

## Instructor Notes:

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# AWS basics and Features

Lesson 02: [AWS Basics and Features](#)



**Instructor Notes:**

This lesson is to give an Introduction on AWS basics

## Lesson Objectives



In this lesson, you will learn:

- Introduction to AWS
- Cloud Computing and Amazon Web Services
- Functionality offered by AWS
- The Differences that Distinguish AWS
- Features of AWS service
- Different AWS web services in Cloud
- AWS global infrastructure

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Introduction to AWS  
Cloud Computing and Amazon Web Services  
Functionality offered by AWS  
The Differences that Distinguish AWS  
Features of AWS service  
Different AWS web services in Cloud  
AWS global infrastructure

**Instructor Notes:**

## Introduction To AWS



Amazon Web Service (AWS) is a secure Cloud Service platform.  
It is currently available in 190 countries with 16 geographic locations



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## 2.1: Introduction to AWS



### Use AWS today - Examples

A large enterprise quickly and economically deploys new internal applications, such as –

- HR solutions, payroll applications
- Inventory management solutions,
- and online training to its distributed workforce.

An e-commerce website accommodates sudden demand for a “hot” product caused by viral buzz from Facebook and Twitter without having to upgrade its infrastructure.

A pharmaceutical research firm executes large-scale simulations using computing power provided by AWS.

Media companies serve unlimited video, music, and other media to their worldwide customer base



## 2.1: Introduction to AWS

### AWS History



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## 2.1: Introduction to AWS

### AWS History

#### Amazon History



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**Instructor Notes:**

## 2.1: Introduction to AWS



### AWS mission

Enable businesses and developers to use web services to build scalable, sophisticated applications.

Amazon enters the Market for cloud computing and storage services.

In November 2004, the first **AWS** service **launched** for public usage: Simple Queue Service (SQS).

**Amazon** Web Services was officially re-**launched** on March 14, 2006, combining the three initial service offerings of **Amazon** S3 cloud storage, SQS, and **EC2**.



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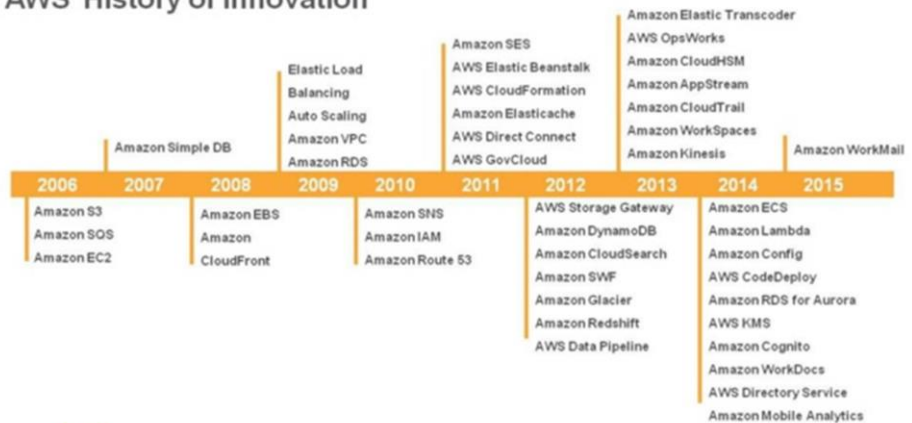
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In November 2004, the first **AWS** service **launched** for public usage: Simple Queue Service (SQS). ...**Amazon** Web Services was officially re-**launched** on March 14, 2006, combining the three initial service offerings of **Amazon** S3 cloud storage, SQS, and **EC2**.

## 2.1: Introduction to AWS

### AWS mission

#### AWS' History of Innovation



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AWS included the following services:

- Alexa Web Information Service: (acquired in 1999)
- Mechanical Turk: dividing work into many tasks for humans (2005)
- Elastic Compute Cloud(EC2): computing platform (2006)
- Simple Storage Service( S3 ) : storage platform (2006)
- Simple Queue Service: web service for storing and queuing messages across the Internet (2007)
- Flexible Payments Service: online payment platform (2007)
- Simple DB: web service for running queries on structured data in real time (2007)
- Persistent Storage: allows developers to earmark a storage volume online for people to save files in different file systems (2008)



**Instructor Notes:****2.2: Cloud Computing and Amazon Web Services****Amazon and Cloud Computing**

Amazon had spent over a decade building and managing the large-scale, reliable, and efficient IT infrastructure that powered one of the world's largest online retail platforms.

