

- 1. Linux Basics**
  - 1.1. Introduction to Operating Systems and various distributions of Linux and file systems in Linux.
  - 1.2. Boot Process and Run levels
  - 1.3. Concepts of Virtualization (VMWare, Virtual Box, Vagrant)
  - 1.4. Concepts of SDLC, Agile/Waterfall Methodologies
  - 1.5. Basic Linux Commands (ls, VI editor, file permissions, find, Grep, SED, AWK, sudo, cat, pwd, echo,mv,rm,cd)
  - 1.6. Networking Concepts (IP, Subnet Masking, IfConfig, Ping, Netstat, Telnet, Top, Vmstat, IOstat, PS, Kill, TCPDump, Isof)
  - 1.7. Package Management (YUM, RPM, APT, APT-GET)
  - 1.8. LVM
  - 1.9. SSH
  - 1.10. Kickstart
  - 1.11. Bonding
- 2. GIT**
  - 2.1. Introduction
  - 2.2. Installation and Configuration of GIT
  - 2.3. Basic GIT Commands (Init, Add, push, pull, clone, commit, log)
  - 2.4. GIT Branching and Stashing
  - 2.5. GIT Tags and Web hooks
  - 2.6. Exercises
- 3. Maven**
  - 3.1. Introduction to Build/Management tools
  - 3.2. Life cycle of Maven
  - 3.3. Installation and configuration of Maven
  - 3.4. Building sample Maven Project
  - 3.5. Understanding Maven POM.xml
- 4. Jenkins**
  - 4.1. Introduction to Continuous Integration (CI)
  - 4.2. Installation and Configuration of Jenkins
  - 4.3. Configuring and Building Freestyle Jenkins Job
  - 4.4. Understanding different Jenkins Plugins
  - 4.5. Creating Sample CI/CD pipeline Job
- 5. Configuration Management Tools**
  - 5.1. Chef**
    - 5.1.1. Introduction to configuration Management.
    - 5.1.2. Tools and Terminology used in Chef
    - 5.1.3. Installation and Configuration of Chef
    - 5.1.4. Understanding Recipes, Resources in Cookbook
    - 5.1.5. Writing sample Cookbook
    - 5.1.6. Chef Roles and Environments
  - 5.2. Ansible**
    - 5.2.1. Advantages of Ansible over Chef
    - 5.2.2. Installation and configuration of Ansible
    - 5.2.3. Writing sample Ansible Playbook.
    - 5.2.4. Understanding Ansible Vaults, Tags and Roles.
- 6. Containerization**
  - 6.1. Docker**
    - 6.1.1. Advantages of Docker over Virtualization tools
    - 6.1.2. Installation and configuration of Docker
    - 6.1.3. Creating Docker container and building Docker images.
    - 6.1.4. Creating Docker files, Docker volumes and understanding Docker Hub and Docker Registry.
- 7. Cloud Technologies**
  - 7.1. Amazon Web services**
    - 7.1.1. Basic AWS Concepts
    - 7.1.2. Creating AWS account and navigate the AWS Console
    - 7.1.3. Identity & Access Management
    - 7.1.4. Virtual Private Cloud (VPC)
    - 7.1.5. Simple Storage Service (S3)
    - 7.1.6. Launching and using an EC2 instance
    - 7.1.7. Provisioning RDS MySQL Database
    - 7.1.8. Simple Notification Service (SNS)
    - 7.1.9. Cloud Watch Metrics and Alarms.
    - 7.1.10. Creating Elastic Load Balancer (ELB) and using Auto Scaling
    - 7.1.11. Using Route 53 and writing sample Lambda function
    - 7.1.12. AWS Cloud Formation
- 8. Advanced**
  - 8.1. Microsoft Azure
  - 8.2. Kubernetes
  - 8.3. Terraform