Beginner’s Guide To Amazon EC2

What is AWS EC2?

Amazon Elastic Compute Cloud, EC2 is a web service from Amazon that provides re-sizable compute services in the cloud.

Features of Amazon EC2

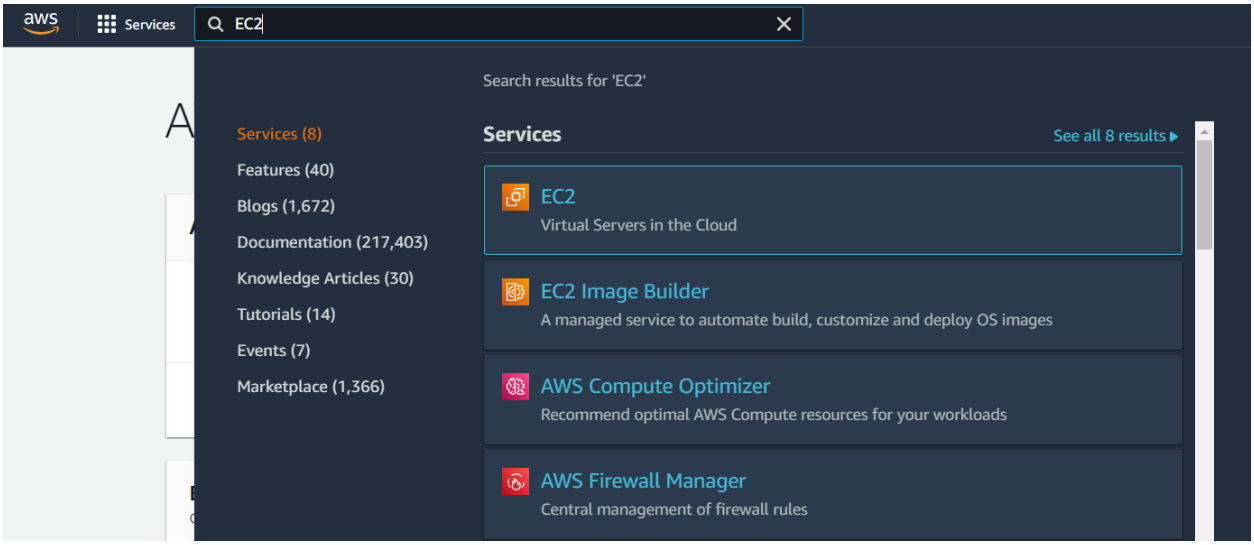
Amazon EC2 provides the following features:

- Virtual computing environments, known as *instances*
- Preconfigured templates for your instances, known as *Amazon Machine Images (AMIs)*, that package the bits you need for your server (including the operating system and additional software)
- Various configurations of CPU, memory, storage, and networking capacity for your instances, known as *instance types*
- Secure login information for your instances using *key pairs* (AWS stores the public key, and you store the private key in a secure place)
- Storage volumes for temporary data that's deleted when you stop, hibernate, or terminate your instance, known as *instance store volumes*
- Persistent storage volumes for your data using Amazon Elastic Block Store (Amazon EBS), known as *Amazon EBS volumes*
- Multiple physical locations for your resources, such as instances and Amazon EBS volumes, known as *Regions* and *Availability Zones*
- A firewall that enables you to specify the protocols, ports, and source IP ranges that can reach your instances using *security groups*
- Static IPv4 addresses for dynamic cloud computing, known as *Elastic IP addresses*

