AMI – Amazon Machine Image

An AMI (Amazon Machine Image) is a **template** that contains the OS, software, and configuration used to launch EC2 instances in AWS, so you can create consistent, repeatable servers quickly. Its purpose is to act as a reusable blueprint or "golden image" so you do not have to reconfigure servers manually each time.

- In AWS, OS (Operating System) is known as Amazon Machine Image. (Windows, Linux, Mac)
- An AMI is a master image used to create virtual servers (EC2 instances) in AWS
- It includes a root volume (OS + packages), optional additional volumes, and metadata like permissions and block device mappings.
- AMIs are regional scope and can be copied between regions when needed.
- Amazon Linux: Provided and managed by Amazon
- AWS marketplace AMIs: Customized OS, Paid version of OS
- We can use same AMI id in different EC2 instance, so that we access the same application hosted in different EC2 instance.

Speed and automation: Greatly reduces setup time and is ideal for autoscaling groups, blue-green deployments, and CI/CD pipelines.

Storage Costs

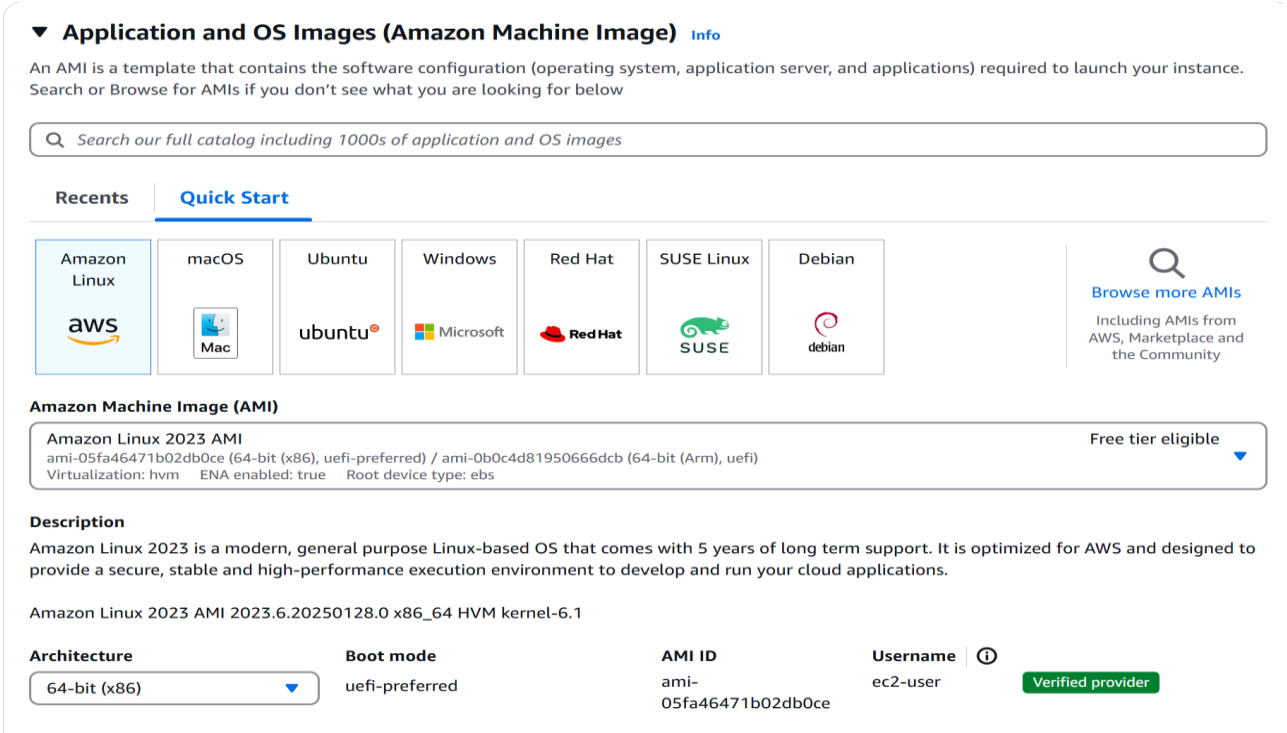
AWS-provided AMIs (like Free-tier-eligible) and your own custom AMIs you create from EC2 instances incur no separate AMI storage fees beyond the underlying EBS snapshots.

Custom AMIs store data as EBS snapshots, so it will be billed. Pay only while snapshots exist; deregister unused AMIs/snapshots to avoid charges.

