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Contents

Name:
Date:

Linux Administration

Linux administration involves managing and maintaining Linux-based systems. This learning plan is designed to guide you through the essential concepts and skills needed for effective Linux system administration. By completing these tasks, you'll gain a solid foundation in Linux and be able to perform common administrative tasks.

Learning Plan Tasks

1. Introduction to Linux
2. Linux File System and Permissions
3. Linux Shell Basics
4. User and Group Management
5. Package Management
6. Process Management
7. Filesystem Management
8. Networking Basics
9. System Logging and Monitoring
10. Security and Firewall Configuration
11. Automation with Shell Scripting
12. Virtualization and Containers
13. Backup and Restore
14. Linux Troubleshooting
15. Best Practices
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#checkoutTheDocs

- **edX Linux Foundation**: Linux Courses
- **Linux Documentation**: Linux Documentation Project

1. Introduction to Linux

- **History and Evolution**: Understand the history and evolution of Linux.
- **Linux Distributions**: Learn about different Linux distributions and choose one to work with.
- **Linux Kernel and Shell**: Understand the role of the Linux kernel and the shell in the operating system.

2. Linux File System and Permissions

- **File System Hierarchy**: Learn about the Linux file system hierarchy.
- **File and Directory Permissions**: Understand how permissions work and how to modify them using commands like `chmod`.

3. Linux Shell Basics

- **Command-Line Interface (CLI)**: Get familiar with the Linux command-line interface.

- **Basic Commands**: Learn essential commands for navigating the file system, managing files, and viewing content.

4. User and Group Management

- **User Accounts**: Learn how to create, modify, and delete user accounts.
- **Group Management**: Understand group concepts and manage user groups.

5. Package Management

- **Package Managers**: Learn to use package managers like `apt` (Debian/Ubuntu) or `yum` (Red Hat/CentOS) to install, update, and remove software.

6. Process Management

- **Viewing Processes**: Learn how to view running processes using commands like `ps` and `top`.
- **Process Control**: Understand how to start, stop, and manage processes.

7. Filesystem Management

- **Disk Partitioning**: Learn about disk partitioning and file system types.
- **Filesystem Maintenance**: Understand tasks like mounting/unmounting filesystems and checking disk space.

8. Networking Basics

- **Networking Configuration**: Learn how to configure network interfaces and set up IP addresses.
- **Firewall Configuration**: Understand how to use firewall tools like `iptables` or `ufw`.

9. System Logging and Monitoring

- **Syslog and Journalctl**: Learn about system logging and use tools like `journalctl`.
- **Monitoring Tools**: Explore monitoring tools such as `sar` and `htop`.

10. Security and Firewall Configuration

- **Security Principles**: Understand basic security principles for Linux systems.
- **Firewall Configuration**: Configure a firewall to enhance system security.

11. Automation with Shell Scripting

- **Bash Scripting Basics**: Learn the basics of Bash scripting.
- **Automating Tasks**: Create simple scripts to automate common tasks.

12. Virtualization and Containers

- **Virtualization Concepts**: Understand virtualization using tools like VirtualBox or KVM.
- **Introduction to Docker**: Learn about containerization and Docker basics.

13. Backup and Restore

- **Backup Strategies**: Understand different backup strategies for Linux systems.
- **Restoring from Backups**: Learn how to restore data from backups.

14. Linux Troubleshooting

- **Troubleshooting Tools**: Explore troubleshooting tools like `strace` and `lsof`.
- **Common Issues**: Learn to identify and troubleshoot common Linux issues.

15. Best Practices

- **Security Best Practices**: Adopt security best practices for Linux systems.
- **Performance Optimization**: Learn techniques to optimize system performance.

16. Build Something Using Linux!

- **Create a Web Server**: Set up a simple web server using tools like Apache or Nginx.
- **Deploy a Database Server**: Install and configure a database server such as MySQL or PostgreSQL.

Next Steps

- **Advanced Topics**: Explore advanced Linux topics like shell scripting, network configuration, and server hardening.
- **Certification**: Consider pursuing Linux certification, such as CompTIA Linux+ or Red Hat Certified System Administrator (RHCSA).
- **Real-world Projects**: Apply your skills by working on real-world projects or contributing to open-source Linux projects.