

Cloud Plus Plus Services



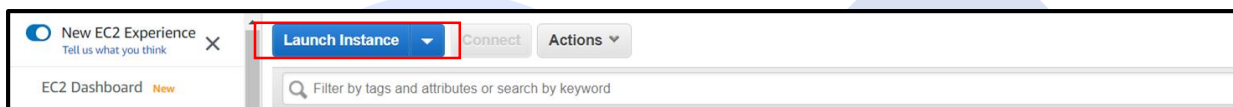
Persists EBS volume beyond the life of an EC2 instance, take snapshot & restore the EBS volume with increased storage capacity to a new instance.

Objectives:

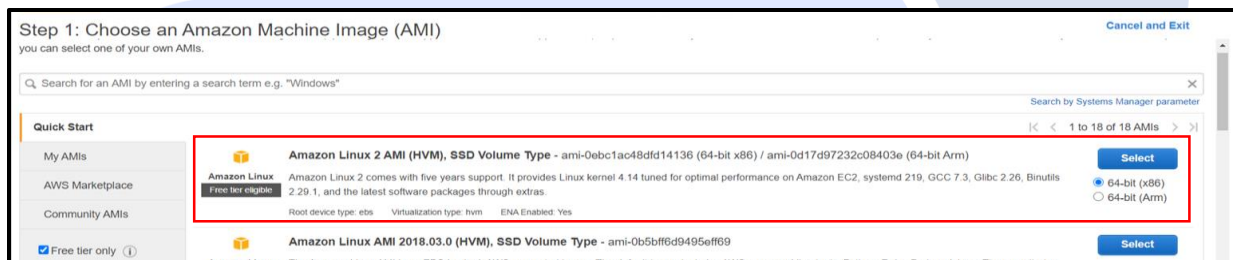
1. Learn to persist EBS Volume beyond the life of an EC2 instance.
2. Resolve the problem of storage capacity for EC2 instance.

Step 1: Create a Linux Instance as follows:

Click on **Instances** option in left navigation pane so as to be directed to following page. Click on Launch Instance button on top left.

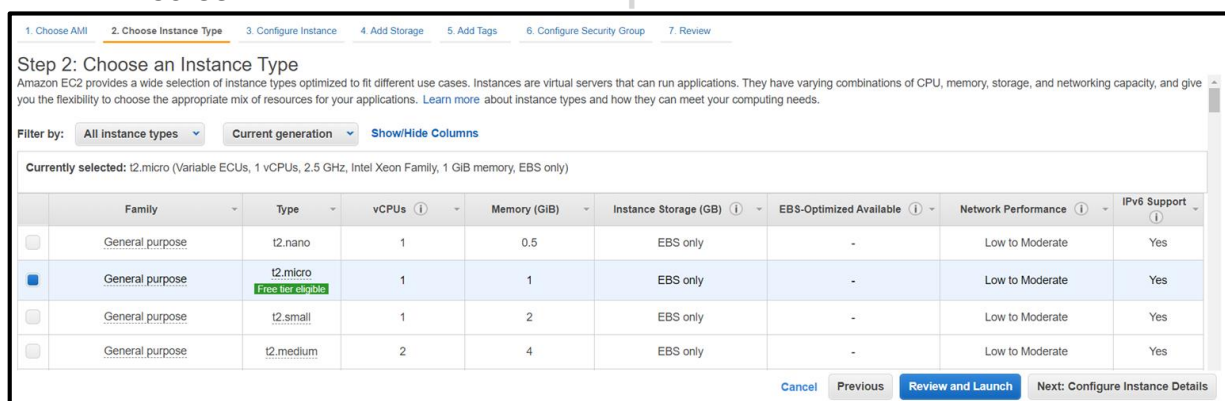


After clicking on the launch instance you will be redirected to this page. Here search/select **Amazon Linux 2 AMI**.



