

What is AWS?

- AWS stands for **Amazon Web Services**.
- The AWS service is provided by the Amazon that uses distributed IT infrastructure to provide different IT resources available on demand. It provides different services such as infrastructure as a service (IaaS), platform as a service (PaaS) and packaged software as a service (SaaS).
- Amazon launched AWS, a cloud computing platform to allow the different organizations to take advantage of reliable IT infrastructure.

Uses of AWS

- A small manufacturing organization uses their expertise to expand their business by leaving their IT management to the AWS.
- A large enterprise spread across the globe can utilize the AWS to deliver the training to the distributed workforce.
- An architecture consulting company can use AWS to get the high-compute rendering of construction prototype.
- A media company can use the AWS to provide different types of content such as ebox or audio files to the worldwide files.

Pay-As-You-Go

Based on the concept of Pay-As-You-Go, AWS provides the services to the customers.

AWS provides services to customers when required without any prior commitment or upfront investment. Pay-As-You-Go enables the customers to procure services from AWS.

- Computing
- Programming models
- Database storage
- Networking



Advantages of AWS

1) Flexibility

- We can get more time for core business tasks due to the instant availability of new features and services in AWS.
- It provides effortless hosting of legacy applications. AWS does not require learning new technologies and migration of applications to the AWS provides the advanced computing and efficient storage.
- AWS also offers a choice that whether we want to run the applications and services together or not. We can also choose to run a part of the IT infrastructure in AWS and the remaining part in data centres.

2) Cost-effectiveness

AWS requires no upfront investment, long-term commitment, and minimum expense when compared to traditional IT infrastructure that requires a huge investment.

3) Scalability/Elasticity

Through AWS, autoscaling and elastic load balancing techniques are automatically scaled up or down, when demand increases or decreases respectively. AWS techniques are ideal for handling unpredictable or very high loads. Due to this

reason, organizations enjoy the benefits of reduced cost and increased user satisfaction.

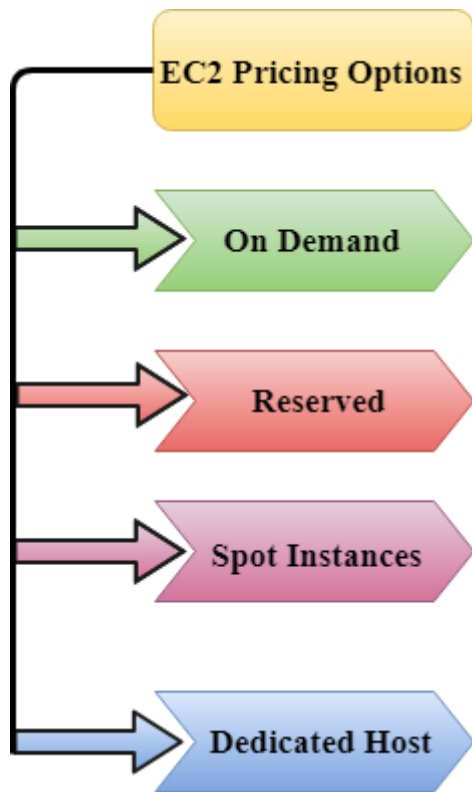
4) Security

- AWS provides end-to-end security and privacy to customers.
- AWS has a virtual infrastructure that offers optimum availability while managing full privacy and isolation of their operations.
- Customers can expect high-level of physical security because of Amazon's several years of experience in designing, developing and maintaining large-scale IT operation centers.
- AWS ensures the three aspects of security, i.e., Confidentiality, integrity, and availability of user's data.

What is EC2?

- EC2 stands for Amazon Elastic Compute Cloud.
- Amazon EC2 is a web service that provides resizable compute capacity in the cloud.
- Amazon EC2 reduces the time required to obtain and boot new user instances to minutes rather than in older days, if you need a server then you had to put a purchase order, and cabling is done to get a new server which is a very time-consuming process. Now, Amazon has provided an EC2 which is a virtual machine in the cloud that completely changes the industry.
- You can scale the compute capacity up and down as per the computing requirement changes.
- Amazon EC2 changes the economics of computing by allowing you to pay only for the resources that you actually use. Rather than you previously buy physical servers, you would look for a server that has more CPU capacity, RAM capacity and you buy a server over 5 year term, so you have to plan for 5 years in advance. People spend a lot of capital in such investments. EC2 allows you to pay for the capacity that you actually use.
- Amazon EC2 provides the developers with the tools to build resilient applications that isolate themselves from some common scenarios.

