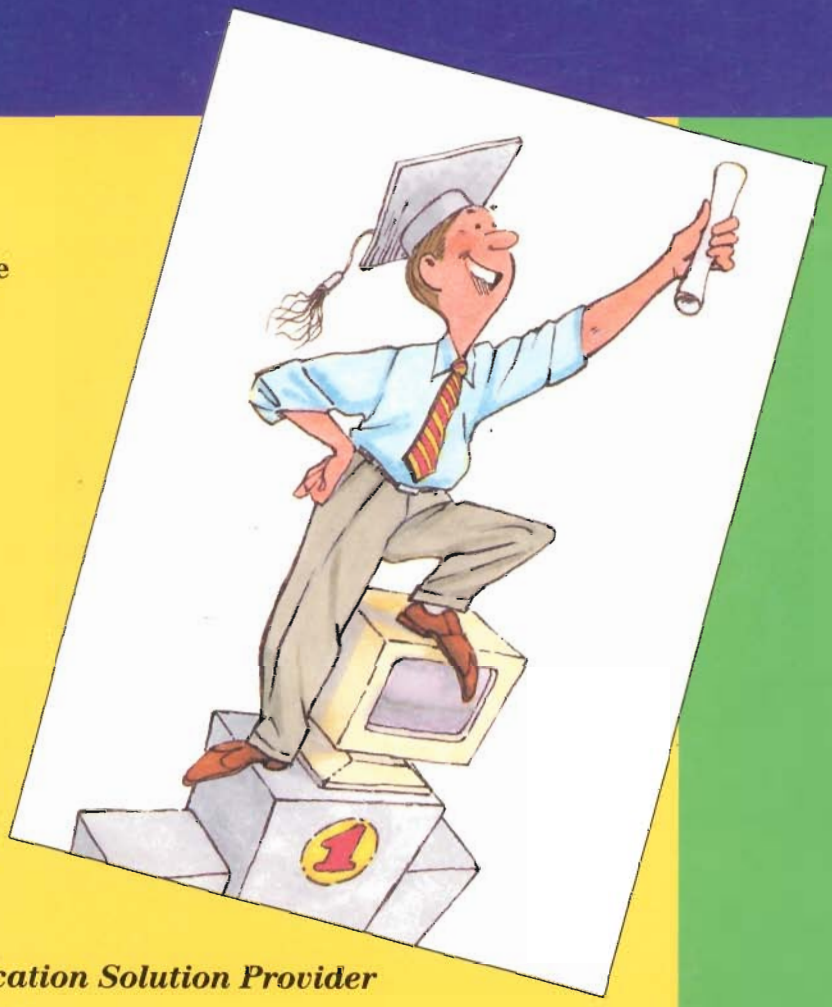
HEWLETT PACKARD

HP Education Catalogue

Includes Course Descriptions and Schedules



Your Complete Source of Computer System Training

Australia
New Zealand

July 1994

HP: Your Total Education Solution Provider

NEW! ***in this Issue:***

Building Networks with Bridges, Routers, and Hubs.... 31
HP OpenView Operations Centre Fundamentals..... 31
MPE/iX Networking Fundamentals..... 43
Open Systems Education Portfolio 35
Getting Started with HP IMAGE/SQL..... 48

Australia
Melbourne **272 2877**
Interstate **008 035 520**
Fax **(03) 898 8848**

New Zealand
Wellington **(04) 802 6837**
Outside Wellington **0800 733 547**
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HP Education Catalogue

HEWLETT PACKARD

Hewlett-Packard Australisia
Professional Services Organisation

Dear Customer:

Hewlett-Packard is pleased to be able to present you with this new catalogue of Customer Education Centre services and courses and would like to take this opportunity to bring to your attention some of the new offerings described therein.

On-Site Training

This type of training can be particularly cost effective if you have six or more students. Courses can be customised to reflect your own environment and training can be scheduled to suit your specific timeframe.

On-Demand Training

Give the Customer Education Centre a call if you find that a particular course date does not suit your timing. We often run additional courses to cater for demand.

Training Needs Analysis/Customised Courses

If your company is planning a move to Open Client/ Server Computing we can help you establish a statement of training requirements. These requirements can be determined on a job function or individual basis to assist you in planning a training schedule for your organisation.

As a follow on to the Training Needs Analysis, courses can now be customised by browsing and selecting modules relevant to your needs. Workbooks can be put together reflecting the sequence of modules chosen.

In addition to the above customised solution we also offer a wide variety of seminar topics. You can choose from client/server concepts and capabilities to open systems security. Look inside for more details.

Distributed Computing

DCE and Encina are the building blocks for enterprise-wide distributed applications. We now offer a number of courses on both these technologies.

Enhanced and New Courses

We are continually adding new courses to the curriculum and also enhancing existing ones to reflect changes in technology and customer needs. Look for the "new" and "enhanced" symbols in this catalogue.

If you would like more information on any of the above offerings please contact our Customer Education Centre.

Sincerely,

Bill Clarke
General Manager
Hewlett-Packard - Professional Services Organisation (PSO)

It's Easy to Register!

1. **Review the catalogue and select a course, date, and location**. Scheduling information is contained in the sleeve at the back of this catalogue.
2. **Contact the HP Customer Registration Centre:**

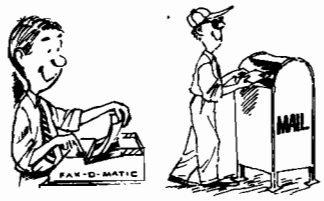
Telephone Registration and Information

In Australia
Melbourne 272 2877
Interstate 008 035 520

In New Zealand
Wellington 802 6837
Outside Wellington 0800 382 0400

Fax and Mail Registration

Available 24 hours a day for your convenience. Use the form contained in the sleeve.



3. **Provide one of the following payment options to hold your seat:**

- Purchase order number
- Cheque
- Credit card information (VISA, MasterCard or Bankcard)

For More Information

To speak to a customer representative who can answer questions about course content, prerequisites, course availability, and local accommodations, call the:

Training Co-ordinators

Australia	New Zealand
008 035 520	**0800 733 547**
Melb. 272 2877	**Well. (04) 802 6837**

Education Volume Purchase Agreements

If your company has an education volume purchase agreement with HP, such as the Education Value Plan or the Educational Services Reseller Agreement, you must reference your plan number when calling the HP Customer Registration Centre to ensure proper billing. See page 6

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

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Contained in the sleeve at the back of this catalogue

- **TRAINING CENTRE LOCATIONS**
- **24-HOUR MAIL/FAX REGISTRATION FORM**
- **TERMS AND CONDITIONS**

OUR EDUCATION CENTRES ARE STRATEGICALLY LOCATED AT:

Melbourne	**(03) 272 2877**
Sydney	**(02) 950 7444**
Perth	**(09) 441 8000**
Adelaide	**(08) 366 5111**
Brisbane	**(07) 858 2222**
Canberra	**(06) 251 6999**
Auckland	**(09) 357 2000**
Wellington	**(04) 382 0400**

COURSE DESCRIPTIONS AND SCHEDULES:

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Curriculum Path 26
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How To Use This Catalogue

The HP Education Catalogue is designed to make it easy for our customers to locate and register for a course. Simply follow the steps below and you'll be enrolled in a course!

- **See What's NEW!**

  Look on pages 3 and 4 for information on new courses and special programs announced since our last catalogue.

- **Discover Our Course Sections**

  Our catalogue is organised by major operating systems and technologies, such as HP-UX, networking, DCE, MPE, and open systems. Check the table of contents on page 1 to find the sections that apply to you. Then locate the course that best applies and turn to the corresponding page.

- **Follow the Curriculum Paths**

  Custom curriculum paths are included for our UNIX® system (page 11), networking (page 29), distributed computing (page 26), and MPE (page 42) curriculums. Use these paths to identify courses that are appropriate for your experience and responsibilities. The page number for each course is listed. Turn to the appropriate page and refer to the accompanying course descriptions and schedules.

- **Locate Course Schedules**

  Course schedules are contained in the sleeve at the back of the catalogue.

  Many courses are available several times a year at various locations. Locate the time and place that best fits your needs. Since many courses fill up weeks in advance, call today to reserve your seat. Courses available for dedicated delivery only are referenced in this catalogue by "Call to arrange a dedicated delivery for six or more students—at your site or ours!"

- **Call for Registration and Questions**

  After reviewing the curriculum path and course descriptions, call our HP Customer Registration Centre to check on availability. Complete registration information is provided in the sleeve of this catalogue. Our customer representatives can also help answer any questions you may have regarding prerequisites, course topics, or logistics.

- **Utilize Our After-Hours Registration**

  Take advantage of our mail/fax order form contained in the sleeve at the back of the catalogue to register or ask a question 24 hours a day.

- **Read Our Policies**

  Look on the back of the registration form for terms and conditions.

- **Send in Your Suggestions**

  If you have ideas for improving our catalogue, call and let us know.

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Melbourne **(03) 272 2877**
Interstate **008 035 520**
Fax **(03) 898 8848**

New Zealand
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What's New with HP Educational Services?

NEW! Courses

Each new course is indicated with the NEW! icon.

Networking

MPE/iX Network Fundamentals (HP B3688S)

This course provides the practical aspects of network administration tailored for the MPE/iX environment. See page 33.

Building Networks with Bridges, Routers and Hubs (HP B3689S)

This course covers the usage of HP's hubs, bridges, and routers as building blocks to create your custom Ethernet LAN. See page 31.

HP OpenView Operations Center Fundamentals (HP B3713S)

This course provides installation, configuration, and customisation of HP OpenView Operations Center for your computing environment. See page 31.

MPE/iX

Getting Started with IMAGE/SQL (HP 50786S+074)

This course provides relational database concepts with IMAGE/SQL. See page 48.

HP 9000

HP-UX Troubleshooting (HP H5368B)

This course teaches general techniques and tools of troubleshooting on an HP-UX system. See page 14.

Kornshell Programming (HP H5888S)
See page 20.

DCE

CICS/9000 Administration (HP H6156S)
See page 28.

ENHANCED Courses

We've updated and enhanced several courses. They are marked with the ENHANCED icon.

HP LAN Manager/X for HP 9000 System Fundamentals (HP B3709S) page 34.

HP OpenView DTC Manager (HP B3711S) page 34.

HP OpenView DTC Manager and DTC/X.25 iX (HP B3712S) page 34.

HP OpenView Network Node Manager Fundamentals for Network Operators (HP B3305S) page 32.

HP OpenView Network Node Manager Fundamentals for Network Operators (HP B3304S) page 32.

HP-UX Performance and Tuning (HP H5278S) page 17.

HP-UX System Security (HP H5001S) page 16.

X Window System Programming: Xlib (HP 50756S) page 23.

HP Educational Solutions

Designing a Solution to Work for You

What Makes an Educational Solution

Even the most straightforward customer site course delivery is an education solution at heart, customised to your needs. Many of the same steps are used whether structuring a very large education solution or simply a dedicated delivery of an existing HP course at your site.

Needs Assessment

A needs assessment is the first step in creating a solution. In this step an HP Educational Services representative works with you to understand your organisation's educational and training needs. We believe it's important to understand your overall business objectives and information technology strategy before recommending educational services. We gather information on your current work environment, projects, skills and knowledge and combine that with information on your upcoming projects, desired skills and knowledge, and educational objectives.

Curriculum Planning

In this phase your HP representative will recommend the right curriculum for your situation. This could be anything from an existing standard course or courses or could involve course customisation or development. We tailor a curriculum based on your needs, not one limited to our offerings, and we can bring in partners where necessary.

Logistics Planning

An HP Educational Services representative will coordinate the logistics associated with delivering the courses. This could include everything from arranging for equipment and facilities to managing subcontractors. Most dedicated deliveries will be at your site but a large solution could incorporate dedicated sessions at an HP site, or seats in regularly scheduled training, or self-paced modules.

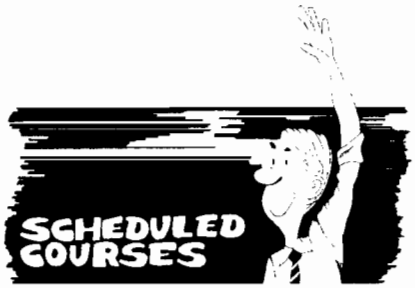
Evaluation Reports

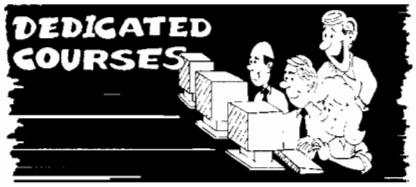
Student evalutions and on-site feedback forms are reviewed extensively by HP and are an essential part of maintaining HP's high-quality course delivery.

Turn the page to learn more about convenient and cost-effective delivery options HP offers to make an Educational Solution work for you.

Flexible Delivery Options

HP has delivery options for your unique need!





Scheduled Training

HP's original education offering still remains our most popular. Reasons why include:

- Choose from popular topics at the most convenient location and date for you
- Enjoy focused, distraction-free learning
- Benefit from the guidance of an expert instructor
- Opportunity to share best practices with your fellow students
- Easily accommodates individuals or groups

Browse through this catalogue and select the right topics, times and locations. If you need more information or want to register we're just a phone call away.

Dedicated course delivery

An extremely popular option for organisations with 6 or more persons to train on the same topic(s).

- Convenient: Scheduled at your request, at your site or ours
- Economical: Can save time and money on both travel and course registration
- Teambuilding: Co-workers learn together - the same topics at the same time
- Confidential: Only the persons you specify attend the class
- Customisable: One of the most attractive aspects of dedicated course delivery is that the content can be tailored to your exact needs.

Custom Education Solutions

For customers undertaking major information technology initiatives, often nothing short of a custom education solution will do. Our trained educational services personnel will work with you to combine the available delivery options in the right mix for your unique situation. See the previous page for more information about HP Education Solutions.

To learn more about these programs and to register for a course, call:

In Australia

Melbourne: *272 2877*
Interstate: *008 035 520*

In New Zealand

Wellington: *802 6837*
Outside Wellington: *0800 733 547*

Maximising Your Education and Training Dollars

Hewlett-Packard understands organisations today need to maximise the return on their investment in information technology. We believe that education and training is a key requirement to optimise that investment. At the same time, we understand that budgets, including those for education and training, are being squeezed like never before. HP has a variety of ways to help you stretch your education and training dollars.

Dedicated Course Delivery

Along with all the other benefits of a dedicated delivery (see page 5), a dedicated course delivery can save you money. It's possible to save up to 25% off thestandard price of our courses. Additionally, many customers also reduce travel expenses through a course delivery at their site.

The Education Value Plan

HP's Education Value Plan (EVP) is designed to make budgeting and purchasing of our regularly scheduled courses easier for you.

The EVP is a convenient way to purchase days of training in advance without specifying the students, the courses, the dates or the locations.

Starting up your EVP

One of our education consultants will contact you to learn more about your specific needs. Based upon your situation and our past experiences with organisations with similar needs, we will estimate the number of training days required. We'll outline a 12-month training plan with the estimated number of people who should attend training and which courses they should take. Based on this estimate we can recommend the correct size EVP for your organisation.

Each unit of your EVP entitles your organisation to one person/day of a regularly scheduled HP course. A minimum purchase of 50 units (only 10 weeks of training) is required to initiate an EVP.

Using your EVP

Once you have purchased an EVP, your designated contact calls the HP Customer Registration Centre to sign up students for each class. Our advance scheduling service allows you to reserve a spot up to 12 months in advance.

An EVP agreement is good for 12 months from purchase and guarantees one low fixed price per day for all your training. In many cases an EVP is not only convenient but saves you money.

Benefits of an EVP

- **Maximise flexibility with minimal advance planning**

  You don't need to know the student names, course, dates or even locations in advance. Our education consultant will work with you to estimate your overall training needs. You then have the flexibility to fill in the plan as the year progresses.

- **Simplify budgeting**

  By purchasing training in quantity in advance you can reserve training dollars when the funding is available

- **Lock in price protection**

  Your price is guaranteed for 12 months from the agreement date.

- **Reduce purchasing effort**

  Eliminate the time and money spent approving training purchases throughout the year.

- **Flexible payment**

  Arrange to be billed up front or periodically.

If you already have an EVP

To expedite the registration process, remember to have your EVP number handy when calling to register students.

