



LPI101—LPIC-1 Exam Prep (Course 1) HL963S

HPE course number	HL963S
Course length	4 days
Delivery mode	ILT
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This course prepares students to take the 101 exam of the LPI level 1 certification. The Linux Professional Institute (LPI) is the go to certification body for vendor independent Linux certifications. This course covers fundamental Linux skills such as file management and manipulation, text processing, command line use, package management, filesystems, hardware, and many more. Students will feel confident taking the LPI LPIC-1 101 exam with in classroom assessments and practice exams.

Why HPE Education Services?

- IDC MarketScape leader 4 years running for IT education and training*
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Prerequisites

General computing knowledge and experience. No prior knowledge with Linux is required.

*Realize Technology Value with Training, IDC Infographic 2037, Sponsored by HPE, January 2016

Detailed course outline

Module 1: Work on the Command Line

- LPI Objectives Covered
- Role of Command Shell
- Shells
- Gathering System Info
- Identifying the Shell
- Changing the Shell
- Shell Prompts
- Bash: Bourne-Again Shell
- Navigating the Filesystem
- Help from Commands and Documentation
- Getting Help Within the Graphical Desktop
- Getting Help with man & info
- Bash: Command Line History
- Bash: Command Editing
- Bash: Command Completion
- Shell and Environment Variables
- Key Environment Variables

Module 2: Use Streams, Pipes, and Redirects

- LPI Objectives Covered
- File Redirection
- Piping Commands Together
- Filename Matching
- File Globbing and Wildcard Patterns
- Brace Expansion
- General Quoting Rules
- Nesting Commands
- Gotchas: Maximum Command Length

Module 3: Manage File Permissions and Ownership

- LPI Objectives Covered
- Filesystem Hierarchy Standard
- Displaying Directory Contents
- Filesystem Structures
- Determining Disk Usage With df and du
- File Ownership
- Default Group Ownership
- File and Directory Permissions
- File Creation Permissions with umask
- Changing File Permissions
- SUID and SGID on files
- SGID and Sticky Bit on Directories
- User Private Group Scheme

Module 4: Create, Delete, Find, and Display Files

- LPI Objectives Covered
- Directory Manipulation
- File Manipulation
- Deleting and Creating Files
- Physical UNIX® File Structure
- Filesystem Links
- File Extensions and Content
- Which and Type
- whereis
- Searching the Filesystem
- Alternate Search Method
- Manually Installed Shared Libraries

Module 5: Work with Archives and Compression

- LPI Objectives Covered
- Archives with tar
- Archives with cpio
- The gzip Compression Utility
- The bzip2 Compression Utility
- The XZ Compression Utility
- The PKZIP Archiving/Compression format

Module 6: Process Text Streams Using Filters

- LPI Objectives Covered
- Producing File Statistics
- The Streaming Editor
- Replacing Text Characters
- Text Sorting
- Duplicate Removal Utility
- Extracting Columns of Text
- Displaying Files
- Prepare Text for Display
- Previewing Files
- Displaying Binary Files
- Combining Files and Merging Text

Module 7: Search Text Files Using Regular Expressions

- LPI Objectives Covered
- Searching Inside Files
- Regular Expression Overview
- Regular Expressions
- RE Character Classes
- Regex Quantifiers
- RE Parenthesis