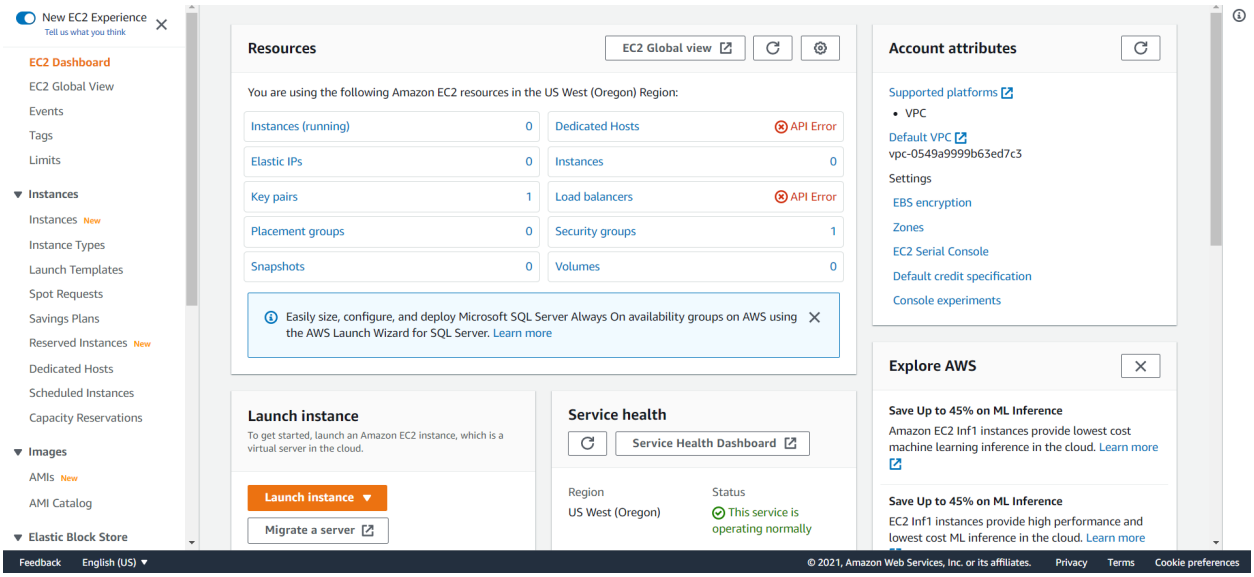
- Metadata, known as *tags*, that you can create and assign to your Amazon EC2 resources
- Virtual networks you can create that are logically isolated from the rest of the AWS Cloud, and that you can optionally connect to your own network, known as *virtual private clouds* (VPCs)

Create Your First Amazon EC2 Instance (Linux)

1-Select Services>EC2 from the AWS Management Console home page:



