

## Lab 2

### Anudit Nagar - E18CSE024

Last 3 activities of Lab 1 because they were done in Lab 2.

**Task 4:** Working with AWS command line and perform Start, Stop and Terminate EC2 Instance using CLI.

The image displays the process of creating and managing an EC2 instance using the AWS CLI and the AWS Management Console.

**Top Panel: AWS CLI Commands and Output**

```
    "GroupName": "my-sg",
    "GroupId": "sg-903004f8"
  },
  "Instances": [
    {
      "Monitoring": {
        "State": "disabled"
      }
    }
  ]
}
```

Administrator Command Prompt:

```
D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>aws --version
aws-cli/2.1.20 Python/3.7.9 Windows/10 exe/AMD64 prompt/off

D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>
```

Administrator Command Prompt (Continued):

```
D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>aws --version
aws-cli/2.1.20 Python/3.7.9 Windows/10 exe/AMD64 prompt/off

D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>aws ec2 create-key-pair --key-name 304Lab2 --query 'KeyMaterial' --output text > 304Lab2.pem

You must specify a region. You can also configure your region by running "aws configure".

D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>aws configure
AWS Access Key ID [*****]: ASIAJLXRVQ53HMYB5A
AWS Secret Access Key [*****]: D5lmp2A+6shxQCaYehCITlqeq3+88X7MADNDC
Default region name [None]: us-east-1
Default output format [None]: json

D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>aws ec2 create-key-pair --key-name 304Lab2 --query 'KeyMaterial' --output text > 304Lab2.pem

D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>aws ec2 create-security-group --group-name sg-304Lab1 --description "My security group"
An error occurred (InvalidParameter) when calling the CreateSecurityGroup operation: Value (sg-304Lab1) for parameter GroupName is invalid. Group names may not be in the format sg-*.

D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>aws ec2 create-security-group --group-name 304Lab1 --description "My security group"
{
  "GroupId": "sg-017c2d7de37cd4b6"
}

D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>aws ec2 run-instances --image-id ami-0885b1f6bd170458c --count 1 --instance-type t2.micro --key-name 304Lab2 --security-group-ids sg-017c2d7de37cd4b6
{
  "Groups": [],
  "Instances": [
    {
      "AmiLaunchIndex": 0,
      "ImageId": "ami-0885b1f6bd170458c",
      "InstanceId": "i-083765ee06379345c",
      "InstanceType": "t2.micro",
      "KeyName": "304Lab2",
      "LaunchTime": "2021-01-21T04:31:38+00:00",
      "Monitoring": {
        "State": "disabled"
      },
      "Placement": {
        "AvailabilityZone": "us-east-1c",
        "GroupName": "",
        "Tenancy": "default"
      },
      "PrivateDnsName": "ip-172-31-80-38.ec2.internal",
      "PrivateIpAddress": "172.31.80.38",
      "PublicDnsName": null
    }
  ]
}
```

**Bottom Panel: AWS Management Console**

The screenshot shows the AWS Management Console with the following details:

- Instances (1/1) Info:** Filter instances.
- Table:**

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4	Elastic IP
<input checked="" type="checkbox"/>	-	i-083765ee06379345c	Running	t2.micro	Initializing	No alarms	us-east-1c	ec2-54-235-226-168.c...	54.235.226.168	-

```
D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>
D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>
D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>aws ec2 terminate-instances --instance-ids i-083765ee06379345c
{
  "TerminatingInstances": [
    {
      "CurrentState": {
        "Code": 32,
        "Name": "shutting-down"
      },
      "InstanceId": "i-083765ee06379345c",
      "PreviousState": {
        "Code": 16,
        "Name": "running"
      }
    }
  ]
}

D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>
```

The screenshot shows the AWS Management Console for the 'Instances' page. The left sidebar contains navigation options like 'EC2 Dashboard', 'Events', 'Tags', 'Limits', and 'Instances'. The main content area displays a table of instances. One instance, 'i-083765ee06379345c', is listed with a status of 'Terminating'. The table columns include Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, Public IPv4 DNS, and Public IPv4.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4
-	i-083765ee06379345c	Terminating	t2.micro	-	1 alarm...	us-east-1c	-	-

