simplilearn

AWS Basics

A Beginner's Guide

Table of Contents

INTRODUCTION TO AWS

Amazon Web Services (AWS) is the cloud-service platform from the e-commerce giant, Amamzon.com Inc (AMZN). It offers diverse functionalities, including compute power, database storage, and content delivery, to help businesses scale and grow efficiently.

Generating **35.03 billion U.S. dollars** in 2019 net sales, AWS ranks as one of the most popular public cloud infrastructure and platform services that dominate public cloud adoption worldwide.

According to many, “cloud” is no longer a tool, but a way of life today. Advantages like lower operating costs, enhanced collaboration, and increased flexibility have pushed companies across industries and geographies to switch to cloud computing. According to a study, most companies are likely to shift to Cloud-only or Cloud-first policies by the end of this year.

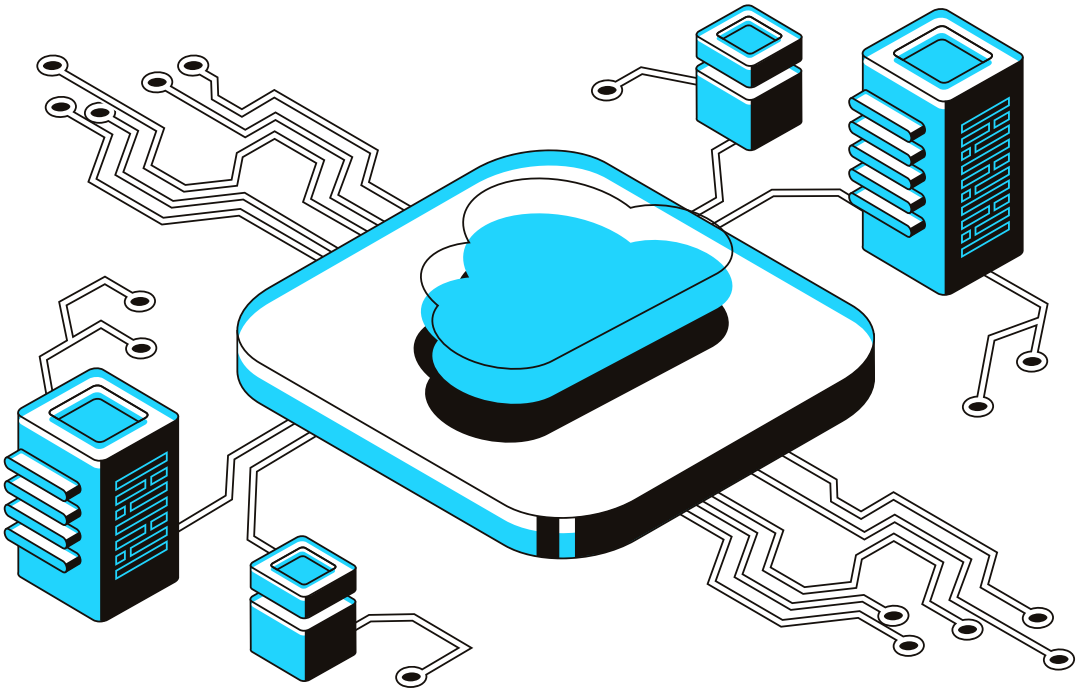
Leading the **$100 billion global cloud market** and generating twice as revenue as its closest rival, AWS controls more than a third of the cloud market and recently broke the record of being a $10 billion business in the first quarter of 2020.

With over one million global users and companies like Netflix, Twitch, LinkedIn, Facebook, etc. featuring among the top 10 AWS users (based on EC2 monthly spend), AWS continues to be the prime choice of public cloud adoption for both big and small companies.

An increase in the adoption of AWS by organizations has spiked the demand for AWS certified professionals. With about more than 380,000 cloud computing jobs available worldwide and about **1 million such jobs** to be available in India by 2022, a career in AWS promises to be a lucrative one.

Learning AWS basics or investing in an AWS certification training program is key to jump-starting technical careers in the most in-demand cloud computing services. Adequate training gives IT professionals that extra edge in terms of a **high-paying salary** and a future-ready career.

This handbook will attempt to discuss some of the most essential services of this leading cloud computing technology and scope for career advancement in this fast-evolving and growing arena.