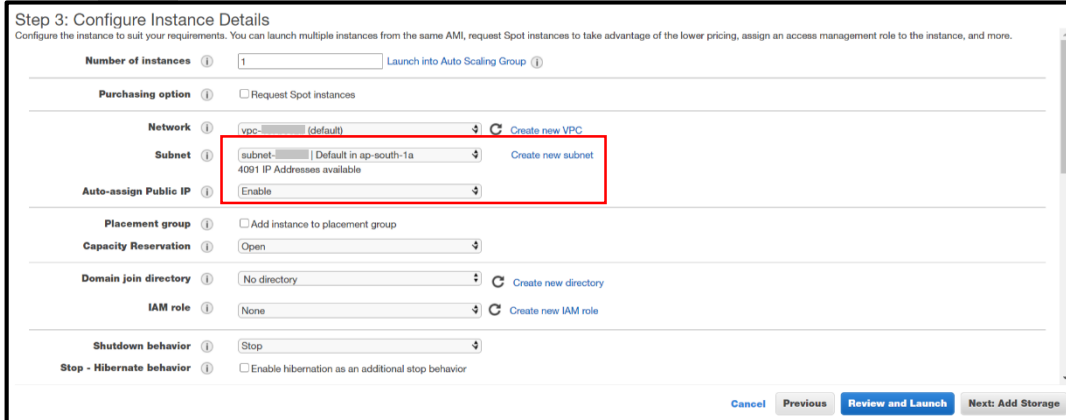
Choose an Instance Type over here.

- Select General purpose type **t2.micro** Instance Type.
- Click on **Next: Configure Instance Details** at the bottom right of the screen.



Here you will Configure Instance Details.

- In the **Subnet** field select on the drop down list and **select any one** of the Subnets. Note This subnet for reference afterwards.
- In the **Auto-assign Public IP** field select on the drop down list and select **Enable** option.
- Click **Next: Add Storage** at bottom right of screen.



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- (default) [Create new VPC](#)

Subnet: subnet- (Default in ap-south-1a) [Create new subnet](#)
4091 IP Addresses available

Auto-assign Public IP: Enable

Placement group: ☐ Add instance to placement group

Capacity Reservation: Open

Domain join directory: No directory [Create new directory](#)

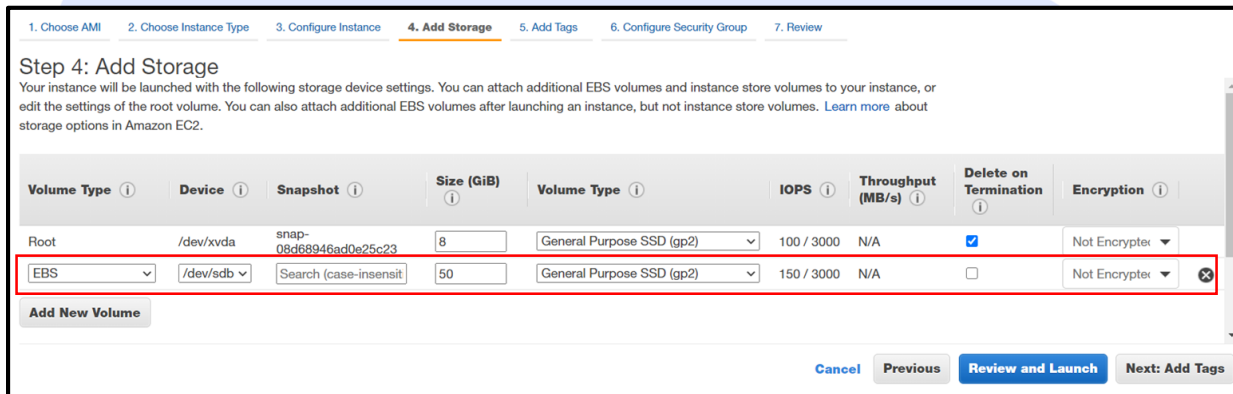
IAM role: None [Create new IAM role](#)

Shutdown behavior: Stop

Stop - Hibernate behavior: ☐ Enable hibernation as an additional stop behavior

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

Step 2: In the step for **Add Storage**, click on the **Add New Volume**. Let everything be default. Mention the required size of volume in GB. 50 GB in our case.



1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 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	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/xvda	snap-08d68946ad0e25c23	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted
EBS	/dev/sdb	Search (case-insensit)	50	General Purpose SSD (gp2)	150 / 3000	N/A	<input type="checkbox"/>	Not Encrypted

[Add New Volume](#)

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

Click on **Next: Add Tags** button in the down right corner.

