

Introduction to DevOps:

- Background
- Ingredients of DevOps
- DevOps principles
- Who has adopted?
- Mirage or Reality?
- Challenges, Domain specific
- Technology specific
- DevOps Toolchain (Practices and Tools)
- SDLC vs Agile/DevOps:
- Agile Values and Principles
- Advantages of Agile
- Importance of DevOps in Agile
- What is Continuous Integration, Delivery, Deployment & Feedback
- Faster deployments using devops
- Collaboration
- How Automation helps devops
- DevOps job market

Linux

- Linux Overview
- What is Operating system
- What is Unix, Linux
- Unix vs Linux, Linux vs Windows
- Linux market trends, Linux flavours
- Linux Architecture
- What is shell kernel command line utilities
- Linux Boot process, Linux commands
- Linux admin level commands
- Reading files, Redirection operators
- Piping
- User management
- Process management
- File system management
- Linux volume manager hands on
- Linux installation using iso
- Directory structure, Editors
- VMware overview

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
- Lambda functions, Modules
- Files, Exception Handling
- Object Oriented concepts,
- Class, Object, Inheritance
- Polymorphism, Abstraction
- Method overloading
- Real time modules/scripts used

Shell Scripting

- She-bang line in shell
- Command line arguments
- Variables, Loops, Case statement
- Getopts, Functions
- Regular expressions
- Grep, Awk, Sed

Cloud Computing

- Cloud features:
 - Elasticity, Pay as you use
- Different models of Cloud:**
IaaS, PaaS, SaaS

Virtualization

- What is virtualization
- Different virtualization models
- Physical Partitioning - LPARs
- Bare metal hypervisor – Vmware ESX servers
- Hosted OS virtualization – KVM
- Software Partitioning - Dockers

Ansible

- Introduction to Ansible and YAML.
- Ansible Documentation.
- Setup and Configuration.
- Ansible Playbooks:
- Ansible command line.
- System Facts.
- Target Section, Variable Section, Handler Section.
- lookups, Runonce, Local Action, Loops, Conditionals, Until, Notify, Tags, Error Handling, Templates etc.

Ansible Modules

- Setup Module.
- File Module.
- Pause Module.
- Yum Module.
- Service Module.
- Copy Module.
- Package Module etc.
- Ansible Command Line Usage.
- How to Download Playbook from Galaxy
- Real time playbooks

Agile and Scrum

- Agile Principles.
- Agile and Scrum Methodologies.
- Scrum Roles, Planning, Estimation.

Git

- Introduction to Version Control.
- Installation and Server setup.
- Git Configuration.
- Branching, Data Recovery

Puppet

- Introduction to Puppet
- Difference between puppet open source and enterprise
- Puppet Architecture
- Puppet components
- Puppet Master installation and configuration
- Puppet agent installation and configuration
- Puppet connections
- Adding agents to master
- Components of Puppet
- Hiera
- Mcollective
- Puppet DB
- Puppet dash board
- Geppato
- Facter
- Catalogue

Puppet DSL

- Templates
- Defining the classes in

- Scope
- Notify required keywords
- Puppet modules
- Site.pp vs node.pp
- Puppet manifests
- How to write basic manifests
- How to define classes
- How to write customized manifests
- Real time examples of manifests

CHEF

- Overview of Chef
 - Common Chef Terminology (Server, Workstation, Client, Repository etc.)
 - Servers and Nodes
 - Chef Configuration Concepts
 - Workstation Setup
 - How to configure knife
 - Execute some commands to test connection between knife and workstation
 - Organization Setup
 - Create organization
 - Add yourself and node to organization
 - Test Node Setup
 - Create a server and add to organization
 - Check node details using knife
 - Databags
 - How to create Databags
 - Add Databags to organization
 - Node Objects and Search

puppet

- How to Add Run list to node
- Relationships between resources
- Variables
 - Check node Details
- Environments
 - How to create Environments
 - Add servers to environments
- Roles
 - Create roles
 - Add Roles to organization

Dockers

- Introduction to Dockers
- Installing dockers
- What are containers
- How to manage dockers from machine
- Jenkins dashboard and Jenkins authentication
- Jenkins plugins – how to download and use
- Parameterizing the build
- One click regression
- Docker pull ,run & attach
- Exploring Docker hub
- Pulling images from hub

MONITORING Tool

NAGIOS

- Nagios Introduction & Architecture
- How to install and configure

VAGRANT

- Introduction
 - What is Vagrant
 - Uses of Vagrant in an environment
- Installation and Configuration
 - How to install Vagrant in Windows and Linux
 - Configure Vagrant
- Provisioning with Vagrant
 - How to use Vagrant to create small virtual
 - Add required Images to Vagrant

CONTINUOUS INTEGRATION

Introduction to Jenkins

- What is Jenkins
- Introduction
- How to install and configure Jenkins
- How to achieve Continuous Integration with Jenkins
- Jenkins Jobs
- How to schedule jobs in Jenkins
- How to integrate Jenkins with Ant
- How to integrate Jenkins with Maven and Slack
- How to integrate Jenkins with Shell scripts
- How to integrate Jenkins with Python scripts

Nagios

- Plugins in Nagios
- How to add servers to Nagios
- NRPE – Nagios Remote Plugin Executor
- How to configure plugins on remote nodes
- Monitoring with Nagios
- Using the default plugins, Writing our plugins

Build Tools:

Ant

- Ant introduction
- What is build.xml
- How to write build.xml
- Targets,Task
- Real time build.xml

Maven

- Maven Introduction
- How to write Pom.xml file
- Real timePom.xml file

Amazon Web Services:

Identity Access Management (IAM)

- Introduction to IAM
- IAM Users
- Policies, Groups and Roles
- Identity Federation and Quiz

EC2 (Elastic Compute Cloud)

- Ec2 and Types, Pricing
- EIP (Elastic IP), Allocating, Releasing, Associating
- Windows and Linux instances connecting from Ec2 Instances

S3 (Simple Storage Service)

- Introduction to S3
- Bucket, Bucket ACLs & Policies
- Object and Object ACLs
- Bucket and Object Operations

EBS (Elastic Block Storage)

- Creating, Attaching
- Detaching volumes

Auto Scaling

- Auto Scaling Groups
- Launching Amazon EC2 Instances with Auto Scaling

ELB (Elastic Load Balancer)

- Introduction to ELB
- Configuring ELB and Connecting web services with ELB