DevOps Course Content

Overview of Devops

- About SDLC models
- About Agile methodology
- The Roles of Developers, Testers and Operation teams
- Why DevOps?
- What is DevOps?
- DevOps Lifecycle
- History of DevOps
- DevOps Tools
- DevOps Goals

Linux Concepts

- Introducing Unix/Linux Operating Systems
- Installation of OS
- Basic commands
- VI/VIM Editors
- File permissions
- Types of links soft and hard link
- LVM
- Job Automation
- Administrating Remote System
- Backup and Restore by using TAR and GZIP
- IP addresses classes (network configuaration and troubleshooting)

Lab session:

- Linux concepts practicing on linux machines

Software Version Control (or) Version control system with GIT

- What is Version Control
- Types of Version Control System
- Introduction to SVN
- Introduction to Git
- Why Git for your organization
- Common Git Commands
- Installing on windows
- Installing on linux
- Initial setup

Lab session:

- Creating bare repository and non-bare repository
- Create a file and add to git, Edit file, Commit the code
- Creating, Deleting Git Branches
- Stashing Code in git
- Merging branches using git merge

- Merging branches using git rebase
- Tag
- Connect with Remote by using push and pull
- Connect with Github

Continuous Integration using Jenkins (CI/CD)

- Introduction to Jenkins
- Overview Jenkins UI
- Jenkins Architecture and Terms of Jenkins
- Jenkins Master Slave Architecture
- Understanding CI/CD Pipelines
- Types of pipeline?
- Creating an end to end automated CI/CD Pipeline

Lab session:

- Creating a Jenkins Master Slave configuaration on AWS
- Installing Plug-ins in Jenkins
- Creating Jenkins Builds
- Creating Scheduled Builds
- Source control polling in jenkins
- Triggering Jobs using Git Web Hooks…
- Other build triggers of jenkins
- Using the Pipeline Plugin In Jenkins
- Install java
- Install Jenkins
- Create first job
- Run first job
- Automate Jenkins pipeline
- Install Jenkins master in the cloud
- Install Jenkins slave agent in the cloud

Configuration Management using Ansible

- What is Ansible?
- Ansible Agentless Architecture
- Ansible vs Puppet
- Setting up Master Slave using Ansible
- Ansible Playbook
- Ansible Modules
- Ansible Roles
- Applying configuration using Ansible

Lab session

- Installing Ansible on AWS
- Difference of why ad-hoc commands and playbooks
- Creating a Playbook using YAML
- Brief about yaml code and how to write yaml code
- What is play?

- Creating an Ansible Role
- Assign different roles in configuration tool

Containerization using Docker

- Introduction to Docker
- What are Containers?
- Docker vs Virtualization
- Understanding Docker Lifecycle
- What are Docker Volumes Introduction to Docker Swarm
- About DockerHub

Lab session:

- Installing Docker on Linux
- Understanding installation of Docker
- Some Docker commands
- Downloading Docker images
- Running Docker images
- Running Commands in Container
- Running multiple containers
- Creating volumes
- Pushing volumes container to container
- Pushing volumes Host to container
- Exposing container ports
- Creating Docker files
- Creating custom image
- Running a container from the custom image
- Publishing Image on Docker Hub

Orchestration using Kubernetes

- Introduction to Kubernetes
- Docker Swarm vs Kubernetes
- Kubernetes Architecture
- Deploying Kubernetes using Kubeadms
- Alternate ways of deploying Kubernetes
- YAML Files
- Creating a Deployment in Kubernetes using YAML
- Services in Kubernetes
- Ingress in Kubernetes
- Case Study – Kubernetes Architecture

Lab session:

- Setting up Kubernetes using kubeadm
- Installing Kubernetes using kops and GCK
- Creating a Deployment
- Creating Services
- Creating an Ingress
- Demonstrating the use of Ingress, services and deployments together

AWS(cloud computing) service for devops

- Introduction to Cloud computing
- Overview of Aws
- EC2
- IAM
- Auto scaling(creating target groups, route tables)
- VPC
- Storage services (S3)
- AWS route53

Lab session:

- Detail practice on every service with devops tools
- Installation of DevOps Tools on cloud
    - Docker
    - Maven
    - Jenkins
    - Ansible
    - Kubernetes

After every tool session completion provide interview questions and discussion on it.

All our Lab Sessions, case studies, and projects will be performed on the AWS Cloud. We will help you set up your AWS Free Tier account once you enroll for the DevOps course.

We will also provide you VMs, which will help you practice even when you're offline!