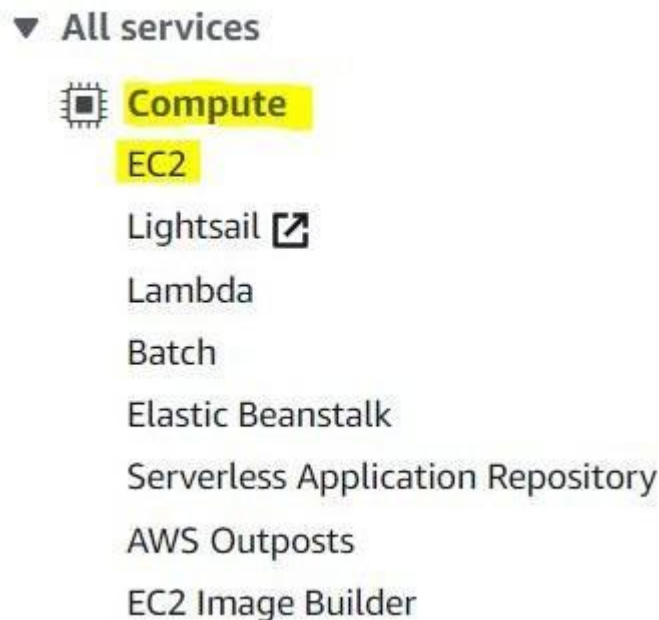


## Launching an EC2 Instance in a VPC

This document will provide you with a step by step guide on how to launch an EC2 instance.

1. On the AWS Management Console, click on the **EC2** service under the **Compute** section as shown below.



2. Once, you do so, you will be redirected to the EC2 dashboard. On this page, you need to click on the dropdown next to the **Launch instance** button and click on **Launch instance** as shown below.

**EC2 Dashboard** New

Events

Tags

Limits

▼ **Instances**

Instances New

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts New

Scheduled Instances

Capacity Reservations

Elastic IPs 0

Key pairs 4

Placement groups 0

Snapshots 0

### Launch instance

To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.

**Launch instance** ▼

Note: Your instances will launch in the US East (N. Virginia) Region

### Launch instance

To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.

**Launch instance** ▲

Launch instance

Launch instance from template

US East (N. Virginia)

- Now, you will be redirected to a new page. On this page, you will need to select the **Amazon Machine Image** (AMI) for your EC2 instance. For the purpose of this demonstration, you need to select the machine image that is eligible for the

free tier. For this select the check-box next to the Free tier only as shown below. This will show you all the machines images that are eligible for the free tier.

Search for an AMI by entering a search term e.g. "Windows"

Search by Systems Manager parameter

Quick Start

My AMIs

AWS Marketplace

Community AMIs

☒ Free tier only ⓘ

**Amazon Linux 2 AMI (HVM), SSD Volume Type** - ami-0be2609ba883822ec (64-bit x86) / ami-0c582118883b46f4f (64-bit Arm)

**Amazon Linux**  
Free tier eligible

Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is approaching end of life on December 31, 2020 and has been removed from this wizard.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

**Select**

☒ 64-bit (x86)  
☐ 64-bit (Arm)

**Red Hat Enterprise Linux 8 (HVM), SSD Volume Type** - ami-096fda3c22c1c990a

**Red Hat**  
Free tier eligible

Red Hat Enterprise Linux version 8 (HVM), EBS General Purpose (SSD) Volume Type

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

**Select**

64-bit (x86)

**SUSE Linux Enterprise Server 15 SP2 (HVM), SSD Volume Type** - ami-0fde50fcbcd46f2f7 (64-bit x86) / ami-05f2f5f76d89313bb (64-bit Arm)

**SUSE Linux**  
Free tier eligible

SUSE Linux Enterprise Server 15 Service Pack 2 (HVM), EBS General Purpose (SSD) Volume Type. Amazon EC2 AMI Tools preinstalled: Apache 2.2, MySQL 5.5, PHP 5.3, and Ruby 1.8.7 available.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

**Select**

☒ 64-bit (x86)  
☐ 64-bit (Arm)

4. Next, you need to select the machine image. Select the Amazon Linux 2 AMI. Click on the **Select** button next to this AMI as shown below.

**Amazon Linux 2 AMI (HVM), SSD Volume Type** - ami-0be2609ba883822ec (64-bit x86) / ami-0c582118883b46f4f (64-bit Arm)

**Amazon Linux**  
Free tier eligible

Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is approaching end of life on December 31, 2020 and has been removed from this wizard.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

**Select**

☒ 64-bit (x86)  
☐ 64-bit (Arm)

**Red Hat Enterprise Linux 8 (HVM), SSD Volume Type** - ami-096fda3c22c1c990a

**Red Hat**  
Free tier eligible

Red Hat Enterprise Linux version 8 (HVM), EBS General Purpose (SSD) Volume Type

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

**Select**

64-bit (x86)

5. Now, you will be redirected to a new page. On this page, you need to select the **Instance Type**. Select the **t2.micro** instance type as it is eligible for the free tier. This is the instance type that is selected by default.

## Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and network you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: **All instance families** **Current generation** **Show/Hide Columns**

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz, -, 1 GiB memory, EBS only)

	Family	Type	vCPUs ⓘ	Memory (GiB)	Instance Storage (GB) ⓘ	EBS-Optimized Available ⓘ	Network Performance ⓘ
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate
<input checked="" type="checkbox"/>	t2	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate
<input type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate

- Next, click on the button which says **Next: Configure Instance Details** in the bottom right corner of the screen as shown below.

<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	t2	t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t2	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t3	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes

[Cancel](#)
[Previous](#)
[Review and Launch](#)
[Next: Configure Instance Details](#)

- Now, you will be redirected to a new page. On this page, you will be selecting the **VPC** and the **subnet** for the EC2 instance.
- For the field **Network** and **Subnet** leave the settings as default. This will launch your EC2 instance in the default VPC that comes with your AWS account. Also, make sure that the number of instances is 1.

In the **Network**, click on dropdown and select **upgrad\_vpc**

In the **Auto-assign Public IP** click on the dropdown and select **Enable**.

### Step 3: Configure Instance Details

Number of instances  [Launch into Auto Scaling Group](#)

Purchasing option ☐ Request Spot instances

Network  [Create new VPC](#)

Subnet  [Create new subnet](#)  
250 IP Addresses available

Auto-assign Public IP

Placement group ☐ Add instance to placement group

Capacity Reservation

Domain join directory  [Create new directory](#)

IAM role  [Create new IAM role](#)

[Cancel](#)
[Previous](#)
[Review and Launch](#)
[Next: Add Storage](#)

## 9. Leave the rest of the settings as default. Next, click on the button **Next: Add Storage**.

### Step 3: Configure Instance Details

Number of instances	1	<a href="#">Launch into Auto Scaling Group</a>
Purchasing option	<input type="checkbox"/> Request Spot instances	
Network	vpc-0746afceb9aaaa6ee   upgrad_vpc	<a href="#">Create new VPC</a>
Subnet	subnet-044da6c3ef6421255   Public subnet   us-east 250 IP Addresses available	<a href="#">Create new subnet</a>
Auto-assign Public IP	Enable	
Placement group	<input type="checkbox"/> Add instance to placement group	
Capacity Reservation	Open	
Domain join directory	No directory	<a href="#">Create new directory</a>
IAM role	None	<a href="#">Create new IAM role</a>

[Cancel](#)
[Previous](#)
[Review and Launch](#)
[Next: Add Storage](#)

## 10. Select **size** as **10**, from **Volume Type** dropdown select **Magnetic(standard)** and click on the **Next: Add Tags** button.

### Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/xvda	snap-0a03896cf2695e901	10	Magnetic (standard)	N/A	N/A	<input checked="" type="checkbox"/>	Not Encrypt

[Add New Volume](#)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

[Cancel](#)
[Previous](#)
[Review and Launch](#)
[Next: Add Tags](#)

11. On this page, you can add a name tag to your EC2 instance. Click on the text which reads **click to add a Name tag** as shown in the image below.

#### Step 5: Add Tags

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver.

A copy of a tag can be applied to volumes, instances or both.

Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

Key (128 characters maximum)	Value (256 characters maximum)	Instances ⓘ	Volumes ⓘ
------------------------------	--------------------------------	-------------	-----------

*This resource currently has no tags*

Choose the Add tag button or **click to add a Name tag.**

Make sure your [IAM policy](#) includes permissions to create tags.

12. In the value field, you can enter any name of your choice.

#### Step 5: Add Tags

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver.

A copy of a tag can be applied to volumes, instances or both.

Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

Key (128 characters maximum)	Value (256 characters maximum)	Instances ⓘ	Volumes ⓘ	Network Interfaces ⓘ
------------------------------	--------------------------------	-------------	-----------	----------------------

Name	upGrad-MongoDB	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="X"/>
------	----------------	-------------------------------------	-------------------------------------	-------------------------------------	----------------------------------

13. Now click on the button **Next: Configure Security Group** as shown below.

#### Step 5: Add Tags

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver.

A copy of a tag can be applied to volumes, instances or both.

Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

Key	Value	Instances	Volumes	Network Interfaces
Name	upGrad-MongoDB	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

[Add another tag](#) (Up to 50 tags maximum)

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Configure Security Group](#)

14. On this page, you need to specify the security group for the instance that you are creating. Click on **Select an existing Security group**.

Choose the security group you created - **mongo-db-security-group**

#### Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: ☐ Create a new security group

☒ Select an existing security group

Security Group ID	Name	Description	Actions
<input type="checkbox"/> sg-0126270472319ab38	default	default VPC security group	<a href="#">Copy to new</a>
<input checked="" type="checkbox"/> sg-0c8923349f7cb2cba	mongo-db-security-group	This is for the mongoDB server	<a href="#">Copy to new</a>

15. One rule which is the All TCP has already been added to the security group.

Under the **Source** field, click on the dropdown and select **My IP** as shown below.

