

Course Format: Paper Based

Approximate Study Time: 120 Hours

Spread the payments for this course over 4 monthly payments.
1 initial payment of £110.00, followed by 3 monthly payments of £55.00

The Linux Professional Institute Certification (LPIC) program is designed to certify the competency of IT professionals using the Linux operating system and its associated tools.

The course is part one of an exam syllabus designed to lead to LPIC-2 intermediate Level Administration certification. The **LPI certification** program is arranged into three main levels by job tasks. eLearning Centre offers LPI Approved Training Material for the LPIC-1 (Level I) and LPIC-2 (Level 2) certifications.



This LPIC-2 Intermediate Level course covers the syllabus for the LPI-201 examination:

● Lesson One – Introduction

The following topics are covered: Course Format; Product Development; Structure; Objectives; Conventions; Introduction to Labs; Introduction to Lab Solutions; and Lab Conventions.

● Lesson Two – The Linux Kernel

The following topics are covered: Kernel Terminology; The Kernel; Kernel Version Numbering; Obtaining the Kernel Source; Kernel Modules; Module Configuration Files; modules.conf; modules.dep; Kernel Module Utilities; depmod; insmod; lsmod; modinfo; modprobe; rmmod; Kernel Types: Monolithic Vs. Modular; Kernel Dependencies; Compiling and Updating a Kernel; Unpacking, Configuring, and Compiling a Kernel; Unpacking the Kernel Source; Kernel Documentation; Configuring a Kernel; Compiling the Kernel and Modules; Reviewing the install.sh Script; Patching a Linux Kernel; Patches; The patch Command; Patching the Kernel; Removing a Kernel Patch; Tuning Kernel Parameters; Tunable Kernel Parameters; IO Scheduling; Read Ahead; Swapiness; Troubleshooting Kernel Errors; and VFS Panic.

● Lesson Three – Hardware Management

The following topics are covered: Devices and Drivers; How Are Device Drivers Loaded; Hard Drives; Using hdparm to Configure a Disk; Configuring Terminal Devices; Terminal Connection; Configuring the Host; getty; stty & setserial; setserial; Configuring Serial Ports; Configuring Multi-Port Cards; sty; Serial UPS Devices; System Configuration; The powerd Daemon; Configuring powerd; powerd States; Configuring Monitors; LCD Monitors; Utilities; Hardware Utilities; lsdev; lspci; Latency Timers; USBView; /proc and procinfo; PCMCIA Utilities; cardmgr; The /var/lib/pcmcia/stab File; and cardctl.

● Lesson Four – Linux System Start-up

The following topics are covered: Identifying Linux Boot Stages; Boot Options; Runlevels; Boot Stages; Stage I: BIOS; BIOS Boot Stages; Stage II: Boot Loader; Boot Loaders: LILO and GRUB; LILO; The LILO Boot Process; GRUB; The Grub Boot Process; Boot Loader Stages; Stage III: Kernel; The RAM Disk; nash; Kernel Stages; Stage IV: init; Runlevel Scripts; Debian Machines and Booting; Troubleshooting LILO; LILO Boot Messages; Map Installer Errors and Warnings; Fatal Errors; Warnings; Disk Error Codes; Hex-Error Codes; Miscellaneous Problems; Restoring the MBR with LILO Files; Removing LILO; Removing LILO via DOS; Customizing Startup and Boot; Processes; inittab; inittab Fields; Initial RAM Disks; Making an initrd Image; mkinitrd; Using Custom Boot Scripts; Recovering From a Lost Root; and Password.

● Lesson Five – Configuring and Maintaining a Linux File System

The following topics are covered: File Systems; Creating a File System; Mounting and Unmounting Devices and File Systems; Mount Files; Automounting; Swap File Systems; File System Utilities; fsck; Options for File System-Specific; Checkers; tune2fs; badblocks; dumpe2fs; debugfs; Building Packages; Debian Packages; Required Files; The control File; The copyright File; The changelog File; The rules File; Building the Package; RPM Packages; The Build Tree; The spec File; The Header Section; The %prep Section; The %build Section; The %install Section; The %clean Section; The %files Section; The %changelog Section; Test Building; Generating the File List; Building the Package with rpmbuild; and Testing It.

● Lesson Six – RAID & LVM

The following topics are covered: RAID Basics; Limitations of RAID; RAID Levels; RAID 0; RAID 1; RAID 4; RAID 5; RAID 1+0 (10); RAID 5+0 (50) and 5+1 (51); RAID Summary; Designing RAID Sets; RAID

Operations; Software and Hardware RAID; Linux Software RAID; The /etc/raidtab File; Persistent Superblocks; The mkraid Utility; Configuring Software RAID; Booting with Software RAID; Linux Hardware RAID; Linux LVM; The Problem that LVM Addresses; Alternatives to LVM; Logical Volume Management; LVM Terminology; LVM Utilities; vgscan; pvcreate; vgcreate; vgextend; vgdisplay; lvcreate; lvextend; and Creating a Partition Using LVM.

