Course Curriculum: Your 12 Module Learning Plan

AWS Development

About Edureka

Edureka is a leading e-learning platform providing live instructor-led interactive online training. We cater to professionals and students across the globe in categories like *Big Data & Hadoop, Business Analytics, NoSQL Databases, Java & Mobile Technologies, System Engineering, Project Management and Programming.*

We have an easy and affordable learning solution that is accessible to millions of learners. With our students spread across countries like the US, India, UK, Canada, Singapore, Australia, Middle East, Brazil and many others, we have built a community of over 1 million learners across the globe.

About the Course

Edureka's AWS Development Certification Training, will introduce to the participants to explore and master AWS concepts and services offered by AWS. Participants will be offered guidance and will share lot of demo's on each topic with real time examples on high availability, load balancing, data redundancy and day to day operations in managing cloud services. Participants will also get to implement one project towards the end of the course.

Module 1

AWS Cloud essentials and overview

Learning Objectives - In this, you will understand overview of cloud, types of cloud services, cloud models, features of cloud, different cloud vendors.

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

Learning Objectives - In this module, you will understand the list of AWS services, overview on each service and its usage along with examples/use cases.

Topics

- ✓ AWS service catalogue
- ✓ AWS Paradigm
- ✓ AWS console
- ✓ Overview of below services along with usage
  - i) Compute Service
  - ii) Storage Service
  - iii) Database Service
  - iv) Content Delivery Service
  - v) Network Service
  - vi) Application Service
  - vii) Deploy & Management Service

Module 3

AWS Console and Usage

Learning Objectives - In this module, you will learn about how to use AWS console and different options available for each service.

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

Learning Objectives - In this module, you will learn about installing and configuring the Java SDK kit and command line tool kit (AWS CLI) and basic commands.

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

Learning Objectives - In this module, you will learn how to enable monitoring and configuring the cloud watch 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
- ✓ Demonstrate ability to monitor and manage billing and cost optimization processes
- ✓ AWS Billing and Linking AWS Accounts
- ✓ AWS Billing Dimensions and Metrics for Cloud Watch

Module 6

High Availability

Learning Objectives - In this module, you will learn how to enable high availability and related concepts.

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

Learning Objectives - In this module, you will learn how to use storage services and enable fault tolerance to achieve 99.9 % data consistency and durability.

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

Learning Objectives - In this module, you will learn how to enable security levels and different options available at network layer

Topics

- ✓ Implement and manage security policies
- ✓ S3 Bucket Policies
- ✓ Building IAM Policies
- ✓ Network Access Control Lists (NACLs)
- ✓ Using IAM Roles with EC2
- ✓ Ensure data integrity and access controls when using the AWS platform
- ✓ What is MFA On Amazon Web Services
- ✓ 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

Learning Objectives - In this module, you will learn how to automate deployment and provisioning using beanstalk and cloud formation services.

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

Learning Objectives - In this module, you will learn how to analyze the unstructured data using AWS EMR / Dynamo DB (No SQL)

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

Learning Objectives - In this module, you will learn what are cloud best practices at each layer

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

Learning Objectives - In this module, you will learn how to use the AWS services effectively and reduce the cost at each layer.

Topics

- ✓ Cost Optimization at each layer
- ✓ Compute Service
- ✓ Storage Service
- ✓ Database Service
- ✓ Content Delivery Service
- ✓ Network Service
- ✓ Application Service
- ✓ Deploy & Management Service

Project

What are the system requirements for this course?

The system requirements include Minimum 4 GB RAM, i3 processor or above,20 GB HDD.

How will I execute the practicals?

For executing the practicals you will be working on the cloud servers and various other services that Amazon provides. You will need to create an account on AWS which will give you access to all the AWS services. The step-wise guide for accessing these services will be available in the LMS and the team will help you with it.

Which case-studies will be a part of the course?

Project 1: Load Balancer

Description: In this Project, you will be performing the following tasks: Spin a ec2 instance (OS: Amazon Linux AMI 2015.09.1), Install binaries (Java 1.7 + Apache(HTTPD)), Install and configure Apache server, Create the image of the above setup and save the AMI for future reference. We will create a new instance using the above AMI, create a load balancer and attach the above instances, Access the load balancer URL to test the application.

Project 2: Elastic Beanstalk

Description: In this Project, you will need to complete the following tasks: Create a web server and deploy a web application using Elastic Beanstalk, Configure Elastic Beanstalk, Enable Auto scaling, Enable Elastic Load balancer.