

Move EC2 Instance

Jun 2017

This page is not complete, please check back in a short time for the full guide.

Introduction

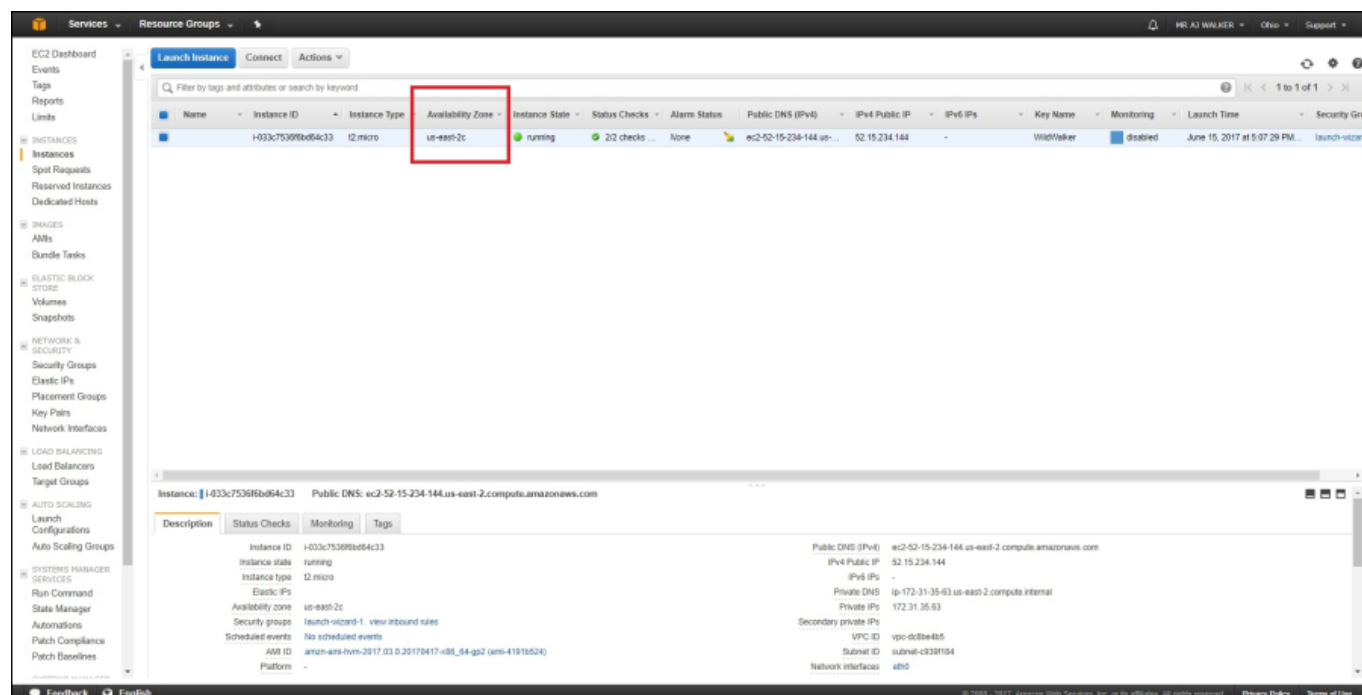
There are a couple of reasons you might want to move your EC2 Instance. The first is that you want to host your EC2 Instance in a location closest to your users. The second is that (like me) you setup your first EC2 instance, got it all running, then realised that your server is several thousand miles away, so now you want it hosted in your region.

There are probably more reasons than that, but these are the main two that spring to mind. This tutorial shows you how to move your EC2 instance (or indeed just create a local copy that will be useful for redundancy purposes) to another zone.

Please bear in mind, if you are using the Free Tier system, that you will need enough available space (you get 30GB free) and that you will be running two instances, albeit for a short time, so this could potentially cost you a few pennies, if we are talking about less than an hour it might not incur any charges.

Move EC2 Instance

Login to the AWS Console and navigate to your EC2 Instance.

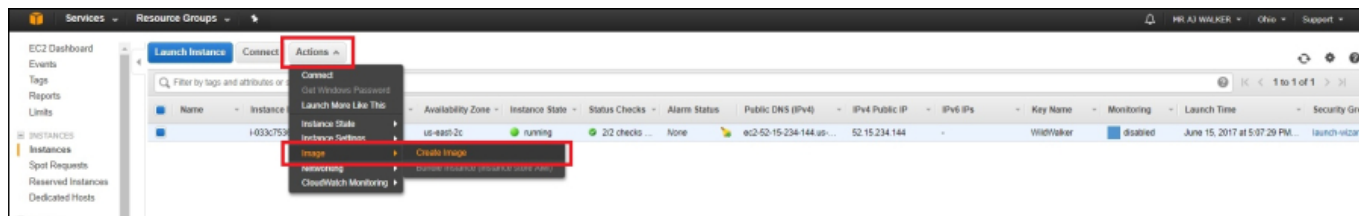


In the example above it can be seen that my EC2 Instance is in the Availability Zone (AZ) us-east-2c. I am in England, so I really need a closer AZ to where I am.

The reality is that we can't move the EC2 Instance, we need to make a copy, then use that to create a new EC2 instance in a different AZ. The new EC2 Instance will be an exact copy of the original, so everything will work exactly the same as it did before, only a little faster.

Amazon Machine Image or AMI.

To create an AMI, select the Actions button.



From the pop out list select **Image** then **Create image**.

The Create Image page will open.

 A screenshot of the 'Create Image' page in the AWS Management Console. The page has a header 'Create Image' with a close button. Below the header, there are fields for 'Instance ID' (i-033c7536f6bd64c33), 'Image name' (webSvrBackup), 'Image description' (Image to move site), and a 'No reboot' checkbox. Below these fields is a table for 'Instance Volumes'. The table has columns: Volume Type, Device, Snapshot, Size (GiB), Volume Type, IOPS, Throughput (MB/s), Delete on Termination, and Encrypted. The first row shows 'Root' volume type, '/dev/xvda' device, 'snap-05587b52a77fbb6b' snapshot, '8' size, 'Magnetic' volume type, 'N/A' IOPS, 'N/A' throughput, 'Delete on Termination' checked, and 'Not Encrypted'. Below the table is an 'Add New Volume' button. At the bottom, there is a 'Total size of EBS Volumes: 8 GiB' and a note: 'When you create an EBS image, an EBS snapshot will also be created for each of the above volumes.' At the bottom right, there are 'Cancel' and 'Create Image' buttons.