UNIX System and HP-UX

Sections

Course Directory 8
HP-UX System Startup Training Guide 9-10
UNIX System Fundamentals 12-13
HP-UX System/Network Administration 14-17
UNIX System Software Development 18-22

Courses for Multiple Job Functions

- System and network administrators
- Software and application developers
- Programmers
- Technology managers
- Application users

Courses for Multiple Operating Systems

- HP-UX HP 9000 Series 300, 400, 700, and 800 systems
- OSF
- Sun/OS, AIX, and ULTRIX

Open Systems

Many of the courses listed in this chapter focus the majority of their content on industry standard topics. They are highlighted with an open systems icon. We also have a dedicated open systems section within this catalogue. Turn to page 35 to find out about our latest seminars designed to successfully lead you to an open systems environment.

Curriculum Paths

Custom curriculum paths are provided to assist with your planning. These paths will help you identify the appropriate courses and recommended follow-on courses based upon your job responsibilities. Paths are included for:

- HP-UX system and network administration 11
- UNIX system programming ... 18
- Graphical user interfaces 18
- Networking 29

Course Directory

Our course directory on page 8 provides a convenient reference guide and overview of our entire curriculum of UNIX system and related courses.

Startup Training

If you are new to HP-UX and are not sure where to start, use our startup training guide to plan your training effectively. This two-page guide starting on page 9 will help you determine who should attend training and which courses they should go to.

UNIX Curriculum Notes

NEW! Courses

Building Networks with Bridges, Routers and Hubs (HP B3689S) Page 31

HP OpenView Operations Center Fundamentals (HP B3713S) Page 31

HP OpenView DTC Manager (HP B3711S) Page 34

HP OpenView DTC Manager and DTC/X.25 iX (HP B3712S) Page 34

HP-UX Performance and Tuning (HP H5278S) Page 17

HP-UX System Security (HP H5001S) Page 16

X Window System Programming: Xlib (HP 50756S) Page 23

ENHANCED Courses

Take a closer look at these updated and enhanced courses:

HP LAN Manager/X for HP 9000 System Fundamentals (HP B2781S) Page 34

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Wellington **(04) 802 6837**
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UNIX System and HP-UX Course Directory

Title	HP Course No	Days	Format	Page
UNIX System Fundamentals				
Fundamentals of the UNIX System	51434S	5	Lecture/Lab	12
UNIX System Basics I	51489S	2	Lectaure/Lab	13
UNIX System Basics II	H2572S	3	Lecture/Lab	13
HP-UX System/Network Administration				
HP-UX Network Admin.: LAN Link, ARPA/Berkeley, NFS, and NIS/and HP-UX Clusters	H2564S, H2550S	4,5	Lecture/Lab	16, 30
HP-UX Performance and Tuning	H5278S	3	Lecture/Lab	17
HP-UX System Administration Basics	50722S	3	Lecture/Lab	13
HP-UX System Administration for the HP 9000 Series 800	51482S	5	Lecture/Lab	14
HP-UX System Security	H5001S	2	Lecture/Lab	16
HP-UX Workstation Administration for the HP 9000 Series 300/400/700	51436S	5	Lecture/Lab	14
Moving to HP 9000 Series 700 System and Network Administration/Non HP-UX Cluster	50790S+112,134	5,4	Lecture/Lab	15
HP-UX Troubleshooting	H5368S	3	Lecture/Lab	14
HP-UX OpenMail/HP-UX Administration Training	H2128S	3	Lecture/Lab	14
UNIX System Software/Application Development				
Programming Languages				
ANSI C Programming	35130S	5	Lecture/Lab	19
C++/Object-Oriented Programming	B1810S	5	Lecture/Lab	19
UNIX System Programming				
Network Programming with BSD Sockets	50783S	4	Lecture/Lab	21
Programming with UNIX System Calls	50710S	5	Lecture/Lab	20
Theory of Operation for PA-RISC HP 9000 System	H5081S	5	Lecture/Lab	21
UNIX System Programmer Tools and Utilities	B1672S	3	Lecture/Lab	20
NEW! Kornshell Programming	H5888S	3	Lecture/Lab	20
Object-Oriented Technology				
HP OpenODB	B3184S	5	Lecture/Lab	22
Object-Oriented Analysis and Design: Fusion	H5851S	4	Lecture/Lab	22
Object-Oriented Analysis and Design: Survey	50790S+054	3	Lecture/Lab	22
Graphical User Interfaces (GUI)				
Fundamentals of X Windows and HP VUE	H5366S	3	Lecture/Lab	23
Programming with Motif	50767S	5	Lecture/Lab	24
User Interface Design with Motif	H5095S	1	Seminar	24
X Window System Programming: Xlib	50756S	5	Lecture/Lab	23
Data Management				
HP ALLBASE/SQL Database Design Theory	30701S	4	Lecture/Lab	25
HP ALLBASE/SQL on HP-UX and MPE/iX	36389S	5	Lecture/Lab	25
HP ALLBASE/SQL for Programmers	H5856S	5	Lecture/Lab	25
HP ALLBASE/SQL Fundamentals For MPE/iX and HP-UX DBAs	H5857S	5	Lecture/Lab	25
Distributed Computing				
DCE Internals	H5098S	5	Lecture/Lab	27
NEW! Encina Administration	B3707S	5	Lecture/Lab	27
Encina Programming	B3706S	4	Lecture/Lab	27
HP DCE System Administration for the HP 9000	B3314S	5	Lecture/Lab	28
OSF DCE Application Programming	H5855S	5	Lecture/Lab	27
NEW! System Administration of CICS on the HP9000	H615S	3	Lecture/Lab	28
Networking				
NEW! Building Networks with Bridges, Routers and Hubs	B3689S	4	Lecture/Lab	31
HP LAN Manager/X for HP 9000 System Fundamentals	B3709S	4	Lecture/Lab	34
HP OpenView DTC Manager Fundamentals	B3711S	2	Lecture/Lab	34
HP OpenView DTC Manager and DTC/X.25 iX	B3712S	3	Lecture/Lab	34
HP OpenView NW Node Manager Fundamentals for Network Managers	B3304S	4	Lecture/Lab	32
HP OpenView NW Node Manager Fundamentals for Network Operators	B3305S	2	Lecture/Lab	32
NEW! HP OpenView Operations Center Fundamentals	B3713S	4	Lecture/Lab	31
HP-UX Network Admin.: LAN Link, ARPA/Berkeley, NFS, and NIS/ and HP-UX Clusters	H2564S, H2550S	4,5	Lecture/Lab	16, 30
NetWare for the HP 9000: Fundamentals for Network Administrators	B3312S	3	Lecture/Lab	33
TCP/IP and LAN Fundamentals	B2969S	2	Lecture/Lab	30

HP-UX System Startup Training Guide

Read Me First!

Even with all the advances in operating environments, getting up to speed quickly can still be a real challenge. Where do you start? **With HP Educational Services.** Don't trust your learning to trial and error with a new system.

If you are new to the HP-UX system or UNIX system, follow these four steps to determine the best training option for your business environment.

1. Refer to the Option Selection Guide below to identify the recommended training option appropriate for your company.
2. Read the selected options on pages 9 and 10 to identify which course best meets your needs.
3. For the complete course descriptions, turn to the page referenced next to each course title.
4. Still not sure? Simply call the HP Customer Registration Centre Australia: Melbourne 272 2877 Interstate 008 035 520. New Zealand: Wellington 802 6837 Outside Wellington 0800 733 547.

Let the experts at HP quickly provide the skills needed to successfully install and maintain your system. Whether you are new to the HP-UX system or the UNIX system, HP has the training solutions to help you go farther faster.

Option Selection Guide

You are:	Your computing environment is: • Large multiuser system • Running multiple applications • Used for application development • Networked	Your computing environment is: • Turnkey/run-time only • Running one application • No application development • CAD/CAM/CAE or office applications
• Designated HP Response Centre caller	Option 1, 4	Option 1, 4
• Primary system administrator	Option 1	Option 2
• Application developer or programmer also responsible for system administration	Option 1	N/A
• Anyone needing a comprehensive understanding of the UNIX system	Option 1	Option 1
• System operator • Back-up system administrator • Application users responsible for administering smaller systems	Option 2	Option 2
• Application users • Occasional users • Anyone needing a basic introduction to the UNIX system	Option 3	Option 3
• Experienced UNIX system and network administrators moving to HP 9000 Series 700	Option 4	N/A

Note: See option descriptions on this and the subsequent page.

Option 1:

Comprehensive UNIX System and Administration Training

Week 1: Fundamentals of the UNIX System (HP 51434S) (page 12), ***plus***

Week 2 (choose one):

- HP-UX Workstation Administration for the HP 9000 Series 300/400/700 (HP 51436S) (page 14), or
- HP-UX System Administration for the HP 9000 Series 800 (HP 51482S) (page 14)

Benefits:

- Develop a comprehensive understanding of the UNIX system.
- Gain the confidence you need to successfully administer complex multiuser systems.
- Prepare yourself for HP's curriculum of advanced system administration and networking courses.

Note: Applications developers and programmers not responsible for system administration should take week 1 (Fundamentals of the UNIX System) and proceed to HP's advanced curriculum of software development courses (see the curriculum paths on page 18).

Option 2:

Introductory UNIX System Overview and Basic Administration Training

Days 1-2: UNIX System Basics I (HP 51489S) (page 13)

Plus

Days 3-5: HP-UX System Administration Basics (HP 50722S) (page 13)

Benefits:

- Gain the confidence you need to successfully install and operate your HP-UX System.
- Understand how to use the system administration manager (SAM) to effectively perform your basic system administration tasks.
- Get a head start and minimise time spent searching through manuals.

Option 3:

Introductory UNIX System Overview

Days 1-2: UNIX System Basics I (HP 52489S) (page 13)

Benefits:

- Learn the basics of the UNIX system in preparation for using an application.

Option 4:

HP-UX Training for Experienced UNIX System and Network Administrators

Week 1: Moving to HP 9000 Series 700 System and Network Administration (HP 50790S+112, HP 50790S+134) (page 15)

Benefits:

- Learn the specifics of the HP 9000 Series 700 system to successfully install, configure, and maintain networks on the HP-UX workstations.
- Optimise productivity by leveraging past UNIX system experience to learn about features unique to the HP 9000.

Note: See page 15 for complete prerequisites. This is a fast-paced 5-day course that provides experienced UNIX system and network administrators the system and networking skills they need to support the HP-UX system when moving to the HP 9000 Series 700.

Benefits to You

- Hands-on experience enables you to develop the confidence you need to support your system.
- HP's technical expertise and reputation for quality means you learn from the leaders.
- Comprehensive student workbooks serve as a valuable reference when you are back in the office.
- A controlled environment allows you to learn without worrying about making costly mistakes.

Still not sure which training option is best for you?
Call

Australia Melbourne 272 2877 Interstate 008 035 520
New Zealand Wellington 802 6837
Outside Wellington 0800 733 547

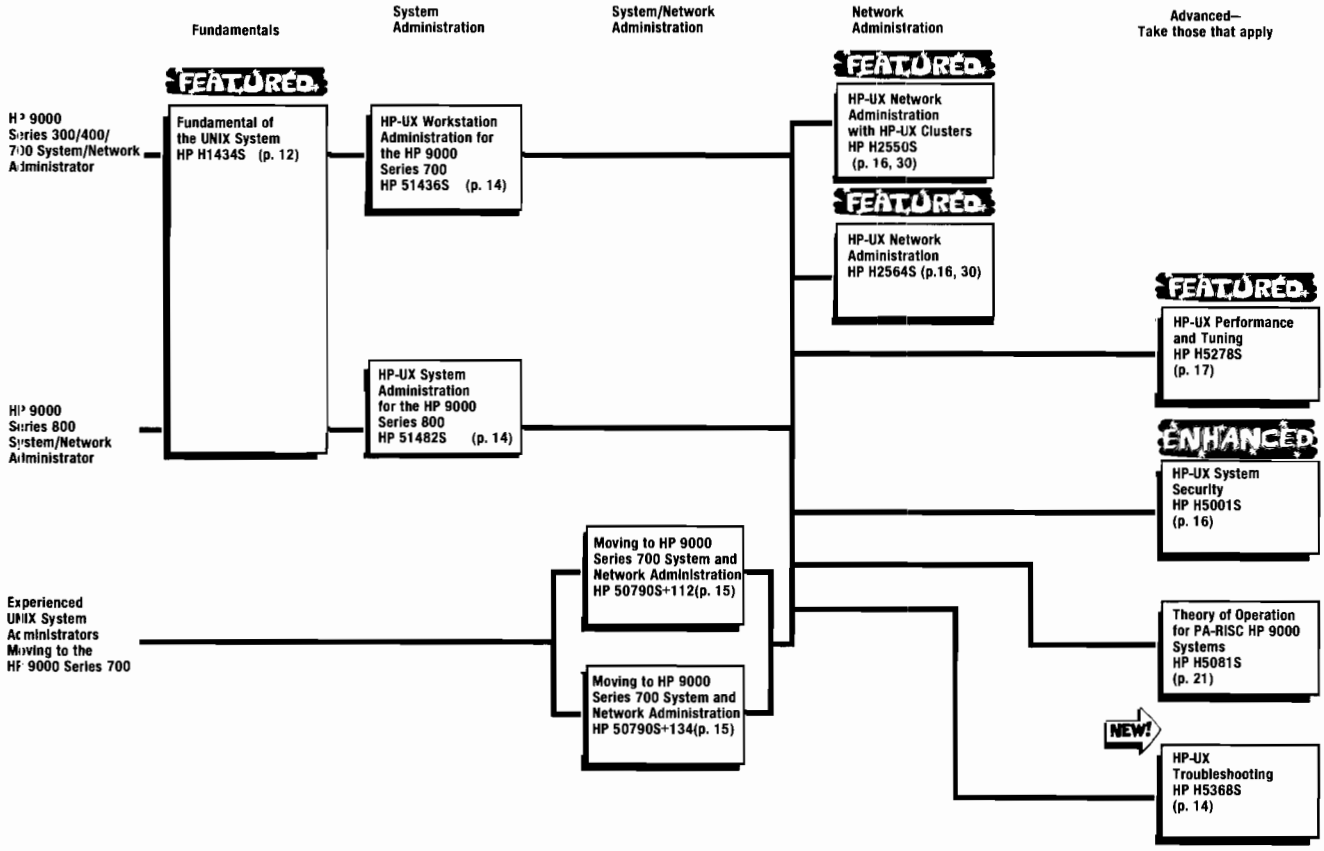
and speak with our trained customer representatives who can help you get started. And remember, it's never too late for training. Even when your system is up and running, HP Educational Services can provide you with entry-level and advanced training to help you run your system better and more efficiently. . . so you can reduce time spent searching through manuals and resolving your system problems.

UNIX System Fundamentals and HP-UX System/ Network Administration

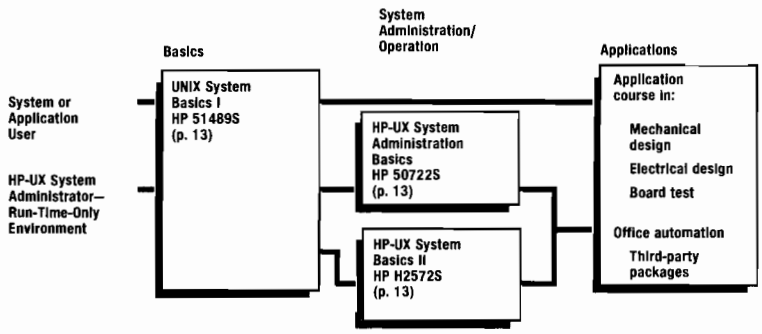
HP-UX System/Network Administration Curriculum Paths HP 9000 Series 300/400/700/800

Primary System Administrators
Network Administrators
Authorised HP Response Centre Callers

See our feature (page 9) on HP-UX startup training for system administrators and operators, as well as application developers and users responsible for system administration.



UNIX System or Application Users
System Administrators—Run-Time-Only Environment
System Operators
Backup System Administrators



FEATURED

OPEN SYSTEMS

Fundamentals of the UNIX System

This intensive, hands-on, 5-day course prepares you for our entire curriculum of system administration and software development courses. Learn why people have made this our number-one selling course for 3 consecutive years.

System administrators, network administrators, authorised HP response centre callers, and software developers:

Receive thorough coverage of the UNIX operating system and learn fundamentals of shell programming in a course based upon AT&T UNIX System V and selected U.C. Berkeley 4.3 BSD extensions. Receive additional information that is specific to the HP-UX operating system.

Prerequisites:

Basic computer knowledge and programming experience

Next steps:

This course is the starting point for our entire curriculum of system administration and programming topics. Most students go on to attend such popular courses as ANSI C Programming, HP-UX System Administration, or Introduction to the X Window System.