EC2 Pricing Options



On Demand

- It allows you to pay a fixed rate by the hour or even by the second with no commitment.
- Linux instance is by the second and windows instance is by the hour.
- On Demand is perfect for the users who want low cost and flexibility of Amazon EC2 without any up-front investment or long-term commitment.
- It is suitable for the applications with short term, spiky or unpredictable workloads that cannot be interrupted.
- It is useful for the applications that have been developed or tested on Amazon EC2 for the first time.
- On Demand instance is recommended when you are not sure which instance type is required for your performance needs.

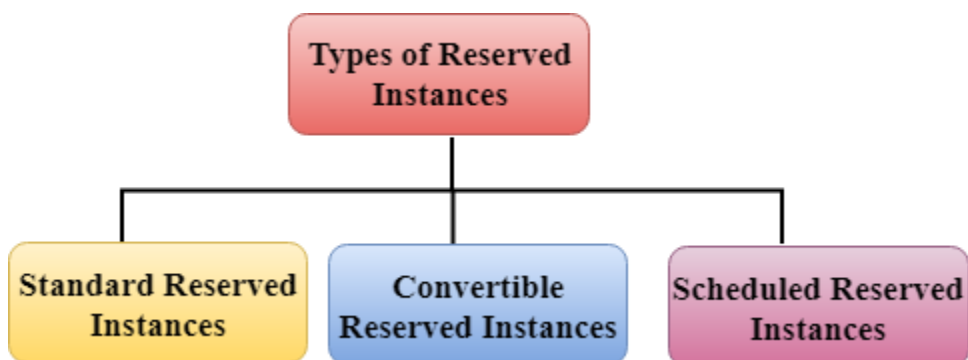
Reserved

- It is a way of making a reservation with Amazon or we can say that we make a contract with Amazon. The contract can be for 1 or 3 years in length.

- In a Reserved instance, you are making a contract means you are paying some upfront, so it gives you a significant discount on the hourly charge for an instance.
- It is useful for applications with steady state or predictable usage.
- It is used for those applications that require reserved capacity.
- Users can make up-front payments to reduce their total computing costs. For example, if you pay all your upfronts and you do 3 years contract, then only you can get a maximum discount, and if you do not pay all upfronts and do one year contract then you will not be able to get as much discount as you can get If you do 3 year contract and pay all the upfronts.

Types of Reserved Instances:

- Standard Reserved Instances
- Convertible Reserved Instances
- Scheduled Reserved Instances



Standard Reserved Instances

- It provides a discount of up to 75% off on demand. For example, you are paying all up-fronts for 3 year contract.
- It is useful when your Application is at the steady-state.

Convertible Reserved Instances

- It provides a discount of up to 54% off on demand.
- It provides the feature that has the capability to change the attributes of RI as long as the exchange results in the creation of Reserved Instances of equal or greater value.
- Like Standard Reserved Instances, it is also useful for the steady state applications.

Scheduled Reserved Instances

- Scheduled Reserved Instances are available to launch within the specified time window you reserve.
 - It allows you to match your capacity reservation to a predictable recurring schedule that only requires a fraction of a day, a week, or a month.
-

Spot Instances

- It allows you to bid for a price whatever price that you want for instance capacity, and providing better savings if your applications have flexible start and end times.
 - Spot Instances are useful for those applications that have flexible start and end times.
 - It is useful for those applications that are feasible at very low compute prices.
 - It is useful for those users who have an urgent need for large amounts of additional computing capacity.
 - EC2 Spot Instances provide less discounts as compared to On Demand prices.
 - Spot Instances are used to optimize your costs on the AWS cloud and scale your application's throughput up to 10X.
 - EC2 Spot Instances will continue to exist until you terminate these instances.
-

Dedicated Hosts

- A dedicated host is a physical server with EC2 instance capacity which is fully dedicated to your use.
- The physical EC2 server is the dedicated host that can help you to reduce costs by allowing you to use your existing server-bound software licenses. For example, VMware, Oracle, SQL Server depending on the licenses that you can bring over to AWS and then they can use the Dedicated host.
- Dedicated hosts are used to address compliance requirements and reduces host by allowing to use your existing server-bound server licenses.
- It can be purchased as a Reservation for up to 70% off On-Demand price.