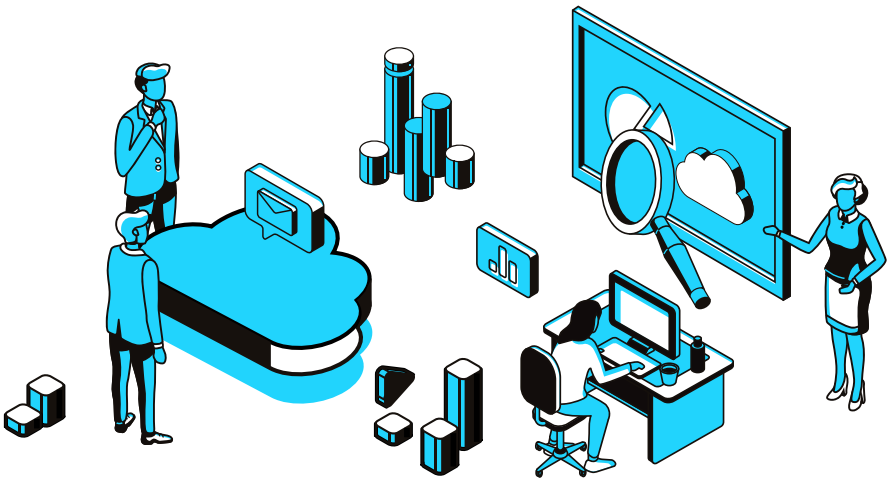
UNDERSTANDING AWS

AWS (Amazon Web Services) is a comprehensive and evolving cloud computing platform that offers services in the form of building blocks and is developed by combining infrastructure as a service (IaaS), platform as a service (PaaS) and packaged software as a service (SaaS) offerings.

These building blocks or services are designed to collaborate and create and deploy sophisticated and highly scalable applications for businesses to improve their performance and productivity. It gives firms enhanced security and storage flexibility, higher computing capacity, easy database construction, and even content caching, depending on where you are located.

Availability

AWS is not limited to a particular geography or time zone. Spanning over a total of 245 countries worldwide, it offers over 175 fully-featured services from its data centers located globally across 76 availability zones.



Advantages

Security

The applications are reliable because they run on a safe and secure AWS infrastructure.

Elasticity and Scalability

AWS's on-demand infrastructure allows greater scalability to businesses, allowing them to innovate and experiment faster.

Cost-effectiveness

These 175 cloud services are available on a pay-as-you-go and scalable basis. This means that you pay only for the services you use, and the less you use it, the less you pay. This also means that the more you use it, the less you pay per unit. (i.e., each unit costs less with each new purchase)

Flexibility

With no rigid protocols or restrictions, AWS is platform agnostic to operating systems and languages, and provides businesses the advantage of selecting a programming model or development platform that is most beneficial for them.

A QUICK PRIMER ON AWS SERVICES

Made up of different cloud computing products and services, AWS provides an organization with a range of tools like servers, storage, networking, remote computing, email, mobile development, and security. It also offers services in emerging technologies like machine learning and artificial intelligence (AI), data lakes, analytics, and Internet of Things (IoT).

For those requiring an introduction to AWS and its services, AWS can be broken into three main products, EC2, Amazon's virtual machine service, Glacier, a low-cost cloud storage service, and S3, Amazon's storage system.

Amazon S3

Amazon Simple Storage Service (S3) is used for scalable object storage for internet back up, collection, and analytics. As the cheapest storage option in the object-storage category, it allows an IT professional to retrieve stored data from almost anywhere whenever you need it. The other AWS services in the "storage" domain include:

- Elastic Block Store
- Amazon Glacier
- AWS Snowball

AWS Data Transfer Products

Amazon Relational Database Service (Amazon RDS), which includes Amazon Aurora, Amazon DynamoDB Accelerator, and Amazon RedShift, are the key data migration, collection, and data transfer products that help in seamless data collection. These products also enable AWS users to monitor and analyze data in real-time.

Amazon EC2 (Elastic Compute Cloud)

This service provides virtual servers called EC2 instances that give AWS users secure and resizable computing capacity based on their needs. EC2 is designed to make web-scale cloud computing more accessible.

Amazon SNS (Simple Notification Services)

This notification tool delivers/publishes or push-sends messages to a large number of subscribers through email or SMS.

Amazon KMS (Key Management System)

This is a security tool that uses 256-bit encryption for data security, safeguarding it from hackers and cyber-attacks.

Amazon Lambda

This cost-effective service runs a code depending on specific events and manages the dependent resources. It provides for a serverless compute where payment depends on how long it takes for the AWS customer to execute the code.

