



# UNIX Fundamentals 51434S

This course is an extensive introduction to the UNIX<sup>®</sup> operating system and how to use its many commands and utilities. It also covers the standard UNIX system file editor and basic shell programming. This course is the foundation and prerequisite for most other courses in HP Education's Tru64 and HP-UX curricula. The 5-day course is 60 percent lecture and 40 percent hands-on labs using HP servers.

## UNIX Fundamentals

**Price** USD \$2,500

**Links to local schedules, pricing and registration** [US/Canada](#)  
[Mexico/Latin America](#)  
[Brazil](#)

**HP course #** 51434S

**Category** HP-UX / HP Integrity

**Duration** 5 days

## Audience

- System administrators, network administrators, software developers, programmers, operators, and technical users

## Prerequisites

- General computer literacy

## Course objectives

- Prepare for our HP-UX system administration and software development courses
- Learn to use your UNIX system effectively and save time by automating tasks with shell programs
- Customize your UNIX system to meet your individual needs
- Learn how to use the full capabilities of your system through hands-on lab exercises

## Benefits to you

- Build your UNIX knowledge and command skills
- Increase your productivity
- Prepare for additional education in HP education's HP-UX system administration courses

## Next steps

- HP-UX System and Network Administration I (H3064S)

## Course outline

### Introduction to UNIX

- UNIX structure and capability overview
- UNIX history
- UNIX standards

### Logging in and general orientation

- Logging in and logging out
- Viewing online man pages
- Executing basic UNIX commands

### Navigating the file system

- UNIX File system layout concepts
- Absolute and relative pathname concepts
- Navigating and viewing directories with cd, pwd, and ls
- Creating and removing directories with mkdir and rmdir
- Searching directories with find

### Managing Files

- File concepts
- File characteristics
- Viewing files with cat, more, head, and tail
- Printing files with lp, lpstat, and cancel
- Managing files with cp, mv, ln, and rm

### File permissions and access

- UNIX file permission concepts
- Managing file permissions with chmod and umask
- Managing other attributes with chgrp, chown, and touch
- Changing user and group identities with su and chgrp

### Introduction to the vi editor

- Editing files with the vi editor

### Shell basics

- Shell features
- Shell types
- Using command aliasing
- Using command line recall and editing
- Modifying TERM, PATH, and other environment variables

### Shell advanced features

- Defining local and environment variables
- Variable substitution
- Alias substitution
- Command substitution
- Tilde substitution

### File name generation

- File name generation character concepts
- File name generation characters: ?, [], and \*

### Quoting

- Quoting concepts
- Quoting characters: ", ' , `

### Input and output redirection

- Redirecting standard input, standard output, and standard error
- Using sort, wc, and grep filters

**Pipes**

- Shell pipeline concepts
- Using tee, cut, tr, more, and pr filters

**Network services**

- Local Area Networks (LANs)
- Hostnames
- Testing connectivity: ping
- ARPA services: telnet, ftp
- Berkeley services: rlogin, remsh, rcp
- Secure shell Services: ssh, scp, sftp

**Process management**

- Process overview
- Listing processes with ps
- Starting processes in the background with “&”
- Starting processes in the background with nohup
- Moving jobs to the background and foreground with bg and fg
- Prioritizing processes with nice
- Terminating processes with signals
- Terminating processes with kill
- Scheduling processes with cron and crontab
- Scheduling processes with at

**Introduction to shell programming**

- Writing simple shell programs
- Using environment variables in shell scripts
- Using positional parameters in shell scripts
- Using read in shell scripts

**Shell programming branches**

- Using if and case constructs for conditional branching
- Using and generating return codes
- Using string, integer, and file tests

**Shell programming loops**

- Performing arithmetic in the shell
- Shell script while loops
- Shell script until loops
- Shell script for loops

**Offline file storage**

- Creating and using tar archives
- Creating and using cpio archives

Learn more at

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