

## Instructor Notes:

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# AWS Compute services

Lesson 03: AWS Compute services



**Instructor Notes:**

This lesson is to give an Introduction on Java Server Pages

## Lesson Objectives



In this lesson, you will learn:

- Amazon EC2
- Auto Scaling
- Elastic Load balancing

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Amazon EC2  
Auto Scaling  
Elastic Load balancing

Instructor Notes:

3.1: Amazon EC2  
AWS 360° View

Your Applications

Deployment & Management

Application Services

Foundation Services

Web Interface  
Management Console

Deployment & Automation  
Bastion CloudFormation

Identity & Access  
IAM Federation Billing

Monitoring  
Amazon CloudWatch

Content Delivery  
CloudFront

Networking  
Amazon SES Amazon SNS Amazon SQS

Search  
CloudSearch

Distributed Computing  
EMR Amazon SWF

Libraries & SDKs  
iOS python php java .net

Compute  
EC2

Storage  
S3 EBS Glacier

Networking  
VPC ELB Route 53

Databases  
RDS DynamoDB ElastiCache Redis

Regions

Availability Zones

Edge Locations

AWS Global Infrastructure

amazon  
web services

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**Instructor Notes:**

3.1: Amazon EC2  
AWS 360° View






Services ▾


Resource Groups

## Amazon Web Services


### Compute





**EC2**  
Virtual Servers in the Cloud



**EC2 Container Service**  
Run and Manage Docker Containers




**Lightsail**   
Launch and Manage Virtual Private Servers



**Elastic Beanstalk**  
Run and Manage Web Apps



**Lambda**  
Run Code without Thinking about Servers



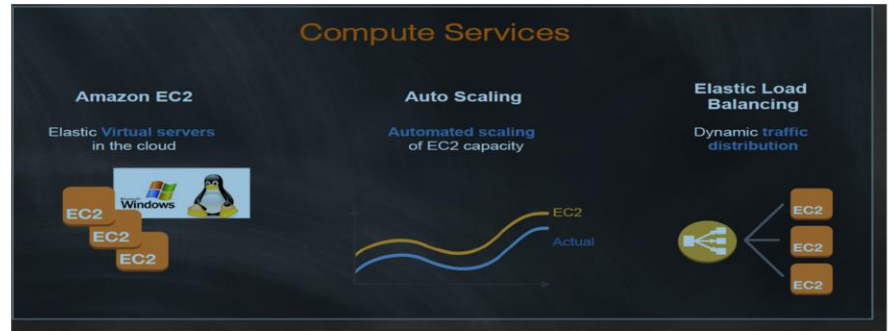
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**Instructor Notes:**

### 3.1: Amazon EC2 Compute Services

Auto Scaling and Elastic Load Balancing is not a part of AWS compute services but It helps the EC2 instance to manage the Load efficiently .



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**Auto Scaling and Elastic Load Balancing is not a part of AWS compute services but It helps the EC2 instance to manage the Load efficiently .**

**Instructor Notes:**

### 3.1: Amazon EC2

## Amazon Web Services Cloud Platform



AWS is a comprehensive cloud services platform that offers

- compute power
- storage
- content delivery
- and other functionality

organizations can use to deploy applications and services cost-effectively—with flexibility, scalability, and reliability.

As per the requirement, one can proactively address the internal plans and react to external demands when you choose .



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AWS is a comprehensive cloud services platform that offers compute power, storage, content delivery, and other functionality that organizations can use to deploy applications and services cost-effectively—with flexibility, scalability, and reliability. AWS self-service means that you can proactively address your internal plans and react to external demands when you choose

**Instructor Notes:**

### 3.1: Amazon EC2 Amazon EC2



#### Amazon EC2 – Amazon Elastic Compute Cloud

It is a web service which provides resizable compute capacity in the cloud.

It is designed to make web-scale computing easier for developers and system administrators.

Amazon EC2's simple web service interface allows you to obtain and configure capacity with minimal friction



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(Amazon EC2) is a web service that provides resizable compute capacity in the cloud. It is designed to make web-scale computing easier for developers and system administrators.