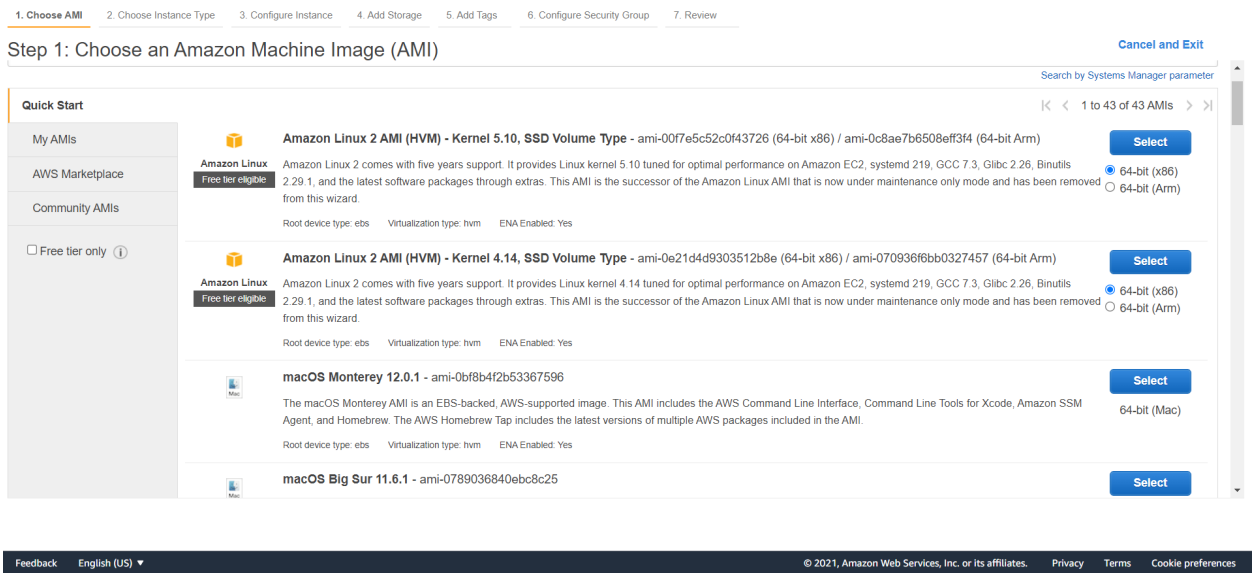
You are now in the EC2 Dashboard



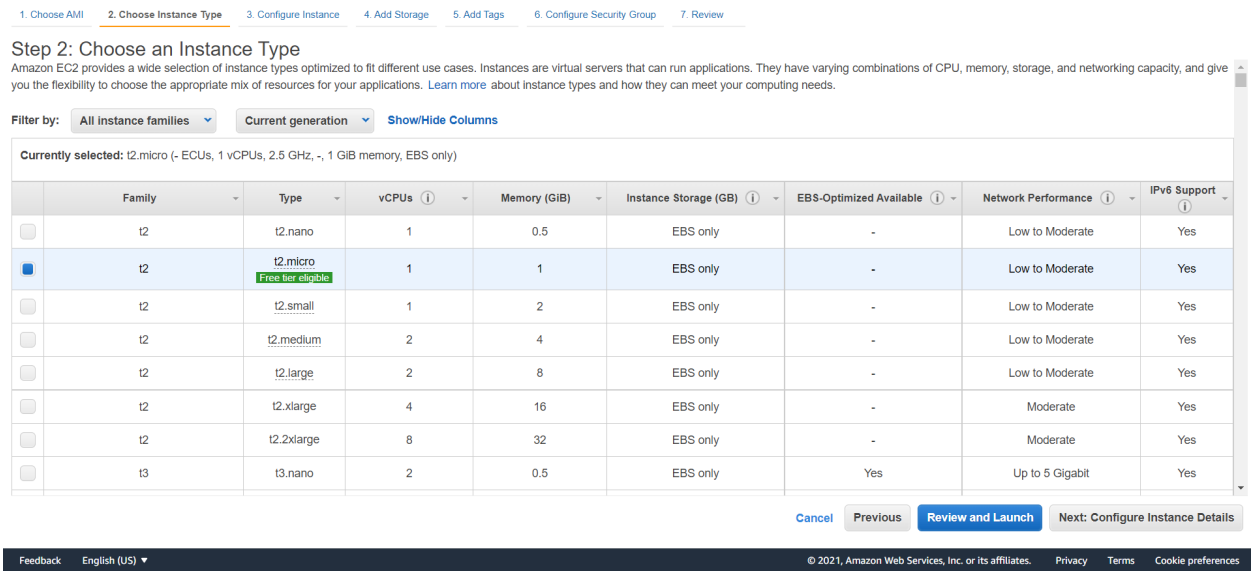
2-Click Launch Instance

