

# Amazon Machine Image(AMI)

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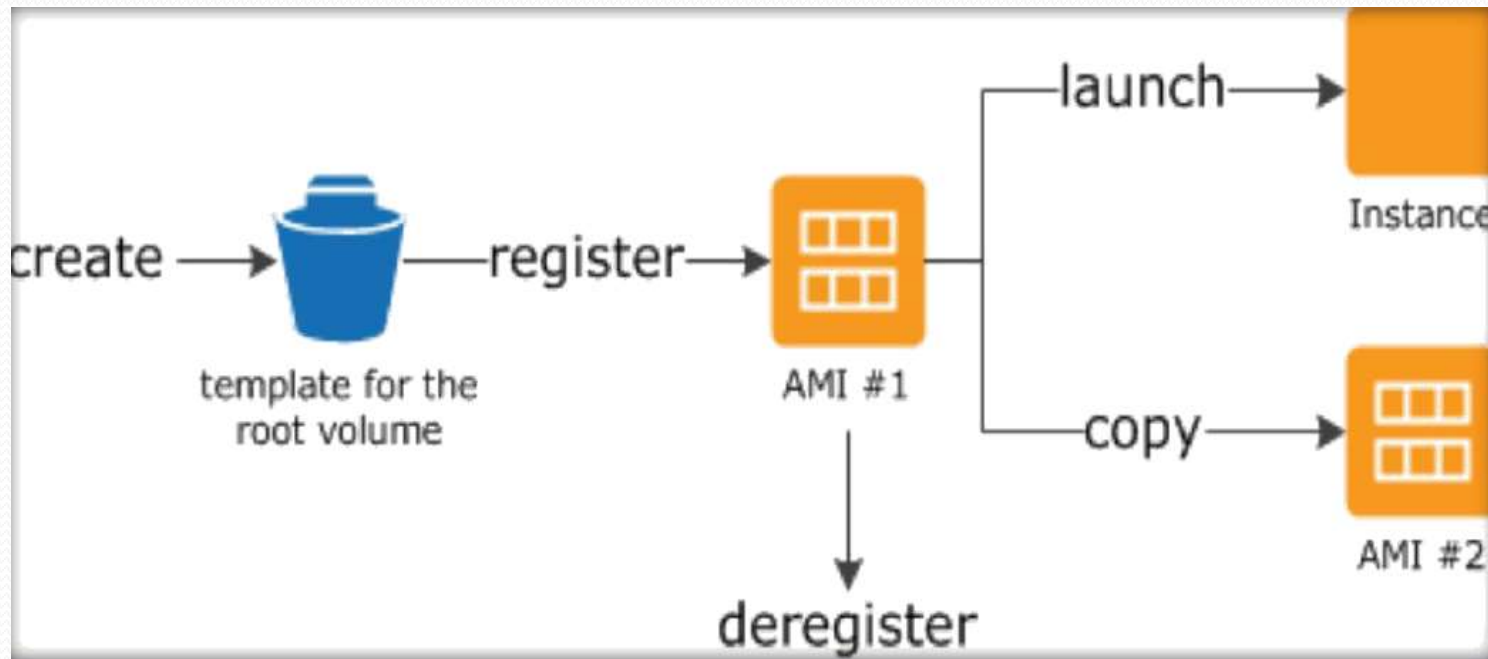
- **When I launch an instance, what software will be installed on it?**
  - Software is taken from an Amazon Machine Image (AMI)
  - Selected when you launch an instance
- Essentially a file system that contains the operating system, applications, and potentially other data
- Lives in S3
- **How do I get an AMI?**
  - Amazon provides several generic ones, e.g., Amazon Linux, Fedora Core, Windows Server, ...
- You can make your own

# AMAZON MACHINE IMAGE (AMI)

- **An Amazon Machine Image (AMI)** provides the information required to launch an instance, which is a virtual server in the cloud. You specify an AMI when you launch an instance, and you can launch as many instances from the AMI as you need. You can also launch instances from as many different AMIs as you need.
- **An AMI includes the following:**
  - A template for the root volume for the instance
    - (for example, an operating system, an application server, and applications)
- **Launch permissions** that control which AWS accounts can use the AMI to launch instances
- A **block device** mapping that specifies the volumes to attach to the instance when it's launched

# USING AN AMI

- The following diagram summarizes the AMI lifecycle. After you create and register an AMI, you can use it to launch new instances. (You can also launch instances from an AMI if the AMI owner grants you launch permissions.) You can copy an AMI to the same region or to different regions. When you are finished launching instance from an AMI, you can deregister the AMI.