Course outline:

- Introduction to the UNIX system
- Structure and capabilities of the UNIX operating system
- System file and pathnames
- Directory and file manipulation
- File permissions and access
- vi editor basics
- Introduction to the shell
- Quoting and special characters
- Kornshell features
- Filename generation
- Input and output redirection
- Pipelines
- Multi-tasking
- Arguments and inputs
- Branches
- Loops
- Signals and traps
- Introductory administration

Fundamentals of the UNIX System
HP 51434S • 5 days

OPEN SYSTEMS

HP-UX System Administration Basics HP 50722S

System administrators in a run-time-only environment:

Learn to use the system administration manager (SAM). Efficiently perform the common administrative tasks necessary to maintain HP-UX systems that are dedicated to running technical or commercial applications on HP 9000 Series 300, 400, 700, or 800 computers.

Note: If you are preparing to be an authorised HP Response Centre caller, refer to Startup Training Options 1 and 4 described on pages 9 and 10.

Prerequisites:

UNIX System Basics I (HP 51489S)

Key topics:

- Hardware overview
- Configuration and peripherals
- Adding and removing users
- Creating a diskless cluster
- System startup, shutdown, and backup procedures
- File system management

HP-UX System Administration Basics
HP 50722S • 3 days

OPEN SYSTEMS

UNIX System Basics I HP 51489S

Application users and system administrators in a run-time-only environment:

Learn the basics of the UNIX system in preparation for using an application or administering a run-time-only environment.

Prerequisites:

Familiarity with computers recommended

Key topics:

- Computer basics, including logging on and orientation
- Managing files and the hierarchical file system
- Basic UNIX system commands
- Using the vi editor
- Using the LP spooler

UNIX System Basics I
HP 51489S • 2 days

UNIX System Basics II HP H2572S

System administrators and software developers:

Expand your UNIX system knowledge with part two of our basics training series. This course plus UNIX System Basics I (HP 51489S) prepares you for our entire curriculum of system administration and software development courses.

Prerequisites:

UNIX System Basics I (HP 51489S); programming experience recommended

Key topics:

- UNIX operating system shell and shell programming
- Process and command execution
- Input/output redirection and pipelines
- File generation

UNIX System Basics II
HP H2572S • 3 days

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HP-UX Workstation Administration for the HP 9000 Series 300/400/700

HP 51436S

System administrators responsible for the configuration, setup, and overall management of an HP-UX system:

Expand what you learned in Fundamentals of the UNIX System (HP 51434S) in order to successfully administer an HP 9000 workstation in an interactive, hands-on environment.

Prerequisites:

Fundamentals of the UNIX System (HP 51434S), or UNIX System Basics I (HP 51489S) and UNIX System Basics II (HP H2572S)

Key topics:

- Hardware overview and software installation
- File system structure, generation, and management
- Bootstrap and shutdown procedures
- Configuration of peripherals
- Kernel reconfiguration
- Backup and recovery procedures

HP-UX Workstation Administration for the HP 9000 Series 300/400/700
HP 51436S • 5 days

HP-UX System Administration for the HP 9000 Series 800

HP 51482S

System administrators responsible for the configuration, setup, and overall management of an HP-UX system:

Expand your UNIX System knowledge to successfully administer an HP 9000 Series 800 multiuser system.

Prerequisites:

Fundamentals of the UNIX System (HP 51434S), or UNIX System Basics I (HP 51489S) and UNIX System Basics II (HP H2572S)

Key topics:

- Hardware overview and software installation
- File system structure, generation, and management
- Bootstrap and shutdown procedures
- Configuration of peripherals
- Kernel reconfiguration
- Backup and recovery procedures

HP-UX System Administration for the HP 9000 Series 800
HP 51482S • 5 days

HP OpenMail/ HP-UX Administration Training

HP H2128S

HP OpenMail administrators:

Learn how to plan and configure the system, carry out standard operations, perform routine reliability testing, and diagnose and correct system errors.

Prerequisites:

UNIX System BasicsI (HP 51489S), or Fundamentals of the UNIX System (HP 51434S)

Key topics:

- Single system and network planning
- Single system and network configuration
- Installation and operation
- Reliability testing
- System error diagnosis and correction
- Planning and configuring an X.400 interface, a UNIX system mail server, and an HP DeskManager gateway

HP OpenMail/HP-UX Administration Training
HP H2128S • 3 days

NEW!

HP-UX Troubleshooting H53685

HP H2128S

This three day course is designed to prepare a student to be a more effective and efficient system administrator of an HP 9000 Series 300/400/700/800 System. The course will help administrators identify, qualify and resolve most problems related to their HP-UX Systems.

Prerequisites:

Fundamentals of the UNIX System (HP 51434S) and HP-UX Workstation Administration (HP 51436S) or HP-UX System Administration for the HP Series 800 (HP 51482S)

Key topics:

- General techniques and tools of troubleshooting
- Identification and resolution of incidents related to
  - system start up
  - loss of data integrity
  - memory, swap, input/output
  - system bottlenecks
  - regeneration of the system kernel
  - connected terminals
  - backups

HP-UX Troubleshooting
HP H5368S • 3 days

Moving to the HP 9000 series 700/800 System and Network Administration

HP 50790S+159

This fast paced course provides the experienced UNIX system administrator with the system and networking skills necessary to support the HP-UX system when moving to the HP 9000 Series 700 or 800 computer.

This course is designed for system and network administrators with significant UNIX system experience who currently install, configure, and maintain networks and who are moving to HP-UX systems.

Moving to the HP 9000 Series 700/800 System and Network Administration
HP 50790S+159 • 5 days
Call for more information

FEATURED

Moving to HP 9000 Series 700 System and Network Administration

System and network administrators with significant UNIX system experience who currently install, configure, and maintain networks and who are moving to HP-UX Series 700 workstations

Key topics:

- Installation/updates with HP-UX
- Using SAM
- Using and customising the HP VUE environment
- Setup and maintenance of HP-UX clusters
- Network troubleshooting tools
- X-terminal installation and configuration
- Monitoring system performance
- Graphics capabilities

Prerequisites:

- At least 1 year's experience with UNIX system and network administration

Note: Students must have prior experience with the following topics:

- Performed UNIX system backup
- Used fsck
- Set up cronjob
- Set up UNIX system spooling
- Mounted UNIX system file system
- Added users to password file
- Regenned UNIX system kernel
- Configured terminals/graphics stations
- Configured and used NFS/NIS and automounter
- Successfully installed, configured, and maintained networks on UNIX systems and set up appropriate security
- Understand routers, bridges, and hubs
- Understand Internet protocol addressing

If you do not have the above experience, please refer to Option 1 listed in our HP-UX startup training guide on page 17.

Moving to HP 9000 Series 700 System and Network Administration
HP 50790S+112 • 5 days

Non HP-UX Cluster Environment

For network administrators who are not in a cluster environment, a 4-day option is available that begins at the same time as the 5-day course and runs concurrently.

Moving to HP 9000 Series 700 System and Network Administration
HP 50790S+134 • 4 days

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FEATURED

HP-UX Network Administration

Gain the skills you need to administer networks on the HP 9000 system effectively!

You will learn how to install, configure, and maintain LAN/9000, TCP/IP services, NFS, NIS, and HP-UX cluster on any HP 9000 HP-UX system. This course has been updated for the HP-UX Release 9.0 system.

Course outline:

Day 1

- Introduction to LAN concepts
- LAN hardware
- Connecting and installing a LAN

Day 2

- Configuring ARPA/Berkeley services
- Additional ARPA/Berkeley services (BIND, gated, and sendmail)
- NFS concepts

Day 3

- Installing and configuring NFS and NIS
- Additional NFS services (lock manager, and status monitor

Day 4

- Using HP-UX troubleshooting tools (ping, landiag, rlb, linkloop, netstat, rpcinfo, and nfsstat)
- Network tools and commands
- Introduction to HP-UX clusters

Day 5 (Workstation users only)

- Configuring an HP-UX cluster
- Cluster concepts and operation
- Managing a cluster
- Creating context-dependent files

Prerequisites:

HP-UX Workstation Administration for the HP 9000 Series 300/400/700 (HP 51436S), or HP-UX System Administration for the HP 9000 Series 800 (HP 51482S), or HP-UX System Administration Basics (HP 50722S)

HP-UX Network Administration: LAN Link, ARPA/Berkeley, NFS, NIS, and HP-UX Clusters
HP H2550S • 5 days

Non HP-UX Cluster Environment

For network administrators who are in a multiuser (Series 800) environment, or are not in an HP-UX cluster environment, a 4-day option begins at the same time as the 5-day course and runs concurrently.

HP-UX Network Administration: LAN Link, ARPA/Berkeley, NFS, and NIS
HP H2564S • 4 days

HP-UX System Security HP H5001S

This course introduces system administrators to the general and network-related security features of the HP-UX system.

Key benefits:

- Mitigate potential security problems by getting an up-front understanding of security requirements and "gotchas."
- Gain the confidence to handle breaches in security effectively.
- Learn key aspects of developing a security plan that ensures your HP-UX system is trustworthy.
- Labs, exercises, and classroom discussions are generously used to reinforce the concepts.
- HP-certified instructors provide a wealth of experience to address your job-specific questions.

Who should attend:

Experienced system administrators or technical managers responsible for security

Prerequisites:

An HP-UX system administration course (HP 51436S, HP 51482S, or HP H5364S)

HP-UX System Security
HP H5001S • 2 days

ENHANCED

ENHANCED

HP-UX Performance and Tuning

This course is a popular follow-on to HP-UX System Administration for the HP 9000 Series 800 (HP 51482S) or Series 700 (HP 52436S).

Experienced system administrators:

Get a head start by understanding system hardware resources and factors impacting system performance. Reduce downtime by learning how to proactively identify bottlenecks and determine the remedial actions available.

Key benefits:

- Expand what you learned in the HP-UX System Administration for the HP 9000 course in order to optimise performance on HP 9000 Series systems.
- Get a head start by understanding system hardware resources and factors that impact system performance.
- Reduce downtime by learning how to proactively identify bottlenecks and determine the remedial actions available.

Course outline:

Day 1

- Module 1: Introduction
  - Definition of Performance
  - Performance Management
  - General Approach to Tuning
- Module 2: Factors Affecting System Performance
  - Processors with Options and Benchmark Figures
  - Processors, TLB, Cache, Co-processor, Pipelining
  - HP-UX Operating System
  - File System Overview
  - Buffer Cache
  - Disk Layouts and Properties
  - LVM and Raid
  - Inode Cache, Page Cache
  - Process States
  - Memory Management System
  - Vhand and Swapper
  - Scheduling, Timeslicing and Priorities
  - Real Time and Nice commands
  - Balancing Disk Loads

Day 2

- Module 3: Performance Tools
  Glance, Sar, iostat, vmstat,time, ps, Perf-Rx: How to use, how they work, advantages and disadvantages, Lab
- Module 4: Performance Analysis
  - Performance Analysis and
  - Diagnosis Understanding Bottlenecks
- Module 5: CPU Bottleneck
  - Systems of a CPU Bottleneck
  - Global and Process CPU Metrics
  - Lab
- Module 6: Memory Bottlenecks
  - Systems of Memory Bottleneck
  - Global and Process Memory
  - Metrics
  - Lab
- Module 7: Disk Bottlenecks
  - Systems of a Disk Bottleneck
  - Global and Process Disk Metrics
  - Lab

Day 3

- Module 8: Other I/O Bottlenecks
  - Network and kernel resource shortages
- Module 9: Performance Tuning
  - Tuning the Disk-Hardware and Software Solutions
  - Application Tuning
  - Disk Load Balancing
  - Tuning the File System and Disks
  - Lab
- Module 10: LVM Performance
  - File system Parameters
  - Mirroring
  - Scheduling
  - Striping
- Module 11: Database Tuning
  How Database performance is Affected by System Performance
  - Identify Bottlenecks
  - Know How and When to Tune Database
- Module 12: System Tuneable Parameters

  Kernel Parameters Commonly Used to Tune system

  Appendix A: Top Command How Top Works

  Other commands such as Accounting and bdf

Who should attend:

Experienced HP 9000 Series 800 or Series 700 system administrators.

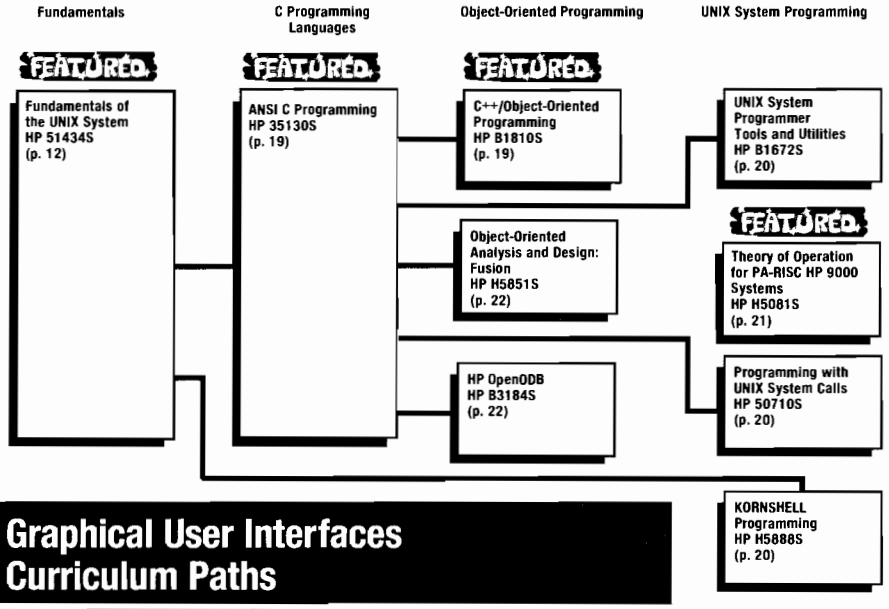
Prerequisites:

HP-UX System Administration for the HP 9000 Series 800 (HP 51482S) or HP-UX System Administration for the HP 9000 Series 700 (HP 52436S).

HP-UX Performance and Tuning
HP H5278S • 3 days

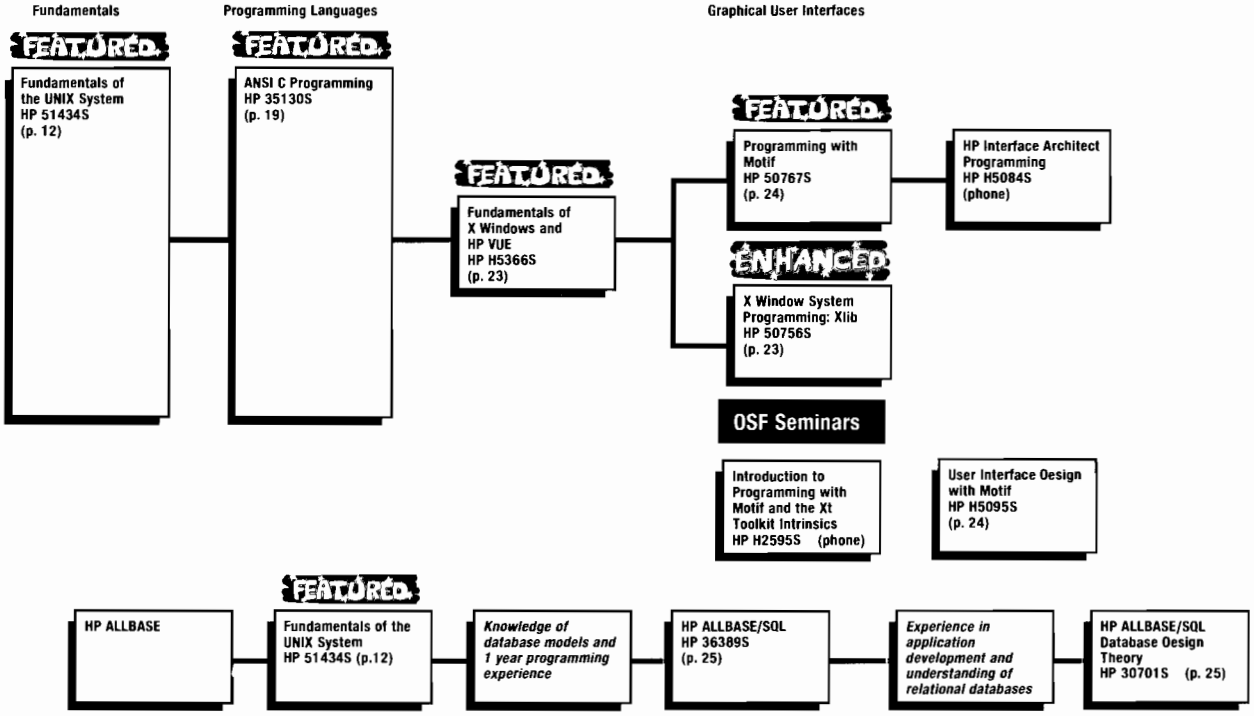
UNIX System Programming Curriculum Paths

Programmers
Application Developers
Software Developers



Graphical User Interfaces Curriculum Paths

Programmers
Application Developers
Software Developers



UNIX System Programming

OPEN SYSTEMS

ANSI C Programming

HP 35130S

Software development professionals:

Our intensive hands-on ANSI C programming course is one of the most highly rated HP education courses.

