

# **AWS Solutions Architect Certification Training**

In collaboration with Indo Fuji's training

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# About the Program

BEBF's AWS training and certification is the first AWS course which is perfectly aligns to Industry standards. This AWS certification includes the latest changes in SAA-C02 and also covers the concepts of SAA- C01. It will master you in skills like AWS Cloud, IAM, Lambda, Redshift, EC2, S3, CloudTrail, Global Accelerator, FSx and more. You will work on various tools of AWS cloud platform and create highly scalable, highly available and fault-tolerant SaaS applications.

Learn from top rated AWS certified mentors to become an AWS certified solutions architect.

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# Key Features



**36 HRS INSTRUCTOR-LED  
TRAINING**



**32 HRS REAL-TIME  
PROJECT WORK**



**24/7 TECHNICAL SUPPORT**



**INDUSTRY-RECOGNIZED  
CERTIFICATION**



**JOB ASSISTANCE**

**FLEXIBLE SCHEDULING**



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# Career Support



## SESSIONS WITH INDUSTRY MENTORS

Attend sessions from top industry experts and get guidance on how to boost your career growth



## MOCK INTERVIEWS

Mock interviews to make you prepare for cracking interviews by top employers



## GUARANTEED INTERVIEWS & JOB SUPPORT

Get interviewed by our 400+ hiring partners



## RESUME PREPARATION

Get assistance in creating a world-class resume from our career services team



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## Why take up this course?

- AWS has over 1 million customers from 190 countries –Amazon
- AWS is as big as its next four competitors combined – Business Insider
- An AWS Certified Solutions Architect can earn US\$125,000 –Indeed

Today, Cloud Computing is no longer optional but critical to the success of any of the biggest enterprises on earth. Hence, getting AWS training and certification means that you can open the doors to virtually unlimited job opportunities that are offering highly competitive salaries.

BEBF's AWS course is completely oriented toward practical applications, and hence it gives you a clear advantage.

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## Who should take up this course?

- Solutions Architects or Programmers looking to build SaaS, PaaS, and IaaS applications or migrate data to AWS from the existing datacenters
- Systems Administrators and Network Administrators
- Graduates and professionals looking to upgrade their skills in the Cloud Computing domain

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# Program Curriculum

## AWS COURSE CONTENT

### 1. INTRODUCTION TO CLOUD COMPUTING AND AWS

- 1.1 What is Cloud Computing?
- 1.2 Cloud service and deployment models
- 1.3 How AWS is the leader in the cloud domain
- 1.4 Various Cloud Computing products offered by AWS
- 1.5 Introduction to AWS S3, EC2, VPC, EBS, ELB, and AMI
- 1.6 AWS architecture, AWS Management Console, and virtualization in AWS (Xen hypervisor)
- 1.7 What is auto-scaling?
- 1.8 AWS EC2 best practices and the cost involved

***Hands-on Exercise:** Setting up of AWS account, how to launch an EC2 instance, the process of hosting a website, and launching a Linux virtual machine using an AWS EC2 instance*

### 2. ELASTIC COMPUTE AND STORAGE VOLUMES

- 2.1 Introduction to EC2
- 2.2 Regions and availability zones (AZs)
- 2.3 Pre-EC2 and EC2 instance types
- 2.4 Comparing Public IP and Elastic IP
- 2.5 Demonstrating how to launch an AWS EC2 instance
- 2.6 Introduction to AMIs and creating and copying an AMI
- 2.7 Introduction to EBS
- 2.8 EBS volume types
- 2.9 EBS snapshots
- 2.10 Introduction to EFS
- 2.11 Instance tenancy: Reserved and spot instances
- 2.12 Pricing and design patterns

**Hands-on Exercise:** Launching an EC2 instance, creating an AMI of the launched instance, copying the AMI to another region, creating an EBS volume, attaching the EBS volume with an instance, taking the backup of an EBS volume, creating an EFS volume, and mounting the EFS volume to two instances

### 3. LOAD BALANCING, AUTOSCALING, AND DNS

3.1 Introduction to Elastic Load Balancer

3.2 Types of ELB: Classic, network, and application

3.3 Load Balancer architecture

3.4 Cross-zone load balancing

3.5 Introduction to auto scaling, vertical and horizontal scaling, and the lifecycle of auto-scaling

3.6 Components of auto-scaling, scaling options and policy, and the instance termination

3.7 Using Load Balancer with auto-scaling

3.8 Pre-Route 53: How DNS works

3.9 Routing policy, Route 53 terminology, and pricing

**Hands-on Exercise:** Creating a classic ELB, creating an application ELB, creating an auto-scaling group, configuring an auto-scaling group, integrating ELB with auto-scaling, and redirecting traffic from the domain name to ELB using Route 53