Amazon EC2's simple web service interface allows you to obtain and configure capacity with minimal friction. It provides you with complete control of your computing resources and lets you run on Amazon's proven computing environment. Amazon EC2 reduces the time required to obtain and boot new server instances to minutes, allowing you to quickly scale capacity, both up and down, as your computing requirements change. Amazon EC2 changes the economics of computing by allowing you to pay only for capacity that you actually use. Amazon EC2 provides developers and system administrators the tools to build failure resilient applications and isolate themselves from common failure scenarios.

**Instructor Notes:**

### 3.1: Amazon EC2 Amazon EC2



It provides you with complete control of your computing resources and lets you run on Amazon's proven computing environment.

Amazon EC2 changes the economics of computing by allowing you to pay only for capacity that you actually use.

It could be a virtual machine in Cloud . it could be a virtual Linux machine , window system in Server.

It gives complete environment setup .

A dynamic website uses server-side processing to build pages that are customized to visitor's requests



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**Instructor Notes:**

### 3.1: Amazon EC2 Amazon EC2 – Container(ECC)



Dynamic websites require server-side technologies such as PHP, Java, or .NET

Launches a virtual server that runs your web server and performs server-side processing.

You can run your database on this server or on Amazon Relational Database Service (Amazon RDS).

Free Usage - YES

- 750 hours per month of a t1.micro instance



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(Amazon EC2) is a web service that provides resizable compute capacity in the cloud. It is designed to make web-scale computing easier for developers and system administrators. **Overview of Amazon Web Services** March 2013  
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**Instructor Notes:**

### 3.1: Amazon EC2

#### Amazon EC2 – OPTIONS



- On Demand :-
  - It allows to pay a fixed rate per hours or seconds
- Reserved:-
  - It provides a capacity reservations for 1 Year or 3 Years terms.
- SPOT :--
  - It allows for bidding , whatever price you want as per capacity
- Dedicated Hosts:--
  - Physical EC2 server dedicated for use .



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**Instructor Notes:**

### 3.1: Amazon EC2

#### Amazon EC2 – Instance Types



- D- Density
- R for ram
- M for general purpose use for Application server
- C for computer means compute optimized
- G for graphics
- I for increase storage (IOPS)
- F – field programming
- T2 is lowest cost used web servers
- P2 – graphics/ general purpose CPU
- X1 for extra large



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D- Density and 2 – for generation

How to remember tips:

R for ram means memory optimized

M for general purpose use for Application server. When we deploy the app server but we don't know what this App server will do , then M4 is the main choice.

C for computer means compute optimized

G for graphics intensive used for video encoding/streaming

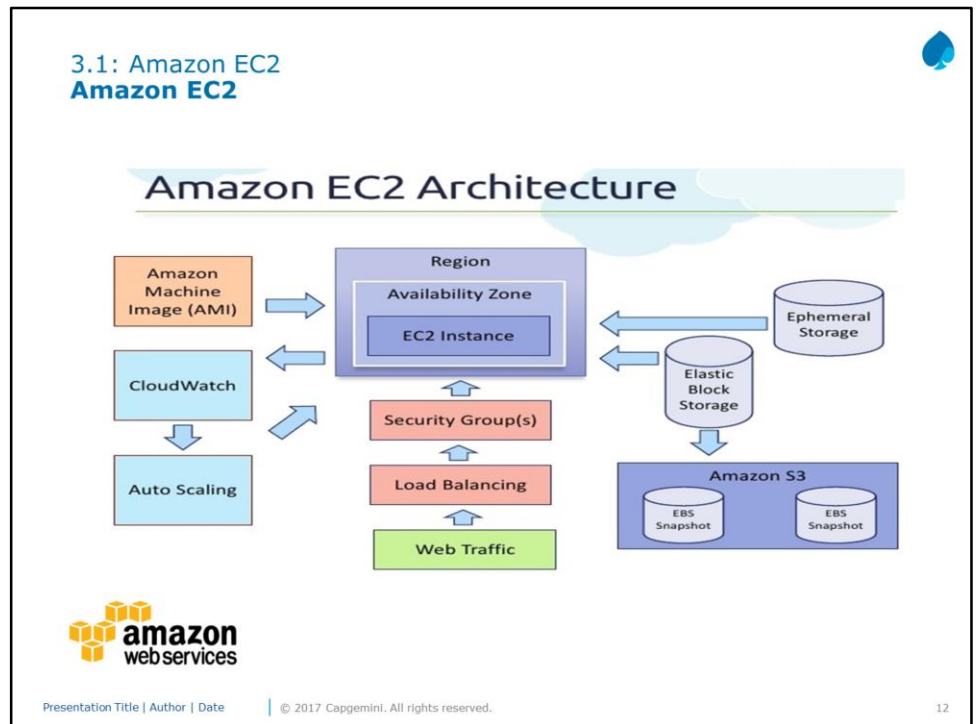
I for increase storage (IOPS), i.e. high speed storage used (NoSQL db. ,data warehousing etc. )

