



LPI102 Exam Preparatory Course-Instructor Guide (BRAD117003)

Course Description: Maps to the updated LPI 102 exam objectives and covers everything you need to know to prepare for the LPI 102 exam. All the key core elements of the Linux operating system – documentation, administration utilities, network configuration, printing, recovery planning, DFS, kernel configuration, TCP/IP, DHCP, device configuration, and more. The core internet related technologies – e-mail, security, DNS, Apache, Squid.

Pre-Requisite: 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

Duration: Five-day

Documentation

- man Pages and the man Command
- Manual Entries
- Related commands
- Info command
- Documentation in /usr/doc
- Online Documentation
- Linux Documentation Project
- Usenet Newsgroups
- Newsgroup Archives
- Hardcopy Documentation

Administration Utilities

- System Information/Identification
- System Default Files
- Identify/Communicate with Active Users
- The Find/Locate Commands
- Interpreting Files
- Text Processing
- The grep Family
- Regular Expressions
- Filters/sed
- Scheduling Processes
- Administering at and crontab

User Environments

- Login Shell
- Restricted root Access
- Environment Files & Definitions
- The umask Command
- Security Issues/Guest Accounts
- Shared Group Directories

Managing Users

- Creating New User Accounts
- New User Requirements
- Preparing Groups
- The /etc/passwd File
- Allocating User IDs
- Adding/Removing Users
- Changing User Attributes
- Changing Group Membership
- Setting/Choosing Passwords
- The /etc/shadow File
- Account Security

Printing

- Print Spooler Model
- User Commands
- Installing and Managing Printers

Printing

- Manipulating Printers in Linux
- Adding a Printer
- Network Printing
- Print Filters
- PostScript Printers

System Startup and Shutdown

- Standard Boot Process
- Typical lilo.conf
- Boot Problems/Manual Boot
- Startup Flow Control
- Run Levels
- The init Control File: /etc/inittab
- Run Command Scripts (System V)
- rc Script Details (System V)
- Changing Run Levels
- Shutting Down/Maintenance Mode

Distributed File Systems

- Linux File Sharing
- Overview of the Network File System (NFS)
- NFS Protocols Stack
- NFS Client, Server, Security
- Using mount with NFS
- Overview of Samba

Recovery Planning

- Why/When/What to Backup
- Where to Store Backups
- Backup Media/Utilities
- Linux Backup Terminology
- Tape Archive and Restore
- Copy to I/O, Using cpio
- Direct Device Access
- Using dd to Identify a File Type
- Using Compression and dd
- Handling Tapes with mt
- Linux Tape Device Names
- Working with MS-DOS Diskettes
- Network Backups

The Linux Shell & Bash Scripting

- Linux Shell Profiles
- Using the bash Shell
- Redirecting Input and Output
- Shell Scripts
- Background Jobs
- Variables – Naming and Assigning
- Quotes and Command Substitution
- Passing Information to Your Script
- Flow Control
- Loops – for, while, and until
- Tests and Conditions
- Return Codes/Exit Status
- if-then-else
- Comparisons – String, Arithmetic
- Logical Evaluation
- File Status Tests
- Input – accepting, read, select
- Advanced bash Concepts

The Linux Kernel

- About the Linux Kernel
- Preparing for a New Kernel
- Software Tools
- The Source Tree
- Patching the Source Code
- Customizing and Installing a New Kernel
- Configuring a New Kernel
- Detailed Procedure – Building a New Kernel
- Default Kernel Options with rdev
- Kernel Modules
- Building a Monolithic Kernel
- LILO Configuration File
- Using LILO to Test a New Kernel
- LILO Command Options
- Boot Options

TCP/IP Networking

- Overview of TCP/IC
- IP Address Format
- Protocols
- Networks
- Internet Protocol Address
- Ipv4 Address Format

Network Configuration

- Set Up Networking
- Routing Tables/Daemons
- Network Interface Configuration
- Point to Point Protocol (PPP)
- Setting up PPP
- Network Statistics

DNS

- The DNS Namespace
- Zones/BIND
- Configuring BIND
- Named (the Server Program) Files
- Domain Database File
- SOA (Start of Authority) Record
- Name and MailServers
- DNS Database Records

DHCP and Name Resolution

- DHCP Clients
- dhcpcd, dhclient
- The alias Command
- /etc/host.conf, /etc/networks, /etc/resolv.conf
- Network Information Service (NIS)

Remote Connectivity

- Telnet
- The r Commands
- ssh – Secure Shell
- Components of Secure Shell 1 & 2

Remote Connectivity

- Installation and Configuration
- File Transfer
- FTP
- ProFTP
- Sendmail Email Services
- Sendmail Install and Configuration
- Sendmail Alias Functions
- Syntax
- Selected Switches and Parameters
- The Sendmail.cf File
- The m4 Macro System
- Structure of Sendmail-cf Directories
- Queued Mail

Apache Web Services

- Apache Installation
- Basic Configuration
- Enable Server Status and View
- Document Directory Configuration
- Options Directive
- Symlinks
- Restrict Access
- Common Tasks

Network Security And Performance Tuning

- Your Role in Security
- Software Security
- Security Tools
- Basic NFS Security
- X Windows Security
- Physical Security and Data Integrity
- Network Security
- Keep Up on Security Updates
- TCP Wrappers
- Ipchains Rules and Features
- Performance Tuning
- Performance Monitoring