Enter the following information:

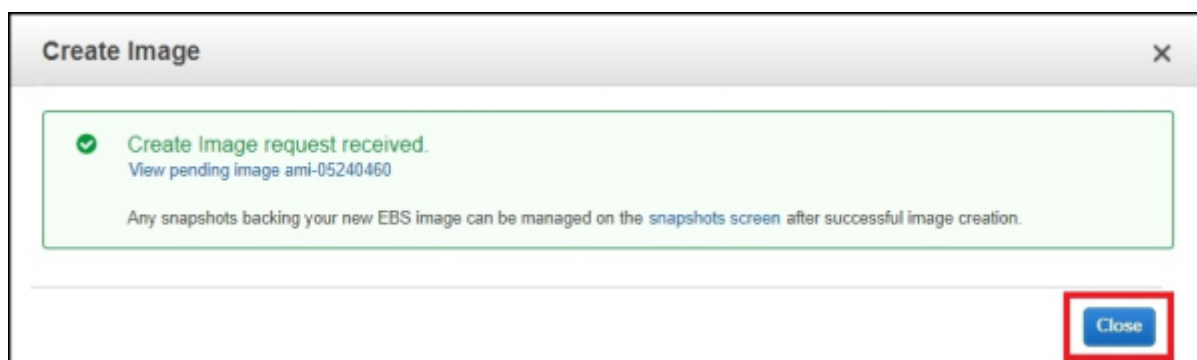
Image name: A simple name to identify the image. **Image description:** A description for the image. **No Reboot:** If you tick this, the Image may have issues, best to allow reboot if possible.

Size GiB: Size of storage for image (I went with the default) **Volume Type:** Magnetic, don't need SSD for simple storage.

Select **Create Image**.

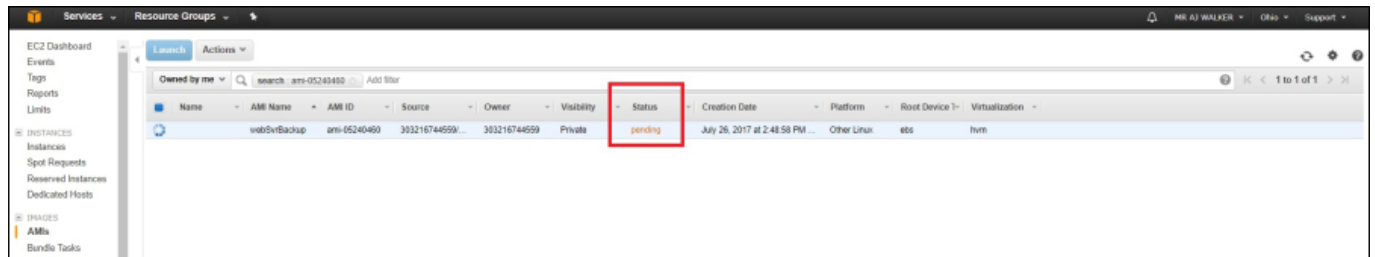
WARNING!: Now I know I go on about this, but the space you use, might not be free. Remember you get 30GB free. If you exceed that you start to pay per hour. Even if you do exceed it, you will finish this process in about 20-30 minutes, and can delete this AMI, so your costs again should be no more than a few pence, if anything at all.

When you select the **Create Image** button, you will see a confirmation window.



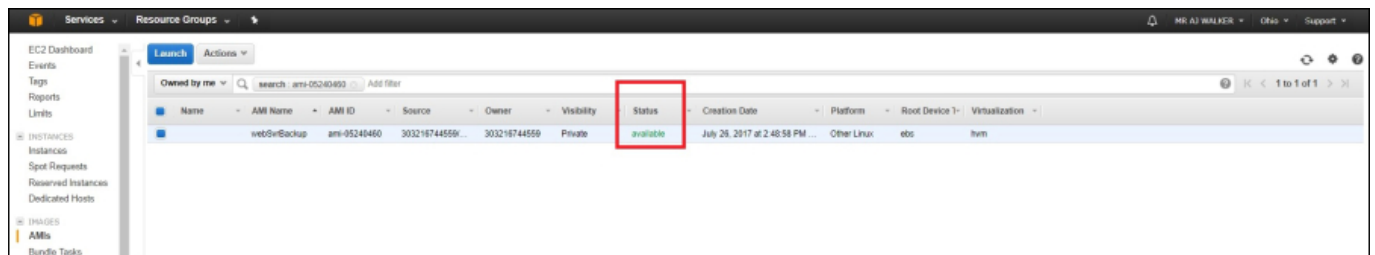
Just accept the message by selecting **Close**.

The **AMI Status** will change to **Pending**.



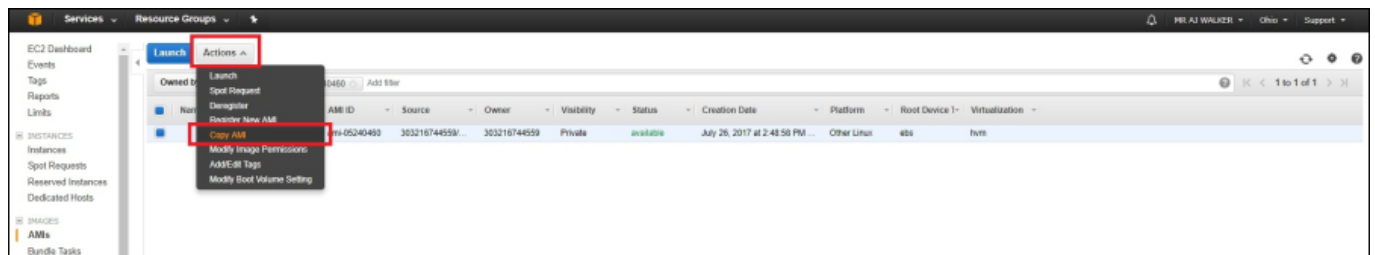
For my EC2 Instance, the AMI creation took around 5 Minutes. I have an EC2 that has an 8Gb Magnetic store, this store is about 80% full.