Creating an EC2 instance

- Sign in to the AWS Management Console.
- Click on the EC2 service.
- Click on the **Launch Instance** button to create a new instance.

The screenshot shows the AWS Management Console EC2 Dashboard. The left sidebar contains navigation links for EC2 Dashboard, Events, Tags, Reports, Limits, INSTANCES (Instances, Launch Templates, Spot Requests, Reserved Instances, Dedicated Hosts, Capacity Reservations), IMAGES (AMIs, Bundle Tasks), and ELASTIC BLOCK STORE (Volumes, Snapshots). The main content area is titled 'Resources' and shows a summary of EC2 resources in the US East (Ohio) region: 0 Running Instances, 0 Elastic IPs, 0 Dedicated Hosts, 0 Snapshots, 0 Volumes, 0 Load Balancers, 0 Key Pairs, 1 Security Groups, and 0 Placement Groups. Below this is a 'Create Instance' section with a 'Launch Instance' button and a note that instances will launch in the US East (Ohio) region. The 'Service Health' section shows 'US East (Ohio)' with 'No events'. The right sidebar contains 'Account Attributes' (Supported Platforms, Default VPC, Resource ID length management, Console experiments), 'Additional Information' (Getting Started Guide, Documentation, All EC2 Resources, Forums, Pricing, Contact Us), and 'AWS Marketplace' (Find free software trial products in the AWS Marketplace from the EC2 Launch Wizard).

- Now, we have different Amazon Machine Images. These are the snapshots of different virtual machines. We will be using Amazon Linux AMI 2018.03.0 (HVM) as it has built-in tools such as java, python, ruby, perl, and especially AWS command line tools.

The screenshot shows the 'Step 1: Choose an Amazon Machine Image (AMI)' screen in the AWS Management Console. The top navigation bar includes '1. Choose AMI', '2. Choose Instance Type', '3. Configure Instance', '4. Add Storage', '5. Add Tags', '6. Configure Security Group', and '7. Review'. The main content area is titled 'Quick Start' and shows a list of AMIs. The first AMI is 'Amazon Linux 2 AMI (HVM), SSD Volume Type' with ID 'ami-04328208f4f0cf1fe' (64-bit x86) / 'ami-0cc848dfaa82172af' (64-bit Arm). The second AMI is 'Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type' with ID 'ami-0cd3dfa4e37921605' (64-bit x86). The third AMI is 'Red Hat Enterprise Linux 7.6 (HVM), SSD Volume Type' with ID 'ami-0b500ef59d8335eee' (64-bit x86) / 'ami-0302c1ecc74930ba5' (64-bit Arm). The left sidebar shows 'My AMIs', 'AWS Marketplace', and 'Community AMIs' with a 'Free tier only' filter selected. The right sidebar shows 'Cancel and Exit' and a '1 to 20 of 20 AMIs' indicator.

- Choose an Instance Type, and then click on the Next. Suppose I choose a t2.micro as an instance type.

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 networking capacity, and give 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 types** **Current generation** [Show/Hide Columns](#)

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes

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

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- The main setup page of EC2 is shown below where we define setup configuration.

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances 1 [Launch into Auto Scaling Group](#)

Purchasing option ☐ Request Spot instances

Network vpc-dacbc4b2 (default) [Create new VPC](#)

Subnet No preference (default subnet in any Availability Zone) [Create new subnet](#)

Auto-assign Public IP Use subnet setting (Enable)

Placement group ☐ Add instance to placement group

Capacity Reservation Open [Create new Capacity Reservation](#)

IAM role None [Create new IAM role](#)

Shutdown behavior Stop

Enable termination protection ☒ Protect against accidental termination

Monitoring ☐ Enable CloudWatch detailed monitoring
Additional charges apply.

Tenancy Shared - Run a shared hardware instance
Additional charges will apply for dedicated tenancy.

Elastic Inference ☐ Add an Elastic Inference accelerator
Additional charges apply.

