

Cloud Plus Plus Services



Persists EBS volume beyond the life of an EC2 instance, take snapshot & restore the EBS volume in a different AZ. Attach the restored EBS volume to a new EC2 instance in that AZ.

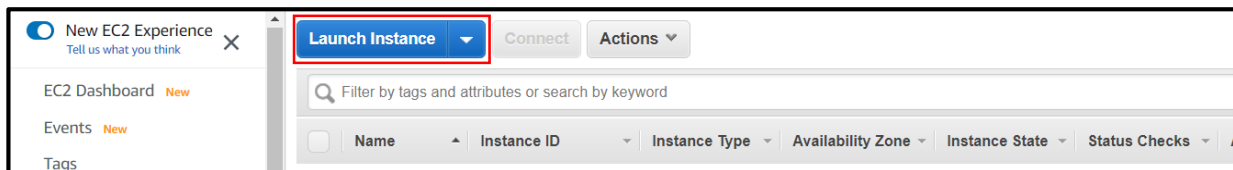
Objectives:

1. Learn to persist EBS Volume beyond the life of an EC2 instance.
2. Replicate your application instance and data in a different AZ.

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

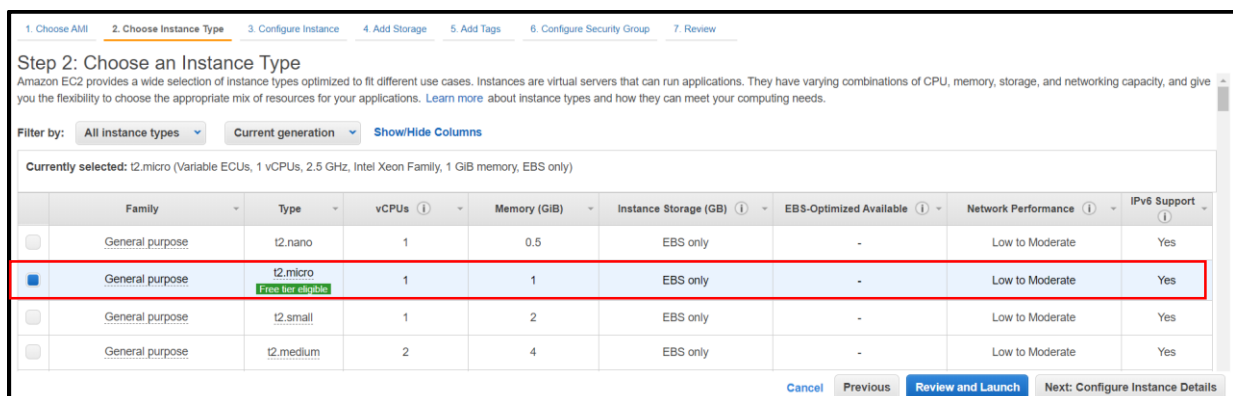


search/select **Amazon Linux 2 AMI**.



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.



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Here you will Configure Instance Details.

- In the **Subnet** field select on the drop down list and **select any one** of the Subnets. It is ap-south-1a in our case.
- 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-1a1a1a1a (default) [Create new VPC](#)

Subnet: subnet-1a1a1a1a (Default in ap-south-1a) [Create new subnet](#)

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**

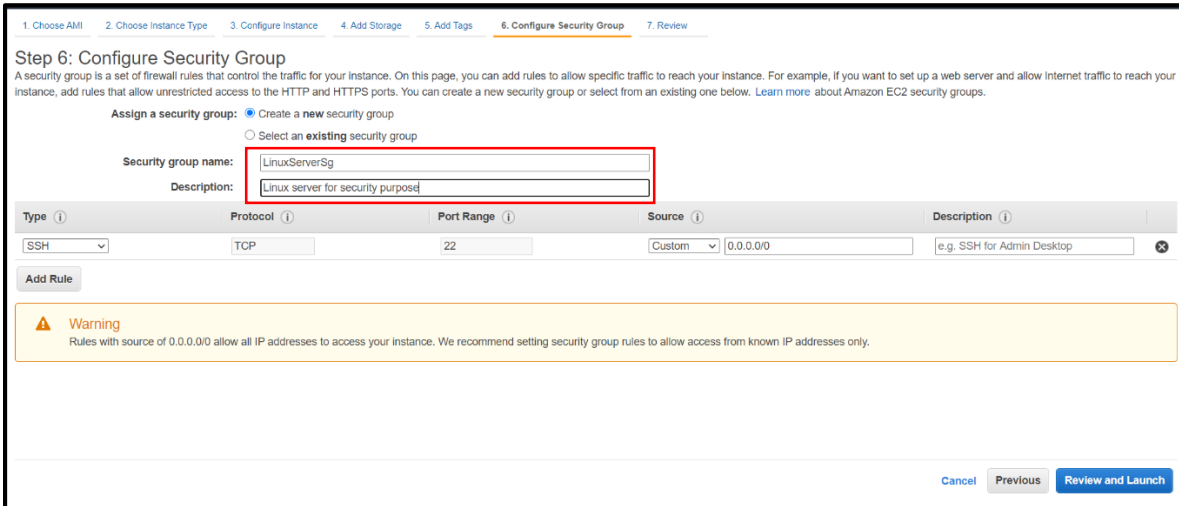
Click on the **Next: Configure Security Group** at the bottom right of the screen.
Configure Security Group

