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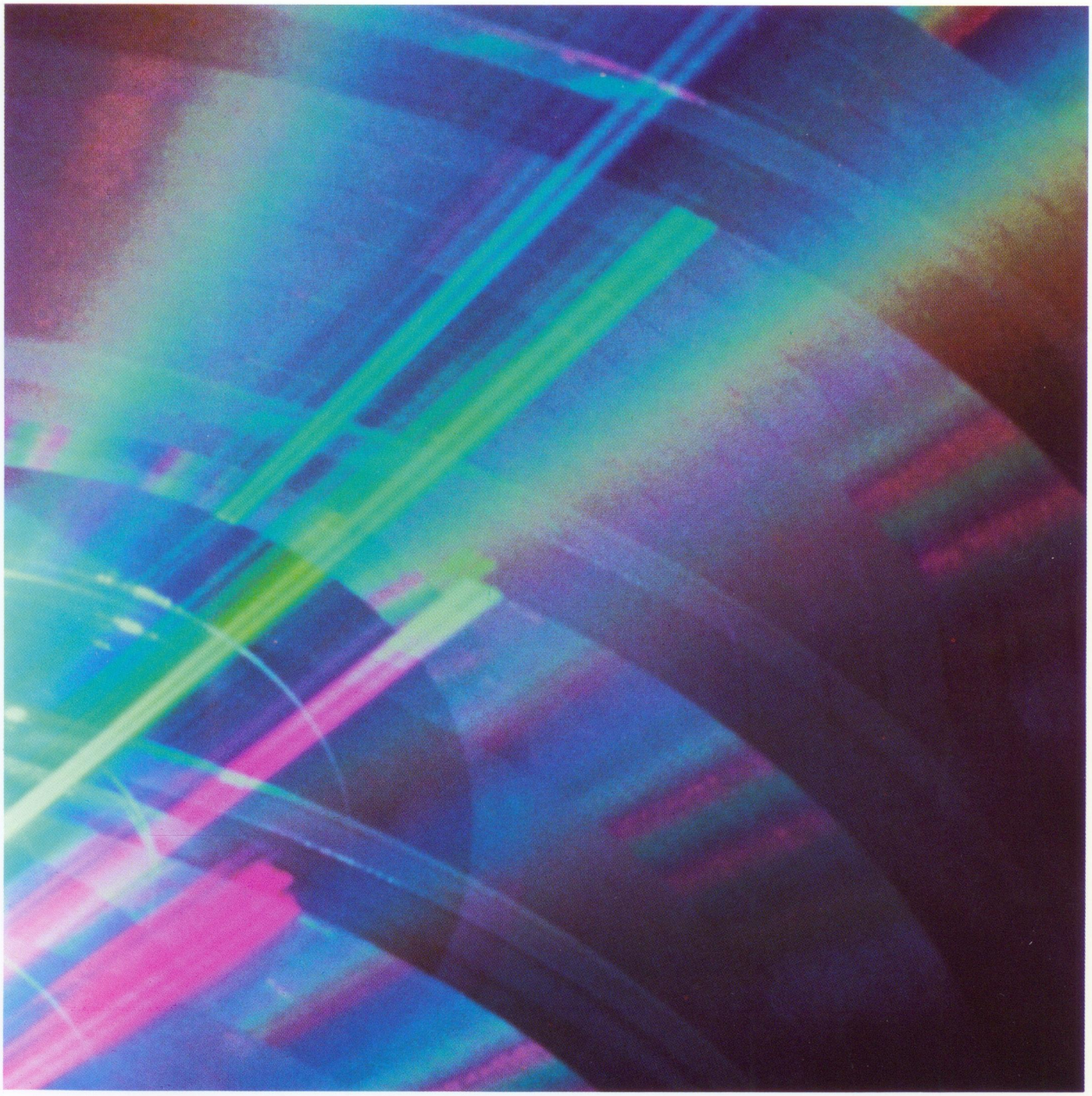
HP 9000 Series 800 Computer Systems

HP-UX Documentation Guide



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HP-UX Documentation Guide

Manual Part Number 92453-90009 November 1988

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HP 9000 Series 800 Computer Systems

HP-UX Documentation Guide

HEWLETT PACKARD

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Second Edition	November 1988	A.B3.00

Preface

The *HP-UX Documentation Guide* describes the manual set for the HP 9000 Series 800 computers. Read this manual first when you receive your new system.

The first chapter is an introduction to this documentation guide.

The second chapter is a graphical display of all the manuals in the manual set. Manuals are ordered by skill level and related tasks.

The third chapter contains detailed information on each manual.

Some of the manuals in this guide reference UNIX and VAX, as well as other terms. UNIX and System V are registered trademarks of AT&T in the U.S.A. and other countries. DEC and VAX are trademarks of Digital Equipment Corporation.

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1

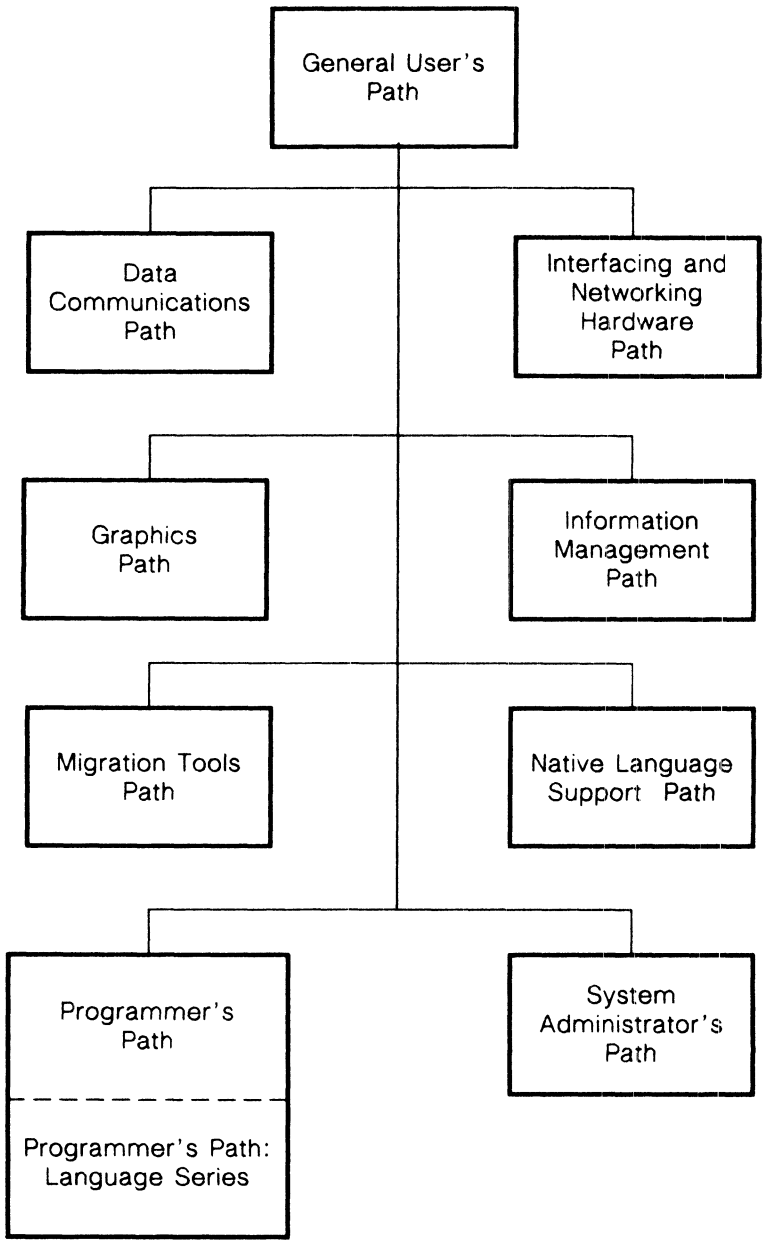
Introduction

Every time you use your computer you may need to use the documentation. How do you know which manuals to read? On the computer, your files are organized in a certain way; that structure allows you to know where they are and find them quickly. This manual organizes the manual set so you will know where to find the information you need.

This *Documentation Guide* is the first manual you should read in the HP-UX manual set. It shows how the other manuals fit together and what material is covered in each manual.

The *Documentation Guide* contains three chapters, including this introduction. Chapter 2 is a set of Manual Maps and Chapter 3 is a Manual List. The Manual Maps illustrate the manual set in a flowchart style. They lead you through a path of manuals that relate to the skills that you are learning. The Manual List gives you overview information for each manual.

HP-UX Manual Set



Legend

Critical Path

Optional

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2

Manual Maps

Introduction

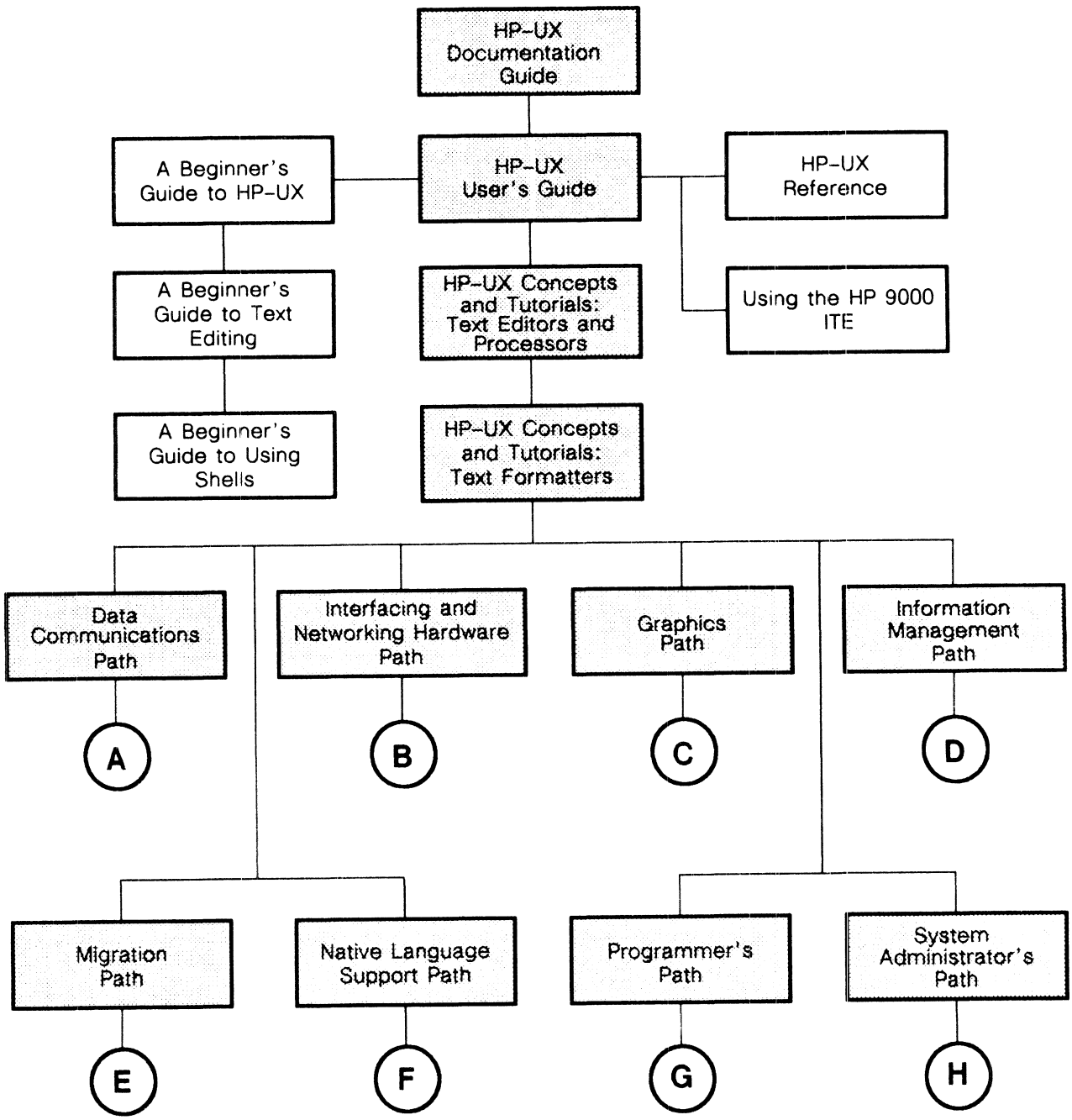
Manual maps show you how the documentation set is laid out. As flowcharts they show the order of the manual set. The manual maps are divided into "paths"; a set of skills defines each path. The manual map begins with the General User's Path (where all users will start). Some manuals are listed in more than one path to reflect overlapping skills.

The manual maps show you two types of manuals: manuals you need to read to become a proficient user, and optional skills manuals. Required reading manuals teach skills that are essential to your growth as an HP 9000 Series 800 user. Reference guides are useful when you need a more detailed reminder. Optional skills manuals will broaden your knowledge of your system.

The manuals you should read to become proficient in each skill area are shown on the manual maps by shaded boxes. These manuals are generally user guides or tutorials.

Reference manuals are shown on the sides of the maps. These are supplementary guides that you will find useful in day-to-day operations. These manuals are optional reading. Also optional are manuals that present different skills; you may read all, none, or some or these manuals.

General User's Path



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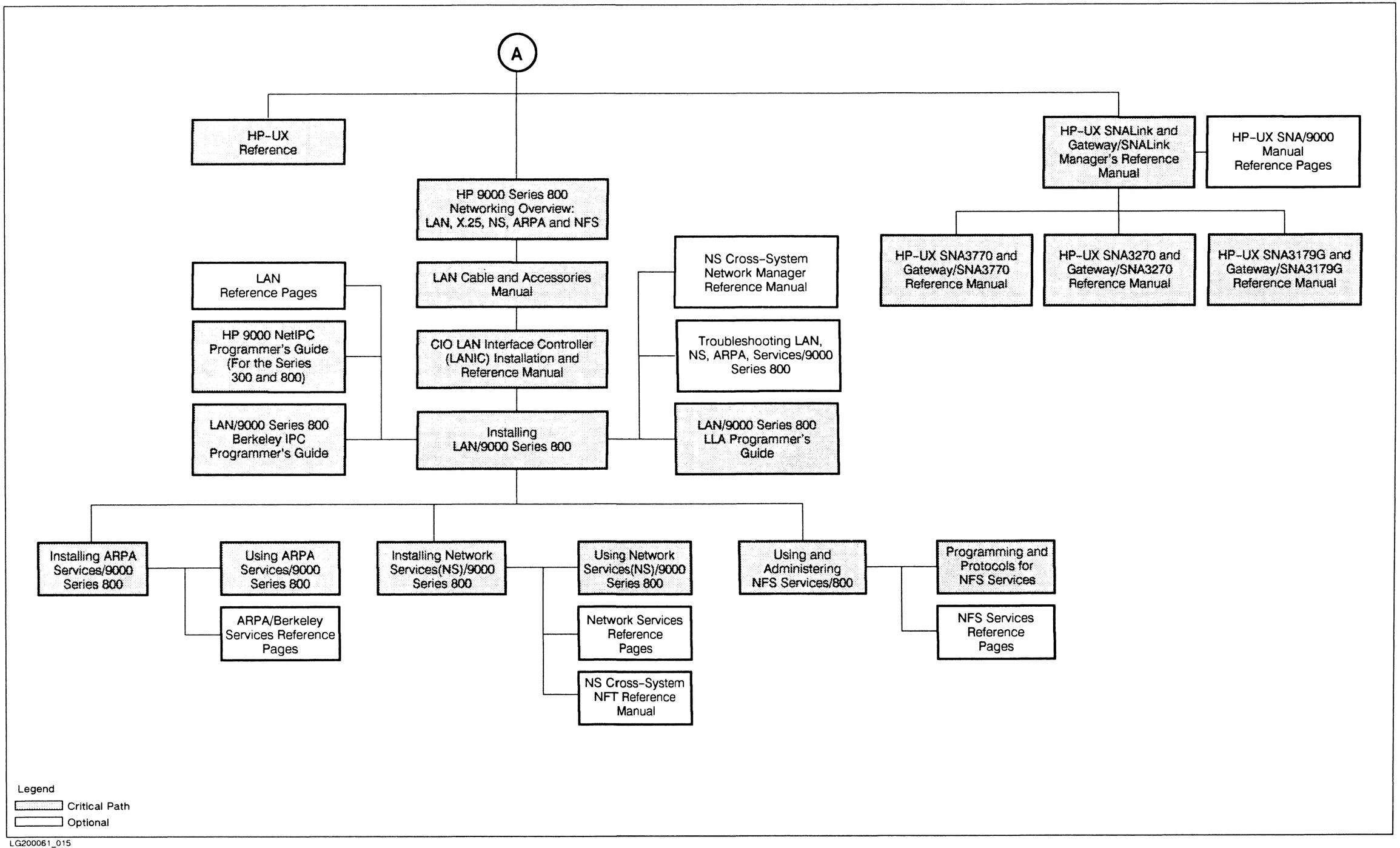

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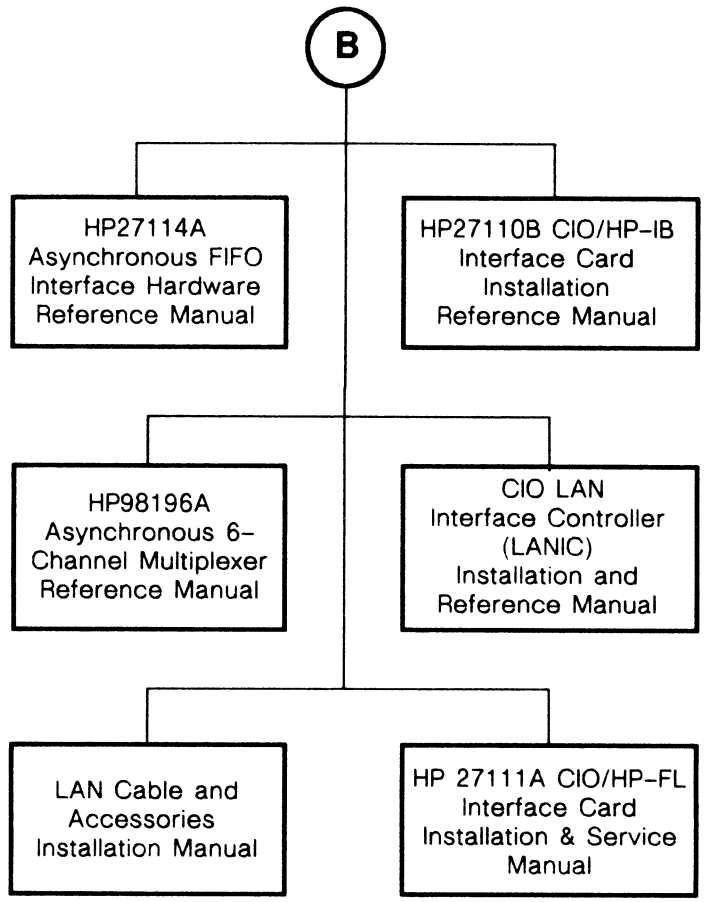
Interfacing and Networking Hardware Path



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Critical Path

Optional

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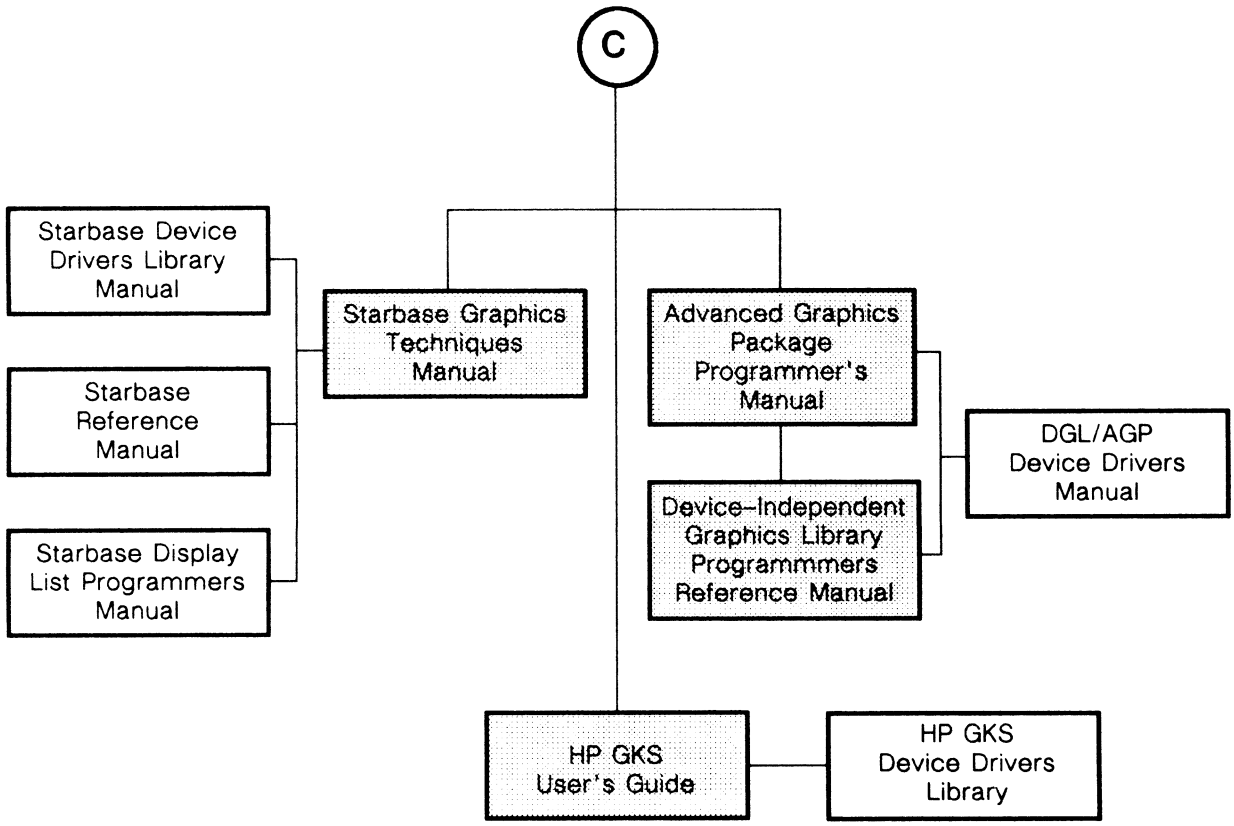
Graphics Path



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Critical Path

Optional

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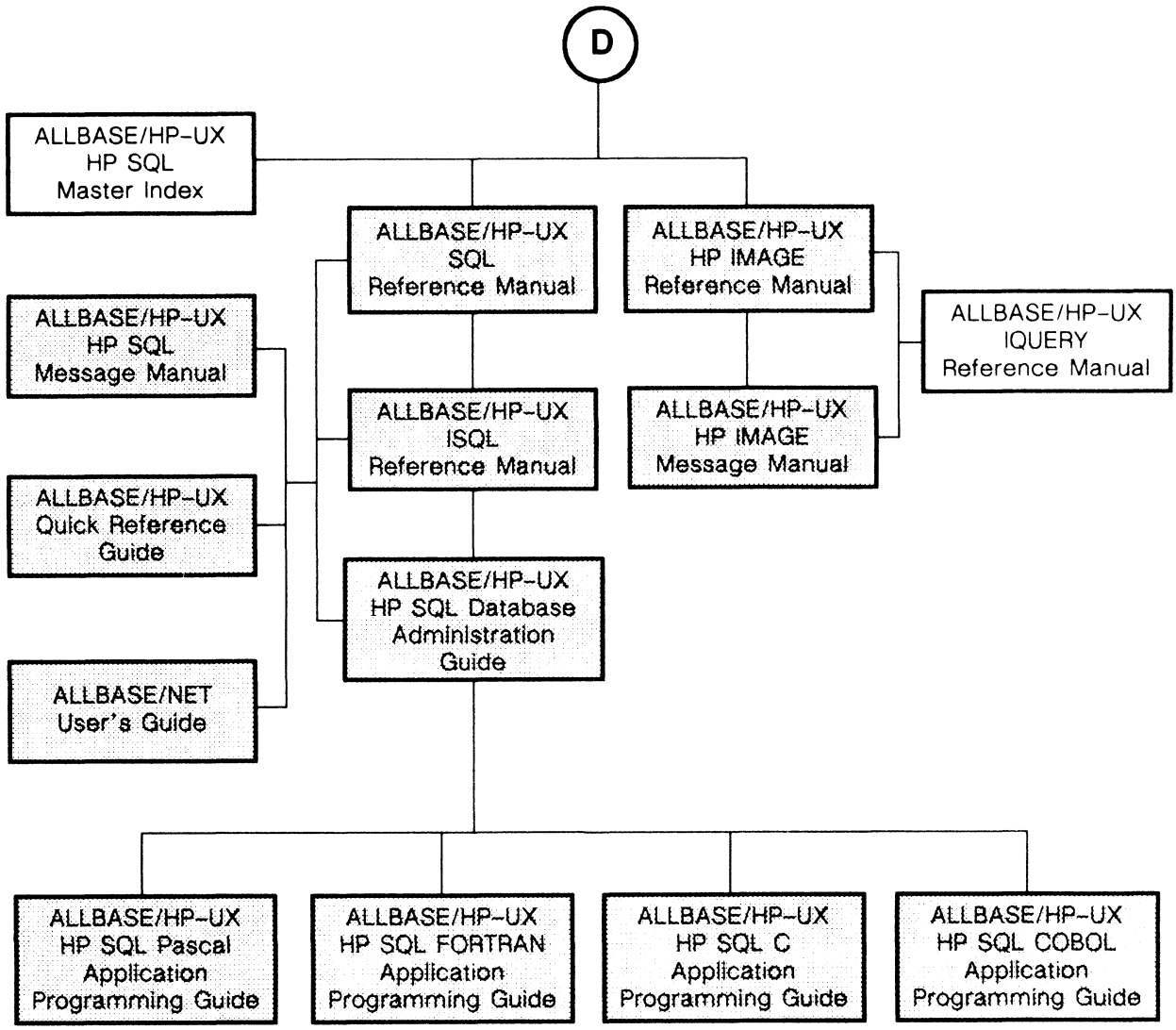
Information Management Path