Description: launch-wizard-6 created 2021-02-03T21:22:07.091+05:30

Type ⓘ	Protocol ⓘ	Port Range ⓘ	Source ⓘ	Description ⓘ
All TCP ▼	TCP	0 - 65535	My IP ▼ 49.36.133.11/32	e.g. SSH for Admin Desktop

Add Rule

16. Next click on the **Review and Launch** button.

Cancel Previous **Review and Launch**

17. A 'Boot from GeneralPurpose' box will appear, choose the third option and click on **Next**.

### Boot from General Purpose (SSD) ×

General Purpose (SSD) volumes provide the ability to burst to 3000 IOPS per volume, independent of volume size, to meet the performance needs of most applications and also deliver a consistent baseline of 3 IOPS/GiB.

☐ Make General Purpose (SSD) the default boot volume for all instance launches from the console going forward (recommended).
   
☐ Make General Purpose (SSD) the boot volume for this instance.
   
☒ Continue with Magnetic as the boot volume for this instance.

Free tier eligible customers can get up to 30GB of General Purpose (SSD) storage.

☐ Don't show again

**Next**



18. On this page, you can review the settings for the EC2 instance that you are about to launch. Now, to launch this instance, you need to click on the **Launch** button as shown below.

## Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

▼ AMI Details

**Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-047a51fa27710816e**

Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is a...  
Root Device Type: ebs    Virtualization type: hvm

Edit AMI

▼ Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	-	1	1	EBS only	-	Low to Moderate

Edit instance type

▼ Security Groups

Security Group ID	Name	Description
-------------------	------	-------------

Cancel

Previous

Launch

19. Once, you click on this button, it will prompt you to select a key pair for this EC2 instance.

If this is the first time you are launching an EC2 instance, you need to generate a new key pair. Click on the dropdown and select **Create a new key pair** as shown below.

You also need to specify a name for the key pair. You can name it anything as per your convenience.

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Create a new key pair

Key pair name

upGrad\_mongoDB

Download Key Pair

You have to download the **private key file** (\*.pem file) before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.

20. After you have named it, click on the **Download Key Pair** button as shown below

A **.pem** file will be downloaded. If you are using a Linux or Mac operating system, you will need this **.pem** file to login to your EC2 instance. If you are a Windows user, you will need to convert this file to a **.ppk** to login to your EC2 instance.

**Irrespective of the operating system, it is very important to keep this .pem file safe. Under no circumstances, you should lose this file.**

21. Once you have downloaded the key pair, then you can launch the EC2 instance. To launch the EC2 instance, click on the **Launch Instances** button as shown below.

### Select an existing key pair or create a new key pair ×

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Create a new key pair

**Key pair name**  
upGrad\_mongoDB

Download Key Pair

... You have to download the **private key file** (\*.pem file) before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.

Cancel

Launch Instances

22. A new page will appear which says **Your instances are now launching**. Scroll down to the bottom and click on the **View Instances** button as shown below.

## Launch Status



### Your instances are now launching

The following instance launches have been initiated: i-0e49785211a8f451f [View launch log](#)



### Get notified of estimated charges

Create billing alerts to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

### How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances.

Click **View Instances** to monitor your instances' status. Once your instances are in the **running** state, you can **connect** to them from the instances screen. Find out how to connect to your instances.

### Here are some helpful resources to get you started

- [How to connect to your Linux instance](#)
- [Amazon EC2: User Guide](#)
- [Learn about AWS Free Usage Tier](#)
- [Amazon EC2: Discussion Forum](#)

### While your instances are launching you can also

- [Create status check alarms to be notified when these instances fail status checks.](#) (Additional charges may apply)
- [Create and attach additional EBS volumes](#) (Additional charges may apply)
- [Manage security groups](#)

[View Instances](#)

23. On this page, you can see the instance that you have just launched.

Instances (4) <a href="#">Info</a>							<a href="#">Refresh</a>	<a href="#">Connect</a>	<a href="#">Instance state</a> ▼	<a href="#">Actions</a> ▼	<a href="#">Launch ins</a>
<input type="text" value="Filter instances"/>											
<input type="checkbox"/>	Name ▼	Instance ID	Instance state ▼	Instance type ▼	Status check	Alarm status					
<input type="checkbox"/>	upGrad-Mon...	i-01175a7001ed9abba	⊖ Stopped	t2.micro	–	No alarms	+				
<input type="checkbox"/>	MongoDB1	i-0b0d2555039d585d5	⊖ Stopped	t2.micro	–	No alarms	+				
<input type="checkbox"/>	MongoDB_H...	i-096845eaab5e5fb84	⊖ Stopped	t2.micro	–	No alarms	+				
<input type="checkbox"/>	upGrad-Mon...	i-099beba194aac7220	⊕ Running	t2.micro	⌚ Initializing	No alarms	+				

You can see that the name is upGrad-mongoDB and the instance type is **t2.micro**.

With this, you have successfully launched a new EC2 instance within a VPC that you had created earlier.