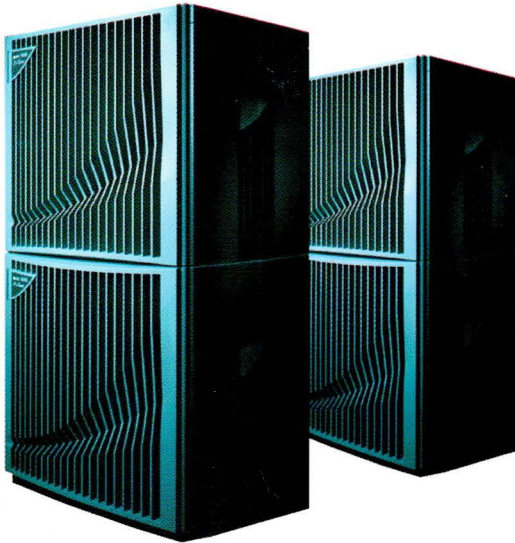


S-Class Servers

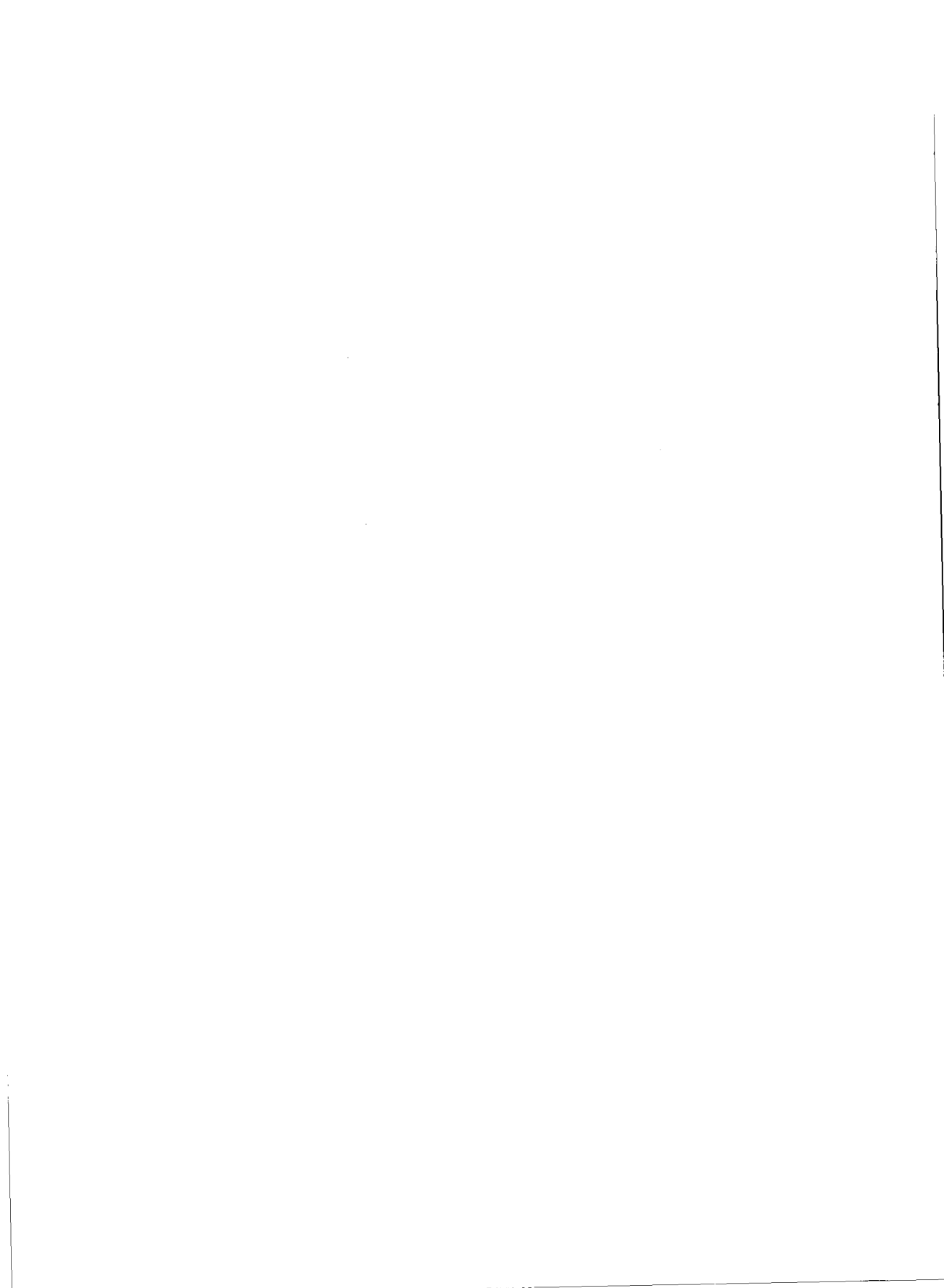


Guide to Exemplar Documentation

Third Edition



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Richardson, TX 75083-3851
United States of America