After the AMI Creation is complete, the status will change to **available**.



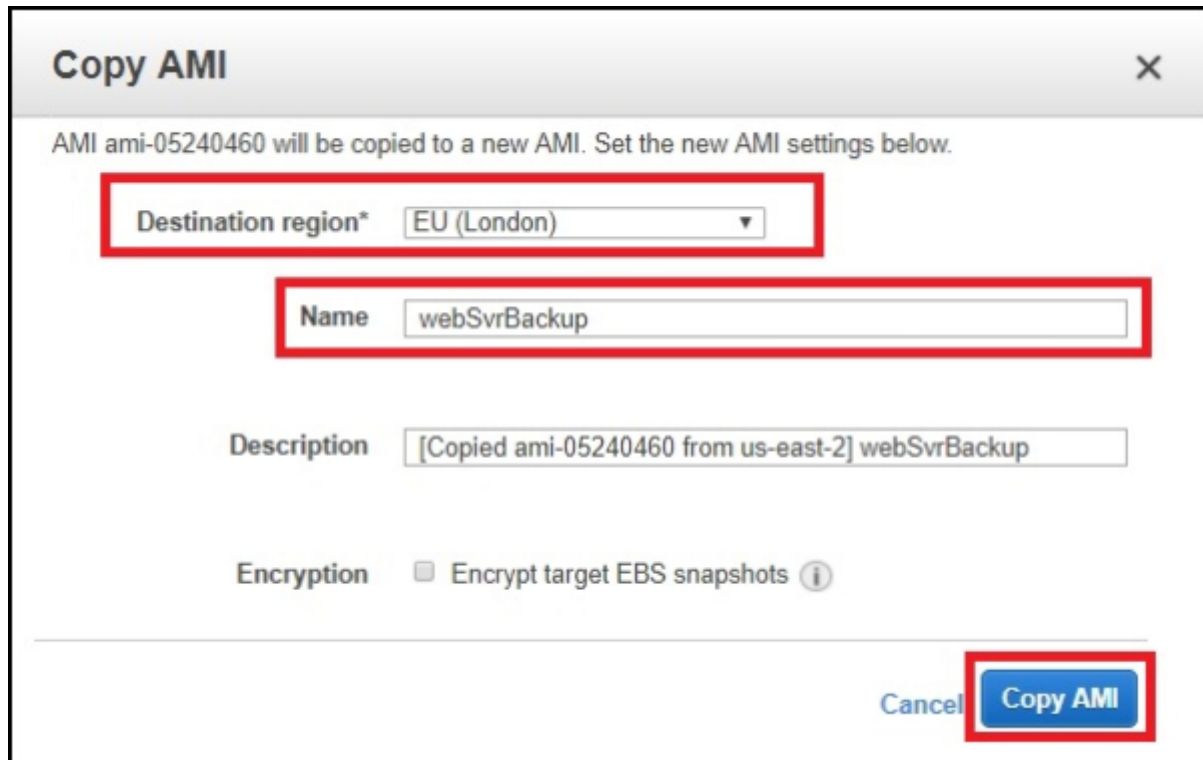
This is the back process complete.

Next we need to make the AMI available in our new region (AZ).



Select **Actions**, then **Copy AMI**.

The Copy AMI page will open.

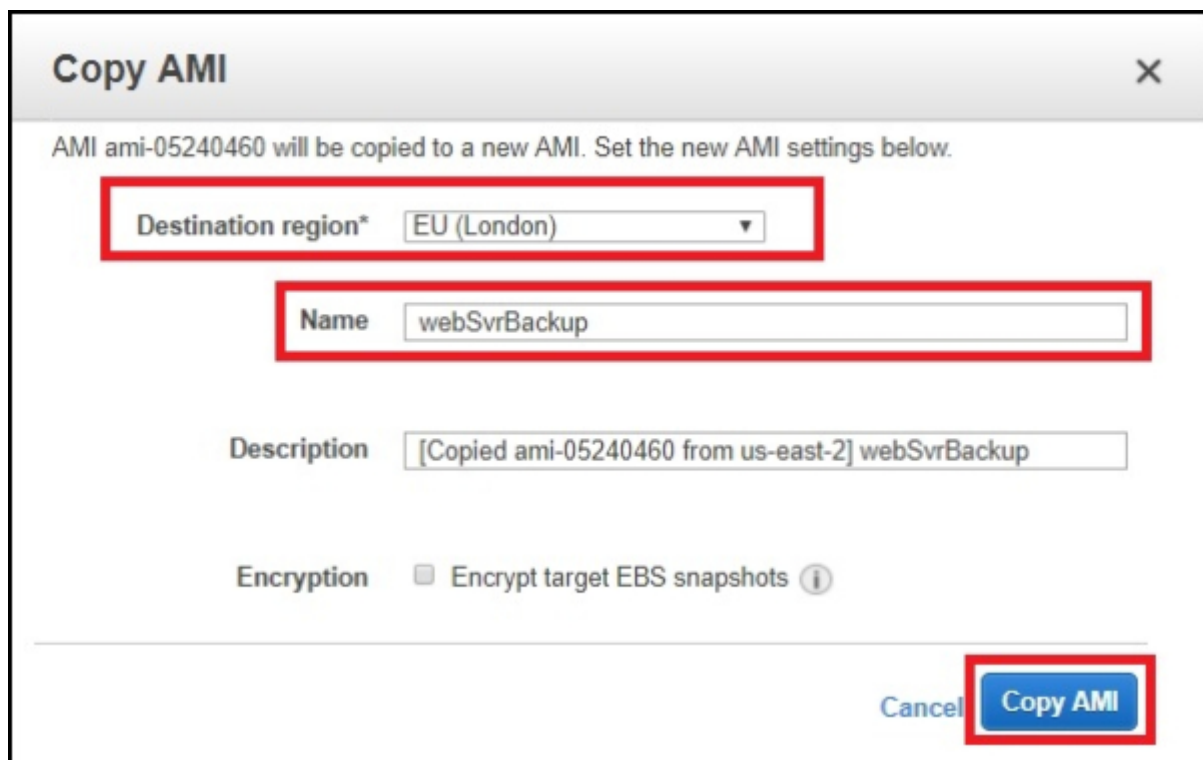


We have to make some initial choices here:

Destination Region: This is the new AZ for your EC2 Instance (I want it in London) **Name:** A name to identify the copied AMI (you will need this, so make it obvious)

Select **Copy AMI**.