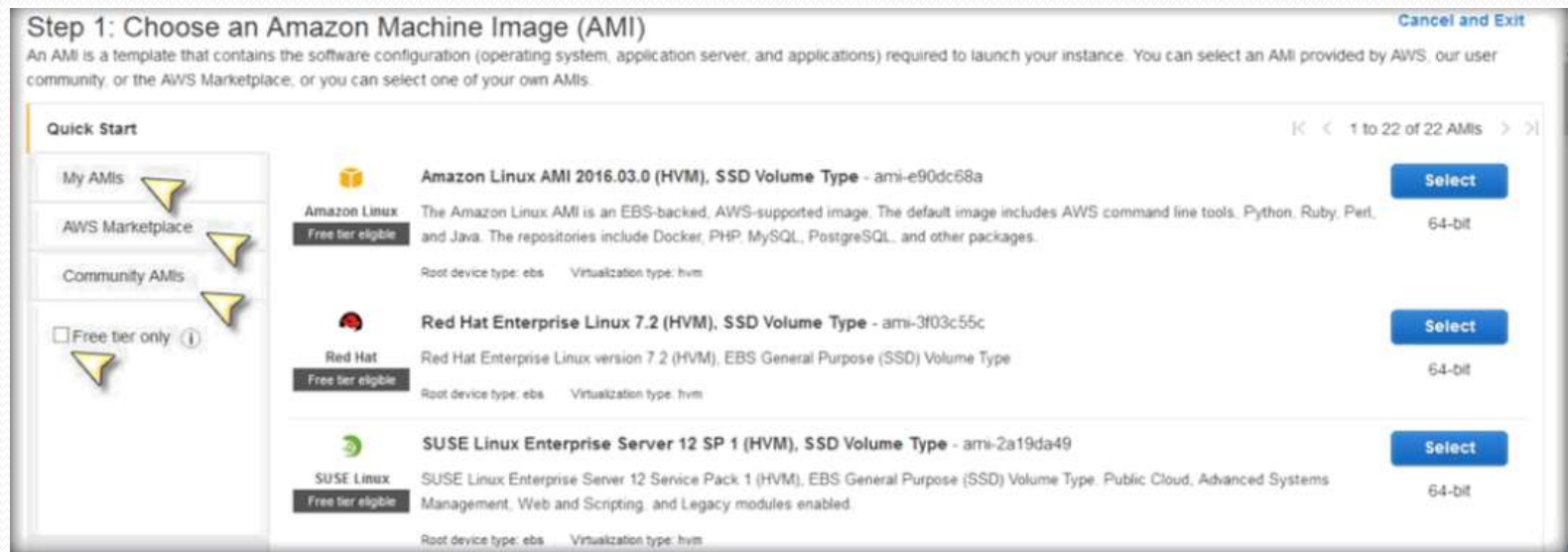


# CHOOSING AN AMI

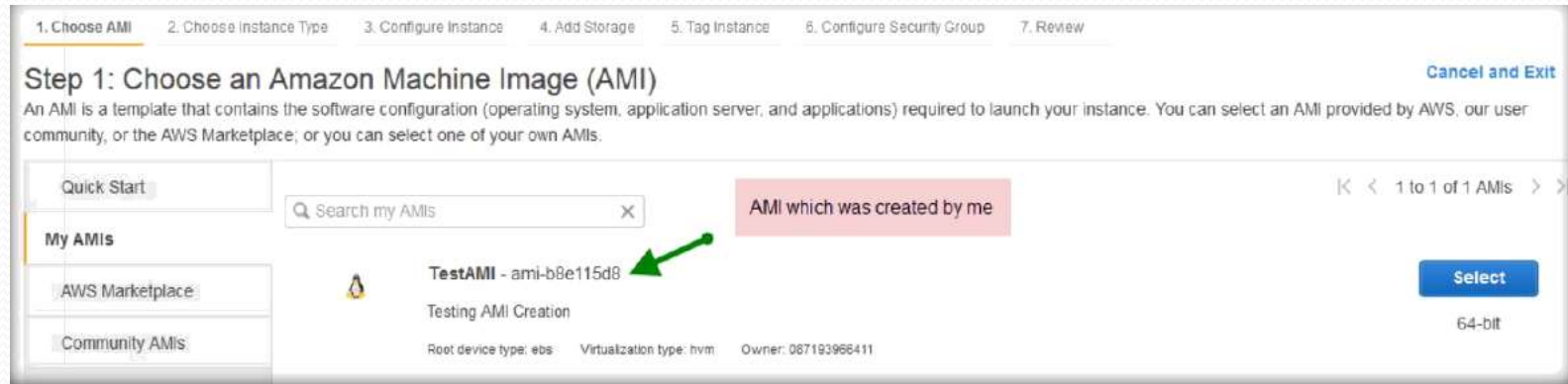
Once you click on Launch instance on Instance s page under EC2, you will get the following screen with

A bunch of options see the options which has highlighted with arrow marks.

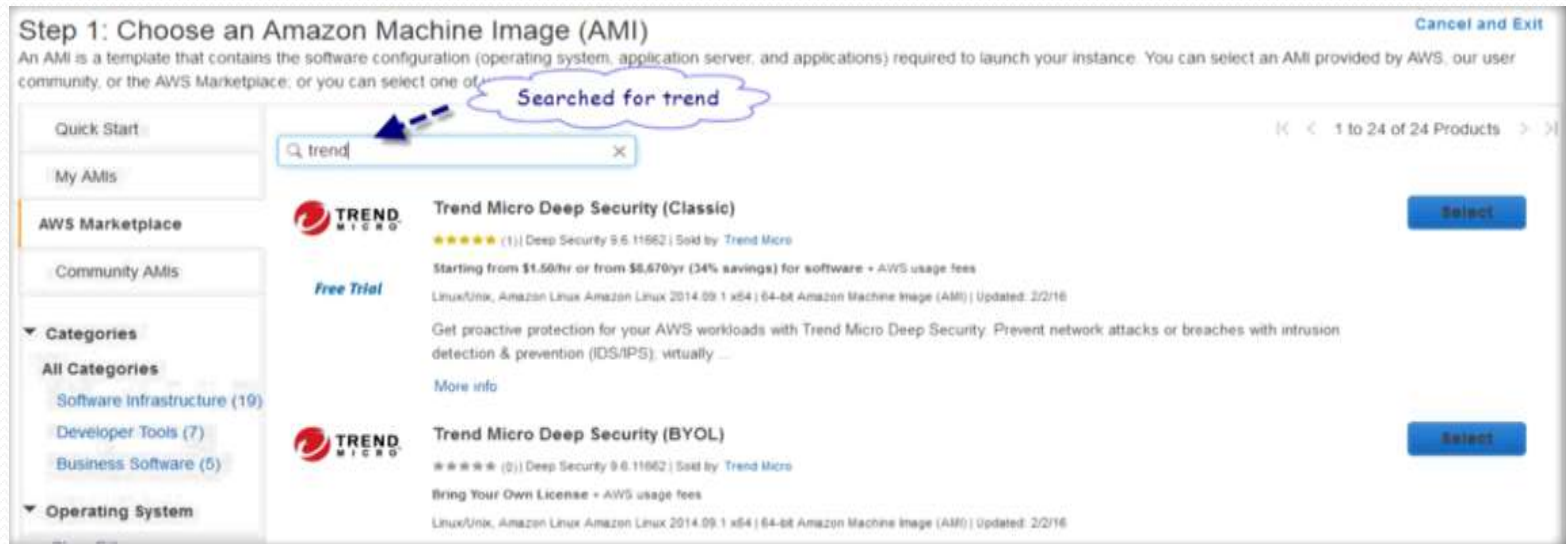
**Quick Start:** Will give you a bunch of AMI's which related to most daily used Operating systems AMI's.



