodes are available to monitor.

2. Once the **installp** command successfully restores the VT files from the distribution medium, it looks at the **vt.post_i** file for post installation steps. The **vt.post_i** file:
   a. Creates the **vt**, **dug**, **dig**, and **digq** executable files by running the bind process against the object files and the library for VT.
   b. Creates the following symbolic links:

This Link:	To:
/usr/bin/vt	/usr/lpp/vt/bin/vt
/usr/bin/dug	/usr/lpp/vt/bin/dug
/usr/etc/dig	/usr/lpp/vt/bin/dig
/etc/dig	/usr/etc/dig
/usr/lpp/X11/lib/X11/app-defaults	/usr/lpp/vt/Resource/VT.ad
/etc/rc.vtdig	/usr/lpp/vt/bin/rc.vtdig
/usr/lib/nls/msg/En_US/pevt.cat	/usr/lpp/vt/include/pevt.cat
/usr/bin/digq	/usr/lpp/vt/bin/digq

3. Modifies the file */etc/inittab* so that the shell script, */etc/rc.vtdig*, runs when the system is restarted to start the vt tracing daemon, */etc/dig*.

How Installing the pedocs Product Option Alters Your System

The pedocs product option consists of man page files and the PE documentation in InfoExplorer format. All the PE X-windows tools use these InfoExplorer books to provide help information. Installing it as described in "Step 2: Initially Installing PE" on page 15 creates the directories and files detailed in the following table.

Table 9. pedocs Directories/Files Installed

Directory/File	Description
/usr/lpp/pedocs/README	File describing available PE documentation and how to access it.
/usr/lpp/info/data/pe	Directory containing PE books in InfoExplorer format.
/usr/man/cat1	Directory containing man page files for PE commands.
/usr/man/cat3	Directory containing man page files for API message-passing subroutines.
/usr/lpp/pedocs	PostScript versions of external publications.
/usr/lpp/pedocs/peinstall.ps	PostScript version of *IBM AIX Parallel Environment Installation, Administration, and Diagnosis*.
/usr/lpp/pedocs/peopsuse.ps	PostScript version of *IBM AIX Parallel Environment Operation and Use*.
/usr/lpp/pedocs/pesubref.ps	PostScript version of *IBM AIX Parallel Environment Parallel Programming Subroutine Reference*.
/usr/lpp/pedocs/peprimer.ps	PostScript version of *IBM AIX Parallel Environment Programming Primer*.

Chapter 4. Installing the Parallel Client Function Software

This chapter describes how to install the Parallel Client Function (PCF) feature on machines in a RISC System/6000 network cluster. The PCF software is *only* intended for machines in a RISC System/6000 network cluster. It is a subset of the PE software containing the files needed to execute parallel programs on remote nodes. PCF is intended to execute parallel programs only. It does not provide for compiling or building executable programs, or running the parallel debugger programs, and VT display and analysis programs.

This chapter describes the hardware, software, and disk space requirements, and provides step-by-step instructions for installation of the PCF feature.

"How Installation of PCF Alters Your System" on page 35 details the files created, and the links that are established by the installation process.

PCF Installation Requirements

This section describes the system requirements for installing and running the PCF feature. It is divided into:

- hardware requirements
- software requirements
- disk space requirements

PCF Hardware Requirements

The PCF feature is designed to run on a RISC System/6000 network cluster. The cluster should support TCP/IP.

PCF Software Requirements

To install the PCF feature on machines in the RISC System/6000 network cluster, the following is required:

- AIX Version 3.2.5 or later
- TCP/IP
- Network File System (NFS)

Also, you need the runtime library for one or more of the following:

- IBM AIX XL FORTRAN Compiler/6000 (5765-018) Version 2 Release 3, or subsequent releases
- IBM AIX XL FORTRAN Compiler/6000 (5765-176) Version 3 (see note below)
- IBM AIX C Compiler
- IBM C Set + + for AIX/6000 (5765-186) Version 2.0, or subsequent releases.

The PCF feature is distributed on:

- 8mm cartridge (feature # 5908)
- 1/4-inch tape in QIC120 format (feature # 5854)
- 1/4-inch tape in QIC525 format (feature # 5863)

The distribution medium contains the two separately installable product options of PCF in backup file format. You can do a partial install and selectively choose

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either of the options on the distribution medium. The following table lists the names of the separately-installable product options shipped on the installation media, and describes their contents. For additional information on the contents of each product option, see Table 13 on page 35 and Table 14 on page 36.

Table 10. The PCF Product Options

This product option:	Contains the:
poe_pcf	partition manager daemon (*pmd*)
vt_pcf	Statistics Collector daemon (*dig*)

PCF Disk Space Requirements

The following tables detail the amount of disk space you need for the two separately-installable product options of the PCF. The tables list the amount of disk space needed by directory after installation.

Table 11. poe_pcf Disk Space Requirements

Directory	Number of 512 Byte Blocks
/usr/lpp/poe/bin	100
/usr/bin	+7
/etc	+5
/usr/lib/nls/msg/En_US	+350

Table 12. vt_pcf Disk Space Requirements

Directory	Number of 512 Byte Blocks
/usr/lpp/vt/vtd	100
/usr/bin	+5
/usr/lib/nls/msg/En_US	+350

PCF Installation Procedure

This section describes the steps you must follow to install the PCF feature on machines in a RISC System/6000 network cluster.

Step 1: Receive the Installation Image

Note: Perform this step on any machine in the cluster. You must login as **root**.

You can install the PCF feature using the **installp** command or the installation menus of the System Management Interface Tool (SMIT). "How Installation of PCF Alters Your System" on page 35 describes the directories, files and daemon processes you create, and the links you establish when you receive the installation image. Should installation fail, a software product cleanup procedure is automatically called. The cleanup procedure removes any files that may have been restored from the distribution medium, and backs out of any post installation procedure that may have been started. To help ascertain to cause of a failed installation, refer to the installation status file. This file indicates how far installation had progressed when the errors occurred. The status file is described in more detail in *AIX for RISC System 6000: General Programming Concepts*. If you can

not ascertain the cause of a failed installation, contact IBM support as described in “Getting Help From IBM Support” on page 39.

Receiving the Installation Image Using the installp Command

To install the PCF software using the **installp** command:

INSERT the distribution medium in the installation device unless you are installing over a network.

You can install all software components of the PCF or individual ones, depending on what you want. The **-I** (capital i) option used in the examples below selects only the requested product option.

To install:	ENTER
all the software components	**installp -a -d** *devicename* **all**
just the poe_pcf product option	**installp -a -I -d** *devicename* **poe_pcf**
just the vt_pcf product option	**installp -a -I -d** *devicename* **vt_pcf**

▲ The system reads and receives the installation image off the distribution medium. The **-a** option applies the software products. The *devicename* variable should be the name of the installation device or directory.

Note: For more information on the **installp** command, refer to *AIX for RISC System/6000: Commands Reference* and *AIX for RISC System/6000: General Programming Concepts*.

Receiving the Installation Image Using SMIT

To install the PCF software using SMIT:

INSERT the distribution medium in the installation device unless you are installing over a network.

ENTER **smit instupdt_install**

▲ This command invokes SMIT, and takes you directly to its window for installing software.

PRESS **List**

▲ A window opens listing the available INPUT devices and directories for software.

SELECT the installation device or directory from the list of available INPUT devices.

▲ The window listing the available INPUT devices and directories closes and the original SMIT window indicates your selection.

PRESS **Do**

▲ The SMIT window displays the default install parameters.

If you want to install:	Type this in the SOFTWARE to install field:
all the PCF software	**all**
just the poe_pcf product option	**poe_pcf**
just the vt_pcf product option	**vt_pcf**

PRESS **Do**

▲ The system reads and receives the installation image.

Note: For more information on SMIT, refer to *AIX for RISC System 6000: General Programming Concepts*.

Step 2: Create a Host List File

Both the poe_pcf and the vt_pcf product options require you to run a shell script to complete installation after you run **installp**. Instructions for running these post installation shell scripts are covered in the next two steps. Before you can run either of them, however, you must create a host list file. This is simply a file used by the post installation scripts listing each machine to be used for parallel execution. By default the post installation script will look for a file named **host.list** in your current directory. However, you can name the host list file anything you want.

Create the host list file using any AIX text editor. Enter one name per line. For example:

```
hostname1
hostname2
hostname3
hostname4
hostname5
```

Step 3: Run the POE PCF Post Installation Script

Note: This step is only for installing the poe_pcf product option.

After you run **installp** to install the poe_pcf product option, you need to run the POE PCF post installation script to complete installation. Before you do this, make sure you can execute the **rsh** command to remotely login as **root** to each of the remote processor nodes listed in the host list file you created in the previous step. This is necessary, as the post installation script invokes the **rsh** command. To run the script:

ENTER **/usr/lpp/poe/bin/pcfpmsetup** [host_list_file]

Note: If you do not specify **host_list_file**, the shell script will look for a file named **host.list** in your current directory.

Installation of the poe_pcf product option is complete. You can now execute, but not create, parallel programs on the processor node as described in *IBM AIX Parallel Environment: Operation and Use*.

Step 4: Run the VT PCF Post Installation Script

Note: This step is only for installing the vt_pcf product option.

After you run **installp** to install the vt_pcf product option, you need to run the VT PCF post installation script to complete installation. Before you do this, make sure you can execute the **rsh** command to remotely login as **root** to each of the remote processor nodes listed in the host list file you created in "Step 2: Create a Host List File." This is necessary, as the post installation script invokes the **rsh** command. To run the script:

ENTER **/usr/lpp/vt/bin/pcfvtsetup** [host_list_file]

Note: If you do not specify **host_list_file**, the shell script will look for a file named **host.list** in your current directory.

Installation of the vt_pcf product option is complete. You can now use VT as described in *IBM AIX Parallel Environment: Operation and Use*.

How Installation of PCF Alters Your System

This section describes how your system is altered when you install the PCF software product options as described in “Step 1: Receive the Installation Image” on page 32. For each of the separately installable product options, it describes the directories and files created by the **installp** command and any symbolic links set up by the product option's **post_i** file. For more information on the **installp** command or the **post_i** file, see *AIX for RISC System/6000: General Programming Concepts*.

How Installing the poe_pcf Product Option Alters Your System

The poe_pcf product option includes the Internet daemon process **pmd**. This daemon is needed to run parallel programs on the node. Installing this product option as described in “Step 1: Receive the Installation Image” on page 32, does the following:

1. Creates the files detailed in the following table.

Table 13. poe_pcf Files Installed

Name	Description
/usr/lpp/poe/bin/pmd2	An Internet daemon process that runs on each of your processor nodes.
/usr/lpp/poe/bin/pcfpmsetup	Shell script to complete installation of the POE PCF.
/usr/lib/nls/msg/En_US/pepoe.cat	Message Catalog for POE.
/usr/lib/nls/msg/En_US/pempl.cat	Message Catalog for Message Passing Library.
/usr/lib/nls/msg/En_US/pepdbx.cat	Message Catalog for pdbx.
/usr/lib/nls/msg/En_US/pevt.cat	Message Catalog for VT.

Note: **pevt.cat** is a shared file between poe and vt. If you currently do not plan on installing vt at this time, we suggest that you rename **pevt.cat** to another file name. This is important if in the future you do install vt, or fixes to poe or vt, since it will avoid a potential execution problem caused by an older version of this file.

2. Once the **installp** command successfully restores the POE PCF files from the distribution medium, it looks at the **poe_pcf.post_i** file for post installation steps. As part of these post installation steps, **poe_pcf.post_i** sets up the following symbolic links:

This link:	To:
/etc/pmd2	/usr/etc/pmd2
/usr/etc/pmd2	/usr/lpp/poe/bin/pmd2
/usr/lib/nls/msg/C/pepoe.cat	/usr/lib/nls/msg/En_US/pepoe.cat

How Installing the vt_pcf Product Option Alters Your System

The vt_pcf product option is the Visualization Tool. Installing it as described in "Step 1: Receive the Installation Image" on page 32 does the following:

1. Creates the directories and files detailed in the following table.

Table 14. vt_pcf Files Installed

Name	Description
/usr/lpp/vt/bin/dig	Statistics Collector daemon used to collect AIX online and tracing kernel statistics. Daemon is initialized when the machine is booted.
/usr/lpp/vt/bin/pcfvtsetup	Shell script to complete installation of the VT PCF.
/usr/lpp/vt/include/pevt.cat	Message Catalog for VT.
/usr/lpp/vt/bin/rc.vtdig	Shell script invoked by inittab.

2. Once the **installp** command successfully restores the VT PCF files from the distribution medium, it looks at the **vt_pcf.post_i** file for post installation steps. The **vt_pcf.post_i** file:
   a. Creates the **dig** executable file by running the bind process against the object files and the library for VT.
   b. Creates the following symbolic links:

This Link:	To:
/etc/dig	/usr/etc/dig
/usr/etc/dig	/usr/lpp/vt/bin/dig
/usr/lib/nls/msg/En_US/pevt.cat	/usr/lpp/vt/include/pevt.cat
/etc/rc.vtdig	/usr/lpp/vt/bin/rc.vtdig

Chapter 5. File Formats

This chapter describes formats for PE files created and edited by system administrators (in /etc or /usr).

/etc/poe.priority dispatching adjustment parameters

This file contains a line for each user/dispatching class to be supported on the POWERparallel system. Following are descriptions of the parameters.

username name of user

classname name assigned to class - user selects class with POE environment variable MP_PRIORITY

hipriority the dispatching priority assigned to the favored portion of the cycle

lopriority the dispatching priority assigned to the rest of the cycle

percenthi the portion of the cycle at which the job is at hipriority (percent)

period length of adjustment cycle, in seconds

Notes:

1. Normal AIX dispatching priority is 60. If both **hipriority** and **lopriority** are set to values less than 60, a compute bound job will prevent other users from being dispatched.
2. The hipriority value must be equal to or greater than 12. If the value is between 12 and 20, the job competes with system processes for cycles, and may disrupt normal system activity.
3. If hipriority value is les than 30, keystroke capture will be inhibited during the hipriority portion of the dispatch cycle.
4. If hipriority is less than 16, the job will not be subject to the AIX scheduler during the high priority portion of the cycle.
5. The lopriority value must be less than or equal to 127.

Examples:

```
userfoo   super     12    64    95    10
userfoo   sponge    64    120   50    30
edgar     default   20    64    95    10
edgar     normal    60    60    50    20
```

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Chapter 6. Diagnosing Problems

Understanding Diagnostic Messages

Message Format

The message identifiers for the Parallel Environment messages in this manual are structured as follows:

```
0029-nnnn     (pdbx)
0030-nnnn     (xpdbx)
0031-nnnn     (Parallel Operating Environment)
0031-A4nn     (Program Marker Array)
0032-nnnn     (Message Passing Library)

0033-1nnn     (Visualization Tool - Performance Monitor)
0033-2nnn     (Visualization Tool - Trace Visualization)
0033-3nnn     (Visualization Tool - Trace Collection)
0039-nnnn     (Parallel Environment)
```

where:

- The first four digits (0029, 0030, 0031, 0032, 0033, 0039) identify the component that issued the message.
- *nnnn* identifies the sequence of the message in the group. For the messages described in this manual, the last four digits of the message number replaces the *nnnn* placeholder.

Getting Help From IBM Support

Should you require help from IBM in resolving a PE problem, you can get assistance by calling IBM Support at the number listed below.

Before you call, be sure you have the following information:

1. Your access code (customer number)
2. The PE program number. It is 5765-144. This is important information that will speed the correct routing of your call.
3. The name and version of the operating system you are using. You also need to provide the version of the products being run. To get this information:

   ENTER **lslpp -h** *product.option*

   where the *product option* is one of the following:

   - poe
   - vt
   - pdbx
   - xpdbx
4. A telephone number where you can be reached.

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The person with whom you speak will ask for the above information and then give you a time period during which an IBM representative will call you back.

The number for IBM support is 1-800-237-5511.

pdbx Messages

0029-0101 Partition loaded ..

Explanation: Informational message. The loading of the partition is complete.

User Response: None.

0029-0104 Can't find executable *string*

Explanation: **xpdbx** or **pdbx** could not find the specified file.

User Response: Check that the name and path of the file to be debugged is correct on the **xpdbx** or **pdbx** command line or the **load** subcommand.

0029-0105 Can't execute *string*

Explanation: The file to be debugged is not executable by this userid.

User Response: Check the file permissions, and the **id** command to ensure that you can execute the file. You may have to change your group or the file permissions.

0029-1001 Missing command file name following -c flag

Explanation: The **-c** flag requires the name of a readable file as an argument. This argument was missing.

User Response: Specify the name of a readable **pdbx** command file following the **-c** flag.

0029-1002 Missing or invalid argument to -I flag

Explanation: The **-I** flag requires the name of a directory to be searched for source code files. This argument was missing or invalid.

User Response: Specify the name of a directory following the **-I** flag. This directory should be available to each task in your partition because the **-I** flag will be passed to each **dbx** invocation.

0029-1003 Missing or invalid argument to -d flag

Explanation: The **-d** flag requires an integer argument specifying the nesting depth limit of program blocks.

User Response: Specify an integer to override the default nesting depth limit of 25 program blocks.

0029-1004 Usage: pdbx [object_file][-c command_file]
[-d nesting_depth][-I directory [-I directory]...]
[-f][-t table_capacity][-x]

Explanation: The command line has a syntax error.

User Response: Ensure that the syntax on the command line is correct. Correct the specific problem identified by the preceding message.

0029-1005 Unable to read command file specified by -c flag

Explanation: The **-c** flag requires the name of a readable file to be passed as an argument. The file could not be opened for reading.