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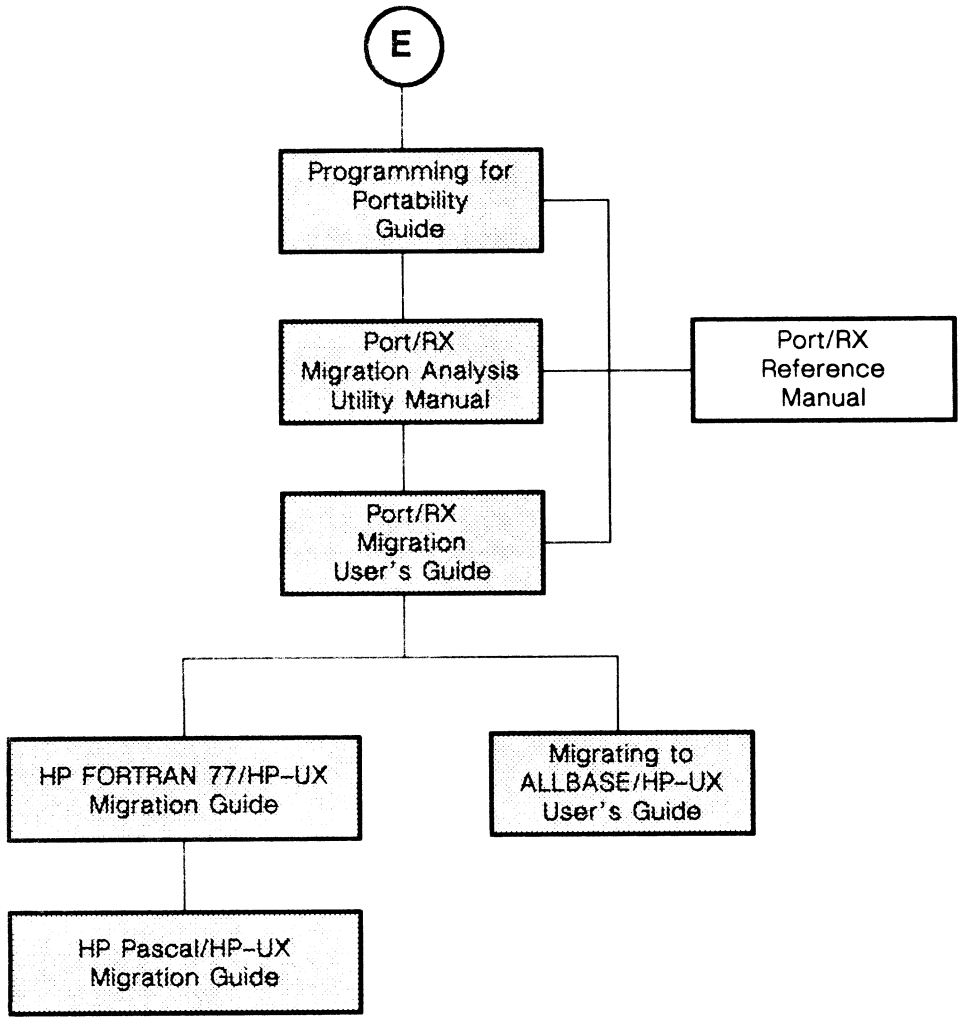
Migration Tools Path



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Critical Path

Optional

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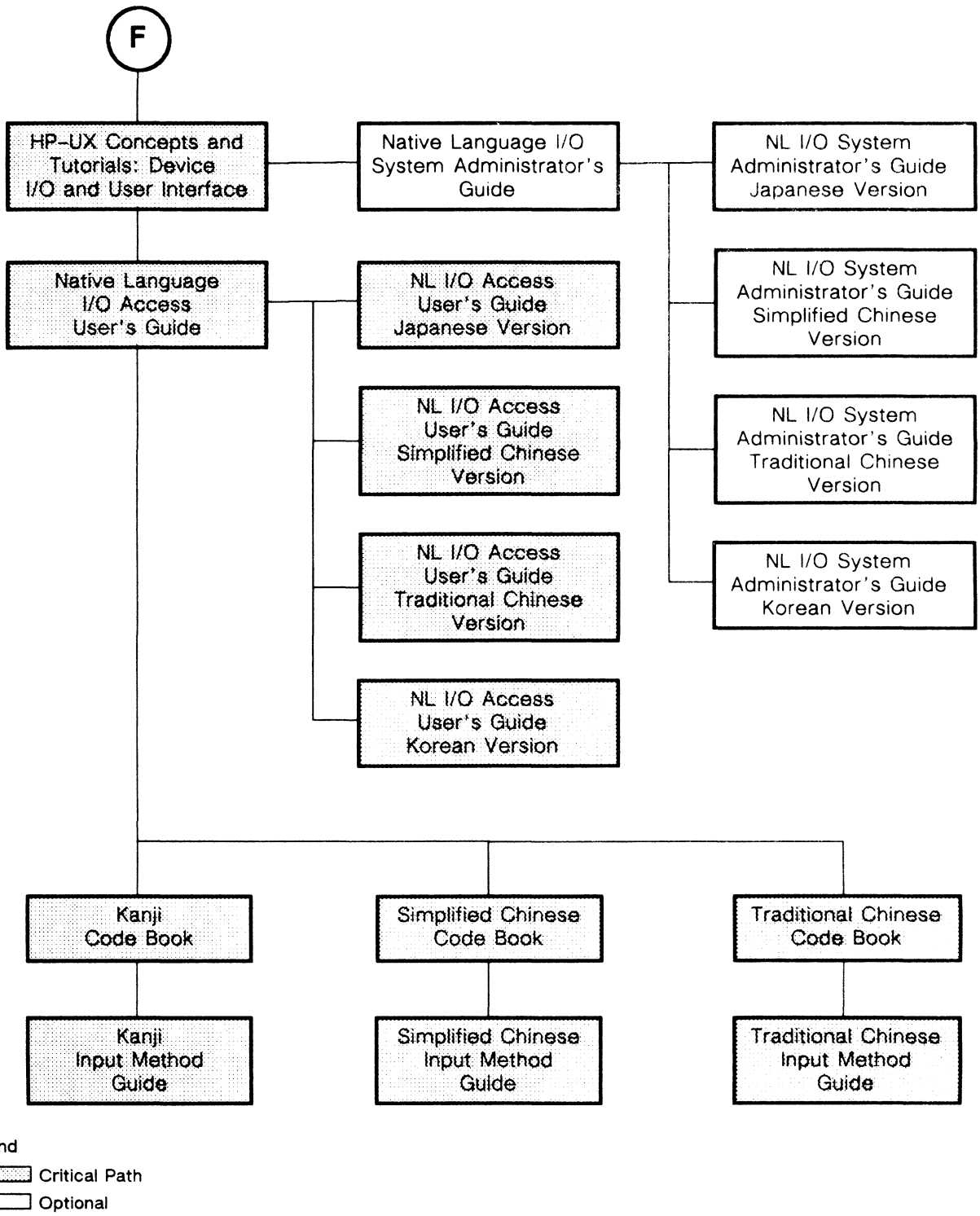
Native Language Support Path



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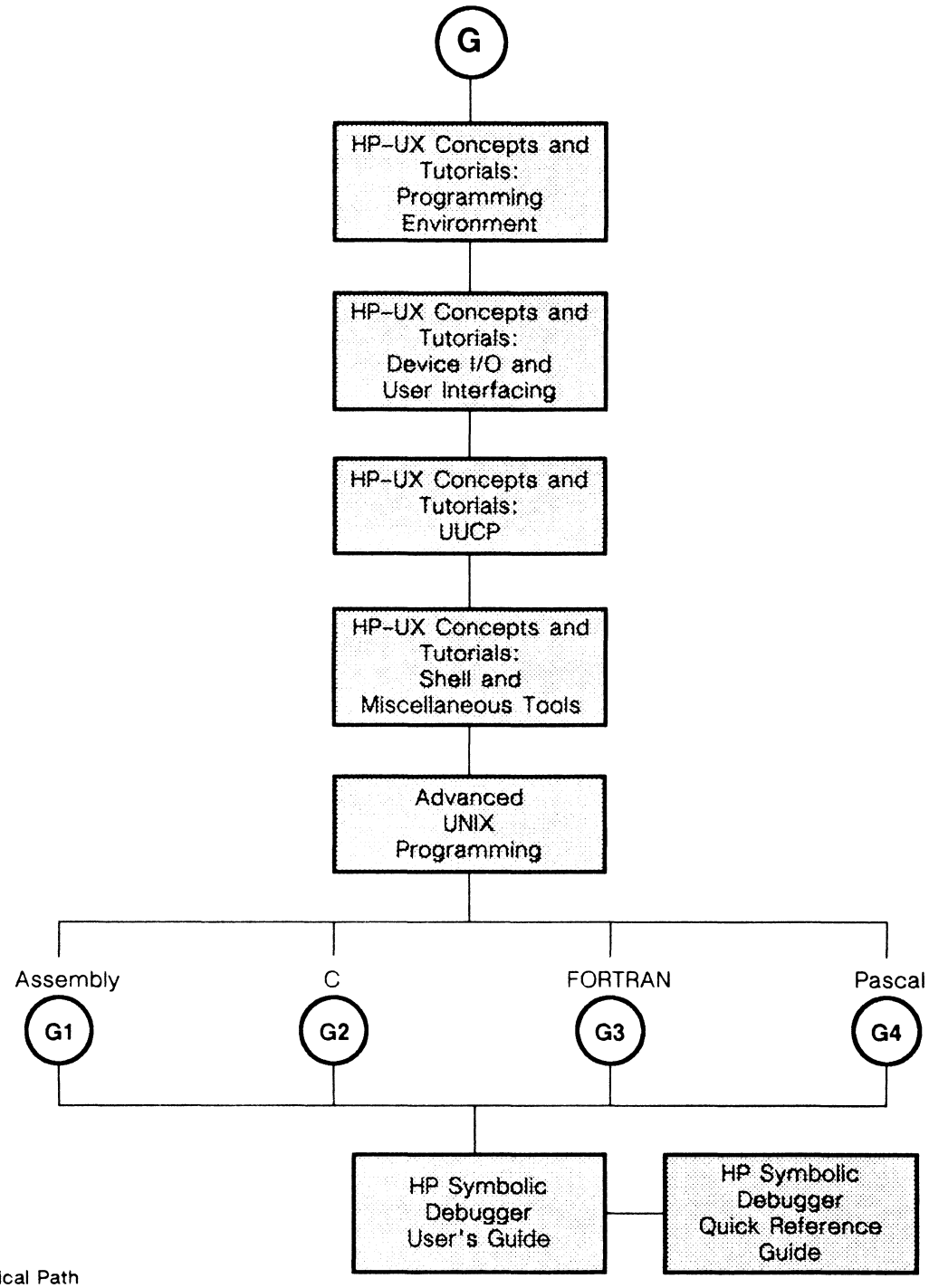
Programmer's Path



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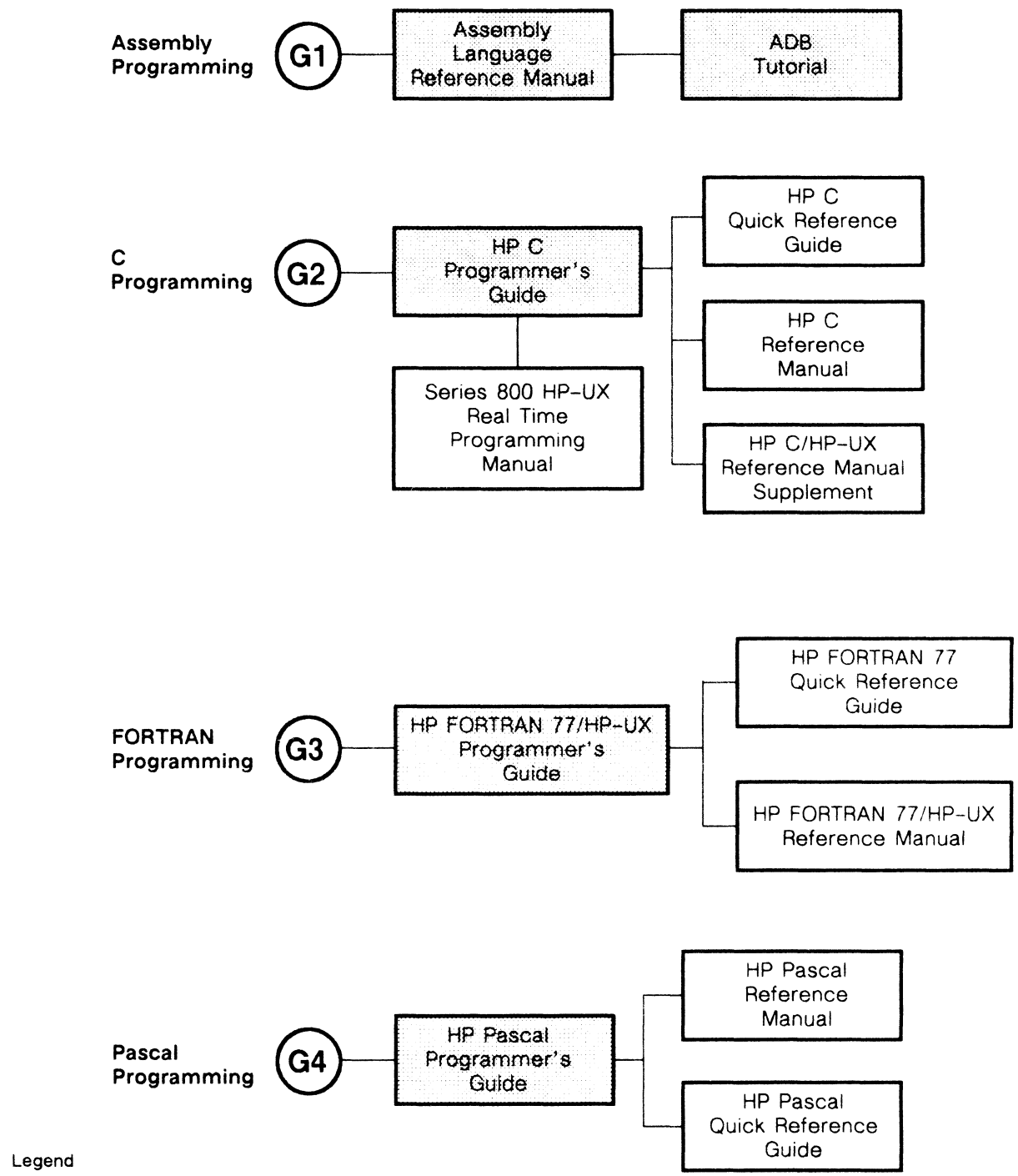
Programmer's Path: Language Series



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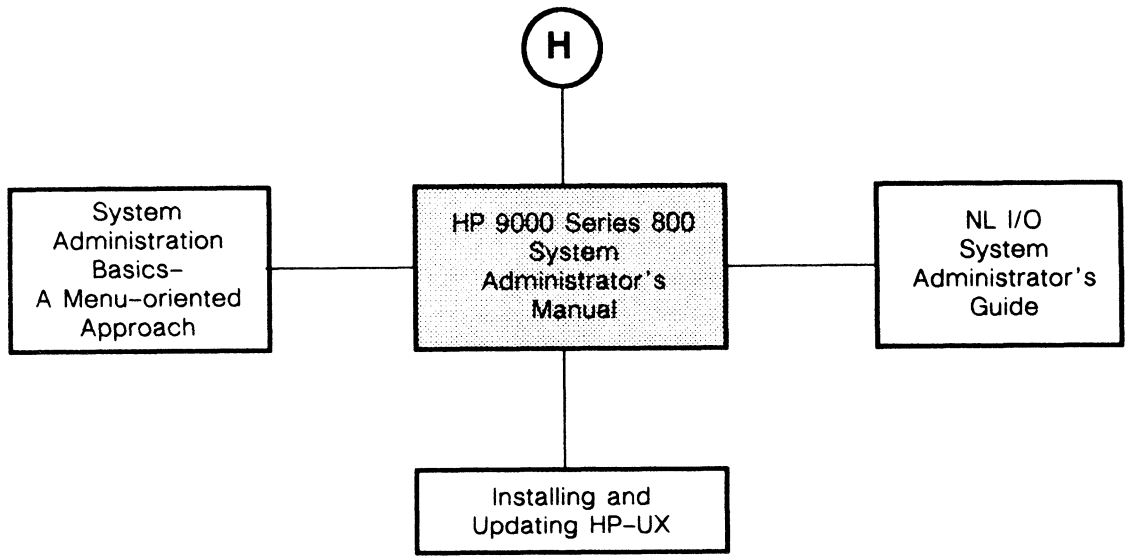
System Administrator's Path



Note:

Each product's manual set includes System Administration information to install and maintain that product on HP-UX.

Legend

Critical Path

Optional

LG200061_013b

3

Manual List

Introduction

The manual lists show you the manual set divided into groups of user skills. These groups of skills are called "series". The series and the manuals within them are in the same order as the manual maps in Chapter 2. The manual list contains the manual title, manual series, part number, intended audience, the abstract, and the table of contents.

The following series divisions are used in the manual list:

- General User's Series
- Data Communications Series
- Interfacing and Networking Hardware Series
- Graphics Series
- Information Management Series
- Migration Series
- Native Language Support Series
- Programmer's Series
- Programmer's Series: Languages
- System Administrator's Series

Audience

The audience specification of the manual list gives the background skill level of the potential reader.

- A General User is any user. A manual written for a General User assumes no particular skill level. The General User's skill level is complete after learning the skills contained in the General User's Path (or Series) manuals.
- An Experienced User is a user who has learned the skills that are presented in the General User's Path (or Series).
- A Programmer is a user who has worked less than six months as a programmer. A manual written for a Programmer assumes basic knowledge of HP-UX, an editor, the linking and execution process, and a programming language.
- An Experienced Programmer is a programmer with more advanced skills and working knowledge. A manual written for an Experienced Programmer assumes that all the basic skills required for a Programmer are known in depth.
- A System Administrator is a user who has had training or experience as a member of the systems operations staff.
- A Network Manager is a user who has experience in using and setting up a computer network.
- A Database Administrator is a user who has experience in using and setting up a database system.
- HP Field Engineers are Hewlett-Packard personnel who may help you with hardware installation.

Manual Information

The abstract of each manual contains a short paragraph that gives an overview of the manual.

The table of contents from each manual shows you chapter or section titles and topics. Some manuals do not have chapters or sections and are arranged by topics. This information lets you explore the manuals before you pull them off your shelf.

General User's Series

Manual Title	Audience
A Beginner's Guide to HP-UX (98594-90000)	General Users
A Beginner's Guide to Text Editing (98594-90010)	General Users
A Beginner's Guide to Using Shells (98594-90020)	General Users
HP-UX Concepts and Tutorials: Text Editors and Processors (97089-90022)	General Users
HP-UX Concepts and Tutorials: Text Formatters (97089-90032)	General Users
HP-UX Reference (92453-90016)	Experienced HP-UX Users and Programmers
HP-UX User's Guide (92453-90001)	General Users
Using the HP 9000 ITE (92453-90011)	General Users

A Beginner's Guide to HP-UX

GENERAL USER'S SERIES

PART-NUMBER: 98594-90000

AUDIENCE: General Users

This book introduces the fundamental concepts of HP-UX. It is designed to teach these concepts through descriptions and examples.

Chapter 1: Introduction

Chapter 2: Getting Started: Your First Work Session

Chapter 3: Working with Files

Chapter 4: Organizing Your Files: Directories

Chapter 5: Command Syntax and the On-Line Reference

Chapter 6: Sending and Receiving Mail

A Beginner's Guide to Text Editing

GENERAL USER'S SERIES

PART-NUMBER: 98594-90010

AUDIENCE: General Users

This guide provides information on the editor of choice for HP-UX users, vi. Basic commands for entering, modifying, and saving text are presented along with some more advanced topics, such as moving and copying text, and searching for and replacing text patterns.

Chapter 1: Introduction

Chapter 2: Using vi: An Introductory Tutorial

Chapter 3: A Closer Look at Editing with vi

Chapter 4: Moving and Copying Text

Chapter 5: Searching for Patterns in Files

Chapter 6: Setting Your vi Environment

A Beginner's Guide to Using Shells

GENERAL USER'S SERIES

PART-NUMBER: 98594-90020

This guide introduces the role of the shell in an HP-UX system. Concepts common to all shells are discussed, and features unique to each shell are briefly introduced.

Chapter 1: Introduction

Chapter 2: An Overview of Shells

Chapter 3: Expanding Your Use of the Shell

Chapter 4: Setting Up Your Shell Environment

Chapter 5: Example Login Scripts

HP-UX Concepts and Tutorials: Text Editors and Processors

GENERAL USER'S SERIES

PART-NUMBER: 97089-90022

AUDIENCE: General Users

This manual describes the text editors and processors that are a basic part of HP-UX. These editors include: edit (an interactive editor), ex (extended editor, it has more features than edit), vi (a display oriented text editor), sed (a non-interactive stream editor), and awk (a programming language for manipulating text and data files).

Section 1: Introduction to Text Editors and Processors

Section 2: Regular Expressions
- Introduction
- Where are REs Used
- Simple Matches

Section 3: The Vi/Ex Editor
- Introducing the Vi/Ex Editor
- Starting and Ending a Session
- Basic Editing: Cursor and Display Control
- Basic Editing: Manipulating Text
- Intermediate Editing: Using Text Objects
- Intermediate Editing: Copying and Moving Blocks of Text
- Intermediate Editing: Search and Replace Operations
- Intermediate Editing: Editing Multiple Files
- Intermediate Editing: File Manipulation Techniques
- Using Ex Commands
- Advanced Editing: Shell Operations
- Editor: Configuring the Vi/Ex Editor
- Using Ex

Section 4: sed
- sed: A Non-Interactive Streaming Editor
- Forming Editor Commands
- Writing Command Scripts

Section 5: Ed
- The Ed Editor
- Creating an Ordinary File
- Getting Acquainted with Ed
- Moving Around in the File
- Adding, Deleting, and Correcting Text
- Special Ed Commands
- The Shell Interface
- Miscellaneous

Section 6: Edit: An Interactive Line Editor

Section 7: Awk: A Programming Language for Manipulating Data

Introduction
The Command Line
Structure of Awk Programs
Predefined Variables
Output
Details of Awk Programming
Error Messages
Notes on the Design
Notes of Awk Implementation
Annotated Examples
References

HP-UX Concepts and Tutorials: Text Formatters

GENERAL USER'S SERIES

PART-NUMBER: 97089-90032

AUDIENCE: General Users

This manual describes the nroff text formatter and the formatting macro packages, mm and tbl.

Chapter 1: The Nroff/Troff Text Processors
- Introduction
- Usage
- Summary and Index
- Escape Sequences
- Predefined General Number Registers
- Predefined Read-Only Number Registers

Chapter 2: Reference Manual
- The Basics
- Page Control
- Text Filling and Adjusting
- Vertical Spacing
- Line Length and Indenting
- Macros, Strings, Diversion, and Position Traps
- Number Registers
- Tabs, Leaders, and Fields
- Input and Output Conventions and Character Translations
- More Functions
- Hyphenation
- Output Line Numbering
- Conditional Acceptance of Input
- Environment Switching
- Insertions from the Standard Input
- Input/Output File Switching
- Miscellaneous
- Output and Error Messages
- Tutorial Examples

Chapter 3: MM: Memorandum Macros
- Introduction
- Usage
- Formatting Concepts
- Paragraphs and Headings
- Lists
- Memorandum and Released-Paper Style Documents
- Displays
- Footnotes
- Page Headers and Footers
- Table of Contents and Cover Sheet
- References

Chapter 3: MM: Memorandum Macros (cont.)
Miscellaneous Features
Errors and Debugging
Extending and Modifying MM Macros
Summary
Footnote Examples
Tables

Chapter 4: Tbl: A Program to Format Tables
Usage
Input Commands
Global Options
Format Section
Data to be Printed
Additional Command Lines
Examples

HP-UX Reference

GENERAL USER'S SERIES

PART-NUMBER: 92453-90016

AUDIENCE: Experienced HP-UX Users and Programmers

This manual describes all of the commands and subroutines for HP-UX. Each section is arranged in alphabetical order.

Section 1: Commands and Application Programs

Section 1M: System Maintenance Procedures

Section 2: System Calls

Section 3: Subroutines

Section 4: Special Files

Section 5: File Formats

Section 6: Games (no games are supported)

Section 7: Miscellaneous Facilities

Section 9: Glossary

**** There is no Section 8 ****

HP-UX User's Guide

GENERAL USER'S SERIES

PART-NUMBER: 92453-90001

AUDIENCE: General Users

The purpose of this guide is to introduce and define terms covered within the scope of this guide; to provide a novice level tutorial of user tasks; to provide a task oriented tutorial for the experienced system users; and to direct the user to other sources within the HP-UX documentation set for further information.