Guide to Exemplar Documentation S-Class Servers

B5655-90001

Third Edition

January 1997

Hewlett-Packard Company
Convex Division
Richardson, Texas
United States of America

Guide to Exemplar Documentation

S-Class Servers

B5655-90001

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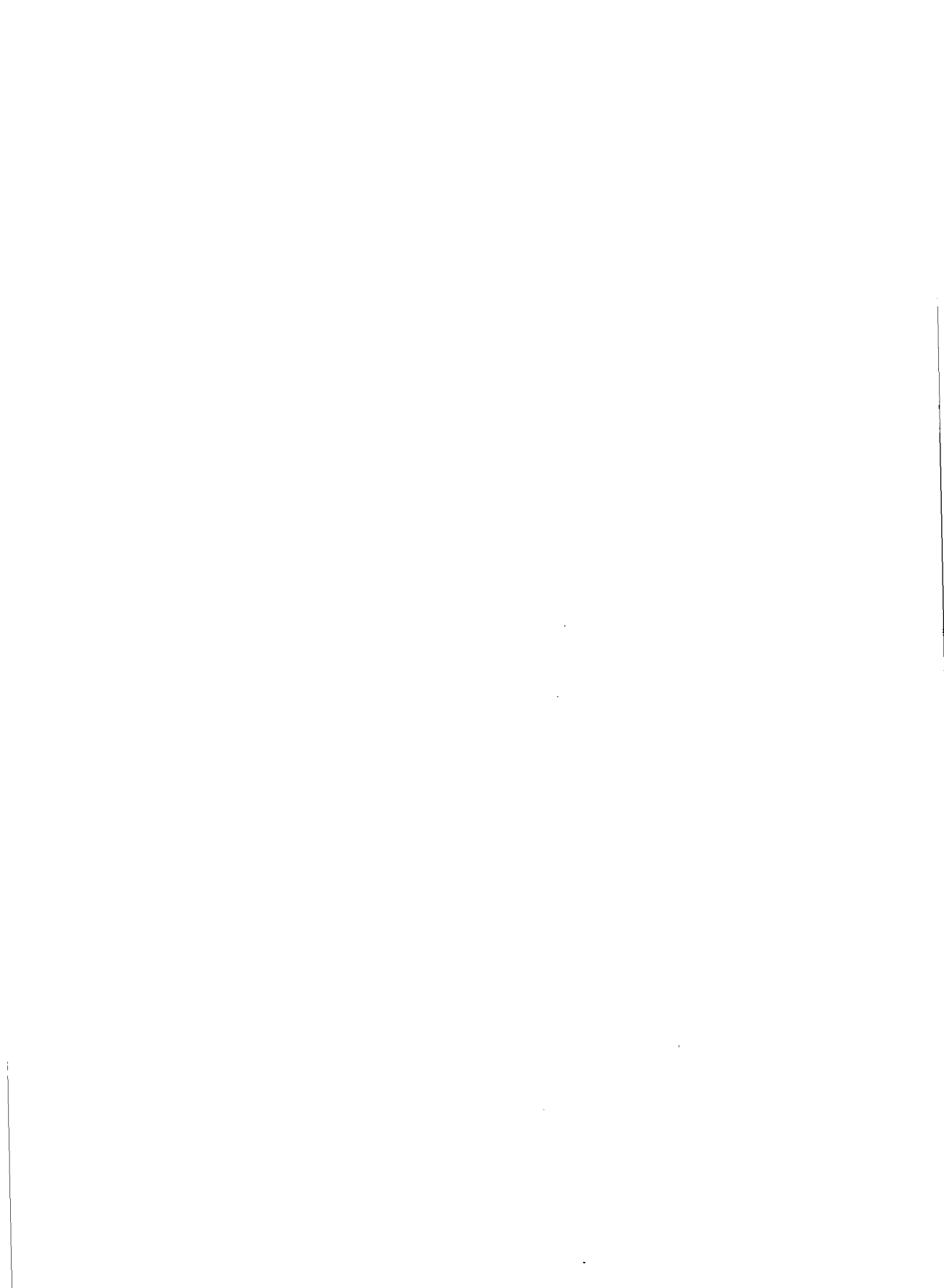


This entire book is recyclable.

Printed in the United States of America

**Revision Information for
Guide to Exemplar Documentation
S-Class Servers**

Edition	Document No.	Description
Third	B5655-90001	Released January 1997. Reorganized categories, added many new documents.
Second	710-029130-001	Released October 1994.
First	710-029130-000	Initial release March 1994.



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How to use this guide

This document lists and describes all documentation available to support the HP Exemplar S-Class and X-Class Servers. Lists of documents are divided into chapters by intended audience.

Ordering documents

To order the current edition of the documents listed in this guide, send requests to:

Hewlett-Packard Company
Convex Division
Customer Service
P.O. Box 833851
Richardson TX 75083-3851 USA

Please include the order number (xxxxx-9xxxx number) or the exact title of each document.

Administrator-level documentation

1

This chapter describes Exemplar documentation useful to system administrators. Some documents may be listed in more than one chapter, as they are written for multiple audiences.

All documents listed are available in PinPoint, unless otherwise noted.