A seven-step wizard is started

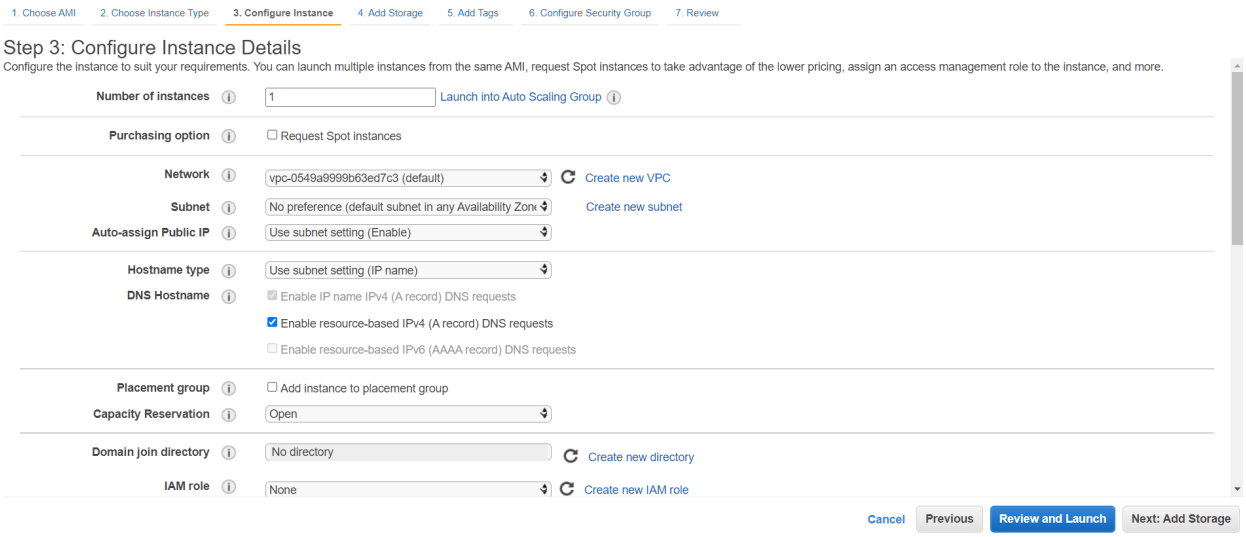
3-Click the top Select button to choose the Amazon Linux 2 AMI