Chapter 1: Introduction to HP-UX
- Compatibility
- Standard Features
- Realtime Enhancements
- Supported Tools for HP-UX
- Structure of HP-UX
- Chapter Review

Chapter 2: The HP-UX File System
- Files
- Sample Filenames (with and without extensions)
- Directories
- Chapter Review

Chapter 3: Before You Begin
- Manual Conventions
- The System Administrator
- Uppercase and Lowercase Entries
- Frequently Used Keys
- Correcting Typing Errors
- Standard HP-UX Command Format
- Successfully Completed Tasks
- Online Documentation
- Chapter Review

Chapter 4: Getting Started Tutorial
- Tutorial Task Summary

Chapter 5: More About HP-UX
- More on Files
- I/O Redirection
- Pipes and Filters
- Multiple Commands
- Background Execution
- Conditional Execution
- Metacharacters
- Quoting Metacharacters
- Chapter Review

Chapter 6: User's Tutorial

Creating Shell Scripts
Concatenating Files
Sorting Contents of a File
Comparing File Contents
Searching for a File
Receiving and Sending Mail
Command History
Chapter Review

Chapter 7: Useful Utilities

Introduction
Utilities
Chapter Summary

Using the HP 9000 ITE

GENERAL USER'S SERIES

PART-NUMBER: 92453-90011

AUDIENCE: General Users

This manual explains how to use the ITE (Internal Terminal Emulator) with the 4602A keyboard. It is similar to the user manuals for HP terminals.

Contents:

Description of the ITE
- Keyboard Requirements
- Description of a System Console
- Additional Considerations

Using the Keyboard
- Character Entry Group
- Numeric Group
- Display Control Group
- Edit Group
- Function Key Group
- System Control Group

The Display
- Memory Addressing Scheme
- Cursor Sensing
- Cursor Positioning
- Screen Relative Addressing
- Absolute Addressing
- Cursor Relative Addressing
- Combining Absolute and Relative Addressing
- Display Enhancements
- Raster Control
- Accessing Color

Configuring the ITE
- Configuring Function Keys
- Terminal Configuration Menu

ITE Escape Sequences
- Sequence Types

Data Communications Series

Manual Title	Audience
ARPA/Berkeley Services Reference Pages (50952-90032)	Experienced HP-UX and ARPA/Berkeley Services Users
HP 9000 NetIPC Programmer's Guide (for the Series 300 and 800) (98194-90002)	NetIPC Programmers
HP 9000 Series 800 Networking Overview: LAN, X.25, NS, ARPA and NFS (50980-90021)	Networking Users
HP-UX SNA3270 and Gateway/SNA3270 Reference Manual (36590-90000)	End Users and System Administrators
HP-UX SNA3770 and Gateway/SNA3770 Reference Manual (98184-90000)	End Users and System Administrators
HP-UX SNALink and Gateway/SNALink Manager's Reference Manual (36592-90000)	System Administrators
HP-UX SNA3179G and Gateway/SNA3179G Reference Manual (B1001-90000)	End Users and System Administrators
HP-UX SNA/9000 Manual Reference Pages (36592-90003)	End Users and SNA System Administrators
Installing ARPA Services/9000 Series 800 (98194-90007)	ARPA/Berkeley Services Network Managers
Installing LAN/9000 Series 800 (98194-90009)	LAN Network Managers
Installing Network Services (NS)/9000 Series 800 (98194-90008)	NS Network Managers
LAN/9000 Series 800 Berkeley IPC Programmer's Guide (98194-90003)	LAN Programmers
LAN/9000 Series 800 LLA Programmer's Guide (98194-90006)	LAN Programmers
LAN Reference Pages (98194-90004)	LAN Programmer's and Network Managers
Network Services Reference Pages (50951-90031)	NS Programmers and Network Managers
NFS Services Reference Pages (50970-90030)	Experienced HP-UX and NFS Services Users
NS Cross-System Network Manager Reference Manual (5958-8564)	Network Managers
NS Cross-System NFT Reference Manual (5958-8563)	NS Programmers and Users

Programming and Protocols for NFS Services/800 (50970-90010)	NFS Programmers
Troubleshooting LAN, NS, ARPA Services/9000 Series 800 (98194-90010)	LAN, NS and ARPA/Berkeley Services Network Managers
Using and Administering NFS Services/9000 Series 800 (50970-90000)	NFS Users and Network Managers
Using ARPA Services/9000 Series 800 (50980-90001)	Users of the ARPA and Berkeley Services
Using Network Services (NS)/9000 Series 800 (50980-90040)	NS Programmers and Users

ARPA/Berkeley Services Reference Pages

DATA COMMUNICATIONS SERIES

PART-NUMBER: 50952-90032

AUDIENCE: Experienced HP-UX users who use, program with and manage the ARPA/Berkeley Services software

This manual contains the reference pages for ARPA/Berkeley.

Section 1: ARPA and Berkeley Commands

Section 1M: Network Management Commands

Section 2: IPC System Calls

Section 3: Library Functions for IPC

Section 4: File Formats for ARPA Configuration Files

Section 7: Special Files Describing Protocols and Facilities

HP 9000 NetIPC Programmer's Guide (for the Series 300 and 800)

DATA COMMUNICATIONS SERIES

PART-NUMBER: 98194-90002

AUDIENCE: NetIPC Programmers

This manual describes Network Interprocess Communication (NetIPC) programming.

Chapter 1: NetIPC Concepts
- Chapter Overview
- Sockets
- Connections
- Establishing a VC Connection
- Sending and Receiving Data
- Shutting Down a Connection
- Summary of NetIPC Calls

Chapter 2: Cross-System NetIPC
- Chapter Overview
- Software Revision Codes
- Local and Remote NetIPC Calls
- HP 9000 to HP 1000 NetIPC
- HP 9000 to HP 3000 NetIPC
- Process Scheduling

Chapter 3: NetIPC Calls
- Programming Languages
- Include Files and Libraries
- HP 1000 to Series 800 Migration
- NetIPC Common Parameters
- Syntax Conventions
- NetIPC Reference Pages

Appendix A: HP Character Set

Appendix B: Sample NetIPC Programs

Appendix C: Error Messages

Appendix D: System Calls and NetIPC Sockets

Appendix E: LAN/9000 Series 800 Migration

Appendix F: Porting NetIPC Programs

HP 9000 Series 800 Networking Overview: LAN, X.25, NS, ARPA and NFS

DATA COMMUNICATIONS SERIES

PART-NUMBER: 50980-90021

AUDIENCE: General users

This booklet describes the LAN/9000 Series 800 Link software product, the X.25/800 Link product, the Network Services (NS)/9000 Series 800 product, the ARPA Services/9000 Series 800 product, and the NFS Services/800 product.

Before You Begin

- Nodes and Networks
- Routes, Paths, and Protocols
- Network Addresses and Host or Node Names
- Bus Networks
- X.25 Packet Switching Networks
- LAN-to-LAN Routers
- Network Architecture and the OSI Model

Networking Software

- Links and Services
- LAN-Based Overview
- X.25-Based Overview

The LAN Product

- Interprocess Communication
- Diagnostics
- Documentation

The X.25 Product

- Interprocess Communication with Berkeley Sockets
- Diagnostics
- Documentation

The NS Product

- Network File Transfer
- Remote File Access
- Interprocess Communication
- Link Level Access
- Diagnostics
- Documentation

The ARPA Product

- ARPA Services
- Berkeley Services
- Interprocess Communication
- Diagnostics
- Documentation

The NFS Product

NFS Services
Diagnostics
Documentation

Documentation Guide

Manual Descriptions
Documentation Map

HP-UX SNA3270 and Gateway/SNA3270 Reference Manual

DATA COMMUNICATIONS SERIES

PART-NUMBER: 36590-90000

AUDIENCE: Programmers and System Administrators

This manual describes the HP-UX SNA3270 and HP-UX Gateway/SNA3270 products for the HP 9000 Series 300 and Series 800 systems. The manual provides the information to install, configure, and use these SNA3270 products and to perform some basic troubleshooting of the products.

Chapter 1: Introduction to SNA3270

Chapter 2: Using SNA3270

Chapter 3: The Keyboard

Chapter 4: File Transfer

Chapter 5: Installing SNA3270

Chapter 6: Identifying the SNA Host Connection

Chapter 7: Troubleshooting SNA3270

Appendix A: Messages and Codes

Appendix B: SNA3270 Product Files

Appendix C: Printer Emulation Considerations

HP-UX SNA3770 and Gateway/SNA3770 Reference Manual

DATA COMMUNICATIONS SERIES

PART-NUMBER: 98184-90000

AUDIENCE: Programmers and System Administrators

This manual describes the HP-UX SNA3770 and HP-UX Gateway/SNA3770 products for the HP 9000 Series 300 and Series 800 systems. The manual provides the information to install, configure, and use these SNA3770 products and to perform some basic troubleshooting of the products.

Chapter 1: Introduction to SNA3770

Chapter 2: Using SNA3770

Chapter 3: Console Facility

Chapter 4: Installing SNA3770

Chapter 5: Configuring SNA3770

Chapter 6: Identifying the SNA Host Connection

Chapter 7: Starting and Stopping SNA3770

Chapter 8: Managing SNA3770

Chapter 9: Troubleshooting SNA3770

Appendix A: Messages and Codes

Appendix B: SNA3770 Product Files

Appendix C: Printer Emulation Considerations

Appendix D: SNA3770 Quick Reference

HP-UX SNALink and Gateway/SNALink Manager's Reference Manual

DATA COMMUNICATIONS SERIES

PART-NUMBER: 36592-90000

AUDIENCE: Programmers and System Administrators

This manual describes the HP-UX SNALink and HP-UX Gateway/SNALink products for the HP 9000 Series 300 and Series 800 systems. The manual provides the information to install, configure, and use these SNALink products and to perform some basic troubleshooting of the products.

Chapter 1: Introduction to SNALink

Chapter 2: Installing SNALink

Chapter 3: Configuring SNALink

Chapter 4: Identifying the Host Connection

Chapter 5: Starting and Stopping SNALink

Chapter 6: Managing SNALink

Chapter 7: Troubleshooting SNALink

Appendix A: Messages and Codes

Appendix B: SNALink Product Files

Appendix C: Modem Requirements

Appendix D: SNA Host Sense Codes

Appendix E: SDLC Card Installation Requirements

HP-UX SNA3179G and Gateway/SNA3179G Reference Manual

DATA COMMUNICATIONS SERIES

PART-NUMBER: B1001-90000

AUDIENCE: Programmers and System Administrators

This manual describes the HP-UX SNA3179G and HP-UX Gateway/SNA3179G products for the HP 9000 Series 300 and Series 800 systems. The manual provides the information to install, configure, and use these SNA3179G products and to perform some basic troubleshooting of the products.

Chapter 1: Introducing HP-UX SNA3179G

Chapter 2: Before Using SNA3179G

Chapter 3: Using SNA3179G

Chapter 4: Installing SNA3179G

Chapter 5: Configuring SNA3179G

Chapter 6: Troubleshooting SNA3179G

Appendix A: SNA3179G Product Files

Appendix B: Unsupported IBM Data Stream Constructs

Appendix C: Typewriter Keyboard Reference Tables

Appendix D: APL Keyboard Reference

HP-UX SNA/9000 Manual Reference Pages

DATA COMMUNICATIONS SERIES

PART-NUMBER: 36592-90003

AUDIENCE: End Users and SNA System Administrators

This manual contains the man pages related to the following products.

HP-UX SNALink and Gateway/SNALink

HP-UX SNA3270 and Gateway/SNA3270

HP-UX SNA3770 and Gateway/SNA3770

HP-UX SNA3179G and Gateway/SNA3179G

Installing ARPA Services/9000 Series 800

DATA COMMUNICATIONS SERIES

PART-NUMBER: 98194-90007

AUDIENCE: ARPA Network Managers

This manual is for network managers of the HP 9000 Series 800 systems using the ARPA product. The manual explains how to install, configure and maintain the ARPA product software.

Chapter 1: Product Overview

Chapter 2: Installing ARPA Services/9000 Series 800

Chapter 3: Maintaining ARPA Services/9000 Series 800

Chapter 4: Internetwork Mail Routing

Appendix A: Error Messages

Appendix B: Sendmail Files

Installing LAN/9000 Series 800

DATA COMMUNICATIONS SERIES

PART-NUMBER: 98194-90009

AUDIENCE: LAN Network Managers

This manual is for network managers of the HP 9000 Series 800 systems using the LAN product. It introduces and explains networking concepts and terminology. The manual also explains how to install, configure and maintain the LAN product software.

Chapter 1: Product Overview

Chapter 2: Networking Concepts

Chapter 3: Installing LAN/9000 Series 800

Chapter 4: Maintaining LAN/9000 Series 800

Appendix A: Network Memory Configuration

Appendix B: Error Messages

Appendix C: Subnetwork Example

Appendix D: Glossary

Installing Network Services (NS)/9000 Series 800

DATA COMMUNICATIONS SERIES

PART-NUMBER: 98194-90008

AUDIENCE: NS Network Managers

This manual is for network managers of the HP 9000 Series 800 systems using the NS product. This manual explains how to install, configure and maintain the NS product software.

Chapter 1: Product Overview

Chapter 2: Installing NS/9000 Series 800

Chapter 3: Maintaining NS/9000 Series 800

Appendix A: Error Messages

LAN/9000 Series 800 Berkeley IPC Programmer's Guide

DATA COMMUNICATIONS SERIES

PART-NUMBER: 98194-90003

AUDIENCE: LAN Programmers

This manual describes BSD IPC in detail for programmers who will be writing distributed application programs.

Chapter 1: Overview of BSD IPC

Chapter 2: BSD IPC Using Stream Sockets
- Preparing Address Variables
- Writing the Server Process
- Writing the Client Process
- Sending and Receiving Data
- Closing a Socket
- Example Using Stream Sockets

Chapter 3: Advanced Topics for Stream Sockets
- Socket Options
- I/O Multiplexing with Select
- Nonblocking I/O
- Using Shutdown
- Using Read and Write to Make Stream Sockets Transparent
- Sending and Receiving Out of Band Data

Chapter 4: BSD IPC Using Datagram Sockets
- Preparing Address Variables
- Writing the Server and Client Processes
- Binding Socket Addresses to Datagram Sockets
- Sending and Receiving Messages
- Closing a Socket
- Example Using Datagram Sockets

Chapter 5: Advanced Topics for Datagram Sockets
- Specifying a Default Socket Address
- I/O Multiplexing with Select
- Nonblocking I/O
- Using Broadcast Addresses

Chapter 6: Programming Hints
- Troubleshooting
- Port Addresses
- Using Diagnostic Utilities as Troubleshooting Tools
- Adding a Server Process to the Internet Daemon
- Summary Tables for System and Library Calls

LAN/9000 Series 800 LLA Programmer's Guide

DATA COMMUNICATIONS SERIES

PART-NUMBER: 98194-90006

AUDIENCE: LAN Programmers

This manual is the primary reference source for programmers who will be writing or maintaining programs that access the LAN linic drivers provided by the LAN/9000 Series 800 product.

Chapter 1: LLA Concepts
- LLA and the OSI Model
- OSI Layer 2
- Device Files
- HP-UX Calls
- NETCTRL and NETSTAT Commands
- ioctl(2) Syntax
- Address Conversion Routines
- LLA Error Codes

Chapter 2: Using LLA
- Opening a Network Device File
- Logging a User-Level Address
- Logging a Destination Address
- Reading Data
- Writing Data
- Synchronizing I/O Operations
- Closing a Network Device File

Chapter 3: Network I/O Control Commands
- Collecting and Resetting Interface Statistics
- Managing Network Addresses
- Resetting an Interface
- Managing Broadcast Packets
- Managing Multicast Packets

Chapter 4: LLA Examples
- File Transfer Program

Appendix A: Implementation Differences
- Network I/O Control Commands

Appendix B: LLA Layer 2 Protocols
- Ethernet Frame Structure
- IEEE 802.3 Frame Structure
- Ethernet and IEEE 802.3 Packet Comparison

LAN Reference Pages

DATA COMMUNICATIONS SERIES

PART-NUMBER: 98194-90004

AUDIENCE: LAN Programmer's and Network Managers

This kit includes the *LAN Reference Pages* as well as tabs for your other networking reference pages, i.e., the Network Services Reference pages, the ARPA/Berkeley Services Reference pages, and the NFS Services Reference pages. The *LAN Reference Pages* contain manual reference pages for nodal management, logging, tracing, troubleshooting, NetIPC (network interprocess communication), and BSD IPC (Berkeley interprocess communication).

Network Services Reference Pages

DATA COMMUNICATIONS SERIES

PART-NUMBER: 50951-90031

AUDIENCE: Network Managers and All Programmers

This manual is a printed copy of the online NS/9000 Series 800 manual reference pages.

NFS Services Reference Pages

DATA COMMUNICATIONS SERIES

PART-NUMBER: 50970-90030

AUDIENCE: Experienced HP-UX users who use, program with, and manage the NFS Services Software

This manual contains the reference pages for NFS Services.

NS Cross-System Network Manager Reference Manual

DATA COMMUNICATIONS SERIES

PART-NUMBER: 5958-8564

AUDIENCE: Network Managers

This manual is a generic reference manual for NS network managers. It is provided as a supplement to the network manager reference manuals. The dual purpose of this manual is to document information specific to network operations across different types of NS systems and to introduce main features in each NS system.

Section 1: Introduction
- Overview
- How the Manual is Organized

Section 2: Network Architecture and Components
- Network Architecture
- NS/1000 Network Architecture and Components
- NS3000/V Network Architecture and Components
- NS3000/XL Network Architecture and Components
- NS/9000 Series 300, 500 Network Architecture and Components
- NS/9000 Series 800 Network Architecture and Components
- DEC VAX Computer NS Architecture

Section 3: Network Configuration
- Common NS Configuration Components
- NS/1000 Configuration
- NS3000/V Configuration
- NS3000/XL Configuration
- NS/9000 Configuration
- DEC VAX Computer NS Configuration

Section 4: Network Information Utilities
- NS/1000 Information Utilities
- NS3000/V Information Utilities
- NS3000/XL Information Utilities
- NS/9000 Information Utilities
- DEC VAX Computer NS Information Utilities

Section 5: Quick Verification
- Setting Up Your Systems
- HP 1000 Initiator
- HP 3000 Initiator
- HP 9000 Initiator
- DEC VAX Computer Initiator
- Cleaning Up Your Systems
- Troubleshooting Suggestions

Section 6: Diagnostics and Troubleshooting

NS/1000 Diagnostics and Troubleshooting
NS3000/V Diagnostics and Troubleshooting
NS3000/XL Diagnostics and Troubleshooting
NS/9000 Series 300 and 500 Diagnostics and Troubleshooting
NS/9000 Series 800 Diagnostics and Troubleshooting
DEC VAX Computer NS Diagnostics and Troubleshooting

Appendix A: Bibliography

Appendix B: System Commands

Appendix C: NS Commands

Appendix D: Network Installation

NS/1000 Network Installation
NS3000/V Installation
NS3000/XL Installation
NS/9000 Series 300 Installation
NS/9000 Series 500 Installation
NS/9000 Series 800 Installation
DEC VAX Computer NS Installation

NS Cross-System NFT Reference Manual

DATA COMMUNICATIONS SERIES

PART-NUMBER: 5958-8563

AUDIENCE: NS Programmers and Users

This manual explains NFT operations that involve more than one type of computer.

Section 1: Introduction
- Overview
- Three-Node Model
- File Copying Formats
- Using this Manual

Section 2: Initiator Command Syntax
- NS/1000 DSCOPY Syntax
- NS3000 DSCOPY Syntax
- NS/9000 DSCOPY Syntax
- DSCOPY for the VAX Computer
- PC DSCOPY Command Syntax
- Interchange Format Options
- Common Options
- Special Characters

Section 3: HP 1000 Source File
- RTE-A File System
- Supported Target Nodes

Section 4: HP 3000 Source File
- MPE File System
- Supported Target Nodes

Section 5: HP 9000 Source File
- HP-UX File System
- Supported Target Nodes

Section 6: VAX/VMS Source File
- RMS File System
- Supported Target Nodes

Section 7: PC Source File
- DOS Stream Files
- Supported Target Nodes

Appendix A: DSCOPY Examples

Programming and Protocols for NFS Services/800

DATA COMMUNICATIONS SERIES

PART-NUMBER: 50970-90010

AUDIENCE: Programmers

This manual contains overviews of Remote Procedure Call (RPC), External Data Representation (XDR) and Yellow Pages. An RPC programming guide is also included, along with protocol specifications for RPC, XDR and YP.

Chapter 1: Documentation Overview

Chapter 2: NFS Services Overview
- Remote Procedure Call (RPC)
- External Data Representation (XDR)
- Yellow Pages (YP)

Chapter 3: RPC Programming Guide
- Layers of RPC
- Highest RPC Layer
- Intermediate RPC Layer
- Lowest RPC Layer
- Additional RPC Features
- Additional RPC Examples
- Synopsis of RPC Routines

Chapter 4: XDR Protocol Specification
- XDR Library Primitives
- XDR Stream Access
- XDR Stream Implementation
- XDR Standard
- Advanced XDR Topics
- Synopsis of XDR Routines

Chapter 5: RPC Protocol Specification
- RPC Model
- RPC Protocol Requirements
- RPC Message Protocol
- Portmapper Program Protocol

Chapter 6: YP Protocol Specification
- YP Database Servers
- YP Binders

Troubleshooting LAN, NS, ARPA Services/9000 Series 800

DATA COMMUNICATIONS SERIES

PART-NUMBER: 98194-90010

AUDIENCE: LAN, NS and ARPA Network Managers

This manual is for network managers of the HP 9000 Series 800 systems using the LAN, NS and/or ARPA products. This manual describes troubleshooting procedures, diagnostic utilities, event logging facilities, and tracing facilities for the network.

Chapter 1: Overview

Chapter 2: Diagnostic Utilities

Chapter 3: RLB Diagnostic

Chapter 4: Network Event Logging

Chapter 5: Network Tracing

Chapter 6: Troubleshooting Guidelines

Appendix A: Link Level Trace Examples

Appendix B: Error Messages

Using and Administering NFS Services/9000 Series 800

DATA COMMUNICATIONS SERIES

PART-NUMBER: 50970-90000

AUDIENCE: NFS Users and Network Managers

This manual describes the NFS services and explains common NFS commands. It also tells how to install, configure, maintain and troubleshoot the NFS Services product software. Yellow Pages (YP) configuration, maintenance and troubleshooting is included. This manual contains reference information on NFS Services vs. local HP-UX and migrating from RFA to NFS.

Chapter 1: Documentation Overview

Chapter 2: NFS Services Overview
- NFS Services
- Virtual Home Environment (VHE)

Chapter 3: Common Commands
- Key Terms
- NFS Commands
- Yellow Pages Overview
- YP Commands

Chapter 4: Installation
- Key Terms
- Prepare the System
- Install Software
- Add a Computer to the Network
- Relink Programs

Chapter 5: NFS Configuration and Maintenance
- Key Terms
- Guidelines
- NFS Configuration
- Maintenance

Chapter 6: YP Configuration and Maintenance
- Key Terms
- YP Databases
- YP Commands
- YP Configuration
- Verify YP
- Disable YP
- YP Maintenance

Chapter 7: YHE Configuration and Maintenance
- Configuration Overview
- Configuration
- Configuration Refinements
- VHE Maintenance
- Advanced Usage

Chapter 8: Troubleshooting

- Key Terms
- Troubleshooting References
- Guidelines
- Flowchart Format
- Troubleshoot NFS
- Troubleshoot Yellow Pages
- Troubleshoot VHE

Appendix A: HP NFS Services vs. Local HP-UX

Migrating from RFA to NFS

Using ARPA Services/9000 Series 800

DATA COMMUNICATIONS SERIES

PART-NUMBER: 50980-90001

AUDIENCE: Users of the ARPA and Berkeley Services

This manual contains introductory information on the ARPA and Berkeley services, a user's view of internetwork mailing, and chapters explaining how to use the ARPA and Berkeley services.

Chapter 1: Documentation Overview
- Manual Overview
- Reference Manual Guide

Chapter 2: Services Overview
- Introduction
- Getting Started
- The ARPA/Berkeley Services
- Services Listed by Function
- Obtaining General Information

Chapter 3: Sending Mail
- Introduction
- Using Sendmail
- Sendmail Operations Overview

Chapter 4: Listing Hosts with Ruptime
- Using Ruptime
- Displaying Ruptime Status Lines

Chapter 5: Listing Users with Rwho
- Using Rwho

Chapter 6: Logging into a Host with Telnet
- Using Telnet
- Giving Telnet Commands When Telnet is in Its Input State
- Checking the Behavior of Carriage Returns from a Remote Host
- Disconnecting from a Remote Host and/or Exiting Telnet
- Obtaining Help
- Temporarily Returning to HP-UX on Your Local Host
- Obtaining Telnet Status
- Connecting to a Remote Host When You Invoke Telnet

Chapter 7: Logging into a Host with Rlogin
- Determining If You Need to Change the Rlogin Escape Character
- Determining What Size Characters to Send with Rlogin
- Using Rlogin
- If you Get Unexpected Results after Logging into a Remote Host
- Logging Out of the Remote Host and Exiting Rlogin
- Temporarily Returning to HP-UX on Your Local Host
- Passing the Rlogin Escape Character to a Remote Program
- Logging into a Remote Host as Someone Else

Chapter 7: Logging into a Host with Rlogin (cont'd.)