User Response: Check the name of the file and the permissions to ensure that it is readable.

0029-1006 Missing or invalid argument to -t flag

Explanation: The **-t** flag requires an integer argument specifying the number of additional types to support beyond the default of 5000.

User Response: Specify an integer number of types to be added to the default type table size of 5000.

0029-1009 Could not open internal pdbx_startup file: *string*

Explanation: Initialization of **dbx** for each task requires the creation of a temporary startup. This file could not be created.

User Response: Ensure that the directory specified by the environment variable MP_TMPDIR, the **-tmpdir** flag, or /**tmp** are available for writing on each node allocated to your partition.

0029-1010 Starting dbx on node *number* **(***string***)**

Explanation: Informational message.

User Response: None.

0029-1012 pdbx interrupt handler processing *string*

Explanation: A signal has been trapped by the **pdbx** signal handler.

User Response: None.

0029-2001 Could not delete task events - bad task state.

Explanation: **pdbx** could not delete events for a task since the task was not in the correct state. It may be possible to continue.

User Response: Issue the **group list** subcommand to check the state of the tasks.

0029-2003 Event *string* **could not be set on task** *number***.**

Explanation: **dbx** gave an invalid response when setting a breakpoint or tracepoint.

User Response: Check to make sure the requested breakpoint or tracepoint was valid. Use the **status** subcommand to check what **pdbx** events have been set. Issue the **dbx where** subcommand to find out where the program is on each node.

0029-2005 Error in reading from task *number***.**

Explanation: An error was encountered when attempting to read from the tasks socket. The task is marked as bad. It may be possible to continue.

User Response: Issue the **group list** subcommand to check the state of the tasks.

0029-2010 Internal Error: Bad status returned from pm_parse_args()!

Explanation: Internal Error. Invalid command syntax for **pdbx**.

User Response: Check the man pages for **pdbx** and restart **pdbx**.

0029-2011 Internal Error: non-zero status *number* **returned from pm_mgr_init().**

Explanation: Internal Error: non-zero status returned from **pm_respond().**

User Response: Validate your installation, restart **pdbx**, if necessary. If the problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0029-2013 main(): Unable to open pdbx command file:*string***, errno:***string*

Explanation: An unreadable file was specified after the **-c** command line option.

User Response: Check that the file specified after the **-c** command line option exists and has read permission.

0029-2014 Internal Error: non-zero status *number* **returned from pm_respond().**

Explanation: Internal Error: non-zero status returned from pm_respond().

User Response: Validate your installation, restart **pdbx**, if necessary. If the problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0029-2015 main(): exit status from pm_respond() = *number***.**

Explanation: Information message.

User Response: None.

0029-2016 maximum error return code from user = *number***.**

Explanation: Information message.

User Response: None.

0029-2017 set_context_mask(): unable to reset context for context = *number***.**

Explanation: Internal command context processing error.

User Response: Further functionality may be limited.

0029-2018 Program not loaded. Issue load or other context-insensitive subcommand.

Explanation: Your application must be loaded on the partition before the **pdbx** subcommands are executed.

User Response: Load your application into the partition. (see the **pdbx load** subcommand)

0029-2019 Can't specify a context for a context-insensitive command.

Explanation: The command entered defines a context-insensitive action for a context sensitive command. Context insensitive commands can not be issued in conjunction with context sensitive commands.

User Response: Respecify your command string without the context sensitive prefix.

0029-2020 Alias name or alias string is too long.

Explanation: You have defined an alias or alias string that is larger than the allowable maximum.

User Response: Respecify your alias definition within the allowable maximums.

0029-2021 No task(s) selected.

Explanation: The context sensitive command entered has no current context defined.

User Response: Select a task context, and reenter the command.

0029-2022 task *number* **is already loaded.**

Explanation: The task number specified has already been loaded.

User Response: Specify another task that has not been loaded.

0029-2023 Internal Error: non-zero status *number* **returned from pm_respond()**

Explanation: Internal Error: invalid return code

User Response: Validate your installation, restart **pdbx**, if necessary. If the problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0029-2024 Bad event number!

Explanation: The event specified does not exist within the current context.

User Response: Check the event number with in your current context.

0029-2025 Syntax is: 'delete event_number'

Explanation: Invalid syntax for the **pdbx** delete subcommand.

User Response: Consult the man pages for the **pdbx** delete subcommand and respecify the command.

0029-2026 Syntax is: 'detach'

Explanation: Invalid syntax for the **pdbx** detach subcommand.

User Response: Consult the man pages for the **pdbx** detach subcommand and respecify the command.

0029-2027 Task or group is not active.

Explanation: The task(s) specified by the **detach** subcommand is not currently active.

User Response: None.

0029-2028 Task may not have detached properly.

Explanation: Internal Error: bad return code recieved communicating with remote tasks.

User Response: Validate your installation, restart **pdbx**, if necessary. If the problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0029-2029 No dbx is available to do a 'dhelp'.

Explanation: There are no active tasks to handle **dbx** subcommands. This command needs at least one active task.

User Response: Hook an inactive task and reissue **dhelp**.

0029-2030 Syntax is: 'group add group_name member_list'.

Explanation: Invalid syntax for the **pdbx group** subcommand.

User Response: Consult the man pages for the **pdbx group** subcommand and respecify the command.

0029-2031 Badly formed member list. No tasks added to any group.

Explanation: The group member list is incorrectly specified.

User Response: Consult the man pages for the **pdbx group** subcommand and respecify the command.

0029-2032 Can't create new group: Name is too long.

Explanation: You have defined a group name that is larger than the allowable maximum.

User Response: Respecify your group definition within the allowable maximums.

0029-2033 First letter of a group name can't be a number

Explanation: The group name is incorrectly specified.

User Response: Consult the man pages for the **pdbx group** subcommand and respecify the command.

0029-2034 Can't create any more groups. Maximum number already exists.

Explanation: You have defined the maximum allowable group definitions.

User Response: None.

0029-2035 Can't add task. *string* **is a reserved group used for all tasks.**

Explanation: The **all** group name is a reserved group name.

User Response: Specify a different group name.

0029-2036 Task *number* **has experienced an error in communicating with pdbx. It can't be added to a group.**

Explanation: The specified task is not communicating properly with the home node, so it is marked as unavailable for any subcommands that would attempt communications.

User Response: The debugger can continue after a task crashes. Under certain circumstances, you might choose to continue using the remaining tasks for some period of time.

0029-2037 *number* **is already in group** *string*

Explanation: The task specified on a **group add** subcommand is already included in the group specified.

User Response: Retry the subcommand specifying only tasks not already included within the specified group.

0029-2038 Task number *number* **is out of range.**

Explanation: The task specified on a **group add** subcommand is not an acceptable value.

User Response: Retry the subcommand specifying only task numbers greater or equal to 0 and less than the value of **-procs** or MP_PROCS.

0029-2039 *number* **task added to group** *string*

Explanation: A task was added to the specified group.

User Response: None.

0029-2040 *number* **tasks added to group** *string*

Explanation: The list of tasks was added to the specified group.

User Response: None.

0029-2041 Syntax is: 'group change old_name new_name'

Explanation: The **group change** subcommand was improperly formed.

User Response: Reissue the command specifying the existing group name and the new group name.

0029-2042 Group name *string* **not found. Name not changed.**

Explanation: The name of the group to be renamed on the **group change** subcommand could not be matched with any of the existing groups.

User Response: Use the **group list** subcommand to see the list of groups currently defined. Ensure that the group you wish to rename already exists.

0029-2043 Group name *string* **is used. Name not changed.**

Explanation: The new name for the group to be renamed on the **group change** subcommand already exists. The existing group will not be renamed to avoid confusion or ambiguity.

User Response: Use the **group list** subcommand to see the list of groups currently defined. Ensure that the group name you wish to change the existing group to does not already exist.

0029-2044 New name is too long. Maximum length is 32.

Explanation: The new group name specified on the **group change** subcommand is too long to be handled.

User Response: Choose a name under 32 characters for the new group name and retry the subcommand.

0029-2045 *string* **is now the new name for** *string*

Explanation: The new group name has been assigned to the previously existing group.

User Response: None. Remember that the old group name no longer exists.

0029-2046 Syntax is: 'group delete group_name [member_list]'

Explanation: The **group delete** subcommand requires an existing group name as an argument.

User Response: Retry the command with an existing group name as an argument. If you wish to delete one or more tasks from a group, add the list of tasks to be deleted after the group name.

0029-2047 Group name *string* **not found. Nothing deleted.**

Explanation: The **group delete** subcommand requires an existing group name as an argument. The specified group could not be matched with any of the existing groups.

User Response: Use the **group list** subcommand to see the list of groups currently defined. Ensure that the group you wish to delete or modify already exists.

0029-2048 Can't delete tasks. *string* **is a reserved group used for all tasks**

Explanation: The debugger requires at least one group which represents all the tasks in your partition. This group can not be deleted or modified.

User Response: If you want to create a group with all tasks except one or two you may do this in two steps.

1. Create a group with all tasks using pk.group create *new_group* 0,*number* where *number* is the number of tasks in your partition.
2. Then use **group delete** *new_group number* to remove one or more tasks, *number*, from the new group.

0029-2049 Badly formed member list. Nothing deleted from group.

Explanation: A member list specified with the **delete** subcommand was not recognized, so no action was taken.

User Response: Re-issue **delete** subcommand with valid member list.

0029-2050 *number* **deleted from group '***string***'**

Explanation: A task has sucessfully been deleted from a group

User Response: None

0029-2051 Group '*string***' not found.**

Explanation: The group specified on the group list command is not known to **pdbx**.

User Response: Re-issue the **group list** command with a valid group name or issue **group list** to list all groups.

0029-2052 Group has no members.

Explanation: **group list** was issued on an empty group.

User Response: None.

0029-2053 Valid group actions are: add, change, delete, list

Explanation: A **group** subcommand was issued with invalid syntax.

User Response: Check syntax and re-issue group subcommand.

0029-2054 Syntax is: 'hook'.

Explanation: The **hook** subcommand was issued with one or more arguments. **hook** takes effect on the current command context or the temporary command context when used in combination with the **on** subcommand.

User Response: Re-issue the **hook** subcommand with no arguments.

0029-2055 Nothing to hook: task or group is not unhooked.

Explanation: There are no unhooked tasks in the command context specified.

User Response: Use **group list** to view the unhooked tasks.

0029-2056 Task *number* **has exited.**

Explanation: An attempt to hook this task has been made. The task had already completed processing and exited.

User Response: None.

0029-2057 A dbx is not available in this context to do a 'list'.

Explanation: A list of the source file cannot be done at this time. There is no debugger active on the remote node.

User Response: None

0029-2058 Syntax is 'on context' or 'on context subcommand'.

Explanation: An **on** subcommand has been issued with incorrect syntax.

User Response: Check syntax and re-issue the on subcommand.

0029-2059 Group '*string*' not found. No action performed.

Explanation: The **on** subcommand has been issued with a group specified. The group is not known to **pdbx**.

User Response: Issue **group list** to display group names, then re-issue **on** subcommand.

0029-2060 Syntax is: source filename.

Explanation: The **source** subcommand was issued with zero or greater than one arguments.

User Response: Re-issue the source subcommand with only one argument.

0029-2061 Cannot open cmd file.

Explanation: The **source** subcommand has been issued with a filename that either does not exist or has no read permission.

User Response: Check the existance and read permission of the file.

0029-2062 Syntax is: status

Explanation: An argument was specified on the **status** subcommand.

User Response: Re-issue **status** with no arguments.

0029-2063 All events are used for this task or group.

Explanation: The maximum number of events for this task or group has been exceeded. Each breakpoint or trace that is set causes an event to be recorded.

User Response: Use the **delete** subcommand on some event(s) in this task or group, then re-issue the original subcommand.

0029-2064 Connection with task has gone bad.

Explanation: Events cannot be added to this task because there is a communication problem with this task.

User Response: None.

0029-2065 Bad breakpoint specified

Explanation: This event was not accepted by the **dbx** debugger.

User Response: Check the **dbx stop** or **trace** syntax.

0029-2066 Syntax is: 'unhook'

Explanation: The **unhook** subcommand was issued with one or more arguments. **unhook** takes effect on the current command context or the temporary command context when used in combination with the **on** subcommand.

User Response: Re-issue the **unhook** subcommand with no arguments.

0029-2067 Syntax is: 'unalias alias_name'

Explanation: Zero or greater than one arguments have been given to the **unalias** subcommand.

User Response: Check the **pdbx** syntax for **unalias** and re-issue the subcommand.

0029-2068 *string* **is not aliased**

Explanation: An attempt to **unalias** an unknown alias has been made.

User Response: To display the existing aliases, issue the **alias** subcommand with no arguments.

0029-2069 Syntax is: 'wait task_number'

Explanation: **wait** expects one numerical argument.

User Response: Check the **wait** syntax, the re-issue the subcommand.

0029-2070 task *number* **is unhooked. Can't wait for it.**

Explanation: Cannot **wait** for a task if it is unhooked.

User Response: Use **hook** to hook the task then reissue **wait**.

0029-2071 The communication with task *number* **has gone bad.**

Explanation: The state of the task indicates that you cannot communicate with it. It may be possible to continue.

User Response: Issue the **group list** subcommand to check the state of the tasks.

0029-2072 Cannot send command to a non-active task *number***.**

Explanation: It is not possible to write to a task that is not active.

User Response: Issue the **group list** subcommand to check the state of the tasks.

0029-2073 Unable to send command to task *number***.**

Explanation: A write to the task socket failed. It may be possible to continue.

User Response: Issue the **group list** subcommand to check the state of the tasks.

0029-2075 Aborting... Out of memory!

Explanation: A malloc failed and that **pdbx** is exiting.

User Response: Determine the cause for a shortage of memory.

0029-2076 There are no active tasks!

Explanation: The response to the **active** subcommand is that there aren't any active tasks..

User Response: None.

0029-2077 Command *string* **is not valid when using pdbx.**

Explanation: **pdbx** does not allow the use of certain subcommands.

User Response: Check the Operation and Use guide for a description of subcommands that are disallowed.

0029-2080 Could not set event!

Explanation: A stop or trace event could not be added in the current context.

User Response: Check the Operation and Use guide for information on setting **pdbx** breakpoints and tracepoints.

0029-2081 Cannot set event in different source files.

Explanation: **pdbx** will not attempt to set a breakpoint at a line number when in a group context if the group members (tasks) have different current source files.

User Response: Either choose to set events for individual tasks or set the same source file for the whole group.

0029-2082 Could not find an active task in the current context!

Explanation: No active tasks were found in the current context setting.

User Response: Issue the **group list** subcommand to determine what tasks are active.

0029-2083 Syntax is: 'stop {variable | [variable] {at sourceline | in procedure}} [if condition]'

Explanation: Usage message for the **stop** subcommand.

User Response: Re-issue the subcommand using the correct syntax.

0029-2084 Missing argument to the -dbxpromptmod flag

Explanation: The **-dbxpromptmod** flag requires a text string as an argument. This text string was missing.

User Response: Specify a text string to be used to modify the **dbx** prompt so that it won't collide with your data or program.

0029-2085 The dbx prompt modifier is too long; The maximum length is *number*

Explanation: The **dbx** prompt modifier string specified using the command line **-dbxpromptmod** flag or the MP_DBXPROMPTMOD environment variable was too long.

User Response: Reset the MP_DBXPROMPTMOD environment variable or retry the **xdbx** or **pdbx** command with a shorter string following the **-dbxpromptmod** flag.

0029-2086 Event does not exist on task or group.

Explanation: The **delete** subcommand was issued with an event number that does not exist in the command context.

User Response: Use the **status** subcommand to display the events that are associated with a command context.

0029-2087 *number* **is not in group '***string***'.**

Explanation: A **group delete groupname member_list** subcommand has been issued. One of the tasks in the **member_list** was not in the group specified.

User Response: To display members of a group issue **group list groupname**.

0029-9000 pdbx terminating.

Explanation: **pdbx** is terminating normally.

User Response: None.

POE Messages

0031-002: Couldn't get node info

Explanation: The remote node terminates.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-007: Error initializing communication subsystem: return code *number*

Explanation: The remote node was unable to initialize its communication subsystem. This message gives the return code from the function called. The remote node terminates.

User Response: Verify that the communication subsystem is running properly. If the 9076 SP high-speed switch is being used, make sure that the system software is operational.

0031-009: Couldn't integrate VT traces

Explanation: The system continues, but trace files for the Visualization Tool (VT) were not integrated.

User Response: Check that sufficient space is available for the VT trace files on each remote node.

0031-011: tcp service *string* **unknown**

Explanation: The Partition Manager terminates.

User Response: The PM daemon, **pmd,** is not known to the system. Review the results of installation to assure that the daemon specified by inetd is startable on each remote node.

0031-012: pm_contact: socket

Explanation: The Partition Manager terminates, as it could not create a socket.

User Response: The message is followed by an explanatory sentence. Check that the number of sockets required does not exceed the number available.

0031-013: pm_contact: setsockopt

Explanation: The Partition Manager continues, but some socket options may not be set correctly.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-018: Couldn't get info for hostname *string*

Explanation: The Partition Manager terminates.

User Response: The name mentioned cannot be identified. Check that the host name is spelled correctly and is known by name to the node on which the Partition Manager is running. If hostname is blank, allocation has failed.

0031-019: pm_contact: connect failed

Explanation: The Partition Manager terminates.

User Response: The Partition Manager is unable to connect to a remote node. Message 0031-020 follows. Probable PE system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-020: Couldn't connect to task *number* **(***string***)**

Explanation: The Partition Manager terminates.

User Response: For the indicated remote task number and indicated host name, socket connection could not be established. Check for valid names.