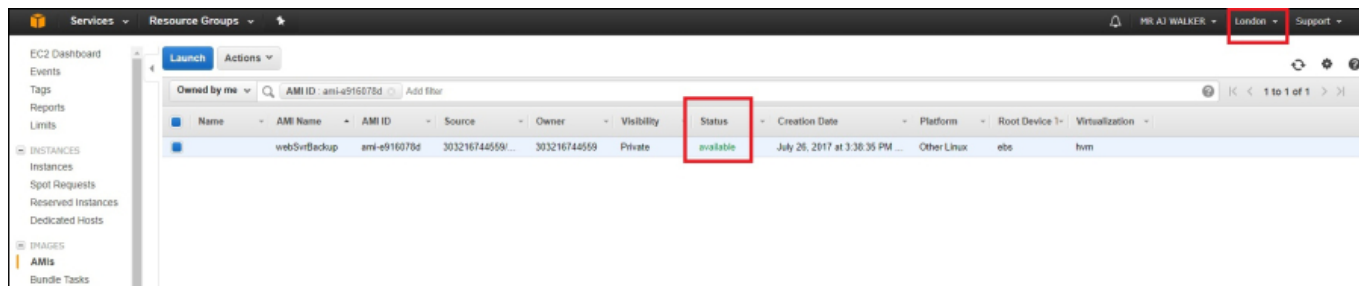
A Copy AMI Confirmation window will open.



Select **Done**.

This also took around 5 minutes to complete for my EC2 Instance.

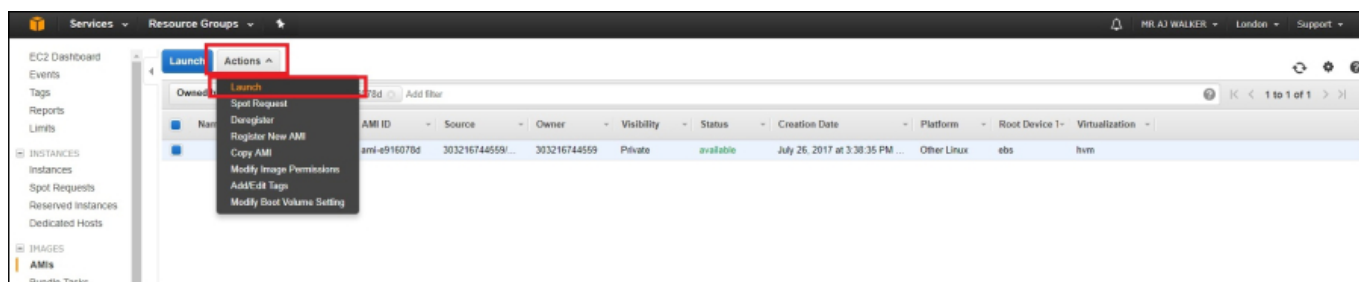
Before you continue, it is very important to ensure that you are now working in the correct AZ (Availability Zone).



In the top right of the web interface, ensure you see your zone.

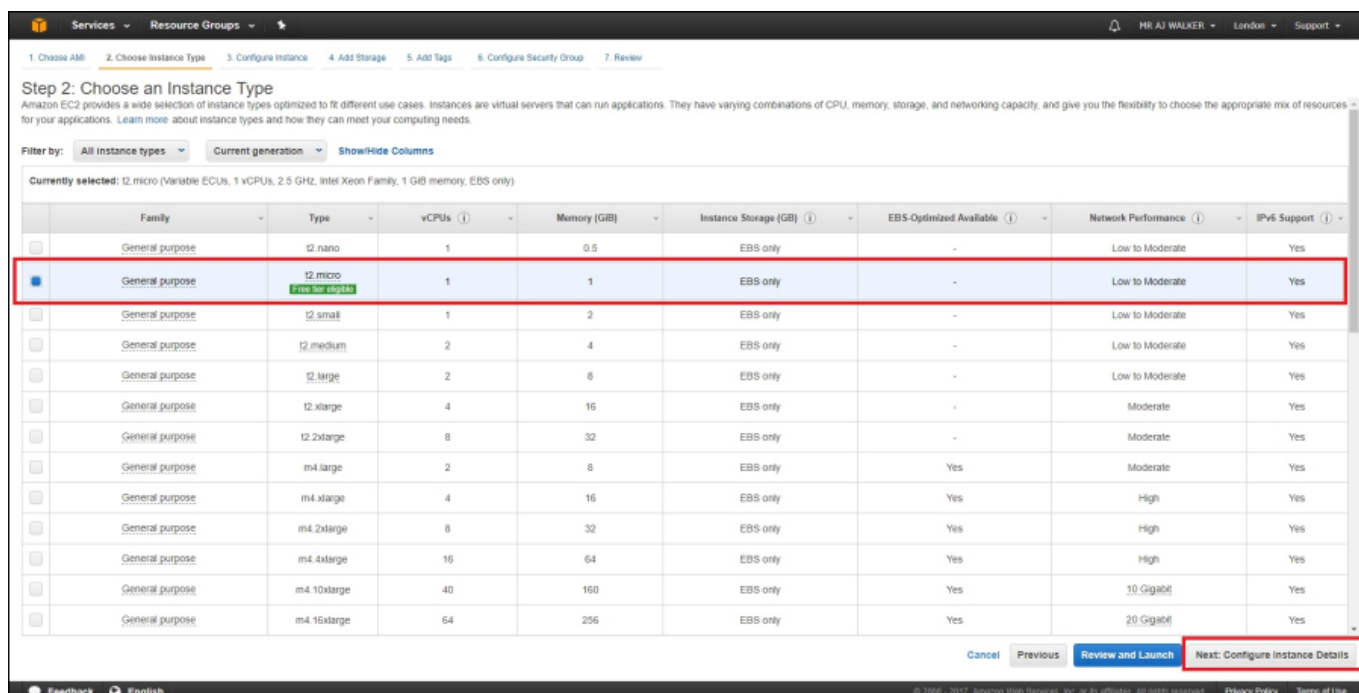
Before you continue, ensure that the status for the AMI is **available**. What you have just done is to copy the AMI you created in your original AZ, and put it in the AZ where you want the new EC2 Instance to reside.

when the AMI is available, select **Actions**.



