

Amazon Machine Images (AMI)

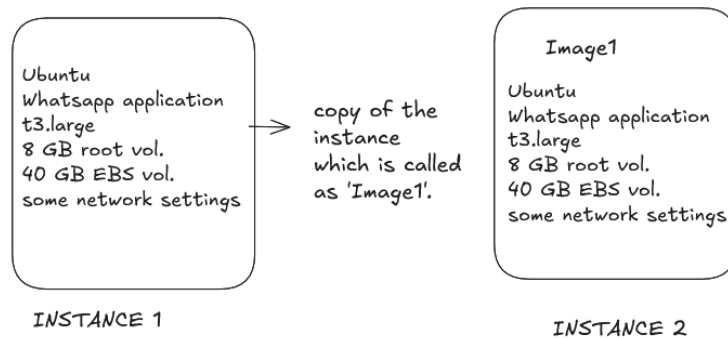
- >> AMI is a template/blueprint which consists of all the software configurations to launch the Instances.
- >> Launched Instances (AMI) will consist of OS & pre-installed software.
- >> Images are created for a particular instance.

Creation of AMI

1. Launch an instance with an OS and an application, if there is any.
(Make sure the Instance for which we want to create the image, we should have all the software already installed on it).
2. Select the Instance for which we want to generate the AMI.
3. Click on 'Actions' and select 'Images & Templates'.
4. Select the 'Create Image' option.
5. AMI dialog box opens, and there provide a name for the image.
6. Click on 'Create Image'.

Check the list of AMIs

1. Go to EC2 and click on 'Images' from the left-panel
2. Select AMIs



Deletion of AMIs

1. Go to EC2 and click on 'Images' from the left-panel
2. Select AMIs.
3. Click on 'Actions' and select 'Deregister AMI'.

ASSIGNMENT 1

1. Launch Ubuntu EC2 server and connect through PuTTY
2. Install nginx into the server
3. Host a simple "Hello DevOps" webpage in it.
4. Create a custom AMI of the current instance.
5. Use that AMI to launch a new EC2 instance.
6. Verify that if the new instance already has nginx and the hosted website.
7. Terminate both the instance but keep the AMI.
8. Delete the AMI

3. `echo "Hello DevOps" | sudo tee /var/www/html/index.nginx-debian.html`
For hosting: copy the Public ip of instance and go to browser and type: `'http://<public-ip>'`

ASSIGNMENT 2

- > My company needs a pre-configured environment with these tools: Python, Git, nginx and Maven installed for all 5 developers. Instead of asking every developer to set up these tools and instances, you have to automate the process.

Why does AWS reboot the instance while creating an Image?

- > When we create an AMI from an EC2 instance, AWS takes the snapshot of the instance's attached EBS volume along with all EBS volumes.
- > If the instance is running:
 - Files being written
 - Data in memory is not saved in disk.
- > If AWS takes a snapshot while all these things are happening, the backup(snapshot) will be inconsistent. That is why AWS, for a moment will stop the instance, then again it will restart the instance.

Why does AWS create a snapshot while creating an AMI?

- > During the image creation process, EC2 creates a snapshot of the volumes, because an AMI is basically a template of the instance. To fully capture the template, AWS needs the root volume EBS data (OS, app, config.) which is stored in the root volume of instance.
- > That is why during AMI creation, EC2 automatically creates snapshots of all the attached EBS volume.
 - > Snapshot = attached volume + AMI metadata
 - > AMI = snapshot+metada

Creation of AMI using Snapshots:

Snapshots: Snapshots are a point-in-time copies, like a backup. A snapshot is a backup of EBS volume.

- > When you launch an EC2 instance, it usually has at least one EBS volume attached to it. And that EBS volume stores:
 - > The OS (Linux, Windows)
 - > Data (files & folders)
 - > Applications

Steps to create image from Snapshots:

1. Launch the Instance.
2. Go to Elastic Block Store and select 'Snapshot'.
3. Click on 'Create Snapshot' and in the resource type, select 'Instance'.
4. Select the particular instance from 'Instance ID'.
5. Click on 'Create Snapshot'.
6. From snapshots, select the 'Root Volume' and click on 'Actions'.
7. Select 'Create image from snapshot'.
8. Provide the name for the image n& click on 'Create Image'.

Q. Why creation of AMI from an existing snapshot takes much less time to become available, rather than the regular AMI creation?