Giving Other Remote Users Rlogin Access to Your Local Account
Using Rlogin's "Shorthand" Syntax

Chapter 8: Transferring Files with Ftp

Using Ftp
Disconnecting from a Remote Host and Exiting Ftp
Obtaining Help
Temporarily Returning to HP-UX on Your Local Host
How Ftp Treats "Wild Card" Characters, or Metacharacters
Performing Directory Operations with Ftp
Transferring Files with Ftp
Performing Other File Operations with Ftp
Obtaining Ftp Status
Setting Up Automatic Remote Login for Ftp
The Public Ftp Account
Specifying Ftp Settings and Connecting to a Remote Host When You Invoke Ftp

Chapter 9: Transferring Files with Rcp

File Copy Concepts
Using Rcp
Performing Copy Operations with Rcp
Copying Remote Files and Directories as Someone Else on the Remote Host
Giving Other Remote Users Rcp Access to Your Local Account

Chapter 10: Executing Commands with Remsh

Using Remsh
Executing Commands on a Remote Host with Remsh
Executing More Than One Remote Command with Remsh
Using Shell Metacharacters with Remsh
Using Remsh with Remote Commands That Do Not Take Input
Using Remsh to Execute a Command as Someone Else on a Remote Host
Giving Other Remote Users Remsh Access to Your Local Account
Using Remsh's "Shorthand" Syntax

Using Network Services (NS)/9000 Series 800

DATA COMMUNICATIONS SERIES

PART-NUMBER: 50980-90040

AUDIENCE: NS Programmers and Users

This manual defines the rules and procedures for developing and executing programs on an NS/9000 Series 800 system.

Chapter 1: Introduction
- Overview
- Network Architecture
- User Services
- Nodal Management Services and Features
- Node Names

Chapter 2: Network File Transfer
- Overview
- Three-Node Model
- File Copying Formats
- Dscopy Command
- Dscopy Examples
- Security
- Using Escape Characters
- HP-UX Signals
- Errors
- Dscopy Options

Chapter 3: Remote File Access
- Overview
- File System Terminology
- Netunam(1)
- Netunam(3N)
- Accessing Multiple Computers
- Using RFA With a Local Working Directory
- Terminating your Login to a Remote Computer
- Establishing a Remote Working Directory
- Using HP-UX Commands With RFA
- Using HP-UX System Calls With RFA

Appendix A: ASCII Character Set

Appendix B: Error Messages
- Overview
- DSCOPY Error Messages
- Errnet Values

Appendix C: NS/9000 Series 800 Migration

NS/9000 Series 800 for DS/1000-IV Users
NS/1000 to NS/9000 Series 800 Migration
NS/9000 to NS/9000 Series 800 Migration

Interfacing and Networking Hardware Series

Manual Title	Audience
CIO LAN Interface Controller (LANIC) Installation and Reference Manual (5959-2259)	HP Field Engineers and Network Managers
HP 27110B CIO/HP-IB Interface Card Installation and Reference Manual (27110-90005)	HP Field Engineers and System Administrators
HP 27111A CIO/HP-FL Interface Card Installation and Service Manual (27111-90001)	HP Field Engineers and System Administrators
HP 27114A Asynchronous FIFO Interface Hardware Reference Manual (27114-90001)	HP Field Engineers and System Administrators
HP 98196A Asynchronous 6-Channel Multiplexer Hardware Reference Manual (98196-90002)	HP Field Engineers and System Administrators
LAN Cable and Accessories Installation Manual (5955-7680)	HP Field Engineers and Network Managers

CIO LAN Interface Controller (LANIC) Installation and Reference Manual

INTERFACING AND NETWORKING HARDWARE SERIES

PART-NUMBER: 5959-2259

AUDIENCE: HP Field Engineers and Network Managers

This manual provides installation, servicing, and troubleshooting information for the IEEE 802.3 LAN Interface Controller (LANIC) card on HP 9000 Series 800 systems that use Channel Input/Output (CIO).

Chapter 1: General Information
- Product Overview
- Link-Level (Station) Address
- Identification
- Specifications
- Test Equipment and Special Tools
- Support Strategy
- Equipment Supplied

Chapter 2: Site Preparation

Chapter 3: Installation/Configuration
- Inspection
- Power Requirements
- Determining the Link-Level Address
- SQE Jumper Setting
- Installation
- Start-Up and Verification
- Installing the Software

Chapter 4: Functional Description

Chapter 5: Removal and Replacement
- LANIC Card and Connector Cable
- Replacing Components on the LANIC Card

Chapter 6: Troubleshooting
- Safety Considerations
- Troubleshooting Strategy
- Maintenance
- Local Area Network Device Adapter Diagnostic
- Running LANDAD

Chapter 7: Replaceable Parts
Ordering Information
Field Replaceable Units

Chapter 8: Reference
Technical Manual Reference
Glossary of Terms

Chapter 9: Schematics and Diagrams

Appendix A: HP 28641A ThinMAU

Appendix B: HP 30241A ThickMAU

Appendix C: Ethernet

Appendix D: Twisted-pair MAU

HP 27110B CIO/HP-IB Interface Card Installation and Reference Manual

INTERFACING AND NETWORKING HARDWARE SERIES

PART-NUMBER: 27110-90005

AUDIENCE: HP Field Engineers and System Administrators

This manual describes the installation, servicing, and troubleshooting of the 27110B CIO/HP-IB Card.

Chapter 1: General Information
- Standard Product
- Specifications
- HP-IB Supported Functions

Chapter 2: Site Preparation

Chapter 3: Installation
- Unpacking and Examining the HP-IB Card
- Storage
- General Guidelines for HP-IB Configuration
- Installation and Checkout
- Reshipment

Chapter 4: Preventive Maintenance
- Preventive Maintenance and Cleaning Instructions

Chapter 5: Functional Description
- Overview
- Backplane Interface
- HP-IB Interface
- DMA Requirements

Chapter 6: Removal and Replacement
- Required Tools
- Repair Environment
- Removal and Replacement Procedures

Chapter 7: Adjustments

Chapter 8: Troubleshooting
- Card Self-Test
- LED Interpretation

Chapter 9: Replaceable Parts
- Replaceable Parts
- Ordering Parts

Chapter 10: Reference
HP Computer Users Documentation Index
HP-IB Tutorial Description

Chapter 11: Product History

Chapter 12: Diagrams

HP 27111A CIO/HP-FL Interface Card Installation and Service Manual

INTERFACING AND NETWORKING HARDWARE SERIES

PART-NUMBER: 27111-90001

AUDIENCE: HP Field Engineers and System Administrators

The HP 27111A is Channel I/O device adapter for connecting an HP Precision Architecture computer to supported peripherals over a fiber optic data link. This manual describes the HP 27111A, including installation, service and troubleshooting information.

Chapter 1: General Information

Chapter 2: Site Preparation

Chapter 3: Installation and Configuration

Chapter 4: Preventative Maintenance

Chapter 5: Functional Description

Chapter 6: Removal and Replacement

Chapter 7: Adjustments

Chapter 8: Troubleshooting and Diagnostics

Chapter 9: Replaceable Parts

Chapter 10: Reference

Chapter 11: Product History

HP 27114A Asynchronous FIFO Interface Reference Manual

INTERFACING AND NETWORKING HARDWARE SERIES

PART-NUMBER: 27114-90001

AUDIENCE: HP Field Engineers and System Administrators

This manual provides installation and configuration procedures, principles of operation, parts lists, and schematic diagrams for the HP 27114A Asynchronous FIFO Interface (AFI).

Chapter 1: General Information
- Functional Description
- Equipment Supplied
- Identification
- Test Equipment and Special Tools
- Support Strategy
- Specifications

Chapter 2: Site Preparation

Chapter 3: Installation and Configuration
- Inspection
- Repacking the AFI
- Storage
- Power Requirements
- Cabling Information
- Configuration Switches
- Installation
- Start-Up and Verification
- Installing the Software

Chapter 4: Preventive Maintenance

Chapter 5: Functional Description
- I/O Channel Interface Control Circuitry
- FIFO Data Path
- FIFO Control State Machine
- Frontplane Interface
- Frontplane Signal Definitions
- Logic Sense
- Data Transfer
- Register Definitions
- ARQ Interrupts

Chapter 6: Removal and Replacement

Chapter 7: Adjustments

Chapter 8: Troubleshooting and Diagnostics
- Safety Considerations
- Troubleshooting Strategy
- Maintenance Aids
- Asynchronous FIFO Interface Device Adapter Diagnostic
- Detailed Test Descriptions

Chapter 9: Replaceable Parts
- Replaceable Parts
- Ordering Information
- Exchange PCAs

Chapter 10: Reference
- Technical Manual Reference

Chapter 11: Product History

Chapter 12: Diagrams

HP 98196A Asynchronous 6-Channel Multiplexer Hardware Reference Manual

INTERFACING AND NETWORKING HARDWARE SERIES

PART-NUMBER: 98196-90002

AUDIENCE: HP Field Engineers and System Administrators

The HP 98196A Asynchronous 6-Channel Multiplexer (with modem control) provides supported HP Channel I/O computers with the ability to connect up to six local or remote peripherals, such as terminals, that conform to RS-232-C or CCITT V.24 and V.28 specifications. This manual describes the HP 98196A, including installation, service and troubleshooting information.

Chapter 1: General Information
- Overview
- Description
- Features and Specifications Table
- Documentation Required for Installation
- Product Identification Information
- Support Strategy
- System Console
- Buffer Capacity

Chapter 2: Site Preparation Requirements

Chapter 3: Installation and Configuration
- Overview
- Unpacking and Examining the PCA
- Checking Power Requirements
- Inserting the Card
- Removing the Card
- Testing the Unit
- Attaching the Cables
- Configuration

Chapter 4: Preventive Maintenance

Chapter 5: Functional Description
- Overview
- Main Sub-assemblies
- Circuit Organization

Chapter 6: Removal and Replacement
- Overview
- Removal of the EPROM

Chapter 7: Adjustments

Chapter 8: Troubleshooting and Diagnostics
- Overview
- Description of Self-test
- Troubleshooting

Chapter 9: Component Parts

Overview
Component Parts
Ordering Information

Chapter 10: Reference

Overview
Other References
Glossary
Safety Ground
Supported Modem Lines
Connecting Cables (RS-232-C)

Chapter 11: Product History

Chapter 12: Diagrams

Backplane Interface Circuit
Microprocessor Circuit
Memory Interface Circuit
Serial Communications Controller
Frontplane Interface Circuit
62-Pin Connector
Port Pin Assignments
Components Location Diagram

LAN Cable and Accessories Installation Manual

INTERFACING AND NETWORKING HARDWARE SERIES

PART-NUMBER: 5955-7680

AUDIENCE: HP Field Engineers and Network Managers

This manual describes how to install the coaxial cable plant for Hewlett-Packard's IEEE-802.3-compatible local area networks. It describes thick and thin coaxial Local Area Network (LAN) cables, connectors, terminators, grounding straps, surge protectors, repeaters, Media Attachment Units (MAUs), thin MAUs, Attachment Unit Interface (AUI) cables, and stub cables. Also included is information on network design and planning.

Chapter 1: General Information
- Scope of This Manual
- LAN Overview
- Network Specifications
- More Information

Chapter 2: Planning Considerations
- Selecting the Cable
- Routing the Cable
- Grounding and Power
- Cable Runs Between Unconnected Buildings

Chapter 3: Backbone LAN Cable Installation
- Backbone LAN Cabling Summary
- Installation Procedures
- Testing the Installed Cable

Chapter 4: ThinLAN Cable Installation
- ThinLAN Cabling Summary
- Installation Procedures
- Testing the Installed Cable

Chapter 5: Device Connections
- General Information
- Connecting Devices
- Fabricating AUI Cables

Chapter 6: Cable Verification

Appendix A: Using a TDR
- General Information
- TDR Test Procedure
- Example TDR Test

Appendix B: Cable Diagrams

LAN Cables
Repeater Cable
AUI Cable (802.3)
Branch Cable (Ethernet)
Stub Cables and Internal Cables
SRM Cables

Appendix C: Configuration Examples

Appendix D: 3Com EtherSeries Networks

Appendix E: SRM Networks

Resource Management Multiplexer Link
Resource Management COAX Link
Hybrid SRM Networks
Coax Link and IEEE 802.3 LAN

Appendix F: Emergency Release for Crimp Tools

N Connector Crimp Tool
BNC Connector Crimp Tool
D Connector Pin Crimp Tool

Graphics Series

Manual Tile	Audience
Advanced Graphics Package Programmer's Manual (97085-90012)	Graphics Programmer
Device-Independent Graphics Library Programmer's Manual (97084-90010)	Graphics Programmer
DGL/AGP Device Drivers Manual (97084-90028)	Graphics Programmer
HP GKS Device Drivers Library (98672-90011)	Graphics Programmer
HP GKS User's Guide (98672-90000)	Beginning Graphics Programmer
Starbase Device Drivers Library Manual (98592-90016)	Graphics Programmer
Starbase Display List Programmer's Manual (98674-90002)	Graphics Programmer
Starbase Graphics Techniques (98592-90076)	Experienced Programmer with little or no graphics experience
Starbase Reference (98592-90063)	Experienced Graphics Programmer

Advanced Graphics Package Programmer's Manual

GRAPHICS SERIES

PART-NUMBER: 97085-90012

AUDIENCE: Graphics Programmer

This manual contains both generic tutorial information concerning Advanced Graphics Package (AGP) and supplemental information which is specific to the HP-UX operating system. This manual also provides AGP subroutine user's and reference information. It contains a user's section and an alphabetical collection of reference pages of the subroutines that make up the Advanced Graphics Package.

Overview

- Introduction
- Device Independence
- Division for the Graphics Task
- Two Step Image Production

Concepts

- Introduction
- Graphics Output Primitives
- Attributes
- Viewing Transformations
- Segments and Output
- Input
- Control

Output Primitives

- General
- Current Position
- 2-D and 3-D Availability
- Move
- Line
- Polyline
- Polygon
- Marker
- Output Primitive Attributes
- General Attributes
- Polygon-Specific Attributes
- Text
- Text Specific Attributes

Viewing Transformations

- General
- Two-Dimensional Viewing Transformation
- Three-Dimensional Viewing Transformation
- Advanced Capabilities

Segments and Primitives

- General
- Segment Creation, Renaming, and Deletion
- Attributes of Segments
- New-Frame-Action

Input

- General
- Button Device
- Keyboard Device
- Locator Device
- Valuator Device
- Pick Device

Control

- General
- Initialization and Termination
- Inquiry
- Timing
- Escape Functions
- Error Handling

HP-UX Systems

- HP 9000 Series AGP Structure
- Programming Languages
- Linking AGP Programs
- Functionality Issues
- Porting

Subroutine Definitions

Font Descriptions

Error Messages

Glossary

Index

Device-Independent Graphics Library Programmer Manual

GRAPHICS SERIES

PART-NUMBER: 97084-90010

AUDIENCE: Graphics Programmer

This manual provides Device-Independent Graphics Library (DGL) tutorial and reference information. Application programmers can use it to learn the features of DGL as well as for reference material as they write their application programs.

DGL Concepts

- Introduction
- Functional Areas
- Graphics Primitives
- Primitive Attributes
- Viewing Transformations
- Input
- Control

HP-UX Systems

- HP 9000 Series DGL Structure
- Programming Languages
- Linking DGL Programs
- Functionality Issues
- Porting

DGL Reference

DGL/AGP Device Drivers Manual

GRAPHICS SERIES

PART-NUMBER: 97084-90028

AUDIENCE: Graphics Programmers

This manual outlines the usage of device drivers for the Device-Independent Graphics Library and the Advanced Graphics Package.

HP 2393A Terminal Device Driver
- General Information
- Graphics Display Device Driver
- Locator Device Driver
- Pick Device Driver
- Valuator Device Driver

HP 2397A Terminal Device Driver
- General Information
- Graphics Display Device Driver
- Locator Device Driver
- Pick Device Driver
- Valuator Device Driver

HP 2563 Line Printer
- General Information
- Graphics Display Device Driver

HP 2623A Graphics Terminal
- General Information
- Graphics Display Device Driver
- Locator Device Driver
- Pick Device Driver
- Valuator Device Driver

HP 2625A/2628A Graphics Terminal
- General Information
- Graphics Display Device Driver
- Locator Device Driver
- Pick Device Driver
- Valuator Device Driver

HP 2627A Graphics Terminal
- General Information
- Graphics Display Device Driver
- Locator Device Driver
- Pick Device Driver
- Valuator Device Driver

HP 2647F Graphics Terminal
- General Information
- Graphics Display Device Driver
- Locator Device Driver

HP 2647F Graphics Terminal (cont'd.)
Pick Device Driver
Valuator Device Driver

HP 2686A LaserJet Device Driver
General Information
Graphics Display Device Driver

HP 2686A LaserJet Device Driver
General Information
Graphics Display Device Driver

HP 2932A/2933A/2934A Line Printers
General Information
Graphics Display Device Driver

HP 7470A Graphics Plotter
General Information
Graphics Display Device Driver
Locator Device Driver

HP 7475A Graphics Plotter
General Information
Graphics Display Device Driver
Locator Device Driver

HP 7550A Graphics Plotter
General Information
Alphanumeric Device Driver
Button Device Driver
Graphics Display Device Driver
Locator Device Driver

HP 7580A/B, 7585A/B and 7586B Drafting Plotters
General Information
Graphics Display Device Driver
Locator Device Driver

HP 9111A Graphics Tablet
General Information
Button Device Driver
Locator Device Driver
Pick Device Driver
Valuator Device Driver

HP 98627A Graphics Interface
General Information
Graphics Display Device Driver

Alphanumeric Device Drivers
General Information
Logical Devices Supported
Alphanumeric Specific Device Driver
Alphanumeric Generic Device Driver

Button Device Drivers

General Information
Logical Devices Supported
Button Specific Device Driver
Button Generic Device Driver

Keyboard Device Drivers

General Information
Logical Devices Supported
Keyboard Specific Device Driver
Keyboard Generic Device Driver

Starbase Handlers

General Information
Button
Graphics Display
Locator (AGP/DGL)
Pick (AGP only)
Valuator (AGP)/DGL)

HP GKS Device Drivers Library

GRAPHICS SERIES

PART-NUMBER: 98672-90011

AUDIENCE: Graphics Programmers

This manual outlines the capabilities and usage of device drivers for the Hewlett-Packard Graphics Kernel System (HP-GKS). This manual is organized around device drivers. The *ANSI GKS Specification* contains the standard specification for GKS. The *HP-GKS User's Guide* contains information specific to the Hewlett-Packard implementation. Knowledge of GKS and HP-GKS as described in these manuals is a prerequisite for using this manual.

The HP-GKS Device Driver Library
- Introduction
- Device Drivers
- Device Identifiers
- Logical Device Support
- Operation Mode
- Special Device Files
- Programmatic Access to Device-Specific Information
- HP-GKS Logical Device Support

The CADplt Device Driver
- Special Device Files
- Operation Modes
- Serial Device Configuration
- Output Characteristics

The GKS Metafile Driver
- Special Device Files
- General Characteristics
- Metafile Format
- Output Characteristics
- Metafile Reader Characteristics

The HP-GL Device Driver
- Special Device Files
- Operation Modes
- Serial Device Configuration
- Output Characteristics
- locator 1
- stroke 1
- valuator 1
- valuator 2
- pick 1
- HP 9111 Digitizer
- Operation Modes
- locator 1
- stroke 1
- valuator 1
- valuator 2

The HP-GL Device Driver (cont'd.)
- choice 1
- pick 1

The HP-HIL Device Driver
- Special Device Files
- Operation Modes
- The 46020a and 46021a Keyboard
- Use of HP-HIL Keyboards
- The 46060a, 46060b and 46095a Mice and the 80409a Track Ball
- The 46086a Button Box
- The 45911a, 46087a and 46088a Digitizers
- The 46087a and 46088a Digitizers with 4-button Puck

The Terminal Device Drivers
- Special Device Files
- Operation Modes
- Device Configuration
- Output Characteristics
- locator 1
- stroke 1
- valuator 1
- valuator 2
- choice 1
- pick 1
- Miscellaneous Information

The Keyboard Device Drivers
- Special Device Files
- Operation Modes
- Use of Keyboards
- Miscellaneous Information

The Starbase Memory Drivers
- Controlling Memory Buffer Sizes
- Controlling Memory Buffer Depth
- Color Table Considerations
- Special Device Files
- Operation Modes
- Output Characteristics

HP Windows/9000 Device Driver
- Logical Device Support
- See-Through Color
- Special Device Files
- Operation Modes
- Special Linking Consideration
- Device Coordinate Space
- Caution
- Shared Resource Considerations
- Performance Considerations
- Input Devices Accessible through Windows
- An Example

The HP 300 Display Device Drivers
- Special Device Files
- Operation Modes
- Device Configuration
- Output Characteristics

The HP 9836A Device Drivers
- Special Device Files
- Operation Modes
- Output Characteristics

The HP 98550A Device Driver
- The HP 98548A Display
- The HP 319C Graphics Display System

The HP 98550A Display
- Special Device Files
- Operation Mode
- Simultaneous Open Workstations
- Device Configuration
- Output Characteristics
- Performance Considerations

The HP 98556 Device Driver

The HP 98700/10 Display Device Driver
- Special Device Files
- Operation Modes
- Device Configuration
- Simultaneous Open Workstations
- Output Characteristics

The HP 98720/21 Device Driver
- Device Identifiers and Color Table Considerations
- Special Device Files
- Operation Modes
- Simultaneous Open Workstations
- Output Characteristics
- Performance Considerations

The HP 98730/31 Device Driver
- Device Description
- Setting Up the Device
- Using the HP 98730 and HP 98731 with Windows/9000
- Logical Device Support
- Wstype and Conid Files
- Simultaneously Open Workstations
- Output Characteristics
- Performance Considerations

The Starbase-on-X11 Device Driver
- Device Driver Description
- Linking an Application with the Starbase-on-X11 Device Driver
- Logical Device Support
- Wstype and Conid Files
- Output Characteristics

HP GKS User's Guide

GRAPHICS SERIES

PART-NUMBER: 98672-90000

AUDIENCE: Beginning Graphics Programmers

The Hewlett-Packard Graphics Kernel System (HP-GKS) is a subroutine library for 2-dimensional computer graphics programming. HP-GKS is implemented on top of the HP Starbase Graphics Library to take advantage of the Device Drivers and special features of the Starbase System. Knowledge of ANSI GKS, as described in the *ANSI GKS Specification* (ANS-X3.124-1985), is a prerequisite for using this manual. This manual explains the specifics of how Hewlett-Packard implemented those parts of GKS that required implementation decisions.

Introduction

Installing HP-GKS

Using HP-GKS

wstype - The Workstation Type File

conid - The Connection Identifier File

HP-GKS Implementation Characteristics

Escape Functions

Appendix A: Performance Hints

Appendix B: HP-GKS File Set

Appendix C: HP-GKS Errors

Appendix D: Implementation Differences

Appendix E: Using HP-GKS From C

Appendix F: Using HP-GKS from Pascal

Starbase Device Drivers Library Manual

GRAPHICS SERIES

PART-NUMBER: 98592-90016

AUDIENCE: Programmers Experienced With Graphics

This manual describes the device-dependent features of all the supported HP graphics peripherals.

