

LPIC-1 Exam Prep (Course 2)

Topics

• Account And Security Administration

- LPI Objectives Covered
- Gathering System Info
- Approaches to Storing User Accounts
- User and Group Concepts
- User Private Group Scheme
- User Administration
- Modifying Accounts
- Group Administration
- Password Aging
- Limiting Logins
- Default User Files
- su and Wheel
- sudo
- Setting Resource Limits via ulimit
- pam_limits.so
- lsof and fuser
- Lab Tasks
 - User and Group Administration
 - Restricting superuser access to wheel group membership
 - User Private Groups
 - Setting Limits with the pam_limits Modules

• Customizing The Shell And Writing Simple Scripts

- LPI Objectives Covered
- Configuration Files
- Script Execution
- Bash: Configuration Files
- Shell and Environment Variables
- Bash Shell Options
- Bash: 'shortcuts'
- Bash: prompt
- Nesting Commands
- Shell Script Strengths and Weaknesses
- Example Shell Script
- Positional Parameters
- Input & Output
- Doing Math
- Comparisons with test
- Exit Status
- Conditional Statements
- Flow Control: case

- The for Loop
- The while and until Loops
- Functions
- Sending and Receiving Email with mailx
- Lab Tasks
 - Bash Login Scripts
 - Writing a Shell Script
 - Command Line Email
 - Alpine

- **Automating Tasks**
 - LPI Objectives Covered
 - Automating Tasks
 - at/batch
 - cron
 - The crontab Command
 - crontab Format
 - /etc/cron.*/ Directories
 - Anacron
 - Lab Tasks
 - Adding System cron Jobs
 - Creating and Managing User Cron Jobs

- **Networking**
 - LPI Objectives Covered
 - IPv4 Fundamentals
 - TCP/UDP Fundamentals
 - IPv6
 - Linux Network Interfaces
 - Ethernet Hardware Tools
 - Configuring Routing Tables
 - Network Configuration with ip Command
 - Starting and Stopping Interfaces
 - SUSE YaST Network Configuration Tool
 - Hostname and Domain Name
 - Name Resolution
 - DNS Clients
 - Network Diagnostics
 - Information from ss and netstat
 - nmap
 - Netcat
 - Lab Tasks
 - Basic Client Networking
 - Configuring IPv6

- **X Window System**

- LPI Objectives Covered
- The X Window System
- X Modularity
- X.Org Drivers
- Starting X
- Configuring X Manually
- Automatic X Configuration
- Xorg and Fonts
- Installing Fonts for Modern Applications
- Installing Fonts for Legacy Applications
- The X11 Protocol and Display Names
- Display Managers and Graphical Login
- X Access Control
- Remote X Access (historical/insecure)
- Remote X Access (modern/secure)
- Customizing X Sessions
- Starting X Apps Automatically
- Lab Tasks
 - Configure X Security
 - Launching X Apps Automatically
 - Secure X

- **Accessibility And Localization**

- LPI Objectives Covered
- GNOME Accessibility Support
- Internationalization & Localization
- Character Encodings
- Locales
- Setting the Time Zone
- Lab Tasks
 - GNOME Accessibility
 - Character Encoding Conversion
 - Locale Configuration
 - Time Zone Configuration - Traditional Method
 - System Clock Configuration - Distribution tools
 - System Clock Configuration - Distribution tools

- **Time And Printing**

- LPI Objectives Covered
- Hardware and System Clock
- Managing Network-Wide Time
- Continual Time Sync with NTP
- Configuring NTP Clients
- Useful NTP Commands

- Common UNIX Printing System
- Defining a Printer
- Standard Print Commands
- CUPS Troubleshooting
- CUPS Troubleshooting
- Lab Tasks
 - NTP Client Configuration
 - Printing
 - Configuring Print Queues

- **Log File Administration**
 - LPI Objectives Covered
 - System Logging
 - Syslog-ng
 - systemd Journal
 - systemd Journal's journactl
 - Secure Logging with Journal's Log Sealing
 - Rsyslog
 - /etc/rsyslog.conf
 - Log Management
 - Sending logs from the shell
 - Lab Tasks
 - Using the systemd Journal
 - Setting up a Full Debug Logfile
 - Remote Syslog Configuration

- **SQL And MTA Fundamentals**
 - LPI Objectives Covered
 - Popular SQL Databases
 - SELECT Statements
 - INSERT Statements
 - UPDATE Statements
 - DELETE Statements
 - JOIN Clauses
 - SMTP
 - SMTP Terminology
 - SMTP Architecture
 - Sendmail Architecture
 - Sending Email with sendmail
 - Sendmail Components
 - Exim
 - Postfix Features
 - Postfix Architecture
 - Postfix Components
 - Postfix Map Types
 - Configuration Commands
 - Lab Tasks
 - SQL with Sqlite3

- Configuring Postfix
- Configuring Sendmail

- **Host Security And Encryption**

- LPI Objectives Covered
- Controlling Login Sessions
- Xinetd
- TCP Wrappers
- /etc/hosts.{allow,deny} Shortcuts
- Advanced TCP Wrappers
- Discovering Hosts
- Secure Shell
- ssh and sshd Configuration
- Accessing Remote Shells
- SSH Port Forwarding
- Transferring Files
- Alternative sftp Clients
- SSH Key Management
- ssh-agent
- GPG – GNU Privacy Guard
- Lab Tasks
 - Securing xinetd Services
 - Enforcing Security Policy with xinetd
 - Securing Services with TCP Wrappers
 - Introduction to ssh and scp
 - SSH Key-based User Authentication
 - Using ssh-agent
 - File Encryption with GPG