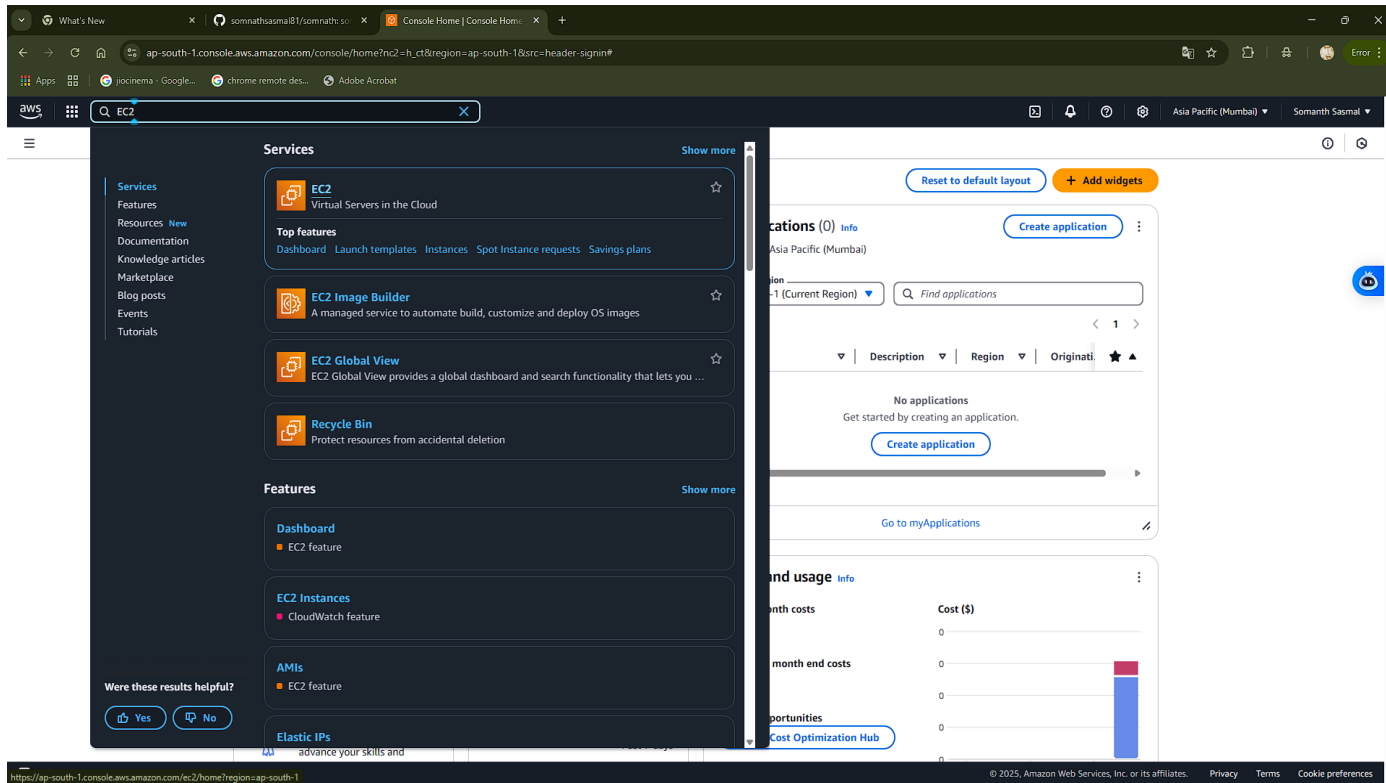


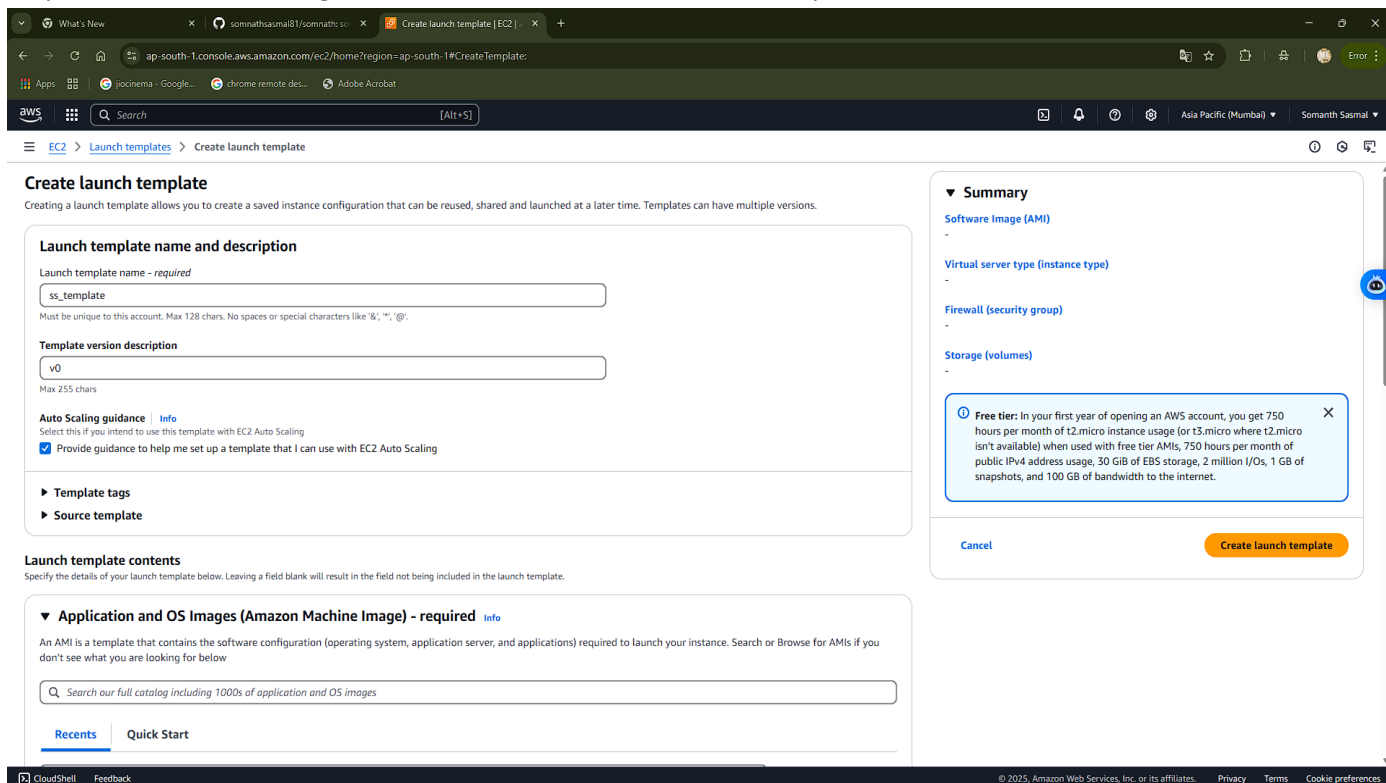
ASSIGNMENT - 11

Build scaling plans in AWS that balance the load on different EC2 instances.

Step : First search EC2 and click the first item



Step 2: then click on the right side of the ec2 and create launch template



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ROLL: CSE-DS/22/26

ASSIGNMENT - 11

Build scaling plans in AWS that balance the load on different EC2 instances.

Step 3: then edit all the things like key pair ,existing security group and add file in the advanced setting option

The screenshot shows the 'Create launch template' page in the AWS Management Console. The 'Quick Start' tab is active, displaying a grid of operating system options: Amazon Linux, macOS, Ubuntu, Windows, Red Hat, SUSE Linux, and Debian. The 'Amazon Machine Image (AMI)' section shows 'Ubuntu Server 24.04 LTS (HVM), SSD Volume Type' as the selected AMI. The 'Instance type' section shows 't2.micro' as the selected instance type. A 'Free tier eligible' badge is visible next to both the AMI and instance type. The 'Summary' panel on the right lists the selected software image, instance type, and storage (1 volume(s) - 8 GiB). A 'Free tier' notification box is also present, stating that 750 hours of t2.micro instance usage are available per month.

The screenshot shows the 'Create launch template' page in the AWS Management Console, Step 2: Configure. The 'Key pair (login)' section shows 'ss_key' as the selected key pair. The 'Network settings' section shows 'Don't include in launch template' as the selected subnet. The 'Firewall (security groups)' section shows 'ss_security' as the selected security group. The 'Storage (volumes)' section shows 'Volume 1 (AMI Root): 8 GiB, EBS, General purpose SSD (gp3)' as the selected storage. The 'Summary' panel on the right lists the selected software image, instance type, security group, and storage. A 'Free tier' notification box is also present, stating that 750 hours of t2.micro instance usage are available per month.

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Build scaling plans in AWS that balance the load on different EC2 instances.

