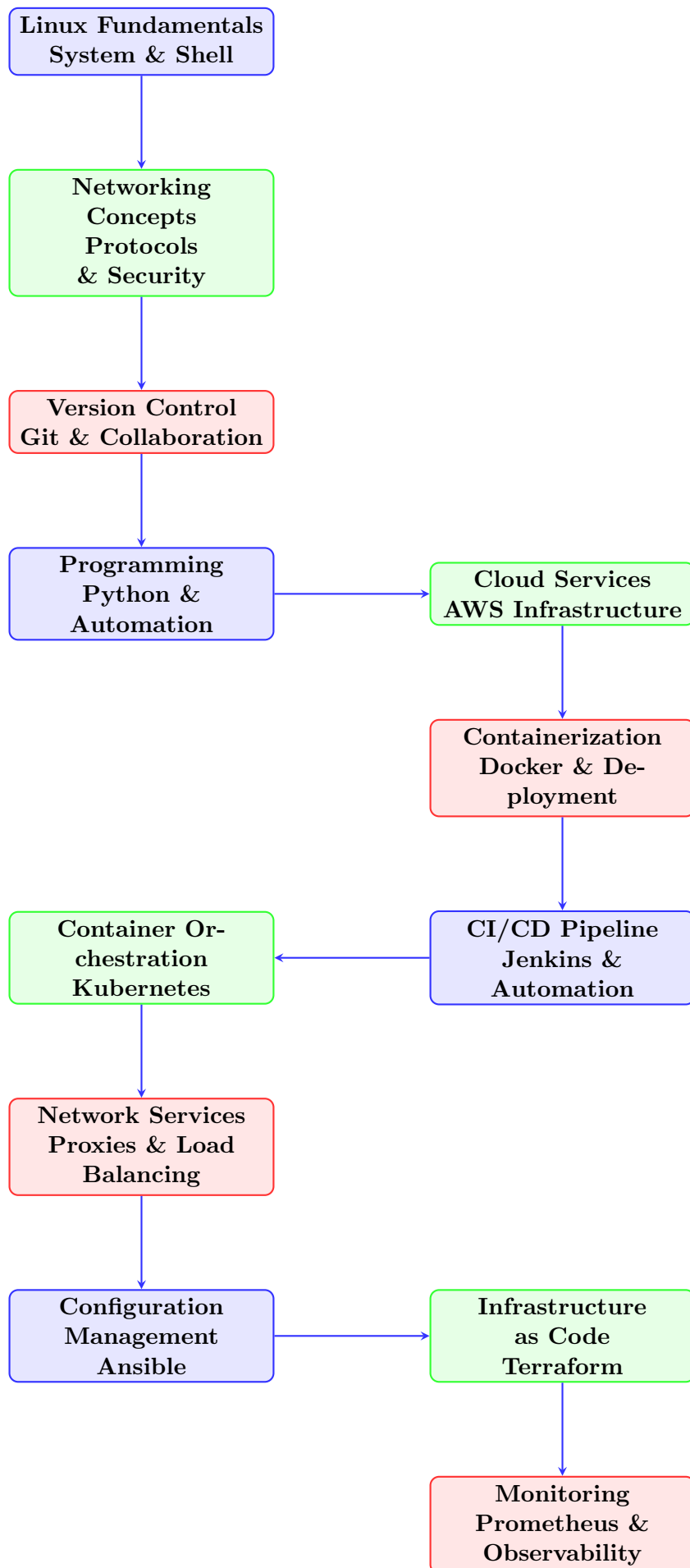


The Complete DevOps Engineer Roadmap



Foundation Phase

1. Linux Fundamentals

Basic Linux commands (ls, cp, mv, rm, etc.)

File system hierarchy (/, /home, /etc, /var, etc.)

Permissions and ownership (chmod, chown)

Processes and signals (ps, top, kill)

Package management (apt, yum)

Shell scripting basics (variables, loops, conditionals, functions)

2. Networking Concepts

OSI and TCP/IP models

IP addressing and subnetting (IPv4, IPv6)

DNS and DHCP

Network protocols (HTTP, HTTPS, FTP, SSH, etc.)

Firewalls and security groups

Basic network troubleshooting (ping, traceroute, netstat)

3. Version Control (Git)

Git basics and commands (clone, commit, push, pull)

Branching and merging

Working with remote repositories (GitHub, GitLab)

Pull requests and code reviews

Git workflows (Git Flow, GitHub Flow)

Resolving merge conflicts

4. Programming (Python)

Python syntax and data structures

Modules and packages

Writing and executing Python scripts

File handling

Error handling

Automation scripts

Basic web scraping

Cloud & Containers Phase

5. Cloud (AWS)

EC2 (virtual servers)

S3 (object storage)

IAM (Identity and Access Management)

VPC (Virtual Private Cloud)

RDS (Relational Database Service)

Lambda (serverless compute)

CloudWatch (monitoring and logging)

6. Containerization (Docker)

Docker installation and setup

Creating and managing Docker images

Running containers

Dockerfile basics

Docker Compose

Container networking

Data persistence

7. CI/CD (Jenkins)

CI/CD concepts and principles

Jenkins installation and setup

Pipeline configuration

Jenkinsfile basics

Automated testing

Build automation

Deployment automation

Orchestration Phase

8. Kubernetes

- Kubernetes architecture
- Pods and services
- Resource management
- Scaling applications
- Helm basics
- Kubernetes networking
- Security in Kubernetes

9. Networking Services

- Nginx proxy setup
- Forward proxies
- Caching implementation
- Firewall configuration
- Load balancing
- SSL/TLS configuration

Infrastructure & Monitoring Phase

10. Configuration Management (Ansible)

- Playbooks
- Roles and modules
- Variables
- Templates
- Inventory management
- Best practices

11. Infrastructure as Code (Terraform)

- Terraform basics
- Configuration files
- State management
- Modules
- Workspaces
- Best practices

12. Monitoring (Prometheus)

- Metrics and exporters
- Alerting
- PromQL
- Grafana integration
- Dashboard creation
- Log management