DevOps Overview

- Devops roles have increased from 10% to 45% in 2018 and Nearly 70% of the system administrators are replaced with roles in devops.
- In short Devops is definitely a promising career for all IT professionals. In next few years 90% of the companies will adopt devops culture.
- In India average salary for a devops professionals is Rs 13,34,890 per year.
  Devops professionals have Hugh demand and potential in near future. To become a devops professional you should learn few automation tools like Chef, Puppet, Ansible, Jenkins and few other very useful tools like GIT, Nagios, Dockers.
- Apponix is dedicated to provide best learning experience for its students since 6 years.
  We offer the best DevOps training in Bangalore, we are proud to say we are the top DevOps training provider in Bangalore, we make sure all our students will get good training experience.
- All our DevOps instructors are working in MNC and have min 7 years of experience.
- Apponix DevOps Training course is designed by industry experts and to cover latest market cloud requirements.
- DevOps Certification Training Course which will prepare you for a career in a DevOps environment, the fast-growing field that bridges the gap between software developers and operations.
- You will become an expert in deployment, automation of configuration management tools such as GIT, Docker, Jenkins, Puppet and Nagios.
- DevOps Training from Apponix will help you gain skills on tools which are used in devops environment.

  In DevOps training course you will be equipped with latest technologies used in the DevOps environment The topics covered are very up to date and very much relevant to the devops, The skills you gain will be very helpful to work in either production support team, projects team or BAU Team.

DevOps Training course objectives:

- In-depth knowledge on Continuous Development, Continuous Integration, and Continuous Testing by performing hands-on on GIT, Jenkins and Selenium
- Comprehensive knowledge on Configuration Management, and Continuous Deployment using Puppet, Ansible Working on Continuous Deployment stage by performing hands-on on popular tools like Docker and Kubernetes
- The exposure to the stage of continuous monitoring using Nagios
- The ability to automate all aspects of a modern code delivery and deployment pipeline using:
  Source code management tools

Build & monitoring tools

Test automation tools

Containerization through Docker

Configuration management tools

Why choose Apponix as a Top DevOps Training institute in Bangalore?

- Apponix has excellent trainers for Devops with rich experience in industry.
- 100% student satisfaction rate in DevOps training
- More than 1000 students completed training in devops since 2013
- Excellent Lab facility for DevOps Training
- We have excellent rating till date, overall 4.9 Rating in Google & Facebook.

Course Duration: 40 Hours

DevOps Training Course Content

1: Devops Lab Setup tools for Linux and windows Environment

- o Git Bash installation and Git hub account setup
- o Tomcat installation and Configuration
- o Jfrog Artifactory installation and Configuration
- o Maven Installation and Configuration
- o Jenkins installation and Configuration
- o Ansible Installation and Configuration
- o Sonarqube installation and Configuration
- o Docker Installation and configuration
- o Java installation and Configuration
- o Environmental variable setup for both windows and Linux

2: Introduction to Devops and Dev sec ops

- o Introduction to DevOps
- o What is DevOps?
- o SDLC models, Lean, ITIL, Agile
- o Why DevOps?
- o History of DevOps
- o DevOps Stakeholders
- o DevOps Goals
- o Important terminology
- o DevOps perspective

- o   DevOps and Agile
- o   DevOps Tools
- o   Configuration management
- o   Continuous Integration and Deployment

3: Introduction to SDLC, Software testing, Agile : Software testing lifecycle

- o   Working with Block box testing
- o   Working with White box testing
- o   Working Grey box testing
- o   Working with Function testing
- o   Working with Regressing testing, smoke testing, System testing, Integration testing etc.

4: Agile Methodologies:

- o   Process flow of Scrum Methodologies
- o   Project planning, scrum testing, sprint Planning and Release management
- o   Analysis
- o   Design, Execution and wrapping closure

5: LINUX Administration

- o   Introduction to Linux Families (ex: Redhat & Debian Family)
- o   working with APT and YUM and Dnf
- o   Working with AWK and SED commands

6: Installation and Initialization:

- o   Installation, Package Selection
- o   Anatomy of a Kick start File, Command line
- o   Introduction to Bash Shell
- o   System Initialization, Starting the Boot Process: GRUB.

7: Boot and Package Management:

- o Securing single-user mode (su login)
- o Shutting down and rebooting the system
- o RPM Package Manager, Installing and Removing Software, Updating a Kernel RPM
- o Yum Command set, Install packages by using yum.
- o Apt-get command set, Apt-cache package management

8: User Administration:

- o Understanding different types of groups and creation of groups
- o Creation of users in different groups
- o Understanding Passwd, Shadow Files
- o Understanding passwd aging
- o Creation of quotas for users, groups and file systems
- o Understanding users security files
- o The different commands for Monitoring the users
- o TROUBLESHOOTING
- o Automation of jobs – Cron , at
- o Working with commands tar, find, grep, etc.

9: Run levels:

- o Understanding the different types of run-levels
- o Understanding different types of shutdown commands
- o Understanding run control scripts
- o Understanding the different types

Version Control/ SCM(Git)

1: Introduction to Git

- o Overview of SVN, GIT , Clear case , perforce & Comparision
- o Introduction of Git
- o Selecting Git Client
- o Creating Repository
- o Working with Tag
- o Creating and Merging Branches
- o Executing Git Commands
- o Git Logs , Git stash, Git rebase
- o Merge conflict issues resolving
- o Git pull, clone, fetch

Ansible Modules

1: Introduction to Ansible

- o What is Ansible
- o Change Management
- o Provisioning with Ansible
- o Benefits of using Ansible

2: Ansible Building blocks and Process flow

- o Introduction to Ansible Anatomy
- o Ansible Requirements Specification
- o Overview of Ansible Components
- o Overview of Ansible Strategy

3: Ansible Playbook Modules and directory structure

- o Introduction to Ansible Playbook
- o Introduction to Ansible Modules
- o Lab (Docs, setup, service, yum ...etc)

4: Variable, Facts and jinja2 templates

- o Working with Ansible Variable
- o Working with Facts
- o Working with Jinja2 Template

5: Play and Playbooks

- o Overview of Ansible Playbooks
- o Playbook Language Example
- o Working on Ansible Handlers
- o Executing a Playbook.

