

# OSVALDO\_EC2\_Introduction

Pear Deck Session  
Training Clarusway  
Pear Deck - January 20, 2022 at 6:31PM

## Part 1 - Summary

Use this space to summarize your thoughts on the lesson

## Part 2 - Responses

Slide 1



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Introduction to EC2

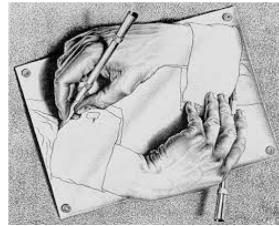
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## Slide 2

### Today's Takeaways

- ▶ Introduction to EC2
- ▶ EC2 Instance Types
- ▶ Creating an EC2 instance



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## Slide 3

### ▶ Introduction to EC2

What is EC2?

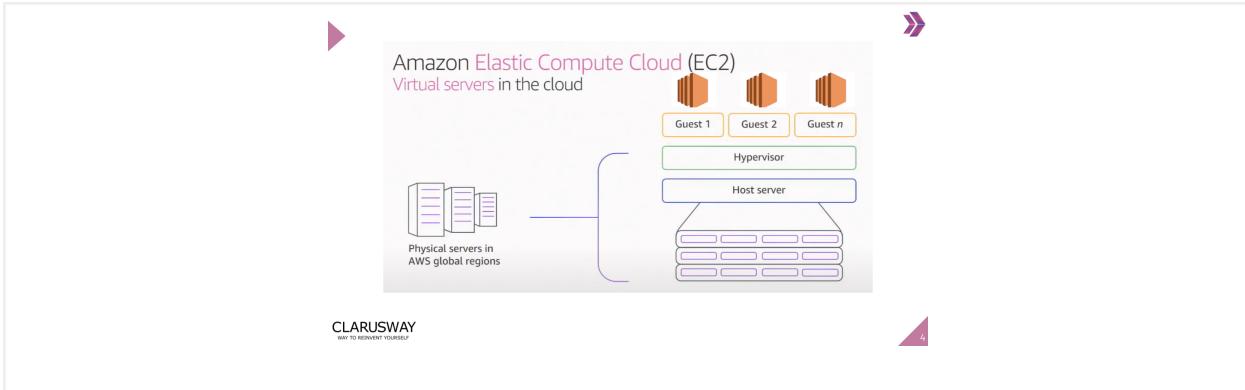


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- EC2 stands for **Elastic Compute Cloud** in AWS.
- EC2 is a service that **allows you to run application** programs in the computing environment.
- EC2 is a web service that provides **secure, resizable compute capacity** in the cloud. It is designed to make web-scale cloud computing easier for developers.

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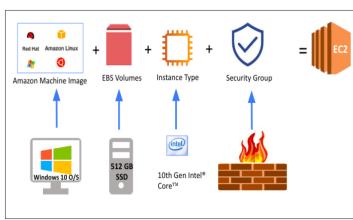


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### ▶ Introduction to EC2 What is EC2?

- In fact, EC2 is a kind of computer such as your desktop in your home. Components of the EC2 are similar to conventional computer devices.
- Each EC2 component refers to one of the conventional computer parts such as Operation System, Hard Disk and Intel/AMD processors, etc.



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## ▶ Introduction to EC2

### EC2 Features



- Pay as you go,
- Setup and ready to use within 1 minute,
- CPU, Memory and Storage Capacity needs can be arranged within minutes,
- Create, Stop or Terminate instances via EC2 console easily.

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## ▶ 2 Types of Instances

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## ▶ EC2 Instances

### Types of Instances



- Amazon EC2 provides a wide selection of instance types optimized to fit different use cases.
- Instance types comprise varying combinations of **CPU**, **memory**, **storage**, and **networking** capacity

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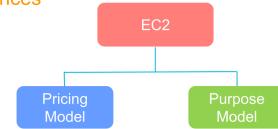
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## ▶ EC2 Instances

### Types of Instances



- Instance types are grouped into a variety of families based on target application profiles and pricing options. It is possible to categorize EC2 types under **two main perspective** :
- These are **Pricing Model** and **Purpose Model**.