0031-022: setsockopt(SO_LINGER)

Explanation: The Partition Manager continues.

User Response: An error occurred in setting the LINGER socket option. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-024: *string***: no response; rc =** *number*

Explanation: The Partition Manager terminates.

User Response: No acknowledgement of startup was received from the **pmd** daemon running on the indicated node. Check for error message from that node. The return codes are: -1, EOF on connection; 1 I/O error; 2 allocation error

0031-025: unexpected acknowledgment of type *string* **from remote node**

Explanation: The Partition Manager received an unexpected acknowledgement during initialization. Initialization with a remote node has failed.

User Response: Check the remote node log file to determine the reason for failure. Probable PE error.

0031-026: Couldn't create socket for PM Array

Explanation: The Partition Manager terminates. An explanatory sentence follows.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-027: Write to PM Array

Explanation: The Partition Manager continues. An explanatory sentence follows.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-028: pm_mgr_handle; can't send a signal message to remote nodes

Explanation: The Partition Manager terminates. An explanatory sentence follows.

User Response: Probable PE error. This error has occurred in the Partition Manager signal handler. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-029: Caught signal *number* **(***string***), sending to tasks...**

Explanation: The indicated signal is not used specifically by Partition Manager, and is being passed on to each remote task.

User Response: Verify that the signal was intended.

0031-031: task *number* **is alive**

Explanation: The message is sent from the indicated task in response to signal SIGUSR2.

User Response: Verify that the signal was intended.

0031-032: exiting...

Explanation: The message is sent from the indicated task in response to signal SIGINT, and the remote node is exiting.

User Response: Verify that the signal was intended.

0031-033: Your application is a bit of a resource hog, bailing out.

Explanation: The remote node exits with signal SIGDANGER. The message is sent from the indicated task in response to signal SIGDANGER.

0031-034: task signal *number*: *string*

Explanation: The message is sent from the indicated task in response to the indicated signal, which is not handled explicitly by the Partition Manager.

User Response: Verify that the signal was intended.

0031-036: sigaction(SIGHUP)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-037: sigaction(SIGINT)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-038: sigaction(SIGQUIT)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-039: sigaction(SIGILL)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-040: sigaction(SIGTRAP)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-041: sigaction(SIGIOT)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-042: sigaction(SIGEMT)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-043: sigaction(SIGFPE)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-044: sigaction(SIGBUS)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-045: sigaction(SIGSEGV)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-046: sigaction(SIGSYS)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-047: sigaction(SIGPIPE)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-048: sigaction(SIGALRM)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-049: sigaction(SIGTERM)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-050: sigaction(SIGURG)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-051: sigaction(SIGSTSTP)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-052: sigaction(SIGCONT)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-053: sigaction(SIGCHLD)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-054: sigaction(SIGTTOU)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-055: sigaction(SIGIO)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-056: sigaction(SIGXCPU)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-057: sigaction(SIGMSG)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-058: sigaction(SIGWINCH)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-059: sigaction(SIGPWR)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-060: sigaction(SIGUSR1)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-061: sigaction(SIGUSR2)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-062: sigaction(SIGPROF)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-063: sigaction(SIGDANGER)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-064: sigaction(SIGVTALRM)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-065: sigaction(SIGMIGRATE)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-066: sigaction(SIGPRE)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-067: sigaction(SIGGRANT)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-068: sigaction(SIGRETRACT)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-069: sigaction(SIGSOUND)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-070: sigaction(SIGSAK)

Explanation: An explanatory sentence follows. The Partition Manager terminates.

Cause: The return from **sigaction** for the indicated signal is negative.

0031-071: invalid number of procs entered

Explanation: The Partition Manager terminates. Incorrect number of tasks specified.

User Response: Enter a number from 1 to the max numbers of nodes you have.

0031-076: invalid infolevel

Explanation: The **-infolevel** option was neither a 0 nor a positive number.

User Response: Correct the flag.

0031-077: invalid tracelevel

Explanation: The **-tracelevel** option was neither a 0 nor a positive number.

User Response: Correct the flag.

0031-078: invalid retrytime

Explanation: The **-retrytime** option was neither a 0 nor a positive number.

User Response: Correct the flag.

0031-079: invalid pmlights

Explanation: The **-pmlights** option was neither a 0 nor a positive number.

User Response: Correct the flag.

0031-080: invalid usrport

Explanation: The **-usrport** option was neither a 0 nor a positive number less than 32768.

User Response: Correct the flag.

0031-081: invalid samplefreq

Explanation: The **-samplefreq** option was neither a 0 nor a positive number.

User Response: Correct the flag.

0031-082: reserved message

Explanation: This message number is obsolete, and should not be issued.

User Response:

0031-083: invalid wrap trace buffer

Explanation: The **-tbuffwrap** option was neither YES or NO.

User Response: Correct the flag.

0031-084: invalid tbuffsize value

Explanation: The **-tbuffsize** option specifies too large a trace buffer (or an invalid number).

User Response: Correct the flag.

0031-085: invalid tbuffsize unit

Explanation: The **-tbuffsize** option is not of the form *number*K or *number*M.

User Response: Correct the flag.

0031-086: invalid ttempsize value

Explanation: The **-ttempsize** option specifies too large a file (or an invalid number).

User Response: Correct the flag.

0031-087: invalid ttempsize unit

Explanation: The **-ttempsize** option is not of the form *number*M or *number*G.

User Response: Correct the flag.

0031-088: invalid tpermsize value

Explanation: The **-tpermsize** option specifies too large a file (or an invalid number).

User Response: Correct the flag.

0031-089: invalid tpermsize unit

Explanation: The **-tpermsize** option is not of the form *number*M or *number*G.

User Response: Correct the flag.

0031-092: MP_PROCS not set correctly

Explanation: The MP_PROCS environment variable is not a positive number.

User Response: Correct the variable.

0031-093: MP_INFOLEVEL not set correctly

Explanation: The MP_INFOLEVEL environment variable is neither 0 or a positive number less than 32768.

User Response: Correct the variable.

0031-094: MP_TRACELEVEL not set correctly

Explanation: The MP_TRACELEVEL environment variable is neither 0 or a positive number less than 32768.

User Response: Correct the variable.

0031-095: MP_RETRY not set correctly

Explanation: The MP_RETRY environment variable is neither 0 or a positive number less than 32768.

User Response: Correct the variable.

0031-096: MP_PMLIGHTS not set correctly

Explanation: The MP_PMLIGHTS environment variable is neither 0 nor a positive number.

User Response: Correct the variable.

0031-097: MP_USRPORT not set correctly

Explanation: The MP_USRPORT environment variable is neither 0 nor a positive number less than 32768.

User Response: Correct the variable.

0031-098: MP_SAMPLEFREQ not set correctly

Explanation: The MP_SAMPLEFREQ environment variable is neither 0 nor a positive number less than 32768.

User Response: Correct the variable.

0031-099: reserved message

Explanation: This message number is obsolete, and should not be issued.

User Response:

0031-100: MP_TBUFFWRAP not set correctly

Explanation: The MP_TBUFFWRAP environment variable is neither YES nor NO.

User Response: Correct the variable.

0031-101: Invalid MP_TBUFFSIZE

Explanation: The MP_TBUFFSIZE environment variable specifies too large a trace buffer (or an invalid number).

User Response: Reduce or correct the size.

0031-102: Incorrect MP_TBUFFSIZE unit

Explanation: The MP_TBUFFSIZE environment variable is not of the form *number*K or *number*M.

User Response: Correct the flag.

0031-103: Invalid MP_TTEMPSIZE

Explanation: The MP_TTEMPSIZE environment variable specifies too large a trace file (or an invalid number).

User Response: Reduce or correct the size.

0031-104: Incorrect MP_TTEMPSIZE unit

Explanation: The MP_TTEMPSIZE environment variable is not of the form *number*M or *number*G.

User Response: Correct the flag.

0031-105: Invalid MP_TPERMSIZE

Explanation: The MP_TPERMSIZE environment variable specifies too large a trace file (or an invalid number).

User Response: Reduce or correct the size.

0031-106: Incorrect MP_TPERMSIZE unit

Explanation: The MP_TPERMSIZE environment variable is not of the form *number*M or *number*G.

User Response: Correct the flag.

0031-110: pm: atexit

Explanation: The user exit handler could not be installed.

Cause: Probable PE error.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-113: Stopping the job. Wait 5 seconds for remotes.

Explanation: The Partition Manager has received a SIGTSTP signal (from the LoadLeveler program product or the <Ctrl>Z keyboard interrupt) and is preparing to stop the job on all the remote nodes. The system will then issue a stop message giving the task number for the job as it would for any <Ctrl>Z keyboard interrupt.

User Response: Wait for the stop confirmation message (0031-127). To continue the job in the foreground, type in **fg** *tasknumber* after you receive the stop message. To continue the job in the background, type in **bg** *tasknumber* after you receive the stop message.

0031-114: partition manager

Explanation: The Partition Manager on the home node received an unexpected signal. An explanatory sentence follows.

Cause: Probable PE error.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-115: invalid resd option

Explanation: The specification of the **-resd** option was neither YES or NO.

User Response: Correct the specification.

0031-116: MP_RESD not set correctly

Explanation: The specification of MP_RESD was neither YES or NO.

User Response: Correct the specification of MP_RESD.

0031-117: Unable to contact Resource Manager

Explanation: The Partition Manager was unable to contact the Resource Manager to allocate nodes of the 9076 SP.

User Response: Check that the Resource Manager is running. Otherwise, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-118: *string string* **requested for task** *number*

Explanation: The named host or pool was requested from the Resource Manager for the indicated task number. This informational message is issued when a host list file is read for node allocation.

0031-119: Host *string* **allocated for task** *number*

Explanation: The named host was allocated by the Resource Manager for the indicated task number. This informational message is issued when the Resource Manager does implicit node allocation.

0031-121: Invalid combination of settings for MP_EUILIB, MP_HOSTFILE, and MP_RESD

Explanation: The execution environment could not be established based on the above settings.

User Response: Refer to IBM AIX Parallel Environment Operation and Use for valid combinations of above settings.

0031-122: For IP allocation, couldn't find host file name <*string***>**

Explanation: The system could not find the specified host list file.

User Response: Check that the host list file name specified was the name intended.

0031-123: Retrying allocation .... press control-C to terminate

Explanation: The requested nodes were not available from the Resource Manager. However, since the retry option was specified (by either the MP_RETRY environment variable or the **-retry** command-line flag), the Partition Manager will continue requesting nodes at the specified delay interval.

User Response: To terminate the allocation request, press <Ctrl>C.

0031-124: Couldn't allocate nodes for parallel execution. Exiting ...

Explanation: The requested nodes were not available from the Resource Manager.

User Response: Check that you haven't specified a number of nodes greater than the number of physical compute nodes in your 9076 SP or RISC System/6000 network cluster. Otherwise, wait until later when the needed number of nodes is available. You might want to specify the retry option by either setting the MP_RETRY environment variable or using the **-retry** command-line flag.

0031-125: Incorrect number of nodes specified (*number*), in <*string*>.

Explanation: There was an incorrect number of nodes specified than what is defined in the **host.list** file.

User Response: Check that you haven't specified a number of nodes greater than the number of physical compute nodes in your 9076 SP or RISC System/6000 network cluster. Otherwise, wait until later when the needed number of nodes is available. You might want to specify the retry option by either setting the MP_RETRY environment variable or using the -retry command-line flag.

0031-126: Unable to read string for current directory

Explanation: The Partition Manager is unable to interpret the data from the **pwd** command.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-128: Invalid euilib selected

Explanation: An **euilib** other than **ip** or **us** was entered.

User Response: Re-specify the **euilib** as either **ip** or **us.**

0031-129: Invalid euidevelop option, should be YES or NO

Explanation: An **euidevelop** other than YES or NO was entered.

User Response: Re-specify **euidevelop** with either YES or NO.

0031-130: Invalid newjob option, should be YES or NO

Explanation: A **newjob** other than YES or NO was entered.

User Response: Re-specify **newjob** with either YES or NO.

0031-131: Invalid pmdlog option, should be YES or NO

Explanation: A **pmdlog** other than YES or NO was entered.

User Response: Re-specify **pmdlog** with either YES or NO.

0031-133: Invalid stdoutmode

Explanation: A **stdoutmode** other than ORDERED, UNORDERED or an integer from 0 to (the number of tasks -1) was entered.

User Response: Re-specify **stdoutmode** with either ORDERED, UNORDERED or a number.

0031-134: Invalid mode for stdinmode

Explanation: A **stdinmode** other than ALL or an integer from 0 to (the number of tasks -1) was entered.

User Response: Re-specify **stdinmode** with either ALL or a number.

0031-135: Invalid labelio option, should be YES or NO

Explanation: A **labelio** other than YES or NO was entered.

User Response: Re-specify **labelio** with either YES or NO.

0031-136: Invalid MP_NOARGLIST option, should be YES or NO

Explanation: The Partition Manager terminates.

User Response: Enter YES or NO for MP_NOARGLIST.

0031-157: Couldn't flush VT traces

Explanation: The program continues.

User Response: At termination, the Partition Manager was unable to successfully terminate trace processing for VT. Check any messages issued by VT.

0031-158: select

Explanation: An explanatory sentence follows. The Partition Manager terminates.

User Response: The select call to the sockets connecting the Partition Manager with the remote nodes failed. Presumably connection has been lost. The explanatory sentence may give an indication of the source of failure.

0031-160: I/O error on socket connection with task *number*

Explanation: An explanatory sentence follows. The Partition Manager con- tinues. A read on the socket used to connect the Home Node with the indicated remote task failed. Probably the remote node has closed the connection. The task is marked as exited and processing continues.

User Response: Examine the communication subsystem for failure.

0031-161: EOF on socket connection with task *number*

Explanation: Processing continues. The socket used to connect the Home Node with the indicated remote task has closed. Probably the remote node has closed the conection.

User Response: Examine the communication subsystem for failure.

0031-164: process_io: read(io command)

Explanation: Processing continues. The command sent to the Partition Manager is ignored.

User Response: Probable system error. An incomplete or invalid I/O command was received by the Partition Manager.

0031-169: pm_remote_shutdown

Explanation: Processing continues. An explanatory sentence is appended.

User Response: A quit message being sent to all remote nodes could not be written to one of the sockets.

0031-171: unknown io command

Explanation: Processing continues. The data is ignored.

User Response: An unsupported or invalid I/O command code was received by the Partition Manager from a remote node.

0031-172: I/O buffer overflow

Explanation: The stdout or stderr string overflows the output buffer (8K). The excess is discarded.

User Response: Probable internal error. Normally, the output is automatically flushed if it exceeds the buffer length. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-179: Unable to acknowledge profiling request for task *number*

Explanation: An error occurred writing a message to the indicated task, allowing it to begin to write the profiling data to disk.

User Response: Probable internal error. Verify that the indicated node is still connected in the partition. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-180: read(PROF)

Explanation: Processing continues. An explanatory sentence is appended.

User Response: The Partition Manager cannot read the remote node's response to a SIGUSR1 profiling signal.

0031-183: Connection to task *number* **blocked. Task abandoned.**

Explanation: While trying to stop the indicated task on a remote node, the Partition Manager discovered that the socket connection was blocked (unavailable). The remote task is marked as inactive and the Partition Manager continues.

User Response: Manual intervention may be required to kill the job on the remote node.

0031-200: pmd: getpeername <*string***>**

Explanation: The daemon is unable to identify the partition manager.

User Response: Probable system or communication subsystem failure.

0031-201: pmd: setsockopt(SO_KEEPALIVE): <*string***>**

Explanation: The daemon is unable to set the indicated socket option. Explanatory sentence is provided.

User Response: Probable system or communication subsystem failure.

0031-202: pmd: setsockopt(SO_LINGER): <*string*>

Explanation: The daemon is unable to set the indicated socket option. Explanatory sentence is provided.

User Response: Probable system or communication subsystem failure.

0031-203: malformed from address: <*string*>

Explanation: The socket address family is incorrect.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-207: pmd: sigaction <*string*>

Explanation: Error when setting up to handle a signal.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-208: pmd: fork <*string*>

Explanation: The **pm** daemon is unable to fork to execute the user application.

User Response: Probable system error.

0031-212: pmd: node *string*: user *string* denied from access from host *string*

Explanation: The user is not permitted to run on the indicated node. The Partition Manager exits.

User Response: Make sure that the Partition Manager home node machine and user id are identified, for example, in **$HOME/.rhosts** or in **/etc/hosts.equiv** for this user on this machine. The access requirements are the same as for remote shell (rsh) access to the node.

0031-213: pmd: setuid <*number*>

Explanation: The **setuid** function failed for a given userid.

User Response: Make sure that the user is known by the same number on all systems.

0031-214: pmd: chdir <*string*>

Explanation: An attempt to change to the indicated directory failed.

User Response: Make sure that the directory exists.

0031-215: can't run parallel tasks as root

Explanation: The userid of the user running the application can not be 0.

User Response: Re-run under a userid other than root.

0031-235: invalid userid received

Explanation: The userid is not valid on this node.

User Response: Run under a valid userid.

0031-237: invalid group id received

Explanation: The group id received by the **pm** daemon is either negative or non numeric and therefore not valid.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-243: invalid environment length received

Explanation: The length received by the **pm** daemon is either negative or non numeric and therefore not valid.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-247: pmd: setgid <*number*>

Explanation: The **pmd** was unable to set the groupid for the remote task.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-250: task *number***:** *string*

Explanation: The given task has received the given signal.

User Response: No response needed.

0031-251: task *number* **exited: rc=***number*

Explanation: The indicated task has exited. This informational message is displayed when processing completes normally and when the job is terminated by the <Ctrl>C interrupt key.