Add Tags

- **Key:** Name
- **Value:** LinuxServer

Click on the **Next: Configure Security Group** at the bottom right of the screen.

Configure Security Group

- Create a **new** security group and name it as **LinuxSG**
- In the description enter the following text:
Security Groups for Linux Servers

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- Keep the default **SSH** 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.
- While using this feature for production make sure the known IP address is entered.
- Click on **Review and Launch** button on the bottom right corner

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	Protocol	Port Range	Source	Description
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop

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](#)

Review Instance Launch

- Here are all the details regarding your instance. Read them once and check if all the configurations are correct
- Click on the **Launch** button at the bottom right corner. This will launch your instance.

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, `linuxServerSG`, 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](#)

Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-0ebc1ac48dfd14136
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.
Root Device Type: ebs Virtualization type: hvm

▼ Instance Type [Edit instance type](#)

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

▼ Security Groups [Edit security groups](#)

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

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- After you click the **Launch** button here you will be asked to select/create KEY-PAIR. Choose an existing key pair option from the drop down.
- Acknowledge the key pair and launch the instance.

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](#).

Choose an existing key pair

Select a key pair

LINUX_SERVER

☒ I acknowledge that I have access to the selected private key file (LINUX_SERVER.pem), and that without this file, I won't be able to log into my instance.

Cancel

Launch Instances

Click **View Instance** button at bottom right of the screen to see your launched instance.

Check if the instance is in **running** state.

Step 3: In the left panel of the AWS console go into **Volumes** under **Elastic Block Store**. Here you will see our 2 volumes created (One which was added by default with the instance and the other we added extra)

Name these two volumes as **ROOT** and **DATA** below the name category by clicking the pencil icon in the name column.

Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone	State	Alarm Status	Attachments
DATA	vol-09fe92d3...	50 GiB	gp2	150		September 1, 2020 ...	ap-south-1a	in-use	None	i-0d22521c...
ROOT	vol-0c1034f...	8 GiB	gp2	100	snap-08d5894...	September 1, 2020 ...	ap-south-1a	in-use	None	i-0d22521c...

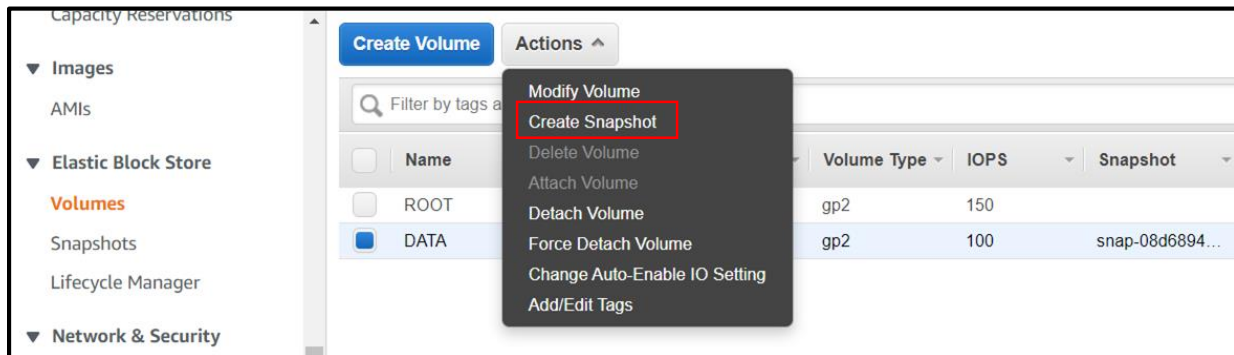
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Step 4: Select the DATA volume. Go to **Actions** and click on **Create Snapshot** option.



Give details of the snapshot in the Create Snapshot pop-up window and click on **Create Snapshot**.

