

DevOps Training

1. Introduction to DevOps
 - What Is DevOps
 - DevOps definition
 - DevOps Main Objectives
 - DevOps and Software Development Life Cycle
 - Waterfall Model and Agile Model
 - Continuous Integration & Deployment (Jenkins)
 - Containers and Virtual Development
 - Docker
 - Configuration Management Tools
 - Ansible, Puppet and Chef?
2. LINUX: Basic and ADMIN (Ubuntu)
 - Linux OS Introduction
 - Importance of Linux in DevOps
 - Linux Basic Command Utilities
 - Linux Administration
 - Environment Variables
 - Networking
 - Linux Server Installation
 - RPM and YUM Installation
3. CLOUD COMPUTING (Amazon Web Services, Google Cloud Services and Microsoft Azure)
 - What is Cloud? and on prime
 - Evolution of Cloud Computing
 - IAAS (Infrastructure as a Service)
 - SAAS (Software as a Service)
 - PAAS (Platform as a Service)
 - Private, Public and Hybrid Cloud
 - Public Clouds?
4. Elastic Compute Cloud(EC2) Instances
 - Regions and Availability Zones
 - Amazon Machine Images(AMI)
 - Working with AMIs
 - EC2 Reserved Instance Market Place
 - EC2 Instance Creation

- Building an Instance
 - Different types of Instances
 - Security with Key pair
 - Different IPs assign to EC2 Instance
 - Elastic IP Address
 - Login access to the Instance
5. Identity and Access Management (IAM))
- Creation of Users Accounts
 - Roles in IAM
 - Groups in IAM
 - Account Settings
 - Creating Permissions for Users
 - Deleting Permissions for Users
 - Accounting Settings
6. Virtual Private Cloud (VPC)
- Creating a Custom VPC
 - Security Groups
 - Creating Identity Gate Way (IGW)
 - Connecting Instances in the Gateway/li>
 - Subnets
 - Route Tables
 - VPN Components
7. Elastic Load Balancer (ELB)
- What is Elastic Load Balancing
 - How Elastic Load Balancing Works
 - Creating Load Balancer
 - Load Balancing Protocols
 - Attach & Detach Subnets
 - Attach & Detach Subnets
 - Monitoring and Logging
8. Auto Scaling
- What is Auto Scaling
 - Auto Scaling Components
 - Advantages of Auto Scaling
 - Auto Scaling Groups (ASG)
 - Attach and Detach EC2 Instances in ASG
 - Monitoring Auto Scaling Instances
 - Health Checks

- 9. Route 53
 - Configuring Amazon Route 53
 - Public Hosted Zones
 - Private Hosted Zones
 - Resource Record Sets
 - Managing Health Checks
 - Working with Public and Private Hosted Zones
- 10. GCS (Google Cloud Services)
 - Subscription to AWS
 - Introduction to the AWS Management Console
 - Why AWS Cloud
 - EC2 Essentials & Build EC2 Instances
 - Security Groups
 - Key Pairs (Public Key, Private Keys)
- 11. WEB SERVER
 - Apache Web Server and Nginx web server
 - Web Server Installation & Configuration
 - Launching webserver with HTML pages
 - WEB SERVER PLUS APPLICATION SERVER
 - Apache Tomcat Server
 - Tomcat Server Installation & Configuration
 - Manual and Automated Application deployment
 - VERSION CONTROL (SVN & GIT)
 - i. What is Version Control System?
 - ii. What is Centralized and Distributed Systems
 - iii. SVN Features
 - iv. SVN Server Installation
 - v. Configure SVN with Jenkins tool
 - vi. Create and Configure Users
 - vii. SVN Trunk / Branch / Tag
 - GIT
 - i. GIT Features
 - ii. 3-Tree Architecture
 - iii. GIT? Clone /Commit / Push
 - iv. GIT Hub Projects
 - v. GIT Hub Management
 - vi. GIT Rebase & Merge
 - vii. GIT Stash, Reset, Checkout

- viii. GIT Clone, Fetch, Pull
 - o Differences between SVN & GIT
 - o CONTINUOUS INTEGRATION- JENKINS
 - i. Introduction to Jenkins
 - ii. Continuous Integration with Jenkins
 - iii. Configure Jenkins
 - iv. Jenkins Management
 - v. Installing Jenkins Plugins
 - vi. SCM plugin
 - vii. Build and test
 - viii. Scheduling build Jobs
 - ix. Build Periodical
 - x. Support for the GIT version control System
 - xi. Different types of Jenkins Jobs
 - xii. Jenkins Build Pipe Line
 - xiii. Parent and Child Builds
 - xiv. Sequential Builds
 - xv. Jenkins Master & Slave Node Configuration
 - xvi. Jenkins Workspace Management
 - xvii. Securing Jenkins
 - xviii. Authentication
 - xix. Authorization
 - xx. Confidentiality
 - xxi. Creating Users
 - xxii. Jenkins Plugins
 - o BUILD TOOLS ?(MAVEN,ANT and GRADEL)
12. Introduction to MAVEN (all build tools)
- o Maven Installation
 - o Maven Build pre-requirements
 - o Maven POM Builds (pom.xml)
 - o Maven Build Life Cycle
 - o Maven Local Repository (.m2)
 - o Maven Global Repository
 - o Group ID, Artifact ID, Snapshot
 - o Maven Dependencies
 - o Maven Plugins

