

# Linux system administration (LPIC-1)

A 5 day **Hands on** training course



## Description

This five day hands on course provides a comprehensive coverage of core Linux administration tasks. The course covers generic Linux and is available for any Linux distribution required. It closely follows the LPIC curriculum allowing delegates to achieve the relevant certification if required.



## Key outcomes

By the end of the course delegates will be able to:

- ✓ Administer & configure Linux systems.
- ✓ Maintain Linux by handling disk space and taking regular backups.
- ✓ Manage software packages.
- ✓ Perform basic troubleshooting.
- ✓ Maintain a secure Linux system.
- ✓ Describe the organisation and implementation of the filesystem.



## Training Approach

This structured course uses Instructor Led Training to provide the best possible learning experience. Small class sizes ensure students benefit from our engaging and interactive style of teaching with delegates encouraged to ask questions throughout the course. Quizzes follow each major section allowing checking of learning. Hands on sessions are used throughout to allow delegates to consolidate their new skills.



## Details

### Who will benefit?

System administrators, network administrators.

### Prerequisites

Linux fundamentals.

**Duration:** 5 days

**Overall rating:**



### Generic Training



Generic training compliments product specific courses covering the complete picture of all relevant devices including the protocols "on the wire".

*"Friendly environment with expert teaching that teaches the why before the how."*  
G.C. Fasthosts

### Small Class Sizes



We limit our maximum class size to 8 delegates; often we have less than this. This ensures optimal interactivity between delegates and instructor.

*"Excellent course. The small class size was a great benefit..."*  
M.B. IBM

### Hands On Training



The majority of our courses use hands on sessions to reinforce the theory.

*"Not many courses have practice added to it. Normally just the theoretical stuff is covered."*  
J.W. Vodafone

### Our Courseware



We write our own courses; courseware does not just consist of slides and our slides are diagrams not bullet point text.

*"Comprehensive materials that made the course easy to follow and will be used as a reference point."*  
V.B. Rockwell Collins

### Customise Your Course



Please contact us if you would like a course to be customised to meet your specific requirements. Have the course your way.

*"I was very impressed by the combination of practical and theory. Very informative. Friendly approachable environment, lots of hands on."*  
S.R. Qinetiq

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## Course Content

### Part I Exam 101

#### Exploring Linux Command-Line Tools

Using a Shell, Shell Configuration, Environment Variables, Getting Help, Streams, Redirection and Pipes, Processing Text Using Filters, Manipulating files, Regular Expressions, grep, sed.

#### Managing Software

Package Concepts, Comparison of package formats, RPM, rpm Commands, Yum, Debian Packages, dpkg, apt-cache, apt-get, dselect, aptitude, Converting Between Package Formats, Dependencies and Conflicts, Startup Script Problems, Shared Libraries, Library Management, Managing Processes, the Kernel: The First Process, Process Lists, Foreground & Background Processes, Process Priorities, Killing Processes.

#### Configuring Hardware

Configuring Firmware and Hardware, IRQs, I/O Addresses, DMA Addresses, Boot Disks, Coldplug and Hotplug Devices, Configuring Expansion Cards and PCI Cards, Kernel Modules, USB Devices, Linux USB Drivers, Configuring Hard Disks, Partitioning Systems, LVM, Common Layouts, Creating Partitions and Filesystems, Maintaining Filesystem Health, Tuning, Journals, Checking Filesystems, Monitoring Disk Use, Mounting and Unmounting Filesystems.

#### Managing Files

File Management Commands, File Naming and Wildcards, File Archiving, Links, Directory Commands, File Ownership and Group, File access control, Permissions, chmod, Defaults, File Attributes, Disk Quotas, Enabling and setting Quotas, Locating Files, The FHS.

#### Booting Linux and Editing Files

Installing Boot Loaders, GRUB Legacy, GRUB 2, Alternative Boot Loaders, the Boot Process, Boot Messages, Runlevels and the Initialization Process, Runlevel Functions, Runlevel Services, Alternative Boot Systems, Upstart, system.

### Part II Exam 102 265

#### Configuring the X Window System

Localization, Configuring Basic X Features, X Server Options, Methods of Configuring X, X Display Information, X Fonts, The X GUI Login System, XDMCP Server, Using X for Remote Access, Screen Display

Settings, Setting Your Time Zone, Your Locale, Configuring Printing, Conceptualizing the Linux Printing Architecture, Understanding PostScript and Ghostscript, Running a Printing System, Configuring CUPS, Monitoring and Controlling the Print Queue.

#### Administering the System

Managing Users and Groups, Tuning User and System Environments, Using System Log Files, Understanding syslogd, Setting Logging Options, Manually Logging Data, Rotating Log Files, Reviewing Log File Contents, Maintaining the System Time, Linux Time Concepts, Manually Setting the Time, Using NTP, Running Jobs in the Future, Understanding the Role of cron, Creating System cron Jobs, Creating User cron Jobs, Using anacron, Using at.

#### Configuring Basic Networking

TCP/IP, Network Hardware, Network Addresses, Hostnames, Network Ports, Configuring Linux for a Local Network, Configuring with DHCP, Static IP Address, Configuring Routing, Using GUI Configuration Tools, ifup and ifdown, Diagnosing Network Connections, Testing Connectivity, Tracing a Route, Checking Network Status, Examining Network Traffic, Additional Tools.

#### Writing Scripts, Configuring Email, and Using Databases

The Shell Environment, Aliases, Shell Configuration Files, Writing Scripts, Commands, Variables, Conditional Expressions, Loops, Functions, Managing Email, Choosing Email Software, Securing Your Email Server, Managing Data with SQL, Picking a SQL Package, Understanding SQL Basics, Using MySQL

#### Securing Your System

Administering Network Security, Super Server Restrictions, Disabling Unused Servers, Administering Local Security, Securing Passwords, Limiting root Access, Setting Login, Process, SUID/SGID Files, Configuring SSH, Using GPG, Generating, Importing and Revoking Keys, Encrypting and Decrypting Data, Signing Messages and Verifying Signatures.

