Linux Administration

The Linux Administration Course is a comprehensive training program designed to equip IT professionals with the skills required to effectively manage and secure Linux-based systems. Covering Linux installation, configuration, file system management, and system administration, this course provides a complete foundation for working with Linux in real-world environments. Participants will also learn networking fundamentals, process management, security implementation (SELinux, firewalld, iptables), and automation using bash scripting.

By the end of the program, learners will have the ability to deploy, configure, and administer Linux systems, manage users and permissions, automate routine tasks, and troubleshoot common issues. With Linux being one of the most widely used operating systems across IT and cybersecurity industries, this course delivers the essential skills and best practices needed for system administrators, SOC analysts, and IT professionals pursuing career advancement or certification.

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Module 1: Introduction & Installation

• Features of Linux
• Linux Distributions
• Linux Installation
• File System Hierarchy Standard (FHS)

Module 2: Basic Commands & File Management

• Opening Terminal & Switching Consoles
• Navigation: pwd, cd, ls
• File Creation: cat, touch
• Directory Management: mkdir
• Absolute vs Relative Paths
• File Editing with vi/vim
• Copying & Removing Files & Directories

Module 3: Boot & Recovery

• Booting Process Explained
• Run Levels
• Resetting Root Password

Module 4: Filtering & Search Commands

• Viewing Files: more, less, head, tail
• File Statistics: wc
• Searching & Editing: grep, find, sed

Module 5: User & Group Administration

• Creating, Modifying, Deleting Users
• Assigning & Changing Passwords
• Managing User Database Files
• Group Creation, Memberships, Group Admins

Module 6: File Permissions

• Basic Permissions (Owner, Group, Others)
• Access Control Lists (ACLs)
• Advanced Permissions: setuid, setgid, Sticky Bit

Module 7: Links & Disk Management

• Soft Links & Hard Links
• Disk Partitioning Basics
• Logical Volume Manager (LVM)

Module 8: Backup & Automation

• Backups using tar + gzip, cpio
• Scheduling Tasks with at & crontab

Module 9: Process Management

• Process Monitoring: ps, top
• Killing Tasks: kill
• Managing Background Jobs: jobs

Module 10: Security & Scripting

• SELinux Modes (Enforcing, Permissive, Disabled)
• Firewalld Rules
• iptables Rules
• Basic Bash Scripting: echo, if…then