From the menu, select **Launch**.

What launch does, it to take you through an identical process to when you create a new EC2 Instance.



Chose an instance type, select **t2micro** (free tier) and then select Next: **Configure Instance Details**.

Configure Instance Details.

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-00b6639 (default) Create new VPC

Subnet: No preference (default subnet in any Availability Zone) Create new subnet

Auto-assign Public IP: Use subnet setting (Enable)

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.

Advanced Details

Cancel Previous Review and Launch Next: Add Storage

Unless you have a good reason, there are no changes required here. Select **Next: Add Storage**.

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-0bd301e0caf1a562a	8	Magnetic	N/A	N/A	☒	Not Encrypted

Add New Volume

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. Set my root volume to General Purpose (SSD).

Free tier eligible customers can get up to 30 GiB 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

I normally accept the defaults here, but I do change from SSD to Magnetic. Select **Next: Add Tags**.

Add Tags.

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 (1)	Volumes (1)
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.			

[Add Tag](#) (Up to 50 tags maximum)

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

Nothing to do here, select [Next:Configure Security Group](#).

Configure 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 name:

Description:

Type (1)	Protocol (1)	Port Range (1)	Source (1)
SSH	TCP	22	Custom 0.0.0.0/0
HTTP	TCP	80	Custom 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.

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

Here we have to open any ports that we were using for the instance we copied earlier. I was using port 80 as my EC2 Instance was a web server.

Add any relevant ports then select [Review and Launch](#).

You will get a warning about storage.

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

Because we selected magnetic, we see this page. I have been using magnetic for a few weeks and have not yet incurred any costs.

Select **Next**.

After all the settings pages you will see a **confirmation page**.

Services
Resource Groups
MR AJ WALKER
London
Support

1. Choose AMI
2. Choose Instance Type
3. Configure Instance
4. Add Storage
5. Add Tags
6. Configure Security Group
7. 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, `launch-wizard-1`, 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 [Edit AMI](#)

webSvrBackup - ami-4916078d
[Copied ami-45240469 from us-east-2] webSvrBackup
Root Device Type: ebs Virtualization type: hvm

Instance Type [Edit 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 [Edit security groups](#)

Security group name launch-wizard-1
Description launch-wizard-1 created 2017-07-26T15:53:03.138+01:00

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

Instance Details [Edit instance details](#)

Storage [Edit storage](#)

[Cancel](#) [Previous](#) **Launch**

Select **Launch**.

Because this is a new EC2 Instance, we need to create a new Key Pair.

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
 wiki.aws.eu

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

Select **Create a new key pair** and enter a **Key pair name**.

Select **Download Key Pair**. (Don't lose the key, you will permanently lose access to your EC2 Instance.)

Select **Launch Instances**.

If you check the status of your EC2 Instance, you will see the following:

Services ▾ Resource Groups ▾														PMI AJ WALKER London Support																															
EC2 Dashboard																																													
Events																																													
Tags																																													
Reports																																													
Limits																																													
INSTANCES																																													
Instances																																													
[Search Instances] Connect Actions ▾																																													
Filter by tags and attributes or search by keyword																																													
<table><thead><tr><th>Name</th><th>Instance ID</th><th>Instance Type</th><th>Availability Zone</th><th>Instance State</th><th>Status Checks</th><th>Alarm Status</th><th>Public DNS (IPv4)</th><th>IPv4 Public IP</th><th>IPv6 IPs</th><th>Key Name</th><th>Monitoring</th><th>Launch Time</th><th>Security Grp</th></tr></thead><tbody><tr><td></td><td>i-07fbc2a0e15620b</td><td>i2.micro</td><td>eu-west-2a</td><td>running</td><td>2/2 checks ...</td><td>None</td><td>ec2-35-176-197-188.eu</td><td>35.176.197.188</td><td>-</td><td>wiki.aws.eu</td><td>disabled</td><td>July 26, 2017 at 3:55:55 PM</td><td>launch-wizard</td></tr></tbody></table>																		Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Name	Monitoring	Launch Time	Security Grp		i-07fbc2a0e15620b	i2.micro	eu-west-2a	running	2/2 checks ...	None	ec2-35-176-197-188.eu	35.176.197.188	-	wiki.aws.eu	disabled	July 26, 2017 at 3:55:55 PM	launch-wizard
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	i-07fbc2a0e15620b	i2.micro	eu-west-2a	running	2/2 checks ...	None	ec2-35-176-197-188.eu	35.176.197.188	-	wiki.aws.eu	disabled	July 26, 2017 at 3:55:55 PM	launch-wizard																																

The Availability Zone (AZ) has now changed to the region you selected. Your IP will also have changed, as IPs can't be moved between AZs you will have to update your DNS settings, also if you use Elastic IP Addresses, you will have to recreate new ones for this AZ.

The Original EC2 Instance

We didn't actually move the EC2 Instance, we simply made a backup, copied the backup to a new AZ and created a new EC2 Instance from that backup.

What this means is that the EC2 Instance that you originally had is still there, and if you left it running, it is still running and potentially costing you money.

From the dashboard, select the AZ where your original EC2 Instance was created (US East (Ohio) in my case.)

