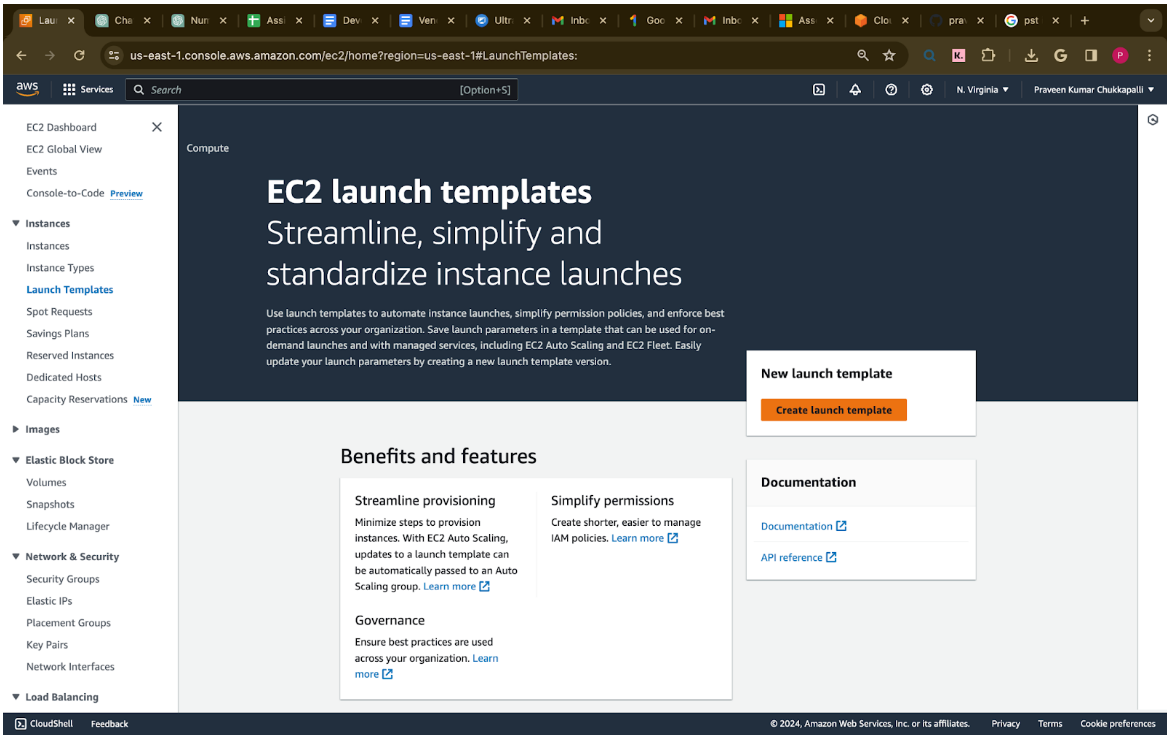
Devops Assignment- 7

Praveen Kumar Chukkapalli

1) Create ASG with UserData in Launch Template to install nginx and setup min, Desired as 1 and max as 2 with Avg CPU 60 .

Creating launch template :



Compute

EC2 launch templates

Streamline, simplify and standardize instance launches

Use launch templates to automate instance launches, simplify permission policies, and enforce best practices across your organization. Save launch parameters in a template that can be used for on-demand launches and with managed services, including EC2 Auto Scaling and EC2 Fleet. Easily update your launch parameters by creating a new launch template version.