T2/T3 Unlimited ☐ Enable
Additional charges may apply

Advanced Details

User data ☒ As text ☐ As file ☐ Input is already base64 encoded
(Optional)

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

Where,

Number of Instances: It defines how many EC2 instances you want to create. I leave it as 1 as I want to create only one instance.

Purchasing Option: In the purchasing option, you need to set the price, request from, request to, and persistent request. Right now, I leave it as unchecked.

Tenancy: Click on the **Shared-Run a shared hardware instance** from the dropdown menu as we are sharing hardware.

Network: Choose your network, set it as default, i.e., **vpc-dacbc4b2 (default)** where vpc is a virtual private cloud where we can launch the AWS resources such as EC2 instances in a virtual cloud.

Subnet: It is a range of IP addresses in a virtual cloud. In a specified subnet, you can add new AWS resources.

Shutdown behavior: It defines the behavior of the instance type. You can either stop or terminate the instance when you shut down the Linux machine. Now, I leave it as Stop.

Enable Termination Protection: It allows the people to protect against the accidental termination.

Monitoring: We can monitor things such as CPU utilization. Right now, I uncheck the Monitoring.

User data: In Advanced details, you can pass the bootstrap scripts to EC2 instance. You can tell them to download PHP, Apache, install the Apache, etc.

- Now, add the EBS volume and attach it to the EC2 instance. Root is the default EBS volume. Click on the **Next**.

The screenshot shows the AWS Management Console interface for configuring an EC2 instance. The top navigation bar includes the AWS logo, 'Services', 'Resource Groups', and user information. The breadcrumb trail indicates the current step is '4. Add Storage'.

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 ⓘ	Encrypted ⓘ
Root	/dev/xvda	snap-040ce2c3f0d1a8f58	8	Magnetic (standard) ▼	N/A	N/A	<input checked="" type="checkbox"/>	Not Encrypted

[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.

At the bottom, there are navigation buttons: 'Cancel', 'Previous', 'Review and Launch' (highlighted), and 'Next: Add Tags'.

Volume Type: We select the Magnetic (standard) as it is the only disk which is bootable.

Delete on termination: It is checked means that the termination of an EC2 instance will also delete EBS volume.

- Now, Add the Tags and then click on the Next.

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 (127 characters maximum)	Value (255 characters maximum)	Instances	Volumes	
Name	MyEc2webserver	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	✕
Department	Developer	<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](#)

In the above screen, we observe that we add two tags, i.e., the name of the server and department. Create as many tags as you can as it reduces the overall cost.

- Configure Security Group. The security group allows some specific traffic to access your instance.

Step 6: Configure Security Group

A security group is a set of firewall rules that control inbound and outbound traffic to 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 name: WebServer

Description: WebServer

Type	Protocol	Port Range	Source	Description	
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop	✕
HTTP	TCP	80	Custom 0.0.0.0/0 ::/0	e.g. SSH for Admin Desktop	✕
HTTPS	TCP	443	Custom 0.0.0.0/0 ::/0	e.g. SSH for Admin Desktop	✕

[Add Rule](#)

[Cancel](#) [Previous](#) [Review and Launch](#)

- Review an EC2 instance that you have just configured, and then click on the Launch button.

The screenshot shows the 'Step 7: Review Instance Launch' page in the AWS Management Console. The page is for launching an Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type. The instance type is t2.micro. The security group is WebServer. The page includes a table for instance details and a table for security group rules.

Instance Type

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

Security Groups

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	0.0.0.0/0	
HTTP	TCP	80	0.0.0.0/0	
HTTP	TCP	80	:::0	
HTTPS	TCP	443	0.0.0.0/0	
HTTPS	TCP	443	:::0	

Buttons: Cancel, Previous, Launch

- Create a new key pair and enter the name of the key pair. Download the Key pair.

The screenshot shows a dialog box titled 'Select an existing key pair or create a new key pair'. It contains instructions on how to use a key pair to connect to an instance. A dropdown menu is set to 'Create a new key pair'. The 'Key pair name' field contains 'ec2instance'. A 'Download Key Pair' button is visible. A message box states: '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.' At the bottom are 'Cancel' and 'Launch Instances' buttons.