Amazon has decentralized IT infrastructure.

Using AWS, you can demand compute power, storage, and other services in minutes .

Have the flexibility to choose the development platform or programming model .

This arrangement enabled our development teams to access compute and storage resources on demand, and it has increased overall productivity and agility.

You pay only for what you use, with no up-front expenses or long-term commitments, making AWS a cost-effective way to deliver applications.



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Amazon has a long history of using a decentralized IT infrastructure. This arrangement enabled development teams to access compute and storage resources on demand, and it has increased overall productivity and agility. Using AWS, you can requisition compute power, storage, and other services in minutes and have the flexibility to choose the development platform or programming model that makes the most sense for the problems they're trying to solve. You pay only for what you use, with no up-front expenses or long-term commitments, making AWS a cost-effective way to deliver applications.

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## 2.2: Cloud Computing and Amazon Web Services

### What Can I Do with AWS?

# AWS Solutions

- ✓ Achieve high availability and scalability with AWS. Ej. Amazon EC2, Cloudformation, and AWS Auto Scaling
- ✓ Improve development productivity with DevOps. Ej. AWS ECS, CloudFormation, Terraform, Docker.
- ✓ Integrate AWS on your applications and gain agility on app performance, optimization, and speediness. Ej. Amazon LB, Route 53, Beanstalk
- ✓ Automate your application environments with DevOps and AWS. Ej. Terraform, OpsWorks, Ansible, Docker.
- ✓ Create a real Disaster recovery plan, Backups and never lose data. Ej. Amazon S3, Glazier, EFS.



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You can run nearly anything on AWS that you would run on physical hardware:

**Websites**

**Applications**

**Databases**

**Mobile apps**

**Email campaigns**

**Distributed data analysis**

**Media storage**

**and private networks.**

The services AWS provide are designed to work together so that you can build complete solutions.

There are currently dozens of services, with more being added each year

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## 2.2: Cloud Computing and Amazon Web Services

### AWS Customers

amazon web services

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**Instructor Notes:****2.2: Cloud Computing and Amazon Web Services****Gartner - Infrastructure-as-a-service Magic Quadrant 2013**

AWS is the overwhelming market share leader, with more than five times the compute capacity in use than the aggregate total of the other fourteen providers."



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"AWS is the overwhelming market share leader, with more than five times the compute capacity in use than the aggregate total of the other fourteen providers."

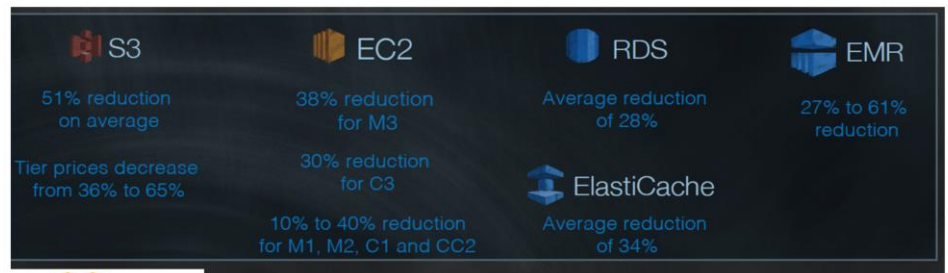
## 2.2: Cloud Computing and Amazon Web Services



### Why AWS ?

Lower costs with AWS up-front and increase savings as your usage grows.

