

Course Outline: Linux Professional Institute-LPI 102

Learning Method: Instructor-led Classroom Learning

Duration: 5.00 Day(s)/ 40 hrs

Overview:

Students will learn all the key core elements of the Linux operating system -installation, package management, X Windows,application management, and more.

Who Should Attend:

- Anyone interested in gaining a greater understanding of Linux
- Anyone responsible for providing basic installation, operation, and troubleshooting services on Linux workstations and servers
- Microsoft professionals seeking to add Linux expertise

At Course Completion:

At end of the course participants will learn:

- System startup and shutdown
- Managing users
- User environments
- Documentation
- Linux Shell and Bash scripting
- Linux Kernel
- Basic Networking
- Networking Services
- DNS

Outline:

Module 1: Introduction

- Course Format
- Product Development
- Structure
- Conventions
- Introduction to Labs
- Introduction to Labs solutions

- Lab convention

Module 2: System Start-up and Shutdown

- Boot Loader Features and configuration
- LILO

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- How to install LILO
- Where to install
- LILO configuration File
- Boot options
- GRUB
- How to install GRUB
- Where to install GRUB
- Boot Problems
- Manual Boot
- Maintenance Mode

Module 3: Managing Users

- Create New Local User Accounts
- New user requirements
- Preparing groups
- Allocating user ID'S
- Adding users
- Removing users
- Security
- Setting passwords
- Account security

Module 4: User Environments

- Login Shell
- Restricted
- Environment
- Environment Files
- Environment Definitions
- Example Environment
- Security issues
- Guests Accounts

- Shared Group Directories

Module 6: Documentation

- Documentation
- Man pages and the man command
- Manual entries
- Related commands
- The info command
- Online documentation
- The Linux documentation project
- Hardcopy documentation

Module 7: The Linux Shell and Bash Scripting

- Introduction
- The Linux Shell
- The bash shell
- Configuration Files
- Environment
- Using the bash shell
- A simple shell script
- Naming variables
- Assigning variables
- Variable notation
- Default variables
- Flow control
- Loops
- The for loop
- Conditions and tests
- Return codes and exit status
- If-then-else
- Conditions
- Case
- Input
- Accepting input
- Read
- Select
- Functions
- Arithmetic and arrays

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Module 8: Process Scheduling

- Scheduling Process
- The at command
- Listing and deleting at jobs
- The crontab command
- Administrating at and crontab
- Anacron

Module 9: Printing

- Printing options
- LPD
- The LPD Daemon
- LPRng
- CUPS
- LPD Installation
- Printer configuration
- Print commands
- Ipr
- Ipq
- Iprm
- Remote printing
- Print filters
- Foomatic

Module 10: The Linux Kernel

- The Linux Kernel
- Kernel version numbering
- Recent Kernel changes
- Preparing for the new kernel
- Software tools
- The source tree
- Customizing and installing a New Kernel
- Configuring a New Kernel
- Kernel modules

Module 11: Basic Networking

- Overview of TCP/IP
- Protocols
- IP
- TCP
- UDP
- ICMP
- Networks
- Internet Protocol Address
- Packet structure
- Setting up Networking
- Configuring a network
- Configuring your network
- Routing tables
- Routing daemon
- Gated and routed
- Minicom
- Ping
- Dig

Module 12: Networking Services

- Web services
- Installation
- Basic Configuration
- Directives
- Configuration
- Document Directory Configuration
- Option Directive
- File transfer
- FTP
- Relevant Files
- Proftpd
- Email services: send mail
- Send mail install & configuration
- Syntax
- Local into section
- Download SSH
- Windows SSH clients

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- Using SSH
- OPEN SSH

Module 13: DNS

- Domain name service
- The DNS Namespace
- Some top level domains
- Zones
- Master and slave servers
- BIND
- Configuring BIND
- Named files
- Option section syntax
- Name servers
- Mail servers
- Sub-domains
- DNS Database Records
- Named signals

Module 14: DISTRIBUTED FILE SYSTEMS

- Linux File Sharing
- The NFS Protocols Stack
- The NFS Client
- The NFS Server
- NFS Daemon
- Mount Daemon
- Overview of Samba
- Obtaining and installing Samba
- Documentation files
- Obtaining and installing samba
- Prerequisites
- Installing samba from source or from Binary
- Installing Samba
- Installing from Binary

- Uninstalling Samba
- Starting Samba
- Configuring Samba with SWAT
- Installing SWAT
- Starting SWAT
- Logon to SWAT
- Help in SWAT
- Add a user

Module 15: Network Security and Performance Tuning

- Your role in security
- About security
- Physical security
- Software security
- Security tools
- Network security
- Unauthorized access
- Basic NFS Security
- Server security
- Introduction to Ipchains
- Ipchains
- Ipchains rules and features
- Implementing Ipchains
- Performance tuning
- What to monitor
- Other utilities
- Managing log files
- Remote logging
- Root and mail
- Troubleshooting
- Repairing file systems
- Mai system maintenance

Module 15: Recovery Planning

- Why Back-up?
- When to back up?
- Where to store Backups?
- What to back up?
- Databases

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- Backup media
- Magnetic tape
- Backup utilities
- Overview utilities
- Options to cpio
- Handling tapes
- Working with MS-DOS Diskettes
- Network Backups

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