- Create a **new** security group and name it as **LinuxSG**
- In the description enter the following text:

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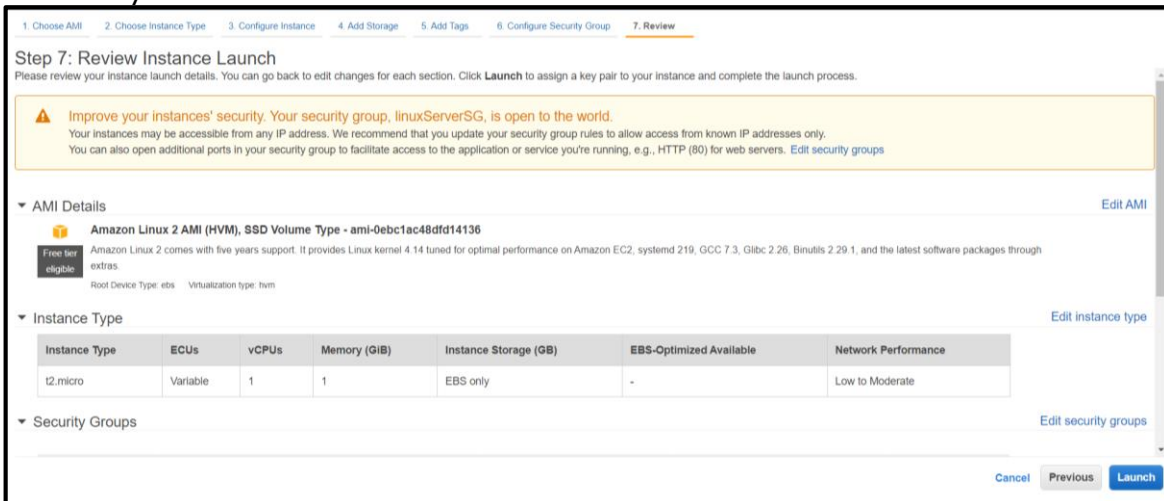
Security Groups for Linux Servers

- 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



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.



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: linuxServerSG

- 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.

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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.

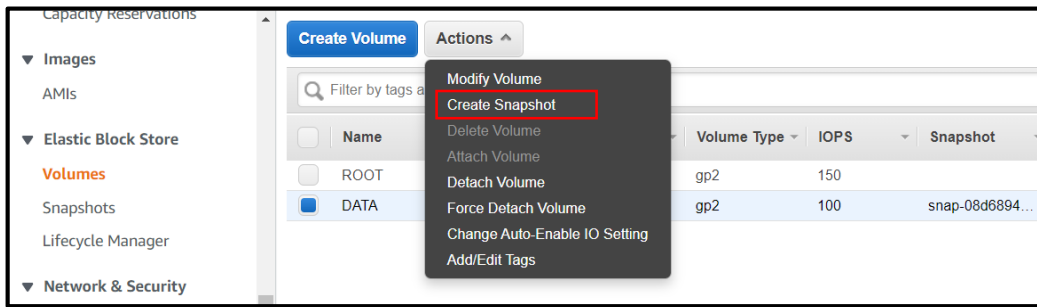
Check if the instance is running.

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)

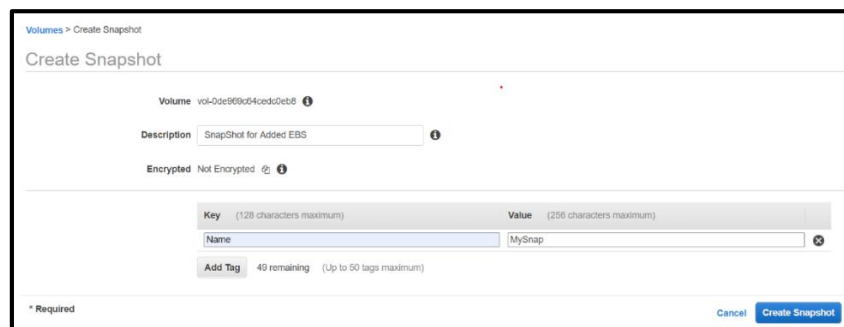
Name these two volumes as ROOT and DATA below the name category by clicking the pencil icon in the name column.

Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone	State	Alarm Status	Attachmer
DATA	vol-09fe92d3...	50 GiB	gp2	150		September 1, 2020 ...	ap-south-1a	in-use	None	i-0d22521c...
ROOT	vol-0c103f4f...	8 GiB	gp2	100	snap-08d6894...	September 1, 2020 ...	ap-south-1a	in-use	None	i-0d22521c...

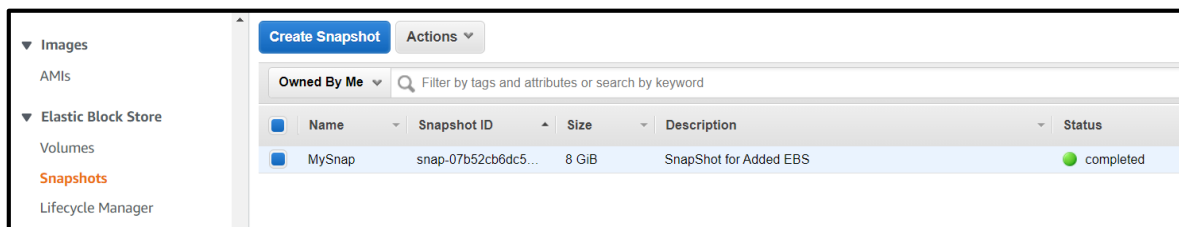
Step 4: Select the DATA volume. Go to **Actions** and click on **Create Snapshot** option.



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



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

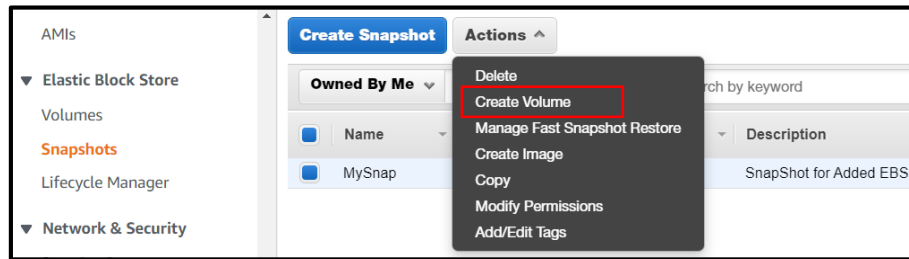


Step 6: Create a new Linux Instance in different availability zone by choosing a different **Subnet** at **Configure Instance Details** step. Follow the Step 1 and Step 2.

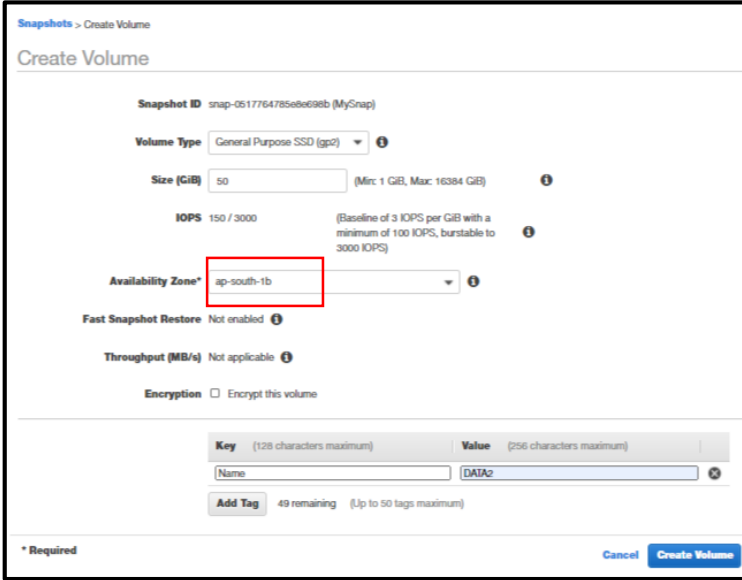
Do not create an additional volume. Just keep the default Root Volume.

Note this Subnet. For our understanding we take the example as **ap-south-1b**

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



We choose the same subnet in which this new Instance is created.



Click on **Create Volume**.

Step 8: In the same Volume Tab, we observe that the DATA2 volume is in **available** state and the root volume of new server is in **in-use** state.

Step 9: Go to Volumes. Select the 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.

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Attach Volume

Volume ⓘ

vol-006616df6b3cf0028 (DATA) in ap-south-1b

Instance ⓘ

in ap-south-1b

Device ⓘ

i-05226ca14632c8c14 (ROOT2) (running)

Cancel

Attach

Thus the volume restored in a new availability zone through snapshot is attached to an instance in that AZ successfully.

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

Was this document helpful? YES / NO

Document Created by	Version
Parag Deshpande	20-01-2021