Learn ANSI C programming syntax, control flow, functions, pointers, structures, input/output, and the HP-UX operating system interface.

Key benefits:

- Learn ANSI C programming in 5 days without interruption in an intensive course that will challenge you.
- Master the advanced topics—like advanced pointers—not covered in most introductory C courses.
- Lots of hands-on exercises and personal instruction.

Who should attend:

Programmers with a knowledge of a high-level programming language and of the basic command set and editor for a host operating system (MPE, RTE, or the UNIX system)

ANSI C Programming
HP 35130S • 5 days

FEATURED

OPEN SYSTEMS

C++/Object-Oriented Programming

This course emphasises object-oriented programming techniques.

Learn and apply object-oriented concepts in the C++ programming environment, and master the skills you need to develop C++ software quickly. This course, unlike many other C++ courses, provides intensive training on the conceptual use of object-oriented programming skills.

This course features HP SoftBench tools that allow you to develop programs and applications more quickly.

Key benefits:

- Make the object-oriented programming paradigm shift in 5 days, even if you have no object-oriented experience.
- Prepare to apply what you learn at the HP class to other AT&T-compliant brands of C++ versions.
- Learn faster through hands-on experience.
- Gain direct experience with CASE tools.

Course outline:

Day 1

- C++ programming terminology
- Object-oriented design

Day 2

- HP's C++ product family
- HP C++ Developer I product

Day 3

- Classes in C++
- Overloading functions and operators

Day 4

- Derived classes
- Multiple inheritance-derivation
- Classes that allocate storage

Day 5

- Virtual functions
- Exception handling
- Templates
- Advanced features

Who should attend:

Programmers with 1 year's experience programming in C or another object-oriented language, such as Ada, and experience using some formal method of analysis and design.

Prerequisites:

Fundamentals of the UNIX System (HP 51434S) and ANSI C Programming (HP 35130S)

C++/Object-Oriented Programming
HP B1810S • 5 days

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UNIX System Programming

OPEN SYSTEMS

Programming with UNIX System Calls

HP 50710S

Understand use of UNIX system calls in application development.

UNIX system application programmers, developers, and system designers:

Learn UNIX system functionality, associated system calls, and library routines for implementing multiprocess software systems. This course is a good review of the UNIX system features that various popular and emerging standards offer. Some of the standards covered include portions of ANSI C, SVID, SPG2, XPG3, FIPS 151-1, and POSIX.1.

Prerequisites:

Fundamentals of the UNIX System (HP 51434S) and ANSI C Programming (HP 35130S), or Programming in FORTRAN 77 (HP 50698S)

Key topics:

- System call interface and process execution
- Summary/language considerations
- Signals in the UNIX system, signal handlers, and signal addressing
- Exception processing, process synchronisation, and interprocess communications (IPC)
- System V IPC facilities
- Input/output without wait

Programming with UNIX System Calls
HP 50710S • 5 days

OPEN SYSTEMS

UNIX System Programmer Tools and Utilities

HP B1672S

UNIX Programmers:

Improve your efficiency and productivity by mastering software development in the UNIX system environment.

Key benefits:

- Meet your specific needs by discovering how to customise the user environment.
- Save time by learning advanced editing methods.
- Increase efficiency by practicing, creating, maintaining, and managing archives and libraries.

Key topics:

- Program development cycle
- Compiler/linker
- Library management
- The debugger
- Make: a utility for building software
- Revision Control System

Prerequisites:

A knowledge of Pascal, FORTRAN, or C, plus Fundamentals of the UNIX System (HP 51434S) and experience with shell script programming

UNIX System Programmer Tools and Utilities
HP B1672S • 3 days

Kornshell Programming

HP H5888S

This course provides an understanding of shell programming necessary for general users who plan to become UNIX system administrators. It also provides HP-UX users with the knowledge and tools necessary to automate complex tasks and increase productivity. The focus is on the Kornshell.

Prerequisites:

UNIX System Basics I (HP 51489S) or the Fundamentals of the UNIX System Class (HP 51434S). The shell programming part discussed in the Fundamentals class will not be repeated here and is expected to be known to the participants.

Key topics:

- The Kornshell in the HP-UX environment
- Compound commands
- Command Language
- Programming Language
- Regular expressions sed
- Awk - A pattern matching language

Kornshell Programming
HP H5888S • 3 days

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UNIX System Programming

FEATURED

Learn Network Programming with BSD Sockets

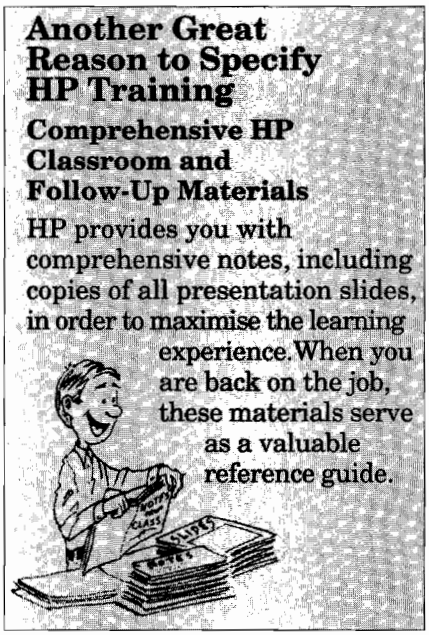
HP 50790S+116

Prerequisites:

A minimum of 6 months of experience with operating systems or network programming, Fundamentals of the UNIX System (HP 51434S), and ANSI C Programming (HP 35130S).

Call for more details.

Network Programming with BSD Sockets
HP 50790S+116 • 4 days



Theory of Operation for PA-RISC HP 9000 Systems

Gain the necessary knowledge to understand process management, swap management, memory management, and the I/O system and how it manipulates the virtual-to-physical memory mapping associated with any HP-UX system process. In this hands-on lecture and lab course, learn how the architecture is optimally designed to achieve user transparency.

The course provides exposure to the HP-UX operating system, kernel data structures, and overview of major kernel routines. It is currently focused on the HP-UX 9.0 system.

Key Benefits:

- Provides initial exposure to the HP-UX operating system by introducing major system tables, data structures, and an overview of major kernel routines
- Details of how a process moves from user level to kernel level in a UNIX environment, providing a deeper and more complete understanding of the HP-UX system

Course outline:

Day 1

- PA-RISC architecture review - covers important registers, virtual addressing, transition tables, TLB, and cache

Day 2

- Process management - covers system tables, data structures, system calls, and kernel routines used by the HP-UX system
- Memory management—covers major memory management data structures, swapping (normal/dynamic), demand paging, process deactivation and shared memory.

Day 3

- The HP-UX file system—covers physical disk structures and memory-resident data structures related to the file system

Day 4

- Logical volume manager—covers overall terminology, commands, and data structures used in the logical volume manager
- I/O system—covers architecture for PA-RISC, including bus connectivity, address space allocation, and memory mapped I/O; also covers I/O system calls

Day 5

- System initialisation—covers major kernel initialisation activities. This includes the steps necessary to boot the kernel into memory and initialise the kernel to its operational state

Who should attend:

Applications programmers and system administrators.

Prerequisites:

HP-UX System Administration for the HP 9000 Series 800 (HP 51482S) or HP-UX Workstation Administration for the HP 9000 Series 300/400/700 (HP 51436S), and ANSI C Programming (HP 35150S) is recommended, but not required

Theory of Operations for PA-RISC HP 9000 Systems
HP H5081S • 5 days

Object-Oriented Technology

OPEN SYSTEMS

Object-Oriented Analysis and Design: Survey HP 50790S+054

Learn the principles of object-oriented analysis and design using a variety of techniques. Identify the strengths and weaknesses of three analysis and design techniques: OMT, Grady Brooch, and Fusion.

Key topics:

- Concepts, terminology, and characteristics of object-oriented technology, identification of the major pieces of an object-oriented model, and problem analysis and design issues

Prerequisites:

At least 1 year of programming experience and a basic knowledge of object-oriented terminology

Object-Oriented Analysis and Design: Survey
HP 50790S+054 • 3 days

OPEN SYSTEMS

Object-Oriented Analysis and Design: Fusion HP H5851S

Learn the principles of object-oriented analysis and design. This course uses the HP fusion methodology. This course is a mix of lecture and labs.

Key topics:

- Learn object-oriented analysis and design. Use HP fusion.
- Practice object modelling.
- Learn about turning an object-oriented design into code.

Prerequisites:

Experience in software engineering or technical management; knowledge of object-oriented concepts.

Object-Oriented Analysis and Design: Fusion
HP H5851S • 4 days

OPEN SYSTEMS

HP OpenODB HP B3184S

HP OpenODB provides you with the background to use HP OpenODB software. Students successfully implement a case study design in an HP OpenODB database using OSQL.

Key topics:

- HP OpenODB administration, security, and optimisation; using OSQL for prototype and production applications
- Writing C applications with embedded OSQL; system functions and the HP OpenODB browser

Prerequisites:

Understanding of object technology concepts, familiarity with one object-oriented analysis and design methodology, experience developing software applications, experience with C, vi (or stand-ard UNIX editor), and UNIX experience using the SQL Select statement.

HP OpenODB
HP B3184S • 5 days

Other courses of interest:

C++/Object-Oriented Programming HP B1810S

For complete course description, see page 19

Australia
Melbourne **(03) 272 2877**
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Graphical User Interfaces

FEATURED

OPEN SYSTEMS

Fundamentals of X Windows and HP VUE

Learn to run programs with the X11 Window system capabilities and interface. This course gives you a jump start on learning X Windows with 60% lectures by an experienced HP instructor and 40% hands-on lab exercises with an instructor available to answer your questions.

Application programmers and users:

Obtain an introduction to the use and customisation of the X11 Window system and HP VUE.

Prerequisites:

Fundamentals of the UNIX System (HP 51434S) or UNIX System Basics I (HP 51489S) or getting started with your Domain/OS UNIX System Environment (HP H2468S)

Key benefits:

- Learn how to run programs in a windows-based and nonwindows-based environment.
- Discover how to start and stop the X Window system.
- Configure menus and the control panel in HP VUE.

Course outline:

Day 1

- Working with the X Window system
- Running programs in the X Window system

Day 2

- Customising your X Window system
- Creating custom bit maps
- Customising menus in the Motif environment
- Customising menus in the universal window manager (optional)
- Running clients in a network (optional)

Day 3

- Overview of HP VUE
- Configuring and using HP VUE

Who should attend:

Users and programmers who operate either HP-UX or Domain/OS on HP workstations and have an introduction to the use and customisation of X Windows Version 11, using the OSF/Motif Window Manager

Fundamentals of X Windows and HP VUE
HP H5366S • 3 days

OPEN SYSTEMS

X Window System Programming: Xlib

HP 50756S

Software developers and application programmers:

Learn the fundamentals of Xlib programming, including window manipulation, graphics capabilities, and hardware control. Practice writing Xlib programs, creating and controlling windows, handling pointers and the mouse, and drawing graphics.

Prerequisites:

Fundamentals of the UNIX System (HP 51434S); ANSI C Programming (HP 35130S); Introduction to X Windows and HP VUE (HP H5366S), or equivalent experience

Key topics:

- X Window system and programming
- Creating and manipulating windows
- Specifying colors and drawing graphics
- Pointers, mouses, pix maps, bit maps, and cursors
- Handling keyboards and text
- Manipulating planes and images

X Window System Programming: Xlib
HP 50756S • 5 days

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Graphical User Interfaces

FEATURED

OPEN SYSTEMS

Programming with Motif

Programming with Motif is the one course that teaches you how to develop graphical user interfaces using Motif.

Graphical user interfaces (GUIs) are an innovative and popular way to create stylish, flexible, and powerful interfaces for today's demanding software users. Motif is the best GUI toolkit available today.

Key benefits:

- Become immediately productive with GUI software development tools. This course will save you time and quickly advance your skills with hands-on Motif training.
- Learn at an accelerated pace with the comprehensive coverage of the Motif toolkit functions and features. You will have the hard copy of the code so you don't have to start from scratch when you return to your workplace.
- Learn by doing. Labs, exercises, and example code are generously used to reinforce the concepts.
- Customise your workstation environment. HP instruction provides an opportunity to get answers to your personal questions about customising your work environment.

Course outline:

Day 1

- Using the Motif window manager
- Introduction to HP Motif programming
- Resource management and resource groups

Day 2

- Writing call-back functions
- Using the main window widget
- Setting keyboard equivalents
- Using resolution independence

Day 3

- Adding pull-down and pop-up menus
- Using dialogs
- Adding file and time input

Day 4

- Text editor pop up
- Setting up keyboard traversal
- Setting up arrow keys and tab groups
- Text editor and files

Day 5

- Adding custom resources
- Adding custom command-line options

Who should attend:

Experienced software developers and application programmers

Prerequisites:

Fundamentals of the UNIX System (HP 51434S); ANSI C Programming (HP 35130S); or equivalent experience are required

Programming with Motif
HP 50767S • 5 days

OPEN SYSTEMS

User Interface Design with Motif

HP H5095S

This course is in lecture format.

Software developers and application programmers:

Learn to use features in the Motif toolkit to construct a usable interface and to achieve OSF Level One Certification. This course presents examples from real applications, demonstration programs, and constructed applications to demonstrate the elements of a good interface and major items in the Motif Level One Certification Checklist Revision 1.

Prerequisites:

Experience with C programming and windowing; or ANSI C Programming (HP 35130S) and Introduction to X Windows and HP VUE (HP H5366S)

User Interface Design with Motif
HP H5095S • 1 day • Quote

Call to arrange a dedicated delivery for six or more students.

Data Management

HP ALLBASE/SQL on HP-UX and MPE/iX HP 36389S

Learn about HP ALLBASE/SQL database management software and its components. *See page 56.*

Database administrators, programmers, and analysts using MPE/iX or HP-UX operating systems:

Learn to create or maintain databases or write application programs for HP ALLBASE/SQL databases. Gain experience with interactive querying, database environment creation and maintenance, and application program development.

HP ALLBASE/SQL on HP-UX and MPE/iX
HP 36389S • 5 days

HP ALLBASE/SQL Fundamentals for MPE/iX and HP-UX DBAs HP H5857S • 5 days

HP ALLBASE/SQL for Programmers HP H5856S • 5 days

HP ALLBASE/SQL Database Design Theory HP 30701S

Discover how to design effective data structures.

Database administrators, senior programmer/analysts, and system analysts:

Become proficient at designing effective data structures using entity relationship (E/R) modelling techniques and implementing them with HP ALLBASE/SQL database management software.

Prerequisites:

At least 2 to 3 years of experience in application development and an understanding of the structure of a relational database (tables, views, rows, columns, and indexes), or HP 36389S

Key topics:

- Identifying and defining entities and attributes
- Building a conceptual model using the entity-modelling technique
- Creating the logical model
- Normalising the data groups in the logical model
- Translating the logical model into an HP ALLBASE/SQL database physical design
- Tuning the physical design to best meet the needs of the customer

HP ALLBASE/SQL Database Design Theory
HP 30701S • 4 days

Another course of interest:

HP OpenODB HP B3184S

For complete course description, see page 22.