**My AMIs:** This will give you the list of AMIs which you have taken from the instances.

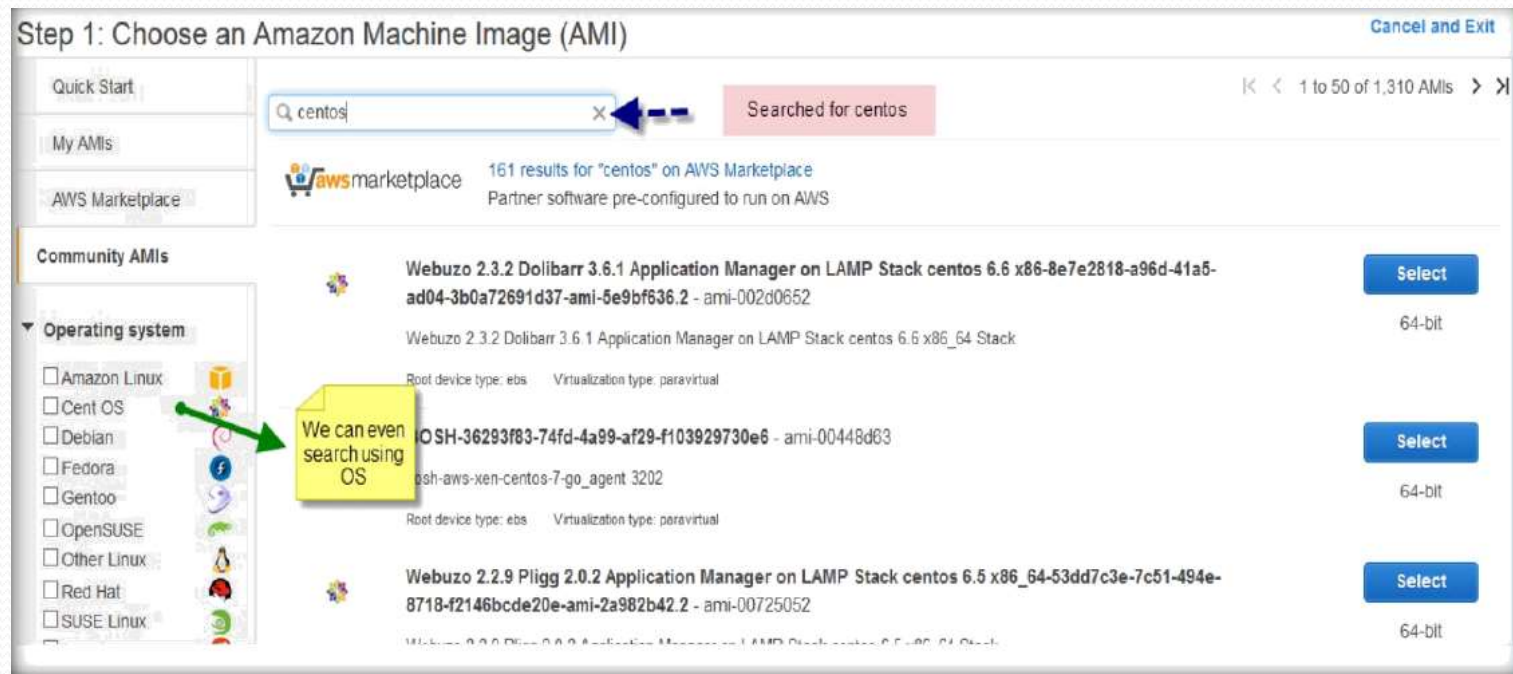


**AWS Marketplace:** Will give you a list of AMIs shared by different vendors and third party where you can buy or pay some amount to AWS to use those AMI. You can see the below screen shot where I have searched for Trend micro.

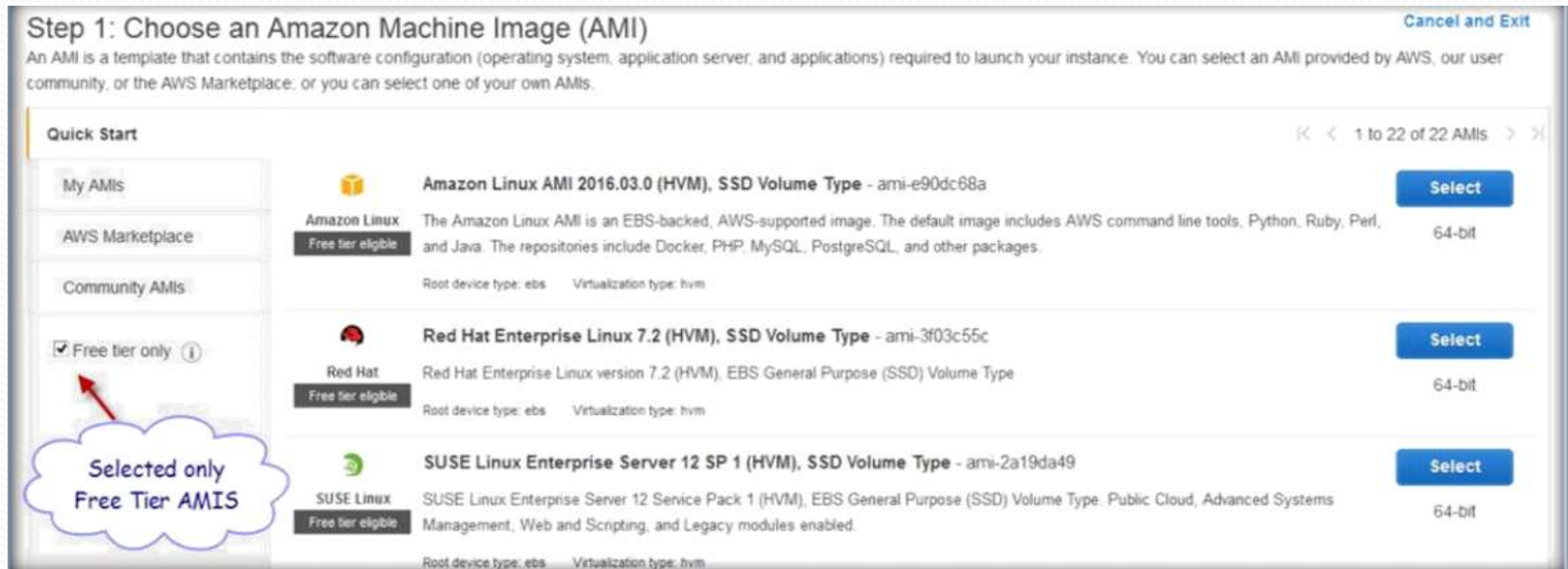




**Community AMIs:** Will give you a list of AMIs which was shared by different communities such as Fedora, Open SUSE, CentOS etc.