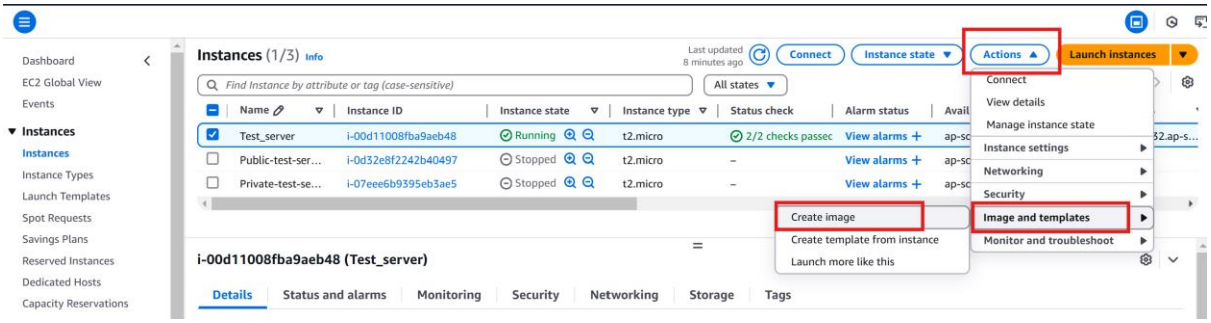
Create a custom AMI

1. Launch and configure a base EC2 instance

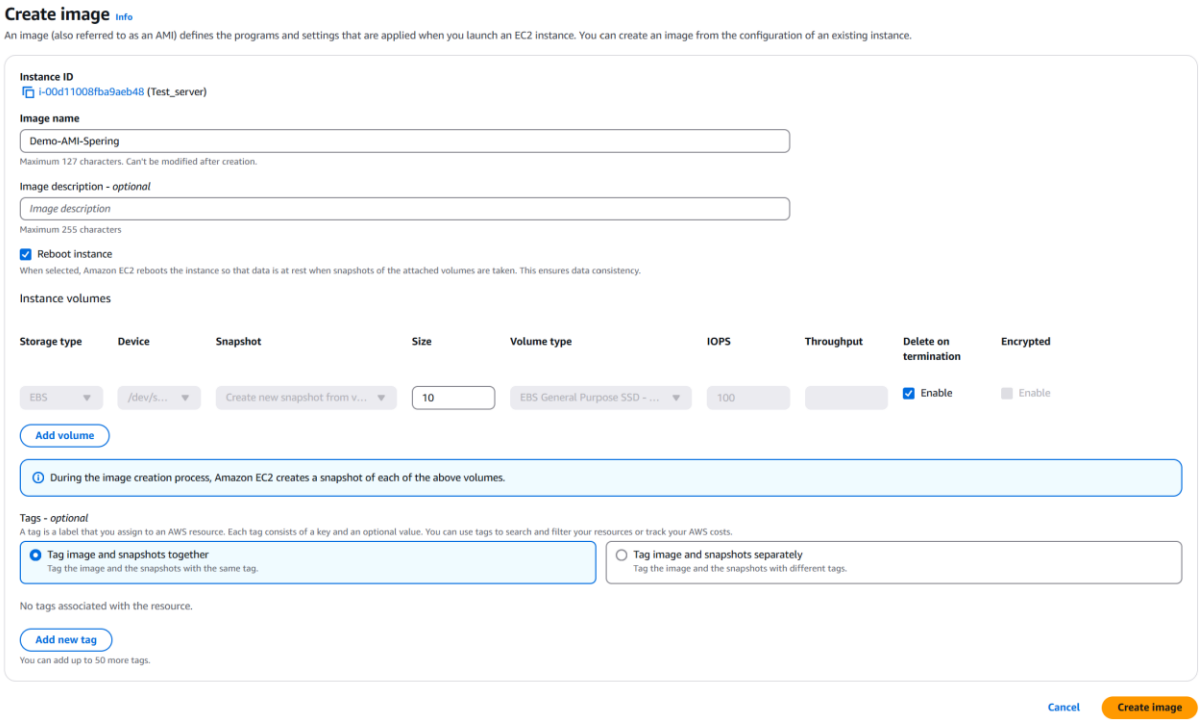
- In EC2 console, choose an existing AMI (e.g., Amazon Linux, Ubuntu) and launch an instance with desired instance type, VPC, subnet, security group, and key pair.
- Additionally, install all required packages, agents, app code, and OS tuning you want baked into the image.



2. Create the AMI from the instance

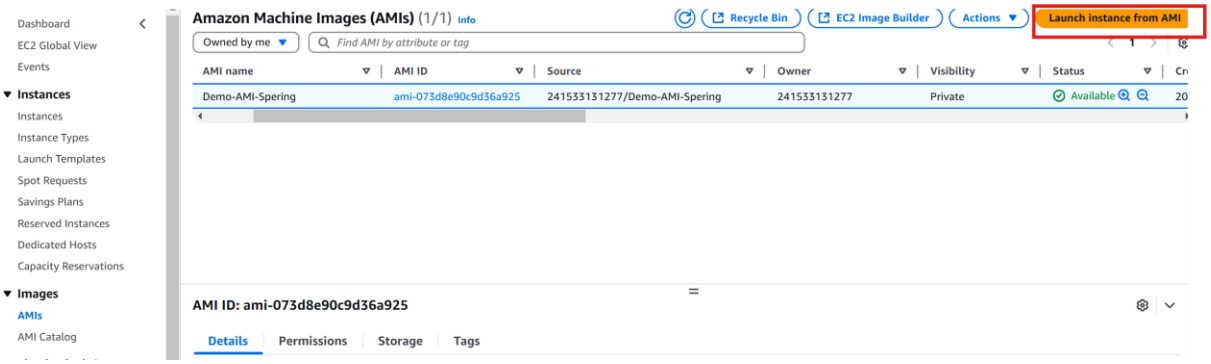


- In EC2 console, go to Instances, right-click (or Actions) on your instance and choose “Create image”. Set Image name/description. Then “Create Image”



3. Wait for AMI creation to complete

- Once the status is “available”, the AMI is ready to launch new instances or be used in launch templates.



Launch an EC2 instance with new AMI. We can launch the same AMI in multiple EC2 instance.

If we hosted any application in the AMI, it will reflect in all other EC2 instance created with the same AMI.

Also, we can use the AMI ID to launch instance by using IAC tools.