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

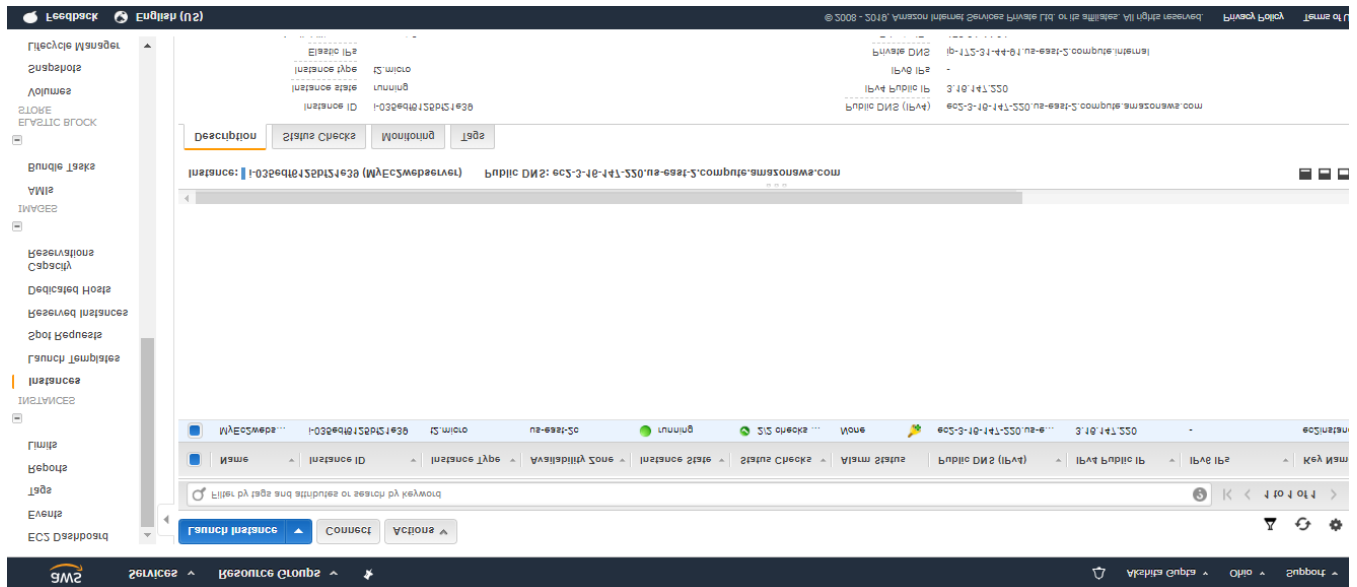
ec2instance

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

- Click on the Launch Instances button.



- To use an EC2 instance in Windows, you need to install both **Putty** and **PuttyKeyGen**.
- Download the **Putty** and **PuttyKeyGen**.

Security Group

- A security group is a virtual firewall which is controlling the traffic to your EC2 instances.
- When you first launch an EC2 instance, you can associate it with one or more security groups.
- A Security group is the first defence against hackers.

Let's understand the concept of security group through an example.

- Sign in to the AWS Management console.
- Launch a new EC2 instance.
- Choose an Amazon Machine Image.

aws Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

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

Quick Start

- My AMIs
- AWS Marketplace
- Community AMIs
- Free tier only

AMI	Description	Root device type	Virtualization type	Architecture
Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-04328208f40cf1fe (64-bit x86) / ami-0cc848dfa82172af (64-bit Arm)	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 2.28, Binutils 2.29.1, and the latest software packages through extras.	ebs	hvm	64-bit (x86) / 64-bit (Arm)
Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type - ami-0cd3dfa4e37921605	The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.	ebs	hvm	64-bit (x86)
Red Hat Enterprise Linux 7.6 (HVM), SSD Volume Type - ami-0b500ef59d8335eee (64-bit x86) / ami-0302c1ecc74930ba5 (64-bit Arm)	Red Hat Enterprise Linux version 7.6 (HVM), EBS General Purpose (SSD) Volume Type	ebs	hvm	64-bit (x86) / 64-bit (Arm)
SUSE Linux Enterprise Server 15 (HVM), SSD Volume Type - ami-0eb9f58db22854f8f	SUSE Linux Enterprise Server 15 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.	ebs	hvm	64-bit (x86)

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- Choose the instance type. Suppose I choose the instance, i.e., t2.micro, and then click on the **Next**.

aws Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

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 networking capacity, and give 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 types Current generation Show/Hide Columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes

Cancel Previous Review and Launch Next: Configure Instance Details

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- Now, configure the Instance details. Keep all the details as default, and then click on the **Next**.