Volume: vol-0de969c04ced0eb8

Description: SnapShot for Added EBS

Encrypted: Not Encrypted

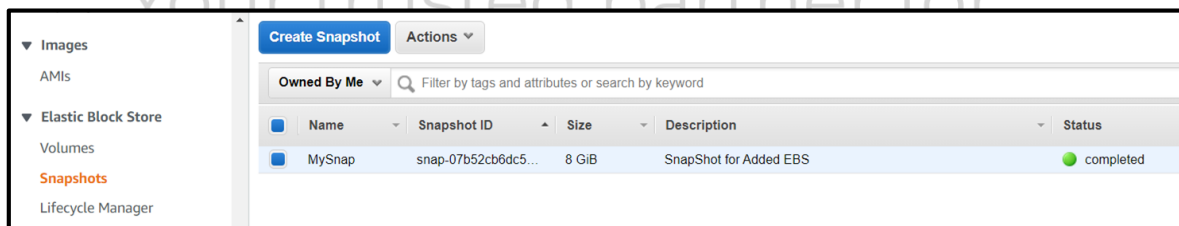
Key	Value
Name	MySnap

Add Tag 49 remaining (Up to 50 tags maximum)

* Required

Cancel Create Snapshot

Step 5: Go to the **Snapshots** option on the left panel and check that the snapshot has been created.

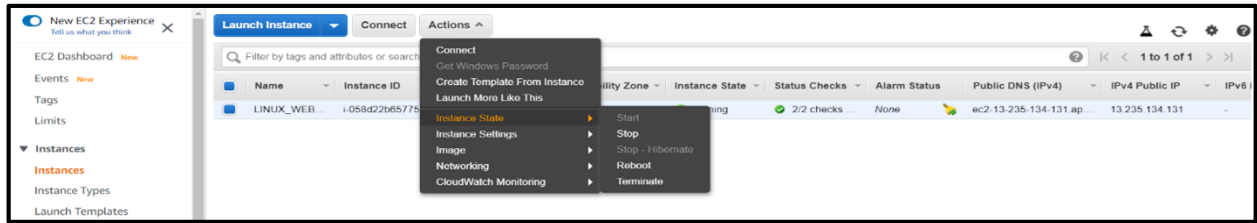


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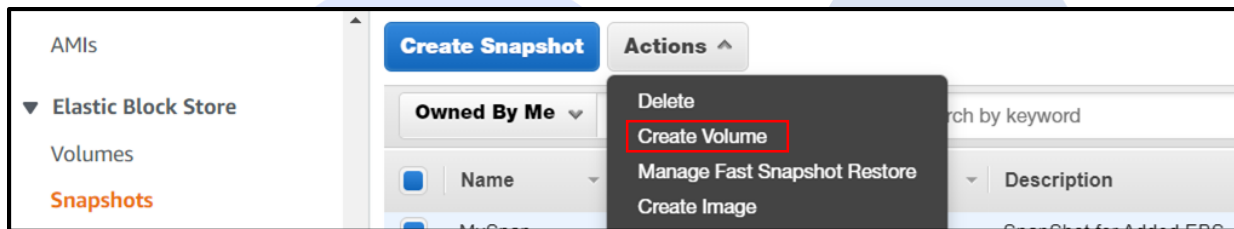


Step 6: Now Terminate the Linux Instance

- Click on drop-down menu besides Actions button
- Select the **Instance State** and click on **Terminate**



Step 7: Go to **Snapshots** under **Elastic Block Store**. Click on **Actions** and select **Create Volume**.



Initially the size of volume in this case is 50 GB. We see the same value in the new Modify Volume pop-up window. Increase it to different value. E.g. 100 GB.



Note the **subnet** and choose the same subnet while creating its associated Instance in future.

Click on **Create Volume**.

Thus the old volume is modified into a new volume with increased size of 100GB.

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Step 8: Go to EC2. Create Linux Instance and configure it in the above noted subnet. Configure it to have only ROOT volume.

After creation on the instance, in EBS, make sure that the new ROOT volume is in **in-use** state. The modified volume will be in **available** state.

Step 9: Go to Volumes. Select the new DATA volume. Go to **Action** -> **Attach Volume**.

In the pop up window select your newly created instance in the **Instance** text field. Click on **Attach** button.

Now the volume is successfully attached to the instance. You may delete the old DATA volume since the data has already been reciprocated.

Note: If you no longer need this instance and the volume make sure to terminate the instance and delete the volume as well as snapshot.



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Was this document helpful? YES / NO

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cloud enablement

Document Created by	Version
Parag Deshpande	19-01-2020