**Free tier Only:** Will display the AMIs which are applicable under Free tier only.



## CREATE AMI FROM EXISTING INSTANCE

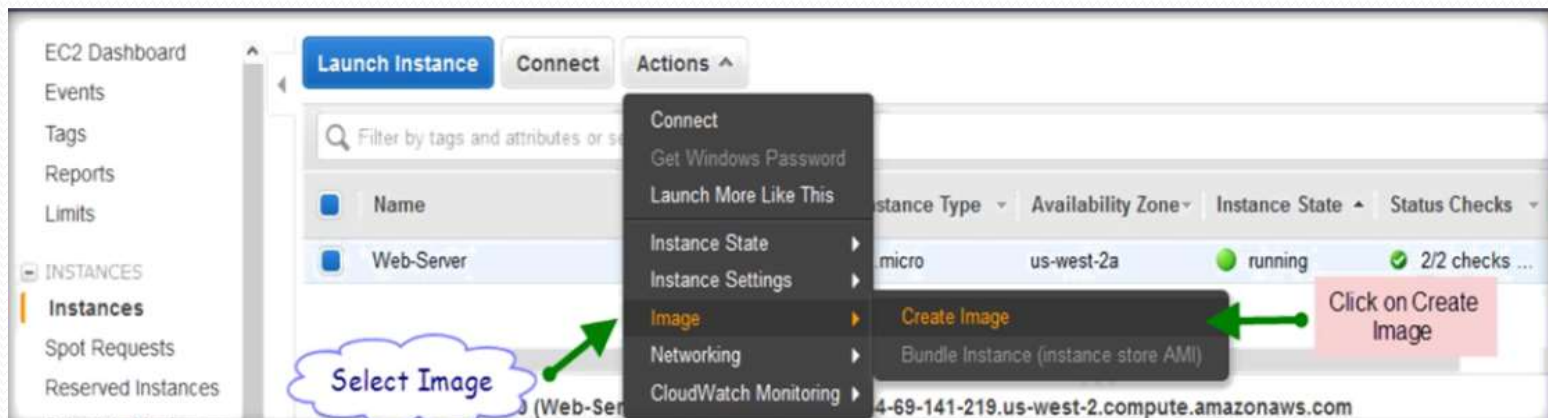
Once you logged in to AWS management console go to EC2 and under EC2 select Instances.

Under Instances select the instance you want to take an AMI and click on Actions.





Under the Actions, click on Image and then select Create Image to create AMI.



On the window specify a name to AMI and add a description.

And select No reboot if you want your server not to reboot while creating an AMI image. (It's advisable to reboot while taking AMI). Then click on click on Create Image to start creating an AMI.

The screenshot shows the 'Create Image' window in the AWS Management Console. It includes fields for Instance ID, Image name, Image description, and a checkbox for 'No reboot'. Below these is a table for 'Instance Volumes' with columns for Volume Type, Device, Snapshot, Size (GiB), Volume Type, IOPS, Delete on Termination, and Encrypted. The table contains one row for the root volume. Annotations include a red arrow pointing to the 'Image name' field with the text 'Specify a Name', a blue dashed arrow pointing to the 'Image description' field with the text 'Add a description', a green arrow pointing to the 'No reboot' checkbox with the text 'Select if you want your instance not to reboot', and a blue speech bubble pointing to the 'Create Image' button with the text 'Click on Create Image'.

**Create Image**

Instance ID ⓘ i-76fe25b0

Image name ⓘ TestAMI

Image description ⓘ Testing AMI Creation

No reboot ⓘ ☐

Select if you want your instance not to reboot

**Instance Volumes**

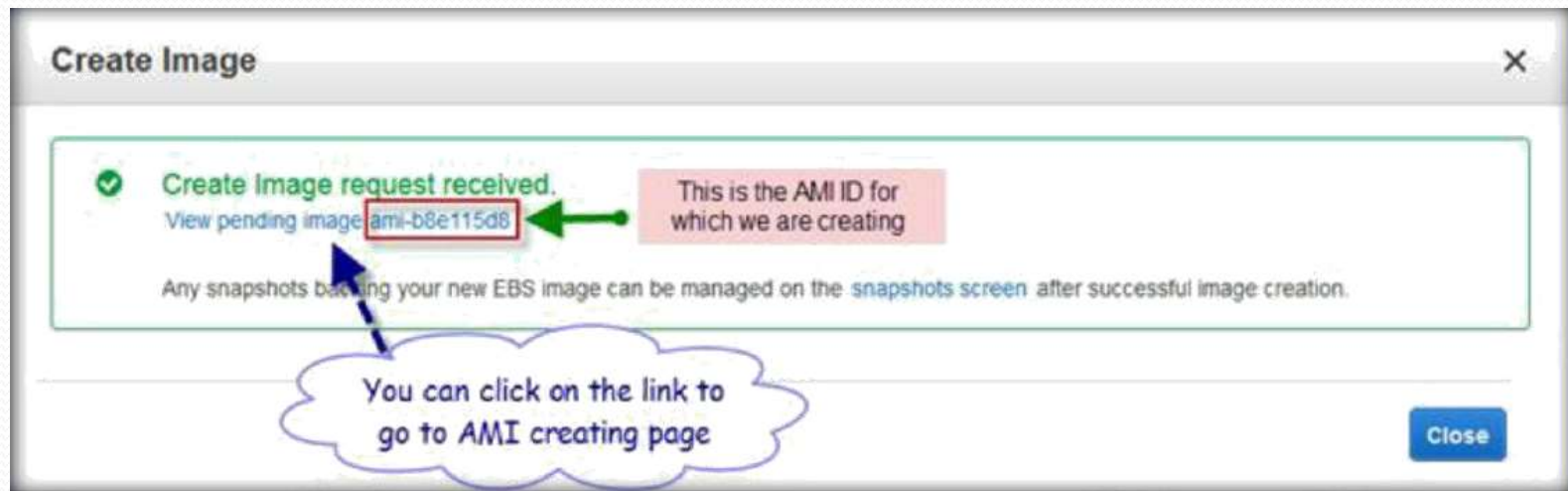
Volume Type ⓘ	Device ⓘ	Snapshot ⓘ	Size (GiB) ⓘ	Volume Type ⓘ	IOPS ⓘ	Delete on Termination ⓘ	Encrypted ⓘ
Root	/dev/xvda	snap-bfb086e1	8	General Purpose SSD (GP2)	24 / 3000	<input checked="" type="checkbox"/>	Not Encrypted

