UpSkill YourSelf
Learn • Earn • Grow

325 W Washington
St Suite 2#3086
San Diego, CA 92103
United States

About the Program

AWS Masters Certification Program is designed to meet the industry benchmarks and makes you proficient in architecting and managing cloud solutions, migrating on-premise infrastructure to AWS, developing and maintaining AWS-based applications, and building CI-CD pipelines using AWS. This program focuses on core AWS skills, which are indispensable for AWS professionals. AWS Masters program course curriculum has been determined by extensive research on 5000+ job descriptions across the globe to make you a certified AWS professional.

AWS Masters Certification Program

1 — Linux Fundamentals
2 — Python Scripting Certification Training
3 — AWS Solutions Architect Certification Training Course
4 — Migrating Applications to AWS Training
5 — AWS SysOps Administrator Certification Training
6 — AWS Development Certification Training
7 — AWS DevOps Engineer Certification Training Course

masters program

Elective Courses:

- Git Certification Training

UpSkill YourSelf
Learn • Earn • Grow

325 W Washington
St Suite 2#3086
San Diego, CA 92103
United States

Linux Fundamentals

Course Outline

Module 1: Linux Fundamentals

Topics:

- History of Linux
- Linux vs Unix
- Features of Linux
- Components of Linux OS
- The architecture of Linux OS
- Linux Distribution
- Shell Scripting
- User Interface in Linux
- Linux Commands

Module 2: User Administration

Topics:

- File Systems and its Types
- Software Package Management
- Users in Linux
- User Groups in Linux
- File/Folder Permissions
- Special Permissions

UpSkill YourSelf
Learn • Earn • Grow

325 W Washington
St Suite 2#3086
San Diego, CA 92103
United States

Module 3: Shell Scripting

Topics:

- Process Management
- Process Synchronization
- Some Basic Linux Commands
- Scripting
- BASH Scripting
- Expect Scripting

Module 4: Networking

Topics:

- OSI Layers
- Protocols
- DNS
- ICMP
- Packet Capturing Tools
- Linux Firewalls
- Iptables
- Linux Security

Python Scripting Certification Training

Course Outline

Module 1: Introduction to Python

Topics:

- Overview of Python
- The Companies using Python
- Other applications in which Python is used
- Discuss Python Scripts on UNIX/Windows
- Variables
- Operands and Expressions
- Conditional Statements
- Loops
- Command Line Arguments
- Writing to the screen

Hands-On:

- Creating "Hello World" code
- Variables
- Demonstrating Conditional Statements
- Demonstrating Loops

Module 2: Sequences and File Operations

Topics:

- Python files I/O Functions
- Lists and related operations
- Tuples and related operations

325 W Washington
St Suite 2#3086
San Diego, CA 92103
United States

UpSkill YourSelf
Learn • Earn • Grow

- Strings and related operations
- Sets and related operations
- Dictionaries and related operations

Hands-On:

- Tuple - properties, related operations, compared with list
- List - properties, related operations
- Dictionary - properties, related operations
- Set - properties, related operations

Module 3: Deep-Dive – Functions, OOPs, Modules, Errors and Exceptions

Topics:

- Functions
- Function Parameters
- Global variables
- Variable scope and Returning Values
- Lambda Functions
- Object Oriented Concepts
- Standard Libraries
- Modules Used in Python (OS, Sys, Date and Time, etc.)
- The Import statements
- Module search path
- Package installation ways
- Errors and Exception Handling

Handling multiple exceptions

Hands-On:

- Functions - syntax, arguments, keyword arguments, return values
- Lambda - features, syntax, options, compared with the functions
- Sorting - sequences, dictionaries, limitations of sorting
- Errors and exceptions - types of issues, remediation

- Packages and modules – modules, import options, sys path

Module 4: Introduction to NumPy & Pandas

Topics:

- NumPy – arrays
- Operations on arrays
- Indexing, slicing and iterating
- Reading and writing arrays on files
- Pandas – data structures & index operations
- Reading and Writing data from Excel/CSV formats into Pandas

Hands-On:

- NumPy library- Installation, Creating NumPy array, operations performed on NumPy array
- Pandas library- Installation, creating series and data frames, Importing and exporting data

Module 5: Data visualisation

Topics:

- matplotlib library
- Grids, axes, plots
- Markers, colors, fonts and styling
- Types of plots – bar graphs, pie charts, histograms
- Contour plots

Hands-On:

· Matplotlib – Installation, Using Scatterplot, histogram, bar graph, pie chart to show information, Styling of Plot

UpSkill YourSelf
Learn • Earn • Grow

325 W Washington
St Suite 2#3086
San Diego, CA 92103
United States

AWS Solution Architect Certification Training Course

Course Outline

Module 1 – Introduction to AWS

Topics:

- Classic Data Center
- Virtualisation
- Cloud and Cloud Computing
- Cloud Computing Service Models
- Cloud Computing Deployment Models
- Service Comparison: AWS, Azure, and GCP
- Amazon Web Services (AWS) and its Benefits
- AWS Global Infrastructure
- AWS Regions and Replication of data between the Regions
- Availability Zones and High Availability
- AWS Edge Location
- Different Amazon Web Services
- Ways to access AWS: CLI, Console, and SDKs

Hands-On:

▪ Sign up for AWS free-tier account

▪ Explore Console and Configure CLI

UpSkill YourSelf
Learn • Earn • Grow

325 W Washington
St Suite 2#3086
San Diego, CA 92103
United States

Module 2 – Security Management in AWS

Topics:

- User management through Identity Access Management (IAM)

- Various access policies across AWS Services

- Security Token Services

- AWS Resource Access Manager (RAM),

- AWS Single Sign-On (SSO)

- AWS Cognito

- AWS Security & Encryption: KMS, CloudHSM, Shield, WAF, Guard Duty

- API keys service access

- Best practices for IAM

- Access billing and create alerts on billing

Hands-On:

- Create new users who can login to AWS console

- Create role for an application to access S3

- Create policies for new user to have either admin or limited privileges

- Configuring Strong and Secure Authentication Access Mechanism using Amazon Cognito

- Configure WAF to Protect Website from Attacks

- Monitoring Malicious Activity or Unauthorized Behavior via GuardDuty

Module 3 – Amazon EC2

Topics:

• Virtualisation

• Amazon Elastic Compute Cloud (EC2) and Its Benefits

• Amazon Machine Image (AMI)

• Security Groups in AWS

• Authentication through Key-pair

• Hardware Tenancy – Shared vs. Dedicated

• Networking Layer in EC2: VPC

• Elastic Network Interface (ENI) and Its Attributes

• Different Categories of IP Address

• Public IP vs. Elastic IP

• Instance Store

• Elastic Block Store (EBS), Its Features and Volume Types

• Solid State Drive: General Purpose SSD and Provisioned IOPS

• Hard Disk Drive: Throughput Optimized HDD and Cold HDD

• Snapshots

• Elastic File System (EFS) and Its Features

• EBS vs. EFS

• Amazon FSx: Windows File Server and Lustre

UpSkill YourSelf
Learn • Earn • Grow

325 W Washington
St Suite 2#3086
San Diego, CA 92103
United States

Hands-On:

• Host your website inside EC2

• Create an AMI

• Create an Elastic IP

• Attaching an EBS volume externally

• To create a snapshot

• Mount EFS volumes

• Mount FSx into Windows Servers and Share the File

Module 4 – Object Storage Options

Topics:

• Traditional Storage

• Need to Move to Cloud Storage

• Traditional vs. Cloud Storage Cost

• Cloud Storage

• Different Storage Options Available on AWS

• Simple Storage Service (S3) and Its Components

• Working of S3

• Difference Between S3, EBS and EFS

• Bucket Policy

• Access Control List(ACL)

- Versioning

- Cross-Region Replication (CRR) and Its Use Case

- Amazon S3 Transfer Acceleration

- Choice of Storage Classes on S3

- Lifecycle Policy of S3 Bucket

- CDN: CloudFront and AWS Global Accelerator

- Storage Gateways

Hands-On:

- Hosting a Static Website on Amazon S3

- Versioning in AWS S3

- Replicating data across regions

- Transfer and retrieve data from Glacier through lifecycle policy

- Direct Data Migration to Amazon S3 Glacier Vault via AWS CLI

- Accessing a static website through CloudFront

- File Share via AWS Storage Gateway

Module 5 – Load Balancing, Auto-scaling, and Route 53

Topics:

- Elastic Load Balancer and its types

- Advanced features of ELB

• Launch Templates

• Launch Configurations

• Comparison of Classic, Network and Application Load Balancer

• Auto-Scaling

• Components of Auto-Scaling

• Lifecycle of Auto-Scaling

• Auto-Scaling policy

• Working of Route 53

• Various Routing Policies

Hands-On:

• Create a Classic Load Balancer

• Create a Network Load Balancer

• Work with Application Load Balancer and Auto-Scaling

• Auto-Scaling and Scaling policy

• Maintaining the User Experience with Low Latency Using Route 53 Traffic Flow Feature

Module 6 – Database Services and Analytics

Topics:

• Amazon RDS and its benefits

Read Replica

• RDS IAM Authentication

• DynamoDB

• ElastiCache: Working, Redis vs Memcached

• Amazon RedShift

• Kinesis: AWS Kinesis Data Streams, AWS Kinesis Data Firehouse

• AWS Lake Formation

• AWS Athena

• AWS QLDB

Hands-On:

• Storing an application data in MySQL DB using Relational Database Service (RDS)

• Creating Tables, loading sample data and running queries

• Cache the static and frequently accessed application data in the memory using Amazon ElastiCache

• Moving an Airline data From S3 to AWS Redshift and Query the data via Redshift Editor

• Design Solution using Amazon Kinesis Data Steam, Kinesis Firehose, Kinesis Analytics

Module 7 – Networking and Monitoring Services

Topics:

• VPC – Benefits and Components

• CIDR Notations

• Network Access Control List v/s Security Groups

• NAT (Network Address Translation): NAT Devices, NAT Gateway and NAT instance

• VPC peering

• Direct Connect

Private Link

• AWS CloudWatch

• AWS CloudTrail

• AWS Config

• Trusted Advisor

Hands-On:

• Create a Non-default VPC and attach it to an EC2 instance

• Accessing Internet inside Private Subnet using NAT Gateway

• Connect two instances in different VPC's using VPC peering

• Monitoring Application Metrics Using CloudWatch Dashboard

• Auditing Amazon Cloud Services via AWS CloudTrail

• Explore Trusted Advisor

• Accessing Application within two VPCs (Different Accounts) connected via Private link

Module 8 – Application Services and AWS Lambda

Topics:

• AWS Simple Email Service (SES)

• Implement SES

• Demonstrate the working of SNS

• SQS: Work with SQS, ASG with SQS

• Amazon MQ

• Amazon Event Bridge

• AWS Simple Notification Service (SNS)

• AWS Simple Work Flow (SWF)

AWS Lambda

• AWS Serverless Application Model

Hands-On:

• Send an Email (SES) on addition of user data (Lambda) in the DynamoDB Table.

• Monitor status of EC2 instance using combination of EventBridge and SNS.

• Manage tightly coupled architecture using Amazon SQS.

• Create workflows using AWS Step Functions to coordinate application logic across distributed systems.

Module 9 – Configuration Management and Automation

Topics:

• Infrastructure as Code

• CloudFormation and its components

• Templates in CloudFormation

• Stack in CloudFormation

• Resource deletion policies in CloudFormation

• Introduction to AWS OpsWorks

• AWS OpsWorks services

• Components of AWS OpsWorks Stack

• OpsWorks Lifecycle Events and Deployment Commands

• OpsWorks for Chef Automate

• AWS OpsWorks for Puppet Enterprise

• Auto Healing

• Elastic Beanstalk

Components of Elastic Beanstalk

• Beanstalk v/s OpsWorks v/s CloudFormation

Hands-On:

• Create Cloud Formation templates using both JSON and YAML

• AWS OpsWorks Stack

• Deploy a Web Application with DynamoDB using Beanstalk

Module 10 – AWS Architectural Designs - I

Topics:

• AWS Well-Architected Framework

• How to Build an architected Framework

• Pillars of AWS Well-Architected Framework

• Resilience

• Design Highly Available and/or Fault-Tolerant Architectures

• Choose Appropriate Resilient Storage

• Designing Decoupling Mechanisms Using AWS Services

• Design a Multi-tier Architecture Solution

• Disaster Recovery (DR)

• Options to Implement DR Plans

• Design High-Performance Architecture

• Achieve Performance Efficiency using Selection

• Achieve Performance Efficiency using Review

• Achieve Performance Efficiency by Monitoring

• Achieve Performance Efficiency by Performing Trade-offs

Module 11 – AWS Architectural Designs – II (Self-Paced)

Topics:

• Design Secure Applications and Architectures

• Cloud Security

• IAM

• How IAM Secures your Resources

• Identity and Federation

• Shared Responsibility Model

• Shared Responsibility Model for Infrastructure Services

• Shared Responsibility Model for Container Services

• Shared Responsibility Model for Abstraction Services

• Network Security Layer

• Multi-Layer Architecture With Network Security

• AWS HSM and its working

• AWS S3 Security

• AWS Security and Compliance Centre

• Design Cost-Optimized Architectures

• Cost Optimization

• Cost Optimization Design Principles

• Cost Effective Resources

Module 12 – Migration to AWS (Self-Paced)

Topics:

• Why Cloud Migration

• What is Cloud Migration

• Migration Phases

• CAF Perspectives and their Roles

• AWS Migration Hub and ways to use AWS Migration Hub

• AWS Migration Hub use cases

• AWS Application Discovery Service

• Application Discovery Tools

• Application Migration to AWS

• Application Migration Phases

• AWS Server Migration Service(SMS) and its working

• Database Migration Service

• Working of DMS

• AWS Database Migration use cases

• Types of data transfer: Homogenous and Heterogenous

• Database Schema Migration tool

• Database Migration best practices

Hands-On:

• Gather Details of Migrating Resource via Application Discovery Service and track the migration via AWS Migration Hub.

• Migrating 3-tier Application to AWS Cloud

• Homogenous Database Migration

• Heterogeneous Database Migration

Module 13 – AWS Solution Architect Associate Exam Questionnaires (Self-Paced)

Topics:

• AWS Solution Architect Certification Exam Guide

• Certification Exam Questionnaires

Module 14 – DevOps on Cloud (Additional Content)

Topics:

• Different software release methodologies

• DevOps Lifecycle and its Building Blocks

• DevOps and cloud relation

• Different AWS Developer tools

• AWS CodeCommit

• Versioning in S3 vs. CodeCommit

• Working of AWS CodeCommit

• AWS CodePipeline and its working

- Concepts of CodePipeline

- Input and Output Artifacts

- AWS CodeBuild and its working

- AWS CodeDeploy

- Primary Components

- Deployment Workflow: On the Lambda Platform and On the EC2 Platform

- Application Specification File

- Deployment Types: In-Place Deployment and Blue/Green Deployment

- AWS CodeStar and its working

Hands-On:

- Implement AWS CodeCommit

- Implement AWS CodePipeline

Migrating Applications to AWS Training

Course Outline

Module 1 – Introduction to AWS Services

Topics:

• AWS Compute, Storage, networking Services

• AWS EC2 Instance launch Demo

• AWS S3 Demo

• AWS security model and Security Services

• AWS IaaC with Cloud formation

• AWS Auto scaling, Load balancing and Cloud Watch Demo

Hands On/Demo:

• Creating an EC2 instance using AWS Management Console

• Creating an Auto-Scaling group using EC2 dashboard

• Configuring a Load Balancer on EC2 instance

• Configuring a Bucket using AWS S3

• Building a non-default VPC

• Using of IAM services to create users and groups

• Creating a Stack using an AWS CloudFormation template

• Setting up your Billing alert

Module 2 – AWS Migration Strategy

Topics:

• AWS CAF – Cloud Adoption Framework

• 6R Migration Pattern

• AWS Well Architecture Framework

Module 3 – Application Migration to AWS

Topics:

• Application discovery services

• Server Migration services

• Agent based and agentless server migration service

• Migration on Premises Microsoft Hyper VM to AWS AMI

• Migration on Premises VMware VM to AWS AMI

Hands On/Demo:

• Migrating an on premises VM machine to AWS environment

Module 4 – Database Migration to AWS

Topics:

• DB Migration challenges

• AWS DB Services

• AWS DB Migration services

AWS Pre during and post migration task

Hands On/Demo:

• Migrating a source DB, which will be from outside the AWS environment to target AWS RDS Aurora DB in side AWS environment

Module 5 – Data Migration To AWS

Topics:

• Storage Gateway

• Kinesis Firehose

• Snowball, Snowball edge and Snowball Mobile

• Direct Connect

• S3 Transfer Acceleration

Hands On/Demo:

• Speeding up a large-scale data migration to S3 by enabling S3 Acceleration

• Confirming how much data migration has been speeded up via a too

Module 6 – Migrating monolithic application to AWS with Docker

Topics:

• Understand Docker Ecosystem

• How docker can be used to package a monolithic application inside docker container

• Understanding how ECS works with docker

• Orchestrate a docker container-based system

Hands On/Demo:

• Migrating a monolithic application to AWS and then breaking it into microservices.

AWS SysOps Administrator Certification Training

Course Outline

Module 1 – AWS Overview

Topics:

• Cloud Computing

• Cloud Services

• Amazon Web Services (AWS)

• AWS Global Infrastructure

Hands on:

• Signing Up for a Free Tier Account with AWS.

Module 2 – Compute on AWS

Topics:

• Introduction

• Amazon Machine Image(AMI)

• What is an Instance?

• Types of Instances

• Creating Instances

- Managing Instances

- Troubleshooting Instances

Network Interfaces

- Different Categories of IP

Hands on:

- Creating EC2 Instance.

Module 3 – Designing the Security Architecture

Topics:

- Cloud Storage

- Types of AWS Cloud Storage

- Understanding AWS Storage

- Amazon Elastic Block Storage(EBS)

- Amazon S3

- Amazon Glacier

- Storage Security

- Storage Gateway

- Snowball

- Troubleshooting Storage in AWS

- Pricing in AWS

Hands on:

• Restoring an EBS Volume from a Snapshot

• Upload and download files from Amazon S3

Module 4 – Networking in the Cloud

Topics:

• Amazon VPC

• VPC Subnets

• Route Tables

• Elastic IPs

• Internet Gateway

• NAT Gateway

• Access Control Lists(ACLs)

• Security Groups

• Creating and Managing a VPC

• Route53

• Network Security

• Troubleshooting Networks in AWS

Hands on:

• Building a VPC Environment.

Module 5 – Database Services

Topics:

• Types of Database Instances

• Amazon RDS

• Amazon DynamoDB

• Amazon ElastiCache

Hands on:

• Creating a MySQL DB Instance via Relational Database Service

• Creating a table and loading data in Amazon DynamoDB

Module 6 – Creating Scalable Deployments in AWS

Topics:

Scaling in the Cloud

• Load Balancer

• Elastic Load Balancing(ELB)

• Auto Scaling

Hands on:

• Auto Scaling to scale up the number of servers available for a specific task

Module 7 – Monitoring in AWS

Topics:

• Logging Basics

- CloudWatch

- CloudWatch logs

- AWS CloudTrail

- Monitoring and Security

- IAM

- Troubleshooting

Hands on:

- Enabling CloudTrail Log Delivery to a S3 Bucket

- Configuring CloudWatch Logs agent on an Instance

Module 8 – Managing Resource Consumption and Configuration Management in AWS

Topics:

- Identifying Cost Reduction Opportunities in the cloud

- Tagging

- Monitoring and Expenditure Alerting with Amazon CloudWatch

- AWS Trusted Advisor

- Creating Amazon Machine Images(AMI)

- AWS OpsWorks

- AWS User Data

• AWS CloudFormation

• Amazon Elastic Beanstalk

Hands on:

• Create a Stack using an AWS CloudFormation Template.