Amazon Route 53

This is a highly scalable, cloud-based Domain Name System web service that does not require AWS users to maintain a separate DNS account. It is designed to allow businesses to route users to internet applications in a reliable and cost-effective method.

AWS USE CASES

Let us take the example of how AWS services helped Unilever, a global-scale consumer goods manufacturer, to grow its business exponentially.

Unilever's Challenge – Spread across 170 countries, the company optimized its business models by testing digital marketing campaigns in a pilot country and then deploying it to other shores, if the pilot was successful. However, when its previous on-premise data centers, which had different processes and technologies, failed to deliver, Unilever planned to redesign its infrastructure to achieve a faster time-to-market and a standardized environment for its digital campaigns.

Goals for AWS – Unilever wanted AWS to design a technology platform for websites with regional content delivery architecture, which could also to migrate its existing web properties to the cloud.

Benefits of AWS – Once Unilever migrated to AWS, using the full range of AWS services to support it's 1700 digital marketing web properties, Unilever's redesigned infrastructure was an improved version with applications becoming more reliable and secure, and the consumer-giant experienced:

- smooth and faster roll-outs of digital marketing campaigns

- improved operational efficiency and business agility

- openness of the AWS Cloud

- accelerated innovation

AWS Services Used – Amazon S3, EBS Snapshot Copy, Amazon Elastic Book Store, Amazon Virtual Private Cloud.

AWS KEY TERMINOLOGIES

As an introduction to AWS, the following terms and definitions will help a beginner navigate the world of the leading cloud computing technology.

AWS Internet of Things (IoT): AWS IoT is a managed cloud service that lets connected devices interact with cloud applications and other devices easily and in a secure manner.

Certificate Manager (ACM): ACM lets AWS customers to easily manage, provision, and deploy public Secure Sockets Layer/ Transport Layer Security (SSL/TLS) certificates for their AWS based websites and applications.

Cloud Formation: This lets users create and update a collection of related AWS resources in a simple and predictable way.

Cloud Front: It is a fast content delivery network (CDN) that securely distributes content to end-users with low latency and high data transfer speeds.

Cloud Search: This is a cost-effective, scalable, and fully managed search solution service for websites and apps.

Cloud Trail: It is a web-based, auditing, compliance monitoring, and governance tool that provides increased visibility into user activity by recording API activity made on user-account.

Data Pipeline: This is a lightweight orchestrated service for periodic, data-driven workflows. It enables reliable processing and movement of data between AWS compute and storage services and on-premises data sources.

Database Migration Service: AWS DMS helps users in databases migration to the cloud, easily and securely while minimizing downtime.

DynamoDB: It is a scalable NoSQL data store that manages distributed replicas of data to make it highly available.

EC2: Amazon Elastic Compute Cloud (EC2) provides need-based, resizable compute capacity in the cloud.

EC2 Container Service: Amazon ECS allows users to easily operate and manage Docker containers across a cluster of Amazon EC2 instances.

Elastic Beanstalk: AWS Elastic Beanstalk is an easy-to-use application container for deploying and managing web applications.

ElastiCache: A widely popular choice for real-time use cases like real-time analytics, caching, gaming, session stores, geospatial services, and queuing, this improves application performance by allowing users to retrieve information from an in-memory caching system.

Elastic File System: Amazon Elastic File System (Amazon EFS) is a file storage service for Amazon Elastic Compute Cloud (Amazon EC2) instances.

Elasticsearch Service: This AWS managed service is a popular open-source search and analytics engine that makes it easy to deploy, operate, and scale Elasticsearch.

Elastic Transcoder: This allows easy, scalable, and low-cost conversion of media files in the cloud.

EMR: Amazon Elastic MapReduce is a tool that enables big data tasks such as web indexing, data mining, and log file analysis.

Glacier: A cost-effective storage service that provides secure and durable storage for data archiving and backup.

IAM: AWS Identity and Access Management (IAM) enables AWS users to securely control access to AWS services and resources and manage user and user permissions with the AWS environment.

Inspector: Amazon Inspector is an automated security assessment service that enables customers to analyze the behavior of the applications and helps to identify potential security issues

Kinesis: Amazon Kinesis services make it easy to work with real-time data streaming in the AWS cloud.

Lambda: AWS Lambda is a compute service that runs a user-generated code in response to events and automatically manages the compute-resources for the user.

Machine Learning: Amazon Machine Learning allows users to build smart applications easily.

OpsWorks: AWS OpsWorks is a DevOps platform that manages applications of any scale or complexity on the AWS cloud.