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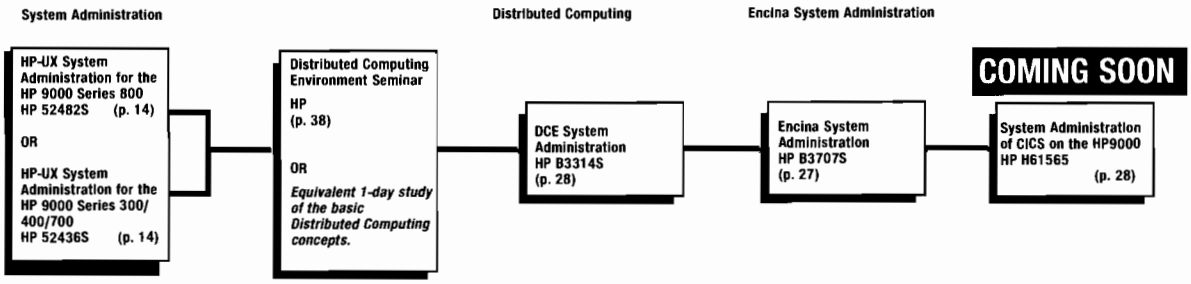
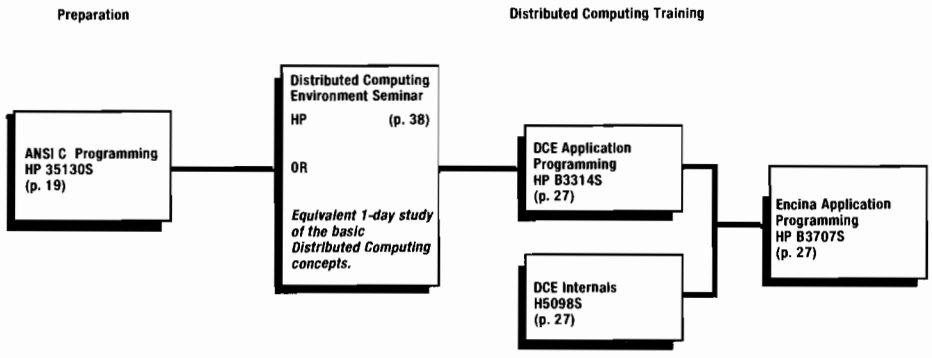
Distributed Computing Curriculum Path

System Administrators



Programmers



OSF Distributed Computing Environment (DCE) Application Programming

Use the full complement of OSF/DCE services to develop a basic distributed application.

Key benefits:

- Learn how to design and implement a basic distributed application using Remote Procedure Call (RPC) and other DCE services.
- Learn the DCE components and how to use them.
- Master a distributed environment and its benefits.

Course outline:

Day 1

- Application development
- DCE concepts and service components
- RPCs
- Design and distribution issues
- Using the IDL

Day 2

- Using DCE directory services
- Developing a server
- Developing a client

Day 3

- Programming to the DCE RPC
- Labs using RPC features

Day 4

- Using DCE security services
- DCE application development steps
- Using the distributed time service

Day 5

- DCE Application Development Steps
- Using threads

Who should attend the course:

Applications programmers who have experience and familiarity with UNIX operating system tools. Students MUST have experience with C programming language (HP 35130S)

OSF Distributed Computing Environment (DCE) Application Programming
HP H5855S • 5 days

Encina Application Programming

HP B3706S

You will learn how to use the Encina toolkit components such as SFS, Monitor, Trans-C, and peer to peer communication.

Prerequisites:

A strong background in DCE Programming (HP H5855S) and C Programming (HP 35130S)

Encina Programming
HP B3706S • 5 days

Encina System Administration with Labs

HP B3707S

You will discover how to administer the various Encina toolkit components, such as SFS, Monitor, vol., log, and distributed transaction service.

Prerequisites:

A strong background in DCE Administration (HP B3314S)

Encina Administration
HP B3707S • 4 days

DCE Internals HP H5098S

Explore how DCE components exploit the native operating system upon which the DCE is layered. Review DCE theoretical applications and discuss ways to use the DCE effectively in multiprocessing environments.

Prerequisites:

Familiarity with UNIX operating system commands and libraries and with the current release of DCE code and related documentation, and OSF DCE Seminar

Key topics:

- Threads
- Remote procedure calls
- CDS/X.500
- Distributed file services
- Security
- Distributed time services

DCE Internals
HP H5098S • 5 days • Quote

Call to arrange a dedicated delivery for six or more students.

OPEN SYSTEMS

HP DCE System Administration for the HP 9000

For system administrators:

This course teaches how to install, configure, and administer HP DCE/9000. It is 50 percent lecture and 50 percent lab.

Prerequisites:

- A good working knowledge of HP-UX system and network administration is required. Courses include HP-UX System Administration for HP 9000 Series 700 or Series 800 (HP 51436S or HP 51482S) or HP-UX System Administration for the HP 9000 Series 300/400/700 (HP 51436S).
- HP-UX Network Administration (HP H2550S or HP H2564S).
- HP OSF Distributed Computing Environment Seminar (HP H2594S) or equivalent experience with DCE concepts.

Course Outline:

Day 1

- Introduction to DCE administration
- DCE components
- The system administrator's role
- Installing, configuring, and troubleshooting a DCE cell with lab
- Designing and implementing the CDS namespace with labs
- Setting up and maintaining CDS with lab

Day 2

- Security and access control
- CDS: advanced topics
- Registry management with lab
- Network security and Kerberos with lab

Day 3

- DCE's security service with lab
- Setting up DCE security with lab
- Maintaining the DCE security service with lab
- Access control with lab

Day 4

- Access control and lab (continued)
- The registry: advanced topics
- RPC concept
- RPC management with lab
- DTS concepts and architecture

Day 5

- DTS management
- DTS security, configuration, and tuning
- Cell boundaries
- Configuration of intercell communications

DCE System Administration for the HP 9000
HP B3314A • 5 days

COMING SOON

System Administration of CICS on the HP 9000

HP H6156S

This is a three day, lecture/lab course that prepares students to install, configure and manage HP-UX systems that are running CICS on the HP 9000.

CICS/9000 utilises Encina and DCE, hence system administrators will also learn how to manage CICS/9000 in the context of ENCINA and DCE. This course includes hands-on labs at the end of key modules.

Prerequisites:

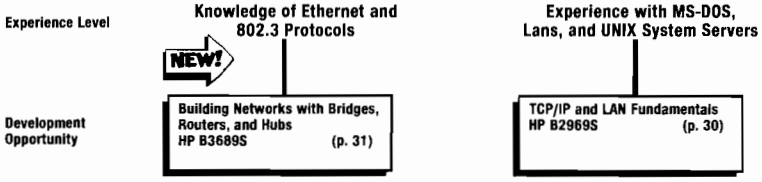
A strong background in DCE System Administration (HP B3314A) and Encina System Administration (HP B3707S) System Administration (HP B3707S)

System Administration of CICS on the HP 9000 .
HP H6156S • 3 days

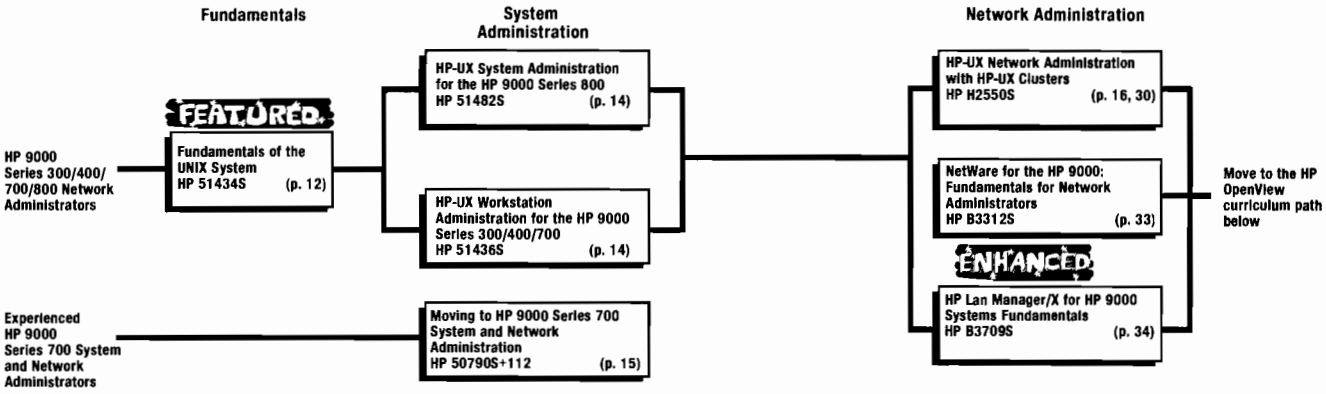
Networking

Networking Curriculum Paths

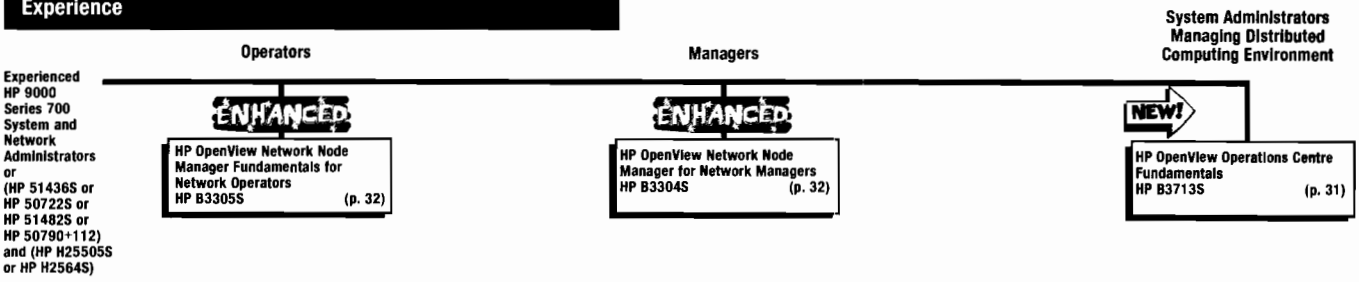
Networking Concepts
Networking Professionals



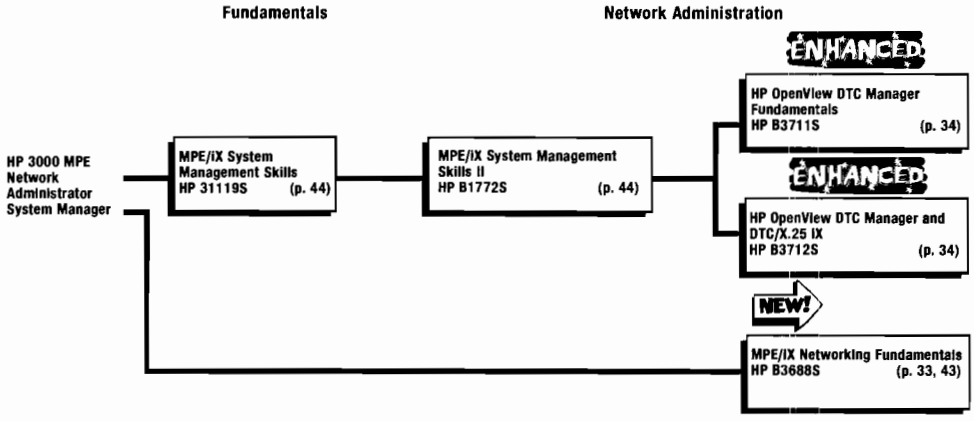
HP 9000 Series 300/400/700/800
Network and System Administrators, Network Planners, Application Programmers, and System Programmers



HP OpenView
Advanced Networking Professionals with System Administration Experience



HP 3000 MPE/iX
Network Administrators, System Managers



HP-UX Network Administration

Gain the skills you need to administer networks on the HP 9000 system effectively!

This course prepares experienced HP-UX system administrators for a successful journey into HP-UX network administration. You will learn how to install, configure, and maintain LAN/9000, TCP/IP services, NFS, NIS, and HP-UX cluster on any HP 9000 HP-UX system. This course has been updated for the HP-UX Release 9.0 system.

Course outline:

Day 1

- Introduction to LAN concepts
- LAN hardware
- Connecting and installing a LAN

Day 2

- ARPA/Berkeley services review (telnet, rlogin, ftp, rcp, and remsh)
- Configuring ARPA/Berkeley services
- NFS concepts

Day 3

- Installing and configuring NFS and NIS
- Additional NFS services (lock manager, and status monitor.
- Using HP-UX system troubleshooting tools (ping, landiag, rlb, linkloop, netstat, rpcinfo, and nfsstat)
- Network tools and commands (backups, updates, and remote installation)

Day 4

- Introduction to HP-UX system clusters

Day 5 (workstation users only)

- Configuring an HP-UX system cluster
- Cluster concepts and operation
- Managing a cluster
- Creating context-dependent files

Prerequisites:

HP-UX Workstation Administration for the HP 9000 Series 300/400/700 (HP 51436S), or HP-UX System Administration for the HP 9000 Series 800 (HP 51482S), or HP-UX System Administration Basics (HP 50722S)

HP-UX Network Administration: LAN Link, ARPA/Berkeley, NFS, NIS, and HP-UX Clusters
HP H2550S • 5 days

Non HP-UX Clusters Environment

For network administrators who are in a multiuser (Series 800) environment, or are not in an HP-UX cluster environment, a 4-day option begins at the same time as the 5-day course and runs concurrently.

HP-UX Network Administration: LAN Link, ARPA/Berkeley, NFS, and NIS
HP H2564S • 4 days

OPEN SYSTEMS

TCP/IP and LAN Fundamentals

HP B2969S

Optimise network technology decisions by learning about LAN technologies and the transmission control protocol/Internet protocol (TCP/IP).

TCP/IP network administrators and analysts who wish to understand the underlying hardware and protocols used in IEEE and Ethernet LANs:

Increase network efficiency by understanding hubs, bridges, repeaters, and routers. Get a basis for network troubleshooting by learning the specifics of the IP, TCP, and the user datagram protocol (UDP). Improve your ability to administer the network by understanding the routing of IP packets.

Prerequisites:

Previous experience working with LANs

Key topics:

- Physical level implementation
- LAN topologies and access methods
- Network devices
- Network layer protocol: IP
- Transport layer protocols: TCP and UDP
- Interface at level 5: BSD sockets and NetIPC sockets

TCP/IP and LAN Fundamentals
HP B2969S • 2 days

HP OpenView Operations Center Fundamentals

System Administrators Managing a Distributed Computing Environment:

Learn to install, configure, and customise HP OpenView Operations Center, (OpC), for your computing environment. This course also provides background on the operations aspects of HP OpenView Operations Center and how to train the operations staff to use the OpenView operator interface. This class is a must for those Administering a system with HP OpenView Operations Center software or for those IT managers considering the purchase of a site license for HP OpenView Operations Center.

Prerequisites:

A background in both system and network administration are required. We suggest having taken HP-UX System Administration for the Series 700 (HP 51436S) or for the Series 800 (HP 51482S) and HP-UX Networking Administration (H2550S/H2564S) or equivalent experience.

Key topics:

- Introduction to the operating environment, OpC basics, OpC installation, OpC processes
- Operations GUI, using OpC, operators workspace, operation tasks
- Administrator tasks, long file encapsulation, message sources and processing, threshold maintaining
- OpC product troubleshooting concepts, training operators and integration

HP OpenView Operations Center Fundamentals for System Administrators
HP B3713S • 4 days

Building Networks with Bridges, Routers and Hubs

HP B3689S

Network Designers, network technicians, network administrators, and system administrators who operate in a networked environment:

Learn how to use HP's hubs, bridges, and routers as building blocks to create your custom Ethernet local area network (LAN).

Prerequisites:

Knowledge of Ethernet and 802.3 protocols

Key Topics:

- How to use and configure hubs to build a workgroup LAN, and an introduction to bridging theory
- Using and configuring bridges to build a site LAN (including a hands-on lab in which students use HP equipment to build a site LAN)
- An introducton to popular wide area network technologies and routing theory
- Using and configuring routers to build a multisite internetwork
- How to use and configure the HP router for the Internet protocol (includes a hands-on lab)
- How to use and configure the HP router in a multiprotocol environment including IPX, DECnet, AppleTalk, and X.25 (including a lab in which the HP router is configured to support multi-protocol routing)

Building Networks with Bridges, Routers, and Hubs
HP B3689S • 4 days

OPEN SYSTEMS

HP OpenView Network Node Manager Fundamentals for Network Operators

HP B3305S

Network operators:

This 2-day course provides information on basic features, functionality, and troubleshooting capabilities of the HP OpenView Network Node Manager product on the HP-UX system.

Prerequisites:

HP 51489S or equivalent experience; knowledge of TCP/IP concepts

Key topics:

- Network management terminology and basics
- Operating HP OpenView Network Node Manager software on the HP-UX system
- Monitoring network status and events
- HP OpenView Network Node Manager software troubleshooting tools

HP OpenView Network Node Manager Fundamentals for Network Operators
HP B3305S • 2 days

FEATURED

OPEN SYSTEMS

HP OpenView Network Node Manager Fundamentals for Network Managers

Gain the skills you need to effectively manage and configure your network using HP's new HP OpenView Network Node Manager product on the HP-UX system.