New launch template

Create launch template

Benefits and features

Streamline provisioning

Minimize steps to provision instances. With EC2 Auto Scaling, updates to a launch template can be automatically passed to an Auto Scaling group. Learn more

Simplify permissions

Create shorter, easier to manage IAM policies. Learn more

Governance

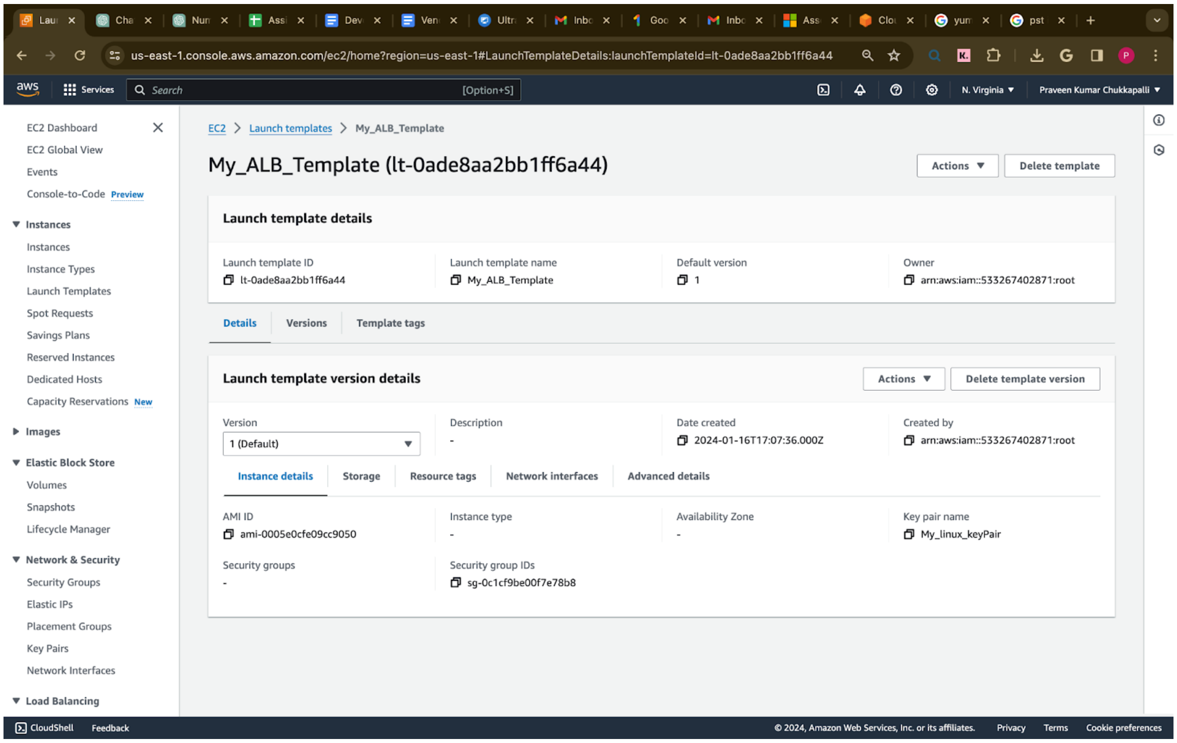
Ensure best practices are used across your organization. Learn more

Documentation

Documentation

API reference

Launch Template Created with User Data to install nginx :



EC2 > Launch templates > My_ALB_Template

My_ALB_Template (lt-0ade8aa2bb1ff6a44)

Actions ▼ | Delete template

Launch template details

Launch template ID	Launch template name	Default version	Owner
lt-0ade8aa2bb1ff6a44	My_ALB_Template	1	arn:aws:iam::533267402871:root

Details | Versions | Template tags

Launch template version details

Actions ▼ | Delete template version

Version	Description	Date created	Created by
1 (Default)	-	2024-01-16T17:07:36.000Z	arn:aws:iam::533267402871:root

Instance details | Storage | Resource tags | Network interfaces | Advanced details

AMI ID	Instance type	Availability Zone	Key pair name
ami-0005e0cfe09cc9050	-	-	My_linux_keyPair