AWS Development Certification Training

Course Outline

Module 1 – AWS Cloud Essentials: An overview

Topics:

• Basic overview of the cloud

• Different types of cloud models

• Different types of cloud services,

• Different vendors of cloud implementation

• Why to choose AWS?

• Features of AWS and key offerings

• Who is using AWS/customers?

• Real time Use-cases

• Opportunities in Cloud / Market

Module 2 – AWS Fundamentals

Topics:

• AWS service catalogue, AWS Paradigm

• AWS console

Overview of below services along with usage, Compute Service

• Storage Service, Database Service

• Content Delivery Service

• Network Service, Application Service

• Deploy & Management Service

Module 3 – AWS Console and Usage

Topics:

• AWS console, Explain each service visually over the console

• Compute Service

• Storage Service

• Database Service

• Content Delivery Service

• Network Service

• Application Service

• Deploy & Management Service

Module 4 – AWS Software development kit and command line tool kit

Topics:

• AWS Java SDK Kit

• Step by step Java SDK installation

• Configuration

• Develop sample java program and access AWS resources

• AWS CLI tool kit

• Step by step Java SDK installation

• Configuration

• Develop sample java program and access AWS resources

Module 5 – Monitoring and Metrics

Topics:

• Demonstrate ability to monitor availability and performance

• Creating Cloud Watch Alarms

• Installing And Configuring Monitoring Scripts for Amazon EC2 Instances

• Elastic Compute Cloud (EC2) Instance and System Status Checks

• Monitoring EBS For Performance and Availability

• Monitoring RDS For Performance and Availability

• Monitoring The Elastic Load Balancer for Performance and Availability

UpSkill YourSelf
Learn • Earn • Grow

325 W Washington
St Suite 2#3086
San Diego, CA 92103
United States

• Demonstrate ability to monitor and manage billing and cost optimisation processes

• AWS Billing and Linking AWS Accounts

• AWS Billing Dimensions and Metrics for Cloud Watch

Module 6 – High Availability

Topics:

• Implement scalability and elasticity based on scenario

• Scalability And Elasticity Essentials

• Determining Reserved Instance Purchases Based Off Business Needs

• Elastic Load Balancer

• Autoscaling

• What is autoscaling and where to use, how to configure autoscaling & autoscaling groups

• Demo on scale up and scale down scenarios, ensure level of fault tolerance based on business needs

• High Availability by using Elastic IP Addresses, Understanding RDS Multi-AZ Failover

Module 7 – Analysis and Data Management

Topics:

• Different storage services

• How to create and attach EBS volumes, EBS Root Devices on Terminated Instances - Ensuring Data Durability

• What is Ephemeral storage? what is the usage? how create and attach s3 bucket

• Demonstrate ability to create backups for different services (EC2 & RD, how to create a customized AMI

• How to take a snapshot and reuse the AMI

• How to take a backup of the RDS instance

• How to enable to auto snapshots for the RDS instance

• Managing Backup and Disaster Recovery Processes

• Quickly Recovering from Disasters

• Read Replicas with MySQL RDS Across Regions

• Storing Log Files and Backups from glacier service

Module 8 – Security and Networking

Topics:

• Implement and manage security policies

• S3 Bucket Policies, Building IAM Policies

• Network Access Control Lists (NACLs)

• Using IAM Roles with EC2

UpSkill YourSelf
Learn • Earn • Grow

325 W Washington
St Suite 2#3086
San Diego, CA 92103
United States

• Ensure data integrity and access controls when using the AWS platform

• What is MFA On Amazon Web Services (Multifactor Authentication)

• What is Security Token Service?

• Demonstrate ability to prepare for security assessment use of AWS

• Different AWS provided certificates & standards followed at AWS data centers

• How to handle IT Audits, demonstrate ability to implement networking features of AWS

• Route53 and DNS Failover

• VPC Essentials, Building A Non-Default VPC, VPC Networking, VPC Security, DB Subnet Groups, Elastic IP Addresses and Elastic Network Interfaces

• Configuring A Web Application In VPC

• Building A Virtual Private Cloud from Scratch – VPC

• Troubleshooting Connectivity in Issues, demonstrate ability to implement connectivity features of AWS

• What is the AWS Direct Connect & On-premise To VPC Redundancy?