Add New Volume

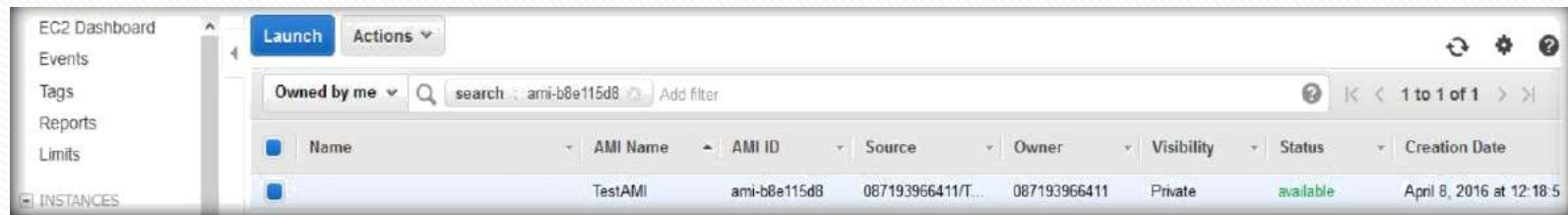
Total size of EBS Volumes: 8 GiB  
When you create an EBS image, an EBS snapshot will also be created for each of the above volumes.

Cancel Create Image

Then you will be displayed with popup window having newly creating AMI ID and the link.  
By clicking the link, you can go to the AMI screen where all AMIs are available which were specific to your account.

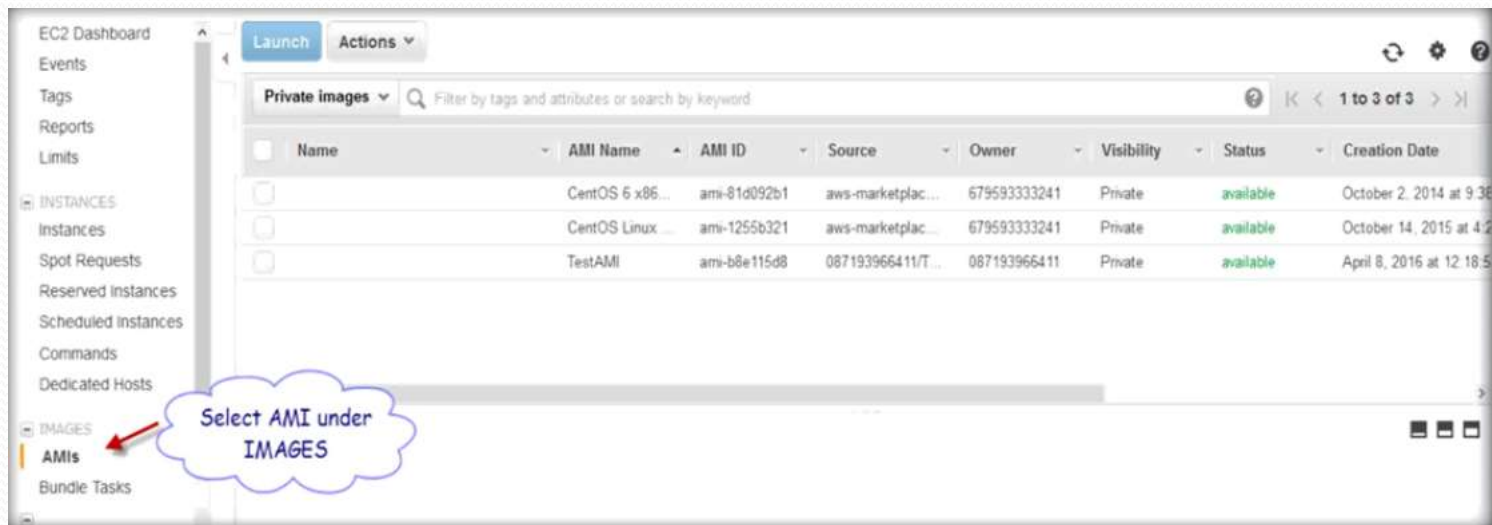


Once you will be on the AMI page you can see the AMI which were created.

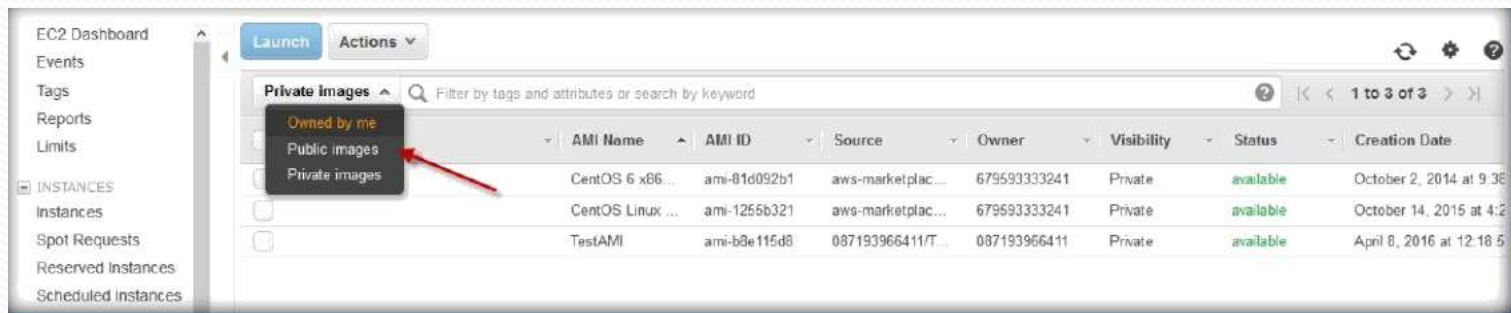


## AMI PAGE ON EC<sub>2</sub> CONSOLE

Once you are in EC<sub>2</sub>, under EC<sub>2</sub> go to the section IMAGES on the left pane and click on AMIs.



On the AMI page we have three different types of AMIs to select.