F – field programming gateway (brand new )Hardware acceleration of code. You can choose hardware.

T2 is lowest cost used web servers , small DB

P2 – graphics/ general purpose CPU, used for Bit coin mining , machine learning etc.

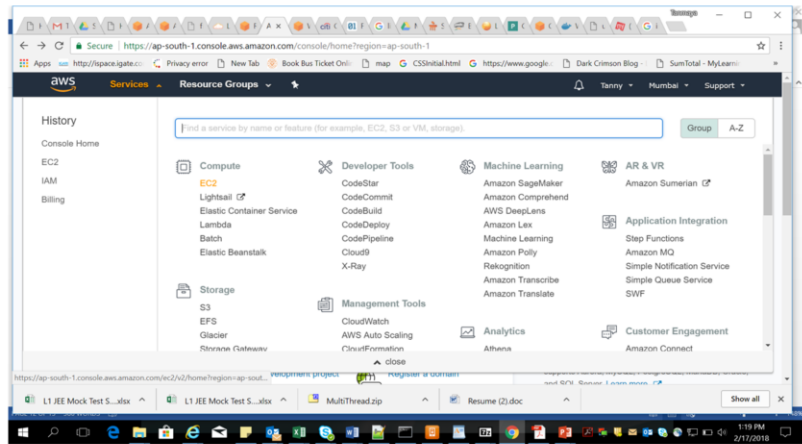
X1 for extra large – extreme memory optimization (SAP , hana etc.)

**Instructor Notes:**

Click on EC2 Dashboard  
Click on Launch Instances

**Instructor Notes:**

### 3.1: Amazon EC2 Amazon EC2



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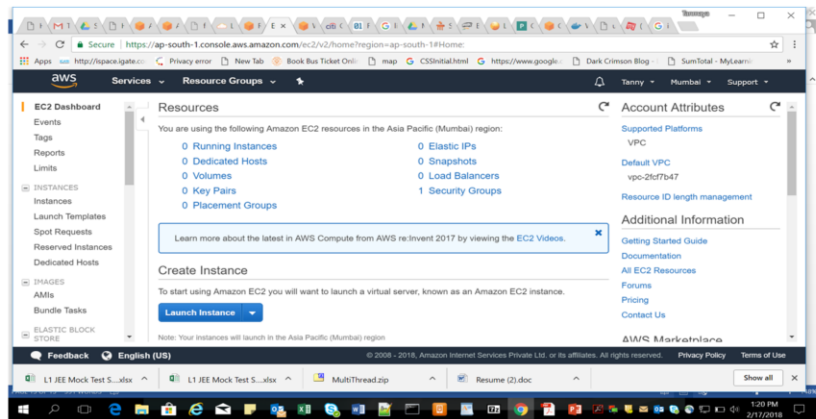
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First Create an Account in AWS .  
Click On Services and choose EC2 options

**Instructor Notes:**

### 3.1: Amazon EC2 Amazon EC2



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Click on EC2 Dashboard  
Click on Launch Instances

**Instructor Notes:**

### 3.1: Amazon EC2 Demo



Demo on:

- Creating EC2 instance ( Refer lab book )