The screenshot shows the 'Create launch template' page in the AWS Management Console. The page is for the 'ap-south-1' region. It includes a warning about V2 requests, a 'Metadata response hop limit' of 2, and 'Allow tags in metadata' set to 'Don't include in launch template'. The 'User data' section contains a script for installing and running a Node.js application. The 'Summary' section on the right lists the 'Software Image (AMI)' as Canonical, Ubuntu, 24.04, amd64, the 'Virtual server type (instance type)' as t2.micro, the 'Firewall (security group)' as sg_security, and the 'Storage (volumes)' as 1 volume(s) - 8 GiB. A 'Free tier' notification is also present. The 'Create launch template' button is highlighted in orange.

EC2 > Launch templates > Create launch template

V2 only (token required)

⚠ For V2 requests, you must include a session token in all instance metadata requests. Applications or agents that use V1 for instance metadata access will break.

Metadata response hop limit: 2

Allow tags in metadata: Don't include in launch template

User data - optional: Upload a file with your user data or enter it in the field.

Choose file

```
#!/bin/bash
apt-get update
apt-get upgrade
apt-get install -y nginx
systemctl start nginx
systemctl enable nginx
apt-get install -y git
curl -sL https://deb.nodesource.com/setup_18.x | sudo -E bash
apt-get install -y nodejs
git clone https://github.com/somnathsasml81/somnath.git
cd somnath
npm install
node index.js
```

☐ User data has already been base64 encoded

Summary

Software Image (AMI)
Canonical, Ubuntu, 24.04, amd64...[read more](#)
ami-0e35dab05955cf57

Virtual server type (instance type)
t2.micro

Firewall (security group)
sg_security

Storage (volumes)
1 volume(s) - 8 GiB

Free tier: In your first year of opening an AWS account, you get 750 hours per month of t2.micro instance usage (or t3.micro where t2.micro isn't available) when used with free tier AMIs, 750 hours per month of public IPv4 address usage, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel Create launch template

Step 4: then click on the right side auto scaling group

The screenshot shows the 'Auto Scaling groups' page in the AWS Management Console. The page features a large banner for 'Amazon EC2 Auto Scaling' with the text 'helps maintain the availability of your applications'. Below the banner, there is a 'How it works' section with a diagram showing an 'Auto Scaling group' containing four instances, with labels for 'Minimum size', 'Desired capacity', 'Scale out as needed', and 'Maximum size'. To the right, there is a 'Pricing' section and a 'Getting started' section with links for 'What is Amazon EC2 Auto Scaling?', 'Getting started with Amazon EC2 Auto Scaling', 'Set up a scaled and load-balanced application', and 'FAQ'. The 'Create Auto Scaling group' button is highlighted in orange.

EC2 > Auto Scaling groups

Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations

Images
AMIs
AMI Catalog

Elastic Block Store
Volumes
Snapshots
Lifecycle Manager

Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces

Load Balancing
Load Balancers
Target Groups
Trust Stores

Auto Scaling
Auto Scaling Groups

Settings

Amazon EC2 Auto Scaling
helps maintain the availability of your applications

Auto Scaling groups are collections of Amazon EC2 instances that enable automatic scaling and fleet management features. These features help you maintain the health and availability of your applications.

Create Auto Scaling group

Get started with EC2 Auto Scaling by creating an Auto Scaling group.

Create Auto Scaling group

How it works

Auto Scaling group

Minimum size
Desired capacity
Scale out as needed
Maximum size

An Auto Scaling group is a collection of Amazon EC2 instances that are treated as a logical unit.

Pricing

Amazon EC2 Auto Scaling features have no additional fees beyond the service fees for Amazon EC2, CloudWatch (for scaling policies), and the other AWS resources that you use. Visit the pricing page of each service to learn more.

Getting started

[What is Amazon EC2 Auto Scaling?](#)

[Getting started with Amazon EC2 Auto Scaling](#)

[Set up a scaled and load-balanced application](#)

[FAQ](#)

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ASSIGNMENT - 11

Build scaling plans in AWS that balance the load on different EC2 instances.

Step 5: then give all the access step by step and continue with clicking next

The screenshot shows the 'Create Auto Scaling group' page in the AWS Management Console, specifically Step 1: Choose launch template. The left sidebar shows the progress: Step 1 (selected), Step 2, Step 3 (optional), Step 4 (optional), Step 5 (optional), Step 6 (optional), Step 7, and Review. The main content area is titled 'Choose launch template' and includes a description: 'Specify a launch template that contains settings common to all EC2 instances that are launched by this Auto Scaling group.'