Services

Resource Groups

Launch Instance

Connect

Actions

EC2 Dashboard

Events

Tags

Reports

Limits

INSTANCES

Instances

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Name	Monitoring
	i-07fbc2a0e15620b	t2.micro	eu-west-2a	running	2/2 checks ...	None	ec2-35-176-197-188.eu	35.176.197.188	-	wiki.aws.eu	disable

US East (N. Virginia)

US East (Ohio)

US West (N. California)

US West (Oregon)

Canada (Central)

EU (Ireland)

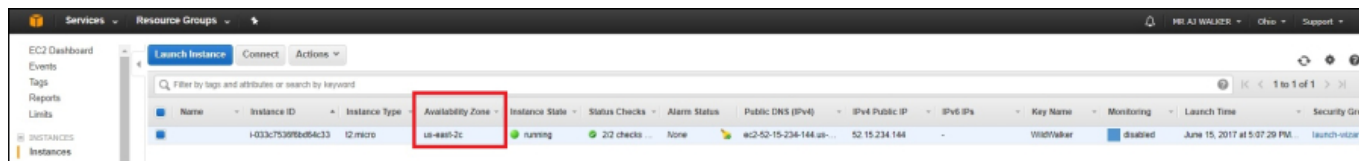
Security Grp

launch-wizard

You can't see instances in different AZs on one page unfortunately, so if you have co-located EC2 Instances, you have to navigate between

AZs.

So here we are, back at the original AZ where our original EC2 Instance is.



We have to stop this instance for two reasons. It is using a server, so this is incurring a cost, yes we could just stop it and leave it BUT, it is also consuming hard disk space. Even worse is that we are using a lot of space now because of the copy process, consider this:

Original EC2 Instance is using..8GB

The AMI we created is using.....8GB

The AMI copy is using.....8GB

The new EC2 Instance is using...8GB

Total.....32GB

Our free allowance is 30GB, so we need to do some cleaning up.

We need to do the following:

Stop the old EC2 Instance.

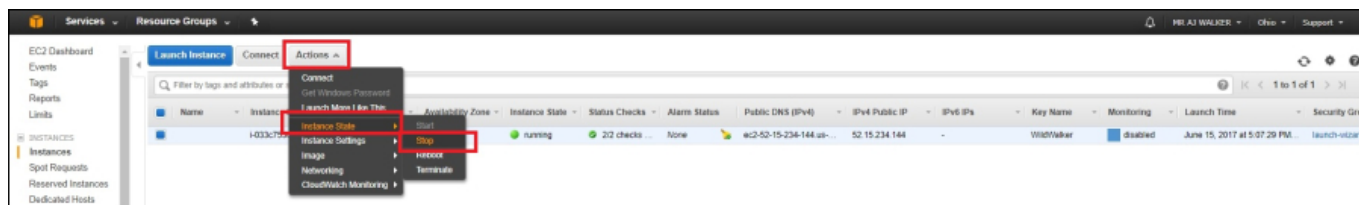
Delete the old EC2 Instance.

Delete the AMI Image (Snapshot).

Delete the AMI Copy Image.

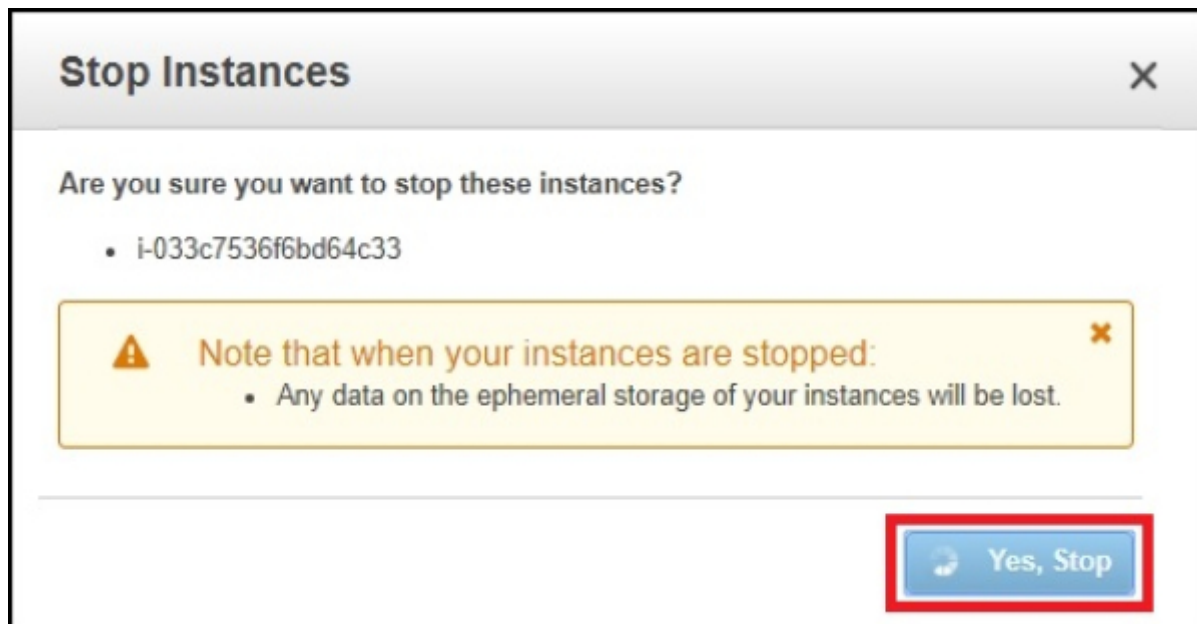
Stop the old EC2 Instance

From the console, navigate to the old EC2 Instance.



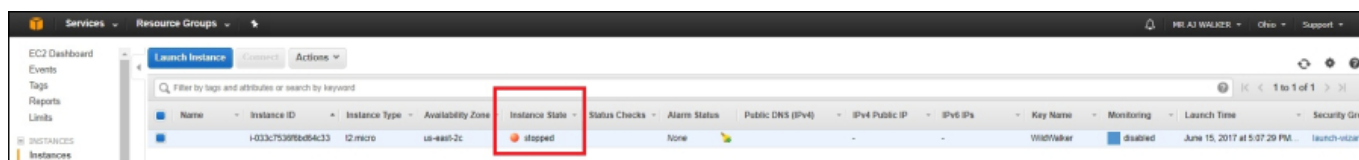
Select **Actions**, then **Instance State** then **Stop**.

You will see a warning page about stopping an Instance.



Select **Yes, Stop**.