Exemplar Architecture ***S-Class and X-Class Servers***

Provides technical information on Exemplar S-Class and X-Class Servers and the optimization of applications that run on those servers.

Order Number

A4716-90001

Audience

Service personnel, general users, administrators, and programmers

Media availability

Hardcopy and PinPoint

Contents

This document provides the following information:

- Introduction to the HP implementation of scalable parallel processing in the S-Class and X-Class Exemplar product line
- Description of memory systems
- Description of messaging mechanisms
- Description of synchronization mechanisms
- Description of exceptions and interrupts
- Description of the I/O subsystem
- Description of performance monitors
- Description of system initialization and booting
- Glossary of terms

Exemplar Diagnostics Guide S-Class and X-Class Servers

Provides reference information for system support engineers and manufacturing test personnel, as well as customers who perform their own system maintenance. This document provides a general roadmap to pertinent diagnostic programs. It also provides users with definitive descriptions of the purpose of each test and defines minimum hardware configurations required for each test.

Order Number

A4716-90002

Audience

System managers, administrators, system support engineers, and general users

Media availability

Hardcopy

Contents

Read this book to learn about:

- Using Memory test
- Using Inter-Node Coherency test
- Using Architectural test
- Using Arbitration test
- Using Stress test

Exemplar Installation Guide ***S-Class Server***

Provides technical information and instructions needed for the installation of an Exemplar S-Class Server.

Order Number

A4716-90003

Audience

System and facility administrators

Media availability

Hardcopy

Contents

This guide provides:

- System definitions and specifications
- Electrical and environmental guidelines
- Facilities guidelines
- Preinstallation survey
- Summary of requirements
- Templates
- Hardware installation instructions
- Diagnostics and utilities

Exemplar Maintenance Guide

S-Class and X-Class Servers

Provides reference information for system support engineers and manufacturing test personnel, as well as customers who perform their own system maintenance. This document provides a general overview of the S-Class and X-Class operational features as defined by functional specs.

Order Number

A4716-90004

Audience

System managers, administrators, system support engineers, and general users

Media availability

Hardcopy

Contents

Read this book for information on how to:

- Maintain the power subsystem
- Remove and replace system components
- Order Field Replaceable Units
- Return equipment

Exemplar Networking Guide

S-Class Servers

Focuses on networking tasks that system administrators perform on Exemplar S-Class Servers. Serves as supplement to other HP networking documentation that is shipped with S-Class Servers.

Order Number

B5655-90004

Audience

System administrators

Media availability

Hardcopy and PinPoint

Contents

This book covers:

- Setting up, maintaining, and troubleshooting networking
- Configuring FDDI
- Configuring Ethernet
- Configuring HIPPI

NQS System Administration Guide Exemplar S-Class Servers

Describes how to configure and manage the NQS job queuing facility, which allows users to submit jobs to a queue for batch execution.

Order Number

B5589-90001

Audience

System administrators

Media availability

Hardcopy and PinPoint

Contents

Read this book to learn NQS concepts and learn how to:

- Configure NQS
- Control queue operations
- Generate NQS accounting report
- Configure your NQS network
- Maintain queue requests on a regular basis

NQS System Manager's Quick Reference Exemplar S-Class Servers

Lists frequently used NQS configuration and management commands.

Order Number

B5589-90004

Audience

System administrators

Media availability

Hardcopy

OpenBoot Quick Reference Exemplar S-Class Servers

Summarizes Exemplar OpenBoot Prom (OBP) firmware commands.

Order Number

B5655-90008

Audience

System administrators and field engineers

Media availability

Hardcopy

Contents

Contains quick reference listings for the following Exemplar OpenBoot commands and related information:

- Boot commands
- Configuration parameters
- Device tree browse commands
- Device mapping commands
- Help commands
- File loading and execution commands
- Diagnostic commands

OpenBoot User's Guide ***Exemplar S-Class Servers***

Describes the history, architecture, and use of the Exemplar OpenBoot Prom (OBP) firmware.

Order Number

B5655-90007

Audience

System administrators and field engineers

Media availability

Hardcopy and PinPoint

Contents

Contains the following Exemplar OpenBoot Prom information:

- OpenBoot Prom Architecture including interfaces and packages
- System configuration and modifications
- System boot procedures
- Device mappings
- Program loading and execution
- Troubleshooting
- Diagnostics
- OBP commands, properties, variables and examples

SPP-UX System Administration Guide Exemplar S-Class Servers

Describes and provides instructions for administration and maintenance of SPP-UX V5.1.

Order Number

B5655-90002

Audience

SPP-UX system administrators and managers of all skill levels

Media availability

Hardcopy and PinPoint

Contents

Read this book to learn about:

- Starting and stopping SPP-UX
- Setting run levels
- Managing users
- Monitoring system performance
- Setting up and maintaining file systems
- Configuring processor and memory resources
- Managing printers
- Backing up and recovering information

This chapter describes Exemplar documentation useful to people who program Exemplar servers. Some documents may be listed in more than one chapter, as they are written for multiple audiences.

All documents listed are available in PinPoint, unless otherwise noted.