User Response: No response needed.

0031-252: task *number* **stopped:** *string*

Explanation: The indicated task has been stopped. The second variable in this message indicates the signal that stopped the task.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-253: Priority adjustment call failed: rc = *number***, errno =** *number*

Explanation: The call to start the priority adjustment process failed. Check that the priority adjustment program is executable. Execution continues, but no priority adjustment is applied to this process. The return code and **errno** reported relate to the system function.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-330: Error getting environment variable *string*

Explanation: The internal **getenv** function failed to get the specified environment variable. The remote node terminates.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-332: SSM_CSS_INIT expected and it was not received.

Explanation: System error occured where an SSM_CSS_INIT was expected for the control pipe input. The remote node terminates.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-333: More node information found than expected.

Explanation: An internal error was detected where there was more node information returned from SSM_CSS_INIT than expected. The remote node terminates.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-334: SSM not SSM_ACK to our sync request.

Explanation: An internal error was detected where there was no acknowledgement returned for a sychronization request. The remote node terminates.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-335: SSM subtype not what was expected

Explanation: An internal error was detected where an unexpected message type was returned. The remote node terminates.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-336: Error with VT_trc_set_params_c.

Explanation: An internal error was detected after trying to set up the VT trace parameters. The remote node terminates.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-337: Error in starting the user's code.

Explanation: An internal error was detected after trying to start the user executable code in the remote node. The remote node terminates.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-338: Error sending exit request to home node.

Explanation: An internal error was detected after trying to send an exit request to the home node. The remote node terminates.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-339: VT trace initialization failed.

Explanation: VT trace initialization failed on a remote node. The remote node continues, but no visualization trace file will be created for that node.

User Response: Probable PE error. Check for other messages from VT. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-400: Invalid value *number* for stdoutmode

Explanation: User has entered a non-negative value with -stdoutmode or MP_STDOUTMODE which is greater than or equal to the number of processes requested; for SINGLE mode, this value must be between 0 and n-1, where n is the number of processes.

User Response: Re-run with valid value.

0031-401: Invalid value *number* for stdinmode

Explanation: User has entered a non-negative value with -stdinmode or MP_STDINMODE which is greater than or equal to the number of processes requested; for SINGLE mode, this value must be between 0 and n-1, where n is the number of processes.

User Response: Re-run with valid value.

0031-402: Using css0 as euidevice for User Space job

Explanation: User specified command line option -euidevice or used environment variable MP_EUIDEVICE with a setting of other than css0, which must be used for User Space jobs. User value has been overridden to allow job to continue.

User Response: None required.

0031-503: Enter program name and flags for each node

Explanation: The system waits for each entry and initiates the given program on the specified node.

User Response: Enter the name and any command line flags or file names to be used.

0031-504: Partition loaded ...

Explanation: Execution continues.

User Response: This is an informational message stating that all requested programs have been loaded on the remote nodes.

0031-600: Number of tasks (*number*) > maximum (*number*)

Explanation: User has requested more tasks than maximum number allowed.

User Response: Rerun job within defined limits for number of tasks.

0031-601: Open of file *string* failed

Explanation: Specified hostfile could not be opened.

User Response: Check pathname and permissions.

0031-603: Resource Manager allocation for task: *number* rc = *number*

Explanation: Node for indicated task unsuccessfully allocated. Reason codes are as follows:

1 JM_NOTATTEMPTED
2 JM_INVALIDPOOL
3 JM_INVALIDSUBPOOL
4 JM_INVALIDNODENAME
5 JM_EXCEEDEDCAPACITY
6 JM_DOWNONENET
7 JM_DOWNONSWITCH
8 JM_INVALIDUSER
9 JM_INVALIDADAPTER

10 JM_PARTITIONCREATIONFAILURE
11 JM_SWITCHFAULT
12 JM_SYSTEM_ERROR

User Response: Use environment variable MP_RETRYCOUNT or command line flag **-retrycount** to increase the number of times that the Resource Manager attempts to allocate the node. If that fails, contact System Administrator to determine node availability.

0031-604: Unexpected non-numeric entry in hostfile

Explanation: A non-numeric pool number exists in **hostfile.**

User Response: Correct the hostfile entry.

0031-605: Unexpected EOF on allocation file for task *number*

Explanation: There were not enough entries in the hostfile for the number of processes specified.

User Response: Lower the number of processes or add more entries to the hostfile.

0031-606: Pool request not allowed in hostfile unless using Resource Manager

Explanation: Execution environment (see IBM AIX Parallel Environment Operation and Use) did not specify use of the Resource Manager, but a hostfile entry contained a pool request.

User Response: If Resource Manager use was intended, check environment variables. Otherwise, remove pool request from hostfile.

0031-607: Pool requests and host entries may not be intermixed in hostfile

Explanation: Pool requests and host entries co-existed in hostfile.

User Response: Modify hostfile to contain only pool requests or only hostnames.

0031-608: Unrecognized option for task *number***: <***string***>**

Explanation: An option other than **shared**, **dedicated**, **multiple**, or **unique** was found in the hostfile.

User Response: Correct hostfile entry.

0031-609: Unable to open save_hostfile *string*

Explanation: Specified save hostfile could not be opened.

User Response: Check pathname and permissions.

0031-610: Error in command broadcast

Explanation: An error occurred in broadcasting the **poe** command to the partition. Probably one of the remote nodes is no longer accessible. POE terminates.

User Response: Verify that the remote nodes in the partition can be contacted by other means. If problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-611: Unable to open command file <*string***>**

Explanation: The file designated to issue POE commands can not be opened. POE terminates.

User Response: Verify that the file name is spelled correctly and is readable.

0031-612: pm_contact: write select error

Explanation: A system error occurred while writing to a remote node. The system error message is appended. POE terminates.

User Response: Verify that the remote nodes in the partition can be contacted by other means. If problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-613: Unable to send command to task *number*

Explanation: An error occurred in sending the **poe** command to the indicated task. Probably the remote node is no longer accessible. POE terminates.

User Response: Verify that the remote node in the partition can be contacted by other means. If problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-614: Unable to send single command to task *number*

Explanation: An error occurred in sending the **poe** command to the indicated task. Probably the remote node is no longer accessible. POE terminates.

User Response: Verify that the remote node in the partition can be contacted by other means. If problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-615: strappend failed for *string* **, rc =** *number*

Explanation: The internal string append function failed. The system terminates.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-616: gethostbyname failed for home node

Explanation: The internal **gethostbyname** function failed. The system terminates.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-617: pm_getcwd failed, rc = *number*

Explanation: The internal **pm_getcwd** function failed. A return code of 1 implies either can't open pipe to **ksh** or command failed. A return code of 2 means the working directory string is longer than **bufsize.** The system terminates.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-618: The following nodes were not contacted:"

Explanation: See message 0031-623 for a list of the remote nodes that did not respond during the phase indicated by the code in message 0031-631. It is possible that some nodes were not tried, so the list doesn't necessarily indicate that all the nodes were unavailable. POE terminates.

User Response: Probably connectivity to one of the listed nodes has been lost. Verify that the node can be contacted by other means. If problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-619: *string*

Explanation: The text is explanatory text as would be provided by the **perror()** or **psignal()** functions. For **perror(),** it is the text contained in **sys_errlist[errno]** for the error **errno.** For **psignal(),** it is the text contained in **sys_siglist[signal]** for signal **signal.** A preliminary 0031-*number* message indicates the context.

0031-620: pm_SSM_write failed in sending the user/environment for taskid *number*

Explanation: The internal **pm_SSM_write** function failed. The system terminates.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-621: pm_SSM_write failed in sending the partition map information for taskid *number*

Explanation: The internal **pm_SSM_write** function failed. The system terminates.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-622: unexpected msg from task *number***, type** *number*
Text: *string*

Explanation: An unexpected message was returned from the indicated task. The system continues.

User Response: Probable PE error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-623: task *number***: hostname** *string*

Explanation: The line indicates the task number and associated host name. See message 0031-618 and 0031-631 for more information.

User Response: The list may contain names of failing nodes. Verify that connectivity exists and the the **pmd** daemon is executable on that node.

0031-624: Error from sigprocmask for blocking stop signals

Explanation: An error occurred in setting the signal mask to block stop signals during installation. POE terminates.

User Response: Probable PE internal error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-625: sigaction(SIGSTOP)

Explanation: An error occurred in setting the flags for the SIGSTOP signal. POE terminates.

User Response: Probable PE internal error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-626: got signal *number***; awaiting response from signal** *number*

Explanation: POE received a signal while processing the responses to a previous signal. The new signal is ignored unless it is the SIGKILL signal.

User Response: Often this means that a remote node is not responding. Verify that the node can be contacted by other means. If problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-627: Task *number* **connection blocked. Task will be abandoned.**

Explanation: While shutting down the partition, POE was unable to write to the indicated task, because the socket was blocked. The socket and task are subsequently ignored and the shutdown continues.

User Response: Often this means that a remote node is not responding. The tasks running on this node must be terminated manually. Verify that the node can be contacted by other means. If problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-628: pm_contact: read select error

Explanation: A system error occurred while reading from a remote node. The system error message is appended. POE terminates.

User Response: Verify that the remote nodes in the partition can be contacted by other means. If problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-629: pm_contact: write timeout occurred; nprocs = *number*

Explanation: The select statement timed out waiting for ready to write to a remote node. A list of nodes not contacted is appended. POE terminates.

User Response: Verify that the remote nodes in the partition can be contacted by other means. If necessary, the timeout interval may be set with the environment variable MP_TIMEOUT. The default is 15 seconds. If problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-630: pm_contact: read timeout occurred; nprocs = *number*

Explanation: The select statement timed out waiting for ready to read from a remote node. A list of nodes not contacted is appended. POE terminates.

User Response: Verify that the remote nodes in the partition can be contacted by other means. If necessary, the timeout interval may be set with the environment variable MP_TIMEOUT. The default is 15 seconds. If problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-631: pm_contact: signal received; nprocs = *number***, code =** *number*

Explanation: Operation was terminated by a signal, either created by the user (SIGINT), or with the system (for example, SIGPIPE). POE terminates. The code indicates where in the contact sequence the signal occurred as follows:

2 - connect
3 - write select
4 - write message 1
5 - write message 2
6 - read select
7 - read acknowledgement
8 - end of contact routine

User Response: The remote node(s) do not respond. Verify that the node can be contacted by other means. Verify that the **pmd2** daemon is executable on the indicated remote node. If necessary, the timeout interval may be set with the environment variable MP_TIMEOUT. The default is 15 seconds. If the problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-632: Can't connect to PM Array. errno = *number*

Explanation: POE tried to connect to the Program Marker Array tool, but was unsuccessful. The system error number is returned. Most likely, the Program Marker Array has not been started.

User Response: If the Program Marker Array is not being used, ignore this message. Otherwise, terminate POE, start the **pmarray**, and restart POE. If Program Marker Array has been started, verify the value of the environment variable MP_USRPORT for a valid port number for connection.

0031-633: Unexpected EOF on socket to task *number*

Explanation: POE got a socket EOF when trying to broadcast a message to the partition. The affected node is marked as not active, and the broadcast continues. The broadcast calling routine may take additional actions.

User Response: Verify the reason for loss of connection. Often this means that a remote node is not responding. Verify that the node can be contacted by other means. If problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-635: Non-zero status *number* **returned from pm_mgr_init**

Explanation: An error has occurred in a lower level function.

User Response: Perform whatever corrective action is indicated for earlier messages and retry. If problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-636: User requested or EOF termination of pm_command

Explanation: End of file was reached in the specified command file or user typed **quit**.

User Response: If termination is unexpected, verify that command file contains correct number of commands based on MP_PROCS and MP_PGMMODEL settings.

0031-637: Non-zero status *number* **returned from pm_command**

Explanation: An error has occurred in a lower level function.

User Response: Perform whatever corrective action is indicated for earlier messages and retry. If problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-638: Non-zero status *number* **returned from pm_respond**

Explanation: An error has occurred in a lower level function.

User Response: Perform whatever corrective action is indicated for earlier messages and retry. If problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-639: Exit status from pm_respond = *number*

Explanation: The **pm_respond** function exited with the indicated status.

User Response: If other error messages occurred, perform corrective action indicated for the message(s); otherwise, no action is required.

0031-641: jm_interpret_message rc = *number*

Explanation: A non-zero return code was returned from the SP Resource Manager message interpretation function. The Partition Manager terminates the partition. The return code value is printed. The defined values are:

1 - A system error occurred. An explanatory message follows.

3 - A socket error occurred. Probably the Resource Manager has failed. If this is a batch job running under LoadLeveler, the job will be terminated.

User Response: Correct the condition causing the non-zero return code, and restart POE.

0031-642: End of File from Program Marker Array

Explanation: The socket connecting POE to the Program Marker Array has returned EOF. Execution of POE continues.

User Response: If the Program Marker Array has not been deliberately terminated, determine the cause of the EOF, and, if desired, restart POE. Otherwise, ignore the message and allow the POE job to terminate normally.

0031-643: Error read from Program Marker Array

Explanation: The socket connecting POE to the Program Marker Array has returned an error condition. POE continues. The defined error codes are:

1 - I/O error on the socket. An explanatory message is appended if **errno** is set.

2 - POE was unable to allocate storage for the message from PM Array. Probable internal error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

3 - Some other error. An explanatory message is appended if errno is set.

User Response: If the Program Marker Array has not been deliberately terminated, determine the cause of the error, and, if desired, restart POE. Otherwise, ignore the message and allow the POE job to terminate normally. If the error code was 2 or 3, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-644: Can't route PM Array message to task *number*

Explanation: An error occurred while trying to forward a message from the Program Marker array to the indicated task. POE continues, but the connection to PM Array is closed.

User Response: Probably the remote task is no longer active, but the Program Marker array responses are backlogged. In this case, the messages can be ignored. Otherwise, look for other failures that may also cause this symptom.

0031-645: PM Array message to unknown destination *number*

Explanation: The PM Array message is not to a remote task and not for the Home Node. The destination code is given. POE continues, but the connection to PM Array is closed.

User Response: Probably the PM Array tool is issuing invalid messages. Check the PM Array application.

0031-646: PM Array is trying to tell us something ...

Explanation: A message from PM Array is directed to the Home Node. At present there are no Home Node functions responding to the PM Array, so the message text is just printed out.

User Response: Verify that the PM Array tool is working correctly.

0031-647: *string*

Explanation: This is the message buffer text from PM Array as described in message 0031-646.

User Response: Verify that the PM Array tool is working correctly.

0031-648: Couldn't tell world about EOF on STDIN

Explanation: An error occurred while broadcasting EOF on STDIN to the partition. The partition is terminated, and POE exits.

User Response: Verify that the remote nodes are accessible and restart POE. If the failure continues, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-649: Couldn't tell task *number* **about EOF on STDIN**

Explanation: An error occurred while sending EOF on STDIN to the indicated task. The partition is terminated, and POE exits.

User Response: Verify that the remote node is accessible and restart POE. If the failure continues, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-650: No receiver for STDIN bound for *number*

Explanation: STDINMODE defines a task number that is not active.

User Response: Probable user error. Verify the value of STDIN mode set by the environment variable or under program control.

0031-651: Error reading input comand file

Explanation: An I/O error occurred reading the input command file describing the initialization sequence for **pdbx** and **xpdbx.** Input reverts to STDIN.

User Response: If possible, determine which file is being read and correct it. If the problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-652: Error reading STDIN

Explanation: An I/O error occurred reading STDIN. STDIN is subsequently ignored.

User Response: Verify that the file used for STDIN is readable. If the problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-653: Couldn't route data from STDIN to task *number*

Explanation: An error occurred routing STDIN to the indicated task. The partition is terminated and POE exits.

User Response: Verify that the remote task is active. If the problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-654: Allocation error for SSM_read, task *number*, **length** *number*

Explanation: An error occurred allocating storage for a message from a remote node. The partition is terminated and POE exits. The task id and length requested are printed.

User Response: Verify that sufficient storage is available to run POE on the Home Node, and that the requested length is not excessive. If the problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-655: Can't route message to destination *number*

Explanation: An error occurred routing a message to the indicated destination task. The requested routing is not supported.

User Response: If the message is generated by Parallel Environment, this is an internal error. If generated by a user program, this is a user error. Determine the source of the message. If the problem is an internal error, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-656: I/O file *string* **closed by task** *number*

Explanation: The **stdio** stream indicated has been closed by the indicated task.

User Response: Verify if this is the intended operation. If so, ignore the message. This message may also occur at the end of a job that terminates normally.

0031-657: Can't send mpl_init_data to nodes

Explanation: An error occurred in broadcasting the CSS initialization data to the remote nodes. The partition is terminated and POE exits.

User Response: The failing routine is **pm_address.** Look for other symptoms to determine the cause of failure.

0031-658: Can't send termination signal to nodes

Explanation: An error occurred in broadcasting the termination message to the remote nodes. The partition is terminated and POE exits (which is was trying to do, anyway).

User Response: The failing routine is pm_shutdown_job. Look for other symptoms to determine the cause of failure.

0031-659: Can't log accounting data from node *number*

Explanation: An error occurred in logging the accounting records received from the remote nodes. Execution continues.

User Response: The failing routine is pm_acct_response. Look for other symptoms to determine the cause of failure.

0031-660: Partition Manager stopped ...

Explanation: The Home Node (POE) has stopped in response to a SIGTSTOP (<Ctrl>Z) signal. The remote nodes have been stopped.

User Response: To resume the job, issue SIGCONT, or use the shell job control commands **fg** or **bg**.

