

## ASSIGNMENT – 7

### 1. Code Execution:

```
siddhartha@Siddharthas-MBP AwsBoto3 % /usr/local/bin/python3 /Users/siddhartha/sid/courses/infraAutomation/Git/InfrastructureAutomation/AwsBoto3/main.py
Starting to create resources
EC2 creation started
Creating the Launch Templates : STARTED
Launch template created with ID:lt-0259d16191aa76a7c and Name:a7_launch_Template
Operation finished
siddhartha@Siddharthas-MBP AwsBoto3 %
```

The code execution happens in the following way

- i. A class Assignment7 is created which consists of the APIs for pushing the file to git, creating launch template, and creating auto scaling group.
- ii. Git actions are performed using bash commands through python interface.
- iii. Auto scale groups are created by calling the **create\_ec2\_auto\_scaling\_group** which calls the method **create\_ec2\_launch\_template** which creates the required launch template for auto scale resource.
- iv. **create\_ec2\_launch\_template** requires 'ImageId', 'InstanceType', 'KeyName', 'UserData', 'SecurityGroupIds'
- v. UserData is provided in base64 format. The input for the UserData is stored in the file userdata64. The exact commands that are encoded in the userdata64 file is present in the file userdata.sh. UserData is used to pass commands that are executed while the instances are booting for configuring the initial EC2 instance setup.

## [Screenshots]

### 2. Launch Template

The screenshot shows the AWS EC2 Launch Templates page. The URL is <https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchTemplates>. The left sidebar shows the New EC2 Experience, EC2 Dashboard, Events, Tags, Limits, Instances (with a red 'New' badge), Instance Types, Launch Templates (which is selected and highlighted in orange), and Spot Requests. The main content area is titled "Launch templates (1) Info". It contains a table with one row, showing the following data:

Launch template ID	Launch template name	Default version	Latest version	Create time
lt-0259d16191aa76a7c	a7_launch_Template	1	1	2021-07-29T04:10:04.00

### 3. Auto Scaling Group

Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability Zones
a7_autoscalling	a7_launch_Template   Version -	2	-	2	2	3	us-east-2a

The screenshot shows the AWS EC2 Management Console with the URL [us-east-2.console.aws.amazon.com/ec2autoscaling/home?region=us-east-2#details/a7\\_autoscalling?view=details](https://us-east-2.console.aws.amazon.com/ec2autoscaling/home?region=us-east-2#details/a7_autoscalling?view=details). The page displays the 'Group details' for the 'a7\_autoscalling' group. Key information includes:

- Desired capacity:** 2
- Auto Scaling group name:** a7\_autoscalling
- Minimum capacity:** 2
- Date created:** Thu Jul 29 2021 00:10:06 GMT-0400 (Eastern Daylight Time)
- Maximum capacity:** 3
- Amazon Resource Name (ARN):** arn:aws:autoscaling:us-east-2:846872669451:autoScalingGroup:51b0cc07-0e5b-47b2-865f-fd26103a87c7:autoScalingGroupName/a7\_autoscalling

The left sidebar shows the navigation menu for EC2 services.

## 4. Instances

The screenshot shows the AWS EC2 Management Console with the URL [us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2instances](https://us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2instances). The page displays the 'Instances (2)' list. The two instances listed are:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
-	i-0f357049123e06b6e	Running	t2.micro	Initializing	No alarms	us-east-2a	ec2-18-218-97-183.us-east-2.compute.amazonaws.com
-	i-0030d656f9f6dad3b	Running	t2.micro	Initializing	No alarms	us-east-2a	ec2-3-144-12-93.us-east-2.compute.amazonaws.com

The left sidebar shows the navigation menu for EC2 services.

### a. Instance 1

The screenshot shows the AWS EC2 Instance Details page for instance i-0f357049123e06b6e. The instance is running an Ubuntu (Inferred) AMI (ami-00399ec92321828f5) and has a t2.micro instance type. It is assigned a public IPv4 address (18.218.97.183) and a private IPv4 address (172.31.6.27). The instance is connected to a VPC (vpc-e40666bf) and subnet (subnet-37860e5c). The instance state is shown as Running.

Instance ID	Public IPv4 address	Private IPv4 addresses
i-0f357049123e06b6e	18.218.97.183	172.31.6.27

Instance state	Public IPv4 DNS	Private IPv4 DNS
Running	ec2-18-218-97-183.us-east-2.compute.amazonaws.com	ip-172-31-6-27.us-east-2.compute.internal

Instance type	Elastic IP addresses	VPC ID
t2.micro	-	vpc-e40666bf

AWS Compute Optimizer finding	IAM Role	Subnet ID
(Opt-in to AWS Compute Optimizer for recommendations.)	-	subnet-37860e5c

This screenshot shows the same AWS EC2 Instance Details page for instance i-0f357049123e06b6e. The configuration is identical to the first instance, including the AMI, instance type, and network settings. The instance state is also listed as Running.