Security groups	Security group IDs
-	sg-0c1cf9be00f7e78b8

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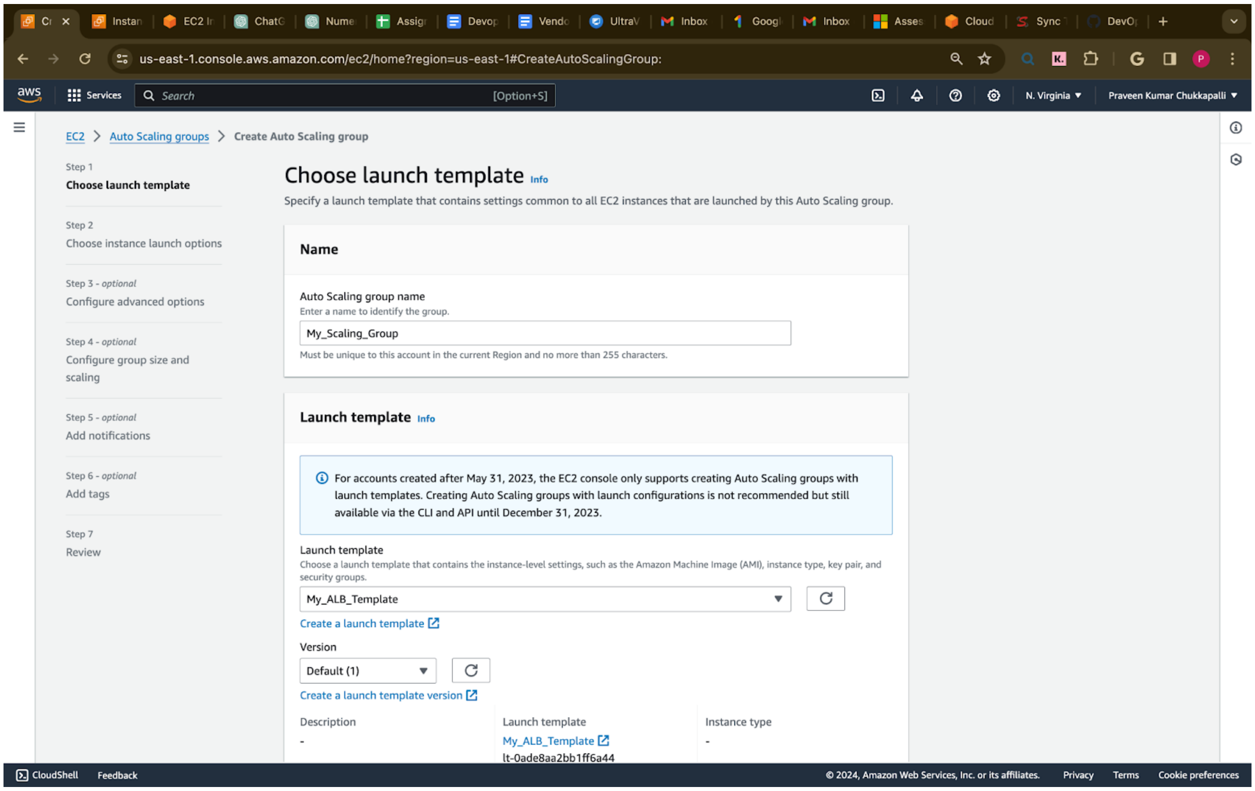
Create a Auto Scaling group from created template:



Choose launch template Info

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.

My_Scaling_Group

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.

My_ALB_Template

Create a launch template

Version

Default (1)

Create a launch template version

Description	Launch template	Instance type
-	My_ALB_Template lt-0ade8aa2bb1ff6a44	-