### 4. VIRTUAL PRIVATE CLOUD

4.1 What is Amazon VPC?

4.2 VPC as a networking layer for EC2

4.3 IP address and CIDR notations

4.4 Components of VPC: Network interfaces, route tables, Internet gateway, and NAT

4.5 Security in VPC: Security groups and NACL, types of VPC, what is a subnet?, VPC peering with scenarios, VPC endpoints, VPC pricing, and design patterns

**Hands-on Exercise:** Creating a VPC and subnets, creating a 3-tier architecture with security groups, NACL, Internet gateway and NAT gateway, and creating a complete VPC architecture

### 5. STORAGE - SIMPLE STORAGE SERVICE (S3)

- 5.1 Introduction to AWS storage
- 5.2 Pre-S3: Online cloud storage
- 5.3 API and S3 consistency models
- 5.4 Storage hierarchy and buckets in S3
- 5.5 Objects in S3, metadata and storage classes, object versioning, object lifecycle management, cross-region replication, data encryption, connecting using VPC endpoint, and S3 pricing

**Hands-on Exercise:** *Creating an S3 bucket, uploading objects to the S3 bucket, enabling object versioning in the S3 bucket, setting up life cycle management for only a few objects, setting up life cycle management for all objects with the same tag, and static website hosting using S3*

## 6. DATABASES AND IN-MEMORY DATA STORES

- 6.1 What is a database? Types of databases and databases on AWS
- 6.2 Introduction to Amazon RDS
- 6.3 Multi-AZ deployments and the features of RDS
- 6.4 Read replicas in RDS and reserved DB instances
- 6.5 RDS pricing and design patterns
- 6.6 Introduction to Amazon Aurora, benefits of Aurora, and Aurora pricing and design patterns
- 6.7 Introduction to Dynamo DB, components of Dynamo DB, and Dynamo DB pricing and design patterns
- 6.8 What is Amazon Redshift? Advantages of Redshift
- 6.9 What is Elastic Cache? Why Elastic Cache?

**Hands-on Exercise:** *Launching a MySQL RDS instance, modifying an RDS instance, connecting to the DB instance from your machine, creating a multi-az deployment, creating an Aurora DB cluster, creating an Aurora replica, and creating a Dynamo DB table*

## 7. MANAGEMENT AND APPLICATION SERVICES

- 7.1 Introduction to Cloud Formation
- 7.2 Cloud Formation components
- 7.3 Cloud Formation templates
- 7.4 The concept of Infrastructure-as-Code
- 7.5 Functions and pseudo parameters

7.6 Introduction to Simple Notification Service and how SNS works

7.7 Introduction to Simple Email Service and how SES works

7.8 Introduction to Simple Queue Service and how SQS works

**Hands-on Exercise:** *Creating a Cloud Formation stack, launching a t2.micro EC2 instance using Cloud Formation, using Cloud Formation to automate an architectural deployment, creating an SNS topic, creating a subscription within the topic, setting up SES and sending a mail, and creating an SQS queue and sending a sample message*

## 8. ACCESS MANAGEMENT AND MONITORING SERVICES

8.1 Pre-IAM and why access management?

8.2 Amazon Resource Name (ARN) and IAM features

8.3 Multi-factor authentication (MFA) in IAM and JSON

8.4 IAM policies, IAM permissions, IAM roles, identity federation, and pricing

8.5 Introduction to Cloud Watch, metrics and namespaces, Cloud Watch architecture, dashboards in CW, Cloud Watch alarms, Cloud Watch logs, and pricing and design patterns

8.6 Introduction to Cloud Trail and tracking API usage

**Hands-on Exercise:** *Creating IAM users and a group, creating an IAM policy and attaching it to the group, creating an IAM role, setting up MFA for a user, creating a CloudWatch dashboard and adding metrics, creating a CloudWatch alarm that triggers according to the CPU utilization of an EC2 instance, creating a billing alarm, creating a log group, and creating a trail*

## 9. AUTOMATION AND CONFIGURATION MANAGEMENT

9.1 What is AWS Lambda?

9.2 How Lambda is different from EC2

9.3 Benefits and limitations of Lambda

9.4 How does Lambda work?

9.5 Use cases of Lambda and Lambda concepts

9.6 Integration S3 with Lambda

9.7 What is Elastic Beanstalk? How does Beanstalk work? Beanstalk concepts and Beanstalk pricing

9.8 What is configuration management?

9.9 What is AWS OpsWorks? AWS OpsWorks benefits

9.10 CloudFormation vs OpsWorks, services in OpsWorks, AWS OpsWorks Stacks, and OpsWorks pricing

**Hands-on Exercise:** *Creating a Lambda function, setting up Lambda triggers and destinations, creating an Elastic Beanstalk application, uploading a new version of the application to Beanstalk, creating a stack in OpsWorks, launching the instance using OpsWorks, and automatically installing the application*