**Owned by me:** AMIs which were created by me.

**Public Images:** AMIs which were created and shared with public.

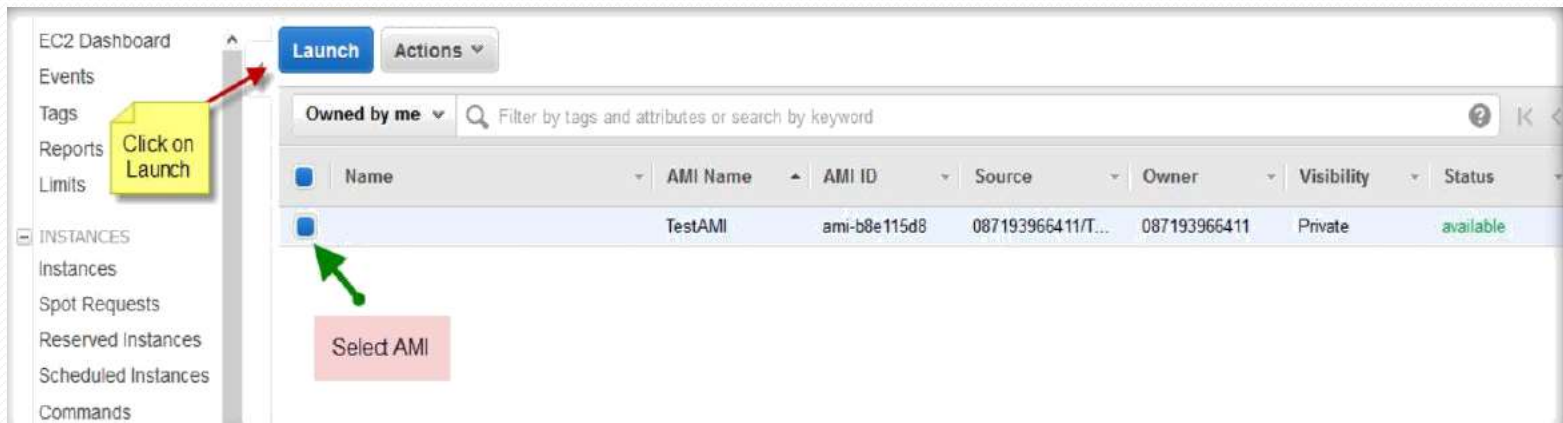
**Private images:** AMIs which were created by someone and given permission to your account.

# DEPLOYING NEW INSTANCE FROM CREATED AMI

Once you logged in to AWS, go to IMAGES on the left pane under EC2 section.  
Choose AMI sorting by Owned by me.



Select your created AMI and click on Launch.



Select instance type and click on Next: Configure Instance Details to go to next screen.

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

### Step 2: Choose an Instance Type

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)

Select an Instance Type

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate
<input checked="" type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Moderate
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Moderate
<input type="checkbox"/>	General purpose	m4.large	2	8	EBS only	Yes	Moderate

Click on Configure Instance Details to go to next screen.

Cancel Previous Review and Launch Next: Configure Instance Details

Do not change any configurations in this menu and click Next to Add Storage.



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

### 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](#)

**Auto-assign Public IP** ⓘ

**IAM role** ⓘ  [Create new IAM role](#)

**Shutdown behavior** ⓘ

**Enable termination protection** ⓘ ☐ Protect against accidental termination

**Monitoring** ⓘ ☐ Enable CloudWatch detailed monitoring  
[Additional charges apply](#)

**Tenancy** ⓘ

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

Click here to go to next page

Specify the ROOT volume size in GB's and click on Next.

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

### 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	Delete on Termination	Encrypted
Root	/dev/xvda	snap-c03b1a21	8	General Purpose SSD (GP2)	24 / 3000	<input checked="" type="checkbox"/>	Not Encrypted

[Add New Volume](#)

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

Specify the root volume storage in GB's

Click here to go to next screen

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

Specify a tag to your instance and click next.

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

### Step 5: Tag Instance

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. [Learn more](#) about tagging your Amazon EC2 resources.

Key (127 characters maximum)	Value (255 characters maximum)
Name	Testing

**Create Tag** (Up to 10 tags maximum)

**Name your instance a tag**

**Click here to go to next screen**

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

Click on Create a new security group, add a name and description to the security group and click on Review and launch.

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

### 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

Click Create a new SG

Specify a name and Description

Name: test

Description: test

Type	Protocol	Port Range	Source
SSH	TCP	22	Anywhere 0.0.0.0/0

Add Rule

**Warning**

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Click here to go to next screen


Cancel Previous **Review and Launch**

Cross check all your settings for your instance and click on Launch.

1. Choose AMI2. Choose Instance Type3. Configure Instance4. Add Storage5. Tag Instance6. Configure Security Group7. Review

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.

 **Improve your instances' security. Your security group, test, 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](#)

▼ AMI Details

 **Amazon Linux AMI 2016.03.0 (HVM), SSD Volume Type - ami-e90dc68a**

Free tier eligible

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.

Root Device Type: ebsVirtualization type: hvm

[Edit AMI](#)