This course teaches network managers the ins and outs of using HP OpenView Network Node Manager on the HP-UX system. This course is the bridge to the Distributed Management Environment (DME) of the future—it presents the technology on which DME is based.

Key benefits:

- Improve your ability to plan and troubleshoot your network by learning how to use the tools in HP OpenView Network Node Manager software.
- Learn how to manage your multivendor environment in an open and distributed fashion.
- Maximise management station flexibility and customisation by learning the features of the HP OpenView Network Node Manager graphical user interface and how to enhance the interface without programming.

Course outline:

Day 1

Network management basics, operating HP OpenView Network Node Manager, discovering the network, and creating network maps

Day 2

Manipulating network objects and symbols, monitoring network and system status, viewing and acknowledging events, and HP OpenView Network Node Manager troubleshooting tools

Day 3

Setting up HP OpenView Network Node Manager, SNMP concepts, browsing and setting MIB variables, and Application Builder

Day 4

Data collection, event configuration, advanced customisation, and the SNMP extensible agent

Who should attend:

Network managers responsible for managing distributed LANs or workgroup environments that run over TCP/IP

Prerequisites:

Familiarity with the UNIX system environment and TCP/IP concepts are required; an HP-UX system administration course (HP 51436S, HP 51482S, HP H5364S, HP 50722S, or HP 50790S+112) and an HP-UX network administration course (HP H2550S or HP H2564S) or equivalent experience is recommended

HP OpenView Network Node Manager Fundamentals for Network Managers
HP B3304S • 4 days

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NEW!

MPE/iX Networking Fundamentals

Benefits:

- Learn the practical aspects of network administration tailored for the MPE/iX environment
- Enjoy four days of un-interrupted dedicated time to master MPE/iX Networking. Meet and discuss the material with other MPE/iX System Administrators over the course of four days
- Practice your networking skills with the various labs included in this course.
- Our HP instructor will guide you through the challenging and important world of Networking for the MPE/iX environment.

Course Outline:

Day 1

- LAN Concepts: Basic components, Transition Media, Topologies, Signaling techniques, network layers, Internet, Protocols, and lab
- LAN Hardware: Hardware description, Links, Terminators, Repeaters, Hubs, Bridges, Routers, Gateways, Examples, and two labs

Day 2

- NS Services, NS3000 Connection Initiation Process, Open Configuration File, Main configuration screen, NS Configuration, Point-to-point and Token Ring configuration and lab
- ARPA Services: Overview, HP ARPA FTP, Starting FTP, FTP Commands, and practice lab

Day 3

- Troubleshooting: ping, Net Tool, collecting statistics on bridges, routers, and hubs. Also covers xpvalloc, xpvallrem, qvains, Linkcontrol, X25servr, X25stat, starting to bring the network up, and how to use network error manuals and lab
- Network Tools and commands: Using NMMGR for network backups, maintenance of configuration files, recovery, updates, and quiz probe proxy servers, domain name servers

Day 4

- Desktop Integration: Novell Netware, LAN Manager/iX, AppleTalk, PC NS/ARPA Service, WRQ
- Network Management: OpenView DTC Manager, FTAM, SNMP, HP PPN, Telnet access hardware limitations, QUIZ

Who should attend:

MPE/iX System Administrators, Operators and Managers, who need to perform routine activities to maintain an MPE/iX network. The student should be knowledgeable in basic MPE/iX commands, such as start-up, shutdown, backups and recovery.

HP B3688S • 4 days

Only from HP

NetWare for the HP 9000: Fundamentals for Network Administrators

HP B3312S

Network Administrators:

This hands-on course is designed to give you a solid foundation for NetWare for HP 9000 systems. You will learn how to install, configure, manage, and troubleshoot HP 9000 servers using NetWare software on HP 9000 Series 800 and Series 700 computers.

Key benefits:

- Overview of NetWare for the HP 9000 system including concepts, features, benefits, structure, and requirements; history of HP's relationship with Novell; pre-installation planning activities; and installing and configuring NetWare on the HP 9000 system.
- Installing NetWare on PC clients; shell options; configuring, managing and using printers; and managing a NetWare network.
- NetWare and network troubleshooting; managing users and data; server configuration for packet mode; and using NVT and ARPA services.

Prerequisites:

Experience with MS-DOS® and UNIX system administration and familiarity with LAN concepts. NetWare 3.11 System Administration, HP-UX System Administration for HP 9000 Series 800 (51482S), or HP-UX Workstation Administration (51436S) are prerequisite courses

NetWare for the HP 9000: Fundamentals for Network Administrators
HP B3312S • 3 days

ENHANCED

HP OpenView DTC Manager HP B3711S

System managers:

Plan, configure, and install a network using the HP OpenView DTC Manager product. Practice on-line and off-line configuration and how to manage and control local and remote data communications and terminal controllers (DTCs). Get an overview of basic troubleshooting tools and techniques.

Prerequisites:

Working knowledge of MPE/iX systems; course HP 31119S or HP 31110S recommended

HP OpenView DTC Manager Fundamentals
HP B3711S • 2 days

ENHANCED

HP OpenView DTC Manager and DTC/X.25 iX HP B3712S

System managers:

Plan, configure, and install a network using the HP OpenView DTC Manager and DTC/X.25 iX products. Practice on-line and off-line configuration and how to manage and control local and remote DTCs. Get an overview of basic troubleshooting tools and techniques.

Prerequisites:

Working knowledge of MPE/iX; course HP 31119S or HP 31110S recommended

HP OpenView DTC Manager Fundamentals
HP B3712S • 3 days

ENHANCED

HP LAN Manager/X for HP 9000 Systems Fundamentals HP B3708S

Technical support staff and system administrators who install, configure, or maintain networks:

Learn to share applications and resources among MS-DOS clients and UNIX system servers.

Key topics:

- Installing and configuring the HP LAN Manager/X server
- Using HP ARPA services 2.1 for MS-DOS clients, isolating and resolving HP LAN Manager/X problems on the HP-UX server for PC DOS clients

Prerequisites:

Experience with MS-DOS, LANs, and basic HP-UX system commands, accounting structures, and permissions

HP LAN Manager/X for HP 9000 Systems Fundamentals
HP B3709S • 4 days

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Open System Education

Moving to OPEN SYSTEMS

Education-The Critical Success Factor

Education is fundamental to your organisation's successful open systems, client/server transition. Your organisation's ability to leverage investment in open systems, client/server technology depends on how well people understand and accept the new computing environment. By empowering internal resources to evaluate, purchase, and build new technologies, you will pave the way for a successful transition.

Many organisations who have initiated the move to open systems, client/server architecture have identified education as the critical factor in their successful transition.

Accelerate Your Move with HP Educational Services

HP can help your organisation accelerate its move to open systems with our extensive Open Systems Educational Portfolio.

Customised Solutions

HP has the experience and expertise to work with you to identify your educational needs and develop the right education solution for your organisation.

By working together, we can develop and deliver customised seminars for managers, technical staff, and end-users in your organisation. We also provide skill-building training for those involved in implementing and supporting new computing environments.

Open Systems Education Portfolio

Customised Open Systems Seminars

Seminars Topics
Open Systems Concept and Capabilities
Client/Server Concepts and Capabilities
UNIX Concepts and Capabilities
IT Standards for Open Systems
Multivendor Networking
Object-Oriented Technology
Open Systems Security
OSF Distributed Computing Environment
Survey of Distributed Computing Technologies
OSF Distributed Management Environment
Introduction to Programming with Motif and the Xt Toolkit Intrinsics
Database Technologies

What is a customised open systems seminar?
HP's customised seminars are designed to meet your organisation's unique education needs. These customised seminars are built from HP's industry-leading seminar topics and are delivered by HP's expert instructors. Hands-on labs, presentations from executives in our organisation, and third-party presentations can also be incorporated.
To learn more about customised open systems seminars, please see pages 37-39.

Skill-Building Courses - Examples

UNIX System Fundamentals
Fundamentals of the UNIX System
UNIX System Basics I
UNIX System Basics II
Distributed Computing
DCE Internals
Encina Applicatons Programming
Encina System Administration
HP DCE System Administration for the HP 9000
OSC DCE Application Programming
UNIX System Programming
Programming with UNIX System Calls
UNIX System Programmer Tools and Utilities
UNIX System Shell Programming
Network Programming with BSD Sockets
Programming Languages
ANSI C Programming
C++/Object-Oriented Programming
Object-Oriented Technology
C++/Object-Oriented Programming
HP OpenODB
Object-Oriented Analysis and Design: Fusion
Object-Oriented Analysis and Design: Survey
Graphical User Interfaces
Fundamentals of X Windows and HP VUE
X Window System Programming: Xlib
User Interface Design with Motif
Programming with Motif
Networking
HO OpenView Network Node Manager Fundamentals for Network Managers and Network Operators
TCP/IP and LAN Fundametals

Moving to OPEN SYSTEMS

Putting It All Together for Chesebrough-Pond's

Education's Role in Open Systems Migration

HP Educational Services built Chesebrough-Pond's a comprehensive education solution that will help the company migrate from a predominantly mainframe computing environment to a multivendor, open systems environment. HP provided everything from customised open systems seminars for managers, technical staff and end users to hands-on, skill-building courses for technical staff.

Customised Seminar

HP designed and delivered a customised open systems seminar to educate approximately 100 Chesebrough-Pond's personnel, including business managers, project and program managers, programmers, operational support staff, and database staff. Participants gained a better understanding of why the company was moving to open systems and developed skills to become more effective in the new environment.

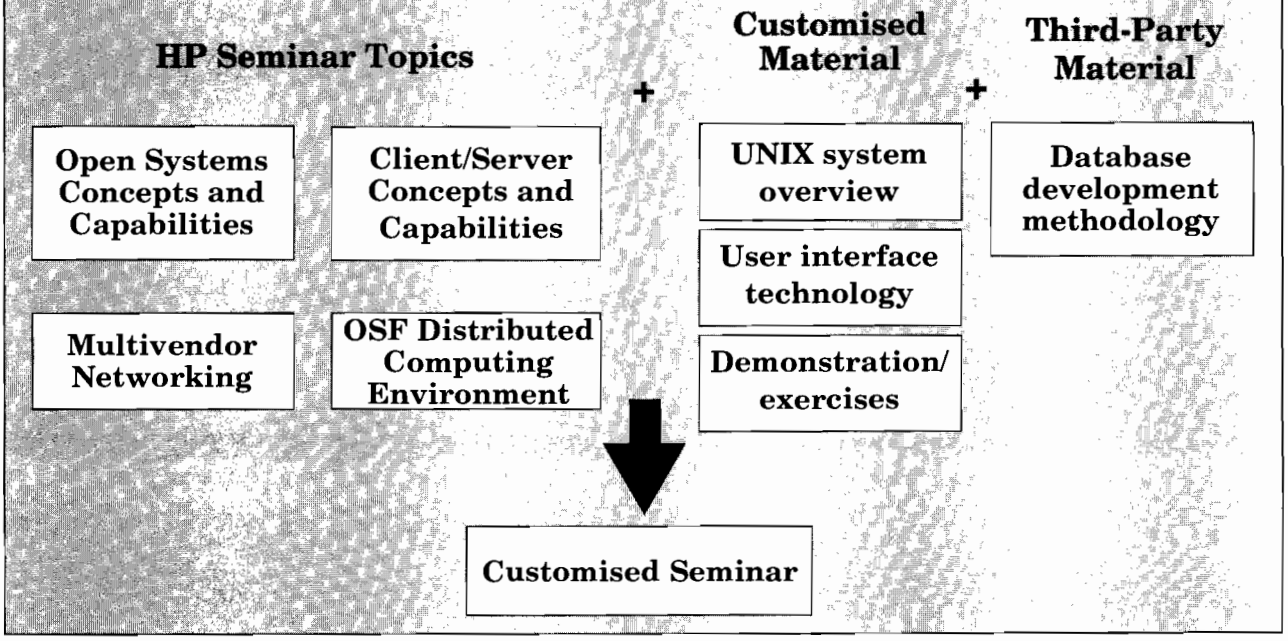
Customer's Satisfaction

"We were impressed with HP's thoroughness in assessing our needs," Chesebrough-Pond's director of management information states. "HP analysed those needs in detail and then promptly developed a focused proposal that mapped people to courses, with a precise schedule for project implementation. We also liked the fact that HP offered to supply some of the equipment for the training, as well as make provisions for Chesebrough to lease the rest."

According to Chesebrough-Pond's director of management information, "HP has become a strategic partner with Chesebrough-Pond's, and Unilever as a whole, for educational and consultant services".

Customised Open Systems Seminar

In addition to Chesebrough-Pond's, HP Educational Services has helped many other companies move to a more open computing environment by developing customised seminars, similar to the one illustrated below.



Moving to OPEN SYSTEMS

Building a Customised Seminar for Your Organization

Whether your organization needs to build open systems awareness, demonstrate the business advantages, or gain deeper understanding of emerging technologies, HP's customised open systems seminars are designed to meet your organisation's unique education needs.

These customised seminars are built from HP's industry-leading seminar topics and are delivered at your facilities by HP's expert instructors. Hands-on labs, presentations from executive in your organisation, and third-party presentations can also be incorporated.

We will work with you to identify your organisation's education needs. Then, we will develop a customised seminar that addresses the open systems technology issues your organisation needs to learn more about. The result is a comprehensive, customised seminar, similar to the one shown below. HP's customised seminars will help your organisation accelerate its move to a more open computing environment. Once the move to open systems, client/server computing is underway, HP can provide your technical staff with skill-building courses to facilitate system implementation.

An Example of a Customised Open System Seminar

Day One	Day Two	Day Three
Organization Kick-Off Presentation	*HP Seminar Presentation:* UNIX System Concepts and Capabilities • Definitions • Key Features	*Customised Course Material*
HP Seminar Presentation: Open Systems Concepts and Capabilities • Definitions • Standards • Benefits	*HP Seminar Presentation:* Multivendor Networking • Advantages of system interconnectivity • Standards and future definitions	*HP Seminar Presentation:* Open Systems Security • Implementation • Management • Confidentiality, intergrity, availability
Lunch	**Lunch**	**Lunch**
HP Seminar Presentation: Client/Server Concepts and Capabilities • Definitions • Enabling technologies • Application architecture	*HP Seminar Presentation:* OSF Distributed Computing Environment • Architecture • Threads and remote procedure calls • Service	*Third-Party Presentation:* Example Database Software
	HP Seminar Presentation: OSF Distributed Computing Environment • Architecture • Benefits and services	*Closing:* Wrap-up and review

To find out more about customised seminars for your organisation, call Australia (Melbourne) 272 2877 (Interstate) 008 035 520, or in New Zealand (Wellington) 802 6837, or outside Wellington 0800 733 547 and ask to have an HP Educational Services representative contact you.

Topics for Customised Seminars

Open Systems Concepts and Capabilities

- Learn about the evolution of open systems technology.
- Learn about the different standards organisations and why standards are important.
- Understand open systems terminology, components, and attributes.
- Understand the business and organisational benefits of open system technology.
- Learn how to evaluate open systems investments for your organisation.

Client/Server Concepts and Capabilities

- Understand Client/Server terminology.
- Understand various Client/Server application architectures and how they support different organisations.
- Understand the primary enabling technologies.
- Learn how to evaluate Client/Server investment for your organisation.
- Learn how to plan, implement and manage a Client/Server transition in your organisation.

UNIX System Concepts and Capabilities

- Understand the Unix computing environment.
- Learn basic UNIX definitions.
- Understand key features of the UNIX operating systems.
- Learn about the HP-UX environment.

IT Standards for Open Systems

- Understand the importance of standards in information technology.
- Understand the roles of various standards organisations and the standards setting process.
- Explore the most prominent standards for operating systems, the development environment, and networks.
- Explore future directions of standards.
- Learn guidelines to help identify standards to implement in your organisation.
- Learn to measure standards compliance.

OSF Distributed Computing Environment

- Understanding the components of Distributed Computing Environment (DCE) architecture.
- Understand threads and Remote Procedure Calls.
- Learn about services available with DCE including: directory services, security services, and time services.
- Learn about the distributed File System, diskless support, and personal computer integration.

Survey of Distributed Computing Technologies

- Develop a working understanding of open technologies in the following areas:

-Graphical user interfaces (GUI)

-System interoperability

-Application interoperability

-Open on-line transaction processing (OLTP) and DTP monitors

-Network management

- Learn to evaluate distributed technologies, tools, and products.
- Learn how to create distributed applications.
- Learn about HP OpenView Network Node Manager.