**Task 5:** Use of Simple Storage Service (S3), by creating AWS S3 bucket and Interact with AWS S3 service using AWS CLI. (Desirable tasks to be performed make bucket, remove bucket, upload object into bucket and explore all the bucket properties.)

```
D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>aws s3 mb s3://304lab2
make_bucket: 304lab2

D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>
```

The screenshot shows the AWS Management Console for the 'Amazon S3' page. The left sidebar contains navigation options like 'Buckets', 'Access points', 'Batch Operations', 'Access analyzer for S3', 'Account settings for Block Public Access', 'Storage Lens', 'Dashboards', and 'AWS Organizations settings'. The main content area displays a table of buckets. One bucket, '304lab2', is listed with a region of 'US East (N. Virginia) us-east-1' and an access level of 'Objects can be public'. The table columns include Name, Region, Access, and Creation date.

Name	Region	Access	Creation date
304lab2	US East (N. Virginia) us-east-1	Objects can be public	January 21, 2021, 10:28:44 (UTC+05:30)

```
D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>aws s3 ls s3://304lab2
2021-01-21 10:39:32          4441 commands.txt
```

```
D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>|
```

```
D:\Users\anudit\Documents\Github\cloudcomp-304\Lab2>aws s3 rb s3://304lab2
remove_bucket: 304lab2
```

## Lab 2

Create Instance 1 with root and additional EBS storage.

**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
Root	/dev/sda1	snap-0846ce4394d115972	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>
EBS	/dev/sdb	Search (case-insensit)	10	General Purpose SSD (gp2)	100 / 3000	N/A	<input type="checkbox"/>

[Add New Volume](#)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

Create Instance 2 with just root volume.

**Step 7: Review Instance Launch**

**Improve your Instances' security.** Your security group, launch-wizard-2, 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](#)

**Free Tier usage information**  
You've used all of your free Linux instance hours for this month (as at 2021-01-26 01:07:49 UTC). For information about the Free Tier limits, see [AWS Free Tier](#). To generate a report of all your EC2-related resources in all Regions, see [document](#).

**AMI Details**

**Ubuntu Server 20.04 LTS (HVM), SSD Volume Type - ami-0885b1f6bd170450c**  
Ubuntu Server 20.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).  
Root Device Type: ebs Virtualization Type: hvm

**Instance Type**

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

**Security Groups**

**Security group name** launch-wizard-2  
**Description** launch-wizard-2 created 2021-01-27T11:03:41.409+05:30

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	0.0.0.0/0	

## 10gb volume available for use on instance 1

```
ubuntu@ip-172-31-93-160: ~  
0 of these updates are security updates.  
To see these additional updates run: apt list --upgradable  
  
The list of available updates is more than a week old.  
To check for new updates run: sudo apt update  
  
The programs included with the Ubuntu system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.  
  
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by  
applicable law.  
  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
ubuntu@ip-172-31-93-160:~$ sudo lsblk  
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT  
loop0        7:0    0  97.8M  1 loop /snap/core/10185  
loop1        7:1    0  55.3M  1 loop /snap/core18/1885  
loop2        7:2    0  70.6M  1 loop /snap/lxd/16922  
loop3        7:3    0   28.1M  1 loop /snap/amazon-ssm-agent/2012  
xvda        202:0    0    8G  0 disk  
└─xvda1      202:1    0    8G  0 part /  
xvdb        202:16   0   10G  0 disk  
ubuntu@ip-172-31-93-160:~$
```

## Detach Volume

The screenshot shows the AWS Management Console interface. A modal dialog titled "Detach Volume" is open, asking for confirmation to detach the volume "vol-033bc3067354f97d". The dialog has "Cancel" and "Yes, Detach" buttons. In the background, the "Volumes" page is visible, showing a table of volumes and their details.

