



# DevOps

## LINUX Basics: (RHCSA , RHCE)

- Linux File system structure
- Basic linux/unix commands
- Changing file permissions and ownership
- Filter commands
- Simple filter and advance filter commands
- Start and stop services
- Basics Containers-
- Find and kill the process with id and name
- Package installation using RPM and YUM
- Basic Servers and advance servers
- Automation Technologies with Ansible Tools

## Introduction to Devops

- Define Devops
- What is Devops
- SDLC models,Lean,ITIL,Agile
- Why Devops?
- History of Devops
- Devops Stakeholders
- Devops Goals
- Important terminology
- Devops perspective
- Devops and Agile
- Devops Tools
- Configuration management
- Continuous Integration and Deployment

## Introduction to Cloud computing

- What is cloud computing
- Characteristics of cloud computing
- Cloud implementation models
- Cloud service models
- Advantages of cloud computing
- Concerns of cloud computing

## DevOps Tools

### GIT: Version Control

- Introduction
  - Installing Git
  - Git Essentials
  - Installing on Linux
  - Installing on Windows
  - Initial setup

### Chef for Configuration Management

- Overview of Chef
- Workstation Setup
- Organization Setup
- Test Node Setup
- Node Objects and Search
- Environments
- Roles
- Attributes
- Data bags

## AWS:

- Creating AWS account
- Understanding AWS Regions and availability zones
- EC2 ( Elastic Cloud Comput)
- S3 ( Simple Storage Service)
- EBS ( Elastic Block Storage)
- Free tier Eligible services
- ELB ( Elastic Load Balancer)
- Auto Scaling
- IAM ( Identity Access Management)

## Puppet for configuration manage

- What is Puppet ?
- Installation and Configuration
- Installing Puppet
- Configuring Puppet Master and Agent
- Connecting Agents
- Puppet Master
- Puppet Language Basics
- Templates
- Example Code Manifests/Modules
- Puppet Forge

## Jenkins – Continuous Integration

- Introduction.
- Installation
- Jobs
- Build Deployments
- Securing Jenkins

## Docker – Containers

- Introduction
- Architecture
- Docker Hub.
- Custom images
- Docker Networking
- Exposing container ports
- Container Routing
- Docker Compose

## Vagrant

- Introduction
- Installation and Configuration
- Provisioning with Vagrant

## Nagois

- Introduction
- ELK
- Introduction
- What is ELK?
- ELK Installation
- ElasticSearch
- Logstash
- Configuring Logstashand Kibana

## Maven

- Maven Overview
- Maven
- Maven Origins
- What Maven Provide?
- Mavens Principles
- Declarative Execution Coherent Organization of Dependencies
- Maven's Benefits
- Maven Environment SetUp
- Create Java Project
- Build and Test Java Project
- External Dependencies
- Maven 2 Eclipse Plugin
- Create web application using maven
- Generate Documentation for Maven Project
- Project Creation from Maven Templates
- Team Collaberation with Maven
- Migrating to Maven

## Kubernetes

- Introduction to Kubernetes
- Environment Setup and Configuration
- High Availability
- Running Code in Kubernetes
- Container LifeCycles
- Background Processing in Kubernetes
- Integration with Continuous Delivery
- Logging and Monitoring
- Troubleshooting

## Terraform

- Introduction to Terraform
- Language Components
- Infrastructure as Code
- State Management
- Environment Variables
- Managing Resources
- Testing Terraform
- Terraform Security
- Maintenance and Troubleshooting

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