

DevOps Classroom Training

DURATION : 6 Weeks

MODE OF TRAINING : Classroom/Online

LEVEL : Advanced

DevOps Course Curriculum

DevOps Introduction

- What is DevOps?
- History of DevOps
- Dev and Ops
- DevOps definitions
- DevOps and Software Development Life Cycle
- DevOps main objectives
- Infrastructure As A Code

Linux Administration

- Basic concepts of Operating System, Kernel, Shell & File System structure.
- Important Commands for Administration.
- Installation of Centos.
- User Management.
- File Permissions.
- Partitioning and File System.
- Package Management.
- Networking.
- Automating tasks with Cron.
- DHCP Configuration.
- NFS Configuration.
- Apache Configuration.
- FTP configuration.
- SSH configuration.
- NTP Configuration.
- Logging.
- Open LDAP server configuration.

Python scripting

- Python Introduction

- Features of Python
- Python vs Perl
- Python vs shell
- Interactive mode of programming using python
- Reserved words
- Python indentation, Python variables
- Python data types
- Numbers, Strings, Lists, Tuples,
- Dictionaries, Loops, Operators,
- Break Continue, pass,
- Command line arguments, Functions
- Modules
- Files, Exception Handling
- Object Oriented concepts,
- Class, Object, Inheritance

Shell Scripting

- She-bang line in shell
- Command line arguments
- Variables, Loops, Case statement
- Functions, Regular expressions, Examples

Cloud computing and Virtualization

- History and evolution of cloud
- Cloud computing concepts
- Characteristics and Benefits of Cloud
- Cloud service models
- IaaS, PaaS and SaaS
- Cloud service model implementations
- Cloud Deployment Models
- Virtualization
- Virtual Machines

Ansible

- Introduction to Ansible.
- Introduction to YAML.
- Ansible Documentation.
- Setup and Configuration.
- Ansible Playbooks

- Ansible command line

Agile and Scrum

- Agile Principles.
- Agile and Scrum Methodologies.
- Scrum Roles.

Git

- Introduction to Version Control.
- Installation and Server setup.
- Git Commands and Repository.
- Branching
- Working with GitHub.

Puppet

- Introduction to Puppet
- Installation of Puppet Master
- Installation of Puppet agent
- Module Structure and Class Naming
- Declaring Classes and Creating Node definition.
- Puppet.conf, Catalog Compilation, Facter and Autoloading.
- Puppet DSL

Apache Tomcat Application Server

- Installation and Configuration of Tomcat Server.
- Managing Tomcat
- Deploying and Managing Applications.

DevOps Tools: CHEF

- Overview of Chef
- Common Chef Terminology (Server, Workstation, Client, Repository etc.)
- Servers and Nodes
- Chef Configuration Concepts
- Installation of Chef Enterprise Server.
- Workstation Setup

DOCKER

- What are containers
- Difference between VM's & Containers
- Hypervisor Vs Docker Engine
- Docker Introduction
- Docker installation
- Images & containers basics
- Images
- Docker Images Deep Dive
- DockerHub
- Pull & Push images
- Building your own Image with Dockerfile
- Docker & Jenkins integration
- Hosting & Managing Images
- Containers
- Deep Dive
- Running, Stopping, Deleting, Inspecting & Managing containers
- Docker networking
- Web server examples
- Local Development workflow
- Docker Compose
- Automated Workflow/ Continuous delivery of dockers
- Docker Orchestration with Kubernetes
- Microservice Architecture
- Why Containers for microservices
- Kubernetes Intro & Architecture
- Kubernetes setup
- Running docker containers on kubernetes
- Kubectl
- Pod
- Service
- Replication controller & Set
- Deployment
- Whats Next in Container world

VAGRANT

- Introduction
- Setting up Vagrant.
- Using Vagrant, Vagrantfiles, Boxes, Synced folders, Networking.

- Automated Provisioning with Shell, Puppet and Chef.
- Private and Public Networking.
- Multiple Machines with Vagrant.
- Box Management.

Continuous Integration

- INTRODUCTION TO JENKINS-CI
- Continuous Integration with Jenkins Overview
- Installation of Jenkins.
- Jenkins management
- Support for the Git version control systems
- Different types of Jenkins Jobs
- Setting up a Jenkins job
- Scheduling build Jobs.
- Securing Jenkins.
- Jenkins Plugins.
- Introduction to Maven.
- Setting up Jenkins Master and Slave servers.
- Distributed builds with Jenkins
- Backup and Restore of Jenkins.

DevOps: Monitoring Tool Nagios

- Installation and Configuration of Nagios Server.
- Configuring NRPE.
- Nagios Configuration.
- Startup.
- Adding Hosts and Services.
- Web Interface.
- Notifications.

AWS Devops

- Identity Access Management.
- S3, Glacier and CloudFront.
- EC2
- Route53
- Databases on AWS.
- VPC.
- Application Services.
- Deployment with EC2 and Auto Scaling.

- Monitoring and Logging with CloudWatch.
- CloudFormation.
- Elastic Beanstalk.
- Opsworks.
- Ansible and Amazon Web Services