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DevOps & AWS Syllabus (2026 Edition)

What are we going to cover ?

Introduction

Linux & System Administration

Networking & Security

Scripting & Automation

Version Control Systems

Cloud Computing (AWS)

Containerization

CI/CD

Infrastructure as Code (IaC)

Orchestration & Cluster Management

Monitoring & Logging

Linux Fundamentals (Complete System Administration)

- Bash commands & shell scripting
- File system, permissions, users & groups
- Process & service management (systemctl, journalctl)
- Log monitoring (/var/log, syslogs)
- System resource monitoring (CPU, memory, disk, network)
- Package management (apt, yum/dnf)
- Linux networking (ip, ss, netstat, routing, DNS)
- Storage management (mount, fstab, partitions)

Networking & Security

- OSI & TCP/IP
- IP addressing, subnetting, routing
- HTTP, HTTPS, SSH, FTP, ICMP
- DNS, DHCP, NAT
- Firewalls, VPN basics
- Troubleshooting (ping, traceroute, dig, nslookup)

Python Scripting & Automation

- Python basics, functions & modules
- File handling
- Error handling
- Automation scripts
- Scheduling scripts with cron

Version Control (Git)

- Repository setup
- Tracking and committing changes
- Syncing and collaboration
- Branching and merging
- Working with remote repositories
- Merge conflict resolution
- Git workflows (Feature branching, GitFlow)

Cloud Computing (AWS)

- Core AWS compute services
- Storage services
- Database services
- Identity and Access Management
- AWS networking (VPC, security controls)

Microservices & Containers (Docker)

- Virtualization vs containerization
- Container concepts and architecture
- Images and containers
- Dockerfiles
- Multi-container applications with Docker Compose

CI/CD (Jenkins)

- Jenkins CI/CD concepts
- Jenkins setup
- Jenkins pipeline creation
- Git integration with Jenkins

Infrastructure as Code (IaC)

- Terraform configuration and workflow
- Terraform state management
- Ansible playbooks
- Server configuration with Ansible
- Inventory management

Kubernetes (K8s)

- Kubernetes architecture
- Pods, Deployments, Services
- Cluster management
- Core Kubernetes operations
- Deployment strategies (rolling, blue-green)

Monitoring & Logging

- Prometheus

- Grafana

- New Relic

- PagerDuty

- SLI / SLO / SLA

- Alerting & Incident Management

- Monitoring & Logging in Kubernetes