



LINUX System Administration (LPI)

Duration: 5 Days **Course Code: LSA**

Overview:

This instructor led Linux System Administration (LPI) training course is designed to teach the key 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 Introduction and the Linux Shell Programming course will enable the delegate to work towards achieving the LPIC-1 qualification.

Target Audience:

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

Objectives:

- Performing administrative tasks with supplied tools such as YaST.
 - Installing and updating Linux.
 - Listing device information.
 - Managing user and group account information.
 - Managing the Linux file systems.
 - Listing, creating and removing swap space.
 - Managing software packages.
 - System startup/shutdown management.
 - Managing system services.
 - Configuring local and remote printers.
 - Process monitoring and job scheduling.
 - Manage system security with encryption
 - Connecting the server to the network.
 - Managing basic network services (ftp, telnet, ssh etc).
 - Performing local and remote backups.
 - Troubleshooting and responding to boot problems.
 - Manage system logging
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Prerequisites:

- LI, Linux Introduction
- Knowledge of Linux Shell Programming would also be beneficial

Testing and Certification

- The Linux System Administration (LPI) training course will teach some of the necessary skills to enable the delegate to work towards achieving the LPIC-1 certification and the CompTIA Linux+ Powered by LPI certification.
 - Together with the Linux Introduction and the Linux Shell Programming courses, this course is suitable for delegates intending to sit the LPI 101 & LPI 102 examinations.
 - Exams are not included as part of the course.
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Follow-on-Courses:

- LASA, Linux Advanced System Administration (LPI)
 - APH, Apache Web Server
 - PERL, Perl Programming
 - OSI, Oracle SQL
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Content:

Session 1: LINUX PRODUCT OFFERINGS

- The different commercial LINUX product offerings
- LINUX certification and exams

Session 2: INSTALLING LINUX

- Information required
- Installation using virtual consoles
- Installation methods (local CD and networked)
- Installing via a remote system using VNC
- Using boot time options
- Partitioning and software selection
- Installation procedures

Session 3: DEVICES UNDER LINUX

- Device files
- Device file naming conventions
- Examining hardware under the /proc directory
- Using the hwinfo command
- Investigating bus/devices: - lspci, lsdev, lsusb commands etc.
- Detecting new/existing devices
- Monitoring the system with siga

Session 4: ACCOUNT MANAGEMENT

- Files used in creating users and groups
- Adding, modifying and deleting users and groups
- Password administration
- The shells and the user environment - login files
- The sudo command

Session 5: FILESYSTEM CONFIGURATION

- The Native Linux filesystems ext2, ext3, ext4 and reiserfs
- Filesystem journals
- Disk partitioning: fdisk and parted
- Filesystem administration and Maintenance (mkfs, mount, umount and fsck)
- Creating ISO images
- Managing disk quotas

Session 6: SWAP

- Swap overview
- Creating and monitoring swap space (swapon, swapoff and mkswap)

Session 7: PACKAGE MANAGEMENT

- The Redhat Package Management (RPM) system
- The SUSE zypper package manager
- Installing, updating and removing software
- Querying and verifying packages
- Dependency problems and resolution
- System updating - manual and automatic

Session 8: SYSTEM STARTUP/SHUTDOWN

- System startup procedure
- The boot process and run-levels (init and /etc/inittab)
- Managing services (chkconfig and rc commands)
- Modifying system settings in /etc/sysconfig
- Shutdown commands

Session 9: PRINTER MANAGEMENT

- The CUPS printing System - local and remote printing
- Administering CUPS using the web browser interface
- Administering CUPS using other graphical tools
- Print queue management
- Print commands

Session 10: PROCESS MONITORING AND SCHEDULING

- Monitoring system processes (strace, top, pstree and ksysguard)
- Scheduling jobs using 'at' and 'crontab'
- Controlling access to the 'at' and 'crontab' utilities

Session 11: SYSTEM SECURITY

- The Secure shell: OpenSSH
- Encryption and Authentication Under SSH
- SSH and Port Tunnelling
- GPG
- GPG Tools
- Managing keys and encryption
- Managing digital signatures

Session 12: CONNECTING LINUX TO THE NETWORK

- Basic network configuration (i.p. addresses, classes, masks, MAC address)
- IPv4 and IPv6 addressing
- Network protocols
- Service port numbers
- Configuration files

Session 13: INTERNET SERVICES

- The extended internet daemon (xinetd)
- Handling network service requests with xinetd
- Enable and configuring access to a service
- Configuring TCP/IP wrappers for security
- Configuring the network time protocol daemon for a client

Session 14: BACKUP AND RESTORE

- Tape devices
- Controlling tapes (mt)
- Backing and restoring with the tar command
- Backing and restoring with the cpio command
- Using dump and restore commands to backup and restore file systems
- Backing up raw data with dd
- File compression and archiving (tar, gzip, bzip2)
- Mirroring data between systems with rsync
- Backing up and restoring with yast

Session 15: TROUBLESHOOTING LINUX

- Troubleshooting process - check list
- Manual booting into single user mode
- Automatic booting into single user mode (fsck checking)
- Rescue environment utilities and operation
- Common boot problems and their resolution

Session 16: SYSTEM LOGGING

- Syslog Configuration
- The /etc/syslog.conf Configuration File
- Editing the syslog.conf File
- Testing Using logger
- Managing Logs with logrotate
- Configuring Postfix Mail
- APPENDIX B - CUSTOMISING AND USING X WINDOWS
- Configuring the X Windows GUI interface and desktops
- APPENDIX C - ACCESSIBILITY
- Configuring the desktop for disabled users
- APPENDIX D - LOCALISATION
- Geographical considerations and character sets
- APPENDIX E - YUM AND APT
- Additional software package management tools
- APPENDIX F - RAIDTOOLS
- The old style software RAID tools

- Managing network devices (ifup, ifdown, ifstatus)
 - Configuring network information (hostnames, i.p addressing, domains)
 - Changing media speed (mii-tool, ethtool)
 - Managing routing
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Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

info@globalknowledge.co.uk

www.globalknowledge.co.uk

Global Knowledge, Mulberry Business Park, Fishponds Road, Wokingham Berkshire RG41 2GY UK