CXdb Quick Reference ***Exemplar S-Class and X-Class Servers***

This guide provides a brief but thorough overview of CXdb, a visual debugger for debugging applications written in Fortran 77, Fortran 90, C, and C++. CXdb has a command-line interface and an X/Motif interface, both of which are covered in the guide. CXdb can debug multithreaded applications written using the globally shared memory (GSM) model and multiprocess application written using the Message-Passing Interface (MPI) model.

The *Quick Reference* is a condensed version of the complete *CXdb Reference*. As such, it covers the same topics found in the *CXdb Reference*, but in less detail. It also provides syntax and a one-line description for each CXdb command.

Order Number

B5639-90001

Audience

Technical marketing and system engineers, ISVs, and customers who develop C, Fortran 77, and C++ applications

Media availability

Hardcopy

Contents

Read this book to learn about:

- Compiling programs for debugging with CXdb
- Invoking CXdb
- Using online help
- Using the graphical user interface
- Controlling process execution
- Displaying and modifying program data and memory
- Debugging multithreaded applications
- Debugging MPI applications
- CXdb commands and syntax

CXpa Reference

Exemplar S-Class and X-Class Servers

Describes how to use CXpa, an interactive runtime performance analysis tool for tuning Fortran, C, and C++ applications on Exemplar S-Class, X-Class, and SPP1200/1600 Series systems.

Performance data that you can collect and analyze includes CPU time, wall clock time, parallel concurrency (CPU/wall clock time), cache misses, latency time for memory accesses, a dynamic call graph, and additional derived metrics. Performance data can be collected for routines, loops, and compiler-generated parallel loops.

You can view performance data for processes or individual threads of a process.

Order Number

B5639-90002

Technical marketing and system engineers, ISVs, and customers who develop and tune C, Fortran 77, and C++ applications

Media availability

Hardcopy

Contents

Read this book to learn about:

- Preparing applications, object files, and archive libraries for profiling with CXpa
- Types of metrics that can be collected using CXpa
- Selecting source code regions and metrics for profiling
- Collecting performance data
- Analyzing performance data using CXpa's 2D and 3D graphs, dynamic call graphs, and text reports
- Using CXpa's X/Motif GUI, command line (tty) and batch mode interfaces

CXtrace User's Guide

Exemplar S-Class and X-Class Servers

Describes CXtrace, a trace-based performance analysis tool for C and Fortran 77 MPI and PVM applications on Exemplar S-Class, X-Class, and SPP1200/1600 Series systems.

CXtrace's instrumentation, monitoring, and analysis tools capture, associate, and display messaging events between processes. Its main components include source-level instrumentation, a runtime performance monitoring library, and a set of analysis tools that work together to measure and display program performance in graphs and statistical reports.

Order Number

B5639-90003

Audience

Technical marketing and system engineers, ISVs, and customers who develop and tune C, Fortran 77, and C++ applications

Media availability

Hardcopy and PinPoint

Contents

Read this book to learn how to:

- Instrument and build applications for profiling with CXtrace
- Use the CXtrace runtime monitoring library
- Use the trace view tool (tv) to view a timeline-oriented graphical representation of trace file data
- Use the tally report generator utility to produce statistical reports for the application, based on trace file data.

Exemplar C and Fortran 77 Programmer's Guide S-Class and X-Class Servers

Describes the Exemplar compilers, which are based on Hewlett-Packard's C and Fortran 77 compilers and support the Exemplar programming model.

Order Number

B5600-90002

Audience

Experienced C and Fortran 77 programmers

Media availability

Hardcopy and PinPoint

Contents

Read this book to learn about:

- Exemplar extensions to the standard HP C and Fortran 77 compilers
- Transition information for users migrating from SPP1x00-Series compilers (/usr/convex/bin/cc, /usr/convex/bin/fc) to the Exemplar compilers
- Exemplar linker and assembler overview
- Debugging and profiling overview
- Exemplar utilities such as mpa and sysinfo
- Related environment variables

Exemplar C++ Programming Guide S-Class and X-Class Servers

Describes the features and operation of the Exemplar C++ compiler. It is not a complete reference for the C++ programming language, but instead focuses on differences between the Exemplar C++ compiler and the standard HP C++ compiler on which it is based.

Order Number

B5630-90001

Audience

C++ programmers

Media availability

Hardcopy and PinPoint

Contents

Read this book to learn how to:

- Compile and link C++ source code
- Use the compiler command line options
- Handle interlanguage programming issues
- Use environment variables to pass information to the compiler

Exemplar Programming Guide S-Class and X-Class Servers

Describes efficient shared-memory programming techniques that are available with the Exemplar C and Fortran compilers.

Order Number

B5600-90001

Audience

Experienced C and Fortran 77 programmers

Media availability

Hardcopy and PinPoint

Contents

Read this book to learn about:

- A programmer's overview of the architecture
- Exemplar compiler optimizations
- Compiler optimization options, directives, and pragmas
- Basic and advanced shared-memory programming
- Compiler optimization reports
- Compiler Parallel Support Library (CPSlib) routines

HP Fortran 90 Programmers' Reference

Provides a complete description of the HP Fortran 90 programming language, including all standard features and HP language extensions.