Instance ID	Public IPv4 address	Private IPv4 addresses
i-0f357049123e06b6e	18.218.97.183	172.31.6.27

Instance state	Public IPv4 DNS	Private IPv4 DNS
Running	ec2-18-218-97-183.us-east-2.compute.amazonaws.com	ip-172-31-6-27.us-east-2.compute.internal

Instance type	Elastic IP addresses	VPC ID
t2.micro	-	vpc-e40666bf

AWS Compute Optimizer finding	IAM Role	Subnet ID
(Opt-in to AWS Compute Optimizer for recommendations.)	-	subnet-37860e5c

## b. Instance 2

Instance summary for i-0030d656f9f6dad3b

Attribute	Value
Public IPv4 address	54.144.12.93 [open address]
Private IPv4 address	172.31.7.24
Public IPv4 DNS	ec2-54-144-12-93.us-east-2.compute.amazonaws.com [open address]
Private IPv4 DNS	ip-172-31-7-24.us-east-2.compute.internal
VPC ID	vpc-e40666bf
Subnet ID	subnet-37860e5c

## Web page output

This is test page for assignment 7

## 5. After terminating 1 instance

Instances (3) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
-	i-037bedbf5a2233917	Pending	t2.micro	-	No alarms	+ us-east-2a	ec2-54-144-12-93.us-east-2.compute.amazonaws.com
-	i-0f5570491250606fe	Running	t2.micro	2/2 checks passed	No alarms	+ us-east-2a	ec2-18-218-97-183.us-east-2.compute.amazonaws.com
-	i-0030d656f9f6dad3b	Terminated	t2.micro	-	No alarms	+ us-east-2a	-

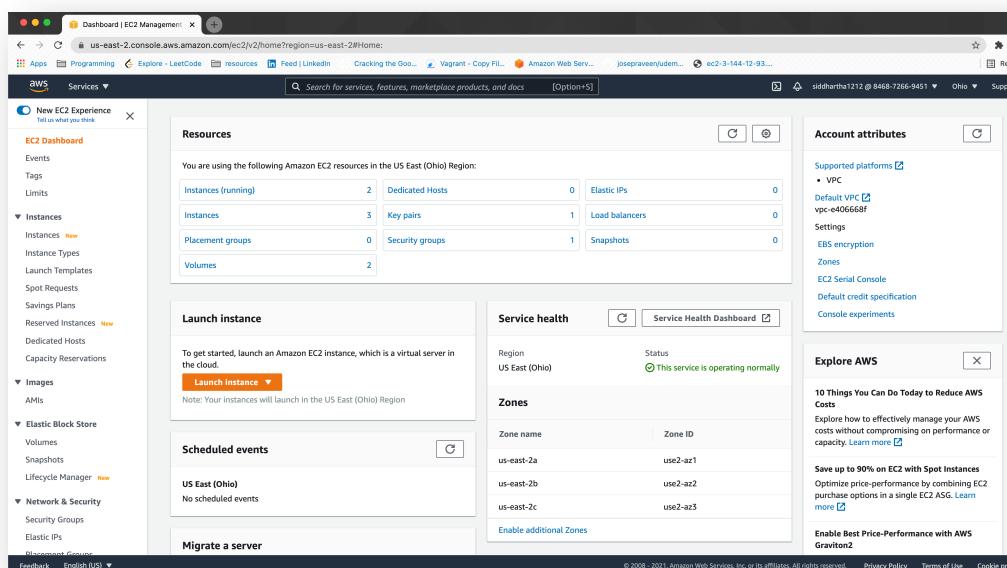
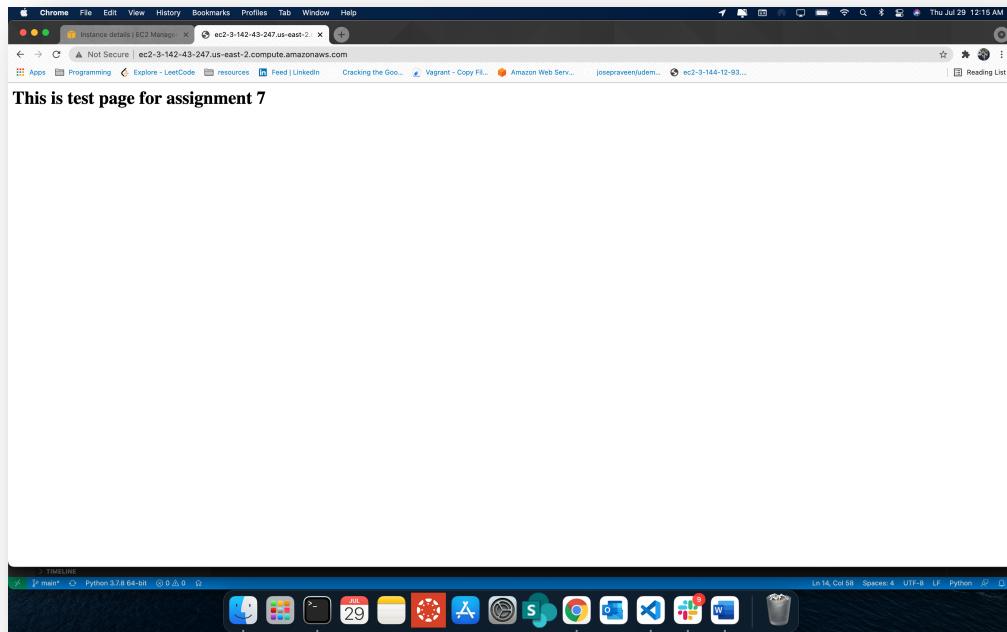
Select an instance above