Name
Auto Scaling group name
Enter a name to identify the group.
sscaling
Must be unique to this account in the current Region and no more than 255 characters.

Launch template
Info
For accounts created after May 31, 2023, the EC2 console only supports creating Auto Scaling groups with launch templates. Creating Auto Scaling groups with launch configurations is not recommended but still available via the CLI and API until December 31, 2023.

Launch template
Choose a launch template that contains the instance-level settings, such as the Amazon Machine Image (AMI), instance type, key pair, and security groups.
ss_template
Create a launch template

Version
Latest (1)
Create a launch template version

Description
v0

AMI ID
ami-0e35ddab05955cf57

Key pair name
ss_key

Launch template
ss_template
lt-088fed33d6db9bfbdb

Security groups
-

Security group IDs
sg-0383e4e9d0d04cf31

Instance type
t2.micro

Request Spot Instances
No

The screenshot shows the 'Create Auto Scaling group' page in the AWS Management Console, specifically Step 3: Integrate with other services. The left sidebar shows the progress: Step 1, Step 2, Step 3 (selected), Step 4 (optional), Step 5 (optional), Step 6 (optional), Step 7, and Review. The main content area is titled 'Load balancing' and includes a description: 'Use the options below to attach your Auto Scaling group to an existing load balancer, or to a new load balancer that you define.'

☐ No load balancer
Traffic to your Auto Scaling group will not be fronted by a load balancer.

☐ Attach to an existing load balancer
Choose from your existing load balancers.

☒ Attach to a new load balancer
Quickly create a basic load balancer to attach to your Auto Scaling group.

Attach to a new load balancer
Define a new load balancer to create for attachment to this Auto Scaling group.

Load balancer type
Choose from the load balancer types offered below. Type selection cannot be changed after the load balancer is created. If you need a different type of load balancer than those offered here, visit the Load Balancing console.

☐ Application Load Balancer
HTTP, HTTPS

☒ Network Load Balancer
TCP, UDP, TLS

Load balancer name
Name cannot be changed after the load balancer is created.
sscaling-1

Load balancer scheme
Scheme cannot be changed after the load balancer is created.
☐ Internal
☒ Internet-facing

Network mapping
Your new load balancer will be created using the same VPC and Availability Zone selections as your Auto Scaling group. You can select different subnets and add subnets from additional Availability Zones.

VPC
vpc-0160528951de6a910

Availability Zones and subnets
You must select a single subnet for each Availability Zone enabled. Only public subnets are available for selection to support DNS resolution.

☒ ap-south-1b
subnet-0c278b985c99afc

☒ ap-south-1a
subnet-0c8aba7920a479b31

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ASSIGNMENT - 11

Build scaling plans in AWS that balance the load on different EC2 instances.

What's New

somnathasma81/somnath: so

Create Auto Scaling group | EC

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#CreateAutoScalingGroup:

Apps

joicinema - Google...

chrome remote des...

Adobe Acrobat

Search

[Alt+S]

Asia Pacific (Mumbai)

Somnath Sasmal

EC2 > Auto Scaling groups > Create Auto Scaling group

No VPC Lattice service

VPC Lattice will not manage your Auto Scaling group's network access and connectivity with other services.

Create new VPC Lattice service

Attach to VPC Lattice service

Incoming requests associated with specified VPC Lattice target groups will be routed to your Auto Scaling group.

Application Recovery Controller (ARC) zonal shift - new

During an Availability Zone impairment, target instance launches towards other healthy Availability Zones.

Enable zonal shift

New instance launches will be retargeted towards healthy Availability Zones until the zonal shift is canceled.

Health checks

Health checks increase availability by replacing unhealthy instances. When you use multiple health checks, all are evaluated, and if at least one fails, instance replacement occurs.

EC2 health checks

Always enabled

Additional health check types - optional

Turn on Elastic Load Balancing health checks

Elastic Load Balancing monitors whether instances are available to handle requests. When it reports an unhealthy instance, EC2 Auto Scaling can replace it on its next periodic check.

Recommended

Turn on VPC Lattice health checks

VPC Lattice can monitor whether instances are available to handle requests. If it considers a target as failed a health check, EC2 Auto Scaling replaces it after its next periodic check.

Turn on Amazon EBS health checks

EBS monitors whether an instance's root volume or attached volume stalls. When it reports an unhealthy volume, EC2 Auto Scaling can replace the instance on its next periodic health check.