4-Choose any Instance Type

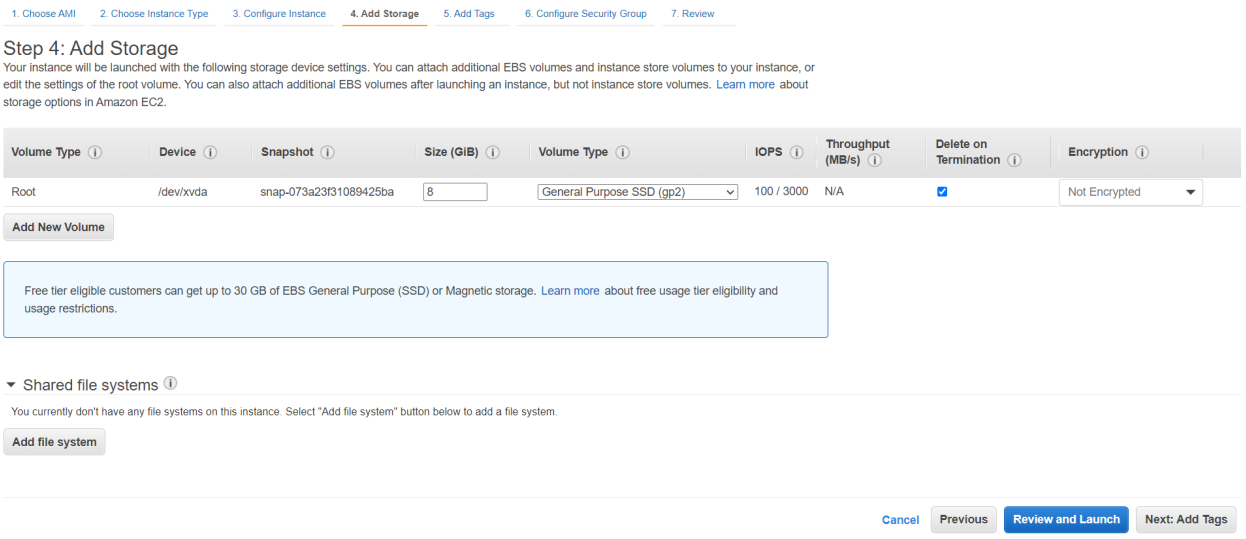


5-Click Next: Configure Instance Details when ready to continue



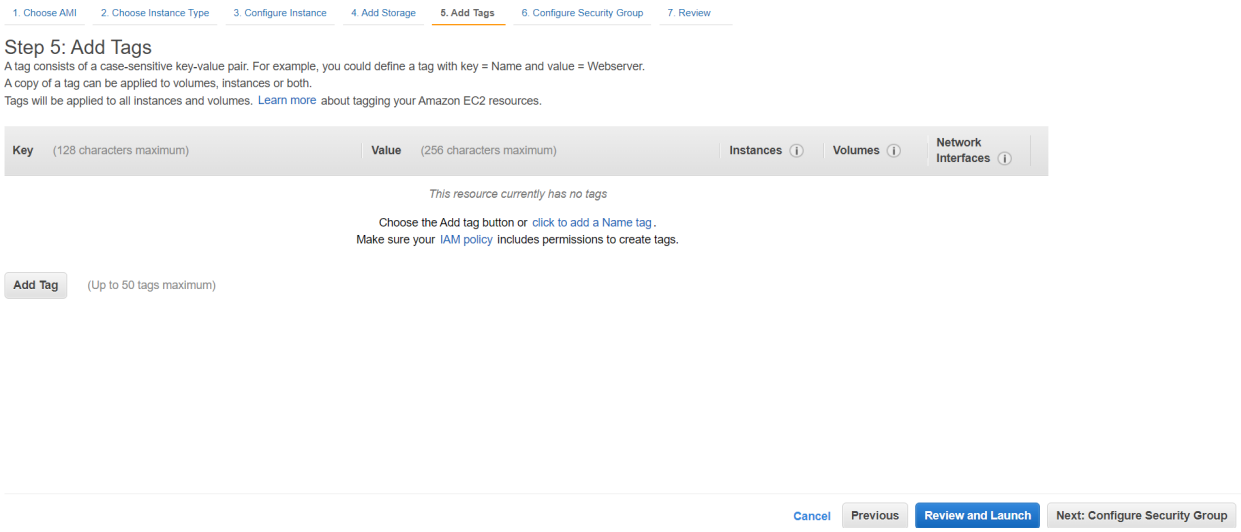
6-Click Next: Add Storage

The Add Storage page enables you to further configure storage options:



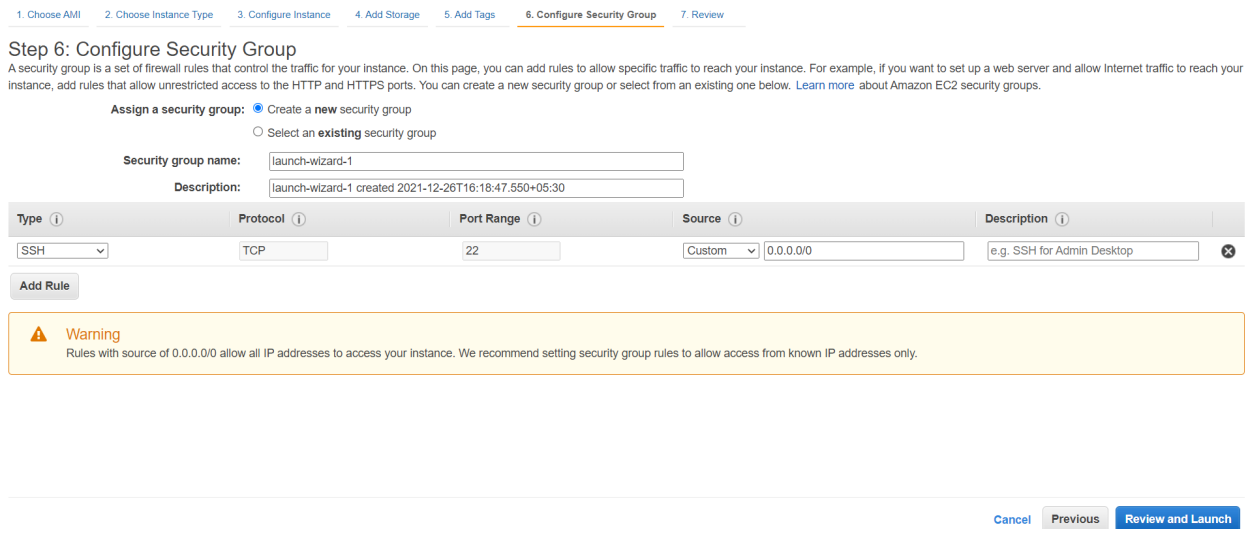
7-Click Next: Add Tags when ready

The Add Tags page provides a helpful way to organize your EC2 instances:



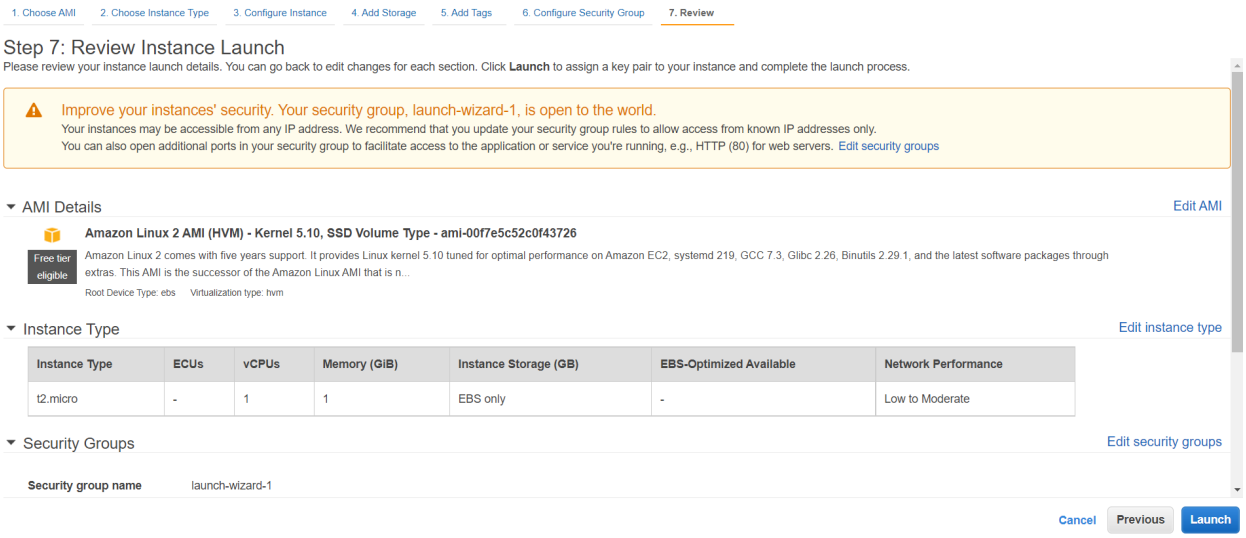
8-Click Next: Configure Security Group when ready

Read the supporting text near the top of the Configure Security Group page of the wizard:



The Warning from AWS is letting you know the default configuration for the security group that is about to be created will grant SSH access from any source IP address (0.0.0.0/0).Production environments should be more restrictive.