Module 8: Perform Basic File Editing Operations Using vi

- LPI Objectives Covered
 - Text Editing
 - vi and Vim
 - Learning Vim
 - Basic vi
 - Intermediate vi
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Module 9: Create, Monitor, and Kill Processes	<ul style="list-style-type: none"> • LPI Objectives Covered • What is a Process? • Process Lifecycle • Process States • Viewing Processes • Signals • Tools to Send Signals • Managing Processes 	<ul style="list-style-type: none"> • Tuning Process Scheduling • Job Control Overview • Job Control Commands • nohup and disown • uptime • Persistent Shell Sessions with Screen • Using Screen • Advanced Screen
Module 10: Use RPM, YUM, and Debian Package Management	<ul style="list-style-type: none"> • LPI Objectives Covered • Managing Software • RPM Architecture • Working With RPMs • Querying and Verifying with RPM • Installing Debian Packages • Querying and Verifying with dpkg • The alien Package Conversion Tool 	<ul style="list-style-type: none"> • Managing Software Dependencies • Using the Yum command • yumdownloader • Configuring Yum • The dselect & APT Frontends to dpkg • Aptitude • Configuring APT
Module 11: Work with Partitions, Filesystems, and Disk Quotas	<ul style="list-style-type: none"> • LPI Objectives Covered • Partition Considerations • Logical Volume Management • Filesystem Planning • Partitioning Disks with fdisk & gdisk • Resizing a GPT Partition with gdisk • Partitioning Disks with parted • Filesystem Creation • Filesystem Support • UNIX/Linux Filesystem Features • Swap 	<ul style="list-style-type: none"> • Selecting a Filesystem • Filesystem Maintenance • Mounting Filesystems • Managing an XFS Filesystem • NFS • SMB • Filesystem Table (/etc/fstab) • Configuring Disk Quotas • Setting Quotas • Viewing and Monitoring Quotas
Module 12: Linux Boot Process	<ul style="list-style-type: none"> • LPI Objectives Covered • Booting Linux on PCs • GRUB 2 • GRUB 2 Configuration • GRUB Legacy Configuration • Boot Parameters • init • Linux Runlevels Aliases • Systemd local-fs.target and sysinit.target 	<ul style="list-style-type: none"> • Runlevel Implementation • System Boot Method Overview • systemd System and Service Manager • systemd Targets • Using systemd • Shutdown and Reboot • System Messaging Commands • Controlling System Messaging
Module 13: Determine and Configure Hardware Settings	<ul style="list-style-type: none"> • LPI Objectives Covered • Managing Linux Device Files • Hardware Discovery Tools • Configuring New Hardware with hwinfo • PC Architecture and Bus • DMA & IRQ • USB Devices • USB Configuration 	<ul style="list-style-type: none"> • Configuring Kernel Components and Modules • Kernel Modules • Handling Module Dependencies • Configuring the Kernel via /proc/ • Kernel Hardware Info—/sys/ • /sys/ Structure • Random Numbers and /dev/random
Module 14: Appendix A: Linux Fundamentals	<ul style="list-style-type: none"> • UNIX and its Design Principles • FSF and GNU • GPL—General Public License • The Linux Kernel • Components of a Distribution • Red Hat® Linux Products • SUSE Linux Products 	<ul style="list-style-type: none"> • Debian • Ubuntu • Logging In • got root? • Switching User Contexts • Gathering Login Session Info

Detailed lab guide

Lab 1:	<ul style="list-style-type: none">• Help with Commands• Linux Shells• Shell Variables	<ul style="list-style-type: none">• Bash History• Aliases
Lab 2:	<ul style="list-style-type: none">• Redirection and Pipes• Wildcard File Matching	<ul style="list-style-type: none">• Shell Meta-Characters• Command Substitution
Lab 3:	<ul style="list-style-type: none">• Navigating Directories and Listing Files• Disk and Filesystem Usage	<ul style="list-style-type: none">• File and Directory Ownership and Permissions
Lab 4:	<ul style="list-style-type: none">• Manipulating Files and Directories	
Lab 5:	<ul style="list-style-type: none">• Archiving and Compression• Using tar for Backups	<ul style="list-style-type: none">• Using cpio for Backups
Lab 6:	<ul style="list-style-type: none">• Text Processing	<ul style="list-style-type: none">• Processing Text Streams
Lab 7:	<ul style="list-style-type: none">• Pattern Matching with Regular Expressions• Extended Regular Expressions	<ul style="list-style-type: none">• Using Regular Expressions With sed
Lab 8:	<ul style="list-style-type: none">• Text Editing with Vim	
Lab 9:	<ul style="list-style-type: none">• Job Control Basics• Process Management Basics	<ul style="list-style-type: none">• Screen Basics• Using Screen Regions
Lab 10:	<ul style="list-style-type: none">• Working with RPMs on Ubuntu	<ul style="list-style-type: none">• Querying the RPM Database
Lab 11:	<ul style="list-style-type: none">• Hot Adding Swap• Accessing NFS Shares	<ul style="list-style-type: none">• Setting User Quotas
Lab 12:	<ul style="list-style-type: none">• Command Line Messaging• Messaging with talkd• Boot Process	<ul style="list-style-type: none">• GRUB Command Line• Basic GRUB Security
Lab 13:	<ul style="list-style-type: none">• Adjusting Kernel Options	
Lab 14:	<ul style="list-style-type: none">• Login and Discovery	<ul style="list-style-type: none">• Switching Users With su

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