Introduction
- Organization of Manual
- Structure of Starbase
- Driver Compatibility With High Level Starbase
- Graphic Escape Sequences (gescapes)

The CADplt Device Driver
- Device Description
- Setting Up the Device
- Device Initialization
- Starbase Functionality
- Gescapes

HP CGM Device Driver
- Device Description
- Linking the Driver
- Initialization
- Starbase Functionality
- Gescapes
- CGM Elements Produced by the hpcgm Driver

The HP-GL Device Driver
- Device Description
- Setting Up the Device
- Device Initialization
- Starbase Functionality
- Gescapes

The HP-HIL Device Driver
- Device Description
- Setting Up the Device
- Device Initialization
- Starbase Functionality
- Gescapes

The HP Keyboard Device Driver
- Device Description
- Setting Up the Device
- Device Initialization
- Starbase Functionality

The HP Locator Keyboard Device Driver

- Device Description
- Setting up the Device
- Initialization
- Starbase Functionality
- Gescapes

The Starbase Memory Driver

- Device Description
- Setting up the Device
- Device Initialization
- Starbase Functionality
- SMD Errors
- Gescapes

The Terminal Device Driver

- Device Description
- Setting Up the Device
- Device Initialization
- Starbase Functionality
- Gescape

The HP Windows/9000 Device Driver

- Device Description
- Setting Up the Device
- Device Initialization
- Performance of Starbase Windows
- Input From Graphics Windows
- Performance of Starbase Input in Windows
- Fast Alpha and Font Manager Functionality
- Gescapes

The HP 300H Device Driver

- Device Description
- Setting Up the Device
- Initialization
- Starbase Functionality
- Fast Alpha and Font Manager Functionality
- Gescapes
- Performance Tips
- Cautions

The HP 300L Device Driver

- Device Description
- Setting Up the Device
- Initialization
- Starbase Functionality
- Fast Alpha and Font Manager Functionality
- Gescapes
- Performance Tips
- Cautions

The HP 9836A Device Driver

- Device Description
- Setting up the Device
- Initialization
- Starbase Functionality

The HP 98550A Device Driver

- Device Description
- Frame Buffer Access
- Setting Up the Device
- Initialization
- Starbase Functionality
- Performance Notes
- Gescapes

The HP 98556 Device Driver

- Device Description
- Hardware Overview
- Setting up the Device
- Initialization
- Starbase Functionality
- Fast Alpha and Font Manager Functionality
- Performance Notes
- Cautions
- Gescapes

The HP 98700 Device Driver

- Device Description
- Setting Up the Device
- Initialization
- Starbase Functionality
- Fast Alpha and Font Manager Functionality
- Gescapes
- Performance Tips
- Cautions

The HP 98710 Device Driver

- Device Description
- Setting Up the Device
- Initialization
- Starbase Functionality
- Gescapes
- Performance Tips
- Example Program - Using 98710 with Windows
- Cautions

The HP 98720 Device Driver

- Device Description
- Setting Up the Device on Series 300
- Setting Up the Device on Series 800
- Special Device Files (mknod) on Series 300
- Special Device Files (mknod) on Series 800
- Linking the Driver
- Device Initialization
- Starbase Functionality
- Fast Alpha and Font Manager Functionality
- Raster Text Support
- Gescapes
- Performance Tips
- Cautions

The HP 98720W Window Device Driver

- Device Description
- Usage and Restrictions
- Setting Up the Device on a Series 300
- Setting Up the Device on Series 800
- Linking the Driver
- Device Initialization
- Starbase Functionality
- Fast Alpha and Font Manager Functionality
- Gescapes
- Performance Tips
- Cautions

The HP 98721 Device Driver

- Device Description
- Setting Up the Device on Series 300
- Setting Up the Device on Series 800
- Special Device Files (mknod) on Series 300
- Special Device Files (mknod) on Series 800
- Linking the Driver
- Device Initialization
- Starbase Functionality
- Gescapes
- Performance Tips
- Cautions

The HP 98730 Device Driver

- Device Description
- Setting Up the Device on Series 300
- Setting Up the Device on the Series 800
- Address Space Usage on Series 300
- Special Device Files (mknod) On Series 300
- Special Device Files (mknod) On the Series 800
- Linking the Driver
- Usage and Restrictions
- Device Initialization
- Starbase Functionality
- Fast Alpha and Font Manager Functionality
- Gescapes
- Performance Tips
- Cautions

The HP 98731 Device Driver

- Device Description
- Setting Up the Device on Series 300
- Setting Up the Device on the Series 800
- Address Space Usage on Series 300
- Special Device Files (mknod) on Series 300
- Special Device Files (mknod) on the Series 800
- Linking the Driver
- Usage and Restrictions
- Device Initialization
- Starbase Functionality
- Gescapes
- Performance Tips
- Cautions

The X 10 Windows Device Driver

- Device Description
- Setting Up a Starbase/X Environment
- Linking the Starbase/Xn Driver with an Application
- Programmatic Initialization
- Starbase Functionality
- Programming Strategy

The Starbase-on-X 11 Device Driver

- Device Description
- Setting Up a sox11 Environment
- Linking the sox11 Driver with an Application
- Programmatic Initialization
- Starbase Functionality
- Programming Strategy

Printer Command Language Formatter

- Overview
- Printer Configurations
- Software Structure
- Setting Up the Special Device File
- Configuration File
- Configuration File Template
- Printer Parameters
- Print Modes
- Using the Graphics Print Procedures
- Linking and Running Your Program
- Warning and Error Messages
- Setting Up the Spooler
- Special Considerations for Non-Spooled Serial Output

Gescapes

- Introduction

Starbase Display List Programmers Manual

GRAPHICS SERIES

PART-NUMBER: 98674-90002

AUDIENCE: Graphics Programmers

This manual is for the graphics programmer who will be using the Starbase Display List subsystem. This subsystem is referred to as the "display list" or the "Starbase Display List" throughout the manual.

Chapter 1: Introduction
- What is a Display List?

Chapter 2: Overview
- Introduction
- Preparation
- Compiling and Linking Display List Programs
- A Simple Example Program in C
- The Progressive Example Program
- Opening and Closing a Display List
- Opening and Closing Segments
- Building a Segment Network
- Displaying Segments and Elements
- Picking
- Editing Segments
- Display List Labels
- Controlling Traversal
- Segment Name and Reference Control
- Deleting Segments
- Inquiring Segment Information
- Application Data
- Starbase State

Chapter 3: Functionality
- Opening and Closing Display Lists
- Opening and Closing Display List Segments
- Adding Elements to a Segment
- Display List Labels
- Element Positioning and Type
- Element Deletion
- Copying Segments
- Segment Network Control
- Display and Refresh
- Renaming Segments and References
- Segment Deletion
- Traversal Control
- Picking
- Application Data
- Archive and Retrieval of Segments
- Debugging
- Namesets and Filters
- Notes

Appendix A: Special Considerations

DC Primitives and Operations
Function Return Values Lost During Traversal
Starbase State Segment Open Display Flag FALSE
Multiple Display List Labels - Same Identifier
Gescape calls in a Segment
Z-buffer Loop Count Problems

Appendix B: Performance Considerations

Performance Improvements

Appendix C: Program Listings

Stick Man Example Program -- C
Stick Man Example Program -- Pascal
Stick Man Example Program -- FORTRAN77
House Plan Example Program -- C
Name Set Utility Example Program -- C
Name Set Utility Example Program -- FORTRAN77
Name Set Utility Example Program -- Pascal
Notes

Display List Device Driver

Device Description
Setting Up the Device
Initialization
Exceptions to Standard Starbase Support

Display Reference

Starbase Graphics Techniques

GRAPHICS SERIES

PART-NUMBER: 98592-90076

AUDIENCE: Experienced Programmers With Little or No Graphics Experience.

This manual begins with a low-level program which draws a line. It gives a progressive example of how to draw a graph. Later chapters present more advanced topics.

Overview: An Overview of Starbase
- Welcome to Starbase

Chapter 1: An Introduction to Starbase Graphics
- Actually Doing Something
- Why Graphics?
- Preparation
- The Progressive Example
- Scaling
- Viewports
- Labels
- Tic Marks

Chapter 2: Functional Review
- Introduction
- The Routines

Chapter 3: View Control and the Graphics Pipeline
- Introduction
- View Control
- Graphics Pipeline

Chapter 4: Controlling Starbase
- Introduction
- Opening a Device
- Clearing the Viewing Surface
- Buffer Mode
- Bringing the Image Up-to-Date
- Error Handling

Chapter 5: Output Primitives
- Introduction
- Line Primitives
- Markers
- Text
- Polygon Primitives
- Raster Operations
- Performance Issues

Chapter 6: Using Starbase Text

Introduction
The Character Sets
Writing Text
The Text Transformations
Character Reference Points
Selecting Character Size and Shape
Text Alignment
Text Path
Text Orientation
Text Density
More Elegant Fonts
The Text Rectangle
Selecting Alternate Character Sets
Three-Dimensional Text
Annotation Text
Matrix Stack Transformations for Text
Integer Text
Defining Your Own Character Set

Chapter 7: Color Graphics

Color!
Overview of Color Devices
Controlling Color
Special Effects
Effective Use of Color
Reproducing Color Graphics

Chapter 8: Frame Buffer Control and Raster Operations

Introduction
Smooth Image Transitions
Drawing Modes
Enabling Selected Planes
Bank Switching
Image Blending
Pixel Pan and Zoom
Double Buffering
Block Operations

Chapter 9: Starbase Input

Introduction
Initialization for Input
Graphics Input Devices
Input Methods
Graphics Echoes
Inputs From Other HP-HIL Devices
Input From a Windows/9000 Window

Chapter 10: The Transformation Matrix Stack

Introduction
Why Starbase Supports Other Transformation Matrices
The "Real" Graphics Pipeline
2D Transformation Matrices
The Starbase Matrix Stack
Using the Matrix Stack
3D Transformation Matrices

Chapter 10: The Transformation Matrix Stack (cont'd)
Perspective
Three-Dimensional Transformation Examples
Integer Transformations

Chapter 11: Picking
Introduction
A Picking Example
Highlighting
A Highlighting Example

Chapter 12: Hidden-Surface Removal
Introduction

Chapter 13: Rendering
Introduction
Depth Cueing
Shading
Smooth Shading
Light Attributes
Advanced Depth-Cueing
Back-Facing Polygons
Surface Coefficients

Chapter 14: B-Splines
Introduction
What's a B-Spline Look Like, Anyway?
Knot Vectors
Three-Dimensional Spline Curves
Spline Surfaces
A More Realistic Example
Rational Splines
Trimming Curves
Trimming Curve Examples

Chapter 15: Storing, Retrieving, and Printing Images
Introduction
Procedures Discussed in this Chapter
Overview of Capabilities
Plane vs. Full Depth
Plane-Major and Pixel-Major Bitmaps
Bitmap Storage to a File and Retrieval
Printing Images From Bitmaps or Files

Chapter 16: The Starbase Memory Driver
Introduction
Creating a Memory Buffer
The SMD and the Font Manager Library
Current Frame Buffer Architectures

Chapter 17: Device-Independent Programming
Introduction
What Does Device Independence Mean?
Inquiries: Pointers to Elsewhere
Inquiries: The Frame Buffer
Inquiries: Determining the Active Device

Chapter 17: Device-Independent Programming (cont'd)
Inquiries: A Device's Physical Limits
Viewing
Isotropic Windows
Using Windows/9000
Spooling Graphical Output

Chapter 18: Enhancing Performance
Introduction
Switching Attribute Types
Switching Primitive Types
Using High-Level Commands
Specifying Colors
Buffering Operations
An Example Program
Avoiding "Picking Up" the Graphics Cursor
Turning Semaphore Operations Off
Rendering
Using Multiple Output Devices Simultaneously

Chapter 19: Using "Escape" Calls
Introduction
Calling "gescape"
Reading the Hardware Color Map
ITE Escape Sequences

Chapter 20: Computer Graphics Metafile
Introduction
The CGM Routines
Creating a Metafile
Example CGM Program
Creating an Interpreter
Example Interpreter Program

Glossary

Appendix A: Device Initialization
Specifying a Device
Device Initialization Information
Special Files for "mknod"

Appendix B: Example Program Listings
Introduction
Language Comparisons of the "Progressive Example"
RGB Color Cube Program
RGB Mechanical Model Program
CMY Color Cube Program
HSL Color Cylinder Program
HSL Mechanical Model Program
RGB/HSL Color Definition Program
Luminous Intensity Distribution Curves for Spotlights

Appendix C: Quick References
Roadmap to Starbase Routines
C
FORTRAN
Pascal

Appendix D: Error Messages
Introduction
The Starbase Error Files

Starbase Reference

GRAPHICS SERIES

PART-NUMBER: 98592-90063

AUDIENCE: Experienced Graphics Programmers

This manual is a companion volume to the Starbase Graphics Techniques. This manual contains an alphabetized list of Starbase Graphics routines.

Information Management Series

Manual Title	Audience
ALLBASE/HP-UX HP IMAGE Message Manual (36217-90010)	Application Programmers and Database Administrators
ALLBASE/HP-UX HP IMAGE Reference Manual (36217-90002)	Application Programmers and Database Administrators
ALLBASE/HP-UX HP SQL C Application Programming Guide (36217-90014)	C Programmers
ALLBASE/HP-UX HP SQL COBOL Application Programming Guide (36217-90058)	COBOL Application Programmers
ALLBASE/HP-UX HP SQL Database Administration Guide (36217-90005)	Database Administrators
ALLBASE/HP-UX HP SQL FORTRAN Application Programming Guide (36217-90013)	FORTRAN Application Programmers
ALLBASE/HP-UX HP SQL Master Index (36217-90042)	All HP SQL Users
ALLBASE/HP-UX HP SQL Message Manual (36217-90009)	Application Programmers and Database Administrators
ALLBASE/HP-UX HP SQL Pascal Application Programming Guide (36217-90007)	Pascal Application Programmers
ALLBASE/HP-UX Quick Reference Guide (36217-90012)	Application Programmers and Database Administrators
ALLBASE/HP-UX IQUERY Reference Manual (36217-90003)	Application Programmers and Database Administrators
ALLBASE/HP-UX ISQL Reference Manual (36217-90004)	Application Programmers and Database Administrators
ALLBASE/HP-UX SQL Reference Manual (36217-90001)	Application Programmers, Database Administrators, and Advanced Users
ALLBASE/NET User's Guide (36217-90093)	System Administrators

ALLBASE/HP-UX HP IMAGE Message Manual

INFORMATION MANAGEMENT SERIES

PART-NUMBER: 36217-90010

AUDIENCE: Application Programmers and Database Administrators

This manual explains the causes of warning and error conditions which may occur during use of HP IMAGE. It also presents actions to be taken in response to these warning and error conditions.

Chapter 1: Introduction
- Messages Documented in This Manual
- Using This Manual
- How Messages are Documented
- How Messages are Returned
- Resolving Errors

Chapter 2: HP IMAGE Messages
- HPIUtil Messages
- Library Procedure Call Messages

Chapter 3: DBCORE Messages

Chapter 4: Console Messages

ALLBASE/HP-UX HP IMAGE Reference Manual

INFORMATION MANAGEMENT SERIES

PART-NUMBER: 36217-90002

AUDIENCE: Application Programmers and Database Administrators

This manual introduces and explains HP IMAGE databases. It also presents concepts associated with database management and access.

Chapter 1: Introduction
- Using this Manual
- What is a Database?
- Features of HP IMAGE
- The Database Environment
- Database Personnel
- Using HP IMAGE
- About the Examples

Chapter 2: Database Structure and Security
- The DBEnvironment
- Database Structure
- Functional Roles of Data Items
- Data Set Types
- HP IMAGE Index Types
- Database Security
- Security for Database Utilities

Chapter 3: Database Access and Manipulation
- Overview of Database Access
- Opening the Database
- Adding Data to the Database
- Retrieving Data From the Database
- Methods of Reading Data
- Updating Data in the Database
- Transactions in HP IMAGE
- Locking Data During Transactions
- Database Structural Information

Chapter 4: Creating the DBEnvironment
- The DBEnvironment
- Recovery and the DBEnvironment
- The DBEnvironment Files
- DBEnvironment Creation Considerations
- Creating the DBEnvironment
- Changing the DBEnvironment Parameters

Chapter 5: Creating a Database
- Overview
- Designing a Database
- Writing the Schema
- Password Definition
- Data Item Definition
- Data Set Definition (Relations)
- Data Set Definition (Manual Master)
- Data Set Definition (Automatic Master)
- Data Set Definition (Detail)
- Processing the Schema
- $PAGE
- $TITLE
- Sample Schema for the Inventory Database

Chapter 6: Data Manipulation
- HP IMAGE Procedures/Parameters

Chapter 7: Maintaining the DBEnvironment
- DBEnvironment Maintenance
- Logging
- Backing Up the DBEnvironment
- Backing Up the Log File
- Restoring the DBEnvironment
- Rollforward Recovery
- Recovery Considerations

Chapter 8: Maintaining the Database
- Restructuring the Database
- Moving the Database to Another DBEnvironment
- Improving Database Performance

Chapter 9: Using HPIUtil

Chapter 10: HP IMAGE Internal Structures and Techniques
- Overview of Processes
- HP IMAGE Indexes
- Locking Data
- Space Allocation

Appendix A: Sample Programs
- Sample Pascal Program
- Sample C Program

Appendix B: Sample Databases
- Files in the hpimage Directory
- Files in the sampledb Directory
- Files in the programs Directory
- The creator File
- The schinv File
- Data in the INVTRY Database

Appendix C: HP IMAGE Maximum Limits

ALLBASE/HP-UX HP SQL C Application Programming Guide

INFORMATION MANAGEMENT SERIES

PART-NUMBER: 36217-90014

AUDIENCE: C Programmers

This manual describes how to write a C program that accesses an HP SQL DBEnvironment. It presumes the reader already has a working knowledge of C and is familiar with the information in the *SQL Reference Manual*.

Chapter 1: Introduction
- HP SQL C Programs
- The HP SQL C Preprocessor
- The Stored Section
- The Compiler and the Linker
- The Executable Program
- Maintaining HP SQL Programs
- The Rest of this Manual

Chapter 2: Using the HP SQL C Preprocessor
- The Preprocessor and Program Development
- Preprocessor Modes
- Preprocessor Input and Output
- Invoking the C Preprocessor
- Preprocessing Errors

Chapter 3: Embedding SQL Commands
- General Rules for Embedding SQL
- Declaring the sqlca
- Declaring Host Variables
- Starting a DBE Session
- Defining Transactions
- Implicit Status Checking
- Terminating a DBE Session
- Defining and Manipulating Data
- Explicit Status Checking
- Obtaining HP SQL Messages

Chapter 4: Host Variables
- Using Host Variables
- Declaring Host Variables

Chapter 5: Runtime Status Checking
- The Importance of Status Checking
- The sqlca
- Approaches to Status Checking

Chapter 6: Overview of Data Manipulation
- The Query
- Simple Data Manipulation
- Introducing the Cursor
- Sequential Table Processing
- BULK Table Processing
- Dynamic Operations

Chapter 7: Simple Data Manipulation
- Simple Data Manipulation Commands
- Transaction Management
- Program Using SELECT, UPDATE, DELETE, and INSERT

Chapter 8: Sequential Table Processing
- Sequential Table Processing Commands
- Transaction Management
- Program Using UPDATE WHERE CURRENT

Chapter 9: BULK Table Processing
- BULK Table Processing Commands
- Transaction Management
- Program Using BULK INSERT

Chapter 10: Dynamic Operations
- Dynamic Versus Nondynamic Commands
- SQL Commands for Dynamic Operations
- How to Handle Dynamic Non-Queries
- How to Handle Dynamic Queries

ALLBASE/HP-UX HP SQL COBOL Application Programming Guide

INFORMATION MANAGEMENT SERIES

PART-NUMBER: 36217-90058

AUDIENCE: COBOL Application Programmers

This manual describes how to write a COBOL program that accesses an HP SQL DBEnvironment. It presumes the reader already has a working knowledge of COBOL and is familiar with the information in the *SQL Reference Manual.*

Chapter 1: Introduction
- HP SQL COBOL Programs
- The HP SQL COBOL Preprocessor
- The Stored Section
- The Compiler and the Linker
- The Executable Program
- Maintaining HP SQL Programs
- The Rest of This Manual

Chapter 2: Using the HP SQL COBOL Preprocessor
- The Preprocessor and Program Development
- Preprocessor Modes
- Preprocessor Input and Output
- Invoking the COBOL Preprocessor
- Preprocessing Errors

Chapter 3: Embedding SQL Commands
- General Rules for Embedding SQL
- Declaring the SQLCA
- Declaring Host Variables
- Starting a DBE Session
- Defining Transactions
- Implicit Status Checking
- Terminating a DBE Session
- Defining and Manipulating Data
- Explicit Status Checking
- Obtaining HP SQL Messages

Chapter 4: Host Variables
- Using Host Variables
- Declaring Host Variables

Chapter 5: Runtime Status Checking
- The Importance of Status Checking
- The SQLCA
- Approaches to Status Checking

Chapter 6: Overview of Data Manipulation
- The Query
- Simple Data Manipulation
- Introducing the Cursor
- Sequential Table Processing
- BULK Table Processing
- Dynamic Operations

Chapter 7: Simple Data Manipulation
- Simple Data Manipulation Commands
- Transaction Management
- Program Using SELECT and UPDATE
- Program Using SELECT, DELETE, and INSERT

Chapter 8: Sequential Table Processing
- Sequential Table Processing Commands
- Transaction Management
- Program Using UPDATE WHERE CURRENT

Chapter 9: BULK Table Processing
- BULK Table Processing Commands
- Transaction Management
- Program Using BULK INSERT

Chapter 10: Dynamic Operations
- Dynamic Versus Nondynamic Commands
- SQL Commands for Dynamic Operations
- How to Handle Dynamic Non-Queries
- How to Handle Dynamic Queries

ALLBASE/HP-UX HP SQL Database Administration Guide

INFORMATION MANAGEMENT SERIES

PART-NUMBER: 36217-90005

AUDIENCE: Database Administrators

This manual describes how to design, create, and maintain an HP SQL database. The reader should be familiar with relational database concepts and have a working knowledge of HP SQL.

Section 1: Introduction
- DBA Tasks
- HP SQL
- HP SQL Databases
- HP SQL Data Access
- HP SQL Objects
- The hpdb User
- The Organization of This Guide

Section 2: Logical Design
- From Data to Tables
- Table Design
- View Design
- Index Design
- Security Design
- Defining the DBEnvironment Scope

Section 3: Physical Design
- HP SQL Files
- Storage Requirements for DBEnvironment Configuration
- Calculating Database Storage
- Allocating Storage to DBEFiles and DBEFileSets
- Shared Memory Requirements
- Implementing the Design

Section 4: Creating Databases
- Configuring a DBEnvironment
- Creating DBEFileSets and DBEFiles
- Creating Tables
- Creating Views
- Creating Indexes
- Loading Tables
- Command Files

Section 5: Managing Security
- Authority Types
- Who Can Have Authority
- Using DBA Authority
- Granting/Revoking CONNECT Authority
- Granting/Revoking RESOURCE Authority
- Granting/Revoking RUN Authority

Section 5: Managing Security (cont'd)
- Granting/Revoking Table and View Authorities
- Controlling Table Access With Views
- Authority Verification

Section 6: Starting and Terminating a DBE Session
- The DBECon File
- The DBEnvironment Directory
- Using START DBE
- Connecting to a DBE
- Using Autostart
- Terminating a DBE Session

Section 7: Logging and Recovery
- Transactions
- HP SQL Logging
- Backing Up the DBEnvironment
- HP SQL Recovery
- Altering the Log File

Section 8: Maintenance
- DBEnvironment Maintenance
- Database Maintenance
- Application Maintenance
- Performance Guidelines

Section 9: System Catalog

Appendix A: HP SQL Limits
- System Control Limits
- Space Management Limits
- Logical Data Limits

Appendix B: Authorities Required by SQL Commands

Appendix C: Syntax Summary
- Data Types
- Expressions
- Search Conditions
- SQL Commands

Appendix D: ISQL Command Summary

Appendix E: Sample Database
- The hpsql Directory Files
- Sample DBEnvironment Files
- Sample Data
- Sample Program Files

Appendix F: SQLUtil Commands

ALLBASE/HP-UX HP SQL FORTRAN Application Programming Guide

INFORMATION MANAGEMENT SERIES

PART-NUMBER: 36217-90013

AUDIENCE: FORTRAN Application Programmers

This manual describes how to write a FORTRAN program that accesses an HP DBEnvironment. It presumes the reader already has a working knowledge of FORTRAN and is familiar with the information in the *SQL Reference Manual*.

Chapter 1: Introduction
- HP SQL FORTRAN Programs
- The HP SQL FORTRAN Preprocessor
- The Stored Section
- The Compiler and the Linker
- The Executable Program
- Maintaining HP SQL Programs
- The Organization of This Manual

Chapter 2: Using the HP SQL FORTRAN Preprocessor
- The Preprocessor and Program Development
- Preprocessor Modes
- Preprocessor Input and Output
- Invoking the FORTRAN Preprocessor
- Preprocessing Errors

Chapter 3: Embedding SQL Commands
- General Rules for Embedding SQL
- Declaring the SQLCA
- Declaring Host Variables
- Starting a DBE Session
- Defining Transactions
- Implicit Status Checking
- Terminating a DBE Session
- Defining and Manipulating Data
- Explicit Status Checking
- Obtaining HP SQL Messages

Chapter 4: Host Variables
- Using Host Variables
- Declaring Host Variables

Chapter 5: Runtime Status Checking
- The Importance of Status Checking
- The SQLCA COMMON Block
- Approaches to Status Checking

Chapter 6: Overview of Data Manipulation

The Query
Simple Data Manipulation
Introducing the Cursor
Sequential Table Processing
Dynamic Operations

Chapter 7: Simple Data Manipulation

Simple Data Manipulation Commands
Transaction Management
Program Using SELECT, UPDATE, DELETE, and INSERT

Chapter 8: Sequential Table Processing

Sequential Table Processing Commands
Transaction Management
Program Using UPDATE WHERE CURRENT

Chapter 9: Dynamic Operations

Dynamic Versus Nondynamic Commands
SQL Commands for Dynamic Operations
How to Handle Dynamic Non-Queries
Program Using EXECUTE IMMEDIATE
Program Using PREPARE and EXECUTE

ALLBASE/HP-UX HP SQL Master Index

INFORMATION MANAGEMENT SERIES

PART-NUMBER: 36217-90042

AUDIENCE: All HP SQL Users

This manual combines the Tables of Contents of the key documents in the HP SQL manual set for the convenience of the user.

ALLBASE/HP-UX HP SQL Message Manual

INFORMATION MANAGEMENT SERIES

PART-NUMBER: 36217-90009

AUDIENCE: Application Programmers and Database Administrators

This manual explains the causes of warning and error conditions which may occur during use of SQL, ISQL, or the preprocessors. It also presents actions to be taken in response to these warning and error conditions.