Docker Modules

1: Getting Started with Docker

- o Introduction to Docker.
- o What's under the hood - Namespaces, Cgroups and OverlayFS
- o Understanding Virtualization
- o Virtualization vs Container

2: Docker Installation

- o Creating a Virtual Docker Host(CentOS) by using Vagrant
- o Installing Docker on CentOS
- o Introduction to Docker namespaces

3: Docker Images

- o Introduction to Docker Images
- o Building a Docker Image with a Dockerfile
- o Sharing Data in Your Docker Host with Containers
- o Sharing Data Between Containers
- o Copying Data to and from Containers
- o Creatoing Docker Hub Account.
- o Building Images using DockerFile.
- o Pull and Push Images From/To Docker Hub.

4: Docker Networking

- o Introduction to Docker Networking
- o Finding the IP Address of a Container
- o Setting Up a Custom Bridge Network for Docker

5: Container Operations

- o   Port Mapping for Docker
- o   Creating, Starting, Stopping, Renaming, Removing Containers
- o   Inspacting Containers
- o   Limiting Rrsoruces Memory and CPU
- o   Prioritizing CPU Utilization

6: Docker Compose

- o   Introduction to Docker compose
- o   Creating Docker compose file
- o   Executing Docker Compose file

Jenkins Modules

1: Introduction to Continuous Integration and Jenkins-CI/CD

- o   What is Continuous Integration
- o   Jenkins Continuous Integration
- o   What is Continuous Deployment
- o   Jenkins Vs Jenkins Enterprise

2: Jenkins Installation

- o   Downloading and Installing Jenkins using TomCat
- o   Creating Jenkins as a Service.
- o   Starting and Stopping Jenkins

3: Configure Jenkins and User Management.

- o   Secure Jenkins
- o   Create a new user
- o   Generate ssh key for Jenkins user
- o   Plug-in management

4: Jenkins jobs setup

- o   Setting up a Jenkins job (Freestyle, Pipeline, maven, MSBuild, Pybuild)
- o   Jenkins parametrized jobs setup (choice params,boolean params etc)
- o   Email notification jobs
- o   Parallel jobs configuration
- o   nodes (slaves) configuration

5: Jenkins Integration

- o   Git integration with Jenkins
- o   Maven Integration with jenkins
- o   ansible , artifactory integration
- o   Docker and scanning tool integration
- o   AWS and code review tool

6: Jenkins User administration

- o   Role based administration
- o   Project based administration
- o   Metric based administration
- o   Slaves configuration
- o   Users and groups creation

Maven Modules

1: Build Tolls overview

- o   What is maven and Msbuild, Pybuild,gradle and ant
- o   Maven Evolution
- o   Maven Objective and Environment setup
- o   Maven project creation
- o   What is POM.xml and super POM
- o   Maven build life cycle creation and Default Build lifecycle

2: Customized Project and plugin setup

- o   Maven Project setup
- o   Maven plugin download and setup
- o   Maven Build automation with CI service

3: Maven Repositories and GAV snapshots.

- o   What is GAV and project and Snapshots ,version
- o   Maven Web application creation with pom.xml
- o   What is Maven repository
- o   Local repo
- o   Central repo and Remote repo
- o   Maven Dependencies and plugin

Complete guide to Kubernetes

1: Introduction to Kubernetes

- o   The need for a Container Orchestration Engine
- o   Battles of COEs, which one to choose
- o   Key Features of a COE.
- o   What makes Kubernetes the defacto COE choice.
- o   Negatives of using Kubernetes

2: Key Concepts of Kubernetes

- o   Namespaces
- o   Pods
- o   Replica Sets and Deployments
- o   Service Discovery and Load Balancing
- o   Configmaps, Storage, Network, RBAC
- o   Statefulsets, Crons and Jobs
- o   Kubernetes Architecture

3: Setting up Environment

- o   Provisioning and configuring on AWS
- o   Initialise Cluster with Kubeadm
- o   Setting up Weave CNI
- o   Launching Kubernetes Dashboard
- o   Setting up a kubernetes Visualizer
- o   Resetting cluster created with kubeadm

4: Building blocks of Pods

- o   Introduction to pod
- o   Writing pod Specification
- o   Launching and Operating Pods (Login to the pod, browsing the web UI of the pod)
- o   Attaching a volume to a Pod
- o   Launching Multi-Container Pods
- o   Connecting to Individual Containers
- o   Launching Replica Set and Fault Tolerance
- o   Solution part - Deploying a worker app

5: Managing Application Configurations with ConfigMaps and Secrets

- o Introduction to ConfigMaps and Secrets
- o Creating Config Map for Vote app
- o Setting up Environment Specific Configs
- o Adding Configs from Files
- o Creating Secrets to Encrypt Database
- o Setting Environment vars using Secrets

6: Setting up Firewall with Network Policies

- o Creating default network policy for namespace
- o Exposing public facing app and allowing inter namespace communication.

Promethues and Grafana

- o Installation and configuration
- o Adding metric and pod level and node level
- o Installing grafana pkugin in Prometheus

Terraform

- o Installation and integration in AWS
- o Understanding basic terra form modules providers

Writing terraform code to provision compute network storage in AWS