Health check grace period

This time period delays the first health check until your instances finish initializing. It doesn't prevent an instance from terminating when placed into a non-running state.

300 seconds

Cancel

Skip to review

Previous

Next

CloudShell

Feedback

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Privacy

Terms

Cookie preferences

What's New

somnathasma81/somnath: so

Create Auto Scaling group | EC

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#CreateAutoScalingGroup:

Apps

joicinema - Google...

chrome remote des...

Adobe Acrobat

Search

[Alt+S]

Asia Pacific (Mumbai)

Somnath Sasmal

EC2 > Auto Scaling groups > Create Auto Scaling group

Step 3 - optional

Integrate with other services

Step 4 - optional

Configure group size and scaling

Step 5 - optional

Add notifications

Step 6 - optional

Add tags

Step 7

Review

Group size

Set the initial size of the Auto Scaling group. After creating the group, you can change its size to meet demand, either manually or by using automatic scaling.

Desired capacity type

Choose the unit of measurement for the desired capacity value. vCPUs and Memory(GiB) are only supported for mixed instances groups configured with a set of instance attributes.

Units (number of instances)

Desired capacity

Specify your group size.

2

Scaling

You can resize your Auto Scaling group manually or automatically to meet changes in demand.

Scaling limits

Set limits on how much your desired capacity can be increased or decreased.

Min desired capacity

2

Equal or less than desired capacity

Max desired capacity

4

Equal or greater than desired capacity

Automatic scaling - optional

Choose whether to use a target tracking policy

No scaling policies

Your Auto Scaling group will remain at its initial size and will not dynamically resize to meet demand.

Target tracking scaling policy

Choose a CloudWatch metric and target value and let the scaling policy adjust the desired capacity in proportion to the metric's value.

Scaling policy name

Target Tracking Policy

Metric type

Monitored metric that determines if resource utilization is too low or high. If using EC2 metrics, consider enabling detailed monitoring for better scaling performance.

Average CPU utilization

Additional settings

Instance scale-in protection

If protect from scale in is enabled, newly launched instances will be protected from scale in by default.

Enable instance scale-in protection

Monitoring

Enable group metrics collection within CloudWatch

Default instance warmup

The amount of time that CloudWatch metrics for new instances do not contribute to the group's aggregated instance metrics, as their usage data is not reliable yet.

Enable default instance warmup

Cancel

Skip to review

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Build scaling plans in AWS that balance the load on different EC2 instances.

The image displays three sequential screenshots of the AWS Management Console during the 'Create Auto Scaling group' process.

First Screenshot: 'Add notifications - optional'
This screen shows the 'Add notifications' step. A sidebar on the left lists the steps: 'Choose launch template', 'Choose instance launch options', 'Integrate with other services', 'Configure group size and scaling', 'Add notifications' (selected), and 'Add tags'. The main content area has a heading 'Add notifications - optional' with a subtext: 'Send notifications to SNS topics whenever Amazon EC2 Auto Scaling launches or terminates the EC2 instances in your Auto Scaling group.' There is an 'Add notification' button and navigation buttons: 'Cancel', 'Skip to review', 'Previous', and 'Next'.

Second Screenshot: 'Add tags - optional'
This screen shows the 'Add tags' step. The sidebar is similar, with 'Add tags' now selected. The main content area has a heading 'Add tags - optional' with a subtext: 'Add tags to help you search, filter, and track your Auto Scaling group across AWS. You can also choose to automatically add these tags to instances when they are launched.' A blue box contains a note: 'You can optionally choose to add tags to instances (and their attached EBS volumes) by specifying tags in your launch template. We recommend caution, however, because the tag values for instances from your launch template will be overridden if there are any duplicate keys specified for the Auto Scaling group.' Below this is a 'Tags (0)' section with an 'Add tag' button and a note '50 remaining'.

Third Screenshot: 'Step 5: Add notifications'
This screen shows the 'Step 5: Add notifications' step. The sidebar lists the steps up to 'Add tags'. The main content area shows 'Instance maintenance policy' with 'Replacement behavior' set to 'No policy', 'Min healthy percentage' set to '-', and 'Max healthy percentage' set to '-'. Below this is 'Additional settings' with 'Instance scale-in protection' set to 'Disabled', 'Monitoring' set to 'Disabled', and 'Default instance warmup' set to 'Disabled'. Then 'Capacity Reservation preference' with 'Preference' set to 'Default', 'Capacity Reservation IDs' set to '-', and 'Resource Groups' set to '-'. Below these are 'Step 5: Add notifications' and 'Step 6: Add tags' sections, both with 'Edit' buttons. The 'Step 6: Add tags' section shows a table with columns 'Key', 'Value', and 'Tag new instances', and a note 'No tags'. At the bottom are 'Preview code', 'Cancel', 'Previous', and 'Create Auto Scaling group' buttons.

