Duration: 1 Month

LINUX FUNDAMENTALS

Overview:

Linux, an open-source Unix-like operating system kernel, serves as the foundation for various Linux distributions. Renowned for its stability, security, and flexibility, Linux powers a wide array of systems, from personal computers to servers and embedded devices. With its modular design and support for a vast range of hardware architectures, Linux caters to diverse computing needs It boasts a rich ecosystem of free and open-source software, including desktop environments, utilities, and development tools. Linux fosters a vibrant community of developers, enthusiasts,and organizations collaborating to innovate and evolve the platform continuously.

What you'll learn

➢Gain essential skills in navigating the Linux operating system, mastering commands for file and directory management, and understanding basic system administration tasks.

➢ Learn how to work effectively in a Linux environment, configure user permissions, and troubleshoot common issues.

➢Build a solid foundation in Linux that forms the basis for advanced system administration and cybersecurity practices.

Benifits

➢**Hands-on practical:** Engage in real-world exercises to apply theoretical knowledge directly.

➢**Internship opportunity:** Gain practical experience through internships to enhance skills and build a professional network.

➢**Expert trainers:** Receive guidance and instruction from seasoned professionals with extensive experience in the field.

➢**Job assistance:** Access support and resources to secure employment opportunities aligned with acquired skills. and expertise.

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Course Outline:

Module 01: Linux Basics

- History and philosophy
- Different distributions
- Command line interaction

Module 02: File System Navigation

- Commands: cd, pwd, ls
- Permissions
- Manipulating files: mkdir, touch, rm, mv

Module 03: File Manipulation

- Text editing: nano, vim
- Searching: grep
- Compression: gzip, tar, zip

Module 04: User and Group Management

- Commands: useradd, usermod, passwd
- Permissions
- Group management

Module 05: Process Management

- Commands: ps, top, kill
- Background and foreground processes
- Priority and scheduling: nice, renice

Module 06: Package Management

- Package managers: apt, yum, pacman
- Searching and repositories
- Dependencies and conflicts

Module 07: Networking Basics

- Configuration: ifconfig, ip
- Troubleshooting
- Protocols: TCP/IP

Module 08: System Administration

- Services: systemctl, service
- Startup/shutdown
- Performance monitoring

Module 09: Shell Scripting

- Scripting basics
- Variables, conditionals, loops
- Task automation

Module 10: File System Permissions

- Ownership and permissions
- chmod
- chown, chgrp

Module 11: Text Processing Tools

- sed, awk
- Text manipulation
- Regular expressions

Module 12: File System Hierarchy

- Structure overview
- Important directories
- Navigation

Module13: Backup and Restore

- Backup tools: tar, rsync
- Strategies
- Restoration

Module 14: File System Integrity

- Checksums
- Error detection and repair
- Journaling

Module15: Security Essentials

- Firewalls
- Authentication
- Log monitoring

Module 16: Remote Access

- SSH
- File transfer: SCP, SFTP
- Remote desktop

Module 17: System Updates and Upgrades

- Package updates
- System upgrades
- Repositories

Module 18: Shell Customization

- Prompt customization
- Aliases, functions
- Configuration files

Module 19: Virtualization and Containers

- Virtualization: VirtualBox, VMware
- Containers: Docker, Podman
- Management

Module 20: Monitoring and Performance Tuning

- Performance tools: sar, vmstat
- Bottleneck identification
- System tuning