Order Number

B5876-90001

Audience

Fortran 90 programmers

Media availability

Hardcopy, PinPoint, LaserRom

Contents

This document describes:

- Features of Fortran 90 that distinguish it from Fortran 77
- Basic language elements of HP Fortran 90
- Intrinsic and derived (user-defined) data types
- Arrays and array-handling features of HP Fortran 90
- Expressions, operators, assignments, and the WHERE construct
- Constructs and statements that control program execution
- Program units and procedures
- I/O and file handling features
- Syntax and use of format specifications and edit descriptors
- Syntax and function of all HP Fortran 90 statements
- Intrinsic procedures, including standard intrinsics and HP extensions
- Libraries shipped with and used by the HP Fortran 90 compiler
- Compile-line options, including optimization options, accepted by the HP Fortran 90 compiler
- Compiler directives
- Other information related to the HP Fortran 90 language

HP Fortran 90 Programmer's Notes

Provides information about using the HP Fortran 90 compiler on Exemplar S-Class and X-Class systems. It is intended to accompany the *HP Fortran 90 Programmer's Reference*.

Order Number

B5876-90002

Audience

Fortran 90 programmers

Media availability

Hardcopy

Contents

Read this document for details on:

- Requirements for using the HP Fortran 90 compiler
- Restrictions on using the HP Fortran 90 compiler
- Using the HP Fortran 90 compiler
- Migrating code from Fortran 77 to Fortran 90
- Calling C routines from HP Fortran 90
- Writing HP Fortran 90 programs for use with the SPP-UX operating system
- Using CXdb, CXpa, PVM, and MPI with HP Fortran 90

HP MLIB Lapack User's Guide

Describes HP's Lapack software library. Lapack is a collection of Fortran-callable subprograms for mathematical applications involving linear algebra, including

- Linear equations
- Least squares
- Eigenvalue problems
- Singular value decomposition

Order Number

B5649-90001

Audience

Fortran programmers

Media availability

Hardcopy and PinPoint

Contents

This book describes Fortran-callable routines for:

- Simple drivers for linear equations
- Expert drivers for linear equations
- Computational subprograms for linear equations
- Drivers for linear least squares problems
- Computational subprograms for orthogonal factorizations
- Simple drivers for ordinary eigenvalue problems
- Expert drivers for ordinary eigenvalue problems
- Drivers for generalized eigenvalue problems
- Drivers for the singular value decomposition
- LAPACK auxiliary subprograms

HP MLIB Scilib User's Guide

Describes HP's Scilib software library, which is a collection of Fortran-callable, Cray-compatible mathematical subprograms for scientific applications.

Order Number

B5649-90002

Audience

Fortran programmers

Media availability

Hardcopy and PinPoint

Contents

This book describes Fortran-callable routines for:

- Vector operations
- Matrix operations
- Linear equation solutions
- Eigenvalue and eigenvector computation
- Fast Fourier transforms
- Correlation and convolution
- Linear recurrences
- Sorting

HP MLIB Veclib User's Guide

Describes HP's Veclib software library, which is a collection of Fortran-callable mathematical subprograms for scientific applications.

Order Number

B5649-90003

Audience

Fortran, C, and Ada programmers

Media availability

Hardcopy and PinPoint

Contents

This document describes Fortran-callable routines for:

- Dense and sparse vector operations, including the Basic Linear Algebra Subprograms (BLAS)
- Matrix operations, including the Level 2 and Level 3 BLAS
- Linear equation solutions, including LINPACK
- Eigensystem problems, including EISPACK
- Sparse symmetric linear equation solutions
- Sparse symmetric ordinary and generalized eigensystem problems
- Skyline linear equation solutions
- Fast Fourier transforms
- Convolution and correlation
- Linear recurrences
- Sorting and generating random numbers

HP MPI User's Guide

Describes how to use HP MPI (Message Passing Interface), a library of C- and Fortran-callable routines used for message-passing programming.

Order Number

B6011-90001

Audience

Programmers experienced with SPP1600 and Exemplar S-Class and X-Class servers running under SPP-UX and/or D-Class and K-Class servers s running under HP-UX.

Media availability

Hardcopy and PinPoint

Contents

Read this book to learn how to:

- Understand and use HP MPI
- Analyze HP MPI applications
- Tune HP MPI applications to improve performance
- Troubleshoot HP MPI applications

HP PVM User's Guide ***Exemplar S-Class and X-Class Servers***

Describes how to use HP PVM (Parallel Virtual Machine), a library of C- and Fortran-callable routines for message-passing programming.

Order Number

B5885-90001

Audience

Programmers experienced with S-Class and X-Class servers running SPP-UX.

Media availability

Hardcopy and PinPoint

Contents

Read this book to learn how to:

- Build and run HP PVM applications
- Analyze HP PVM applications
- Tune HP PVM applications to improve performance

VAST/f90 User's Guide

Gives programmers an understanding of the VAST/f90 compiling system. VAST/f90 translates Fortran 90 programs into Fortran 77, which is then compiled by an HP Fortran 77 compiler.