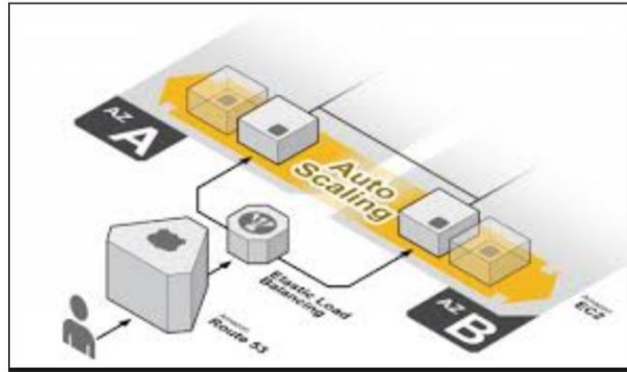


**Instructor Notes:**

### 3.2: AWS Auto Scaling

#### Amazon Auto Scaling

- Auto Scaling allows you to scale your Amazon EC2 capacity up or down automatically according to conditions you define.



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**Auto Scaling**

- With Auto Scaling, one can ensure that the number of Amazon EC2 instances are using increases seamlessly during demand spikes to maintain performance, and decreases automatically during demand lulls to minimize costs.
- Auto Scaling is particularly well suited for applications which experience hourly, daily, or weekly variability in usage.
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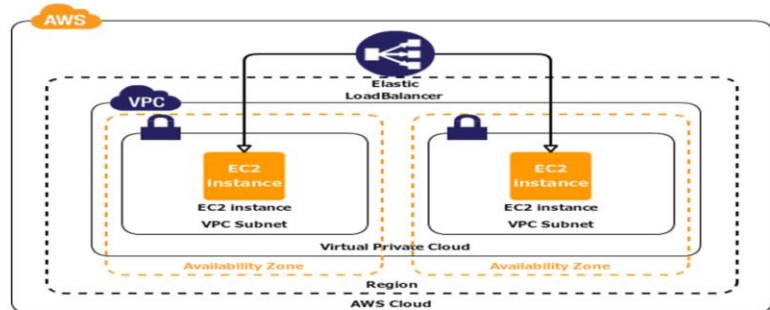


**Instructor Notes:**

### 3.3: AWS Elastic Load balancing

#### Amazon Elastic Load balancing

- Elastic Load Balancing automatically distributes incoming application traffic across multiple Amazon EC2 instances.



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**Elastic Load Balancing**

- It enables you to achieve even greater fault tolerance in our applications, seamlessly providing the amount of load balancing capacity needed in response to incoming application traffic.
- It detects unhealthy instances and automatically reroutes traffic to healthy instances until the unhealthy instances have been restored.
- Customers can enable Elastic Load Balancing within a single Availability Zone or across multiple zones for even more consistent application performance.

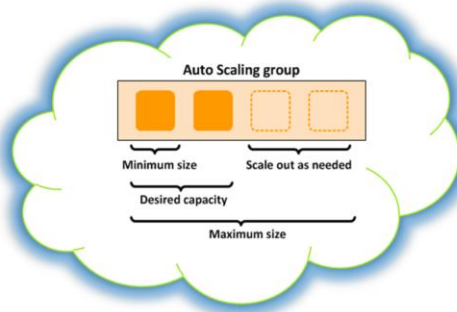
**Instructor Notes:**

### 3.1: Amazon EC2 Demo



Demo on:

- Creating AutoScaling on EC2 instance ( Refer lab book )



**Instructor Notes:**

## Summary



In this lesson, you have learnt:

- What is Amazon EC2
- How to demand Amazon EC2
- Amazon Auto scaling
- Amazon Auto Load balancing

**Instructor Notes:****Answers for the  
Review Questions:**

**Answer 1:** Amazon  
EC2

**Answer 2:** Auto  
Scaling

**Review – Questions**

Question 1: \_\_\_\_\_ could be a virtual machine in Cloud , which could be a virtual Linux machine , window system in Server Using AWS and one can demand compute power, storage, and other services in minutes .

Question 2 : \_\_\_\_\_ is particularly well suited for applications which experience hourly, daily, or weekly variability in usage.

**Instructor Notes:****Answers for the Review Questions:**

**Answer 3** Elastic Load Balancing

**Answer 4:** Option 4

## Review – Questions



- Question 3: \_\_\_\_\_ automatically distributes incoming application traffic across multiple Amazon EC2 instances.

- Question 5: Which of the followings are an Amazon EC2 Options?

Option 1 : On demand

Option 2 : SPOT

Option 3 : Reserved

Option 4 : All of the above