Topics for Customised Seminars

OSF Distributed Management Environment

- Learn about the Distributed Management Environment architecture.
- Explore the benefits of the DME.
- Understand DME component services including Management and Management user interface services, licensing services, printing services, and software services.

Open Systems Security

- Understand the key success factors for implementing and managing secure open systems.
- Explore solutions for effectively managing aspects of information security including: confidentiality, integrity, and availability.
- Learn how to implement secure open systems in your organisation.

Object-Oriented Technology

- Explore state-of-the-art object-oriented technology.
- Learn object-oriented terminology and concepts.
- Understand how object-oriented technology expedites delivery of higher-quality products and services.
- Learn how to manage the transition to object-oriented technology.

Multivendor Networking

- Understand network needs for system-to-system communication and the advantages of system interconnectivity.
- Understand common network topologies.
- Explore the future direction of open systems interconnection (OSI) standards.
- Understand the functionality of a virtual terminal.
- Understand the networking strategies of various vendors and learn about various interconnection products.

Introduction to Programming with Motif and the Xt Toolkit Intrinsics

- Understand the components of OSF/Motif, including window manager, widget set, user interface language, and style guide.
- Learn the design principles of the X Window System.
- Become familiar with Xt intrinsics and widgets.
- Understand Motif classes and their user interface purposes.
- Understand how to create and manage widgets.
- Understand event handlers, callback routines, menus, dialog types and composition.

MPE Operating System

Sections

Introduction 40
MPE Course Directory 41
MPE/iX Curriculum Paths 42
MPE/iX 43-46
Database Management 47
HP ALLBASE 48-49

Courses for Multiple Job Functions

- System management
- System operation
- Network management
- Database management
- Programming
- Office administration

Curriculum Paths

Custom curriculum paths are provided to assist with your planning. These paths will help you identify the appropriate courses and recommended follow-on courses based upon your job responsibilities. Paths are included for:

- Networking 42
- MPE/iX system operation and management 42
- MPE/iX programming 42
- HP TurboIMAGE database administration 42

Course Directory

Our course directory on page 41 provides a convenient reference guide and overview of our entire curriculum of MPE operating system and related courses.

MPE Curriculum Notes

Two NEW! Courses

MPE/iX Networking Fundamentals (HP B3688S) page 43

Getting Started with HP IMAGE/SQL (HP 50786+047) page 48

Three FEATURED Courses

MPE/iX System Management Skills II (HP B1772S) page 44

MPE/iX Programming Skills (HP 31118S) page 46

HP TurboIMAGE DBMS/3000 (HP 35053S and HP B1779S) page 47.

MPE Course Directory

Title	HP Course No.	Days	Format	Page
MPE/iX System Operation and System Management				
MPE/iX System Management Skills	31119S	5	Lecture/Lab	44
MPE/iX System Management Skills II	B1772S	5	Lecture/Lab	44
MPE/iX System Operation Skills	B2801S	4	Lecture/Lab	43
Moving from MPE V to MPE/iX				
Moving from MPEV to MPE/iX: Application Programming	31114S	4	Lecture/Lab	45
Moving from MPEV to MPE/iX: System Management	31110S	4	Lecture/Lab	45
Moving from MPEV to MPE/iX: System Operations	31117S	2	Lecture/Lab	45
MPE/iX System Programming/System Performance				
MPE/iX Programming Skills	31118S	5	Lecture/Lab	46
MPE/iX Programming Skills II	B2653S	5	Lecture/Lab	46
Database Management				
NEW! Getting Started with IMAGE/SQL	50786S+074	2	Lecture/Lab	48
HP TurboIMAGE Database Design Theory	30606S	4	Lecture/Lab	47
HP TurboIMAGE DBMS/3000 for Programmers	35053S	5	Lecture/Lab	47
HP ALLBASE				
HP ALLBASE/SQL Database Design Theory	30701S	4	Lecture/Lab	49
HP ALLBASE/SQL on HP-UX and MPE/iX	36389S	5	Lecture/Lab	49
Networking				
HP OpenView DTC Manager and DTC/X.25 iX Fundamentals	B3712S	3	Lecture/Lab	34
HP OpenView DTC Manager Fundamentals	B3711S		Lecture/Lab	34
NEW! MPE/iX Networking Fundamentals	B3688S		Lecture/Lab	33,43

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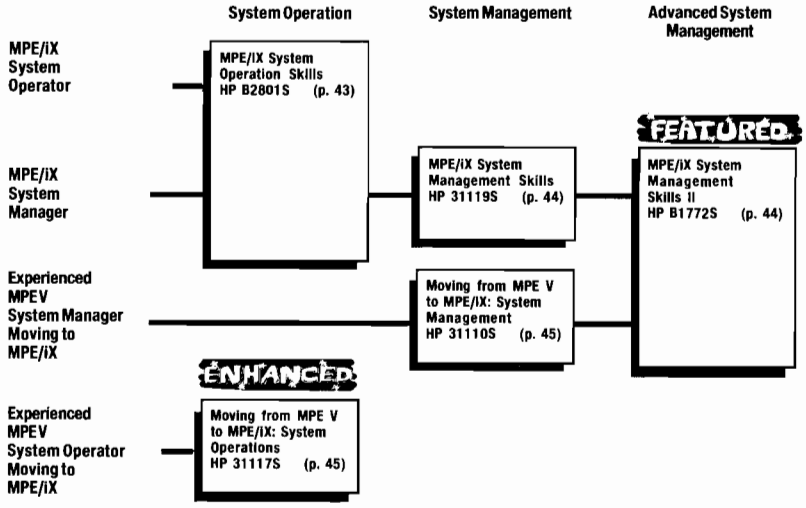
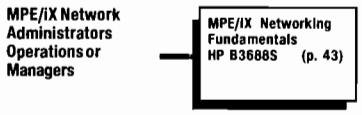
MPE/iX Curriculum Paths

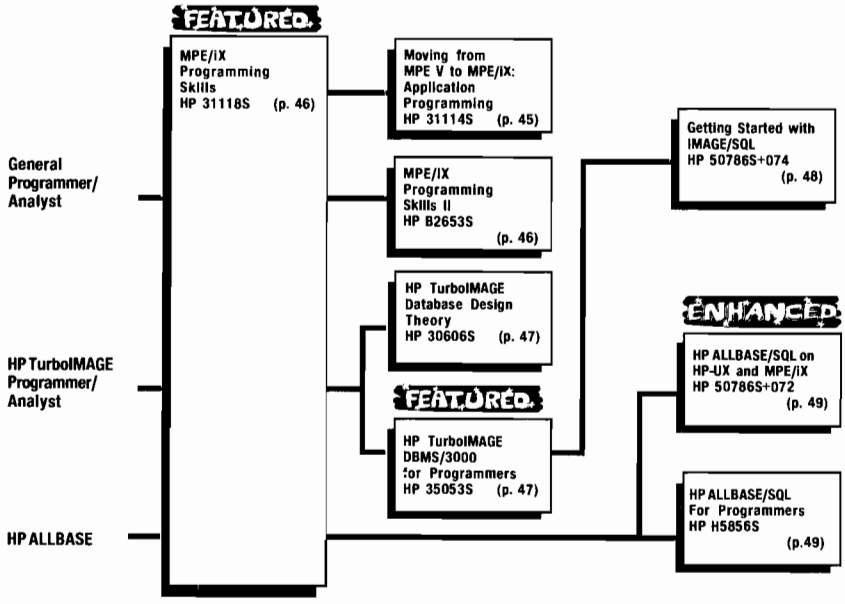
MPE/iX System Operation/System Management



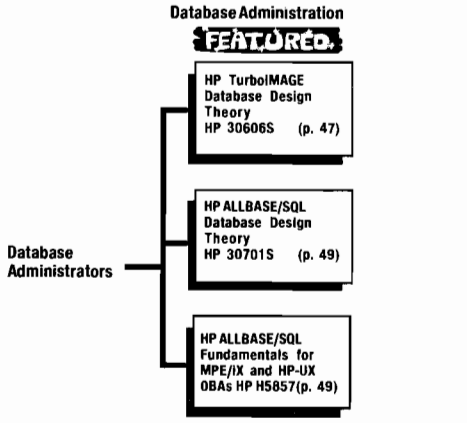
Network Administration



HP 3000 MPE/iX Programming



HP 3000 MPE/iX HP TurboIMAGE Database Administration



MPE/iX System Operation Skills

HP B2801S

Learn to operate an HP 3000 computer running the MPE/iX operating system.

New system operators with no HP 3000 computer experience

Learn basic MPe/iX operating system communication skills and concepts. Gain practical information about how to perform daily operation tasks successfully.

Prerequisites:

MPE V-experience users should attend Moving from MPE V to MPE/iX: System Operations (HP 31117S).

Key topics:

- Logging on and off the system and executing basic commands
- File organisation and manipulation
- Using peripherals such as tape drivers, disk drives, and printers
- Managing the spooler
- Managing jobs and sessions
- Backup, startup, shutdown, system aborts, and system recovery
- Troubleshooting

MPE/iX System Operation Skills Fundamentals
HP B2801S • 4 days

NEW!

MPE/iX Networking Fundamentals HP B3688S

MPE/iX system administrators, operators, and managers:

Learn the practical aspects of network administration tailored for the MPE/iX environment.

Enjoy 4 days of dedicated time to master MPE/iX networking.

Prerequisites:

Knowledge of basic MPE/iX commands, such as start up, shutdown, backups, and recovery

Key topics:

- Local area network (LAN) concepts and LAN hardware
- NS services; NS3000 connection initiation process, open configuration file, main configuration screen, NS configuration, point-to-point and token ring configuration, and lab
- ARPA services: overview, HP ARPA FTP, starting FTP, FTP commands, and practice lab
- Troubleshooting: ping, Net Tool, collecting statistics on bridges, routers, and hubs (also covers xpvalloc, xpvallem, qvains, Linkcontrol, X25serv, and X25stat)
- Network tools and commands (using NMMGR)
- Desktop integration: Novell NetWare, LAN Manager/iX, AppleTalk, PC NS/ARPA services, and WRQ. Network management, FTAM, SNMP, HP PPN, Telnet access hardware limitations, and QUIZ

MPE/iX Networking Fundamentals
HP B3688S • 4 days

ENHANCED

MPE/iX System Management Skills

HP 31119S

Learn how to use HP 3000 Series 900 computer running the MPE/iX operating system.

New system managers with no HP 3000 system management experience:

Understand the functions of the HP 3000 Series 900 computer and learn procedures and guidelines for the effective management and scheduling of system resources.

Prerequisites:

- MPE/iX System Operation Skills (HP B2801S); MPE V-experienced users should attend Moving from MPE V to MPE/iX: System Management (HP 31110S)

Key topics

- Security guidelines
- Creating and manipulating user commands and command files
- Hardware overview
- Configuring and maintaining system and serial peripherals
- Disk space management
- System startup, backup, and recovery

MPE/iX System Management Skills
HP 31119S • 5 days

MPE/iX System Management Skills II

Gain the in-depth knowledge required to optimise your system performance!

This course is designed to provide experienced MPE/iX system managers with a thorough understanding of internal system activities and tools for better analyzing, managing, and tuning system performance on the HP 3000 Series 900 computer.

Key benefits:

- Improve productivity by becoming familiar with utilities for resources and load management.
- Maximise uptime by learning to identify and deal effectively with bottlenecks.
- Ensure the smooth functioning of your operations by understanding how to develop a strategy for process management.

Course outline:

Day 1

- Overview of MPE/iX operating system components
- Design concepts of MPE/iX (PA-RISC feature, memory and process management, interprocess communications, file storage, file access, and transaction manager)

Day 2

- Resource and load management (SYSGEN, SYSINFO, DTSINFO, disk space utilisation, system resources, monitoring resource usage, and external and internal security)

Day 3

- Troubleshooting and data recovery (SYSDIAG, SYSMAP, LOGTOOL, ISL, DISCUTIL, IOMAP, VOLUTIL, and TELESUP)
- Introduction to system performance

Day 4

- Analysing system performance (identifying and dealing with bottlenecks, memory performance, disk performance, and using HP GlancePlus/iX and HP LaserRX/iX software)

Day 5

- Guidelines and tips (sizing and configuration, optimising disk input/output load and process management, application optimisation, and thresholds)
- Additional tools and services (HP performance tools, HP RXForecast software, HP SPT/iX software, performance consulting, and global system utilisation)

Who should attend:

- System administrators with at least 6 months of experience managing an HP 3000 Series 900 computer system

Prerequisites:

- MPE/iX System Management Skills (HP 31119S) or Moving from MPE V to MPE/iX: System Management (HP 31110S)

MPE/iX System Management Skills II
HP B17725S • 4 days

Moving from MPE V to MPE/iX

OPEN SYSTEMS ENHANCED

Moving from MPE V to MPE/iX: System Operations HP 31117S

Experienced HP 3000 MPE V system operators:

Learn the differences between operating an MPE V and an MPE/iX system. Understand the new options and utilities of the MPE/iX system.

Prerequisites:

MPE V System Operation (HP 22807S). Students without prior HP 3000 system experience should attend MPE/iX System Operation Skills (HP B2801S)

Key topics:

- New or enhanced CI commands
- Native mode spooler
- System startup and shutdown procedures
- Introduction to the hierarchical file system (HFS)
- System backup
- Using TERMDSM for troubleshooting terminals
- System abort and power down procedures

Moving from MPE V to MPE/iX: System Operations
HP 31117S • 2 days

OPEN SYSTEMS

Moving from MPE V to MPE/iX: System Management HP 31110S

MPE V system managers moving to an MPE/iX system:

Review administrative functions and learn the differences between the MPE V and MPE/iX systems.

Prerequisites:

Six months of system management experience with an HP 3000 MPE V operating system, and MPE V System Management (HP 22802S)

Key topics:

- Basic components of the HP 3000 Series 900 system
- System startup, backup, and configuration
- Migrating from an MPE V operating environment to an MPE/iX operating system
- Migrating an HP TurboIMAGE/V system database to an HP TurboIMAGE/iX database
- New volume management commands for more effective disk management
- Native mode spooler

Moving from MPE V to MPE/iX: System Management
HP 31110S • 4 days

OPEN SYSTEMS

Moving from MPE V to MPE/iX: Application Programming HP 31114S

Learn how to migrate applications from an HP 3000 MPE V operating system to an MPE/iX operating system.

MPE V application programmers moving to an MPE/iX computer:

Learn about the differences between the MPE V and MPE/iX operating systems.

Prerequisites:

Experience programming with an MPE V operating system and MPE V Programming Fundamentals (HP 22801S)

Key topics:

- Differences between the operating systems as they apply to program development
- Native mode and compatibility mode compilers
- Transporting HP TurboIMAGE databases between MPE V and MPE/iX operating systems
- Generating switch stubs to run programs in multiple modes
- Creating and managing libraries

Moving from MPE V to MPE/iX: Application Programming
HP 31114S • 4 days

FEATURED

MPE/iX Programming Skills

You already know how to program, but now it is time to move to an HP 3000 system.

Begin programming on an HP 3000 Series 900 MPE/iX system. Learn the fundamental concepts of the MPE/iX operating system and the HP 3000 Series 900 programming environment.

Key benefits:

- Learn the MPE/iX operating system concepts and commands
- Prepare and use command files and user-defined commands
- Gain the ability to locate and correct errors in code and data.
- Discover how to take a source program through the necessary steps to produce an executable program

Course outline:

Day 1

- Introduction to the HP 3000 Series 900 system
- Hierarchical file system (HFS)
- Native mode spooler, jobs, and sessions

Day 2

- Fundamental MPE/iX programmer skills
- MPE/iX command interpreter
- Native mode

Day 3

- Managing large programs and libraries

Day 4

- Error detection
- Program optimisation

Day 5

- Data management and subsystems

Who should attend:

Programmers/analysts with no HP experience that are using an HP 3000 Series 900 system for the first time.

Prerequisites:

Programming in FORTRAN 77, (HP 50698S), ANSI C Programming (HP 35150S), or Pascal Programming (HP 31112S); equivalent experience is a working knowledge of COBOL or any other of the above languages

MPE/iX Programming Skills
HP 31118S • 5 days

MPE/iX Programming Skills II

HP B2653S

Capitalise on the advanced features of the HP 3000 Series 900 computer system.