Chapter 1: Introduction
- Types of Messages
- How Messages are Returned
- Using this Manual
- Using the HELP Command
- Using Other Manuals

Chapter 2: HP SQL Messages

ALLBASE/HP-UX HP SQL Pascal Application Programming Guide

INFORMATION MANAGEMENT SERIES

PART-NUMBER: 36217-90007

AUDIENCE: Pascal Application Programmers

This manual describes how to write a Pascal program that accesses an HP SQL DBEnvironment. It presumes the reader already has a working knowledge of Pascal and is familiar with the information in the *SQL Reference Manual.*

Chapter 1: Introduction
- HP SQL Pascal Programs
- The HP SQL Pascal Preprocessor
- The Stored Section
- The Compiler and the Linker
- The Executable Program
- Maintaining HP SQL Programs
- The Rest of This Manual

Chapter 2: Using the HP SQL Pascal Preprocessor
- The Preprocessor and Program Development
- Preprocessor Modes
- Preprocessor Input and Output
- Invoking the Pascal Preprocessor
- Preprocessing Errors

Chapter 3: Embedding SQL Commands
- General Rules for Embedding SQL
- Declaring the SQLCA
- Declaring Host Variables
- Starting a DBE Session
- Defining Transactions
- Implicit Status Checking
- Terminating a DBE Session
- Defining and Manipulating Data
- Explicit Status Checking
- Obtaining HP SQL Messages

Chapter 4: Host Variables
- Using Host Variables
- Declaring Host Variables

Chapter 5: Runtime Status Checking
- The Importance of Status Checking
- The SQLCA
- Approaches to Status Checking

Chapter 6: Overview of Data Manipulation
- The Query
- Simple Data Manipulation
- Introducing the Cursor
- Sequential Table Processing
- BULK Table Processing
- Dynamic Operations

Chapter 7: Simple Data Manipulation
- Simple Data Manipulation Commands
- Transaction Management
- Program Using SELECT and UPDATE
- Program Using SELECT, DELETE, and INSERT

Chapter 8: Sequential Table Processing
- Sequential Table Processing Commands
- Transaction Management
- Program Using UPDATE WHERE CURRENT

Chapter 9: BULK Table Processing
- BULK Table Processing Commands
- Transaction Management
- Program Using BULK INSERT

Chapter 10: Dynamic Operations
- Dynamic Versus Nondynamic Commands
- SQL Commands for Dynamic Operations
- How to Handle Dynamic Non-Queries
- How to Handle Dynamic Queries

ALLBASE/HP-UX Quick Reference Guide

INFORMATION MANAGEMENT SERIES

PART-NUMBER: 36217-90012

AUDIENCE: Application Programmers and Database Administrators

This manual contains commands, syntax, and general information for HP SQL. It presumes that the reader is already knowledgeable about HP SQL functionality and is using this manual as a reference.

Chapter 1: SQL Syntax
- Expressions
- Search Conditions
- SQL Commands

Chapter 2: ISQL Syntax
- Invocation
- ISQL Filenames
- ISQL Commands

Chapter 3: HP SQL Data Types

Chapter 4: HP SQL Preprocessors
- FORTRAN Preprocessor
- Preprocessor Input and Output
- FORTRAN Data Type Compatibility
- HP SQL Conversion Rules
- Pascal Preprocessor

Chapter 5: SQLUTIL
- Invocation
- SQLUTIL Commands

Chapter 6: HP IMAGE Database Definition Language
- Database Name Definition Part
- Password Definition Part
- Data Item Definition Part
- Data Set Definition Part
- Schema Processor Commands

Chapter 7: HP IMAGE Procedures
- Calling and HP IMAGE Procedure
- HP IMAGE Procedures

Chapter 8: HP IMAGE HPIUtil Commands
- Invocation of HPIUtil
- HPIUtil

Chapter 9: HP IMAGE/IQUERY Access Modes and Data Types
Database Access Modes
Data Types

Chapter 10: IQUERY Syntax
Invocation of IQUERY
Clauses
Operators
IQUERY Commands

ALLBASE/HP-UX IQUERY Reference Manual

INFORMATION MANAGEMENT SERIES

PART-NUMBER: 36217-90003

AUDIENCE: Application Programmers and Database Administrators

This manual describes IQUERY and how to use it. The reader should be familiar with the information presented in the *HP IMAGE Reference Manual* and have a thorough understanding of network architecture.

Chapter 1: Introduction to IQUERY
- What is IQUERY?
- HP IMAGE Database Structure
- The Sample Database
- Database Transactions and IQUERY
- Database Access
- Getting Started With IQUERY
- Organization of This Manual

Chapter 2: Selecting Data
- Introduction to the Data Selection Commands
- Selecting Data Entries
- Using the FIND Command
- Using the LIST Command
- Using the FIND JOIN Command
- Manipulating Select Files

Chapter 3: Modifying Data
- Introduction to the Data Modification Commands
- Using the ADD Command
- Using the DELETE Command
- Using the REPLACE Command
- Using the KEYUP Command
- Using the MIGRATE Command

Chapter 4: Reporting Data
- Introduction to the Data Reporting Commands
- Using the REPORT ALL Command
- Using the REPORT Command
- Using the LIST Command

Chapter 5: Executing IQUERY Commands from a File
- Using an Input File
- Using Command Files
- Executing a File from Another File
- Continuing a Command
- Using IQUERY Commands in a File
- Special Command File Capability

Chapter 6: IQUERY Commands

Appendix A: IQUERY Error and Warning Messages

Appendix B: Sample Databases
Copying the Files
Files in the sampledb Directory
Creating the Databases
The creator File
The schsale
Data in the SALES Database

ALLBASE/HP-UX ISQL Reference Manual

INFORMATION MANAGEMENT SERIES

PART-NUMBER: 36217-90004

AUDIENCE: Database Administrators and Application Programmers

This manual describes ISQL and how to use it. ISQL is a facility for executing SQL commands interactively. You can also invoke SQLUtil from ISQL. SQL is a facility for maintaining HP SQL DBEnvironments. The reader should be familiar with basic relational database concepts and have an introductory understanding of HP SQL.

Chapter 1: Introduction

- ISQL
- Uses for ISQL
- Elements of ISQL
- ISQL Command Categories
- Authorization
- ISQL Command Structure
- Reading More About ISQL

Chapter 2: Using ISQL

- Invoking ISQL
- Starting a DBE Session
- Leaving ISQL
- Managing Transactions
- Sources of Commands
- Command Termination
- Prompting Mode
- Aborting Commands
- Special Characters
- SET Options
- Parameters
- Getting Help
- The SELECT Command
- Other SQL Commands
- Data Definition Information
- Data Utility
- Using Command Files
- Using the Command Buffer
- The Command History Buffer
- Profile Files
- The Welcome File
- Synonym Files
- Installing a Module
- Issuing System Commands
- Issuing SQLUtil Commands
- Handling Errors
- Running ISQL From a Script

Chapter 3: ISQL Commands

Appendix A: ISQL Command Summary

Appendix B: SQL Syntax Summary
- Data Types
- Expressions
- Search Conditions
- SQL Commands

Appendix C: Sample Database
- The hpsql Directory Files
- Sample DBEnvironment Files
- Sample Data
- Sample Program Files

ALLBASE/HP-UX SQL Reference Manual

INFORMATION MANAGEMENT SERIES

PART-NUMBER: 36217-90001

AUDIENCE: Application Programmers, Database Administrators, and Advanced Users

This manual presents the syntax and semantics of SQL. SQL is the language used to define, access, and maintain data in an HP SQL database. The reader should be familiar with basic relational database and programming concepts.

Chapter 1: Introduction
- HP SQL
- HP SQL Databases
- HP SQL Data Access
- HP SQL Objects
- HP SQL Users
- Queries
- SQL Command Categories
- SQL Language Structure
- Reading More About SQL

Chapter 2: Using SQL
- Creating Databases
- Controlling Database Access
- Data Definition
- Starting and Terminating a DBE Session
- Data Manipulation
- Transaction Management
- Application Programming
- Dynamic Preprocessing
- Database Administration

Chapter 3: Names
- Basic Names
- DBEUserIDs
- Owner Names
- Compound Identifiers
- Host Variable Names
- DBEnvironment and DBECon File Names
- System File Names
- Special Names

Chapter 4: Data Types
- Type Specifications
- Value Comparisons
- Overflow and Truncation
- Underflow
- Type Conversion
- Null Values
- Decimal Operations

Chapter 5: Expressions
- EXPRESSION
- AGGREGATE FUNCTION
- CONSTANT

Chapter 6: Search Conditions
- SEARCH CONDITION
- BETWEEN PREDICATE
- COMPARISON PREDICATE
- LIKE PREDICATE
- NULL PREDICATE

Chapter 7: SQL Commands

Appendix A: SQL Syntax Summary
- Data Types
- Expressions
- Search Conditions
- SQL Commands

Appendix B: ISQL Command Summary

Appendix C: Sample Database
- The hpsql Directory Files
- Sample DBEnvironment
- Sample Data
- Sample Program Files

ALLBASE/NET User's Guide

INFORMATION MANAGEMENT SERIES

PART-NUMBER: 36217-90093

AUDIENCE: System Administrators

This user's guide describes how to install and use ALLBASE/NET.

Chapter 1: Introduction
- How DA Works
- Hardware and Software Requirements
- Files Used by DA on the Client Node
- Files Used by DA on the Server Node

Chapter 2: Getting Started
- Installation of DA
- Purpose of DAUtil
- Using DAUtil

Chapter 3: Accessing an Alias DBEnvironment
- Using ISQL
- Using the Preprocessor
- Running an Application Program
- Using ALLBASE/QUERY
- Authorizations
- Connecting to a Remote DBEnvironment

Chapter 4: DAUtil Commands

Appendix A: DA File Names

Appendix B: Error Messages

Migration Series

Manual Title	Audience
HP FORTRAN 77/HP-UX Migration Guide (92430-90003)	Experienced FORTRAN Programmers
HP Pascal/HP-UX Migration Guide (92431-90004)	Experienced Pascal Programmers
Migrating to ALLBASE/HP-UX User's Guide (36217-90008)	Database Administrators and Application Programmers
PORT/RX Migration Analysis Utility Manual (92561-90002)	Experienced Programmers
PORT/RX Migration User's Guide (92561-90003)	Experienced Programmers
PORT/RX Reference Manual (92561-90004)	Experienced Programmers
Programming for Portability Guide (92561-90001)	Experienced RTE Programmers

HP FORTRAN 77/HP-UX Migration Guide

MIGRATION SERIES

PART-NUMBER: 92430-90003

AUDIENCE: Experienced FORTRAN Programmers

This manual explains the differences between FORTRAN 7X (on the HP 1000) and HP FORTRAN 77 (on the HP 9000 Series 800). It also explains how to convert FORTRAN 7X programs and data to HP FORTRAN 77.

Chapter 1: Introduction

Chapter 2: Language Differences
- Additional Features
- Limitations
- Other Differences
- Changed Features

Chapter 3: Converting FORTRAN 7X To FORTRAN 77
- FORTRAN Convert Overview
- Automatic Conversion
- Manual Conversion
- Using FORTRAN Convert
- What FORTRAN Convert Does
- Conversion Scripts
- Complete Example

Chapter 4: Convert Migration Checklist

Chapter 5: Converting HP FORTRAN 77 to FORTRAN 7X
- FORTRAN Back Convert Overview
- Automatic Conversion
- Manual Conversions
- Using FORTRAN Back Convert
- What FORTRAN Back Convert Does
- Conversion Scripts
- Complete Example

Appendix A: FORTRAN Convert Error Messages

Appendix B: FORTRAN Back Convert Error Messages

HP Pascal/HP-UX Migration Guide

MIGRATION SERIES

PART-NUMBER: 92431-90004

AUDIENCE: Experienced Pascal Programmers

This manual explains the syntactic, semantic, and packing algorithm differences between Pascal/1000, Pascal/9000 and HP Pascal. It explains how to change a Pascal/1000 program to a HP Pascal/HP-UX program.

Chapter 1: Introduction

Chapter 2: Differences
- New Features
- Missing Features
- Changing Features

Chapter 3: Source Program Migration
- Overview
- Missing Features
- Changed Features

Chapter 4: Data File Migration
- File Format Conversion
- ASCII Data Files
- Binary Data Files

Chapter 5: Migration Examples
- Data File Migration

Appendix A: Migration Checklist

Appendix B: User-Callable Library Routines
- New Routines
- Implemented Routines
- Unimplemented Routines

Migrating to ALLBASE/HP-UX User's Guide

MIGRATION SERIES

PART-NUMBER: 36217-90008

AUDIENCE: Database Administrators and Application Programmers

This manual provides an overview of HP IMAGE features and procedures involved in migrating from IMAGE/1000-I or IMAGE/1000-II to HP IMAGE. The user should be familiar with the RTE-A, RTE-6, or RTE-IVB operating systems on HP 1000, and familiar with the HP-UX operating system on the HP 9000 Series 800. The user should also have a working knowledge of IMAGE/1000-I or IMAGE/1000-II, and at least one high-level programming language.

Chapter 1: HP IMAGE Overview
- HP IMAGE Features
- Overview of Migration Method
- Personnel Requirements for HP IMAGE
- Review Summary

Chapter 2: Migration Tools
- Migration Tools
- Database Migration
- Application Program Migration
- Review Summary

Chapter 3: Database Migration Procedure
- Summary of Database Migration Procedure
- Review Summary
- Review Exercises
- Solutions to Review Exercises

Chapter 4: Application Program Migration
- Procedure Summary
- Application Migration on the HP 9000
- Translator Access Summary
- Direct Access Summary
- Review Summary
- Review Exercises
- Review Exercises Solutions

Chapter 5: Query Migration
- IQUERY
- Migration Process
- Review Summary

Appendix A: Migration Guidelines

Appendix B: MAU Output

Appendix C: Error Messages

Appendix D: Glossary

PORT/RX Migration Analysis Utility Manual

MIGRATION SERIES

PART-NUMBER: 92561-90002

AUDIENCE: Experienced Programmers

This manual describes the limitations of the Migration Analysis Utility (MAU), how to use the product, how to interpret MAU output, and how to use the MAU dictionary. Error Messages are listed, with their meanings. The Migration Analysis Utility (MAU) analyzes RTE application programs for migration to Real-Time HP-UX.

Limitations

Environment

Installation

Description

Using MAU

Output From MAU

Output Examples

Dictionary

Error Messages

PORT/RX Migration User's Guide

MIGRATION SERIES

PART-NUMBER: 92561-90003

AUDIENCE: Experienced Programmers

The PORT/RX migration package includes the Migration Analysis Utility floating point data format conversion routines, file transfer and conversion utilities, and the RTE emulation software on HP-UX. This manual provides instructions for transporting program source files from RTE to HP-UX and making the needed conversions for compatibility with the emulation software.

Chapter 1: Introduction
- RTE Emulation Implementation
- Review of PORT/RX Components
- Migration Phases
- Multiple Environment Variable
- Migration Example

Chapter 2: Transfer Files From RTE to HP-UX
- Media and Utilities
- Transfer Files
- Rename Source Files

Chapter 3: Modify Source Files
- HP-UX Command Interpreters
- HP-UX for RTE Users
- Editors
- Compilation Scripts
- Emulated File System
- Operating System Consideration
- RTE Features Not Emulated
- Alignment Considerations

Chapter 4: Language and Subsystem Specifics
- FORTRAN
- Pascal
- Assembly Code
- FORMS
- IMAGE

Chapter 5: Modify Data Files
- ASCII Data Files
- Binary Data Files

Chapter 6: Run, Debug, and Consider Performance
- The RTE Command Interpreter Rtesh
- Real-Time Priorities
- Symbolic Debuggr xdb
- Performance Considerations

Chapter 7: Converting RTE Programs to Native HP-UX

Recommended Migration and Conversion Procedure
Functionality Comparison Table
Input/Output
Interprocess Communication
Resource Management
Program to System Communication
Program Control
Memory Management
File Management
Mixing RTE and HP-UX Environments

Chapter 8: System Administration

PORT/RX Internal Implementation
Installation Procedure
PORT/RX Environment Maintenance

Appendix A: Troubleshooting

Appendix B: Graphics Compatibility

PORT/RX Reference Manual

MIGRATION SERIES

PART-NUMBER: 92561-90004

AUDIENCE: Experienced Programmers

The PORT/RX Reference manual provides descriptions of commands, calls, and tables included in the RTE emulation software on HP-UX. Presented in "HP-UX man page" format, the subject matter is divided into sections.

Utilities

System Library

File Management

Files and Data Structures

Drivers

Programming for Portability Guide

MIGRATION SERIES

PART-NUMBER: 92561-90001

AUDIENCE: Experienced RTE Programmers

This guide provides an introduction to the subject of portability, describes programming language differences between RTE and HP-UX, and discusses operating system dependencies. Subsystem considerations include Graphics, IMAGE, and DS/1000-IV.

Chapter 1: Introduction
- Defining Portability
- Commitment to Compatibility

Chapter 2: Languages
- FORTRAN 77
- Pascal
- Macro/1000 and Microcode

Chapter 3: Operating System
- Minimizing Dependencies
- RTE Emulation

Chapter 4: Subsystems
- Graphics
- IMAGE
- DS/1000-IV

Native Language Support Series

Manual Title	Audience
Manual Title	**Audience**
**Native Language I/O Access User's Guide* (92559-90001) (English version)	General Users
**Native Language I/O System Administrator's Guide* (92559-90002) (English version)	System Administrators
Kanji Code Book (98861-90003)	General Users who enter Japanese characters
Japanese Input Method Guide (98861-90009)	General Users
Simplified Chinese Code Book (92550-90002)	General Users who enter Simplified Chinese characters
Simplified Chinese Input Method Guide (92550-90001)	General Users
Traditional Chinese Code Book (92552-90002)	General Users who enter Traditional Chinese characters
Traditional Chinese Input Method Guide (92552-90001)	General Users

*These books have been translated and localized in Japanese, Simplified Chinese, Traditional Chinese, and Korean. Localization consists of adding country specific examples and additional explanations. The part numbers for these translated books are as follows:

Native Language I/O Access User's Guide:	*Native Language I/O System Administrator's Guide:*
Japanese Version (92557-90004)	Japanese Version (92557-90003)
Simplified Chinese Version (92550-90004)	Simplified Chinese Version (92550-90003)
Traditional Chinese Version (92552-90004)	Traditional Chinese Version (92552-90003)
Korean Version (92555-90004) (The Korean Code and Input Methods information is included in this book)	Korean Version (92555-90003)

Native Language I/O Access User's Guide

NATIVE LANGUAGE SUPPORT SERIES

PART-NUMBER: 92559-90001

AUDIENCE: General Users

This manual explains how to use the Native Language Input/Output (NL I/O) subsystem on the HP 9000 Series 800 and Series 300 computers. A programming section for advanced users and/or programmers is included. The keyboard functions and input methods for Japanese, Simplified Chinese, Traditional Chinese and Korean are briefly described. In addition, this guide provides a reference section for the NL I/O commands.

Chapter 1: Introduction
- What is Native Language I/O?
- What is Host Conversion?
- How to Use This Manual
- Who Should Read This Manual
- Compatibility and Security Issues
- Definition of NL I/O Terms

Chapter 2: Native Language I/O
- Code Conventions and Translations
- Structure of the NL I/O Modules
- File Directory Structure

Chapter 3: Using NL I/O Commands
- Using the NLIOSTART(UTIL)
- Using the NLIO Command
- Using the NLIOENV Command
- Programming Examples

Chapter 4: Reference Section
- LP(UTIL)
- NLIO(DEV)
- NLIO(UTIL) Command
- NLIOENV(UTIL) Command
- NLIOINIT(ADMIN)
- NLIOSTART(UTIL)
- WDEDIT(UTIL)
- WDUTIL(UTIL)

Chapter 5: NL I/O X Window System
- Setting Up the NL I/O X Window Environment
- The Input Window
- X Library
- X-Ray Library
- Terminal Emulator

Chapter 6: Japanese Code Mapping
- HP-16 to HP-15 Mapping
- HP-15 to HP-16 Mapping

Chapter 7: The Kanji Input Window

Chapter 8: Kanji Key Functions
- Kanji Key
- Romanji/Katakana Key
- Hiragana/Katakana Key
- CONV/NEXT Key
- NOCONV Key
- WORD Key
- AUX Key
- PREV Key
- ERASE Key
- CANCEL (KILL) Key

Chapter 9: Japanese Input Methods
- Setting Up Parameters
- Multiple Phrase Conversion
- Word Conversion
- Single Kanji Conversion
- Code Conversion
- No Conversion
- Control Characters
- Gakushuu

Chapter 10: Japanese Input Modes
- Japanese Input Modes
- Japanese Designation Modes

Chapter 11: The User Dictionary
- System Dictionary
- User Dictionaries
- Setting and Closing a Word Dictionary
- Creating a User Dictionary
- Editing a User Dictionary (WDEDIT)
- Maintaining a User Dictionary (WDUTIL)

Chapter 12: Simplified Chinese Key Functions

Chapter 13: Simplified Chinese Input Methods
- Setting Up Parameters
- Simplified Chinese Input Method
- Using the Phonetic or Pinyin Input Mode
- Using the Tsang-Chieh Input Mode
- Using Rapid Tsang-Chieh Input Mode
- Using the Full-Size ASCII Input Mode
- Using the Code Input Mode
- Using the HP-15 Code Input Mode

Chapter 14: Traditional Chinese Key Functions

Chapter 15: Traditional Chinese Input Methods
- Setting Up Parameters
- Traditional Chinese Input Method
- Using the Phonetic or Pinyin Input Mode
- Using the Tsang-Chieh Input Mode
- Using Rapid Tsang-Chieh Input Mode
- Using the Full-Size ASCII Input Mode

Chapter 15: Traditional Chinese Input Methods (cont'd)
Using the Telegram Code Input Mode
Using the HP-15 Code Input Mode

Chapter 16: Korean Key Functions

Chapter 17: Korean Input Methods
Setting Up Parameters
Korean Input Method
Using the Hangul/Hanja Input Mode
Using the Full-Size ASCII Input Mode
Using the Code Input Mode

Appendix A: Error Messages

Native Language I/O System Administrator's Guide

NATIVE LANGUAGE SUPPORT SERIES

PART-NUMBER: 92559-90002

AUDIENCE: System Administrators

This guide tells system administrators how to install the Native Language I/O subsystem on the HP 9000 Series 300 and Series 800 computers. Section I explains how to install Asian language-dependent printers and terminals. Host computer hardware and software requirements are also covered. Japanese, Simplified Chinese, Traditional Chinese and Korean peripherals are covered in separate sections. The following additional fonts are covered in this manual: Japanese, Traditional Chinese and Korean simplex fonts and Japanese designer fonts.

Chapter 1: Introduction

Chapter 2: Host Computer System Requirements
- Introduction
- Hardware Requirements
- Software Requirements

Chapter 3: Japanese Host Computer Installation Procedures
- Introduction
- Hardware Installation Procedures
- Software Installation Procedures

Chapter 4: Japanese Terminals
- Introduction
- Terminal Installation Procedures
- Terminal Configuration Procedures

Chapter 5: Japanese Printers
- Introduction
- HP 41063A (HP-IB) and HP 35713A Printers
- HP 41063A (RS-232C) Printer
- HP C1200A (RS-232C) Printer

Chapter 6: Japanese Stick Fonts
- Japanese Stick Font Directories
- Installing Japanese Stick Fonts
- Configuring Japanese Stick Fonts

Chapter 7: Japanese Window and FA/FM Fonts
- Font Files for the X Window System
- Font Files for FA/FM Libraries

Chapter 8: The Japanese Simplex Font
- Introduction
- Series 800 Japanese Simplex Font
- Series 300 Japanese Simplex Font

Chapter 9: Japanese Designer Fonts
Introduction
Japanese Helvetica Font
Japanese Roman Font

Chapter 10: Simplified Chinese Host Computer Installation Procedures
Introduction
Hardware Installation Procedures
Software Installation Procedures

Chapter 11: Simplified Chinese Terminals
Introduction
Terminal Installation Procedures
Terminal Configuration Procedures

Chapter 12: Simplified Chinese Printers
Introduction
HP 41063A (HP-IB) Printer
HP 41063A (RS-232C) Printer
HP C1200A (RS-232C) Printer

Chapter 13: Simplified Chinese Stick Fonts
Simplified Chinese Stick Font Directories
Installing Simplified Chinese Stick Fonts
Configuring Simplified Chinese Stick Fonts

Chapter 14: Simplified Chinese Window Fonts
Font Files for the X Window System

Chapter 15: Traditional Chinese Host Computer Installation Procedures
Introduction
Hardware Installation Procedures
Software Installation Procedures

Chapter 16: Traditional Chinese Terminals
Introduction
Terminal Installation Procedures
Terminal Configuration Procedures

Chapter 17: Traditional Chinese Printers
Introduction
HP 41063A (HP-IB) Printer
HP 41063A (RS-232C) Printer
HP C1200A (RS-232C) Printer

Chapter 18: Traditional Chinese Stick Fonts
Traditional Chinese Stick Font Directories
Installing Traditional Chinese Stick Fonts
Configuring Traditional Chinese Stick Fonts

Chapter 19: Traditional Chinese Window Fonts
Font Files for the X Window System

Chapter 20: Traditional Chinese Simplex Font
Introduction
Series 800 Traditional Chinese Simplex Font
Series 300 Traditional Chinese Simplex Font

Chapter 21: Hangul (Korean) Host Computer Installation Procedures
Introduction
Hardware Installation Procedures
Software Installation Procedures

Chapter 22: Hangul (Korean) Terminals
Introduction
Terminal Installation Procedures
Terminal Configuration Procedures

Chapter 23: Hangul (Korean) Printers
Introduction
HP C1200A (RS-232C) Printer

Chapter 24: Hangul (Korean) Stick Fonts
Hangul Stick Font Directories
Installing Hangul Stick Fonts
Configuring Hangul Stick Fonts

Chapter 25: Hangul (Korean) Window Fonts
Font Files for the X Windows System

Chapter 26: Hangul (Korean) Simplex Font
Introduction
Series 800 Hangul Simplex Font
Series 300 Hangul Simplex Font

Appendix A: X10 Window System Files
Japanese X10 Window System Fonts
Simplified Chinese X10 Window System Fonts
Traditional Chinese X10 Window System Fonts
Korean X10 Window System Fonts

Kanji Code Book

NATIVE LANGUAGE SUPPORT SERIES

PART-NUMBER: 98861-90003

AUDIENCE: General User who enters Japanese characters

This manual explains how to use Kanji code for host conversion input on the HP 9000 Series 800 and Series 300 computers. This entire manual is written in Japanese.