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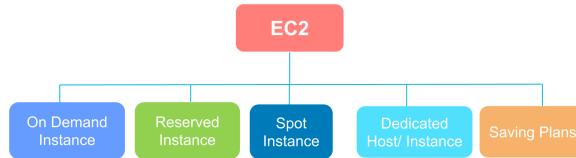
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## ► EC2 Instances

Pricing Model of Instances



When we look at the pricing perspective, AWS offers 5 different types of instance pricing.

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### ► EC2 Instances

On Demand Instances



- You pay for compute capacity by the "hour" or the "second"
- No commitments
- No upfront payments
- You can increase or decrease your compute capacity
- Pre-estimated

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## ▶ EC2 Instances On Demand Instances



On-Demand instances are recommended for:

- Users that prefer the low cost and flexibility of Amazon EC2 without any up-front payment or long-term commitment
- Applications with short-term, spiky, or unpredictable workloads that cannot be interrupted

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### ▶ EC2 Instances On Demand Pricing

- t2.micro in us-east-1 (N.Virginia)
- cost : \$ 0.0116/hour



- 25 seconds usage--->>>  $\$ 0.0116 / 60 = \$ 0.00019$  (min 60 seconds )
- 60 seconds usage--->>>  $\$ 0.0116 / 60 = \$ 0.00019$  (min 60 seconds )
- 30 minutes usage--->>>  $\$ 0.0116 / 2 = \$ 0.0058$
- 1 month usage----->>>  $\$ 0.0116 * 24 * 30 = \$ 8.32$  )

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## ► EC2 Instances Reserved Instances (RI)



- Reserved Instances provide you with a **significant discount** (up to **75%**) compared to On-Demand instance pricing.
- It is a tariff that takes advantage of the discounted price by giving AWS a **1 or 3-year commitment**.

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## ► EC2 Instances Scheduled Reserved Instances



- It's an Instance model **derived from Reserved Instance**
- This model is very similar to the Reserved Instance and provides you to **make the purchase over 24 hours**.
- Thanks to the Scheduled Reserved Instance, you can run an instance **only between the hours you reserved in reduced price**.

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## ► EC2 Instances Reserved Instances (RI)



Reserved Instances are recommended for:

- Applications with **steady state usage**
- **Applications that may require reserved capacity**
- Customers that can **commit** to using EC2 over a **1 or 3 year term** to **reduce** their total computing costs

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### ► EC2 Instances Example



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## ► EC2 Instances Spot Instance



- In Spot Instance, you can enter a purchase order by setting a target price.
- The machine runs when the current price falls below the target price.
- The machine automatically shuts down if the price exceeds that target price.
- You can save up to 90% cost advantage.

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### ► EC2 Instances Spot Instance



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▶ EC2 Instances

Spot Instance vs. On Demand Price

**ON-DEMAND**

**Spot Instance**

2,5 hour

Pay for 3 hours

???????

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▶ EC2 Instances

Spot Instance

\$

EC2

Spot instances are recommended for:

- Applications that have **flexible start and end times**
- **Non-continuity jobs** such as testing

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## ► EC2 Instances

### Dedicated Host/Instance

A Dedicated Host is a physical server the whole capacity of which an EC2 instance is **dedicated to your use**.



Not only your instances are reserved but also they **physically separated** from the other servers.

A Dedicated Host consists of **Dedicated Instance capacities** according to your needs. You may choose to buy a Dedicated Host or only one Dedicated Instance also.