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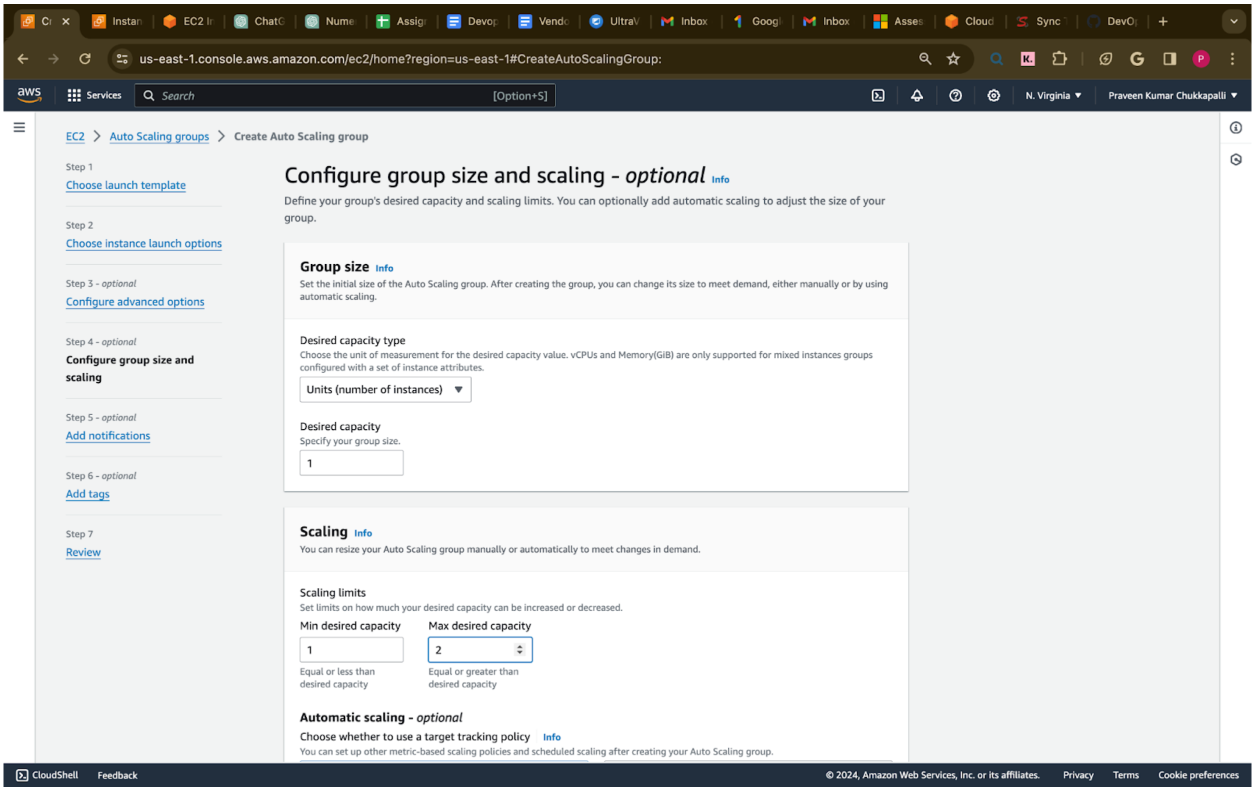
Setting up scaling parameters :


us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateAutoScalingGroup:
Services
Search
[Option+S]
N. Virginia
Praveen Kumar Chukkapalli
EC2 > Auto Scaling groups > Create Auto Scaling group
Step 1
Choose launch template
Step 2
Choose instance launch options
Step 3 - optional
Configure advanced options
Step 4 - optional
Configure group size and scaling
Step 5 - optional
Add notifications
Step 6 - optional
Add tags
Step 7
Review
CloudShell
Feedback
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Privacy
Terms
Cookie preferences

Configure group size and scaling - *optional* Info

Define your group's desired capacity and scaling limits. You can optionally add automatic scaling to adjust the size of your group.

Group size Info

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.