▼ Instance Type

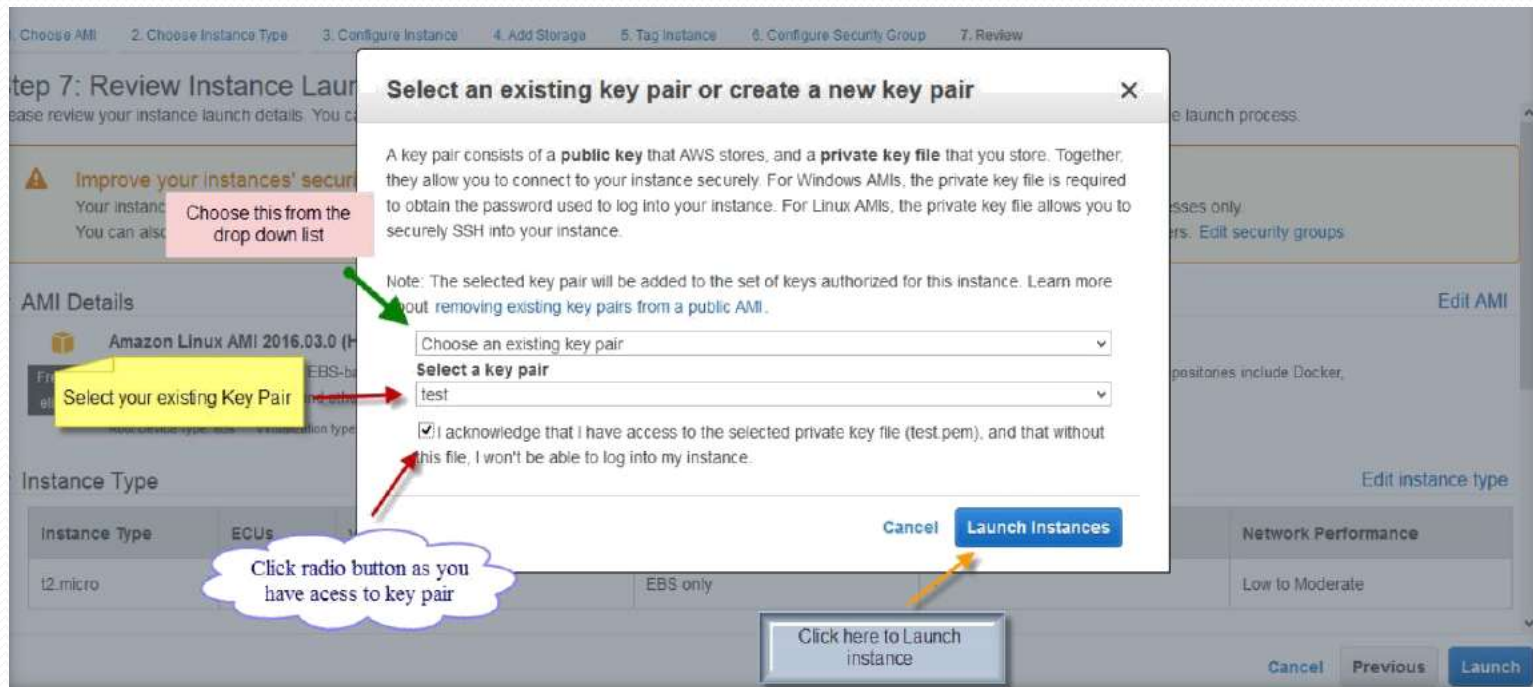
Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

Click here to launch

[Edit instance type](#)

CancelPreviousLaunch

Select choose an existing key pair from dropdown list to get the existing key pairs.  
Choose the existing key pair and then click on acknowledgement then click Launch instance.



Click on View instances to see the instance which is creating.



## Launch Status



### 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](#)

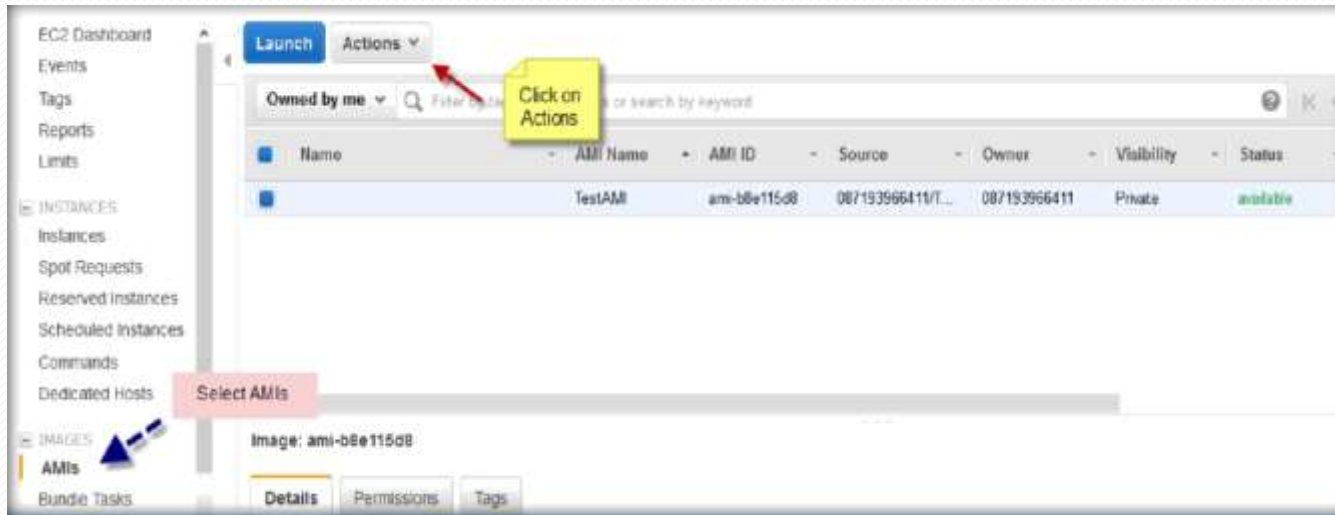
Click here to see  
launched instance

View Instances

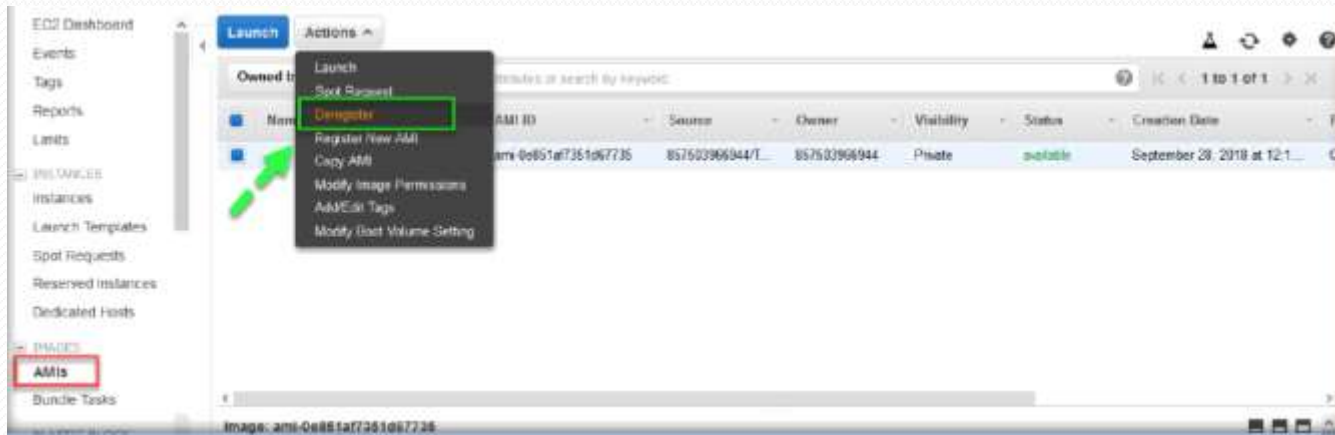
You can see the instance which is creating under instances tab.