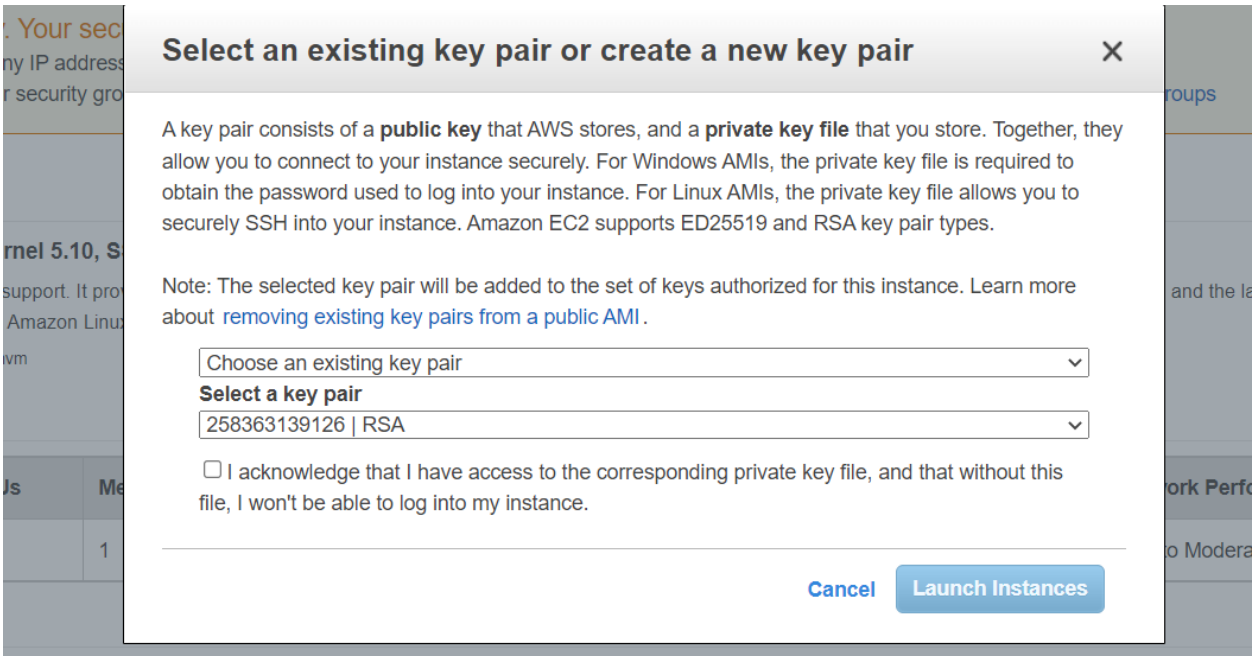
9-Click Review and Launch when ready



Be sure to look over the Instance Type, Instance Details and Storage sections.

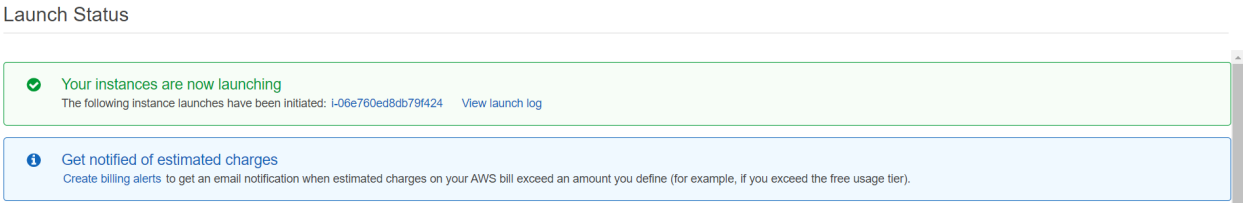
10-Click Launch when ready

11-In the Select an existing key pair or create a new key pair dialog box, select Create a new key pair. Enter *keypair* for the Key pair name, keep the default value for Key pair type, and then click Download Key Pair:



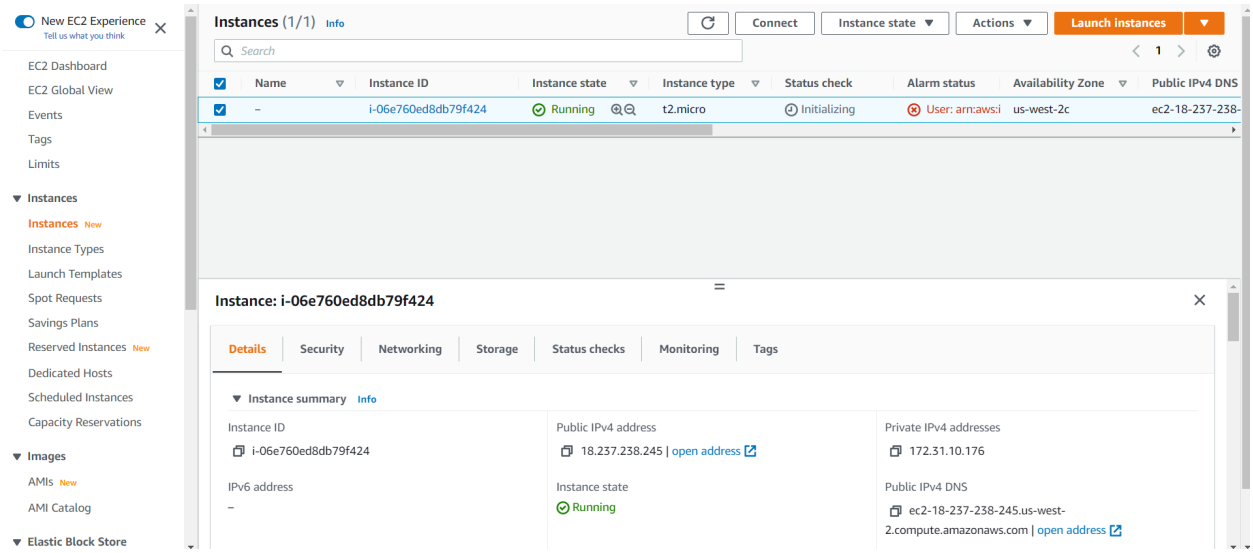
The download will create a file named keypair.pem on your local system. It contains a private key that you can use to connect to the EC2 instance via SSH

12-Click Launch Instances



13-Click the View Instances button (lower right) to close the confirmation page and return to the Instances screen of the EC2 console.

You can view the status of your instance on the Instances screen of the EC2 console:



Components of AWS EC2

1-Amazon Machine Image (AMI)

Amazon Machine Image is like a preconfigured template to launch an EC2 instance with Operating system, tools, applications and more. You can choose AMI based on the project or usage. There are mainly 3 components in AMI

- Root Component Template which consists of Operating system and applications
- Launch permissions to launch EC2 instance
- Block device mapping that is connecting the storage devices to the instance

2-Instances

An instance is a virtual server in the cloud. Its configuration at launch is a copy of the AMI that you specified when you launched the instance.

You can launch different types of instances from a single AMI. Each instance type offers different compute and memory capabilities. Select an instance type based on the amount of memory and computing power that you need for the application or software that you plan to run on the instance.

Storage for your instance

The root device for your instance contains the image used to boot the instance. The root device is either an Amazon Elastic Block Store (Amazon EBS) volume or an instance store volume. EBS is a storage service that is attached to EC2 to store data it's just like a hard drive.

Amazon EC2 Instance Types

Amazon EC2 pricing

There are five ways to pay for Amazon EC2 instances: On-Demand, Savings Plans, Reserved Instances, and Spot Instances. You can also pay for Dedicated Hosts which provide you with EC2 instance capacity on physical servers dedicated for your use.

Reference

What is Amazon EC2?

Amazon Elastic Compute Cloud (Amazon EC2) provides scalable computing capacity in the Amazon Web Services (AWS) Cloud. Using Amazon EC2 eliminates your need to invest in hardware up front, so you can develop and deploy applications faster. You can use Amazon EC2 to launch as many or as few virtual servers

https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/concepts.html

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