● **Lesson Seven – File Sharing and Services - NFS**

The following topics are covered: Introduction to NFS; Prerequisites; How NFS Works; What Needs To Be Configured On A NFS Server; Choosing Your Exports; Configuring /etc/exports; Restricting Access; User ID Mapping; Starting NFS; Server Side Options; Temporarily Exporting A Directory; Mounting Exported Directories; Automatically; The Soft Touch; Hard Mounting; Soft Mounting; Signal Handling; intr (Interruptible); Block Size; Monitoring the NFS Server; Defense; and Secure NFS with TCP wrappers.

● **Lesson Eight – File Sharing and Services - Samba**

The following topics are covered: Upgrading Samba; Configuration Files; Encrypted Password File; (smbpasswd); Optional Items (Log Files and Startup Scripts); Common Locations; The smb.conf File; Sharing Directories; Creating a Simple Disk Share; Case Sensitivity and Name Mangling; Restricting Access; [homes]; Enabling smbfs Support; Building smbmount and smbmount Tools; Sharing Printers; How Does SMB Printing Work?; Samba's Printing Styles; Initial Print Share Creation; Controlling a Printer From Remote Clients; Printer Service Troubleshooting; Download Print Drivers to Windows 9x Clients; The [printer\$] Disk Share; The [print\$] Share Directory; Installing Drivers into [print\$]; Add Printer Wizard Driver; Installation; Installing Print Drivers Using; rpcclient; Identifying the Driver Files; Obtaining Driver Files from Windows Client [print\$] Shares; Installing Driver Files into [print\$]; Using the smbclient to Confirm Driver Installation; Running rpcclient with adddriver; Checking adddriver Completion; Check Samba for Driver; Recognition; Specific Driver Name Flexibility; Running rpcclient with setdriver; First Client Driver Installation; Setting Device Modes on New Printers; Modify smb.conf; [printers]; Network Browsing and WINS Browsing 101; Collect the Browse List; Request a Copy of the Browse List; Browser Elections; Browsing 102; LMHOSTS File; Windows Internet Name Service; (WINS); Samba's WINS Capabilities; Cross Subnet Browsing; Microsoft Clients; Windows 95 and 98; Network Components; Network Redirectors and Password Issues; Remote Disk Share Connection; Remote Printer Connection; Support for Windows 9x Domain logins and logon scripts; Windows NT 4.0 Passwords and Service Pack 3; Disk Share Connections; Remote Printers Connections; Credential Conflicts; Windows 2000; and Microsoft DOS Network Client 3.0.

● **Lesson Nine – Recovering a Linux System**

The following topics are covered: Developing an Onsite and Offsite; Backup Strategy; Data Classifications; Ephemeral; Local General System; Choosing a Backup Method; Backup Media; Magnetic Media; Backup Utilities; tar; cpio; rsync; dd; mt; Automate Backups With Cron; System Recovery; Passing Parameters To The Kernel; Device Does Not Work; Lost root Password; Journal Checking with fsck; Creating a Boot Disk; Installing LILO on a Floppy; Creating A Data CD; Creating the CD Filesystem; Testing .iso Images; Burning the CD; and Duplicating Data CDs.

● **Lesson Ten – System Logging & Automation**

The following topics are covered: System Logging; The syslogd Utility; Signals; Remote Logging; Security; The syslog.conf File; Selectors; Actions; Compressed Log Files; Automounting with autofs; autofs; and The autofs Map: /etc/auto.master.

● **Lesson Eleven – Troubleshooting**

The following topics are covered: General Troubleshooting; Packages, Programs, and Scripts; Permissions; File System Issues — Disk Space and Mounting; BIOS Issues; Recognizing and Identifying Boot and Kernel Specific Stages; The Operating System; What Sort of "It Doesn't Work" Does it Do?; Hardware vs. Software Problems; Environment Configurations; /etc/shadow; /etc/group; /etc/profile; and /etc/login.defs.

Exams:

On completion of a Curriculum, you can apply for the Internationally Recognised **Linux PWO-201** examination at any Authorised Prometric or Pearson Vue Testing Centre. The examination fee is £86 +VAT.

To become Linux Professional Institute Certified - Level 2, candidates must pass the LPI-201 and LPI-202 exams.

Exams must be sat at a registered Prometric or Pearson VUE testing centre. You can locate testing centres and schedule appointments on their Websites:

Prometric website – www.2test.com/

Pearson VUE - <http://pearsonvue.com/>