Module 9 – Deployment and Provisioning

Topics:

• Demonstrate the ability to provision cloud resources and manage implementation automation

• Creating Our First Stack

• Creating an Amazon Virtual Private Cloud with Cloud Formation and Launching An EC2 Instance

Module 10 – Big Data and Analytics

Topics:

• What is the usage the EMR and big data concepts?

• How to launch and configure the EMR service

• Run a sample MapReduce program to view the job details to analyze the Big data

Module 11 – Cloud Best Practices

Topics:

• Cloud Security Best Practices at each layer, Compute Service

• Storage Service

• Database Service

• Content Delivery Service

• Network Service

• Application Service

• Deploy & Management Service

Module 12 – Cost Optimization

Topics:

• Cost Optimization at each layer

• Compute Service

• Storage Service

• Database Service

• Content Delivery Service

• Network Service

• Application Service

• Deploy & Management Service

AWS DevOps Engineer Certification Training Course

Course Outline

Module 1– Introduction to DevOps on Cloud

Topics:

• Understanding DevOps and its lifecycle

• Why DevOps on Cloud?

• Introduction to AWS

• DevOps using AWS

• Security Management - IAM (Identity and Access Management), WAF (Web Application Firewall), AWS Shield, Guard Duty

• Trusted Advisor

• Governance Strategies

UpSkill YourSelf
Learn • Earn • Grow

325 W Washington
St Suite 2#3086
San Diego, CA 92103
United States

Hands on:

• Creating Policies for a new user to have all Admin Or Limited Privileges

• Login AWS Management Console via MFA

• Trusted Advisor

• Enabling Governance using AWS Config

• Set Alerts and Budget for your AWS Account

Module 2– SDLC Automation

Topics:

• Cost Optimization at each layer

• Code Commit

• Code Build

• Code Pipeline

• Code Deploy

• AWS Code Star

Hands on:

• Working of Code Commit

• Deploy an application using Code pipeline

Module 3– Automating Infrastructure with CloudFormation

Topics:

• Introduction to CloudFormation

• CloudFormation Template

• Intrinsic Functions & Conditions

• Stack Creation

• Advanced CloudFormation Concepts - CloudFormation Nesting, CloudFormation Wait Conditions & Wait Condition Handlers, CloudFormation Helper Scripts, CloudFormation Custom Resources

• CloudFormation Stack Updates

• CloudFormation Resource Deletion Policy

• CloudFormation Best Practices

• Troubleshooting

Hands on:

• Creating an S3 Bucket using CloudFormation by Hardcoding the Name

• Creating an S3 Bucket using Intrinsic Function (Join And Ref)

• Creating and Configuring EC2 Instance using Helper Scripts

• Creating a Custom Resource with the help of Lambda Function

Module 4– Application Deployment Using Elastic Beanstalk

Topics:

• Introduction to Elastic Beanstalk

• Components of Beanstalk

• Deployment Option

• Platform Updates

• Docker in Elastic Beanstalk

• Extending Beanstalk using extensions

• Alarms and Notification

• Troubleshooting

Hands on:

• Deploy a Web application with DynamoDB using Beanstalk

• Deploy an application in beanstalk using Docker

• Immutable deployment of the application in Beanstalk

• Creating cron-job on beanstalk instances using .ebextensions

Module 5– Configuration Management Using OpsWorks

Topics:

• Cost Optimization at each layer

• Introduction to OpsWorks

• Components of OpsWorks

• Cookbooks, Recipes, Data bags and Berkshelf

• OpsWorks Lifecycle Events

• OpsWorks Deployment

• OpsWorks Auto-Healing

• Troubleshooting

Hands on:

• Deploy an application in OpsWorks Stack

• Integration of CloudFormation with OpsWorks

Module 6– Automate Monitoring and Event Management in AWS

Topics:

• Introduction to CloudWatch

• CloudWatch Metrics: EC2, ELB, and Auto Scaling metrics

• Custom Metrics

• CloudWatch Alarms

• CloudWatch Agent

• CloudWatch Logs

• Introduction to CloudTrail

• System Manager

• Tagging

• Concepts required to set up event-driven automated actions - Lambda, SNS, Autoscaling

Hands on:

• Configure Amazon CloudWatch to Notify when CPU Utilization of an Instance is greater than 85%

• Enable CloudTrail and store Logs in S3

Module 7– High Availability, Fault Tolerance and Disaster Recovery

Topics:

• EBS

• Elastic IP

• Multi region and multi AZs

• SQS

• Data Management in Amazon RDS

• Dynamo DB

• S3

• Provisioning elasticity using Load Balancer and Auto-Scaling

• Components of Auto Scaling

• Horizontal and vertical scaling

• Auto-Scaling Lifecycle

• Recovery Time Objective and Recovery Point Objective

• Disaster Recovery Options

• Overcome single Point of Failure

Hands on:

• Working of Load Balancer and Auto-Scaling to support highly available and fault tolerant system

Module 8– Container Management Tools

Topics:

• Orchestration

• Elastic Container Service

• Amazon ECR

• Select a Launch type for your application

• ECS with EC2

• ECS with Fargate

Hands on:

• To Push an Image Into ECR

• To host a website inside ECS using Fargate launch type

Module 9– AWS Certified DevOps Engineer Exam Discussion (Self-paced)

Topics:

• AWS Certified DevOps Engineer Exam Guide

• Certification Exam Questionnaires

Git Certification Training

Course Outline

Module 1– Getting Started with Git

Topics:

• Version Control/Revision Control system

• The types of VCS

• The benefits of using VCS

• What is GIT?

• The difference between GIT and other VCS

• Where to use Git and where not to use it

• Web Scale architecture

• Install Git on Windows/Mac/Linux/Unix

• Understand Git file life cycle

• Create Git repository - Local repository and configure it to GitHub

• Create a repository on GitHub and clone it

• Understand basic Git commands

• Git command shortcuts

• Revisit the Git file lifecycle with Git terminology

Hands on:

• Perform git commands

Module 2– Working with Git Repositories

Topics:

• Work with remote repositories

• Configure remote repository on GitHub

• Understand Git buzzwords

• Understand remote commands

• Work with Fork and Pull requests in GitHub

• Understand Upstream and Downstream

Hands on:

• Perform git operations on the remote repository

Module 3– Branching and Merging

Topics:

• Branching in Git

• How Git internally manages branches

• How to switch between branches and different commits

• Two-way merge and three-way merge

• Merging Strategies

UpSkill YourSelf
Learn • Earn • Grow

325 W Washington
St Suite 2#3086
San Diego, CA 92103
United States

• Merging and rebasing (using Source tree)

• Git tags

• Difference between branching and tagging

Hands on:

• Performing different Branching and Merging operations

• Using Git Tags

• How to use git stash

Module 4– Git Workflows

Topics:

• What is GIT workflow?

• Advantages of workflow

• Different types of workflows in Git

• Centralized Workflow

• Feature branch workflow

• Gitflow Workflow

• Forking Workflow

• How to use git in real-time open-source projects

Module 5– Using Git in IDE

Topics:

• Install Eclipse IDE

• Install IntelliJ IDE

• Configure Git plugin

• Work with Git using IDE

• How to work with git Workflow on Eclipse IDE

• Explore GitHub UI options

Hands on:

• Using Git with Eclipse IDE

• Using Git with IntelliJ IDE

Module 6– Git Server Administration

Topics:

• User Management

• GitHub Account Creation and Configuration

• Permissions with Organization

• Access Control for SSH and HTTP access

• Differences between the HTTPS and SSH Authentication Strategies

• Local Protocol

• HTTP Protocol

- SSH Protocol

- Setting Up the Git Server

- GitLab Administration

- Working with GitLab

Hands on:

- Setting Up the Git Server

- Working with Gitlab