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## ► EC2 Instances

### Saving Plans



5000 HOURS OF USAGE

1500\$

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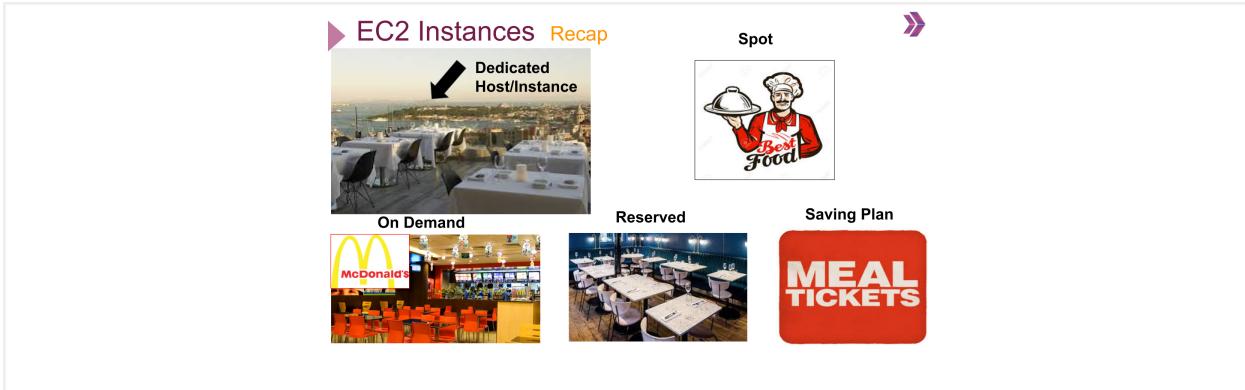
5000 HOURS OF USAGE

1000\$

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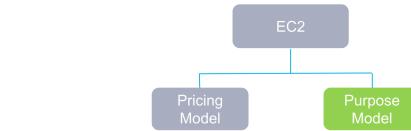
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▶ EC2 Instances  
Types of Instances Recap



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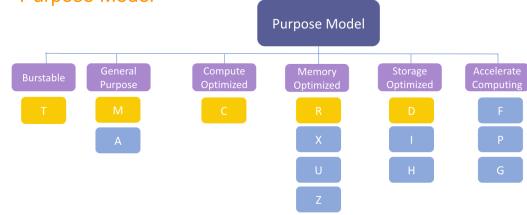
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## ▶ EC2 Instances

### Purpose Model



AWS offers 14 different types of virtual machines in 6 categories

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## ▶ EC2 Instances

### General Purpose



General Purpose

- General purpose instances provide a **balance of compute, memory and networking resources**, and can be used for a variety of diverse workloads.
- There are **T, M and A** options that we can use for standard and application needs.
- This is the **most commonly used instance type** and ideal for web servers.

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## ▶ EC2 Instances Compute Optimized



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- Compute Optimized instances are ideal for compute bound applications that benefit from **high performance processors**.
- Instances belonging to this family are well suited for batch processing workloads, media transcoding, high performance web servers, dedicated gaming server, etc.

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## ▶ EC2 Instances Memory Optimized



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- Memory optimized instances are used in situations requiring a **high-performance database**, **real-time large data analytics**, and **high memory usage**.
- There are R, X, Z and U type instances in this category.

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## ► EC2 Instances Storage Optimized



- Storage optimized instances are designed for workloads that require **high, sequential read and write access** to very large data sets on local storage.
- It is the best used for the fast disk structures we need in **NoSQL databases or data warehouse solutions**.
- There are D, H and I type of instances in this category.

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## ► EC2 Instances Accelerated Computing

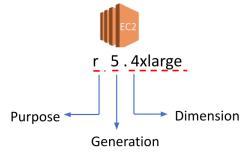


- Preferred when you need **machine learning, deep learning calculation, and analysis**.
- There are F, P and G type of instances in this category.

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## ▶ EC2 Instances Instance Coding



- R refers to its **purpose**. It means this EC2 is Memory Optimized instance.
- 5 refers to instance **generation**. For example, the last generation of the r-family is 5.
- 4xlarge refers to **dimension** of instance. AWS has built servers of various sizes to suit every need in instance families. For example, the r5-family has 8 different sizes starting from **large to 24xlarge**.
- Not all models have instances in every generation and size.

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### ▶ Introduction to EC2



Let's get our hands dirty!

- Introduction of EC2 console
- Creating an EC2 instance
- Creating an EC2 instance with user data
- Working with Instance Actions

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# THANKS!

## Any questions?

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