

AWS with DevOps Course Content

Introduction to DevOps

- What is data Science?
- Overview of the existing system
- Why DevOps
- Introduction to DevOps automation
- Introduction to DevOps Automation
 - Introduction
 - Tools
 - DevOps technology categories

Linux Administration and Shell Scripting

- Environment Management
 - Tools and Networking Concepts
- Basic Unix/Linux Commands
 - Server Environment introduction
 - Types of Environments and their importance
 - Introduction to the Linux environment
 - Basic commands to work on Linux environment
- Shell Scripting
 - Basics introduction
 - Variables, arrays
 - Conditions and loops
 - Functions
 - File system accessing
 - Special variables/Command line variables

Maven: Build Automation Tools

- Build process automation
- Maven
 - Environment Setup
 - Build Life Cycle
 - Build Profiles, Repositories, Plug-ins
 - Creating, Building & Testing Project
 - Project Templates

- Snapshots
- Build Automation
- Manage Dependencies
- Deployment Automation
- Web Application

GIT:

- Source Code Management
- Source code management/Version controlling system
- GIT REPOSITORY
 - What is a distributed version control system?
 - Installation
 - Different levels of Git configuration
 - The process of staging and committing
 - The details of the commit objects

NEXUS

- Nexus prerequisites
- Installing and Running Nexus
- Using the Nexus User Interface

Sonar Qube

Jenkins: Continuous Integration Tools

- Jenkins Introduction
 - Jenkins configuration
 - Master and slaves configuration
 - Types of projects and integration of builds
 - Reporting
 - Plugins
- DevOps: Deployment Environment
- Apache Tomcat
 - Installation
 - Configurations
 - Deployments and types of deployments
 - Debugging logs

DEVOPS: Docker

- What is Docker
- Docker Installation
- Docker Images
- Docker Engine



IT's next generation

- Docker Hub
- Docker Registry
- Provision and Setup
- Docker hosts

Kubernetes:

- Kubernetes Architecture
- Pods
- Deployments
- Services
- Storage
- ConfigMaps
- Security

Terraform:

- Introduction to Terraform
- Getting started with Terraform
- Plan, show, Apply, Destroy
- Terraform Modules

Ansible:

- What is Ansible?
- Installation
- Inventory
- Modules
- Playbook
- Handlers, Facts, Variables, and Templates

DEVOPS Engineer Activities

- Day to day activities as a DevOps engineer
- Release process and types of releases
- Coordination with Dev and QA teams
- Optimizing the build and deploy process activities

AWS Course Content

Introduction to Cloud Computing:

- What is Cloud?
- Why Cloud?
- Future of Cloud Technologies
- Advantages and Disadvantages of Cloud
- Cloud Delivery Models :
- Cloud Deployment Models

Introduction to Amazon Web

Services(AWS):

- What is AWS?

- How to Subscribe for AWS account
- What is the AWS Free Tier Limits and Usage?
- Navigate AWS Console
- List of services given by AWS
- Regions and Availability Zone Concepts:
- Describing Regions
- Availability Zones and Endpoints
- Managing services in an Availability zones
- Elastic Compute Cloud(EC2):
- What is Amazon EC2?
- Features of Amazon EC2
- Managing the EC2 Infrastructure
- EC2 Dashboard
- Pricing for Amazon EC2
- Ec2 Instances:
- Instance Types
- Instance lifecycle
- Difference between reboot, stop and terminate
- Amazon Machine Image(AMI)
- Security groups
- IP Addressing
- Assigning Elastic IP
- Elastic Block Storage(EBS)
- Launching and using an EC2 Instance
- EC2 Essentials
- Ec2 Instance Protection
- Security from Key pairs
- Pricing Model in EC2 Instances
- Understanding Reserved Instances
- Understanding AWS Storage Types
- Increasing IOPS Performance
- EBS Volumes and Snapshots
- AWS marketplace
- Building Linux and Windows Instances
- Connecting Instances from Different Platforms
- Setting up Security
- Network Interfaces
- Placement groups
- AWS Command line Interface
- EC2 Troubleshooting Scenarios

Amazon Machine Image(AMI):

- What is AMI?
- Managing AMI
- Working with Linux and Windows AMI

- Shared and Paid AMI
- Creating own AMI
- Making an AMI Public
- AMI Market place

Amazon Elastic Block Storage(EBS):

- What is EBS?
- Features of Amazon EBS
- Amazon EBS Volumes
- EBS Ephemeral
- Managing EBS Volumes
- Creating and Deleting EBS Volumes
- Attaching and Detaching EBS Volumes
- Increasing EBS Volumes
- Amazon EBS Snapshots

Elastic Load Balancing(ELB):

- What is ELB?
- Creating a load Balancer
- Load balancer Types
- Internal and External load balancer
- Load balancing protocols
- Security group for the load balancer
- Health check for the load balancer
- Adding multiple instances to the load balancer
- Cross zone Load balancing
- Connection Draining
- ELB Trouble shooting scenario

Auto Scaling:

- What is Auto Scaling?
- Auto Scaling Components
- Benefits of Auto scaling
- Creation of launch Configuration
- Configuration of auto scaling policies
- Elastic Beanstalk:
- Elastic Beanstalk Essentials
- Getting started with EB.
- Deploy, manage, scale an application
- Workflow of Elastic Bean Stalk
- Components and usage
- Environment overview
- Create Application
- Launch Environment
- Manage Environment
- Creating application source bundle
- Modifying the properties of the deployment

Amazon Virtual Private Cloud(VPC):

- What is Amazon VPC?
- VPC Essentials
- Default and Non Default VPC
- VPC networking and ACL
- Security Groups
- DNS and DHCP options set
- VPC Peering and end points
- Subnets
- Subnet Routing
- VPC Internet Gateway
- Elastic IP addresses and network interfaces
- Extending on-premise networks with VPC
- VPC integration with other services
- Creating NAT Instance
- Configuring web application in VPC
- Trouble shooting scenarios
- Network monitoring with flow logs
- Security Zones
- Pricing for Amazon VPC
- Network and Security:
- Security Groups
- Elastic IPs
- Placement Groups
- Key Pairs
- Network Interfaces

Amazon Route53:

- Route53 as your DNS service
- Route53 basics
- Route53 and DNS failover
- Latency based Routing
- Weighted Routing Policies

Identity Access Management(IAM):

- What is IAM?
- IAM initial setup and configuration
- IAM Best practices for new accounts
- IAM Policies
- API keys and roles
- IAM Groups and Policies
- IAM Roles & it's Essentials

Simple Storage Service(S3):

- What is object storage?
- What is bucket?
- Managing Buckets

- Storage classes
- Creating and deleting buckets
- Getting objects
- Static website hosting with S3
- Uses of s3 storage
- S3 IAM and Bucket policies
- Working with permissions of S3
- Object versioning
- Object lifecycle

Relational Database Service(RDS):

- What is RDS?
- Working with the RDS
- Selecting the Engine
- Configuring database Engine
- Creating your database

Simple Notification Service(SNS):

- SNS basics
- SNS Essentials and usage
- Subscribing topic via Email
- Setting notification for EC2 instance changes
- SNS message data

Cloud Watch:

- Introducing cloud watch
- Cloud watch basics
- Cloud watch Architecture
- Monitoring the AWS service health dashboard
- Monitoring the cloud watch
- Getting statistics for a specific EC2 instance

Amazon Cloud Formation:

- Cloud Formation Essentials
- Building AWS Infrastructure as a code
- Building an S3 bucket with cloud formation
- Deploying EC2 Resources
- Deploying a website S3 bucket Configuration