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

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

Purchasing option ☐ Request Spot instances

Network [Create new VPC](#)

Subnet [Create new subnet](#)

Auto-assign Public IP

Placement group ☐ Add instance to placement group

Capacity Reservation [Create new Capacity Reservation](#)

IAM role [Create new IAM role](#)

Shutdown behavior

Enable termination protection ☐ Protect against accidental termination

Monitoring ☐ Enable CloudWatch detailed monitoring
Additional charges apply.

Tenancy
Additional charges will apply for dedicated tenancy.

Elastic Inference ☐ Add an Elastic Inference accelerator

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

- Attach the EBS Volume to your EC2 instance. By default, Root is the default EBS volume which is attached to your EC2 instance. Click on the **Next**.

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	Encrypted
Root	/dev/xvda	snap-0ba107d12d889f010	<input type="text" value="8"/>	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

[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](#)

- Add tags.

aws

Services

Resource Groups

Akshita Gupta

Ohio

Support

1. Choose AMI

2. Choose Instance Type

3. Configure Instance

4. Add Storage

5. Add Tags

6. Configure Security Group

7. Review

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 (127 characters maximum)	Value (255 characters maximum)	Instances	Volumes	
Name	EC2server	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="X"/>
Role	Developer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="X"/>

Add another tag

(Up to 50 tags maximum)

Cancel

Previous

Review and Launch

Next: Configure Security Group

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- Configure Security Group. Select an existing security group that you created previously, i.e., **WebServer**.

aws

Services

Resource Groups

Akshita Gupta

Ohio

Support

1. Choose AMI

2. Choose Instance Type

3. Configure Instance

4. Add Storage

5. Add Tags

6. Configure Security Group

7. Review

Step 6: Configure Security Group

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-44f3582b	default	default VPC security group	Copy to new
<input checked="" type="checkbox"/> sg-094233cbc069fc0dc	WebServer	WebServer	Copy to new

Inbound rules for sg-094233cbc069fc0dc (Selected security groups: sg-094233cbc069fc0dc)

Type	Protocol	Port Range	Source	Description
HTTP	TCP	80	0.0.0.0/0	

Cancel

Previous

Review and Launch

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Step 7: Review Instance Launch

Security Groups

Edit security groups

Security Group ID	Name	Description
sg-094233cbc069fc0dc	WebServer	WebServer

All selected security groups inbound rules

Type	Protocol	Port Range	Source	Description
HTTP	TCP	80	0.0.0.0/0	
HTTP	TCP	80	::/0	
SSH	TCP	22	0.0.0.0/0	
HTTPS	TCP	443	0.0.0.0/0	

Cancel

Previous

Launch

The above screen shows that a WebServer is a security group that consists of inbound rules such as protocol, port range, and source address.

- Click on the **Review and Launch** button.

The screenshot displays the AWS Management Console interface during the 'Step 7: Review Instance Launch' process. The top navigation bar includes the AWS logo, 'Services', 'Resource Groups', and user information. The breadcrumb trail shows steps from 'Choose AMI' to 'Review'. A prominent yellow warning box states: 'Improve your instances' security. Your security group, WebServer, is open to the world. Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. Edit security groups'. Below this, the 'AMI Details' section for 'Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-04328208f4f0cf1fe' is shown, noting it is 'Free tier eligible'. The 'Instance Type' section is partially visible. At the bottom right, 'Cancel', 'Previous', and 'Launch' buttons are present.

From the above screen, we observe that the security group, WebServer is open to the world means that SSH port is open to the world.

AMI

- An AMI stands for **Amazon Machine Images**.
- An AMI is a virtual image used to create a virtual machine within an EC2 instance.
- You can also create multiple instances using single AMI when you need instances with the same configuration.
- You can also create multiple instances using different AMI when you need instances with a different configuration.
- It also provides a template for the root volume of an instance.

AMI Lifecycle

- First, you need to create and register an AMI.

- You can use an AMI to launch EC2 instances.
- You can also copy an AMI to some different region.
- When AMI is no longer required, then you can also deregister it.