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Build scaling plans in AWS that balance the load on different EC2 instances.

Step 6 : after creating auto scaling then go to the instance and click on any one and copy the ipv4 address

The screenshot shows the AWS Management Console for the 'Instances' page. The left sidebar contains navigation links for EC2, including Dashboard, EC2 Global View, Events, Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, Elastic Block Store, and Network & Security. The main content area displays a table of instances with columns: Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, Public IPv4 DNS, Public IPv4 address, and Elastic IP. Two instances are listed, both in a 'Running' state. The details for instance i-0f85010aeb0ed16ba are expanded, showing its public IPv4 address as 13.232.118.13. A tooltip indicates that the public IPv4 address has been copied.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 address	Elastic IP
i-0f85010aeb0ed16ba	i-0f85010aeb0ed16ba	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1a	ec2-13-232-118-13.ap-south-1.compute.amazonaws.com	13.232.118.13	-
i-087c5d8604e04bac6	i-087c5d8604e04bac6	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1b	ec2-65-2-70-107.ap-south-1.compute.amazonaws.com	65.2.70.107	-

Instance details for i-0f85010aeb0ed16ba:

- Instance ID: i-0f85010aeb0ed16ba
- IPV6 address: -
- Hostname type: IP name: ip-172-31-41-122.ap-south-1.compute.internal
- Answer private resource DNS name: -
- Auto-assigned IP address: 13.232.118.13 [Public IP]
- Instance state: Running
- Private IP DNS name (IPv4 only): ip-172-31-41-122.ap-south-1.compute.internal
- Instance type: t2.micro
- VPC ID: vpc-0160528951de6a910
- Private IPv4 addresses: 172.31.41.122
- Public IPv4 DNS: ec2-13-232-118-13.ap-south-1.compute.amazonaws.com
- Elastic IP addresses: -
- AWS Compute Optimizer finding: Opt-in to AWS Compute Optimizer for recommendations. | Learn more

Step 7: then open it with another window giving the ip with : 4000

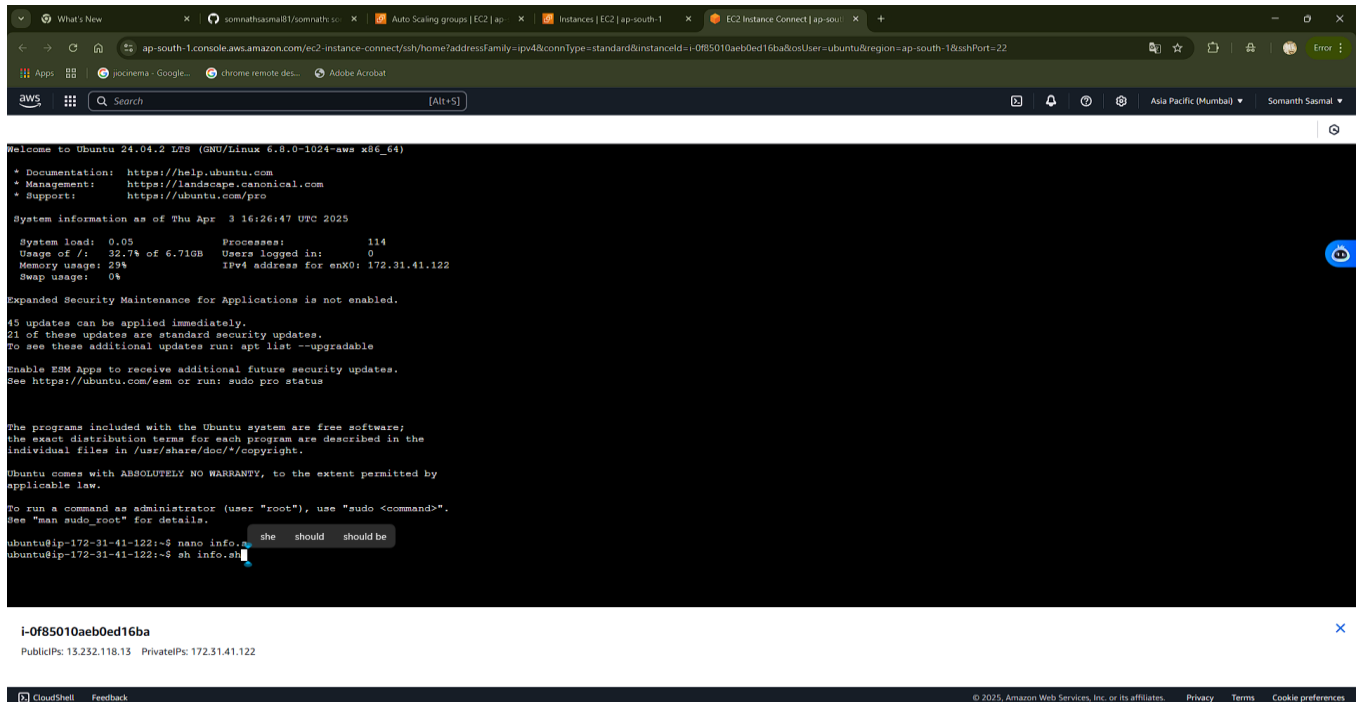
The screenshot shows a web browser window with the address bar displaying '13.232.118.13:4000'. The page content is 'HELLO MCKY'.