Order Number

B5885-90001

Audience

Fortran programmers

Media availability

Hardcopy

Contents

Read this guide for information on:

- Translating Fortran 90 programs into Fortran 77
- Compiling Fortran 90 programs using the VAST/f90 command line
- Example uses of the VAST/f90 command line
- Distinctive Fortran 90 features and example code that illustrates their use.

This chapter describes available Exemplar documentation that is useful to general users of Exemplar servers. Some documents may be listed in other chapters of this guide, as they are written for multiple audiences.

All documents listed are available in PinPoint, unless otherwise noted.

Checkpoint Restart User's Guide Exemplar S-Class Servers

Provides instructions on how to save the state of selected processes to disk files and later restart them from their saved states.

Order Number

B5655-90005

Audience

Programmers and general SPP-UX users

Media availability

Hardcopy and PinPoint

Contents

This reference guide summarizes:

- How checkpoint restart works
- How to checkpoint processes and process hierarchies
- How to restart processes and process hierarchies'
- How to program in C, C++, and Fortran using checkpoint restart

Exemplar User's Guide S-Class and X-Class Servers

Provides user-level information about using HP Exemplar S-Class and X-Class Technical Servers.

Order Number

B5655-90003

Audience

Exemplar users, including programmers

Media availability

Hardcopy and PinPoint

Contents

This general user's guide explains:

- Exemplar architecture overview
- Configuring your Exemplar account
- Monitoring an Exemplar system's resources
- Differences between Exemplar utilities and those found on HP-UX workstations
- Effectively making use of Exemplar subcomplexes
- Documentation information; associated documentation, man pages, and pertinent online documentation systems
- Other user-level information

NQS User's Guide Exemplar S-Class Servers

Provides user-level information on NQS, a batch queuing system, and instructions on its use.

Order Number

B5589-90002

Audience

Programmers and general system users

Media availability

Hardcopy and PinPoint

Contents

This user's guide explains:

- Queue processing, levels of authorization, and NQS accounting
- How to display information
- How to submit and control requests
- Transaction completion messages and request completion messages

***NQS User's Quick Reference
Exemplar S-Class Servers***

Lists frequently used NQS user-level commands.

Order Number

B5589-90003

Audience

Programmers and general system users.

Media availability

Hardcopy

SPP-UX Large Files User's Guide Exemplar S-Class Servers

Describes 'large' files and provides information on how to use them and program with them.

Order Number

B5655-90006

Audience

Programmers and general system users

Media availability

Hardcopy and PinPoint

Contents

This user's guide explains:

- The relationship between file systems and large files
- How/which SPP-UX utilities work with large files
- How to program using large files

Hardware and I/O documentation

4

Hardware and I/O documentation that supports Exemplar S-Class and X-Class servers is listed in this chapter. Some documents may also be listed in other chapters, as they are written for multiple audiences.

Exemplar Architecture S-Class and X-Class Servers

Provides technical information for the evaluation of the Exemplar product line and the optimization of applications that run on the Exemplar system.

Order Number

A4716-90001

Audience

Service personnel, general users, and programmers

Media availability

Hardcopy and PinPoint

Contents

This document provides:

- Introduction to the Hewlett-Packard implementation of scalable parallel processing in the Exemplar product line
- Description of memory systems
- Description of messaging mechanisms
- Description of synchronization mechanisms
- Description of exceptions and interrupts
- Description of the I/O subsystem
- Description of performance monitors
- Description of system initialization and booting
- Glossary of terms

Exemplar Diagnostics Guide S-Class and X-Class Servers

Provides reference information for system support engineers, as well as those customers who perform their own system maintenance. It provides a general roadmap to all diagnostic programs. It also lists definitive descriptions of the purpose of each test, and defines minimum hardware configurations required for each test.

Order Number

A4716-90002

Audience

System administrators, system support engineers, and general users

Media availability

Hardcopy

Contents

Read this book to learn how to:

- Use the Memory test
- Use the Inter-Node Coherency test
- Use the Architectural test
- Use the Arbitration test
- Use the Stress test

Exemplar S-Class Installation Guide

Provides technical information and instructions for installing an Exemplar S-Class Server.

Order Number

A4716-90003

Audience

System and facility managers

Media availability

Hardcopy

Contents

This document provides:

- System definitions and specifications
- Electrical and environmental guidelines
- Facilities guidelines
- Preinstallation survey
- Summary of requirements
- Templates
- Hardware installation instructions
- Diagnostics and utilities information

Exemplar Maintenance Guide S-Class and X-Class Servers

Provides reference information for system support engineers and manufacturing test personnel, as well as customers who perform their own system maintenance. It also provides a general overview of the S-Class servers system operational features.

Order Number

A4716-90004

Audience

System administrators, system support engineers, and general users

Media availability

Hardcopy

Contents

Read this book for information on how to:

- Maintain the power subsystem
- Remove and replace system components
- Order Field Replaceable Units
- Return equipment

Exemplar Site Preparation Guide S-Class Servers

Provides technical information needed to prepare a site for installation of an Exemplar S-Class system.