0031-661: signal_sent = *number* **not recognized**

Explanation: The indicated signal was recorded as being sent to the remote nodes, but is not recognized by POE. Execution continues.

User Response: Probable POE internal error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-662: Node *number* **did not send PROFILE_DONE, sent msgtype** *number*

Explanation: The indicated node did not send the PROFILE_DONE message after profiling, but sent a message of the indicated type. Message 0031-663 gives the text sent.

User Response: Consult the explanatory text. If that fails to disclose the problem, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-663: *string*

Explanation: This is the text of a message received instead of the expected PROFILE_DONE message.

User Response: If the text fails to disclose the problem, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-664: Unknown message type *number* **received**

Explanation: The indicated message type is not known by POE. Execution is terminated.

User Response: Probably the socket contains a non-structured message, which would be a stray. If the source of the stray socket message cannot be determined, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-665: Invalid value for SSM_SINGLE *number*

Explanation: The indicated value is invalid as a destination for SINGLE I/O mode. The specification is ignored.

User Response: Verify that the correct value for SINGLE I/O mode is used.

0031-666: Out of range value for SSM_SINGLE *number*

Explanation: The indicated value is out of range: less than zero, or greater than the number of tasks. The specification is ignored.

User Response: Verify that the correct value for SINGLE I/O mode is used.

0031-667: Invalid value for SSM_UNORDERED *number*

Explanation: The indicated value is invalid as a specification for UNORDERED I/O mode. The specification is ignored.

User Response: Verify that the correct value for I/O mode is used.

0031-668: pm_io_command: error in pm_SSM_write, rc = *number*

Explanation: An error occurred while responding to a STDIO MODE QUERY message. The response is abandoned.

User Response: Probable POE internal error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-669: Can't acknowledge IO_command sync

Explanation: A socket error occurred while broadcasting a synchronization request acknowledgment. The partition is terminated and POE exits.

User Response: One or more remote nodes may not be reachable. Verify that the remote nodes can be contacted, and restart POE. If problems persist, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-670: Illegal stdout mode *number*

Explanation: The indicated value for STDOUT mode is not valid. The requested I/O buffering is not performed.

User Response: Correct the value for STDOUT mode.

0031-671: Can't acknowledge PMArray data from task *number*

Explanation: An error occurred trying to return an acknowledgement to a node sending data to PM Array.

User Response: Probable POE internal error. The error may also be caused by loss of contact with the remote node. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-672: Invalid routing request from task *number* **to task** *number*

Explanation: The Home Node has received a message, but doesn't know how to route it to the indicated task (destination).

User Response: Probable POE internal error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-673: Invalid mode/destination for STDIN: *number*

Explanation: The requested destination for STDIN is invalid. The request to route STDIN is ignored.

User Response: Verify the STDIN I/O mode requested.

0031-674: Unexpected return code *number* **from pm_SSM_write**

Explanation: Internal error has occurred.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-675: Invalid mode *number* **requested**

Explanation: User program has called function MP_STDOUTMODE or **mpc_stdoutmode** with invalid mode.

User Response: Refer to man page for explanation of valid modes.

0031-676: Invalid value *string* **for mp_euidevice**

Explanation: The **mp_euidevice** specified on the command line with **-euidevice** or in the environment with MP_EUIDEVICE is not valid.

User Response: Refer to IBM AIX Parallel Environment Operation and Use for valid choices and rerun.

0031-677: Unexpected return code *number* **from _mp_stdoutmode**

Explanation: An error may have occurred in a lower level function.

User Response: If earlier error messages exist, perform whatever corrective action is indicated for these. If there are no other messages or if problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-678: Hostfile may not contain pool requests if not using Resource Manager

Explanation: The user explicitly requested not to use the Resource Manager (with MP_RESD environment variable or **-resd** command line flag), but the hostfile contained pool requests.

User Response: Use hostnames in the hostfile or do not request that the Resource Manager not be used.

0031-680: Invalid mode *number* **requested**

Explanation: User program has called function MP_STDINMODE or **mpc_stdinmode** with invalid mode.

User Response: Refer to man page for explanation of valid modes.

0031-682: Unexpected return code *number* **from _mp_in_mode**

Explanation: An error may have occurred in a lower level function.

User Response: If earlier error messages exist, perform whatever corrective action is indicated for these. If there are no other messages or if problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-687: Unsuccessful call to pm_SSM_read

Explanation: Internal error has occurred.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-688: Incorrect subtype *number* **received in structured socket message**

Explanation: Internal error has occurred.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-689: Unexpected return code *number* **from _mp_stdoutmode_query**

Explanation: An error may have occurred in a lower level function.

User Response: If earlier error messages exist, perform whatever corrective action is indicated for these. If there are no other messages or if problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-690: Connected to Resource Manager *string string*

Explanation: Informational message to user to indicate successful connection to Resource Manager.

User Response: None required.

0031-692: Invalid option *number* **requested**

Explanation: User program has called function MP_FLUSH or **mpc_flush** with invalid option.

User Response: Refer to man page for explanation of valid options.

0031-696: Unexpected return code *number* **from _mp_flush**

Explanation: An error may have occurred in a lower level function.

User Response: If earlier error messages exist, perform whatever corrective action is indicated for these. If there are no other messages or if problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-699: Task *number* **waiting to profile...**

Explanation: Designated task is waiting to profile.

User Response: None required, information only.

0031-700: invalid priority received

Explanation: The **priority** received by the **pm** daemon is invalid.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-701: invalid envc received

Explanation: The **envc** received by the **pm** daemon is invalid.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-702: invalid pmdlog argument

Explanation: The **pmdlog** argument received by the **pm** daemon is invalid.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-703: invalid nprocs argument

Explanation: The **nprocs** argument received by the **pm** daemon is invalid.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-704: invalid newjob argument

Explanation: The **newjob** argument received by the **pm** daemon is invalid.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-705: invalid pdbx argument

Explanation: The **pdbx** argument received by the **pm** daemon is invalid.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-706: pmd: Error reading node info from home node.

Explanation: The node info received by the **pm** daemon is invalid.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-707: pmd: error sending node map ack to home node.

Explanation: The **pm** daemon was not able to send a node map **ack** to the home node.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-708: pmd: invalid JOBID.

Explanation: The **pm** daemon was not able to send a node map **ack** to the home node.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-709: pmd: SSM recv'd not cmd str or exit

Explanation: An incorrect SSM was received by the **pm** daemon from the home node.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-710: pmd: pipe creation error

Explanation: The **pm** daemon was unable to create pipes to its child.

User Response: Probable system error. Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-711: parent select errno = *number*

Explanation: select error from **pmd** parent.

User Response: Probable system error.

0031-712: parent error reading STDIN, rc = *number*

Explanation: **pm** daemon parent was unable to read STDIN.

User Response: Probable system error.

0031-713: pmd parent: error w/ack for sig req to home

Explanation: **pm** daemon parent had error sending **ack** for **sig** request.

User Response: Probable system error.

0031-714: pmd parent: error writing to child's STDIN

Explanation: **pm** daemon parent was not able to write to its child's STDIN.

User Response: Probable system error.

0031-715: pmd parent: error writing to child's cntl

Explanation: **pm** daemon parent was not able to write to its child's control pipe.

User Response: Probable system error.

0031-716: pmd parent: error reading STDOUT from child

Explanation: **pm** daemon parent was not able to read STDOUT from the child.

User Response: Probable system error.

0031-717: pmd parent: error writing to STDOUT

Explanation: **pm** daemon parent was not able to write to STDOUT.

User Response: Probable system error.

0031-718: pmd parent: error reading control from child

Explanation: **pm** daemon parent was not able to read the control pipe from the child.

User Response: Probable system error.

0031-719: AFS authorization failed in settokens

Explanation: **settokens()** failed in **pmd** child when given the **afstoken.**

User Response: Probable system error.

0031-720: child: initgroups error - errno = <*number***>**

Explanation: **initgroups** failed, errno given.

User Response: Probable system error.

0031-721: unable to set user info

Explanation: **userinfo()** was unable to set user info.

User Response: No response needed.

0031-722: can't set priority to *number*

Explanation: **setpriority()** failed in **pmd** child.

User Response: No response needed.

0031-723: userid = <*number***>**

Explanation: **userid** is set to the given userid.

User Response: No response needed.

0031-724: Executing program: <*string***>**

Explanation: The child is executing the given program.

User Response: No response needed.

0031-725: Failed to exec program *string***; errno =** *number*

Explanation: The child failed to execute the given program.

User Response: Probable system error.

0031-800: -procs *string* **ignored in remote child**

Explanation: **-procs** interpreted only in parent code.

User Response: No response needed.

0031-801: -hostfile *string* **ignored in remote child**

Explanation: **-hostfile** interpreted only in parent code.

User Response: No response needed.

0031-802: -newjob *string* **ignored in remote child**

Explanation: **-newjob** interpreted only in parent code.

User Response: No response needed.

0031-803: -pmdlog *string* **ignored in remote child**

Explanation: **-pmdlog** interpreted only in parent code.

User Response: No response needed.

0031-804: -pgmmodel *string* **ignored in remote child**

Explanation: **-pgmmodel** interpreted only in parent code.

User Response: No response needed.

0031-805: Invalid programming model specified: *string*

Explanation: **-pgmmodel** should be either SPMD or MPMD.

User Response: Re-enter **-pgmmodel** with either SPMD or MPMD.

0031-806: Invalid retry count *string*

Explanation: Retry count should be an integer.

User Response: Re-enter **-retry**followed by an integer.

0031-807: Invalid node pool specified: *string*

Explanation: **-rmpool** should be an integer.

User Response: Re-enter **-rmpool** followed by an integer.

0031-808: Pool number must be specified when using Resource Manager

Explanation: When using the Resource Manager, the environment variable MP_RMPOOL or the command line option -rmpool must be used to specify the pool number, since a hostfile did not exist.

User Response: Ensure that absence of hostfile was intended, verify command-line or environment variable settings of hostfile, resd, and rmpool, and re-try. Refer to IBM AIX Parallel Environment Operation and Use for further information.

0031-809: -tracefile *string* **ignored in remote child**

Explanation: **-tracefile** interpreted only in parent code.

User Response: No response needed.

0031-810: -tracelevel *string* ignored in remote child

Explanation: **-tracelevel** interpreted only in parent code.

User Response: No response needed.

0031-900: Can't request profiling for task *number*

Explanation: A communication failure has occurred.

User Response: Retry; if problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-901: Didn't get response to profiling request for task *number*

Explanation: A communication failure has occurred.

User Response: Retry; if problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-902: Unexpected response to profiling request for task *number*

Explanation: A stray message may have been received during profiling.

User Response: Retry; if problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-903: Can't confirm profiling for task *number*

Explanation: A communication failure has occurred.

User Response: Retry; if problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-904: Can't rename profiling file to *string*

Explanation: A communication failure may have occurred, or the profiling file could not be opened.

User Response: Check path name and permissions. If problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-906: Task *number* finished profile...

Explanation: Designated task has finished profile.

User Response: None required, information only.

0031-A400: Error in creating socket

Explanation: The program **pmarray** terminates. An explanatory sentence is appended.

User Response: Probable system error. Check the condition(s) given in the explanatory sentence.

0031-A401: Error in binding socket

Explanation: The program **pmarray** terminates. An explanatory sentence is appended.

User Response: Probable system error. Check the condition(s) given in the explanatory sentence.

0031-A402: Error in listen

Explanation: The program **pmarray** terminates. An explanatory sentence is appended.

User Response: Probable system error. Check the condition(s) given in the explanatory sentence.

0031-A403: Error in accept

Explanation: The program **pmarray** terminates. An explanatory sentence is appended.

User Response: Probable system error. Check the condition(s) given in the explanatory sentence.

0031-A404: Error in socket read. File descriptor = *number*

Explanation: The program **PMArray** terminates. An explanatory sentence is appended.

User Response: Probable system error. Check the condition(s) given in the explanatory sentence.

0031-A405: Unsupported data type *number* **received by PMArray, task** *number*

Explanation: Execution continues. The data is ignored.

User Response: **PMArray** received data which was not recognized. This probably indicates that the **PMArray** program is not connected properly to the Partition Manager.

0031-A406: Bad message type *number*

Explanation: Internal error has occurred.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-A407: Internal error reading socket message

Explanation: Internal error has occurred.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0031-A409: Invalid action code *number***, msg type** *number*

Explanation: An unexpected message was received during initialization of the Program Marker Array.

User Response: Restart **pmarray;** If problem persists, gather information about the problem and follow local site procedures for reporting hardware and software problems.

Message Passing Library Messages

0032-001 Invalid source task (*number*) in *string*, task *number*

Explanation: The value of **src** (source task ID) is out of range.

User Response: Make sure that the source task id is within the range 0 to N-1, where N is the number of tasks in the partition.

0032-002 Invalid destination task (*number*) in *string*, task *number*

Explanation: The value of **dest** (destination task id) is out of range.

User Response: Make sure that the destination task id is within the range 0 to N-1, where N is the number of tasks in the partition.

0032-003 Invalid message length (*number*) in *string*, task *number*

Explanation: The value specified for message length or block length is out of range.

User Response: Make sure that the message length is not less than zero.

0032-004 Invalid message type (*number*) in *string*, task *number*

Explanation: The value specified for **type** (message type) is out of range.

User Response: Make sure that the message type is within the allowable range as specified by MP_TASK_QUERY (**qtype**=2).

0032-005 Invalid message id (*number*) in *string*, task *number*

Explanation: The value specified for **msgid** (message id) is invalid.

User Response: Make sure that the message id is not less than 0.

0032-006 Invalid message buffer in *string*, task *number*

Explanation: The specified send and receive buffers overlap in memory.

User Response: Make sure that the buffers are disjoint.

0032-007 Invalid message offset (*number*) in *string*, task *number*

Explanation: The value specified for **offset** is invalid.

User Response: Make sure that **offset** is not less than **blklen.**

0032-008 Invalid blknum (*number*) in *string*, task *number*

Explanation: The value specified for **blknum** is invalid.

User Response: Make sure that **blknum** is not less than 0.

0032-009 Invalid stype value (*number*) in *string*, task *number*

Explanation: The value specified for **stype** is invalid.

User Response: Make sure that **stype** is either 1, 2, or 3.

0032-010 Invalid nbuf value (*number*) in *string*, task *number*

Explanation: The value specified in **nbuf** is invalid.

User Response: Make sure that **nbuf** contains valid data.

0032-011 Invalid qtype value (*number*) in *string*, task *number*

Explanation: The value specified for **qtype** is invalid.

User Response: Make sure that **qtype** is either 1, 2, or 3.

0032-012 Invalid nelem value (*number*) in *string*, task *number*

Explanation: The value specified for **nelem** is invalid.

User Response: Make sure that **nelem** is not less than 0.

0032-013 Out of memory, task *number*

Explanation: There is insufficient memory available to continue.

User Response: Reduce the size of user storage required per task.

0032-014 Internal error: *string*, task *number*

Explanation: An internal software error occurred during execution.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0032-015 System error: *string*, task *number*

Explanation: A system software error occurred during execution.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0032-016 Deadlock detected, task *number*

Explanation: A software-generated deadlock was detected.

User Response: Make sure that your application code does not contain potential deadlock conditions. Refer to IBM AIX Parallel Environment: Parallel Programming Reference (SH26-7228).

0032-017 Buffer too small, task *number*

Explanation: The buffer specified for the operation was too small to hold the received message.

User Response: Increase the size of the buffer or reduce the size of the message.

0032-018 Too many messages, task *number*

Explanation: Too many outgoing and incoming messages have been posted without being completed.

User Response: Make sure that MP_WAIT (**mpc_wait**) or MP_STATUS (**mpc_status**) is being called to complete pending non-blocking sends and receives. In addition, make sure that for each message sent, there is a corresponding receive issued by some task.

0032-019 Invalid group id (*number*) in *string*, task *number*

Explanation: The value of **gid** (group id) is out of range.

User Response: Make sure that **gid** is not less than 0. In addition, make sure that the value specified for **gid** is a value that was returned by either MP_GROUP (**mpc_group**) or MP_PARTITION (**mpc_partition**).

0032-020 Invalid task id (*number*) in *string*, task *number*

Explanation: The value specified for **taskid** is out of range.

User Response: Make sure that **taskid** is within the range 0 to N-1, where N is the number of tasks in the partition.

0032-021 Invalid task rank (*number*) in *string*, task *number*

Explanation: The value specified for **rank** is out of range.

User Response: Make sure that **rank** is within the range 0 to N-1, where N is the number of tasks in the group referenced by gid.

0032-022 Invalid step value (*number*) in *string*, task *number*

Explanation: The value specified by **step** is out of range.

User Response: Make sure that **step** is in the range -N to N, where N is the number of tasks in the group referenced by **gid**.

0032-023 Invalid gsize value (*number*) in *string*, task *number*

Explanation: The value specified by **gsize** is out of range.

User Response: Make sure that **gsize** is in the range 1 to N, where N is the number of tasks in the partition.

0032-024 Invalid task group list (*number*) in *string*, task *number*

Explanation: The list of task ids for the group (**glist**) contains one or more invalid task ids.

User Response: Make sure that the local task id is included in the group list, and that all of the task ids in the list are within the range 0 to N-1, where N is the number of tasks in the partition.

0032-025 Duplicate task id (*number*) in *string*, task *number*

Explanation: A duplicate task id was found in the group list.

User Response: Make sure that each task in the group list is included only once.

0032-026 Inconsistent source task in *string*, task *number*

Explanation: The same source task was not specified by each task in the group.

User Response: Make sure that each task specifies the same source task.

