



TECHNOCATION FREELANCING TRAINING INSTITUTE & SOFTWARE HOUSE

Professional Linux(lovable intellect not using xp) Course Outline

Module 1: Introduction to Linux

- History and Evolution of Linux
- Linux Distributions: Ubuntu, CentOS, RHEL, Debian
- Open-Source Philosophy & Linux Community
- Installation Methods: Virtual Machines, Cloud, Bare Metal

Module 2: Linux Filesystem & Directory Structure

- Linux Filesystem Hierarchy (FHS)
- Understanding File Types & Permissions
- File and Directory Management Commands
- Disk Partitioning & Mounting File Systems

Module 3: Linux Command Line & Shell Scripting

- Basic Linux Commands (ls, cp, mv, rm, cat, echo)
- Working with Bash Shell & Environment Variables
- Redirection, Pipes, and Filters
- Writing and Executing Shell Scripts
- Scheduling Jobs with Cron & Anacron

Module 4: User & Group Management

- Creating and Managing Users & Groups
- Understanding File Ownership & Permissions
- sudo Privileges & Access Control
- Password Policies & Account Locking

Module 5: Linux Networking & Security

- Network Configuration & Troubleshooting
- Understanding Firewalls (iptables, nftables, firewalld)
- SSH Configuration & Secure Remote Access
- Intrusion Detection & Log Analysis

Module 6: Linux Process & Service Management

- Understanding System Processes & Signals
- Process Monitoring (ps, top, htop)
- Managing System Services (systemd, init.d)
- Performance Tuning & Resource Optimization

Module 7: Package Management & Software Installation

- Package Managers: APT (Debian/Ubuntu), YUM/DNF (RHEL/CentOS)
- Installing, Updating, and Removing Software
- Compiling Software from Source
- Managing Repositories & PPAs

Module 8: Storage & Backup Management

- Partitioning & Formatting Disks (fdisk, mkfs)
- Logical Volume Manager (LVM) Concepts
- RAID Configuration & Data Redundancy
- Backup & Restore Strategies (rsync, tar, snapshots)

Module 9: Linux Server Administration

- Configuring and Managing Web Servers (Apache, Nginx)
- Setting Up Database Servers (MySQL, PostgreSQL)
- Email Services & DNS Server Configuration
- Load Balancing & High Availability

Module 10: Automation & Infrastructure as Code (IaC)

- Introduction to Ansible for Automation
- Writing Ansible Playbooks & Roles
- Managing Infrastructure with Terraform
- CI/CD Integration in Linux Environments

Module 11: Linux for DevOps & Cloud

- Running Linux in AWS, Azure, GCP
- Docker & Kubernetes on Linux
- Serverless Computing with Linux
- Cloud Security Best Practices

Module 12: Linux Troubleshooting & Certification Prep

- Common Linux Issues & Fixes
- Kernel Debugging & Log Analysis
- Hands-on Labs & Real-World Scenarios
- Linux Certification Prep (RHCSA, LFCS, CompTIA Linux+)