Linux Advanced System Administration (LPI)

Category: Infrastructure & IT Operations | **Vendor:** Linux Professional Institute

Duration: 40.00 hours (5 days) **32.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Certification: Linux Professional Institute (LPI)

Course Overview

This instructor led Linux Advanced System Administration (LPI) training course is designed to teach the advanced administration, security, networking and performance tasks required on a Linux Enterprise system.

Targeted to closely follow the official LPI curriculum (generic Linux), this course together with the Linux System Administration course will enable the delegate to work towards achieving the LPIC-2 qualification.

About This Course

The delegate will have knowledge in all, and practise in some, of the following:

- Perform administrative tasks via supplied tools (YaST) and the command line
- Advanced network configuration
- Network troubleshooting
- Configuring network services LDAP, DNS and DHCP
- Sharing Window and Linux resources with SAMBA
- Sharing Linux network resources with NFS
- Configuring FTP and NFS
- Configuring network services APACHE and SQUID
- Managing the Logical Volume Manager (LVM)
- Managing software RAID
- Centralised storage with iSCSI
- Monitoring disk status and reliability with smartd
- Firewall configuration
- Pluggable Authentication Modules (PAM)
- Kernel installation and compilation
- Compiling software from source
- System performance monitoring
- Hardware configuration with hotplug and udev

Who Should Attend

The Linux Advanced System Administration (LPI) training course is suitable for Linux System Administrators who need to acquire advanced administration knowledge of the key administrative, networking and security tasks required on Linux within the Enterprise.

An ideal course for delegates who will be working in an environment using several different Linux distributions and therefore knowledge of skills common to all the different Linux distributions is required. For the purpose of practical exercises, SUSE Linux will be used.

Delegates who wish to work towards achieving the Linux Engineer LPIC-2 certification will find this course a good basis for LPIC-2: 201-450 and 202-450 exams.

The appendixes also include other related topics that would be useful reading for delegates preparing for certification.

Note: Should the delegate only require knowledge of Red Hat Linux then they should instead consider attending our range of Red Hat Linux Administration courses.

Prerequisites & Entry Requirements

General Prerequisites:

Experience of administering Linux in an Enterprise environment to the level covered in the Linux System Administration (LPI & CompTIA) course.

Knowledge of Linux Shell Programming to the level covered on the Linux Shell Programming course would also be beneficial.

Pre-Requisite Courses

- Linux System Administration (LPI & CompTIA) (LSA)

Learning Outcomes

Upon successful completion of this course, participants will be able to:

On completion of this course the delegate will have in-depth technical knowledge of what is required to administer Linux within the Enterprise. They will have gained practical experience of configuring administrative, networking and security aspects of a Linux Enterprise system to an advanced level.

The delegate will possess the essential knowledge required to work towards achieving the Linux Engineer LPIC-2 qualification.

Detailed Course Outline

Course Contents - DAY 1

Course Introduction

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

Session 1: ADVANCED NETWORK CONFIGURATION & TROUBLESHOOTING

- Configuring the network card (ip link, ip addr)
- Network scripts
- Configuring routing (ip route)
- Network troubleshooting and related tools (ethereal, tcpdump, ping, traceroute, netstat, arp, nmap, nc)

- Exercise

[Session 2: APACHE, SQUID AND NGINX

- Apache main configuration files
- Apache server and access configuration
- Configuring secure Apache (https)
- Configuring IP address-based virtual hosts
- Configuring name-based virtual hosts
- Configuring Apache for user-based content
- Configuring the Squid proxy server
- Configuring client browsers
- Squid security settings
- Nginx Proxy and Reverse Proxy
- Exercise

Session 3: NFS NETWORK SERVICES

- NFS operation and associated daemons
- Configuring an NFS server
- Investigating the portmapper
- Configuring an NFS client
- Mounting NFS filesystems at boot
- Using the automounter to access NFS mounts on demand
- Configuring AutoFS direct and indirect mounts
- Creating AutoFS units
- Exercise

Session 4: SAMBA

- The SAMBA configuration file (smb.conf)

- Testing the SAMBA configuration file (testparm)

- Configuring SAMBA users

- Starting SAMBA

- Testing SAMBA (smbclient, smbstatus)

- Managing Windows filesystems (smbmount, nmblookup)

- Accessing Windows shares

- Exercise

Day - 2

Session 5: THE DOMAIN NAME SERVER

- DNS operation

- Types of DNS Servers

- Domain Name Space

- Setting up a DNS server

- Server configuration files (named.conf and databases)

- DNS resource record formats

- Starting and managing the DNS Server (rcnamed, rndc)

- Testing the DNS Server (host, dig, nslookup)

- DNS Client set up (resolv.conf)