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Build scaling plans in AWS that balance the load on different EC2 instances.

Step 8: then connect the both instances and in there run the same code and check the output



The screenshot shows the AWS CloudShell interface with a terminal window. The terminal displays the Ubuntu 24.04.2 LTS welcome message and system information. The user has entered the command `info.sh` in the nano editor, and the output is displayed in the terminal. The terminal output includes system load, memory usage, and a list of installed packages. The user has also entered the command `sudo apt list --upgradable` to check for updates.

```
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.8.0-1024-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Thu Apr  3 16:26:47 UTC 2025

System load: 0.05          Processes:    114
Usage of /:  32.7% of 6.71GB Users logged in:  0
Memory usage: 29%         IPV4 address for enx0: 172.31.41.122
Swap usage:  0%

Expanded Security Maintenance for Applications is not enabled.

45 updates can be applied immediately.
21 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

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-172-31-41-122:~$ nano info.sh
info.sh
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ASSIGNMENT - 11

Build scaling plans in AWS that balance the load on different EC2 instances.

Step 9: this will be the output for the both instances

The screenshot shows the AWS Management Console interface. At the top, there are several browser tabs: 'What's New', 'somnathasama81/somnath: so...', 'Auto Scaling groups | EC2 | ap-', 'Instances | EC2 | ap-south-1', and 'EC2 Instance Connect | ap-sou...'. The address bar shows the URL: 'ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh/home?addressfamily=ipv4&connType=standard&instanceId=i-0f85010aeb0ed16ba&osUser=ubuntu®ion=ap-south-1&sshPort=22'. Below the browser tabs, there is a search bar and a navigation bar with the AWS logo and a search bar. The main content area is divided into two sections. The top section is a terminal window with a black background and white text that says 