0032-027 Inconsistent destination task in *string*, task *number*

Explanation: The same destination task was not specified by each task in the group.

User Response: Make sure that each task specifies the same destination task.

0032-028 Inconsistent message length in *string*, task *number*

Explanation: The same message length was not specified by each task in the group.

User Response: Make sure that each task specifies the same message length.

0032-029 Inconsistent step value in *string*, task *number*

Explanation: The same value of **step** was not specified by each task in the group.

User Response: Make sure that each task specifies the same **step** value.

0032-030 Inconsistent flag value in *string*, task *number*

Explanation: The same value of **flag** was not specified by each task in the group.

User Response: Make sure that each task specifies the same **flag** value

0032-031 Inconsistent gsize value in *string*, task *number*

Explanation: The same value of **gsize** was not specified by each task in the group.

User Response: Make sure that each task specifies the same **gsize** value.

0032-032 Inconsistent label value in *string*, task *number*

Explanation: The same value of **label** was not specified by each task in the group.

User Response: Make sure that each task specifies the same **label** value.

0032-033 Inconsistent task group list in *string*, task *number*

Explanation: The same task group list was not specified by each task in the group.

User Response: Make sure that each task specifies the same task group list.

0032-034 Buffering cannot be turned on twice, task *number*

Explanation: A task called MP_TASK_SET (**mpc_task_set**) with **stype**=3 twice.

User Response: Make sure that each task makes the indicated call no more than once.

0032-035 Buffer changed before message completion, task *number*

Explanation: The contents of a buffer posted by a non-blocking send operation were modified before the send was completed.

User Response: Make sure that the buffer used to send a message is not reused before a WAIT or STATUS operation indicates that the send is complete.

VT Messages

0033-1001 Node is inactive

Explanation: The node selected for monitoring is not active.

Cause: The selected square does not represent a node that is communicating with the performance monitor.

User Response: Select a different square.

0033-1002 Monitoring is currently ON.
Changes will not be effective
until monitoring is stopped and restarted

Explanation: You have tried to add or remove a node for monitoring while monitoring was in progress. Changes are only registered when monitoring is off.

Cause: Selecting or deselecting a node while monitoring is active.

User Response: Stop monitoring and restart it to let the requested change(s) take effect.

0033-1003 *string* **was requested for monitoring but is not a known host**

Explanation: The monitoring program attempted to contact the named host for monitoring but was unable to determine its network address.

Cause: The gethostbyname() function failed to locate the host.

User Response: Ensure that the host can be contacted on the network.

0033-1004 Failed to fork PM statistics collector program because
string

Explanation: A process to run the Performance Monitor statistics collection program could not be started.

Cause: The fork() function failed for the indicated reason.

User Response: Correct the specified problem.

0033-1005 Unable to execute *string* **program**
Error is *string*

Explanation: The Performance Monitor statistics collection program could not be run.

Cause: The dug executable could not be invoked for the indicated reason.

User Response: Correct the specified problem.

0033-1006 Failed to create socket for the data collector because
string

Explanation: The socket for communicating between the Performance Monitor and the dug program could not be created.

Cause: The socket() function failed for the indicated reason.

User Response: Correct the specified problem.

0033-1007 Bind failed for the data collector socket.ErrNo=*number*

Explanation: Bind could not be done on the socket for communicating between the Performance Monitor and the dug program

Cause: The bind function failed for the indicated reason.

User Response: Correct the specified problem.

0033-1008 Accept failed for the PM data collector

Explanation: A connection on the socket for communicating between the Performance Monitor and the dug program could not be accepted.

Cause: The accept() function failed.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1009 Select a Node Before Start

Explanation: Monitoring can not be done unless at least one node to monitor has been specified.

Cause: You requested monitoring to start before specifying any nodes to monitor.

User Response: Select at least one node to monitor before starting the monitoring process.

0033-1010 Select a View to see statistics before start

Explanation: Monitoring is not done unless one view of the performance data has been specified.

Cause: You requested monitoring to start before specifying what view(s) of the data to display.

User Response: Select at least one view of the data before starting the monitoring process.

0033-1011 Unable to connect to HostNames :
string

Explanation: The indicated nodes did not respond to the Performance Monitoring initiation sequence and therefore cannot be monitored.

Cause: Usually because the performance data gathering daemon is not running on the indicated host(s).

User Response: Ensure that the performance data gathering daemon is running on the requested hosts. If the daemon appears to be running, ensure that it is at the proper level.

0033-1012 Error connecting stream socket

Explanation: Internal Program error.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1013 Error *number* **opening file node_list**

Explanation: Internal Program error.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1014 Error opening stream socket

Explanation: Internal Program error.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1015 Error *number* **reading node list file** *string*

Explanation: Internal Program error.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1016 Error writing socket on allocate

Explanation: Internal Program error.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1017 Error writing socket on de-allocate

Explanation: Internal Program error.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1018 Unable to query Resource Manager

Explanation: Internal Program error.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1019 Host number missing in node list file *string*

Explanation: Internal Program error.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1020 pm_read_msg: Socket read failed *string***.**
Error is *string*

Explanation: The Performance Monitor encountered an error when communicating with the dug statistics collection program.

Cause: The socket read() function failed for the indicated reason.

User Response: Correct the specified problem.

0033-1021 pm_send_msg: Socket write failed *string***.**
Error is *string*

Explanation: The Performance Monitor encountered an error when communicating with the dug statistics collection program.

Cause: The socket write() function failed for the indicated reason.

User Response: Correct the specified problem.

0033-1022 dug: Unknown command from pm_dug <*character***>**

Explanation: The dug statistics collection program encountered an unknown command on the socket for communicating with the Performance Monitor.

Cause: Usually the Performance Monitor has been terminated ungracefully without being able to notify dug.

User Response: dug will terminate after a consecutive series of unknown commands. If the Performance Monitor is still active, contact program support.

0033-1023 dug: socket() failed.
Error is *string*

Explanation: The socket for communicating between the Performance Monitor and the dug program could not be created by dug.

Cause: The socket() function failed for the indicated reason.

User Response: Correct the specified problem.

0033-1024 dug: socket read failed *string***, Node=***string***.**
Error is *string*

Explanation: The dug statistics collection program encountered an error reading the socket from either the Performance Monitor or the statistics gathering daemon.

Cause: The socket read() function failed for the indicated reason.

User Response: Correct the specified problem.

0033-1025 dug: socket write failed *string* **Node=***string***.**
Error is *string*

Explanation: The dug statistics collection program encountered an error writing the socket from either the Performance Monitor or the statistics gathering daemon.

Cause: The socket write() function failed for the indicated reason.

User Response: Correct the specified problem.

0033-1026 dug: socket select failed.
Error is *string*

Explanation: The dug statistics collection program encountered an error waiting for input from the statistics gathering daemon on one of the nodes being monitored.

Cause: The select() function failed for the indicated reason.

User Response: Correct the specified problem.

0033-1027 dug: connect_dig_socket(), socket() system call failed for node *string***.**
Error is *string*

Explanation: Socket system call failed.

Cause: The socket() function failed for the indicated reason.

User Response: Correct the specified problem.

0033-1028 dug: connect_dig_socket(), connect() failed for the node *string***. Err =** *string*

Explanation: The dug statistics collection program did not get a response from the Performance Monitor while it was trying to write data. dug will assume that the Performance Monitor has been terminated and will terminate itself.

Cause: Usually because the Performance Monitor has been terminated ungracefully without being able to notify dug.

User Response: If the Performance Monitor is still active, contact program support.

0033-1029 dug: *number* **unknown commands were received.**
vt is presumed to be no longer active and dug is terminating

Explanation: The performance statistics collection program, dug, has received the indicated number of unknown commands and is terminating because it assumes that the Performance Monitor is no longer active.

Cause: Usually because the Performance Monitor has been terminated ungracefully without being able to notify dug.

User Response: If the Performance Monitor is still active, contact program support.

0033-1030 pm_connect_dug() : tmpnam() failed. Unable to get Unix stream socket pathname.
Error is *string*

Explanation: The Performance Monitor was not able to establish a communication channel with the performance statistics collection program, dug.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1031 pm_connect_dug() Select Failed for the Unix socket.
Error is *string*

Explanation: The Performance Monitor experienced an internal program error on its communication channel to the performance statistics collection program, dug.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1032 pm_connect_dug() Connection with DUG timed out after *number* **seconds.**

Explanation: The Performance Monitor did not receive a response from the performance statistics collection program, dug, after a reasonable amount of time.

Cause: The dug program may not have been started successfully or may have been terminated after starting.

User Response: Ensure that the dug program can be invoked and continues to execute.

0033-1033 pm_connect_digq() : tmpnam() failed. Unable to get Unix stream socket pathname.
Error is *string*

Explanation: The Performance Monitor was not able to establish a communication channel with the program digq which queries the nodes that are running the performance statistics monitor daemons, dig.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1034 Failed to fork PM Dig Query program because
string

Explanation: A process to run the Dig Query program could not be started.

Cause: The fork() function failed for the indicated reason.

User Response: Correct the specified problem.

0033-1035 Unable to execute *string* **program**
Error is *string*

Explanation: The Dig Query program could not be run.

Cause: The digquery executable could not be invoked for the indicated reason.

User Response: Correct the specified problem.

0033-1036 Failed to create socket for the Dig Query because
string

Explanation: The socket for communicating between the Performance Monitor and the Dig Query program could not be created.

Cause: The socket() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1037 pm_connect_digq() Connection with DIGQ timed out after *number* **seconds.**

Explanation: The Performance Monitor did not receive a response from the performance statistics query program, digq, after a reasonable amount of time.

Cause: The digq program may not have been started successfully or may have been terminated after starting.

User Response: Ensure that the digq program can be invoked and continues to execute.

0033-1038 pm_read_msg: Socket read failed *string***.**
Error is *string*

Explanation: The Performance Monitor encountered an error when communicating with the Dig Query program.

Cause: The socket read() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1039 pm_send_msg: Socket write failed *string***.**
Error is *string*

Explanation: The Performance Monitor encountered an error when communicating with the Dig Query program.

Cause: The socket write() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1040 digq():Cannot create socket for broadcast rpc.
Error is *string*

Explanation: The performance statistics query program, digq, was unable to create a socket with which to query the nodes that are running the performance statistics daemon.

Cause: The socket() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1041 digq():Cannot set socket option SO_BROADCAST.
Error is *string*

Explanation: The performance statistics query program, digq, was unable to set the socket it created to broadcast. It must be broadcast in order to query all the nodes running the performance statistics daemon.

Cause: The setsockopt() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1042 digq():Error in getting the local domain.
Error is *string*

Explanation: The performance statistics query program, digq, was unable to get the local domain.

Cause: The gethostname() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1043 digq():Error in getting the Internet address of the local host *string***.**
Error is *string*

Explanation: The performance statistics query program, digq, was unable to get the Internet address of the local host.

Cause: The gethostbyname() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1044 digq():Cannot send broadcast packet.
Error is *string*

Explanation: The performance statistics query program, digq, was unable to broadcast a query to the nodes running the performance statistics daemon.

Cause: The sendto() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1045 digq():select() failed .
Error is *string*

Explanation: The performance statistics query program, digq, experienced a problem while waiting for a response from either the Performance Monitor or from the nodes running the performance statistics daemon.

Cause: The select() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1046 digq():Cannot receive reply to broadcast.
Error is *string*

Explanation: The performance statistics query program, digq, received notification that a node running the performance statistics daemon was ready to respond but when it tried to accept the response, an error occurred.

Cause: The recvfrom() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1047 digq():gethostbyaddr() failed.
Error in getting the Host name for address *hex number***.**
Error is *string*

Explanation: The performance statistics query program, digq, was unable to resolve the name of the host with the indicated Internet address.

Cause: The gethostbyaddr() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1048 digq():Failed to create socket for the Dig Query because
string

Explanation: The socket for communicating between the Performance Monitor and the Dig Query program could not be created.

Cause: The socket() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1049 digq():Bind failed for the digquery socket.
Error is *string*

Explanation: The performance statistics query program, digq, was unable to establish a communication channel to the Performance Monitor.

Cause: The bind() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1050 digq():select() failed .
Error is *string*

Explanation: The performance statistics query program, digq, experienced a problem while waiting for input from the Performance Monitor.

Cause: The select() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1051 digq():accept() failed.
Error is *string*

Explanation: The performance statistics query program, digq, experienced a problem while waiting for input from the Performance Monitor.

Cause: The accept() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1052 digq():read_msg: Socket read failed.
Error is *string*

Explanation: The Dig Query program unable to read message from Performance Monitor.

Cause: The socket read() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1053 digq():send_msg: Socket write failed in *string*
Error is *string*

Explanation: The digquery encountered a error when communicating with the Dig/Performance Monitor program.

Cause: The socket write() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1054 digq():broadcast: Unable to get the socket interface configuration.
Error is *string*

Explanation: The performance statistics query program, digq, was unable to get the interface configuration of the socket in order to locate broadcast devices.

Cause: The ioctl() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1055 digq():broadcast: Unable to get socket interface flags.
Error is *string*

Explanation: The performance statistics query program, digq, was unable to get the interface flags of the socket in order to locate broadcast devices.

Cause: The ioctl() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-1056 Initialize_socket(), Connection to Resource Manager failed

Explanation: Connection to resource manager failed.

Cause: Resource manager may not be running.

User Response: Start Resource manager daemon.

0033-1057 pm_start_monitor(), Get Time of Day Call failed(), Error is *string*

Explanation: UNIX gettod call failed

User Response: Refer to AIX system documentation

0033-1058 Timer_FunctionPM(), Get Time of Day Call failed(), Error is *string*

Explanation: UNIX gettod call failed

User Response: Refer to AIX system documentation

0033-2002 Add: meter name was not specified

Explanation: The display meter for a manual configuration was not specified.

Cause: During the manual creation of an event/display pair, the display meter was not specified.

User Response: Be sure both the event and the display meter are specified during manual configuration.

0033-2003 Add: event name was not specified

Explanation: The event widget for a manual configuration was not specified.

Cause: During the manual creation of an event/display pair, the meter widget was not specified.

User Response: Be sure both the event and the display meter are specified during manual configuration.

0033-2004 AddHostname() could malloc *number* **bytes for the first element of the history buffer**

Explanation: The Performance Monitor could not allocate sufficient storage for the internal representation of the first node to be monitored.

Cause: Insufficient memory is currently available on the system for Performance Monitoring to operate.

User Response: Remove some of the concurrently executing processes or add more memory to the system.

0033-2005 AddHostname() could malloc *number* bytes for a subsequent element of the history buffer

Explanation: The Performance Monitor could not allocate sufficient storage for the internal representation of one of the nodes to be monitored.

Cause: Insufficient memory is currently available on the system for Performance Monitoring to operate.

User Response: Remove some of the concurrently executing processes or add more memory to the system.

0033-2006 \"*string*\" is not a valid meter name

Explanation: The indicated name was specified as a display meter in a configuration file but is not a recognized meter.

Cause: The configuration file is invalid.

User Response: If the error occurred while using the View Selector, contact local support for the Visualization Tool. If the error occurred while loading a configuration file, correct the entry called out by the error message.

0033-2007 Internal Error: bitmap_index : unable to find given bitmap

Explanation: While attempting to save a display meter configuration, the meters spectrum was not recognized as valid.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-2008 Cannot allocate cmap entry for \"*string*\"

Explanation: The indicated color could not be allocated under X

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-2009 Cannot find the host running Resource Manager

Explanation: The Resource Manager host could not be located.

Cause: Either the Resource Manager or its host is down or the network connection to the Resource Manager host is down.

User Response: Ensure that the Resource Manager and its host are up and that the network connection to it is up.

0033-2010 Cannot get black color for cspectrum

Explanation: The color black could not be allocated under X.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-2011 Cannot get color for *string* spectrum

Explanation: A color for the indicated spectrum could not be obtained.

Cause: Either the X server where VT is running does not support a named color or no free color cells remain in the colormap.

User Response: If the spectrum identified used resources to select the colors, ensure all the colors specified (either by default or in a resource file) are supported by the X server. Otherwise, run VT with the -cmap option to request a private colormap.

0033-2022 *string* is an illegal time unit because it is not greater than zero

Explanation: The value entered for the time sensitivity of the display (the time resolution) is the frequency with which the display will be updated and must be greater than zero.

Cause: The value entered is not a positive number greater than zero.

User Response: Enter a number greater than zero.

0033-2023 Incorrect password for Configuration Add

Explanation: The configuration add function is enabled only during development and debugging and requires a password for invocation during normal use.

Cause: An incorrect password was supplied.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-2025 *string* is an invalid configuration file

Explanation: The configuration file that was specified to be loaded could not be read.

Cause: The file specified is not a regular file.

User Response: Specify a regular file.

0033-2026 Cannot open configuration file *string* because *string*

Explanation: The configuration file that was specified to be loaded could not be opened to be read.

Cause: The reason is indicated in the message.

User Response: Specify a readable file.

0033-2027 Configuration file *string* cannot be located because *string*

Explanation: The specified configuration file could not be loaded.

Cause: The stat() command failed for the indicated reason.

User Response: Correct the problem with the configuration file.

0033-2028 cx_delete_entry: Internal Error.
Attempt to delete unused entry from cs_table

Explanation: Internal program error.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-2029 Cannot close previous trace file because
string

Explanation: An error occurred while trying to close the previous trace file.

Cause: The fclose() function failed for the indicated reason.

User Response: If the problem appears to be correctable, do so. Otherwise gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-2030 Reset cannot occur because the trace file
\"*string*\" **could not be opened**

Explanation: The reset button was pressed but the trace file had not been successfully opened.

Cause: An error occurred with the specified trace file.

