

Here is a specification of the steps, commands, observations, and problems I faced.
I used AWS CLI V2 shell to do the operations.
The key-pair I created is named: cloudp0
Cost Estimation Detail is in Step 7, Total is \$0.00232

Step 2: Create Instance from Preconfigured AMI 2:46
Command: `aws ec2 run-instances --image-id ami-0ff8a91507f77f867 --instance-type t2.micro --key-name cloudp0`

Pre-configured AMI: `ami-0ff8a91507f77f867`
Returned Values:
Instance ID: `i-08dcbf8495766346f`
Public DNS Name: `ec2-44-197-246-116.compute-1.amazonaws.com`

Observation:
--key-name parameter is not required to create the instance, but it is needed to ssh into the instance.
Forgetting to add the --key-name parameter will throw an error about (publickey) that stops user to access the instance. Therefore, do not skip it.

Step 3: Wait the Instance to be initialized 2:48
Command: `ssh -i cloudp0.pem ec2-user@ec2-35-174-207-107.compute-1.amazonaws.com`

Step 4: Download some app on Linux 2:50
`sudo yum install -y perl emacs`
`logout`

Observation:
Linux stops user to download apps directly unless you are the root user.
Adding keyword "sudo" will do the command as root user.

Step 5: Create Image 2:51
`aws ec2 create-image --instance-id i-08dcbf8495766346f --name cloudp0_test_image`
Returned Values:
AMI ID: `ami-0f342d7605fcdee91`

Observation:
Before moving to Step 6, you must wait until the AMI is been created and is in available state, because creating new AMI involves copying data from the instance. Therefore, terminating the instance before the AMI is available, will cause AMI to stuck in pending state forever. Additionally, instance is not usable during the creation of AMI.

Step 6: Terminate Instance from Step 2 2:56
Create Instance base on the newly created ImageID
AMI from Step 5 is pending, waiting to be available

Command: `aws ec2 terminate-instances --instance-id i-08dcbf8495766346f`

`aws ec2 run-instances --image-id ami-0f342d7605fcdee91 --instance-type t2.micro --key-name cloudp0`
Returned Values:
Instance ID: `i-01bdb9a7c84d50f90`

Observation:
Sometimes, it ask for SnapshotID or Volume size. Not sure why it happens, maybe due to the instance terminated before the AMI is available.

Step 6.5: Terminate the New Instance
Command: `aws ec2 terminate-instances --instance-id i-01bdb9a7c84d50f90`

Step 7: Compute cost 2:58

Instance Type	Hourly Rate(On demand)	Charge Basis
t2.micro	\$0.0116	Per-second

First Instance(Step 2 - 6) run time: 10 min (2:46 - 2:56)
Second Instance(Step 6) run time: 2 min (2:56 - 2:58)
Total Run Time: 12 min
Total Cost: (12 min/ 60 min) * \$0.0116 = \$0.00232

Step 8: Clean up
Command:
`aws ec2 deregister-image --image-id ami-0f342d7605fcdee91`
`aws ec2 delete-snapshot --snapshot-id snap-033528c08e92417f9`