

Opp. Satyam Theatre, Durga Bhavani Plaza, Ameerpet, Hyd-16

# DevOps

## Introduction to DevOps

- What is DevOps
- History of DevOps
- Dev and Ops
- DevOps definitions
- DevOps and Software Development life Cycle
- DevOps main objectives
- Infrastructure As A Code
- Pre-requisites for DevOps
- Continues Integration and Deployment

## AWS (Cloud Computing)

- History
- Free tier account creation
- EC2
- Windows server, Linux server, Web Server
- Load balancer

## Linux

- History
- Types of OS
- Flavours
- OS structure
- File system hierarchy
- All Linux commands
- File/Directory Permissions
- User & Group Administration
- Tar & Zip
- Hard link & Soft link

## Git (Revision Control System)

- Source code management
- Version control system/Revision control system
- SCM tools
- Repository/Depot
- Server
- Work space/Work dir/Work tree
- Branch/Trunk/Code line
- Commit/Check-in
- Version/Version-ID/Commit-ID, Tag
- Advantages of Git, Git Snapshots
- Work space, Staging area, Buffer area
- Repository (Local/non-bare)
- Repository (Central/bare)
- Installation & configuration
- Git add, Git commit, Git log, Git push, Git status
- Git ignore, Git branch, Git checkout, git merge
- Git Snapshots, Git conflict, Git stash
- Git reset, Git revert,
- Repository (Central/bare)
- Git remove, Git clean
- Git tag, Git fetch, Git diff
- Git cherry-pick, Git hub

## Shell Scripting

- Introduction
- Variables
- If Statement
- Case
- Loops
- Functions
- Real-Time Examples

## Apache web server

- Installation
- Configuration

## MySQL / MariaDB

- Configuration
- User mgmt
- Permission
- DB Creation
- DB Backup
- DBGUI
- DB CLI
- DB tools

## LAMP Setup

- Linux, Apache, PHP, DB & WordPress

## Chef (Configuration Management tool)

- Configuration Management
- History
- Advantages of CM tool, Advantages of Chef
- Chef Architecture, Chef Workstation
- Chef server, Chef nodes
- Knife
- Chef-client
- Ohai
- Idempotency
- Install & configuration of chef
- Cookbooks
- Recipes
- Berks file
- Metadata
- Ruby language
- Deploying Apache web server
- Run list
- Include\_recipe
- Ohai
- Attributes
- Chef Resources, Chef server setup
- Boot strapping node
- Wrapper cookbook
- Chef supermarket
- Calling Dependency cookbooks
- Chef Roles
- Clean up chef server

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**Maven (Build Management)**

- Build management
- Advantages of Build tool
- Build tools
- Architecture of Maven
- Maven build life-cycle
- Maven directory structure
- Maven repositories
- Pom.xml
- Multi module project

**Tomcat web Server**

- Installation, Configuration
- Tomcat manager
- Application management
- App deployment methods

**Jenkins (CI-CD Tool)**

- Continues Integration(CI)
- Jenkins workflow
- Ways of CI
- Benefits of CI
- Why only Jenkins
- Git for Windows
- Java installation & configuration
- Maven installation & Configuration
- Jenkins installation & configuration
- Free style project
- Maven project by maven
- Maven project by Jenkins
- Jenkins Plugins
- Scheduled Projects
- Source code polling (Git)
- Related/Linked projects
- Upstream & Downstream projects
- CI-CD pipeline
- Jenkins Views
- User management
- Jenkins Slaves
- Tomcat web server

**Vagrant**

- Introduction
- Installation, Configuration
- Mini Project
- Hand-on

**Docker (Containerization)**

- Container
- Docker history
- Docker usage
- OS-Level-Virtualization
- Layered file system
- VM Ware vs Docker
- Docker components, Docker workflow
- Docker benefits, Docker images
- Docker Container, Docker file
- Docker hub/registry
- Docker daemon
- Docker Install & Configure
- Docker all commands
- Docker Volumes
- Volume (container-container)
- Volume (Host- Container)
- Port mapping
- Registry server
- Pull/push images from /to registry
- CMD, RUN, ENTRYPOINT

**Ansible (Configuration Management tool)**

- Configuration Management
- History
- Advantages of CM tool
- Why Ansible, Ansible Advantages
- Ansible Architecture setup
- Install & configure Ansible
- Ansible Inventory
- Test Environment setup
- Host Patterns
- Ad-Hoc commands
- Modules
- Gathering facts
- Playbooks
- YAML Language
- Target section
- Variable section
- Task section
- Handle section
- Dry run
- Loops
- Conditionals
- Vault
- Ansible Roles

**Kubernetes (Container Orchestration Technology)**

- What is kubernetes
- Features of kubernetes
- Architecture of kubernetes
- Kubernetes Master
- Kubernetes nodes
- Kubernetes components
- Kube-api server
- etcd (cluster store)
- Kube-scheduler
- Node
- Kube-proxy
- Kubelet
- pods
- Multi container pod
- Pod limitations
- Replica sets
- Deployments
- Installation of Kubernetes

**Nagios (Monitoring Tool)**

- Why monitoring tool
- Ways of monitoring
- Why Nagios so cool?
- Architecture of Nagios
- Plugins, Config files
- Dashboard overview
- Nagios working process
- Nagios Installation & Nagios Configuration
- Nagios Directory structure

**Puppet**

- Installation
- Configuration

**Virtual box****DevOps Real-Time Project****CI-CD pipeline project****Interview Questions****Resume Preparation& Validation****Real-Time Scenarios****Day-to Day activities****Material****Exam at the end of course**