User Response: Ensure the trace file is successfully opened before attempting to reset.

0033-2031 Cannot open help file *string*

Explanation: The text file for the requested help could not be located.

Cause: Either the file is not installed in the proper location or it is not installed with the proper permissions.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-2032 An error occurred while reading help file *string***.**
The reason is *string*

Explanation: It was not possible to successfully read the text file for the requested help.

Cause: The read() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-2033 Internal Error: iwc_remove : unable to find \"*string*\" **event type**

Explanation: An internal program error occurred.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-2035 Internal Error
DialogAcceptCB received unknown event

Explanation: An internal program error occurred.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-2036 Internal Error
DialogCancelCB received unknown event

Explanation: An internal program error occurred.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-2037 Internal Error
MenuCB received unknown event

Explanation: An internal program error occurred.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-2041 Internal Error: make_menu_item: Invalid Item Type

Explanation: An internal program error occurred.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-2042 *string* **is not valid for the sampling interval**
number **will be used**

Explanation: An invalid sampling frequency was specified and the default will be used instead.

Cause: The sampling frequency must be between 1 an 999 seconds.

User Response: Respecify a valid frequency or accept the default.

0033-2043 Internal Error
panel_updateCB() was called with invalid data

Explanation: An internal program error occurred.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-2044 A trace file is required
but was not specified

Explanation: Trace display can only occur if a trace file is specified.

Cause: The field where the trace file name is entered was left empty.

User Response: Specify a trace file name before attempting to display the trace file.

0033-2045 Could not open trace file \"*string*\" because
string

Explanation: The specified trace file could not be opened.

Cause: The fopen() function failed for the indicated reason.

User Response: Ensure that the specified trace file can be opened.

0033-2046 \"*string*\" is not a regular file

Explanation: Although it exists, the specified trace file is not a regular file and it must be in order to be used as input.

Cause: The name specified is not the name of a regular file.

User Response: Ensure that the specified trace file is a regular file.

0033-2047 Events widgets must produce port numbers.

Explanation: The widget specified cannot be used as an event widget.

Cause: The widget specified cannot drive a display widget.

User Response: Specify a valid widget.

0033-2048 Event widgetclass is invalid.
Configuration cannot be created.

Explanation: An event/display chain was being created but the specified event widget is not valid.

Cause: If this message occurs using the Icon View Selector, it indicates a bad configuration file. If it occurs while manually creating a chain, it indicates the specified event widget is not legal.

User Response: Ensure that the configuration file or the manual process specifies a valid event widget.

0033-2049 Event widgets must accept multiple ports.
Configuration cannot be created.

Explanation: An event/display chain was being created but the specified event widget cannot handle multiple processes.

Cause: The 'single' attribute of the event widget is set to TRUE which indicates it cannot handle multiple processes.

User Response: Ensure that the specified event widget can handle multiple processes.

0033-2050 Incompatible events selected.
Configuration cannot be created.

Explanation: The event widgets selected do not generate the same type of events and cannot drive the same display meters.

Cause: The type attributes of the specified event widgets are not the same.

User Response: Ensure that the selected event widgets produce the same type of events.

0033-2051 Filter widgetclass is invalid.
Configuration cannot be created.

Explanation: An event/display chain was being created but the specified filter widget is not valid.

Cause: If this message occurs using the Icon View Selector, it indicates a bad configuration file. If it occurs while manually creating a chain, it indicates the specified filter widget is not legal.

User Response: Ensure that the configuration file or the manual process specifies a valid filter widget.

0033-2052 Meter widget class is invalid.
Configuration cannot be created

Explanation: An event/display chain was being created but the specified display meter widget is not valid.

Cause: If this message occurs using the Icon View Selector, it indicates a bad configuration file. If it occurs while manually creating a chain, it indicates the specified filter widget is not legal.

User Response: Ensure that the configuration file or the manual process specifies a valid display meter widget.

0033-2053 Internal Error: Event widget could not be created

Explanation: An error occurred while attempting to create the display meter widget.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-2054 Internal Error: Filter could not be created

Explanation: An error occurred while attempting to create the filter widget.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-2055 No config file specified

Explanation: The program attempted to load a configuration file but the file name was blank.

Cause: Either the configuration installation is bad or a bad file name was specified on the command line option or environment variable.

User Response: If the configuration file command line option or environment variable was used, ensure it specifies a valid file name. Otherwise, contact program support.

0033-2056 Too many displays are open!

Explanation: Only 20 displays can be opened at a time.

Cause: An attempt was made to open another display while 20 were already opened.

User Response: Close a display before attempting to open another.

0033-2057 \"*string***\" is not a regular file name and cannot be used to save a config file**

Explanation: An attempt was made to save a configuration file in something that is not a regular file.

Cause: The name specified for the configuration file is the name of an existing object (eg. a directory) that cannot be written into.

User Response: Specify a name that is not already in use or that is the name of a regular file.

0033-2058 Unable to open View Selection File \"*string*\"

Explanation: The View Selection File determines the layout of the Icon Selection Panel. The file could not be found.

Cause: The message indicates the place where the file was expected but was not found.

User Response: Ensure that the View Selection File exists in the proper place. The VTDIR environment variable can be used to set the root of the path (up to but not including the ViewSelect subdirectory). If the View Selection File cannot be found, contact program support.

0033-2059 Executable file *string* **not found**

Explanation: Executable file not found in current path.

Cause: Executable is not found in $PATH environment variable.

User Response: Exit from VT, reset $PATH, and restart VT.

0033-2060 Source Code file *string* **not found**

Explanation: Source code file not found in current directory or source path command line variable (-spath) or Resource File (Vt).

Cause: Executable is not found in $PATH environment variable.

User Response: Without exiting VT, press the mouse 3 button while pointing in the Source Code display and add the directories to the source search path. Otherwise, exit VT and change the directory name(s) from the command line variable (-spath) or Resource File (Vt).

0033-2061 Executable file *string* **not compiled with -g option**

Explanation: Source not Compiled with -g option.

Cause: Symbol Table information not found in executable.

User Response: Compile the source with -g option.

0033-2062 Command line option *string* **is not a recognized option**
It will be ignored

Explanation: The indicated option is not recognized and the Visualization Tool does not know what to do with it other than ignore it.

Cause: The option may have been misspelled or may just be wrong.

User Response: Ensure that valid options are passed to the Visualization Tool as command line options.

0033-2063 Invalid release level, *hex number***, for trace file** \"*string*\"
Release level for current VT is *hex number*

Explanation: VT detected a release level in the trace file it was processing that it did not recognize.

Cause: Either the trace file was generated by a backlevel version of the VT tracing system or the file is not a valid trace file (either it was valid and became corrupted or it never was a valid trace file)

User Response: Verify that the file is a valid trace file and was generated by the same or a compatible level of the VT trace system as the VT visualization system. If it was not, re-generate the trace file. If the file should be a valid, compatible trace file, attempt to locate causes for corruption.

0033-2064 This version of VT was created on
string

Explanation: This is an informational message that indicates when the VT executable was created.

Cause: Selecting the About button under Help.

User Response: None.

0033-3002 VT_trc_init(), Getcwd() failed because
string

Explanation: During trace initialization, the program was unable to determine the current working directory.

Cause: The getcwd() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3003 VT_trc_init() failed to find a writeable directory
Cannot create trace files

Explanation: During trace initialization, neither the temporary directory nor the current working directory were found to be writeable.

Cause: The program could not write into either the directory specified as the temporary directory (/tmp) or the directory specified as the current working directory.

User Response: Ensure that the directories are writeable.

0033-3004 Could not open timestamp file \"*string*\"

Explanation: The program could not write the time stamp information that is used to synchronize the parallel nodes once the program has completed.

Cause: The fopen() function call failed.

User Response: Ensure that the program has write access to the file where it is trying to write the timestamp information.

0033-3005 Could not obtain current time for timestamp file because
string

Explanation: The program could not determine the current time of day to write into the timestamp file.

Cause: The gettimeofday() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3006 VT_trc_init(), Error writing Timestamp file *string*

Explanation: An error occurred while the program was trying to write the current time of day into the timestamp file.

Cause: The fwrite() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3007 VT_trc_init(), Cannot create directory: *string*

Explanation: The program was trying to create the indicated directory in order to store existing trace files but it could not.

Cause: The mkdir() function failed.

User Response: Ensure that the program can create a directory in the current working directory.

0033-3008 VT_trc_init(),move_old_trc_file(),mv *string string* **failed, Errno=***number*

Explanation: The program was trying to move existing trace files into another directory to save them when an error occurred.

Cause: the rename() function failed for the indicated reason.

User Response: Ensure that the program can move files into the target directory.

0033-3009 VT_trc_capture(), Cannot Open File *string*
because *string*

Explanation: The program was trying to write another trace file record but could not open the ongoing trace file.

Cause: The fopen() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3010 VT_trc_capture(), malloc of *number* **bytes failed**

Explanation: The program was trying to allocate the memory buffer for AIX statistics information but failed.

Cause: Not enough memory was present for the memory buffer.

User Response: Specify a smaller memory buffer or increase the amount of available memory on the system.

0033-3011 VT_trc_set_params(), realloc of *number* **bytes failed**

Explanation: The tracing routine attempted to reallocate the trace memory buffer (Tier 1) to the requested size and failed.

Cause: Not enough memory was present for the memory buffer.

User Response: Specify a smaller memory buffer or increase the amount of available memory on the system.

0033-3012 Internal Error: write_trc_data(), Error writing buffer to file.
Error was: *string*

Explanation: An error occurred while writing a trace record to the intermediate trace file.

Cause: The fwrite() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3013 Cannot copy file from tmp to usd area.
Errno was: *string*

Explanation: An error occurred while writing the temporary trace file to the permanent area.

Cause: The fwrite() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3014 VT_trc_done(), Malloc of *number* bytes for Message Events buffer failed

Explanation: The program was trying to allocate space for the memory buffer for message events but failed.

Cause: Not enough memory was present for the memory buffer.

User Response: Specify a smaller memory buffer or increase the amount of available memory on the system.

0033-3015 VT_trc_done(), Malloc of *number* bytes for AIX statistics buffer failed

Explanation: The program was trying to allocate space for the memory buffer for AIX statistics but failed.

Cause: Not enough memory was present for the memory buffer.

User Response: Specify a smaller memory buffer or increase the amount of available memory on the system.

0033-3016 VT_trc_done(), Malloc of *number* bytes for merged trace buffer failed

Explanation: The program was trying to allocate space for the memory buffer for the merged trace file but failed.

Cause: Not enough memory was present for the working buffer.

User Response: Specify a smaller memory buffer or increase the amount of available memory on the system.

0033-3017 Write failed for Trace File Header record

Explanation: The program was trying to write the trace file header record but failed.

Cause: The fwrite() function failed.

User Response: Ensure that the program has write access into the target directory for the trace file.

0033-3018 Write failed for Trace File Data record

Explanation: The program was trying to write a trace record into the trace file but failed.

Cause: The fwrite() function failed.

User Response: Ensure that the program has write access into the target directory for the trace file.

0033-3019 Internal Error: Invalid EUIType *number* **found by VT_trc_done()**

Explanation: While merging the temporary trace files, a message event was encountered that was not recognized.

Cause: The indicated subtype is not valid as a message.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3020 Cannot read *string* **to convert switch times because** *string*

Explanation: The program was attempting to open the timestamp file in order to synchronize the trace files from the parallel process nodes but could not open it.

Cause: The file may not have been created, may have been deleted before the application terminated or may not have been created with read authority.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3021 get_actual_trc_time(), Cannot read Timestamp file *string*

Explanation: The program was attempting to open the timestamp file in order to synchronize the trace files from the parallel process nodes but could not read it after opening it.

Cause: The file may have been corrupted or may not contain readable data.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3022 Client: Cannot open stream socket for Dig Daemon

Explanation: The parallel application was attempting to create a unix socket with which to talk to the AIX statistics daemon but failed.

Cause: The socket() function failed.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3023 Client: Cannot connect to the server Dig Daemon

Explanation: The parallel application attempted to connect to the AIX statistics daemon but failed.

Cause: The connect() function failed.

User Response: Ensure that the dig daemon is running on all of the nodes that the parallel application is executing on. If it is and the message still occurs, contact program support.

0033-3025 PMdig: Error waiting for communication

Explanation: The AIX statistics daemon, dig, experienced a problem while waiting for communication from clients.

Cause: The select() function failed.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3026 PMdig: Error accepting socket connection
Error is *string*

Explanation: The AIX statistics daemon, dig, experienced a problem trying to service a client.

Cause: The accept() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3028 PMdig: Unable to send TCP message

Explanation: The AIX statistics daemon, dig, experienced a problem trying to send data to one of its clients.

Cause: The write() function failed.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3029 PMdig: Data read Error from the socket

Explanation: The AIX statistics daemon, dig, experienced a problem trying to accept commands from one of its clients.

Cause: The read() function failed.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3030 PMdig: Unable to start monitoring

Explanation: The AIX statistics daemon, dig, experienced a problem trying to acknowledge a request to start monitoring.

Cause: The write() function failed.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3031 PMdig: Monitoring is already stopped

Explanation: You tried to stop monitoring in the Performance Monitor but monitoring was not being done.

Cause: Stop monitoring was requested when monitoring was not being done.

User Response: You do not need to stop monitoring if it is not being conducted.

0033-3032 PMdig: Unable to send trace done message

Explanation: The AIX statistics daemon, dig, experienced a problem trying to acknowledge a request to stop monitoring.

Cause: The write() function failed.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3033 PMdig: Unable to get kernel offsets for AIX statistics
Error is *string*

Explanation: The AIX statistics program, dig, was unable to determine the offset into the kernel of the statistic information.

Cause: The nlist() function failed for the indicated reason.

User Response: The dig program must be run as root. If it is and the error is still occurring, contact program support.

0033-3034 PMdig: Unable to open the kernel for reading
Error is *string*

Explanation: The AIX statistics program, dig, was unable to open the kernel area to read the AIX statistics.

Cause: The open(/dev/kmem,O_RDONLY) function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3035 PMdig: Unable to read the location of the paging information

Explanation: The AIX statistics program, dig, was unable to read the location of the vminfo information.

Cause: The read() function into the kernel failed.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3036 PMdig: Unable to obtain the location of the interface information in the kernel.
Error is *string*

Explanation: The AIX statistics program, dig, was unable to determine the offset into the kernel of the interface information.

Cause: The lseek() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3037 PMdig: unable to get network information

Explanation: The AIX statistics program, dig, was unable to read the offset into the kernel of the interface information.

Cause: The read() function failed.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3038 PMdig: unable to get io information

Explanation: The AIX statistics program, dig, was unable to determine the offset into the kernel of the system io information.

Cause: The read() function failed to set the pointer to the io information.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3039 PMdig: Could not create a socket to service Performance Monitor requests.
Error is *string*

Explanation: The AIX statistics program, dig, was unable to create a socket to respond to requests from the Performance Monitor for real-time monitoring.

Cause: The socket() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3040 PMdig: Unable to bind socket for Performance Monitor.
Error is *string*

Explanation: The AIX statistics program, dig, was unable to associate a port address with the socket it created for servicing Performance Monitor requests.

Cause: The bind() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3041 PMdig: Could not create a socket to service tracing requests.
Error is *string*

Explanation: The AIX statistics program, dig, was unable to create a socket to respond to requests from the parallel application to create trace records.

Cause: The socket() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3042 PMdig: Unable to bind socket for tracing.
Error is *string*

Explanation: The AIX statistics program, dig, was unable to associate a port address with the socket it created for servicing tracing requests.

Cause: The bind() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3043 PMdig: Unable to obtain kernel system information.
Error is *string*

Explanation: The AIX statistics program, dig, was unable to obtain kernel information about CPU utilization.

Cause: The lseek() function to the sysinfo offset in the kernel failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3044 PMdig: Unable to obtain kernel paging information.
Error is *string*

Explanation: The AIX statistics program, dig, was unable to obtain kernel information about paging.

Cause: The lseek() function to the vminfo offset in the kernel failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3045 PMdig: Unable to obtain kernel I/O information.
Error is *string*

Explanation: The AIX statistics program, dig, was unable to obtain kernel information about I/O.

Cause: The lseek() function to the iostat offset in the kernel failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3046 PMdig: Unable to obtain kernel disk information.
Error is *string*

Explanation: The AIX statistics program, dig, was unable to obtain kernel information about disk activity.

Cause: The lseek() function to the dkstatp offset in the iostat data block failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3047 PMdig: Unable to obtain kernel interface information.
Error is *string*

Explanation: The AIX statistics program, dig, was unable to obtain kernel information about system interfaces.

Cause: The lseek() function to the ifnet offset in the kernel failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3048 PMdig: second attempt to initialize tracing occurred

Explanation: While tracing was occurring, the AIX statistics daemon, dig, received a second request to begin tracing. The dig daemon can only service one trace request at a time and the second is ignored.

Cause: Multiple parallel tasks running on the same node.

User Response: Ensure that only one parallel task that requests AIX statistic tracing is running on a node at a time.

0033-3049 PMdig: Unable to create a socket to service dig query requests.
Error is *string*

Explanation: The AIX statistics program, dig, was unable to create a socket with which to respond to queries about its status.

Cause: The socket() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3050 PMdig: Unable to bind socket to service dig query requests.
Error is *string*

Explanation: The AIX statistics program, dig, was unable to associate a port address with the socket it created for servicing query requests.

Cause: The bind() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3051 VT_trc_capture(),write_tmp_to_usd_file(),No space left in usd_file

Explanation: The intermediate trace file size has exceeded the allowed size (either explicitly set with a command option or environment variable or implicitly set to the default of 10M).