Name	Volume ID	Size	Volume Type	IOPS	Throughput	Snapshot	Created	Availability Zone	State	Alarm Status	Attachment Information	Monitoring	Volume Status
vol-0e95e68...	vol-0e95e68...	8 GiB	gp2	100	-	snap-0846ce4...	January 27, 2021 at...	us-east-1c	In-use	None	i-099843eb71938ef...	OK	OK
vol-033bc30...	vol-033bc30...	10 GiB	gp2	100	-	-	January 27, 2021 at...	us-east-1c	In-use	None	i-022924b7d5e6f249...	OK	OK
vol-0d26632...	vol-0d26632...	8 GiB	gp2	100	-	snap-0846ce4...	January 27, 2021 at...	us-east-1c	In-use	None	i-022924b7d5e6f249...	OK	OK

**Volume Details: vol-033bc3067354f97d**

Description	Status Checks	Monitoring	Tags
Volume ID	vol-033bc3067354f97d		
Alarm status	None		
Snapshot	-		
Availability Zone	us-east-1c		
Encryption	Not Encrypted		
KMS Key ID	-		
KMS Key Aliases	-		
KMS Key ARN	-		
Throughput (MB/s)	-		

**Attachment Information:**

Attachment Information	Volume type	Product codes	IOPS	Multi-Attach Enabled
i-022924b7d5e6f249d /dev/sdb (attached)	gp2	-	100	No

## Attach to instance 2.

The screenshot shows the AWS Management Console interface. On the left, the navigation menu includes sections like EC2 Dashboard, Instances, Images, Elastic Block Store, Network & Security, and Load Balancing. The main content area displays a table of EBS volumes. A modal dialog titled 'Attach Volume' is open in the center. The dialog contains the following fields:

- Volume:** vol-033bc3067354f97d
- Instance:** i-022924b7d5e6f249d
- Device:** /dev/sdf

Below these fields, a note states: 'Note: Newer Linux kernels may rename your devices to /dev/xvdf through /dev/xvdp internally, even when the device name entered here (and shown in the details) is /dev/sdf through /dev/sdp.' At the bottom right of the dialog are 'Cancel' and 'Attach' buttons.

Name	Volume ID	Size	Volume Type	IOPS	Throughput	Snapshot	Created	Availability Zone	State	Alarm Status	Attachment Information	Monitoring	Volume Status
	vol-0e95e68...	8 GiB	gp2	100	-	snap-0846ce4...	January 27, 2021 at...	us-east-1e	In-use	None	i-099043eb07193bf...		Okay
	vol-033bc30...	10 GiB	gp2	100	-		January 27, 2021 at...	us-east-1c	available	None			Okay
	vol-0e26632...	8 GiB	gp2	100	-	snap-0846ce4...	January 27, 2021 at...	us-east-1c	In-use	None	i-022924b7d5e6f249...		Okay

## Delete storage volume.

The screenshot shows the AWS Management Console interface, similar to the previous one. The 'Delete Volume' modal dialog is open. It contains the following information:

- Title:** Delete Volume
- Message:** Are you sure you want to delete this volume?
- Volume List:** vol-033bc3067354f97d

At the bottom of the dialog are 'Cancel' and 'Yes, Delete' buttons.

Name	Volume ID	Size	Volume Type	IOPS	Throughput	Snapshot	Created	Availability Zone	State	Alarm Status	Attachment Information	Monitoring	Volume Status
	vol-0e95e68...	8 GiB	gp2	100	-	snap-0846ce4...	January 27, 2021 at...	us-east-1e	In-use	None	i-099043eb07193bf...		Okay
	vol-033bc30...	10 GiB	gp2	100	-		January 27, 2021 at...	us-east-1c	available	None			Okay
	vol-0e26632...	8 GiB	gp2	100	-	snap-0846ce4...	January 27, 2021 at...	us-east-1c	In-use	None	i-022924b7d5e6f249...		Okay