KOENIG
step forward

LPIC-1 Exam Prep (Course 1)

Topics

- **Work On The Command Line**
    - LPI Objectives Covered
    - Role of Command Shell
    - Shells
    - Gathering System Info
    - Identifying the Shell
    - Changing the Shell
    - Shell Prompts
    - Bash: Bourne-Again Shell
    - Navigating the Filesystem
    - Help from Commands and Documentation
    - Getting Help Within the Graphical Desktop
    - Getting Help with man & info
    - Bash: Command Line History
    - Bash: Command Editing
    - Bash: Command Completion
    - Shell and Environment Variables
    - Key Environment Variables
    - Lab Tasks
        - Help with Commands
        - Linux Shells
        - Shell Variables
        - Bash History
        - Aliases

- **Use Streams, Pipes, And Redirects**
    - LPI Objectives Covered
    - File Redirection
    - Piping Commands Together
    - Filename Matching
    - File Globbing and Wildcard Patterns
    - Brace Expansion
    - General Quoting Rules
    - Nesting Commands
    - Gotchas: Maximum Command Length
    - Lab Tasks
        - Redirection and Pipes
        - Wildcard File Matching
        - Shell Meta-Characters
        - Command Substitution

- **Manage File Permissions And Ownership**

  - LPI Objectives Covered
  - Filesystem Hierarchy Standard
  - Displaying Directory Contents
  - Filesystem Structures
  - Determining Disk Usage With df and du
  - File Ownership
  - Default Group Ownership
  - File and Directory Permissions
  - File Creation Permissions with umask
  - Changing File Permissions
  - SUID and SGID on files
  - SGID and Sticky Bit on Directories
  - User Private Group Scheme
  - Lab Tasks
    - Navigating Directories and Listing Files
    - Disk and Filesystem Usage
    - File and Directory Ownership and Permissions

- **Create, Delete, Find, And Display Files**

  - LPI Objectives Covered
  - Directory Manipulation
  - File Manipulation
  - Deleting and Creating Files
  - Physical Unix File Structure
  - Filesystem Links
  - File Extensions and Content
  - Which and Type
  - whereis
  - Searching the Filesystem
  - Alternate Search Method
  - Manually Installed Shared Libraries
  - LAB TASKS
    - Manipulating Files and Directories

- **Work With Archives And Compression**

  - LPI Objectives Covered
  - Archives with tar
  - Archives with cpio
  - The gzip Compression Utility
  - The bzip2 Compression Utility
  - The XZ Compression Utility
  - The PKZIP Archiving/Compression format
  - Lab Tasks
    - Archiving and Compression
    - Using tar for Backups
    - Using cpio for Backups

- **Process Text Streams Using Filters**
    - LPI Objectives Covered
    - Producing File Statistics
    - The Streaming Editor
    - Replacing Text Characters
    - Text Sorting
    - Duplicate Removal Utility
    - Extracting Columns of Text
    - Displaying Files
    - Prepare Text for Display
    - Previewing Files
    - Displaying Binary Files
    - Combining Files and Merging Text
    - Lab Tasks
        - Text Processing
        - Processing Text Streams

- **Search Text Files Using Regular Expressions**
    - LPI Objectives Covered
    - Searching Inside Files
    - Regular Expression Overview
    - Regular Expressions
    - RE Character Classes
    - Regex Quantifiers
    - RE Parenthesis
    - Lab Tasks
        - Pattern Matching with Regular Expressions
        - Extended Regular Expressions
        - Using Regular Expressions With sed

- **Perform Basic File Editing Operations Using Vi**
    - LPI Objectives Covered
    - Text Editing
    - vi and Vim
    - Learning Vim
    - Basic vi
    - Intermediate vi
    - Lab Tasks
        - Text Editing with Vim

- **Create, Monitor, And Kill Processes**
    - LPI Objectives Covered
    - What is a Process?
    - Process Lifecycle
    - Process States
    - Viewing Processes

- Signals
- Tools to Send Signals
- Managing Processes
- Tuning Process Scheduling
- Job Control Overview
- Job Control Commands
- nohup and disown
- uptime
- Persistent Shell Sessions with Screen
- Using screen
- Advanced Screen
- Lab Tasks
    - Job Control Basics
    - Process Management Basics
    - Screen Basics
    - Using Screen Regions

- **Use RPM, Yum, And Debian Package Management**

    - LPI Objectives Covered
    - Managing Software
    - RPM Architecture
    - Working With RPMs
    - Querying and Verifying with RPM
    - Installing Debian Packages
    - Querying and Verifying with dpkg
    - The alien Package Conversion Tool
    - Managing Software Dependencies
    - Using the Yum command
    - yumdownloader
    - Configuring Yum
    - The dselect & APT Frontends to dpkg
    - Aptitude
    - Configuring APT
    - Lab Tasks
        - Working with RPMs on Ubuntu
        - Querying the RPM Database

- **Work With Partitions, Filesystems, And Disk Quotas**

    - LPI Objectives Covered
    - Partition Considerations
    - Logical Volume Management
    - Filesystem Planning
    - Partitioning Disks with fdisk & gdisk
    - Resizing a GPT Partition with gdisk
    - Partitioning Disks with parted
    - Filesystem Creation
    - Filesystem Support
    - Unix/Linux Filesystem Features

- Swap
- Selecting a Filesystem
- Filesystem Maintenance
- Mounting Filesystems
- Mounting Filesystems
- Managing an XFS Filesystem
- NFS
- SMB
- Filesystem Table (/etc/fstab)
- Configuring Disk Quotas
- Setting Quotas
- Viewing and Monitoring Quotas
- Lab Tasks
    - Hot Adding Swap
    - Accessing NFS Shares
    - Setting User Quotas

- **Linux Boot Process**

    - LPI Objectives Covered
    - Booting Linux on PCs
    - GRUB 2
    - GRUB 2 Configuration
    - GRUB Legacy Configuration
    - Boot Parameters
    - init
    - Linux Runlevels Aliases
    - Systemd local-fs.target and sysinit.target
    - Runlevel Implementation
    - System Boot Method Overview
    - systemd System and Service Manager
    - systemd Targets
    - Using systemd
    - Shutdown and Reboot
    - System Messaging Commands
    - Controlling System Messaging
    - Lab Tasks
        - Command Line Messaging
        - Messaging with talkd
        - Boot Process
        - GRUB Command Line
        - Basic GRUB Security

- **Determine And Configure Hardware Settings**

    - LPI Objectives Covered
    - Managing Linux Device Files
    - Hardware Discovery Tools
    - Configuring New Hardware with hwinfo
    - PC Architecture and Bus

- DMA & IRQ
- USB Devices
- USB Configuration
- Configuring Kernel Components and Modules
- Kernel Modules
- Handling Module Dependencies
- Configuring the Kernel via /proc/
- Kernel Hardware Info – /sys/
- /sys/ Structure
- Random Numbers and /dev/random
- Lab Tasks
    - Adjusting Kernel Options

- **Linux Fundamentals**

    - Unix and its Design Principles
    - FSF and GNU
    - GPL – General Public License
    - The Linux Kernel
    - Components of a Distribution
    - Red Hat Linux Products
    - SUSE Linux Products
    - Debian
    - Ubuntu
    - Logging In
    - got root?
    - Switching User Contexts
    - Gathering Login Session Info
    - Lab Tasks
        - Login and Discovery
        - Switching Users With su