'Looping' repeatedly. The bottom section shows the details of an EC2 instance with the ID 'i-0f85010aeb0ed16ba'. Below the instance ID, it shows 'PublicIPs: 13.232.118.13' and 'PrivateIPs: 172.31.41.122'. At the bottom of the console, there is a footer with the text '© 2025, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences'.

Step 10: then go the instances and check it then open for monitoring

The screenshot shows the AWS Management Console interface. At the top, there are several browser tabs: 'What's New', 'somnathasama81/somnath: so...', 'Auto Scaling groups | EC2 | ap-', 'Instances | EC2 | ap-south-1', 'EC2 Instance Connect | ap-sou...', and 'EC2 Instance Connect | ap-sou...'. The address bar shows the URL: 'ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#Instances:'. Below the browser tabs, there is a search bar and a navigation bar with the AWS logo and a search bar. The main content area is divided into two sections. The top section is the 'Instances' page, which shows a table of EC2 instances. The table has columns for 'Name', 'Instance ID', 'Instance state', 'Instance type', 'Status check', 'Alarm status', 'Availability Zone', 'Public IPv4 DNS', 'Public IPv4 ...', and 'Elastic IP'. There are two instances listed: 'i-0f85010aeb0ed16ba' and 'i-087c5d8604e04bac6'. Both instances are in the 'Running' state. The bottom section is a monitoring dashboard for the two selected instances. It shows various metrics such as 'CPU utilization (%)', 'Network in (bytes)', 'Network out (bytes)', 'Network packets in (count)', 'Network packets out (count)', 'Metadata no token (count)', 'CPU credit usage (count)', and 'CPU credit balance (count)'. Each metric is represented by a line graph showing the trend over time. At the bottom of the console, there is a footer with the text '© 2025, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences'.

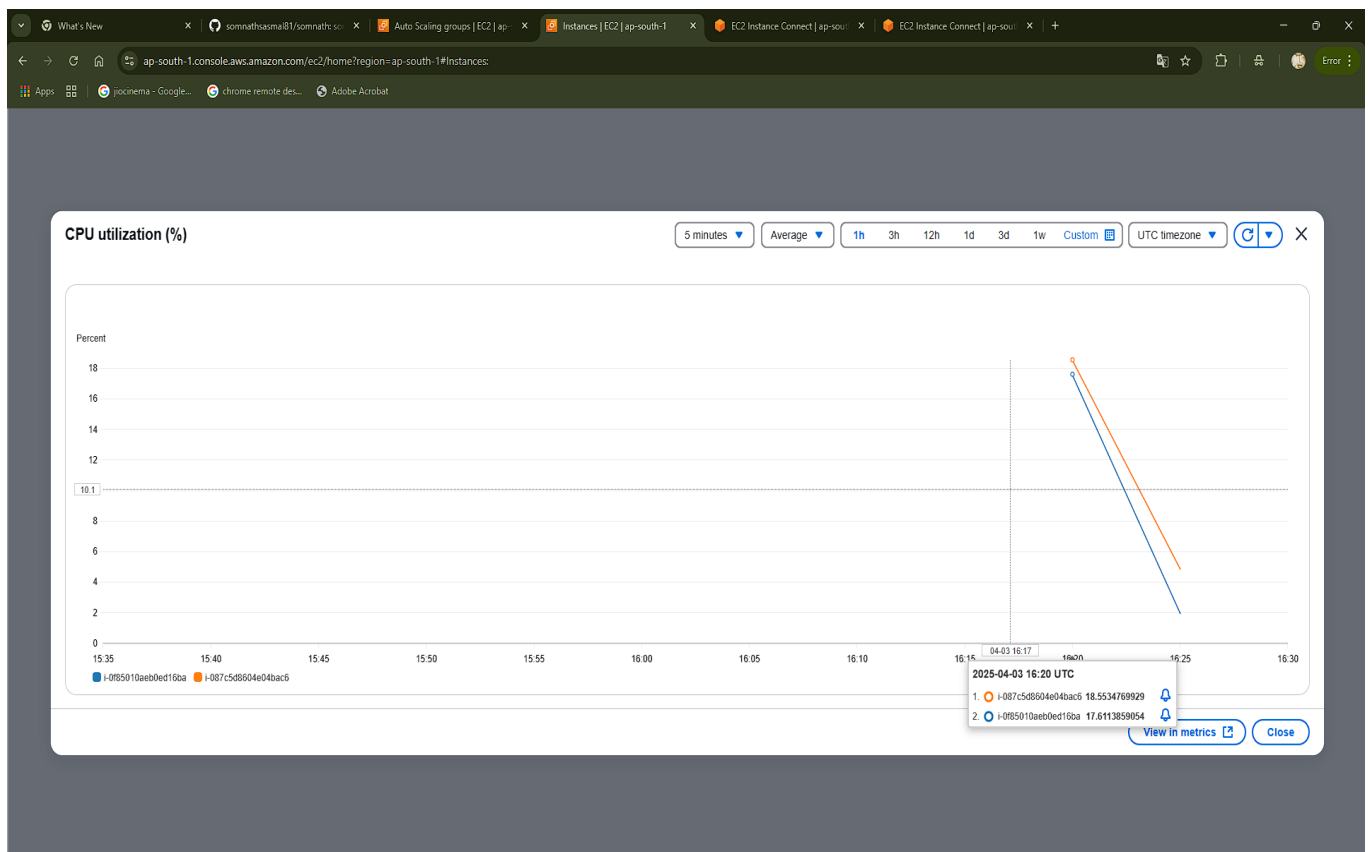
NAME: SOMNATH SASMAL

ROLL: CSE-DS/22/26

ASSIGNMENT - 11

Build scaling plans in AWS that balance the load on different EC2 instances.

Step 11: this is the graph of cpu utilization of two instances



NAME: SOMNATH SASMAL
ROLL: CSE-DS/22/26