# TERMINATING AMI

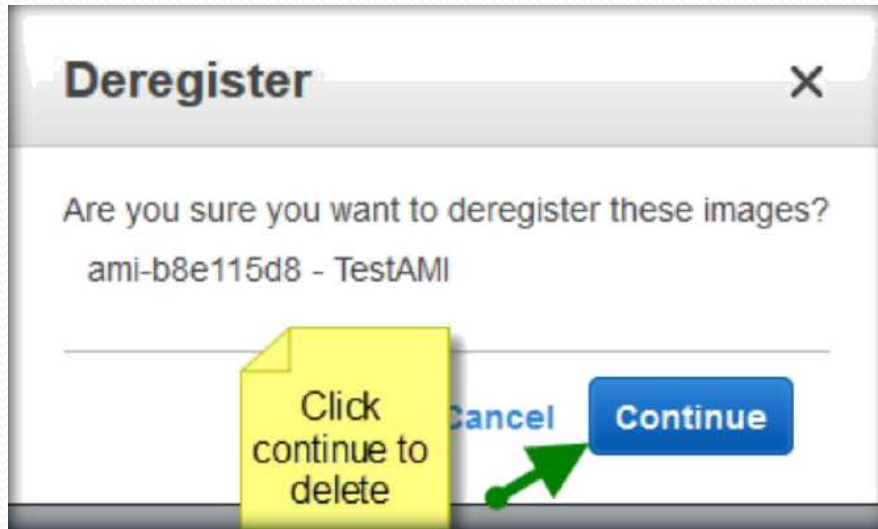
Go to the AMI section under EC2 under IMAGES and select the AMI and click on **Actions**.



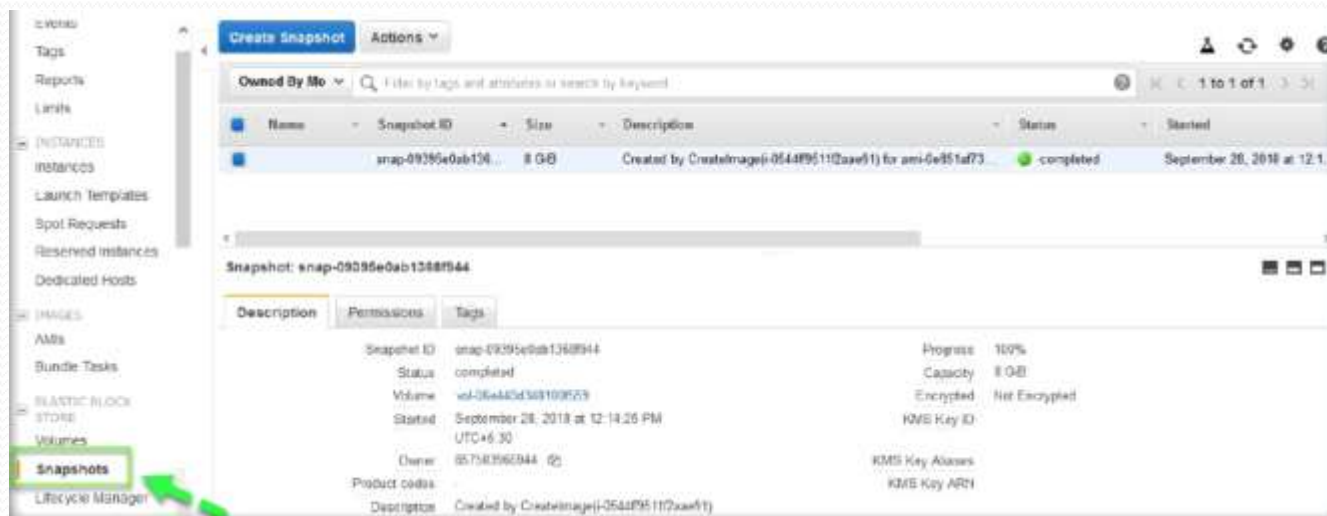
Then under the Actions, select Deregister to terminate the instance.



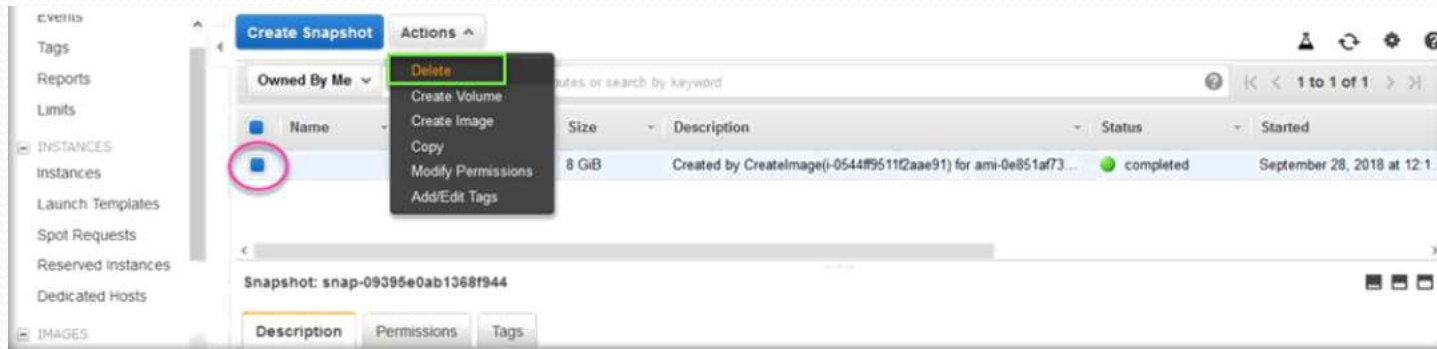
A popup window will ask you for the confirmation to terminate then click continue to complete the AMI termination.



Next, we need to go to snapshots section under Elastic Block Store section.



Select the snapshot then choose Delete from the Actions drop down list.



Next, click on Yes, delete to delete the snapshot which completes the deletion of AMI.