RDS: Amazon Relational Database Service (RDS) makes it easy to set up, operate, and scale familiar relational databases in the AWS cloud.

Redshift: Amazon Redshift is a fast, fully managed, petabyte-scale data warehouse that allows easy data analysis using the customer's existing business intelligence (BI) tools.

Route 53: Amazon Route 53 is a scalable and highly available Domain Name System (DNS) and Domain Name Registration service.

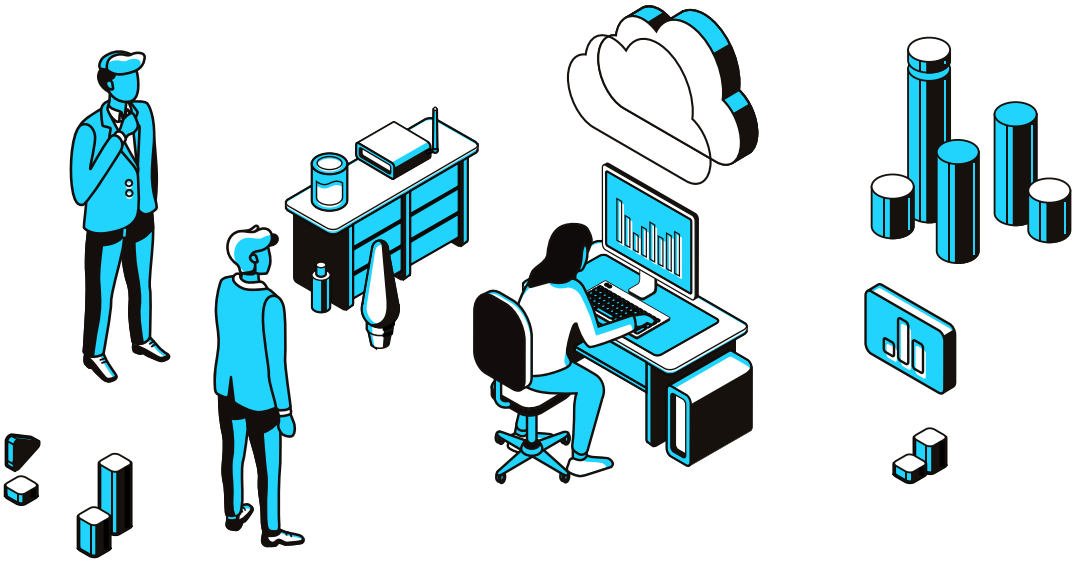
SES: Amazon Simple Email Service (SES) enables customers to send and receive emails.

Storage Gateway: AWS Storage Gateway is a system that securely integrates an organization's on-premises IT environments with AWS cloud storage infrastructure for backup and disaster recovery.

Amazon Simple Queue Service (SQS): A reliable and highly scalable hosted queue for storing messages as they travel between computers

SWF: Amazon Simple Workflow (SWF) coordinates all of the parallel or sequential processing steps within an application.

Amazon Virtual Private Cloud (VPC): Allows users to launch AWS resources in a private, isolated cloud.



SKILLS REQUIRED TO BECOME AN AWS PROFESSIONAL

Here is a list of few skills that an aspiring AWS professional needs to pick up before stepping afoot in this industry.

Data storage skills –

Knowledge in bucket storage using AWS S3, AWS RDS, all the way to full-fledged Hadoop clusters will help in landing an AWS architect's job with ease

Programming Skills –

An AWS architect should be able to write code in Java, Python or C+ or any other programming languages that have an official AWS SDK

Networking Skills –

An AWS architect or developer has to be familiar with and understand networking terms like HTTP, VPN, DNS, CDN, and TCP/IP. Also, knowledge in services such as Route 53 (DNS), Virtual Private Cloud (VPC), and CloudFront (CDN) that are used to design cloud networking, using public and private subnets, VPC peering, internet access and, is expected of an AWS professional.

Information Security –

AWS is a highly secured environment with services and guidelines in place to make sure that only authorized persons are allowed to perform specific tasks. Knowledge in IAM and how to secure networks using Security Groups and Access Control Lists are prerequisite skillsets for an AWS expert.

AWS Service Selection –

Basic services every AWS architect should have knowledge in include SQS (simple queuing), RDS (Relational Database Service), and SNS (notifications). Knowledge of AWS IoT related services can be helpful too.