Cause: The allowed size of the trace file is smaller than the actual trace file.

User Response: Specify a larger size for the permanent trace file size, reduce the number of trace records being generated (either by changing the trace level flag or by increasing the time between AIX statistics samples) or use the wrap around trace buffer.

0033-3052 VT_trc_capture(),write_tmp_to_usd_file(),Cannot open File *string***, Err =** *string*

Explanation: The tracing program could not open the intermediate trace file in the current working directory.

Cause: The fopen() function failed for the indicated reason.

User Response: Ensure that the current working directory is available to the node(s) executing the parallel tasks and that they have write permission.

0033-3053 VT_trc_done(),No file found to merge with AIX/EUI extension

Explanation: At the end of the parallel application, no intermediate files for AIX statistics or Message events were found on the parallel node to be moved to the current working directory.

Cause: Either no events were requested for tracing or an error occurred in writing the files.

User Response: If events were selected for tracing, contact program support.

0033-3054 VT_trc_done(),Cannot open File *string***, Err =** *string*

Explanation: At the end of the parallel application, the program could not open the file that was specified as the output trace file.

Cause: The fopen() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3055 VT_trc_done(),Read Failed for EUI File *string*

Explanation: While processing the intermediate trace files, the program encountered an error in one of the Message event trace files.

Cause: The fread() function failed on the indicated file.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3056 VT_trc_done(),Read Failed for AIX File *string*

Explanation: While processing the intermediate trace files, the program encountered an error in one of the AIX statistics trace files.

Cause: The fread() function failed on the indicated file.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3057 VT_trc_done(), Error while processing Group Message event

Explanation: While processing the intermediate trace files, the program encountered a problem while processing a Message Group event.

Cause: The fread() function failed.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3058 VT_trc_done(), Error while disconnecting from dig.Err=*string*

Explanation: After the parallel application was complete, it tried to send a disconnect message to the AIX statistics daemon but encountered an error.

Cause: The select() function failed while waiting for an acknowledgement from dig.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3059 VT_integrate(), Getcwd() failed, Err is *string*

Explanation: While merging the intermediate trace files into a single file, the program was unable to determine the current working directory.

Cause: The getcwd() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3060 VT_integrate(), Error in scanning directory *string*
for intermediate trace files
The error is *string*

Explanation: While merging the intermediate trace files into a single file, the program encountered an error reading the current working directory.

Cause: Either the current directory is not readable or there is not enough memory available to build the directory list.

User Response: Ensure that the current directory is readable and that the amount of available memory is not close to zero.

0033-3061 VT_integrate(), No Files found to Integrate in Dir=*string*

Explanation: At the end of the parallel application no intermediate trace files were found in the current working directory to be merged into a single trace file.

Cause: 1) No events were traced. 2) The intermediate trace files could not be generated. 3) The intermediate trace files could not be moved to the current working directory.

User Response: Ensure that some trace activity should occur and contact program support if the message still occurs.

0033-3063 VT_integrate(), malloc failed for size *number***, Err=***string*

Explanation: While integrating the intermediate trace files, the program could not allocate sufficient memory to continue.

Cause: The malloc() failed to allocate the indicate number of bytes for the indicated reason.

User Response: Increase the amount of memory available on the system.

0033-3064 VT_integrate() Could not open trace output file \"*string***\"**
The error is *string*

Explanation: While generating the output trace file, the program could not open the file.

Cause: The fopen() function failed on the indicated file for the indicated reason.

User Response: Ensure that the name specified for the output trace file is valid. If it is and the message still occurs, contact program support.

0033-3065 VT_integrate() Could not open intermediate trace input file \"*string***\"**
The error is *string*

Explanation: While generating the output file, the program could not open the intermediate trace file for input.

Cause: The fopen() function failed on the indicated file for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3066 VT_integrate() Could not write to trace output file \"*string***\"**
The error is *string*

Explanation: While generating the output trace file, the program could not write to the file.

Cause: The fwrite() function failed on the indicated file for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3067 VT_integrate() Could not open intermediate trace file \"*string***\"**

Explanation: While integrating the intermediate trace files, the program could not open the intermediate trace file for input.

Cause: The fopen() function failed on the indicated file for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3068 VT_integrate() Could not open output file \"*string***\"**
The error is *string*

Explanation: While integrating the intermediate trace files, the program could not open an intermediate output file.

Cause: The fopen() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3069 VT_integrate() Could not write output file *string*

Explanation: While integrating the intermediate trace files, the program could not write to the intermediate output file.

Cause: The fwrite() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3070 PMdig: Unable to read the location of the CPU utilization information

Explanation: The AIX statistics program, dig, was unable to read the location of the sysinfo information

Cause: The read() function into the kernel failed.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3071 VT_trc_init(), Invalid trace flag value *number*
Tracing is off
string

Explanation: Invalid Trace flag value.

Cause: User has set invalid value for environment variable or passed wrong value on command line.

User Response: Specify a correct value.

0033-3072 write_tmp_to_usd_file(), Fork failed to the write data on to the user specified directory. Err=*string*

Explanation: While writing the AIX statistics file to the current working directory, the fork which would allow the dig daemon to act on the behalf of the user failed.

Cause: The fork() function failed for the indicate reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3073 write_data_to_usd_file(), setuid() failed from root to user_id=*number***, Can't create AIX trace file, Err=***string*

Explanation: While writing the AIX statistics file to the current working directory, the program was unable to change its user id to the user id that submitted the application program.

Cause: The setuid() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3074 write_data_to_usd_file(), setgid() failed from root to user_gid=*number***, Can't create AIX trace file, Err=***string*

Explanation: While writing the AIX statistics file to the current working directory, the program was unable to change its group id to the group id of the user that submitted the application program.

Cause: The setgid() function failed for the indicated reason.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3075 VT Node Tracing completed. Node merge beginning

Explanation: A node is beginning to merge its intermediate trace files.

Cause: Application has completed on one node.

User Response: None.

0033-3076 VT Node Trace merge completed

Explanation: Informational message. Merge of euitrc and aixtrc node trace files on originating node completed, resulting in .vtrc files for each node. The .vtrc tracefiles for all nodes are eventually integrated into a single .trc tracefile.

Cause: Printed during trace processing when the appropriate MP_INFOLEVEL is set.

User Response: None. Refer to the Operation and Use Publication for an explanation on tracing.

0033-3077 VT Final Trace Integration beginning at *string*

Explanation: Informational message. Time printed before merging of all the .vttrc tracefiles into a single .trc tracefile.

Cause: Printed during trace processing when the appropriate MP_INFOLEVEL is set.

User Response: None. Refer to the Operation and Use Publication for an explanation on tracing.

0033-3078 VT Final Trace Integration completed

Explanation: Informational message. Time printed before merging of all the .vttrc tracefiles into a single .trc tracefile.

Cause: Printed during trace processing when the appropriate MP_INFOLEVEL is set.

User Response: None. Refer to the Operation and Use Publication for an explanation on tracing.

0033-3079 PMdig::Gettimeofday() call failed for time end struct. Error=*string*

Explanation: UNIX gettod call failed.

Cause: Refer to error in message.

User Response: Refer to AIX system documentation.

0033-3080 PMdig::Gettimeofday() call failed for time end struct. Error=*string*

Explanation: UNIX gettod call failed.

Cause: Refer to error in message.

User Response: Refer to AIX system documentation.

0033-3081 PMdig::SendMessage failed in Is_Dig_Tracing(). Error=*string*

Explanation: dig disconnected client because of version mismatch.

Cause: May be a version problem.

User Response: Check with the system administrator to insure the same version of the dig program is installed on each node, for the respective version of VT or POE.

0033-3082 PMdig::ExtractMessage() Invalid command *hex number* **found**

Explanation: Invalid data is present in the buffer.

Cause: May be a version problem

User Response: Check with the system administrator to insure the same version of the dig program is installed on each node, for the respective version of VT or POE.

0033-3083 VT_trrtn:: select() failed in *string*. Err=*string*

Explanation: Invalid data is present in the buffer

Cause: System Error as explained in the printed message.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3084 VT_trrtn:: dig_init() failed as dig is already generating traces.

Explanation: Dig is already running traces for some task so currently not available.

Cause: Two or more tasks are running on the same node.

User Response: Execute only one job task per node at a time.

0033-3085 VT_trrtn:: dig_init() failed as dig version is incompatible with the poe-trace version.

Explanation: POE version is different from dig version.

Cause: Versions are different.

User Response: Rerun dig with proper version.

0033-3086 VT_trrtn:: dig_init() Timeout expired in handshaking with dig.

Explanation: Not able to communicate with dig.

Cause: Dig may not be running or network is very very slow.

User Response: Check if dig daemon is running.

0033-3087 VT_trc_capture(),Maximum filesize for intermediate file exceeds the TPERMSIZE value. Tracing stopped

Explanation: The intermediate trace file size has exceeded the allowed size (either explicitly set with a command option or environment variable or implicitly set to the default of 10M).

Cause: The allowed size of the trace file is smaller than the actual trace file.

User Response: Specify a larger size for the permanent trace file size, reduce the number of trace records being generated (either by changing the trace level flag or by increasing the time between AIX statistics samples) or use the wrap around trace buffer.

0033-3088 VT_trrtn::write_trc_data(), Tracing continued after reducing the max size for temp file from *number* **to** *number*

Explanation: Tracing continued even if write failed on temp disk.

Cause: Temp Disk full.

User Response: Increase the space in the temp disk.

0033-3089 VT_trc_init::get_dir_stat failed for cwd directory *string***, Error is** *string*

Explanation: Cannot access current working directory.

Cause: System Error.

User Response: Refer to the AIX system documentation for cause of the error.

0033-3090 *string***:** *string* **write failed to the dig daemon. AIX Tracing has been stopped. Error is** *string*

Explanation: Write on to a socket failed.

Cause: Network problem or dig is not running.

User Response: Refer to the AIX system documentation for cause of the error.

0033-3091 Read failed from the dig daemon, Error is *string*

Explanation: Write on to a socket failed.

Cause: Network problem or dig is not running.

User Response: Refer to the AIX system documentation for cause of the error.

0033-3092 VT_trint, statfs call failed, Disk space computation failed. Continuing ... Error is *string*

Explanation: Check the error message

Cause: System problem.

User Response: Refer to the AIX system documentation for cause of the error.

0033-3093 Trace Integration stopped , Disk space left is *number***, required is** *number*

Explanation: Not Enough disk space left.

Cause: Insufficient disk space.

User Response: Clean the disk.

0033-3094 VT_trc_capture write_buff_to_file()Insufficient disk space to write, space left is *number*, required is *number*

Explanation: Not Enough disk space left.

Cause: Insufficient disk space.

User Response: Clean the disk.

0033-3095 VT_trc_capture write_buffusd_data()Insufficient disk space to write, Tracing stopped. Space left is *number*, required is *number*

Explanation: Not Enough disk space left.

Cause: Insufficient disk space.

User Response: Clean the disk.

0033-3096 VT_trc_init() HPSOclk_init failed, Tracing not allowed Err=*string*

Explanation: Cannot initialize the clock.

Cause: Either insufficient memory was available or the sync node could not write the counter/time sync file.

User Response: Check that the nodes have sufficient memory available and that the directory from which the job is started is writeable by each node.

0033-3097 VT_trc_capture() HPSOclk_gettime failed, Tracing stopped. Err=*string*

Explanation: Cannot read the VT trace record time stamp.

Cause: System problem.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3098 VT_trc_init(): High Performance Switch Option was not detected. The time of day clock will be used to timestamp trace records

Explanation: The program is indicating that it is not using the HPSO switch to synchronize VT trace records across nodes. This is not a problem unless the program SHOULD be using the switch.

Cause: The /dev/css0 device is not present, is present but at a back level or is not operating properly.

User Response: Ensure that ssp.css is installed and that /dev/css0 is present. If it appears to be, refer to css documentation for problem determination procedures.

0033-3099 VT_trc_init(): High Performance Switch Option was detected and will be used to timestamp trace records

Explanation: The program is indicating that it is using the HPSO switch to synchronize VT trace records across nodes. This is not a problem unless the program SHOULD NOT be using the switch.

Cause: The /dev/css0 device is present and functioning normally.

User Response: Gather information about the problem and follow local site procedures for reporting hardware and software problems.

0033-3100 VT_trc_init(): Unknown configuration detected during clock initialization.

Explanation: The program is indicating that after the initializing the trace record time stamp, an unknown switch configuration was detected. Since initialization completed successfully, tracing continues but the resulting trace file should be checked for timestamp integrity.

User Response: Even if the trace file appears correct, report the message following local site procedures for reporting hardware and software problems.

Dialog and Echo Messages for Parallel Desktop GUI

The messages in this section are unnumbered. The *Dialog Messages* are those that appear in an X-Windows dialog box. The *Echo Messages* are warning or informational messages that appear on AIXTERM (standard output).

Text that is shown enclosed in angle brackets < > in this manual is filled in dynamically. The message text described here shows the source of the message.

Dialog Messages

Dialog title: OPERATING_ENVIRONMENT

Text: Enter **IP** or **US** for message passing library

User Response: Type **IP** if you are using the IP message passing library on a RISC System/6000 cluster. Type **US** if you are using the POWERparallel system with the high speed switch. This response causes the Desktop to tailor the environment to include the appropriate libraries. The default is “IP.”

Dialog title: MP_PROCS

Text: How many processors?

User Response: Enter the number of processors (tasks) to be used for execution of the parallel program. The current value of MP_PROCS is displayed as the default.

Dialog title: MP_HOSTFILE

Text: Use host.list for allocation (yes/no)?

User Response: Select the appropriate button. This sets the MP_HOSTFILE environment appropriately.

Dialog title: MP_RESD

Text: Use the Resource Manager (yes/no)?

User Response: Select the appropriate button. This sets the MP_RESD environment variable.

Dialog title: OPTIONS

Text: Enter cmd line options

User Response: Enter a string to be appended to the command line of the program being run. Normally, the string will contain options preceded by dashes, but could also contain strings used as file names, for example.

Dialog title: EXECUTION

Text: Can only run one program at a time.

Explanation: Two programs were selected and dragged onto the execution environment icon. However, only one program can be executed at a time by drag/drop.

Dialog title: COMPILER

Text: No files passed. Exiting

Explanation: The parallel compiler program was invoked, but no files were dragged onto it. Drag the program(s) to be compiled onto the compiler icon.

Dialog title: COMPILER

Text: Executable <$HOME>/parallel/<$_basenm.par> now ready

User Response: The executable has been compiled and distributed. To run the program, drop it onto the environment icon.

Dialog title: COMPILER

Text: Executable <$HOME>/parallel/<$_basenm>.par not created.

Explanation: The compilation or link step failed, and the indicated executable was not (re)created. The script error messages should appear in the AIXTERM window.

Dialog title: COMPILER

Text: You must be compiling a .c, .C, or a .f file

Explanation: A file with extension other than .c, .C, .f, or .o was dragged onto the parallel compile icon. Verify the file extensions of the icons dragged for compilation.

Dialog title: COMPILE_FLAGS

Text: Enter compile flags

User Response: Enter a string to be appended to the command line of the compiler script. Normally, the string will contain options preceded by dashes, but could also contain additional file names, or the debug flag, for example.

Dialog title: MP_PMLIGHTS

Text: How many markers per task?

User Response: Enter the number of markers (lights) to be allocated for the Program Marker Array and subsequent runs of the executable. The current value is shown as the default.

Echo Messages

Message: Warning: No choice specified for Operating Environment.

Explanation: Neither IP nor US was entered as a choice for the Operating Environment. The entered data is ignored and the environment variables MP_EUILIB, MP_RESD, and MP_HOSTFILE are set to null.

Message: Creating <$HOME>/parallel directory for executables

Explanation: At invocation of the Desktop, if the directory $HOME/parallel does not exist, it is created. This message informs the user.

Message: Creating <$HOME>/parallel/parallel.env file

Explanation: At invocation of the Desktop, if the file $HOME/parallel/parallel.env does not exist, it is created. This message informs the user.

Message: Creating <$HOME>/parallel/host.list> file

Explanation: At invocation of the Desktop, if the file $HOME/parallel/host.list does not exist, it is created and initialized to the current hostname. This message informs the user.

Message: Creating <$HOME>/parallel/hello_parallel.c file

Explanation: At invocation of the Desktop, if the file $HOME/parallel/hello_parallel.c does not exist, it is copied from the samples directory. This message informs the user.

Message: MP_PREFIX: <$MP_PREFIX>

Explanation: Informs the user of the current value of the MP_PREFIX environment variable. This can be set to provide an alternate path to the PE libraries and scripts.

Message: Loading the Parallel Environment Desktop Icon Rules

Explanation: Confirms that the Parallel Desktop is being initialized.

Message: Using IP message passing and host.list

Explanation: Confirms that the IP option was selected.

Message: Using POWERparallel system high speed switch message passing and Resource Manager

Explanation: Confirms that US option was selected.

Message: Using existing <$HOME>/parallel directory

Explanation: Confirms existence of indicated directory.

Message: Using existing <$filename> file

Explanation: Confirms existence of indicated file.

Message: Initializing Parallel Desktop Layout

Explanation: A new desktop is being constructed. This message informs the user.

Message: Setting Parallel Environment

Explanation: The environment script echoed and saved by the user is being run.

Message: Compiling...

Explanation: The Parallel Environment compiler script is being executed.

Message: Copying to remote nodes

Explanation: For IP, the executable is being copied to the remote nodes named in host.list.

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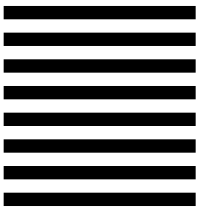

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