13. NEXUS (Artifactory)

- Introduction to Sona-type nexus
- Nexus Configuration
- Configure settings.xml & pom.xml files
- Managing Nexus Releases and Snapshots
- Repository Maintenance
- Nexus user management
- Nexus roles management

14. ANSIBLE

- Introduction to Ansible and difference B/W puppet and chef
- Ansible Server Configuration
- Infrastructure Management
- SSH Connection in Ansible Master
- YAML Scripts
- Host Inventory
- Hosts and Groups
- Host Variables
- Group Variables
- Host and Group Specific Data
- Ad-hoc Commands
- Playbooks
- Variables
- Conditionals
- Loops
- Blocks
- Handlers
- Templates
- Modules
- Core Modules
- Extra Modules
- Ansible Roles
- New concept:

15. DOCKER

- How to get Docker Image?
- What is Docker Image
- Docker Installation
- Working with Docker Containers
- What is Container

- Docker Engine
 - Crating Containers with an Image
 - Working with Images
 - Docker Command Line Interphase
 - Docker Compose
 - Docker Hub
 - Docker Trusted Registry
 - Docker swarm
 - Docker attach
 - Docker File & Commands
16. GCS (Google Cloud Services)
- Google Instance Creation
 - Internal and External IPs
 - Virtual Private Cloud
 - Firewall Rules
 - Google Compute Engine
 - Putty Configuration
 - Simple Storage Services (S3)
 -
 - Creating and Deleting Buckets
 - Adding Objects to Buckets
 - Deleting Objects
 - Uses of S3 storage
 - Notifications
 - Uses of S3 storage
17. Elastic Block Store(EBS)
- EBS Volume Types
 - EBS Performances
 - Instance Store Volumes
 - Optimizing Disk Performance
 - Creating and Deleting Volumes
 - Attach and Detach Volumes
 - Mount and Un-mounting Volumes
18. Relational Database Services (RDS)
- Data Base Instances
 - Data Base Engine
 - Creating Data Base
 - RDS Limits

- Working with Storage Types
- Additional topics:

19. SCRIPTING

- Shell Scripting
- DSL (Declarative Domain Specific Language)
- Python Scripting
- Ruby Scripting
- Introduction
- Variables
- Flow Controls
- Loops
- Functions
- Lists
- Manipulating Strings
- Reading and Writing Files
- Positional Parameters

20. VAGRANT

- Introduction to Vagrant
- Setting Up Vagrant
- Virtual Box Installation
- Vagrant Installation
- Vagrant Machines
- Vagrant File
- Vagrant Boxes
- Environment Management
- Networking Basics
- Private Network
- Public Network
- Network Adopters

21. PUPPET

- Introduction to Puppet
- Installation of Puppet Master
- Installation of Puppet Agent
- Configuration of Puppet Master and Agents
- Parameters in Puppet.conf
- Facter
- Managing Manifests
- Creating Manifests

- Node Definitions
- Managing Files
- Puppet DSL
- Adding Class to the Node definition
- Variables
- Inheritance
- Templates (.erb)
- Puppet Node Definition
- Puppet Forge Modules
- Creating and Managing Modules
- Module Structure
- Defining First Class
- Creating Node Definitions
- Installing Web Servers
- Installing App Servers
- Installing DB Server
- Roles and Profiles

22. CHEF

- Introduction to Chef
- Installation of Chef Master
- Installation of Chef DK and Nodes
- Configuration of Chef Master
- Configuration of Chef DK and Master
- Knife utility
- Chef Repository
- Workstation setup
- How to configure knife
- Workstation Installation
- Connection between knife and Master
- Organization Setup
- Create an Organization
- Add User & Node to an Organization
- Node Setup
- Create a Server & add to Organization
- Cookbooks creation
- Check node details using knife
- Node Objects
- How to add Run list to Nodes

- Check node details
- Managing Multiple Nodes
- Roles and Environments
- Chef Data Bags
- Chef Market Place

23. NAGIOS

- Introduction to Nagios Core
- Installation of Nagios Server
- Configuration of Nagios Server & Agent

24. NRPE (Nagios Remote Plugin Executer)

- Configuration of Nagios.cfg and Contacts.cfg
- Monitoring Hosts
- Monitoring Services
- Monitoring Server Infrastructure

25. HA Proxy (High Availability Proxy)

- HA Proxy Installation
- HA Proxy Configuration(haproxy.cfg)
- Backend Servers & Ports
- Load Balancing Algorithm
- Multiple HAProxy Configuration

26. GIT Lab

- GITLab Installation
- GITLab Configuration
- Managing Projects in GITLab
- Creating Private Repository
- Repository Maintenance
- Set up key for Repository
- Deleting Repository