## 10. AWS MIGRATION

10.1 What is cloud migration?

10.2 Why is migration so important?

10.3 Migration process in AWS and the 6 Rs of the migration strategy

10.4 Virtual machine migration and migrating a local VM onto the AWS Cloud

10.5 Migrating databases using Database Migration Service (DMS)

10.6 Migrating a local database to RDS

10.7 Migrating an on-premises database server to RDS using DMS and other migration services



## 11. AMAZON FSx AND GLOBALACCELERATOR

11.1 What isFSx?

11.2 Types of FSx and FSx for Windows server

11.3 How does FSx for Windows File Server work? FSx for Lustre

11.4 Use cases ofFSx

11.5 Automatic failover process

11.6 Supported clients and access methods

11.7 What is a Global Accelerator? How does Global Accelerator work? Listeners and end points

11.8 What are AWS Organizations? Features of AWS Organizations and managing multiple accounts

11.9 What are ENIs, ENAs, and EFAs? Working with network interfaces

11.10 Enhanced Networking with ENA, EFA with MPI, and monitoring anEFA

***Hands-on Exercise:** Creating a shared FSx file system between two Windows instances, accessing one instance with multiple Elastic IPS using ENI, using Global Accelerator to map instances from two regions into one domain name, and enabling enhanced networking on an Ubuntu instance*

## 12. AWS ARCHITECT INTERVIEWQUESTIONS

12.1 Guidance for clearing the exam, most probable interview questions, and other helpful tips for clearing the exam and interview



# AWS Projects Covered

## Deploying a Multi-tier Website on AWS

Using various AWS services such as EC2, ELB, Auto Scaling, VPC, etc., you need to create a highly available and reliable architecture to host a PHP website. Furthermore, you will use SNS for sending mails to all your website's operations on AWS, deploy the application in a private subnet, and use ELB to expose it. Also, you will prevent the website from crashing by dynamically scaling your servers.

## Deploying a Website for High Availability and High Resilience

Here, you will build an architecture, which should be designed to be highly available. Based on the application's workload, the architecture should automatically scale its servers up and down. To balance the load across all these servers, using a ELB is must, and also the architecture should be decoupled to connect an RDS database with an Elastic Beanstalk environment.

## Sending Notifications to Patients Using Push Notifications

You will design an architecture to send notifications to patients based on their doctors' feedback. Using SNS for sending messages will increase reliability and resilience. You will integrate EC2 with the SNS topic for message storing, and by using Public and Private subnets, you will have to secure the EC2 instances.

## Application to Sort Objects in an S3 Bucket Using Beanstalk and Lambda

Here, you will upload an application, which could upload objects to an S3 bucket with the help of Elastic Beanstalk. You will set up your Lambda functions trigger as object creation in the S3 bucket to which the Beanstalk application uploads the objects. Then, you will have to add your Lambda code, which will segregate the uploaded objects into separate buckets according to the extension (e.g., .png, .pdf, etc.).

## Case Study 1 - Using Different Operations on EC2 and EWS

The case study is to replicate or copy EC2 instances to varied regions. depending upon the high availability. Furthermore, the main strategy is to extend the size of EBS volumes without losing the data. The major highlights of this case study are to scale and mount the EBS volumes to different EC2 instances one at a time.

## Case Study 2 – Auto scaling Compute Capacity in AWS

The major aim of this case study is to auto-scale (scaling up and down automatically) and load balance among multiple EC2 instances within AWS based on varied/defined metrics for auto-scaling instances. Also, the case study deals with routing custom domains to AWS resources.

### **Case Study 3 - Creating Custom VPCs in AWS**

In this case study, you will create a custom VPC in AWS with the help of multiple subnets having both private as well as public access. The route tables are also configured to subnets using the Internet Gateway and the NAT Gateway.

### **Case Study 4 - Using AWS S3 for Lifecycle Access Management**

The case study deals with moving artifacts from on-premise to S3 in the most cost-efficient manner. Furthermore, it deals with the creation of lifecycle rules for events in S3 objects, hosting a static website, and experimenting with the usage of Route 53.

### **Case Study 5 - Highly Available Relational Database in AWS**

This case study is all about creating a highly available and scalable AWS database service in AWS using RDS. The process involves creating database architecture, collecting data for real-time analysis, and relocating the latency issues.

### **Case Study 6 – Cloud Formation for Infrastructure-as-Code**

The case study involves provisioning and deploying AWS resources using AWS Cloud Formation. Within the process, you will have to define rules for deletion using IaC and also minimize the deployment time.

### **Case Study 7 - Administering User Access Using AWS IAM**

In this case study, you will create users in IAM for defining granular access that differs with each user. Alongside, you will also define custom policies that add users to groups.

### **Case Study 8 - Application Services in AWS and Configuration Management**

The main aim of this case study is to use application services in AWS Lambda for deploying code and also conduct configuration management using OpsWork. Alongside, WebApp is also deployed to Elastic Beanstalk.

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# Certification

After the completion of the course, you will get a certificate.

## CONTACT US

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