

EC2



Amazon EC2

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First some online resources about EC2...



- Landing page: landing page: <https://aws.amazon.com/ec2>
- FAQ: <https://aws.amazon.com/ec2/faqs/>
- Userguide: <http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/concepts.html>
- 10 minute tutorials for different but simple use cases
<https://aws.amazon.com/getting-started/tutorials>



Terminology

- Instance = One running virtual machine.
- Instance Type = hardware configuration: cores, memory, disk.
- Instance Store Volume = Temporary disk associated with instance.
- Image (AMI) Amazon Machine Image = Stored bits which can be turned into instances.
- Key Pair = Credentials used to access VM from command line.
- Region = Geographic location, price, laws, network locality.
- Availability Zone = Subdivision of region the is fault-independent.



EC2 concepts

- EC2 = Elastic compute cloud
- virtual server running a guest os of your choice
- Whatever you can do using admin console for ec2, you can also do using AWS CLI or using AWS SDK (available in many programming languages like Java, Python, .NET, Node.js)
- Some examples are to create, start, stop an ec2 instance
- Elastic IP address: is a public IPv4 address, which is reachable from the internet. It is associated with your account. You can associate (or detach) it with your ec2 instance or a network interface.

EC2 – Type, families, sizes



- Instance Types

Size

- Nano, micro, small, medium, large, xlarge

General Purpose

Compute Optimized

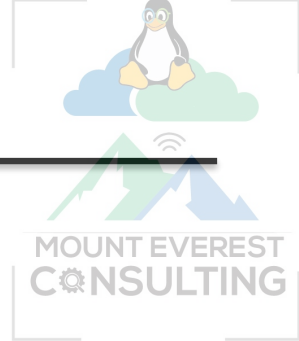
Memory Optimized

Accelerated Computing

Storage Optimized

- <https://aws.amazon.com/ec2/instance-types/>
- Note there is not full permutation and combination with all AMI, instance type and size. (example, if you choose Windows server 2016, it is only available in xlarge)

EC2 - Volumes



Volume Type ⓘ

General Purpose SSD (gp2) ▼

- General Purpose SSD (gp2) ▼
- General Purpose SSD (gp2)
- Provisioned IOPS SSD (io1)
- Cold HDD (sc1)
- Throughput Optimized HDD (st1)
- Magnetic (standard)

Hands-on



1) Launch a wordpress website using EC2

<https://aws.amazon.com/getting-started/tutorials/launch-a-wordpress-website/>

Gotchas:

- Wait for instance to be fully up and running before accessing the site using public ip address
- System log window most likely will show blank until instance is fully up and running. (not a realtime log)

2) Launch a Windows Virtual Machine

<https://aws.amazon.com/getting-started/tutorials/launch-windows-vm/>

Gotchas:

- Use **Microsoft Windows Server 2019 Base** instead of 2012 as in the instructions
- Use keypair and save the file where you can find it (you will need it to connect)
- Wait for instance to be fully up and running before connecting it

EC2 Pricing wise types



Free Usage Tier

On-Demand Instances

Start and stop instances whenever you like, costs are rounded up to the nearest hour. (Worst price)

Reserved Instances

Pay up front for one/three years in advance. (Best price)

Unused instances can be sold on a secondary market.

Spot Instances

Specify the price you are willing to pay, and instances get started and stopped without any warning as the market changes

<http://aws.amazon.com/ec2/pricing>

Exam tips/Additional tests on hands on

- 1) Expect one or two questions about instance types
- 2) Expect one question about AWS CLI for EC2 management
- 3) Expect one or two questions about volume types