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with various navigation options like EC2 Dashboard, Instances, Images, and Network & Security. The main area displays a table of instances with columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IPv4 DNS. Three instances are listed:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
i-037bedbf5a2233917	i-037bedbf5a2233917	Running	t2.micro	Initializing	No alarms	us-east-2a	ec2-3-142-43-247.us-east-2.compute.amazonaws.com
i-0f557049123e066e	i-0f557049123e066e	Running	t2.micro	2/2 checks passed	No alarms	us-east-2a	ec2-18-218-97-183.us-east-2.compute.amazonaws.com
i-0030d656f9f6da3b	i-0030d656f9f6da3b	Terminated	t2.micro	-	No alarms	us-east-2a	-

A modal window titled "Select an instance above" is open at the bottom of the list.

The screenshot shows the AWS EC2 Instance details page for instance i-037bedbf5a2233917. The left sidebar is identical to the previous screenshot. The main content area has tabs for Details, Security, Networking, Storage, Status checks, Monitoring, and Tags. Under the Details tab, there's an "Instance summary" section with fields like Public IPv4 address (3.142.43.247), Private IPv4 addresses (172.31.0.56), Instance ID (i-037bedbf5a2233917), Instance state (Running), Instance type (t2.micro), and AWS Compute Optimizer finding (Opt-in to AWS Compute Optimizer for recommendations). Below this, there's an "Instance details" section with tabs for Platform, AMI, and Lifecycle. The Platform tab shows Ubuntu (Inferred) and Linux/UNIX. The AMI tab shows AMI ID (ami-00399ec92321828f5), AMI name (ubuntu/images/hvm-ssd/ubuntu-focal-20.04-amd64-server-20210450), and AMI location (ami-00399ec92321828f5). The Lifecycle tab shows Monitoring disabled and Termination protection Disabled.



## 6. Security Group

The screenshot shows the AWS EC2 Management Console with the 'Security Groups' page. The left sidebar includes links for EC2 Dashboard, Events, Tags, Limits, Instances, Images, AMIs, Elastic Block Store, Network & Security (with 'Security Groups' selected), and Network Groups. The main area displays a table of security groups with one entry:

Name	Security group ID	Security group name	VPC ID	Description	Owner	Inbound rules count
sg-27d0d06f	sg-27d0d06f	default	vpc-e406668f	default VPC security gr...	846872669451	3 Permission entries

Below the table, a detailed view for 'sg-27d0d06f - default' is shown with tabs for Details, Inbound rules, Outbound rules, and Tags. The Details tab shows the following information:

- Security group name: default
- Security group ID: sg-27d0d06f
- Description: default VPC security group
- VPC ID: vpc-e406668f
- Owner: 846872669451
- Inbound rules count: 3 Permission entries
- Outbound rules count: 1 Permission entry

The screenshot shows the AWS EC2 Management Console with the 'sg-27d0d06f - default' security group details page. The left sidebar is identical to the previous screenshot. The main area shows the 'Details' tab and the 'Inbound rules' tab is active, displaying three rules:

Name	Security group rule...	IP version	Type	Protocol	Port range	Source	Description
sgr-0008bf0771753a5c	IPv4	HTTP	TCP	80	0.0.0.0/0	-	
sgr-0f948d4879b8119f1	-	All traffic	All	All	sg-27d0d06f / default	-	
sgr-075da2e9bf815c1a7	IPv4	SSH	TCP	22	0.0.0.0/0	-	