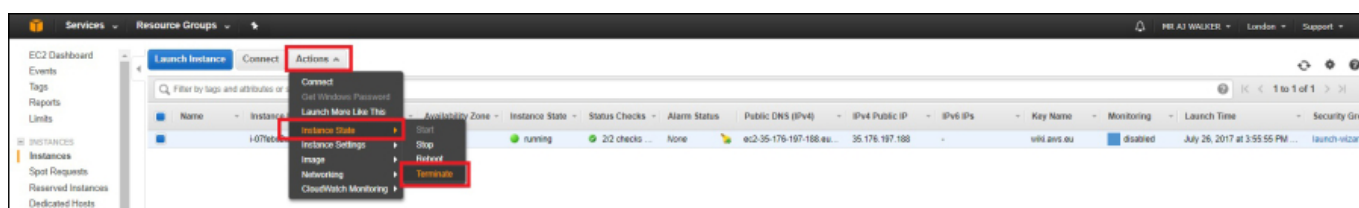
It might take a minute or two, but the instance will stop.



Keep checking the console until the instance status is **stopped**.

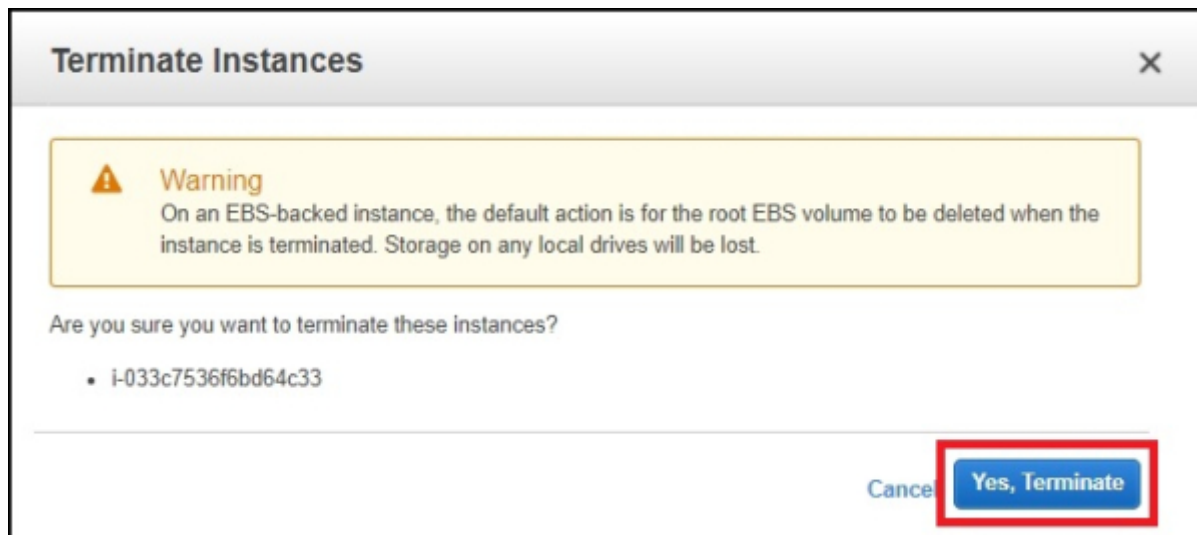
Delete old EC2 Instance

To delete the old EC2 Instance, from the EC2 Console page.



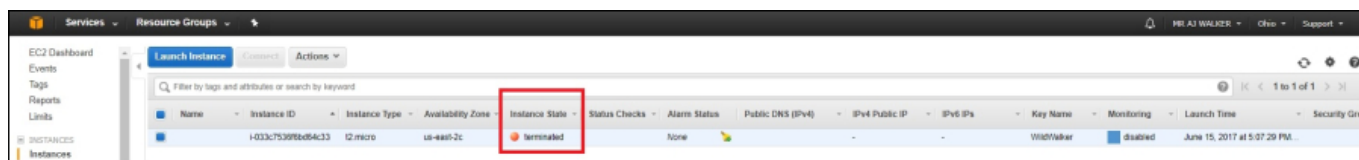
Select **Actions**, **Instance State**, **Terminate**.

You will get a warning about terminating an instance.



Select **Yes, Terminate**.

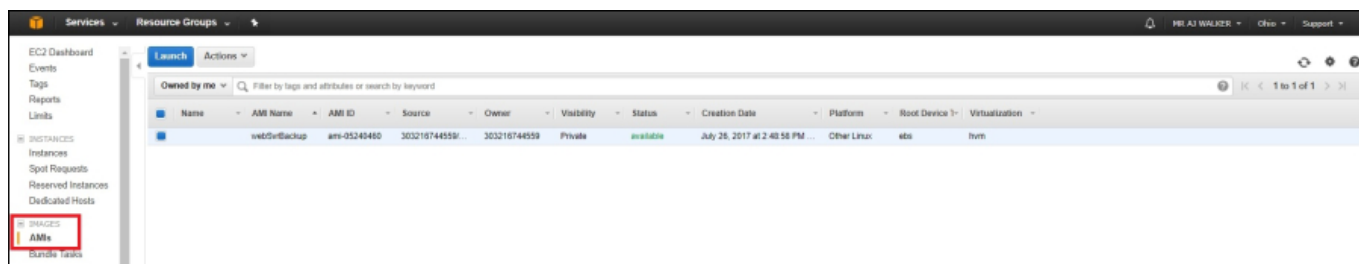
Check the status of your old EC2 to check termination is complete.



This might take a minute to two.