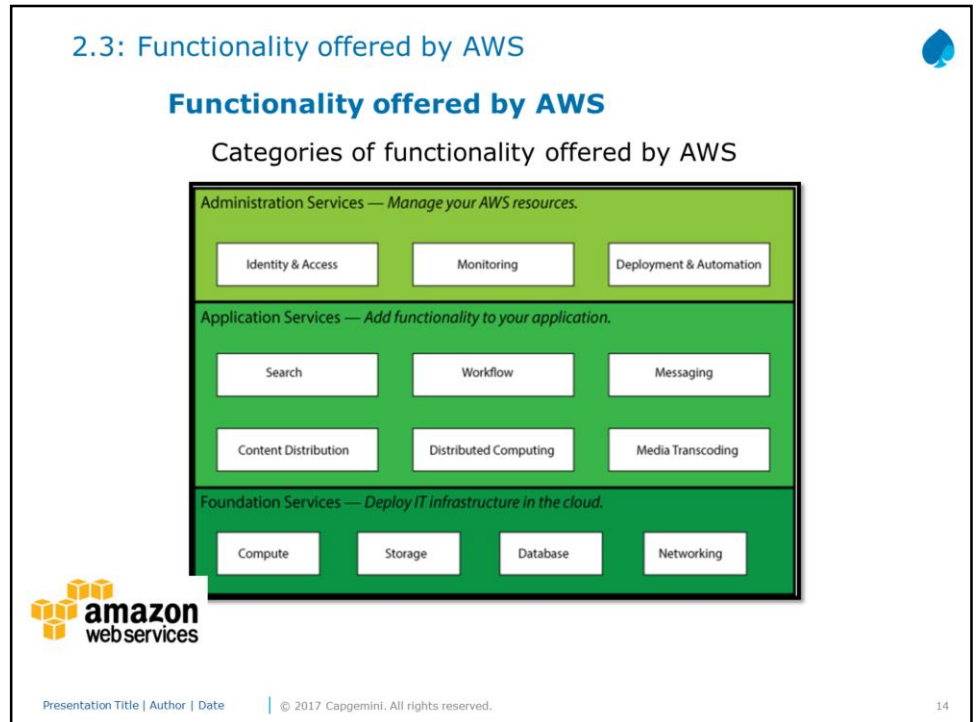
Amazon's 42nd Price Reduction! Effective April 1, 2014



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The diagram shows the categories of functionality offered by AWS. In each category, there are one or more services. For example, AWS offers five database services, each one optimized for a certain type of use. With so many offerings, you can design an AWS solution that is tailored to your needs.

## 2.4: Difference that distinguishes AWS



### Difference that distinguishes AWS ?

**Flexible.**

**Cost-effective.** Organizations pay only for what they use.

**Scalable and elastic**

**Secure.**

**Experienced.**



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AWS is readily distinguished from other vendors in the traditional IT computing landscape because it is:

**Flexible.** AWS enables organizations to use the programming models, operating systems, databases, and architectures with which they are already familiar. In addition, this flexibility helps organizations mix and match architectures in order to serve their diverse business needs.

**Cost-effective.** With AWS, organizations pay only for what they use, without up-front or long-term commitments.

**Scalable and elastic.** Organizations can quickly add and subtract AWS resources to their applications in order to meet customer demand and manage costs.

**Secure.** In order to provide end-to-end security and end-to-end privacy, AWS builds services in accordance with security best practices, provides the appropriate security features in those services, and documents how to use those features.

**Experienced.** When using AWS, organizations can leverage Amazon's more than fifteen years of experience delivering large-scale, global infrastructure in a reliable, secure fashion.

**Instructor Notes:**

## 2.5: Features of AWS



### Features of AWS

#### Flexible

- AWS enables organizations to use the programming models, operating systems, databases, and architectures with which they are already familiar.
- In addition, this flexibility helps organizations mix and match architectures in order to serve their diverse business needs.

#### Cost-effective

- With AWS, organizations pay only for what they use, without up-front or long-term commitments.

#### Scalable and elastic

- Organizations can quickly add and subtract AWS resources to their applications in order to meet customer demand and manage costs.



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Cost is one of the most complex elements of delivering IT solutions. The cloud provides an on-demand IT infrastructure that lets you consume only the amount of resources that you actually need. It is often difficult to predict requirements for the resources. As a result, we might provision too few resources, which has an impact on customer satisfaction, or we might provide too many resources and miss an opportunity to maximize return on investment (ROI) through full utilization.

In the traditional IT organization, scalability and elasticity were often equated with investment and infrastructure. In the cloud, scalability and elasticity provide opportunity for savings and improved ROI. AWS uses the term elastic to describe the ability to scale computing resources up and down easily, with minimal friction. Elasticity helps you avoid provisioning resources up front for projects with variable consumption rates or short lifetimes. Instead of acquiring hardware, setting it up, and maintaining it in order to allocate resources to your applications, you use AWS to allocate resources using simple API calls.



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## 2.5: Features of AWS

### Features of Amazon – contd.



#### Secure

- In order to provide end-to-end security and end-to-end privacy, AWS builds services in accordance with security best practices, provides the appropriate security features in those services, and documents how to use those features.

#### Experienced

- When using AWS, organizations can leverage Amazon's more than fifteen years of experience delivering large-scale, global infrastructure in a reliable, secure fashion.