Advanced programmer/ analysts experienced on the HP 3000 Series 900:

Learn how to use the extended features and special capabilities of the HP 3000 Series 900 computer system.

Prerequisites:

MPE/iX Programming Skills (HP 31118S) or Moving from MPE V to MPE/iX: Application Programming (HP 31114S), and at least 6 months of experience programming on the HP 3000 Series 900 computer system

Key topics:

- DEBUG/iX command
- Using resource identification numbers (RINs)
- Programming calls to process management intrinsics
- Methods of file sharing
- Trapping features in the MPE/iX operating system
- User-mapped files, controls and maps, and numeric maps

MPE/iX Programming Skills II
HP B2653S • 4 days

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Database Management

HP TurboIMAGE Database Design Theory

HP 30606S

Design an HP TurboIMAGE database to fit your organisation's data needs.

Database administrators, programmer/analysts, and system analysts:

Learn how to logically group an organization's data requirements into a design implemented on an HP TurboIMAGE database management system.

Prerequisites:

At least 2 to 3 years of experience in applications development and an understanding of the structure of a network database (data sets, paths, chains, key items, and search items)

Key topics:

- Entities and attributes
- Building a conceptual model
- Creating a logical model
- Normalising the data groups
- Translating into a physical design for an HP TurboIMAGE database
- Tuning the physical design to meet your needs

HP TurboIMAGE Database Design Theory
HP 30606S • 4 days

FEATURED

HP TurboIMAGE DBMS/3000

Learn administration and programming concepts of the HP TurboIMAGE database management system.

Key benefits:

- Acquire the skills needed to perform database administration activities.
- Learn to create and maintain an HP TurboIMAGE database.
- Meet your specific needs designing, writing, and running database application programs.
- Understand the impact of design features on database performance.

Course outline:

Day 1

- HP TurboIMAGE database overview
- HP TurboIMAGE database structure and terminology
- HP QUERY/3000 software
- Database definition and creation

Day 2

- Database definition and creation (continued)
- Database access

Day 3

- Database access (continued)
- Multiple user considerations and security

Day 4

- Multiple user considerations and security (continued)
- Utilities and HP TurboIMAGE database logging

Day 5

- Introduction to HP TurboIMAGE database performance and design
- Database tools

Who should attend:

Programmer/analysts

Prerequisites:

MPE/iX Programming Skills (HP 31118S) or MPE V Programming Fundamentals (HP 22801S) and knowledge of one of the following programming languages: COBOL, FORTRAN, C, or Pascal

HP TurboIMAGE DBMS/3000 for Programmers
HP 35053S • 5 days

Experienced Database Administrators

For database administrators experienced with the MPE/iX or MPE V system, a 3-day option is available. It begins at the same time as the 5-day course and runs concurrently.

HP TurboIMAGE Fundamentals for Database Administrators
HP B1779S • 3 days

NEW!

Getting Started with IMAGE/SQL

HP 50786S+074

TurboIMAGE database administrators, programmers, and analysts interested in moving to the relational environment using IMAGE/SQL.

Learn about relational database concepts and IMAGE/SQL. Gain hands-on experience with IMAGE/SQL database administration tasks. Learn how to leverage your TurboIMAGE database with client/server tools.

Prerequisites:

HP TurboIMAGE DBMS/3000 for Programmers (HP 35053S) or HP TurboIMAGE Fundamentals for Database Administrators (HP B1779S) or equivalent experience with TurboIMAGE.

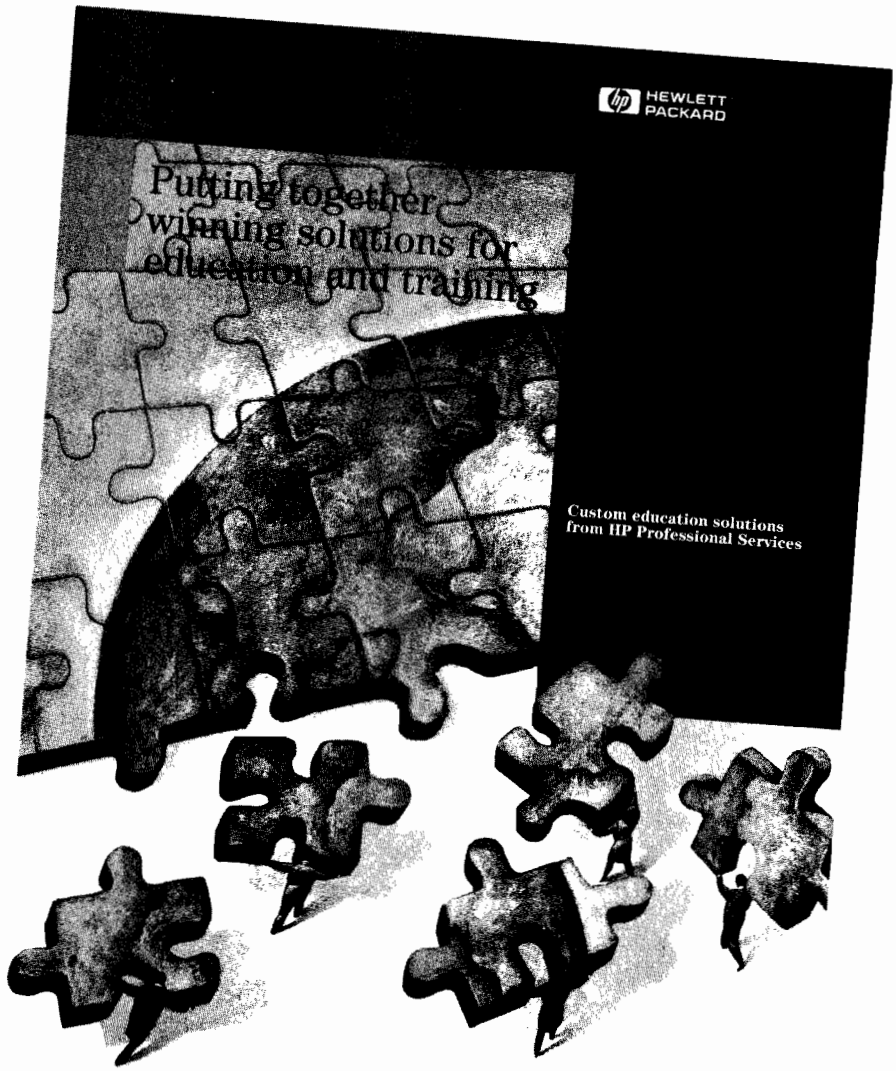
Note: This class assumes significant knowledge of Turbo IMAGE and does not include TurboIMAGE topics.

Key Topics:

- Relational database environment terminology
- Components of IMAGE/SQL software
- Basic tasks of IMAGE/SQL database administrator functions
- Interactive and programmatic use of SQL
- Overview of client/server tools and networking requirements

HP 50786S+074 • 2 days

Schedules unavailable at press time. Please call for latest scheduling information.



HP ALLBASE

ENHANCED

HP ALLBASE/SQL on HP-UX and MPE/iX HP 36389S

Database administrators, programmers, and analysts using MPE/iX or HP-UX operating systems:

Learn to create or maintain databases or write application programs for HP ALLBASE/SQL databases under MPE/iX or HP-UX systems. Gain hands-on experience with interactive querying, database environment creation and maintenance, and application program development.

Prerequisites:

Familiarity with MPE/iX or HP-UX systems, basic knowledge of database models, and at least 1 year of experience programming in COBOL, C, or Pascal languages

Key topics:

- Components of HP ALLBASE/SQL software
- HP ALLBASE/SQL terminology
- Basic tasks of interactive user concepts and functions
- Basic tasks of database administrator functions
- Basic tasks of application programmer functions

HP ALLBASE/SQL on HP-UX and MPE/iX
HP 36389S • 5 days

HP ALLBASE/SQL Database Design Theory HP 30701S

Discover how to design effective data structures.

Database administrators, senior programmer/analysts, and system analysts:

Become proficient at designing effective data structures using entity relationship (E/R) modelling techniques and implementing them with HP ALLBASE/SQL database management software.

Prerequisites:

At least 2 to 3 years of experience in application development and an understanding of the structure of a relational database (tables, views, rows, columns, and indexes), or HP 36389S

Key topics:

- Identifying and defining entities and attributes
- Building a conceptual model using the entity-modelling technique
- Creating the logical model
- Normalising the data groups in the logical model
- Translating the logical model into an HP ALLBASE/SQL database physical design
- Tuning the physical design to best meet the needs of the customer

HP ALLBASE/SQL Database Design Theory
HP 30701S • 4 days

NEW!

HP ALLBASE/SQL For Programmers HP B5856S • 5 days

Phone for data sheet

NEW!

HP ALLBASE/SQL Fundamentals For MPE/iX and HP-UX DBAs HP H5857S • 5 days

Phone for data sheet

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RTE Operating System

RTE-A and RTE-6

RTE-A Fundamentals

Phone for data sheet **HP B2656S**

RTE-6 Fundamentals

HP B2657S

General users, programmers, system designers, and system managers:

Learn the functions of the HP 1000 computer system components. Use fundamental CI, FMGR, and system commands and utilities to manipulate files and to obtain system status information. Understand file system structure. Use HP EDIT/1000 software to create and modify text files. Learn about RTE utilities for program development, spooling, batch processing, and file backup.

Prerequisites:

None

RTE-A Fundamentals
HP B2656S • 5 days • Quote

RTE-6 Fundamentals
HP B2657S • 5 days • Quote

RTE-A Programming with System Calls

Phone for data sheet **HP B2654**

RTE-6 Programming with System Calls

HP B2655S

Programmers, system designers, and system managers:

Practice using the RTE FORTRAN and Pascal compilers, LINK relocating loader, and symbolic debugger to develop programs. Understand the intrinsic programming services available through the RTE and file system calls.

Prerequisites:

Working knowledge of the FORTRAN or Pascal language and the RTE interactive operating environment; and course HP B2657S or HP 2656S

RTE-A Programming with System Calls
HP B2654S • 5 days • Quote

RTE-A System Management

HP 22949S

System managers, designers, analysts, and programmers:

Learn procedures for designing a new system configuration, generating and installing a system, maintaining a system, and performing system backup.

Prerequisites:

Working knowledge of the FORTRAN or Pascal language and course HP B2658S, or HP B2656S and HP B2654S

RTE-6 System Management
HP 22989S • 5 days • Quote

RTE-6 System Management HP 22989S

Call to arrange a dedicated delivery for six or more students. Phone for data sheet

Phone for data sheet

RTE-6 System Management
HP 22989S • 5 days • Quote

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CA-Unicenter for UNIX

Resource Accounting
UX050

2 Days 2 TCUs

Course Description

The CA-UNICENTER for UNIX Resource Accounting course teaches the student to use the facilities within CA-UNICENTER to define the resource accounting environment.

Topics for discussion include:

- Chargeback tables
- Define tables
- Define process reports

Prerequisites

None

Objectives:

Upon successful completion of the course, students should be able to manage resource accounting in the CA-UNICENTER Environment.

Installation
UX100

1 Day 1 TCU

Course Description

The CA-UNICENTER for UNIX Installation course is designed to enable students to install the CA-UNICENTER for UNIX software.

Topics for discussion include:

- Diagnostics
- Troubleshooting common problems which may occur during or after software installation

Prerequisites

None

Objectives:

Upon successful completion of the course, students should be able to install and maintain the CA-UNICENTER Environment.

Automated Storage Management
UX030

2 Days 2 TCUs

Course Description

The CA-UNICENTER for UNIX Automated Storage management course teaches students the skills they need to project storage media and to manage disks.

Topics for discussion include:

- Tape protection
- Tape back up
- Disk management
- Archiving

Prerequisites

None

Objectives:

Upon successful completion of the course, students should be able to manage the storage of their UNIX system using CA-UNICENTER.

For Pricing & Scheduling Information
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Problem Management

UX040

1 Day

1 TCU

Course Description

The CA-UNICENTER for UNIX Automated Storage management course teaches students the skills they need to project storage media and to manage disks.

Topics for discussion include:

- Defining components and creating configuration definitions
- Problem administration customisation
- Defining and updating problem history
- Machine generated problem tracking
- Reporting

Prerequisites

None

Objectives:

Upon successful completion of the course, students should be able to gain proficiency in using problem management in the CA-UNICENTER Environment.

CA-UNICENTER for UNIX Security

UX010

3 Days

3 TCUs

Course Description

The CA-UNICENTER for UNIX Security course provides students with the knowledge to implement and maintain a secure UNIX systems environment.

Topics for discussion include:

- Security administration concepts
- Defining Users and Assets
- Defining Calendars
- Using JLL
- Reporting and auditing functions

Prerequisites

None

Objectives:

Upon successful completion of the course, students should be able to secure their UNIX Systems Environment.

Automated Production Control

UX020

3 Days

3 TCUs

Course Description

The CA-UNICENTER for UNIX Automated Production Control course provides students with a working knowledge of work load management through CA-UNICENTER.

Topics for discussion include:

- Job Definitions
- Special Events
- Cross node and non-CPU jobs
- Monitoring the work load and reporting
- CA-UNICENTER powerful report distribution function
- Spool management
- Console management and Message management

Prerequisites

None

Objectives:

Upon successful completion of the course, students should be able to automate the workload of their CA-UNICENTER Production Environment.

Distributed Computing

H5098S DCE Internals ... 27
B3706S Encina Application Programming ... 27
B3707S Encina System Administration ... 27
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HP 9000 Applications

General

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MPE Operating System

MPE/iX

Database Management

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35053S HP TurboIMAGE DBMS/3000 for Programmers ... 47

Moving from MPE V to MPE/iX

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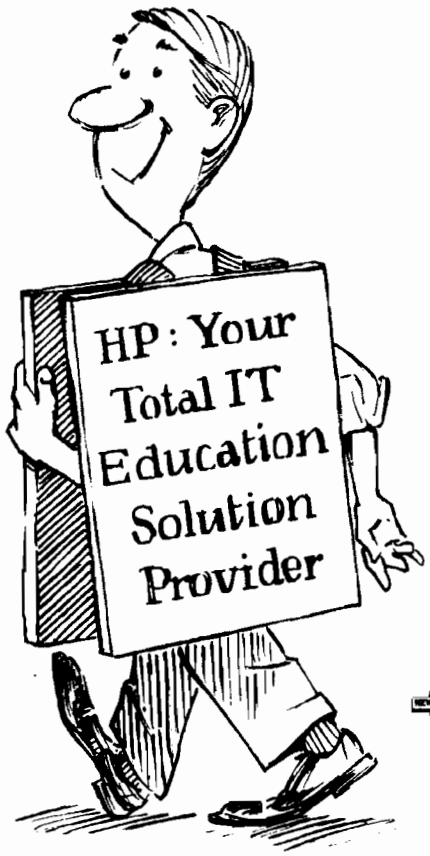

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C++/Object Oriented Programming	5 Days	30
HP LAN MGR/X For HP 9000 Systems Fundamentals	3 Days	18
HP Openview Network Node Mgr. Fundamentals for Operators & Network Managers	2-4 Days	12-24
HP UX Series 800 Performance & Tuning	3 Days	18
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HP UX Network Admin. LanLink, ARPA Berkley, NFS, NIS & Diskless	4-5 Days	24-30
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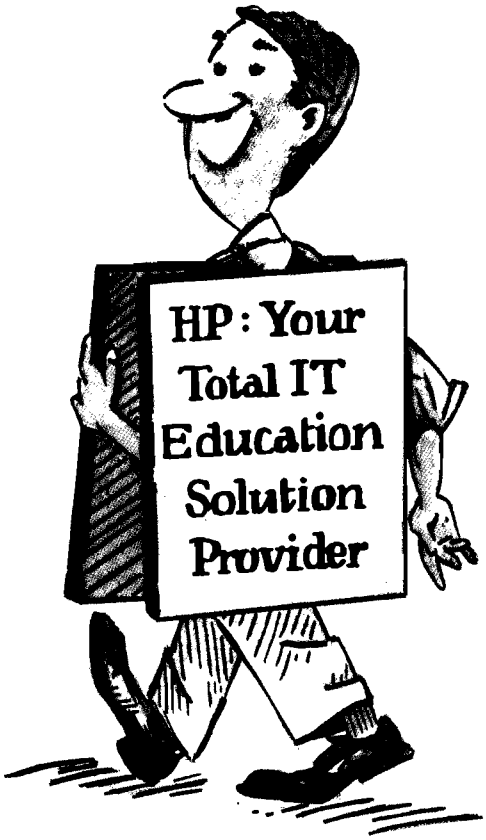

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