Japanese Input Method Guide

NATIVE LANGUAGE SUPPORT SERIES

PART-NUMBER: 98861-90009

AUDIENCE: General User

This manual explains how to use the Japanese input methods for host conversion input on the HP 9000 Series 800 and Series 300 computers. This entire manual is written in Japanese.

Simplified Chinese Code Book

NATIVE LANGUAGE SUPPORT SERIES

PART-NUMBER: 92550-90002

AUDIENCE: General User who enters Simplified Chinese characters

This manual explains how to use Simplified Chinese code for host conversion input on the HP 9000 Series 800 and Series 300 computers. This entire manual is written in Chinese.

Simplified Chinese Input Method Guide

NATIVE LANGUAGE SUPPORT SERIES

PART-NUMBER: 92550-90001

AUDIENCE: General User

This manual explains how to use Simplified Chinese input methods for host conversion input on the HP 9000 Series 800 and Series 300 computers. This entire manual is written in Chinese.

Traditional Chinese Code Book

NATIVE LANGUAGE SUPPORT SERIES

PART-NUMBER: 92552-90002

AUDIENCE: General User who enters Traditional Chinese characters

This manual explains how to use Traditional Chinese code for host conversion input on the HP 9000 Series 800 and Series 300 computers. This entire manual is written in Traditional Chinese.

Traditional Chinese Input Method Guide

NATIVE LANGUAGE SUPPORT SERIES

PART-NUMBER: 92552-90001

AUDIENCE: General Users

This manual explains how to use Traditional Chinese input methods for host conversion input on the HP 9000 Series 800 and Series 300 computers. This entire manual is written in Chinese.

Programmer's Series

Manual Title	Audience
Advanced UNIX Programming (92453-90007)	Experienced C Programmers
HP-UX Concepts and Tutorials: Device I/O and User Interfacing (97089-90054)	Programmers
HP-UX Concepts and Tutorials: Programming Environment (97089-90042)	Beginning HP-UX Programmers
HP-UX Concepts and Tutorials: Shells and Miscellaneous Tools (97089-90062)	Beginning HP-UX Programmers
HP-UX Concepts and Tutorials: UUCP (97089-90053)	Programmers
HP Symbolic Debugger Quick Reference Guide (92435-90002)	Experienced Programmers
HP Symbolic Debugger User's Guide (92435-90001)	Experienced Programmers

Advanced UNIX Programming

PROGRAMMER'S SERIES

PART-NUMBER: 92453-90007

AUDIENCE: Experienced C Programmers

This book by Marc J. Rochkind (Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 1985) describes UNIX system calls and how to use them to access the file system. It also explains how to facilitate multitasking and interprocess communication.

Preface

Chapter 1: Fundamental Concepts

Chapter 2: Basic File I/O

Chapter 3: Advanced File I/O

Chapter 4: Terminal I/O

Chapter 5: Processes

Chapter 6: Basic Interprocess Communication

Chapter 7: Advanced Interprocess Communication

Chapter 8: Signals

Chapter 9: Miscellaneous System Calls

Appendix A: System V Process Attributes

Appendix B: Standard Subroutines

Bibliography

HP-UX Concepts and Tutorials: Device I/O and User Interfacing

PROGRAMMER'S SERIES

PART-NUMBER: 97089-90054

AUDIENCE: Programmers

This manual presents three topics: Device I/O Library (DIL) Routines, Native Language Support (NLS), and Curses and Terminfo. Each section has its own table of contents, indices, and appendices.

Section 1: Device I/O Library (DIL) Routines

- Interfacing Concepts
- General-Purpose Routines
- Controlling the HP-IB Interface
- Controlling the CPIO Interface
- Series 500 Dependencies
- Series 200/300 Dependencies
- Integral PC Dependencies
- Series 800 Model 840 Dependencies
- Character Codes

Section 2: Using Curses and Terminfo

- Introduction
- Display Data Handling
- Keyboard Input
- Display Highlighting
- Multiple Windows
- Multiple Terminals
- Low-Level Terminfo Usage
- A Larger Example
- Program Routines
- Curses Routines
- Description of Routines
- Terminfo Routines
- Termcap Compatibility Routines

Section 3: Series 300/800 Native Language Support

- Overview
- Introduction to NLS
- Using International Applications
- Administering Prelocalized Software
- Developing International Software
- Native Language Support Library and Commands
- Task Reference of NLS Routines
- Character Representation and Sets
- Peripheral Configuration

HP-UX Concepts and Tutorials: Programming Environment

PROGRAMMER'S SERIES

PART-NUMBER: 97089-90042

AUDIENCE: Beginning HP-UX Programmers

This tutorial describes how to write programs that interface with the HP-UX operating system in a non-trivial way. This includes programs that use files by name, that use pipes, that invoke other commands as they run, or that attempt to catch interrupts and other signals during execution.

Section 1: HP-UX Programming
- Introduction
- Basics
- The Standard I/O Library
- Low-Level I/O
- Processes
- Signals - Interrupts and All That
- Appendix - The Standard I/O Library

Section 2: Using C Library Routines
- Standard Input/Output Routines
- Math Routines
- String Manipulations
- Date and Time Manipulation

Section 3: Lint C Program Checker
- Introduction
- Error Detection
- Problem Detection
- How to Use Lint
- Directives

Section 4: Ratfor: A Preprocessor for a Rational FORTRAN
- Language Description
- Experience
- Conclusions
- Usage on HP-UX

Section 5: The M4 Macro Processor
- General
- Usage
- Defining Macros
- Arguments
- Arithmetic Functions
- File Manipulation
- System Commands
- Conditionals
- String Manipulation
- Printing

Section 6: Yacc - Yet Another Compiler-Compiler

Basic Specification
Actions
Lexical Analysis
How the Parser Works
Ambiguity and Conflicts
Precedence
Error Handling
The Yacc Environment
Hints for Preparing Specifications
Advanced Topics
References
Appendix A: A Simple Example
Appendix B: Yacc Input Syntax
Appendix C: An Advanced Example
Appendix D: Old Features Supported but Not Encouraged

Section 7: The ADB Debugger

Command Format
Displaying Information
Debugging C Program
Setting Breakpoints
Advanced Breakpoint Usage
Other Breakpoint Facilities
Maps
Variables and Registers
Formatted Dumps
Patching
Anomalies
Command Summary
Format Summary
Expression Summary

Section 8: C Debugger (cdb)

Introduction
Viewing Commands
Job Control Commands
Breakpoint Commands
Assertion Control Commands and Signal Handling Commands
Record, Playback, and Other cdb Commands

Section 9: Make a Program for Maintaining Computer Programs

Introduction
Basic Features
Description Files and Substitutions
Command Usage
Implicit Rules
Example
Suggestion and Warnings
Appendix: Suffixes and Transformation Rules

Section 10: SCCS User's Guide

Introduction
Terms
Creating SCCS Files
Removing SCCS Files
Getting Files for Compilation
Changing Files (Creating Deltas)
Restoring Old Versions
The Help Command
Auditing Changes
Files Used by SCCS
Concurrent Editing
Saving Yourself
Using the Admin Command
Maintaining Different Branches
SCCS's Protection Facilities
Using Sccs With Make
Using SCCS on a Multi-User Project
Quick Reference

Section 11: Lex: A Lexical Analyzer Generator

Introduction
Lex Source
Lex Regular Expressions
Lex Actions
Ambiguous Source Rules
Lex Source Definitions
Usage
Lex and Yacc
Examples
Left-Context Sensitivity
Character Set
Summary of Source Format
Caveats and Bugs

HP-UX Concepts and Tutorials: Shells and Miscellaneous Tools

PROGRAMMER'S SERIES

PART-NUMBER: 97089-90062

AUDIENCE: Beginning HP-UX Programmers

This manual covers seven topics: Bourne Shell Programming, C Shell Programming, Korn Shell Programming, BC (Desk Calculator), DC (Desk Calculator), Mailx, and Vt (Virtual Terminal). Each section may have its own table of contents, appendices, or indices.

Section 1: The Bourne Shell

Using Shell Commands
Shell Scripts
Basic Shell Programming
Advanced Programming
Detailed Reference
Appendix A: Helpful Tips for Shell Programmers
Glossary

Section 2: The C Shell

Introduction
HP-UX Standard Shells
Shell Startup and Termination
Command History
Aliases
Command Substitution
Metacharacters in csh
Using Metacharacters as Normal Characters
Built-In Shell Variables
Numeric Shell Variables
File Evaluation
Csh Commands
Jobs
C Shell Scripts
Subject Index

Section 3: The Korn Shell

Introducing the Korn Shell
Starting and Stopping the Shell
Using Metacharacters
Aliasing: Abbreviating Commands
Substitution Capabilities
Editing Command-lines
Basic Ksh Programming
Controlling Jobs
Advanced Concepts and Commands
Command Reference

Section 4: BC: An Arbitrary-Precision Desk-Calculator Language

Running BC
Simple Computations With Integers
Bases
Scaling
Functions
Subscripted Variables (Arrays)
Control Statements
Some Details
Three Important Things
Notation

Section 5: DC: An Interactive Desk Calculator

Synoptic Description
Detailed Description

Section 6: Mailx

Introduction
Common Usage
More About Sending Mail
Additional Features
Non-Interactive Mail
Command Line Options
Message Format
Glossary
Summary of Commands, Options, and Escapes

Section 7: Vt: Virtual Terminal

Using vt
Installing vt

HP-UX Concepts and Tutorials: UUCP

PROGRAMMER'S SERIES

PART-NUMBER: 97089-90053

AUDIENCE: Programmers

This manual describes how to use "HoneyDanBer uucp", an HP-UX facility that transfers files among Series 300 and 800 HP-UX and UNIX systems linked by RS-232-C modem or direct connections.

SECTION 1: HDBuucp

Chapter 1: Introduction and Orientation
- Conceptualizing the Tasks
- Contacting Remote System SAs

Chapter 2: Configuring uucp
- An Overall View of uucp
- Edit rc to Set the Hostname
- Edit passwd to Provide a Login
- Edit inittab to Start a getty
- Edit dialitic or Dialer for Using a Modem
- Edit Systems for Calling Data
- Edit Dialcodes to Supply Phone Strings
- Edit Permissions to Control Systems
- Edit Poll to Provide for Polling Systems
- Edit Devices for Modem Info
- Edit ADMIN for Comments
- Make Device Files for RS-232-C
- Continuing to Setup uucp

Chapter 3: Installing uucp Hardware
- Selecting a Modem or Direct Connection
- Illustrated Typical Connections
- Special Connectors
- Making a Decision and Continuing
- Installing a Phone Line
- Installing An Interface Card
- Installing a Modem

Chapter 4: Testing and Using uucp
- Using cu for an Initial Test
- Trying A uucp Call

Chapter 5: Making uucp Work
- Major Sources of Problems
- The .Log Directory Files
- Debugging With .Admin/errors
- The .Admin/xferstat File
- The DIALLOG file
- Running uucico With Debugging Output

Chapter 6: Uucp Files and Structure
Examples of uucp Data Transfer
The Spool Directory
Library Files
ADMIN Files
Binary Files
The Status Files
Some Cleanup Scripts
Forwarding through Several Systems
The uux Command
Miscellaneous Commands

Chapter 7: Uucp Facility Daemons
Running the uucp Utility
Invoking uucp Daemons

Appendix A: Using cu
Using cu with a Modem Connection
Cu with Direct Connection
After Connecting

Appendix B: The X.25 Network
Description of X.25
Configuring uucp for X.25

Appendix C: An Arbitrary Quick Procedure

Appendix D: HDBuucp Conversion

SECTION 2: UUCP

Chapter 1: Introduction and Orientation
Conceptualizing the Tasks
Contacting Remote System SAs

Chapter 2: Configuring uucp
An Overall View of uucp
Edit rc to Set the Hostname
Edit passwd to Provide a Login
Edit inittab to Start a getty
Edit dialit.c to Accomodate a Modem
Edit L.sys for Calling Data
Edit L-dialcodes to Supply Phone Strings
Edit L.cmds to Specify Commands
Edit L-devices for Modem Info
Edit USERFILE to Specify Search Info
Edit FWDFILE and ORIGFILE for Forwarding
Edit ADMIN for Comments
Make Device Files for RS-232-C
How to Continue

Chapter 3: Installing uucp Hardware
Selecting a Modem or Direct Connection
Illustrated Typical Connections
Special Connectors
Making a Decision and Continuing

Chapter 3: Installing uucp Hardware (cont'd)
Installing a Phone Line
Installing An Interface Card
Installing a Modem

Chapter 4: Testing and Using uucp
Using cu for an Initial Test
Trying A uucp Call

Chapter 5: Making uucp Work
Major Sources of Problems
The LOGFILE
Debugging With ERRLOG
The SYSLOG file
The DIALLOG file
Running uucico With Debugging Output

Chapter 6: Uucp Files and Structure
Examples of uucp Data Transfer
The Spool Directory
Library Files
ADMIN File
Binary Files
The Status Files
Some Cleanup Scripts
Forwarding through Several Systems
The uux Command
Miscellaneous Commands
Using the Mail Facility

Chapter 7: Uucp Facility Daemons
Running The uucp Utility
Invoking uucp Daemons

Chapter 8: Using cu
Using cu with a Modem Connection
Cu with Direct Connection
After Connecting

Chapter 9: The X.25 Network
Description of X.25
Configuring uucp for X.25

Chapter 10: An Arbitrary Quick Procedure

HP Symbolic Debugger Quick Reference Guide

PROGRAMMER'S SERIES

PART-NUMBER: 92435-90002

AUDIENCE: Experienced Programmers

This quick reference guide lists and defines the commands used for debugging programs. It should be used with the *HP Symbolic Debugger User's Guide*.

Symbolic Debugger Commands

Record and Playback Commands

Record All Commands

Data Viewing and Modification Commands

Data Viewing Options

Special and Program Variables

HP-UX Command Line Options

HP-UX Symbolic Debugger Commands

HP Symbolic Debugger User's Guide

PROGRAMMER'S SERIES

PART-NUMBER: 92435-90001

AUDIENCE: Experienced Programmers

This manual explains how to debug computer programs on the HP-UX Operating System. It assumes that the user has had some experience with symbolic debuggers and HP-UX.

Chapter 1: Program Overview
- Introduction
- The Operating Environment
- Features and Capabilities
- User Manual Conventions
- Language Conventions

Chapter 2: Using the HP Symbolic Debugger
- Program Preparation
- Debugger Interface
- Beginning a Sample Session
- Specifying Locations
- Viewing Source Code and Moving Within Files
- Using the Step Command
- Searching for a String in Source Code
- Setting Breakpoints
- Displaying and Deleting Breakpoints
- Displaying and Modifying Data
- Limitations

Chapter 3: Language Conventions
- Special Variables
- Finding a Variable
- Expression Conventions
- Procedure Call Conventions
- Command Conventions

Chapter 4: Commands
- Job Control Commands
- File Viewing Commands
- Window Mode Commands
- Single Step Commands
- Assertion Control Commands
- Breakpoint Commands
- Data Viewing Commands
- Data Modifying Commands
- State Viewing Commands
- Stack Viewing Commands
- Signal Control Commands
- Record and Playback Commands
- Macro Facility
- Miscellaneous Commands

Chapter 5: Sample Sessions
- A Sample Session in HP C
- A Sample Session in HP Pascal
- A Sample Session in HP FORTRAN 77
- A Sample Session in Mixed Languages

Appendix A: Error Messages
- User Errors
- HP Symbolic Debugger Errors

Appendix B: Debug Differences
- Program Location
- Command Changes

Appendix C: Language Operators

Appendix D: HP-UX Dependencies
- Compiling and Linking
- Commands
- Debug Installation
- Limitations

Appendix E: MPE XL Dependencies
- Compiling and Linking
- The HP Symbolic Debugger Run String Command
- Debug Installation
- Limitations

Programmer's Series: Languages

Manual Title	Audience
ADB Tutorial (92432-90002)	Experienced Assembly Language Programmers
Assembly Language Reference Manual (92432-90001)	Experienced Assembly Language Programmers
HP C Reference Manual (92434-90001)	Experienced C Programmers
HP C Programmer's Guide (92434-90002)	Experienced C Programmers
HP C Quick Reference Guide (92434-90003)	Experienced C Programmers
HP C/HP-UX Reference Manual Supplement (92434-90004)	Experienced C Programmers
HP FORTRAN 77/HP-UX Programmer's Guide (92430-90004)	Experienced FORTRAN Programmers
HP FORTRAN 77 Quick Reference Guide (5957-4687)	FORTRAN Programmers
HP FORTRAN 77/HP-UX Reference Manual (92430-90005)	Experienced FORTRAN Programmers
HP Pascal Programmer's Guide (31502-90002)	Experienced Pascal Programmers
HP Pascal Quick Reference Guide (31502-90003)	Pascal Programmers
HP Pascal Reference Manual (31502-90001)	Pascal Programmers
Series 800 HP-UX Real-Time Programming Manual (92453-90003)	Experienced C Programmers

ADB Tutorial

PROGRAMMER'S SERIES: LANGUAGES

PART-NUMBER: 92432-90002

AUDIENCE: Experienced Assembly Language Programmers

This tutorial describes the use of ADB, a program that you can use to debug assembly language programs. It also presents the ADB command format, and explains how to debug C programs, set breakpoints, and use maps. A complete command summary is provided following the tutorial.

Invocation

ADB Command Format

Displaying Information

Debugging C Programs

Maps

Variables and Registers

Formatted Dumps

Patching

Debugging Already Running Processes

Anomalies

Command Summary

Assembly Language Reference Manual

PROGRAMMER'S SERIES: LANGUAGES

PART-NUMBER: 92432-90001

AUDIENCE: Experienced Assembly Language Programmers

This manual describes the HP-UX Assembler for those programmers who need to write code as close to machine language as possible.

Chapter 1: The Assembly Language
- Assembler Features
- Structure of the Source Program
- Symbols and Constants
- Registers and Register Mnemonics
- Expressions
- Operands and Completers
- Macro Processing

Chapter 2: Programming for HP-UX
- Spaces
- Subspaces
- Location Counters
- Compiler Conventions
- System Calls
- Assembly Listing

Chapter 3: Assembler Directives and Pseudo-Operations
- Assembler Directives
- Programming Aids

Chapter 4: The Instruction Set
- Instruction Operands
- Memory Reference Instructions
- Immediate Instructions
- Branch Instructions
- Computational Instructions
- System Control Instructions
- Assist (Coprocessor) Instructions
- Pseudo-Instructions

Chapter 5: Programming Examples
- Binary Search for Highest Bit Position
- Copying a String
- Dividing a Double-Word Dividend
- Demonstrating the Procedure Calling Convention
- Output of the cc -S Command

Chapter 6: Assembling Your Program
Invoking the Assembler
Error Message Catalog
Linking an Assembly Program

Appendix A: Error Messages
Warning Messages
Error Messages
Panic Messages
User Warnings
Limit Errors
Branching Errors

Appendix B: Instruction Summaries

HP C Reference Manual

PROGRAMMER'S SERIES: LANGUAGES

PART-NUMBER: 92434-90001

AUDIENCE: Experienced C Programmers

This manual fully describes the C programming language as it operates on all HP computer systems. It includes information about C lexical elements, data types, specifiers, type conversions, expressions, and operators. The manual also describes library routines that perform useful functions and are accessible from HP C programs.

Chapter 1: Introduction
- Syntax Conventions

Chapter 2: Lexical Elements
- Tokens
- Keywords
- Identifiers
- Constants
- Floating-Point Constants
- Integer Constants
- Enumeration Constants
- Character Constants
- String Literals
- Operator Tokens
- Punctuators
- Commands

Chapter 3: Data Types and Declarations
- Program Structure
- Declarations
- Storage-Class Specifiers
- Type Specifiers
- Structure and Union Specifiers
- Enumeration
- Declarators
- Type Names
- Type Definitions Using typedef
- Initialization
- Function Definitions

Chapter 4: Type Conversions
- Usual Unary Conversions
- Usual Binary Conversions
- Arithmetic Conversions

Chapter 5: Expressions
Operator Precedence
lvalue and rvalue Expressions
Primary Expressions
Postfix Operators
Array Subscripting
Function Calls
Structure and Union Members
Postfix Increment and Decrement Operators
Unary Operators
Prefix Increment and Decrement Operators
Address and Indirection Operators
Unary Arithmetic Operators
The Sizeof Operator
Cast Operators
Multiplicative Operators
Additive Operators
Bitwise Shift Operators
Relational Operators
Equality Operators
Bitwise AND Operator
Bitwise Exclusive OR Operator
Bitwise Inclusive OR Operator
Logical AND Operator
Logical OR Operator
Conditional Operator
Assignment Operators
Comma Operator
Constant Expressions

Chapter 6: Statements
Labeled Statements
Compound Statement or Block
Expression and Null Statements
Selection Statements
The if Statement
The switch Statement
Looping Statements
The while Statement
The do Statement
The for Statement
Jump Statements
The goto Statement
The continue Statement
The break Statement
The return Statement

Chapter 7: Preprocessor Directives
Source File Inclusion
Macro Replacement
Conditional Compilation
Line Control
Pragmas

Chapter 8: C Library Functions

Header Files
Using the Library Functions
Standard Input/Output Functions <stdio.h>
The printf Function
Math Functions <math.h>
Character Conversion and Classification Macros <ctype.h>
String Manipulation Functions
Date and Time Functions <time.h>
Memory Functions
General Utilities

Appendix A: System-Dependent Information

Lexical Elements
Data Types and Declarations
Type Conversions
Expressions
C Statements
Preprocessor
Library Functions and Header Files

Appendix B: Syntax Summary

HP C Programmer's Guide

PROGRAMMER'S SERIES: LANGUAGES

PART-NUMBER: 92434-90002

AUDIENCE: Experienced C Programmers

This manual discusses how to program in the C programming language. It includes information on topics such as storage and alignment comparisons, calling other languages, using the optimizer, and debugging.

Chapter 1: Introduction to HP C

Chapter 2: Storage and Alignment Comparisons
- HP C on HP-UX
- C Data Types on Other Systems

Chapter 3: Calling Other Languages
- HP C and HP Pascal
- HP C and HP FORTRAN 77
- Examples of Corresponding Types

Chapter 4: The Optimizer
- Introduction to the Optimizer
- When to Use the Optimizer
- Invoking the Optimizer on HP-UX
- Level 1 Optimization Modules
- Level 2 Optimization Modules
- HP C Guidelines for Using the Optimizer
- HP C Optimizer Assumptions
- What to Do If the Optimized Program Fails

Chapter 5: Debugging HP C Programs
- The HP Symbolic Debugger and HP C
- Sample Debugging Session

Chapter 6: Programming for Portability
- Things to Avoid
- Things to Do
- Examples

Appendix A: Migrating C Programs

Migrating an Application
Byte Order
Data Alignment
Unsupported Keywords
Unsupported Identifiers
Predefined Macro Names
White Space
Hexadecimal Escape Sequence
Multicharacter Character Constants
Invalid Structure References
Leading Underscore
Library Functions
Floating-Point Format
Bit Fields
Data Storage and Alignment
Typedefs

HP C Quick Reference Guide

PROGRAMMER'S SERIES: LANGUAGES

PART-NUMBER: 92434-90003

AUDIENCE: Experienced C Programmers

This manual is a quick reference to the HP C programming language. It summarizes C language elements, the syntax of statements, and lists the syntax for the commands and compiler directives on HP computers.