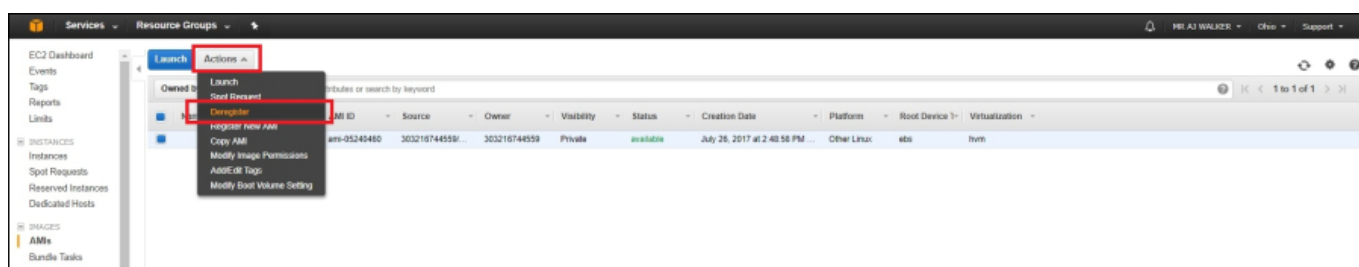
Delete Old AMI

Navigate back to the EC2 Console (ensure you are on your old AZ)



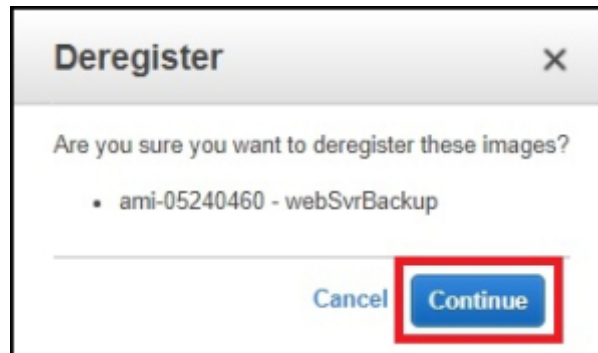
From the menu on the right, go down to **Images** and select **AMIs**.

Your AMI will be listed in the main page.



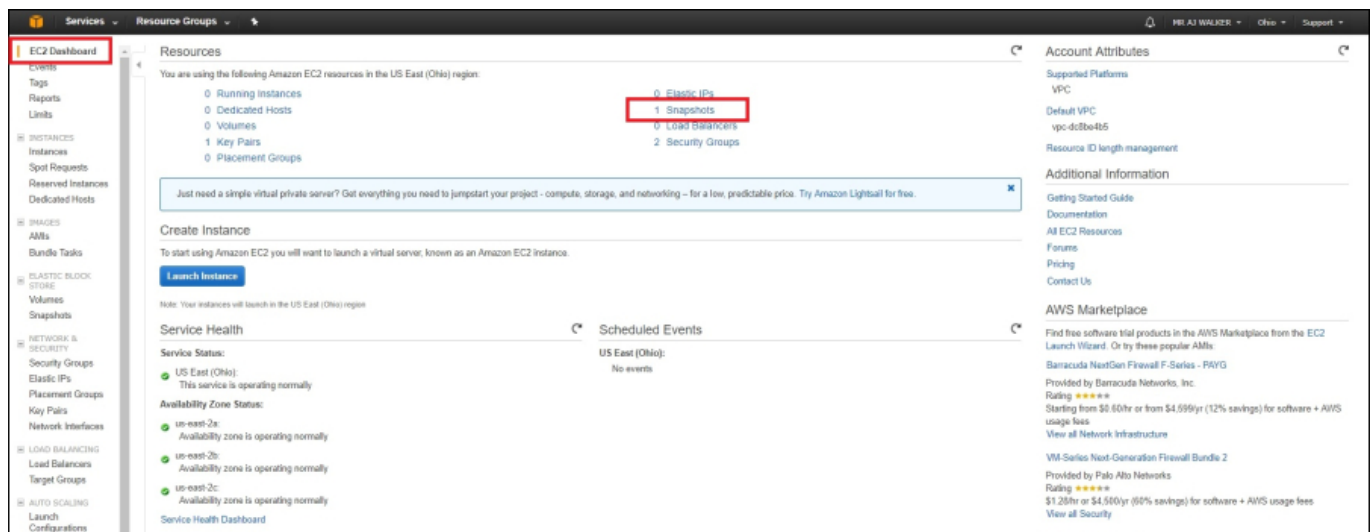
Select **Actions, Deregister**.

You will get a warning about deregistering an AMI.



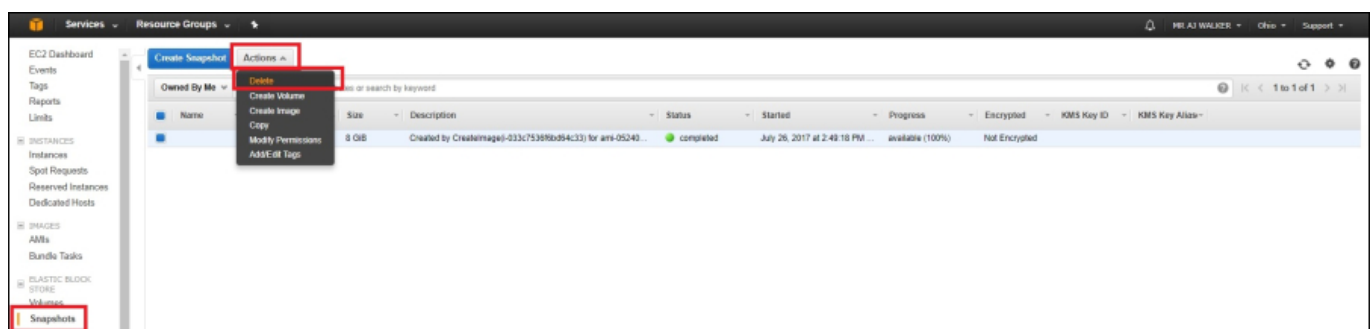
Select **Continue**.

From the **EC2 Dashboard**.



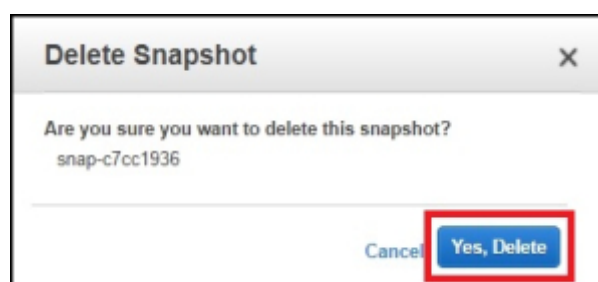
Select **Snapshots**.

From the **Actions** menu, select **Delete**.



If you have more than one snapshot, ensure you select the correct one.

You will see a warning about deleting a snapshot.



Click **Yes, Delete**.

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