Order Number

A4716-90005

Audience

System and facility managers

Media availability

Hardcopy

Contents

This manual provides:

- System definitions and specifications
- Electrical and environmental guidelines
- Facilities guidelines
- Preinstallation survey
- Summary of requirements
- Templates

Barracuda 9 Gb Disk Drive Installation and Service Guide

Exemplar S-Class and X-Class Servers

Addresses customer requirements for service and installation of the 9 Gb disk drive. It provides technical information for installation and replacement of this drive.

Order Number

A4716-90008

Audience

System administrators and system support engineers

Media availability

Hardcopy, PinPoint, and WWW

Contents

Read this book for information on the following:

- Learning drive specifications, DC power requirements and drive jumper configuration
- Unpacking and inspection of disk
- Installing drive
- Downloading the SCSI configuration
- Troubleshooting format verification, sector errors, and FSC codes
- Maintenance
- Obtaining Field Replaceable Units

DAT Installation and Service Guide Exemplar S-Class and X-Class Servers

Addresses customer requirements for service and installation of the Digital Audio Tape (DAT) drive.

Order Number

A4716-90014

Audience

System administrators and system support engineers

Media availability

Hardcopy, PinPoint, and WWW

Contents

Read this book for information on:

- Learning features and specifications of the DAT
- Unpacking and inspection procedures
- Installing drive and integrating system
- Troubleshooting information
- Running diagnostic routines
- Removing and replacing drive
- Obtaining Field Replaceable Units

Digital Tape Autoloader Installation and Service Guide

Exemplar S-Class and X-Class Servers

Addresses customer requirements for installation and service of the Digital Tape Autoloader.

Order Number

A4716-90013

Audience

System administrators and system support engineers

Media availability

Hardcopy, PinPoint, and WWW

Contents

Read this book for information on the following topics:

- Drive specifications
- Unpacking and inspection procedures
- Installation process, including:
 - precautions
 - site preparation
 - drive installation
 - cabling
 - system integration
- Troubleshooting information
- Field Replaceable Units

Embedded Disk Drive Installation and Service Guide

Exemplar S-Class and X-Class Servers

Provides technical information for installation and replacement of disk drive during service or manufacture.

Order Number

A4716-90009

Audience

System administrators and system support engineers

Media availability

Hardcopy, PinPoint, and WWW

Contents

Read this book to learn how to:

- Use drive specifications, DC power requirements, and drive jumper configuration
- Unpack and inspect disk
- Install the drive
- Download the SCSI configuration
- Troubleshoot
 - format verification
 - sector errors
- Perform maintenance
- Obtain Field Replaceable Units

PCI Fast Ethernet Installation and Service Guide Exemplar S-Class and X-Class Servers

Addresses customer requirements for service and installation of the PCI Fast Ethernet controller.

Order Number

A4716-90010

Audience

System administrators and system support engineers

Media availability

Hardcopy, PinPoint, and WWW

Contents

Read this book for information on the following topics:

- Features and specifications of the controller
- Unpacking and inspection procedures
- Installation process and system integration
- Use of the espeed utility program
- Troubleshooting information
- Diagnostic routines
- Removal and replacement procedures
- Field Replaceable Units

PCI Dual Attach FDDI Installation and Service Guide

Exemplar S-Class and X-Class Servers

Addresses customer requirements for service and installation of the PCI Dual Attach FDDI controller.

Order Number

A4716-90012

Audience

System administrators and system support engineers

Media availability

Hardcopy, PinPoint, and WWW

Contents

Read this book for information on the following topics:

- Features and specifications of the controller
- Procedures on unpacking and inspection
- Installation process and system integration
- Troubleshooting information
- Diagnostic routines
- Procedures on removal and replacement
- Field Replaceable Units

PCI Ultra SCSI Installation and Service Guide Exemplar S-Class and X-Class Servers

Addresses customer requirements for service and installation of the PCI Ultra SCSI controller.

Order Number

A4716-900011

Audience

System administrators and system support engineers

Media availability

Hardcopy, PinPoint, and WWW

Contents

Read this book for information on the following topics:

- Features and specifications of the controller
- Board unpacking and inspection procedures
- Hardware installation
- Troubleshooting information
- Diagnostics routines
- Removal and replacement procedures
- Field Replaceable Units

Some of the documents listed in this guide are intended to be supplemented by other Hewlett-Packard or 3rd party documents.

Table 1 lists supplemental Hewlett-Packard documents that were shipped to you with your S-Class or X-Class Server with the HP products they describe.

You can order these documents by contacting your local HP sales office with each document's 5x5-digit order number and title, or by sending requests to the address listed in the section "Ordering documents" on page ix.