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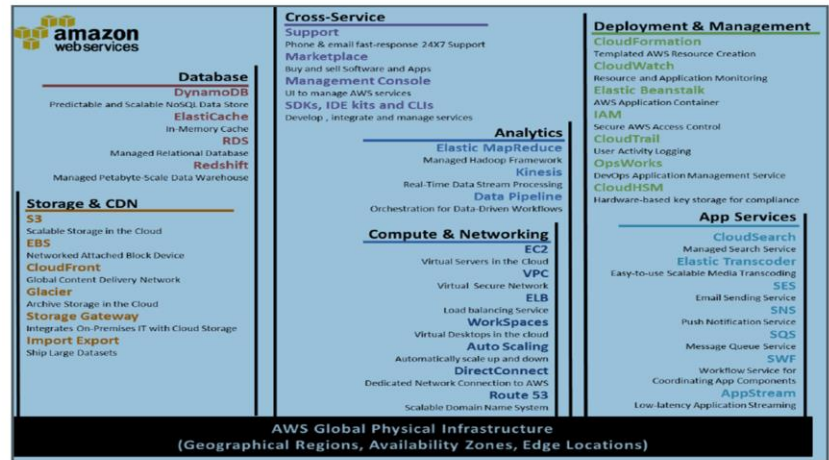
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AWS delivers a scalable cloud-computing platform that provides customers with end-to-end security and end-to-end privacy. AWS builds security into its services in accordance with security best practices, and documents how to use the security features. It is important that you leverage AWS security features and best practices to design an appropriately secure application environment.

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## 2:6: Different AWS web services in Cloud

### Different AWS web services in Cloud



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## 2.7: Global Infrastructure Perspective on Scaling



On average, AWS adds enough new server capacity every day to support Amazon's global infrastructure when it was a \$7B business (2004)



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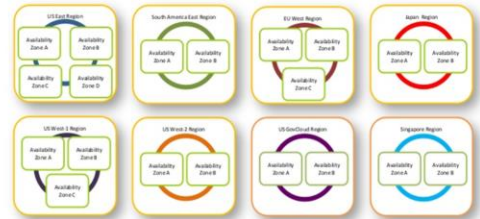
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## 2.7: Global Infrastructure

**AWS ( Global Infrastructure )**

Till Dec 2017

- Total Regions are 16
- Total Available Zones are 44
- Total Edged Zones are 96

**AWS Regions and Availability Zones****Customer decides where applications and data reside**

\*Note: Conceptual drawing only, actual number of Availability Zones per Region may vary



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**Instructor Notes:**

## 2.7: Global Infrastructure AWS ( Global Infrastructure )

Region :-

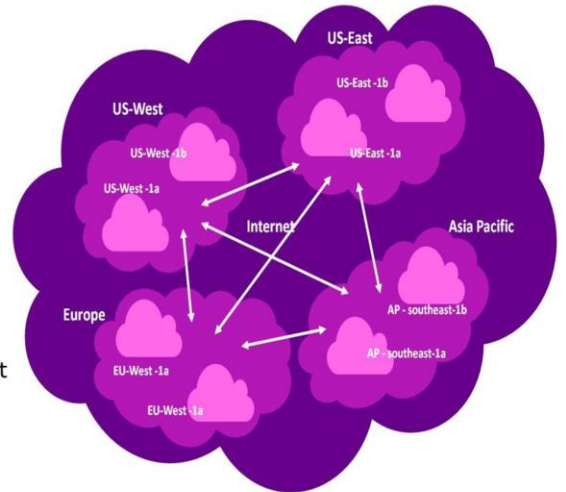
- It is a Geographical area .
- Each region consists of 2
- or more AZ(Availability Zones)

AZ :-

Each AZ is nothing but the data center .

EL :-

Edge Location are AWS endpoint where for caching contents .



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## Summary



In this lesson, you have learnt:

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- Functionality offered by AWS
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**Instructor Notes:****Answers for the  
Review Questions:****Answer 1:** True**Answer 2:** AZ**Review – Questions**

Question 1: Using AWS, you can demand compute power, storage, and other services in minutes .

- Option 1 : True
- Option 2 : False

Question 2 : \_\_\_\_\_ in AWS represents the Data center.



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**Instructor Notes:****Answers for the  
Review Questions:****Answer 3 Region**

**Answer 4:** Option 2  
: PAAS

## Review – Questions



- Question 3: \_\_\_\_\_ in AWS represents the geographical area.
- Question 5: Which of the following is not an AWS service  
Option 1 : EBS  
Option 1 : PAAS  
Option 2 : EC2  
Option 3 : S3



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