- Exercise

Session 6: DHCP

- Configuring DHCP

- The dhcpd.conf configuration file

- DNS entries

- Client address entries

- Address leases

- Exercise

Session 7: FTP

- Configuring a VSFTPD server

- Configuring FTP

- Configuring Pure-FTPd

- Configuring ProFTPd

- Active vs Passive mode

- vsftpd.conf configuration file

- Anonymous access

- Restricting access to the user's login directory

- FTP logfile

- Exercise

Session 8: CENTRALISED STORAGE WITH ISCSI

- Definition and benefits of iSCSI

- Configuring an iSCSI target and initiator

- Configuring iSCSI via YaST

- Exercise

DAY 3

Session 9: FILESYSTEM TOOLS AND DISK MONITORING

- Converting Ext filesystems to Btrfs
- Checking and repairing Btrfs filesystems
- Creating Btrfs subvolumes and snapshots
- Performing full and incremental backups of XFS filesystems
- Querying the backup repository
- Restoring XFS filesystems
- The ZFS filesystem
- Configuring smartd
- Disk monitoring with smartctl
- Exercise

Session 10: RAID

- RAID overview
- Raw devices and partitions
- Creating and managing a RAID device
- Creating and mounting a file system within RAID
- Hot swapping failed drives
- Exercise

Session 11: LOGICAL VOLUME MANAGEMENT (LVM)

- Logical Volume Management Overview
- Viewing LVM information
- Configuring LVM
- Creating striped logical volumes
- Resizing Logical Volumes
- Logical Volume Snapshots
- The role of the Device Mapper
- Configuring the lvm.conf file

- Exercise

Session 12: DIRECTORY SERVICES

- Structure of an LDAP Tree
- Configuring 389 Directory Services
- Managing Directory Server Users
- Testing the Directory Server
- Configuring the Client
- Legacy LDAP Commands
- Secure LDAPS with Directory Server
- Exercise

DAY 4

Session 13: COMPILING SOFTWARE FROM SOURCE

- Installing programs from source
- Compiling Open Source Software
- Installing the compiled software
- Managing shared libraries
- Compiling from SRC (source) RPM packages
- Exercise

Session 14: SYSTEM MONITORING & PERFORMANCE MANAGEMENT

- System performance monitoring
- Collecting system performance information

- Monitoring memory usage
- Measuring virtual memory
- Measuring I/O performance
- Performance Guidelines
- Performance monitoring tools
- Capacity planning
- Exercise

Session 15: FIREWALL CONFIGURATION

- Basic packets and routing
- Netfilter (iptables)
- Packet filtering (iptables, chains, rule targets, connection tracking)
- Saving and restoring firewall settings
- Network address translation (NAT)
- Exercise

Session 16: SYSTEM SECURITY

- Reporting security alerts
- Applying security related patches
- Installing and configuring a Host Intrusion Detection System (HIDS)
- Installing and configuring fail2ban
- Exercise

DAY 5

Session 17: PLUGGABLE AUTHENTICATION MODULES (PAM)

- Main PAM configuration files
- Configuration file formats
- Controlling user access using the configuration files
- Configuring pam_listfile
- Controlling time-based access with PAM
- Controlling limits with PAM
- Exercise

Session 18: POSTFIX

- Configuring a Postfix server
- Postfix TLS configuration
- Configuring Dovecot
- Managing email delivery
- Filtering emails
- Exercise

Session 19: THE LINUX KERNEL

- Kernel naming conventions
- Monolithic and Modular kernel design
- Listing modules
- Kernel module configuration
- Kernel tuning
- The GRUB2 Bootloader
- Installing an alternate Kernel
- Exercise

Session 20: HARDWARE CONFIGURATION

- Hotplug system
- Devices and Interfaces
- sysfs filesystem and persistent names
- Device initialisation and interface configuration
- Hotplug and Coldplug
- UDEV system
- Exercise

Skills You Will Learn:

On completion of this course the delegate will have in-depth technical knowledge of what is required to administer Linux within the Enterprise. They will have gained practical experience of configuring administrative, networking and security aspects of a Linux Enterprise system to an advanced level.

The delegate will possess the essential knowledge required to work towards achieving the Linux Engineer LPIC-2 qualification.

Frequently Asked Questions

Q: What delivery options are available for Linux Advanced System Administration (LPI)?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: What certification does this course prepare me for?

The Linux Advanced System Administration (LPI) course helps prepare you for the Linux Professional Institute (LPI) certification path.

Q: How many CPD hours does this course provide?

The 5-day Linux Advanced System Administration (LPI) course provides up to 32.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Linux Advanced System Administration (LPI) training?

The training takes place over 5 day(s), with each day lasting approximately 40.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Linux Advanced System Administration (LPI)?

Yes, we provide corporate training, dedicated training, and closed classes for Linux Advanced System Administration (LPI). Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: Linux Advanced System Administration (LPI), Linux, LASA

Q: Why choose Nexus Human for Linux Advanced System Administration (LPI)?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Linux Advanced System Administration (LPI) training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

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