Cloud Specific Technologies –

In order to properly design workloads and harness AWS infrastructure in an optimum manner to be able to make scalable and available applications, knowledge about several AWS core services like AWS Lambda, EC2, S3, VPC, ELB, etc. is a must.

Other Skills include:

- Experience working with automation tools like Chef/Puppet.
- Familiarity working with CI tools like Jenkins.
- Good knowledge of code deployment
- Build and release management across multiple environments and infrastructure

TRUSTED AWS LEARNING RESOURCES

Earning an AWS certification is the best route to take to embark on a flourishing AWS career. The AWS certification has been available since 2013, and the best way to achieve an AWS certification is to learn through an AWS course that offers a mix of theory and hands-on experience.

Simplilearn's **AWS Certification Courses** can help you prepare for AWS exams, and let you be successful in earning your valuable AWS Certification too. As an **AWS select technology partner**, our AWS courses are aligned with the latest AWS exams featuring Amazon designed best practices.

You can choose any one from the role-based certifications in Cloud Practitioner, Architect, **Developer**, and Operations roles.

Our learning path for the top-paying and high-in-demand AWS certificate courses include:

- AWS Solutions Architect Certification Training Course

- AWS Developer Associate Certificate Training Course

And our fundamental AWS certification course is:

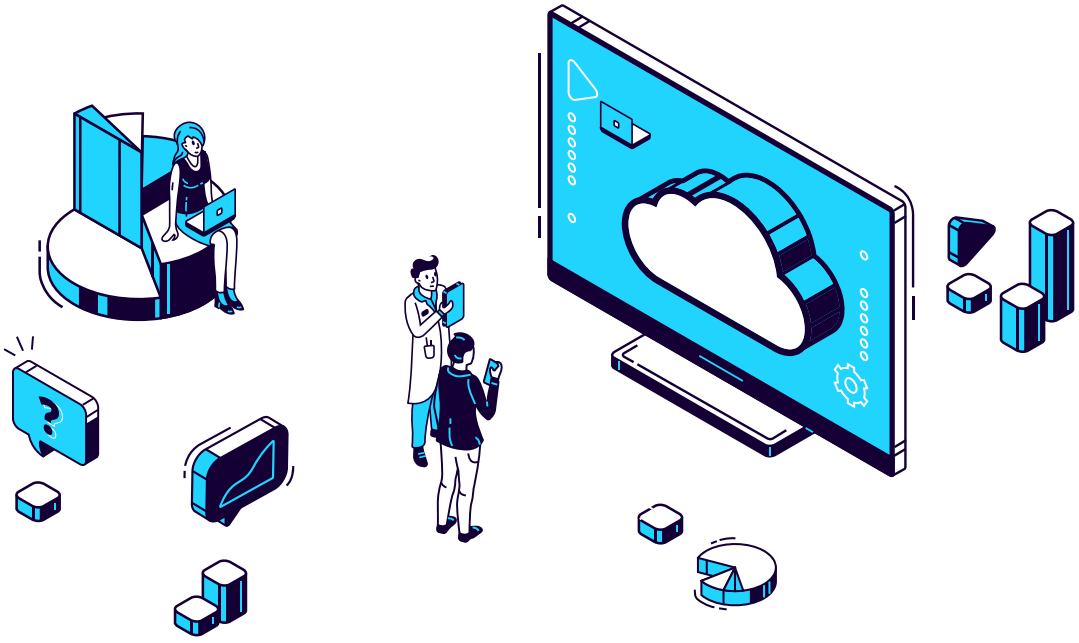
- AWS Technical Essentials Certification Training course

All Simplilearn AWS Certification courses contain current, and relevant course material, access to integrated labs, live demos and real-time industry projects to help you pass these AWS exams.

We are here to assist you with our 24/7 teaching assistance,

applied projects, and online videos. Our AWS training is conducted through self-paced live streaming that facilitates networking with a global audience and encourages live interactions, discussions, and questions and answers sessions with industry-expert instructors.

Find our AWS Solutions Architect Online Classroom training classes in top cities, **here** and our AWS Developer Associate Online Classroom training classes in top cities **here**.



simplilearn

INDIA

Simplilearn Solutions Pvt Ltd.

53/1 C, Manoj Arcade, 24th Main,
Harlkunte
2nd Sector, HSR Layout
Bangalore - 560102

Call us at: 1800-212-7688

USA

Simplilearn Americas, Inc.

201 Spear Street, Suite 1100,
San Francisco, CA 94105
United States

Phone No: +1-844-532-7688

www.simplilearn.com