Chapter 1: HP C Language Elements
- Keywords
- C Operators
- C Operator Precedence
- Escape Sequences
- Declarations

Chapter 2: C Statements
- Statement Types
- Labeled Statements
- Compound Statements
- Expression and Null Statements
- Selection Statements
- Looping Statements
- Jump Statements

Chapter 3: Preprocessor Directives

Chapter 4: Pragmas

Chapter 5: C Library Functions
- Standard Input/Output Functions
- Math Functions
- Character Conversion and Classification Macros
- String Manipulation Functions
- Date and Time Functions
- Memory Functions
- General Utilities

Appendix A: HP-UX Compiler
- Compiling on HP 9000 Series 800 Computers
- Running HP C Programs

HP C/HP-UX Reference Manual Supplement

PROGRAMMER'S SERIES: LANGUAGES

PART-NUMBER: 92434-90004

AUDIENCE: Experienced C Programmers

This supplement contains all HP-UX specific information on how to use the C programming language. It is intended to be used with the *HP C Reference Manual.*

Chapter 1: Compiling and Running HP C Programs
- Compiling HP C Programs
- Pragmas
- Running HP C Programs

Chapter 2: HP C/HP-UX Implementation Topics
- Data Types
- Volatile Type Specifier
- Bit Fields
- IEEE Floating-Point Standard
- Lexical Elements
- Unreachable Code
- Structures and Unions
- Identifier of Program Scope
- Overflow or Underflow Expressions
- Pointers
- Maximum Size of an Array
- Scope of extern Declarations
- Conversions Between Floats and Doubles
- Statements
- Preprocessor
- The varargs Macros
- Location of Files

Chapter 3: Using Intrinsics
- INTRINSIC Pragma
- INTRINSIC_FILE Pragma

Chapter 4: The Listing Facility
- Listing Format
- Listing Pragmas
- Listing Options

Appendix A: Diagnostic Messages
- Warning Messages
- Error Messages
- Panic Messages
- Internal Panic Messages

HP FORTRAN 77/HP-UX Programmer's Guide

PROGRAMMER'S SERIES: LANGUAGES

PART-NUMBER: 92430-90004

AUDIENCE: Experienced FORTRAN Programmers

This manual contains a detailed discussion of selected FORTRAN topics. This manual is intended for experienced programmers who have some familiarity with HP systems, data processing concepts, and the FORTRAN programming language.

Chapter 1: Data Storage
- Variable Types
- Addressing Mode
- The EQUIVALENCE Statement

Chapter 2: Formatted Input/Output
- List-Directed Statements
- Formatted Statements
- Summary of the Descriptors
- Format Specifications
- Alternative Methods of Specifying Input/Output
- Using the Implied DO Loop

Chapter 3: File Handling
- Disc Files
- Internal Files

Chapter 4: Subprograms
- Subroutines
- Functions
- Arguments to Subprograms
- Multiple Entries into Subprograms
- Common Blocks
- Block Data Subprograms
- Using the SAVE Statement

Chapter 5: Writing Efficient Programs
- Compile-Time Efficiency
- Run-Time Efficiency
- Code Space Efficiency
- Data Space Efficiency

Chapter 6: Programming for Portability
- Restricting Programs to the HP FORTRAN 77 Standard
- Using Consistent Data Storage
- Writing Programs That Can Be Easily Modified
- Avoiding Unstructured FORTRAN 77 Features

Chapter 7: Introduction to HP-UX
- Using the MAN Command
- Invoking the Compiler and Linker
- Passing Run-String Parameters to a FORTRAN 77 Program
- File Preconnection and Redirection
- Compiler Options and Directives

Chapter 8: Debugging FORTRAN 77 Programs
- Common Run-Time Errors
- The TABLES Directive
- The RANGE Directive
- Debugging Lines, the DEBUG Directive, and -D Compiler Options
- CATCHEM and RESTOREM for Procedure Traceback
- +T Compiler Option
- The xdb Symbolic Debugger

Chapter 9: HP 9000 Series 800 Architecture and FORTRAN 77 Storage Assignment
- Memory Data Areas
- Local Variables
- Saved Variables
- COMMON
- Summary of the Memory Area Assignment
- Accessing Data
- The ALIAS, LITERAL_ALIAS, and EXTERNAL_ALIAS Directives

Chapter 10: Interfacing with Other Languages and the HP-UX Operating System
- Interfacing with Other Languages
- Interfacing with the HP-UX Operating System
- Communicating Through COMMON

Chapter 11: Porting FORTRAN Programs from Other Computer Systems
- A Common Problem: Implicit SAVE
- Using Short Integers and Short Logicals
- Bit Manipulation with FORTRAN 77

Chapter 12: Enhancing the Efficiency of FORTRAN 77 Programs
- Group Related Routines
- Shift Data from the Data Area to the Stack Area
- Manipulating Large Arrays
- Use the Optimizer

HP FORTRAN 77 Quick Reference Guide

PROGRAMMER'S SERIES: LANGUAGES

PART-NUMBER: 5957-4687

AUDIENCE: FORTRAN Programmers

This manual is a quick reference guide for the HP FORTRAN 77 programming language. It assumes that the reader has been trained in the FORTRAN language, and is knowledgeable of FORTRAN programming techniques.

Chapter 1: HP FORTRAN 77 Elements
- The HP FORTRAN 77 Character Set
- Special Symbols
- Truth Table for Logical Operators
- Keywords
- Data Types

Chapter 2: HP FORTRAN 77 Statements
- Statement Classification
- How to Use the Syntax Diagrams

Chapter 3: HP FORTRAN 77 Intrinsic Functions
- Arithmetic
- Bit Manipulation
- Character
- Numeric Conversion
- Transcendental
- Miscellaneous

Chapter 4: HP FORTRAN 77/V on the HP 3000
- HP FORTRAN 77/V Commands
- :Run FTN.PUB.SYS Command
- Compiler Directives

Chapter 5: HP FORTRAN 77/UX on the HP 9000 Series 500
- Compiling Programs
- Compiler Directives

Chapter 6: HP FORTRAN 77/UX on the HP 9000 Series 800
- Compiling Programs
- Compiler Directives

Chapter 7: HP FORTRAN 77/XL on the Series 900 HP 3000
- Compiling Programs
- :RUN FTNCOMP.PUB.SYS
- Compiler Directives

HP FORTRAN 77/HP-UX Reference Manual

PROGRAMMER'S SERIES: LANGUAGES

PART-NUMBER: 92430-90005

AUDIENCE: Experienced FORTRAN Programmers

This manual fully describes HP FORTRAN 77 as it operates on the HP-UX operating system. It provides information on all data types and statements in the language and also describes the compiler diagnostic messages. It also presents tables of intrinsic functions and gives Hewlett-Packard's implementation of the ASCII character set.

Chapter 1: Introduction to HP FORTRAN 77
- The FORTRAN 77 Compiler
- FORTRAN Vocabulary
- Source File Structure
- Page Eject with Cntl-L

Chapter 2: Language Elements
- The FORTRAN 77 Character Set
- Special Symbols
- Keywords
- Symbolic Names
- Comments
- Data Types
- Variables
- Expressions

Chapter 3: FORTRAN Statements
- FORTRAN Statement Format
- Statement Classification
- Order of Statements
- Statements

Chapter 4: Input/Output
- Formatted Input/Output
- Format Specifications
- Format and Edit Descriptors
- Edit Descriptors
- Repeat Specification
- Nesting of Format Specifications
- Unformatted Input/Output
- List-Directed Input/Output
- Namelist-Directed Input/Output

Chapter 5: Compiling and Running Programs
- Compiling FORTRAN Programs
- Listing Format
- Preparing Programs for Execution
- Running FORTRAN Programs
- Using the PROGRAM Statement

Chapter 6: Run-Time Errors and Exceptions
- +T Compiler Option
- Procedure Traceback with CATCHEM and RESTOREM
- Trapping Run-Time Errors

Chapter 7: Interfacing with non-FORTRAN Subprograms and HP-UX
- FORTRAN and Pascal
- FORTRAN and C
- Built-In Functions
- HP-UX System Calls from FORTRAN

Chapter 8: Compiler Directives

Chapter 9: System-Specific Features of HP-UX
- Using the PAUSE Statement
- System-Specific Limits
- System Intrinsics

Chapter 10: Using Files in HP FORTRAN 77
- File Definition and Representation
- File Access
- File Formats
- Scratch Files
- Stream I/O Using FSTREAM
- File Descriptor I/O Using FNUM
- Using FSET
- File Positioning with the BACKSPACE Statement
- End-of-Line Edit Descriptors -- NN, NL, and $
- Carriage Control

Chapter 11: Data Format in Memory
- Integer Format
- Short Integer Format
- Real Format
- Double Precision Format
- Complex Format
- Double Complex Format
- Logical Format
- Short Logical Format
- Character Format
- Hollerith Format
- Byte of Logical*1 Format

Appendix A: Compile-Time Diagnostic Messages
- Compile-Time Diagnostics
- Diagnostic Messages
- Compile-Time Errors
- Compile-Time Warnings
- ANSI Warnings
- Run-Time Errors

Appendix B: Intrinsic Functions and Math Subroutines
Invoking an Intrinsic Function
Generic and Specific Function Names
Summary of the Intrinsic Functions
Random Number Generator Functions
HP-UX Intrinsic Functions
System Calls and Library Routines
Function Descriptions

Appendix C: FORTRAN Comparisons
Extensions to the Standard
Comparison of HP FORTRAN 77 and FORTRAN 66/V
Comparison of HP FORTRAN 77 and FORTRAN 7X

Appendix D: HP Character Set

Appendix E: Vector Instructions Set (VIS) Subroutines

HP Pascal Programmer's Guide

PROGRAMMER'S SERIES: LANGUAGES

PART-NUMBER: 31502-90002

AUDIENCE: Experienced Pascal Programmers

This manual discusses selected HP Pascal topics in detail. It explains statement interaction but does not explain every feature of HP Pascal. Some topics covered are: HP Pascal procedure options, compiler options, and how HP Pascal works on the HP-UX operating system.

Chapter 1: Introduction

Chapter 2: Program Structure
- Introduction
- Syntactic Structure
- Compilation Unit Structure
- External Interfaces

Chapter 3: Input/Output
- Introduction
- General File Information
- Opening Files
- Associate Procedure
- Sequential Input/Output
- Textfile Input/Output
- Direct Input/Output
- Closing Files

Chapter 4: Predefined HP Pascal Data Types
- Introduction
- Values of Predefined Constants
- Ranges of Predefined Data Types
- Shortint
- Predefined Modules

Chapter 5: Allocation and Alignment
- Introduction
- Allocation, Alignment, and Packing Algorithm
- Unpacked Variables
- Packed Variables
- Arrays
- Records
- Packed Arrays
- Packed Records
- Crunched Arrays and Records
- Crunched Sets
- Enumerations and Subranges
- Files
- Sets
- Strings

Chapter 6: Dynamic Variables
- Introduction
- Globalanyptr Variables
- Localanyptr Variables
- New Procedure
- Dispose Procedure
- Mark and Release Procedures
- P_getheap and P_rtnheap Procedures
- Getheap and Rtnheap Procedures

Chapter 7: Parameters
- Introduction
- Value vs. Reference Parameters
- ANYVAR Parameters
- READONLY Parameters
- Conformant Array Parameters
- Routines as Parameters
- Hidden Parameters

Chapter 8: Procedure Options
- Introduction
- EXTENSIBLE
- DEFAULT_PARMS
- UNCHECKABLE_ANYVAR
- UNRESOLVED
- INLINE

Chapter 9: External Routines
- Introduction
- EXTERNAL Directive
- Calling C from HP Pascal
- Calling COBOL II from HP Pascal
- Calling FORTRAN 77 from HP Pascal
- Calling FORTRAN/3000 from HP Pascal
- Calling SPL from HP Pascal
- Switch Stubs
- How Non-Pascal Programs Call Pascal Routines

Chapter 10: Intrinsics
- Introduction
- Using Intrinsics
- Defining Intrinsics
- How to Build or Change an Intrinsic File

Chapter 11: Error Recovery and Debugging
- Introduction
- Error Recovery
- ARITRAP and HPENBLTRAP Intrinsics
- XLIBTRAP Intrinsic
- XARITRAP Intrinsic
- XCONTRAP Intrinsic
- HPTOOLSET/XL and Symbolic Debuggers

Chapter 12: The Optimizer
- Introduction
- When to Use the Optimizer
- Invoking the Optimizer

Chapter 12: The Optimizer (cont'd)
Level One Optimization
Level Two Optimization
Optimizer Assumptions
Writing Programs That are Easily Optimized
What to Do if the Optimized Program Fails

Appendix A: Compiler Options
Introduction
System Independent Options
System Dependent Options

Appendix B: HP-UX Dependencies
Introduction
System Dependent Features
HP-UX Extensions
Compiling, Linking, and Running Your Program

Appendix C: Compiler Limits and Values

Appendix D: HP Pascal Error Messages

Appendix E: Undetected Errors

HP Pascal Quick Reference Guide

PROGRAMMER'S SERIES: LANGUAGES

PART-NUMBER: 31502-90003

AUDIENCE: HP Pascal Programmers

The quick reference guide gives the syntax of every HP Pascal statement, including restrictions on statement parameters. It does not explain statements or concepts, as it is intended only to refresh the reader's memory for syntactic details.

Chapter 1: Programs
- Compilation_Unit
- Program_Heading
- Block

Chapter 2: Declarations

Chapter 3: Statements

Chapter 4: Expressions
- Expression
- Selector
- Pointer_Dereference

Chapter 5: Language Elements
- Reserved Words
- Special Symbols
- Identifier
- Unsigned_Integer
- Signed_Integer
- Unsigned_Real
- Signed_Real
- String_Literal

Chapter 6: Input/Output
- File Procedures and Functions

Chapter 7: Predefined Procedures and Functions
- System Independent
- System Dependent

Chapter 8: System Programming Extensions
- System Programming Extension Reserved Words
- System Programming Extension Predefined Identifiers
- TRY_RECOVER_Statements
- Type
- Expression
- Option Specification

Appendix A: Compiler Options

System Independent Compiler Options
HP Standard Options
HP Pascal Options
System Programming Options
System Dependent Compiler Options
MPE XL Options
MPE XL and HP-UX Options
HP-UX Options

Appendix B: Intrinsics

Appendix C: HP Pascal and Other Languages

EXTERNAL Directive
Calling C from HP Pascal
Calling COBOL II from HP Pascal
Calling FORTRAN 77 from HP Pascal
Calling SPL from HP Pascal

HP Pascal Reference Manual

PROGRAMMER'S SERIES: LANGUAGES

PART-NUMBER: 31502-90001

AUDIENCE: Pascal Programmers

This manual gives the syntax, semantics and simple examples of each statement. It does not contain tutorial material or examples of how the statements interact with each other.

Chapter 1: Introduction
- Extensions to ANSI/IEEE and ISO Pascal

Chapter 2: Language Elements
- BASIC SYMBOLS
- Reserved Words
- Identifiers
- Numbers
- Comments
- Separators
- String Literals

Chapter 3: Data Types
- Simple Types
- Structured Types
- Pointer Types
- Type Compatibility
- Assignment Compatibility

Chapter 4: Expressions
- Operands
- Operators

Chapter 5: The Declaration Section
- Constant Definition
- Label Declaration
- Type Definition
- Variable Declaration

Chapter 6: Statements
- Compound Statements
- BEGIN .. END
- Empty Statements
- Assignment
- CASE
- IF .. THEN
- IF .. THEN .. ELSE
- FOR .. TO
- FOR .. DOWNTO
- REPEAT .. UNTIL
- WHILE .. DO

Chapter 6: Statements (cont d)
WITH .. DO
GOTO
Procedures

Chapter 7: Program Structure
Program Heading
Block
Declaration Part
Procedure
Function
Module
EXPORT
IMPORT
Implement

Chapter 8: Procedures and Functions
Conformance
Directives
FORWARD Directive
Recursion
Functions Calls

Chapter 9: Predefined Routines
Procedures for Allocation and Deallocation
String Procedures
String Functions
Transfer Procedures
Program Control Procedures
MODCAL/3000 Compatibility Procedures
Arithmetic Functions
Predicate Functions
Numeric Conversion Functions
Transfer Functions
Ordinal Functions

Chapter 10: Input and Output
I/O Standard Procedures and Functions
Implicit Data Conversion
Formatting of Output to Textfiles

Chapter 11: System Programming Extensions
Language Elements
Data Types
Expressions
Declaration Section
Statements
Procedures and Functions
Predefined Routines

Appendix A: Error Messages

Appendix B: ASCII Character Codes

Series 800 HP-UX Real-Time Programming Manual

PROGRAMMER'S SERIES

PART-NUMBER: 92453-90003

AUDIENCE: Experienced C Programmers

This manual explains how to use the real-time features of HP-UX that are a superset of System V features such as priority scheduling, asynchronous I/O, reliable signals and preallocation of disc space. It also discusses standard AT&T features that can be useful in real-time programs such as process locking, shared memory, semaphores, and messages.

Chapter 1: Introduction
- What is Real Time?
- Adding Real-Time Capability to the UNIX Operating System
- Real-Time Features in HP-UX
- Real-Time Programming with HP-UX Features

Chapter 2: Privilege Groups
- Introduction
- Available Privileges
- Retrieving Your Group Access List
- Retrieving Privileges Assigned to Your Groups
- Removing Privileges From a Process With setgroups(2)
- Chapter Summary

Chapter 3: Priority Scheduling
- Introduction
- The RTPRIO Privilege
- Setting or Changing the Real-Time Priority of a Process
- Reading the Real-Time Priority of a Process with rtprio(1)
- Setting the Priority of a Real-Time Process to be Time-Shared
- The Effect of nice(1) on Real-Time Priorities
- Chapter Summary

Chapter 4: Memory Locking
- Introduction
- Memory Locking and the HP-UX Process Model
- Locking With plock(2)
- Locking With datalock(3C)
- Locking Shared Memory Segments with shmctl(2)
- Chapter Summary

Chapter 5: Signals: Software Interrupts
- Introduction
- Available Signals
- Sending a Signal
- Preparing to Receive a Signal
- Receiving and Handling a Signal
- Waiting for a Signal
- A Software Fault Tolerance Example Using Signals
- Chapter Summary

Chapter 6: Time-Based Scheduling
- Introduction
- Time-Related Data Structures
- Time Retrieval
- Time-Scheduling Programs
- Chapter Summary

Chapter 7: Shared Memory
- Introduction
- Overview of System V Interprocess Communication Facilities
- Shared Memory Segment Data Structure
- The Shared Memory Interface
- Chapter Summary

Chapter 8: Synchronization with Semaphores
- Introduction
- The Semaphore Set and Semaphore Set Data Structure
- The Semaphore Set Interface
- Chapter Summary

Chapter 9: Messages
- Introduction
- The Data Structure Associated with a Message Queue Identifier
- The Message Interface
- Receiving a Message on a Message Queue with msgrnd()
- A Time and Attendance Transaction Processing Example Using Messages
- Removing the Message Queue Identifier with msgctl(2)
- Chapter Summary

Chapter 10: Pipes
- Introduction
- A Functional Comparison of Piples and Names Pipes (FIFOs)
- Programming Examples Using Pipes
- Programming Examples Using FIFOs
- Using Pipes
- Using FIFOs

Chapter 11: System Asynchronous I/O
- Introduction
- System Asynchronous I/O Overview
- System Asynchronous I/O Facilities, Devices and Device Drivers
- Using O_NDELAY or FIOSNBIO to Do Nonblocking I/O
- Enabling a Driver to Send SIGIO when I/O is Possible
- Checking if an I/O Request Should be Issued to One or More Devices with select(2)
- Chapter Summary

Chapter 12: Disk I/O
- Introduction
- Getting Good File System Performance
- Optimum Raw Disk I/O Performance
- Chapter Summary

Appendix A: A Comparison of Real-Time Features in the RTE and HP-UX Operating Systems

Overview
Program Control
Resource Management
Time Operations
Standard I/O
Asynchronous I/O
Interprocess Communication
Operating System and Hardware Functionality
Event Scheduling on Interrupts
Privileged Operation

System Administrator's Series

Manual Title	Audience
HP 9000 Series 800 System Administrator s Manual (92453-90004)	System Administrators
Installing and Updating HP-UX -- HP 9000 Series 800 (92453-90019)	System Administrators
System Administration Basics -- A Menu-oriented Approach (92453-90017)	System Administrators

HP 9000 Series 800 System Administrator's Manual

SYSTEM ADMINISTRATOR'S SERIES

PART-NUMBER: 92453-90004

AUDIENCE: System Administrators

This manual enables the System Administrator to perform first-time system installation and configuration and provides information for performing system administration tasks. It enables the System Administrator to tailor the operating system to make use of its resources efficiently, provides detailed information for system designers to customize their operating system, and provides training aids for the assistant System Administrator.

Chapter 1: Introduction
- The System Administrator
- Responsibilities of the System Administrator
- Conventions Used in this Manual
- User Survey Form

Chapter 2: Getting Started
- Installing HP-UX
- Updating HP-UX
- After Installing HP-UX
- Customizing a System
- Using the System Administration Manager

Chapter 3: System Startup and Shutdown
- System Boot
- Booting Problems
- After Booting
- Login
- Changes You May Want to Make
- Shutting Down the System

Chapter 4: Customizing the HP-UX System
- Setting the System Clock
- Maintaining System Security
- Creating Groups
- Setting Up the LP Spooler
- Administering UUCP

Chapter 5: System Administration Tasks
- Communicating With System Users
- Adding/Removing Users
- Overview of the I/O System Device Drivers
- Adding/Removing Peripheral Devices
- Adding a CIO Expander
- Adding Terminals and Modems
- Adding a Tape Drive
- Adding Disks and Cartridge Tape Drives
- General-Purpose Instruments
- Removing Peripheral Devices

Chapter 5: System Administration Tasks (cont'd)
- Access Port
- Changing and Creating System Run Levels
- Backing Up the File System
- Updating the HP-UX System

Chapter 6: System Accounting
- Goals of System Accounting
- Overview of System Accounting
- Daily Usage and Installation
- Disk Space Usage Accounting
- Connect Session Accounting
- Process Accounting
- Charging Fees to Users
- Accounting Summary and Report
- Updating the Holidays File
- Fixing Corrupted Files
- Sample Accounting Shell Scripts

Chapter 7: System Reconfiguration
- System Reconfiguration Summary
- The System Reconfiguration Process
- Swap Space Configuration
- Controlling Disk Use
- Creating a New File System
- Adding a New Disk
- Mounting and Unmounting File Systems

Chapter 8: Troubleshooting
- System Panic
- Manual System Dump
- Using savecore
- Power Fail Recovery
- /etc/passwd File Recovery
- /dev/tty File Recovery
- Dealing With an Unresponsive Terminal
- On-Line Diagnostics
- System Activity Reporter

Chapter 9: System Management Concepts
- The Superuser
- Processes
- IDs
- File System Implementation
- The HP-UX File Structure
- Memory Management

Appendix A Error Messages
- ISL Error Messages
- Booting Diagnostic Error Messages
- Booting Error Messages
- Spooling Errors

Appendix B System Accounting Files
Files in the /usr/adm directory
Files in the /usr/adm/acct/nite directory
Files in the /usr/adm/acct/sum directory
Files in the /usr/adm/acct/fiscal directory

Appendix C Using the fsck Command
How fsck Handles Inconsistencies

Appendix D System Parameters

Installing and Updating HP-UX -- HP 9000 Series 800

SYSTEM ADMINISTRATOR'S SERIES

PART-NUMBER: 92453-90019

AUDIENCE: System Administrators

This manual explains how to install and update the HP-UX operating system (and optional subsystems) on HP 9000 Series 800 computers.

Chapter 1: Introduction

Chapter 2: Concepts

Chapter 3: Installing HP-UX

Chapter 4: Updating HP-UX

Chapter 5: Modifying HP-UX

Chapter 6: Root Disk Partitioning

Chapter 7: The Update Screens

Appendixes

Hardware paths; release-specific procedures.

System Administration Basics - A Menu-oriented Approach

SYSTEM ADMINISTRATOR'S SERIES

PART-NUMBER: 92453-90017

AUDIENCE: System Administrators

This manual describes SAM, the System Administration Manager, a menu-driven package that simplifies some of the most commonly performed system administration tasks.

Chapter 1: Introduction
- What is System Administration?
- Installing Your System
- Updating Your System
- What is the System Administration Manager?
- What SAM Can Do For You
- To Invoke SAM
- Tips for Using SAM

Chapter 2: Account Management
- Account Administration and SAM
- What is a User?
- Why Use Passwords?
- Provide the Real Name, Too
- User Groups
- What is the Home Directory?
- What Does the Startup Program Do?
- Adding a New Account
- Deleting or Deactivating a User
- Reactivating a User
- Showing User Information
- Modifying User Information
- Adding a New Group
- Deleting a Group Account
- Showing Users in a Group
- Add or Delete Users in a Group

Chapter 3: File System Management
- Maintaining the File System
- Managing the File System
- Making a New File System
- Unmounting a File System
- Listing or Enabling Swap Devices
- Checking Disk Information

Chapter 4: Backup and Recovery
- Backup Considerations
- Backup and Recovery with SAM
- Performing a Full Backup
- Performing an Incremental Backup
- Setting a Schedule for an Automated Backup
- Recovering an Index of Files
- Recovering Selected Files

Chapter 4: Backup and Recovery (cont'd)
Display Index Files
Displaying the Logfile
Displaying and Modifying - List of Backup Filesets

Chapter 5: System Configuration
Adding Terminals
Configuring the Kernel
Converting to Long Filenames

Chapter 6: Spool System Configuration
LP Spooler Management
Starting and Stopping the Spool System
Adding a Printer
Removing a Printer
Starting or Stopping a Printner
Listing Printer Information
Setting the Default Printer

Chapter 7: UUCP Management
The UUCP Network
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Showing and Modifying Device Configurations
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SALES & SUPPORT OFFICES
Arranged alphabetically by country

Product Line Sales/Support Key

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Telex: 0845-430 BSLBIN
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Blue Star Ltd.
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