Table 1 Hewlett-Packard supplemental documentation

Title	Order number
<i>HP C HP-UX Reference Manual</i>	92453-90024
<i>HP C Programming Guide</i>	92434-90002
<i>HP C++ Programmer's Guide</i>	92501-90005
<i>HP C++ Quick Reference</i>	B1637-90001
<i>HP Codelib Library Reference</i>	B2617-90000
<i>HP Fortran/9000 Programmer's Guide</i>	B3906-90001
<i>HP Fortran/9000 Programmer's Reference</i>	B3906-90002
<i>HP Installing and Administering Internet Services</i>	B1030-90000
<i>HP Installing and Administering NFS</i>	B1031-90000
<i>HP PA-RISC 2.0 Architecture Reference</i>	B5655-90009

Table 1 Hewlett-Packard supplemental documentation

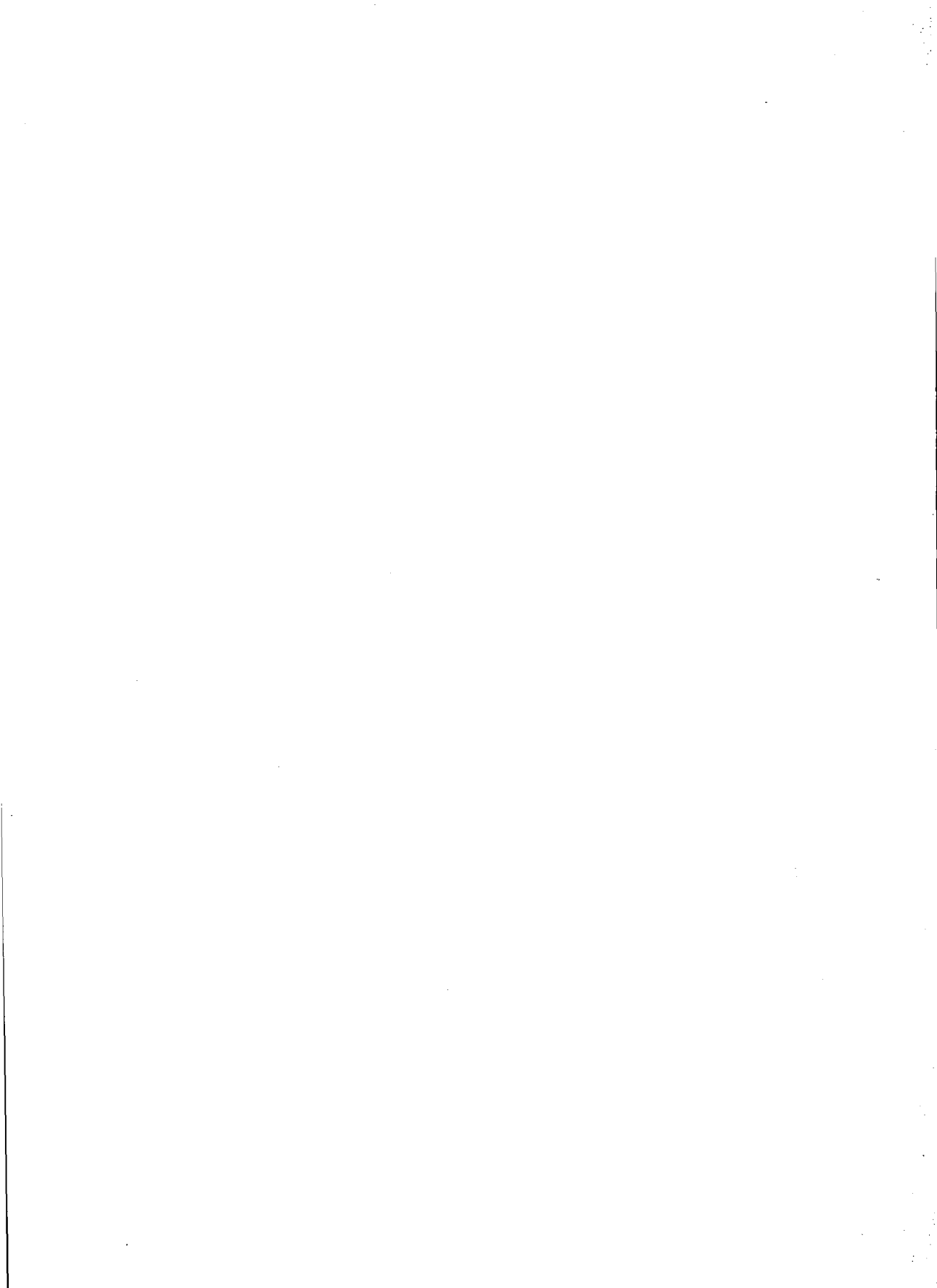
Title	Order number
<i>HP Networking Overview</i>	B1029-90000
<i>HP-UX Assembly Language Reference Manual</i>	92432-90001
<i>HP-UX Error Message Catalog</i>	B1862-90004
<i>PA-RISC Procedure Calling Conventions Reference</i>	09740-90015

Table 2 lists 3rd party documents that were shipped to you with the HP product they describe. You can order these documents by contacting your local HP sales office with each document's 5x5-digit order number and title, or by sending requests to the address listed in the section "Ordering documents" on page ix.

Table 2 3rd-party supplemental documentation

Title	Order number
<i>MPI: The Complete Reference</i>	B6011-90003
<i>PVM User's Guide</i>	B5885-90002
<i>FlexLM User's Guide</i>	B5655-90010









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