1

Scaling Info

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

Scaling limits

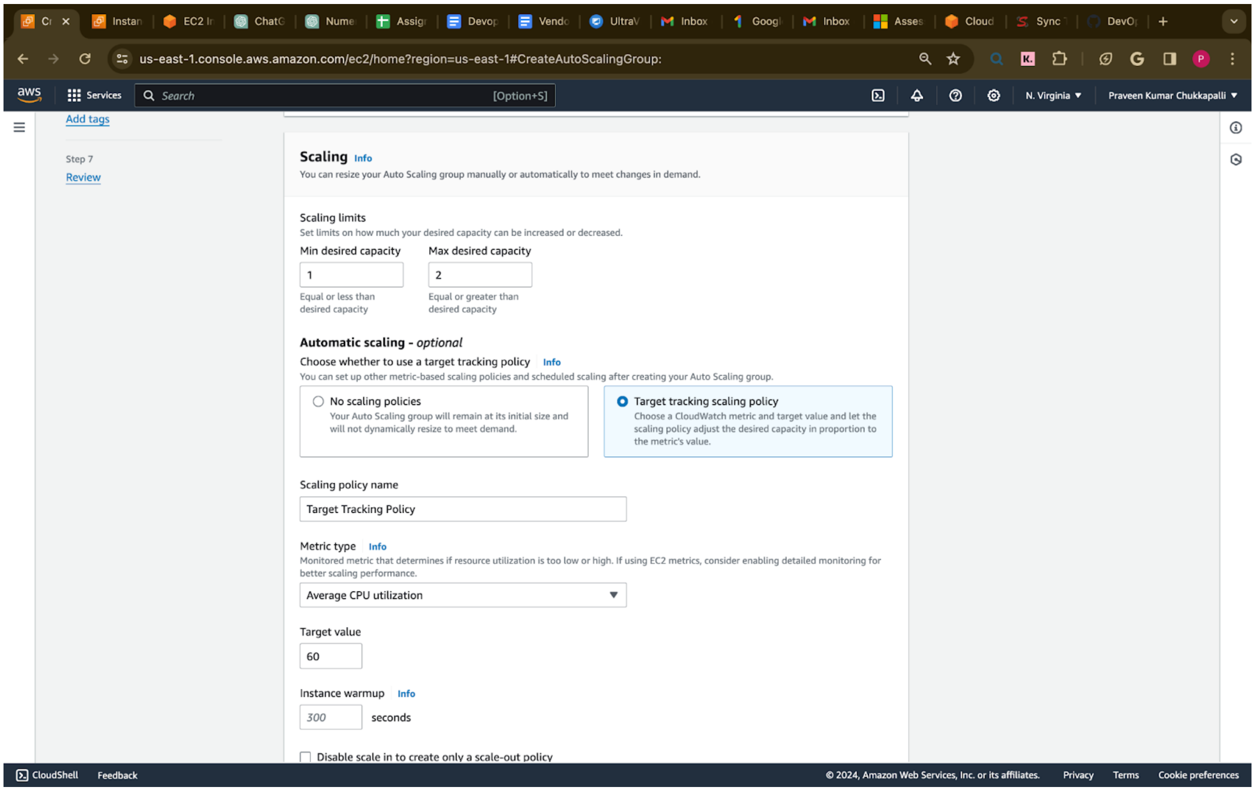
Set limits on how much your desired capacity can be increased or decreased.

Min desired capacity	Max desired capacity
1	2
Equal or less than desired capacity	Equal or greater than desired capacity

Automatic scaling - *optional*

Choose whether to use a target tracking policy Info

You can set up other metric-based scaling policies and scheduled scaling after creating your Auto Scaling group.


us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateAutoScalingGroup:
Services
Search
[Option+S]
N. Virginia
Praveen Kumar Chukkapalli
Add tags
Step 7
Review
CloudShell
Feedback
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Privacy
Terms
Cookie preferences

Scaling Info

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	Max desired capacity
1	2
Equal or less than desired capacity	Equal or greater than desired capacity

Automatic scaling - *optional*

Choose whether to use a target tracking policy Info

You can set up other metric-based scaling policies and scheduled scaling after creating your Auto Scaling group.

○ 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 Info

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

Target value

60

Instance warmup Info

300 seconds

□ Disable scale in to create only a scale-out policy

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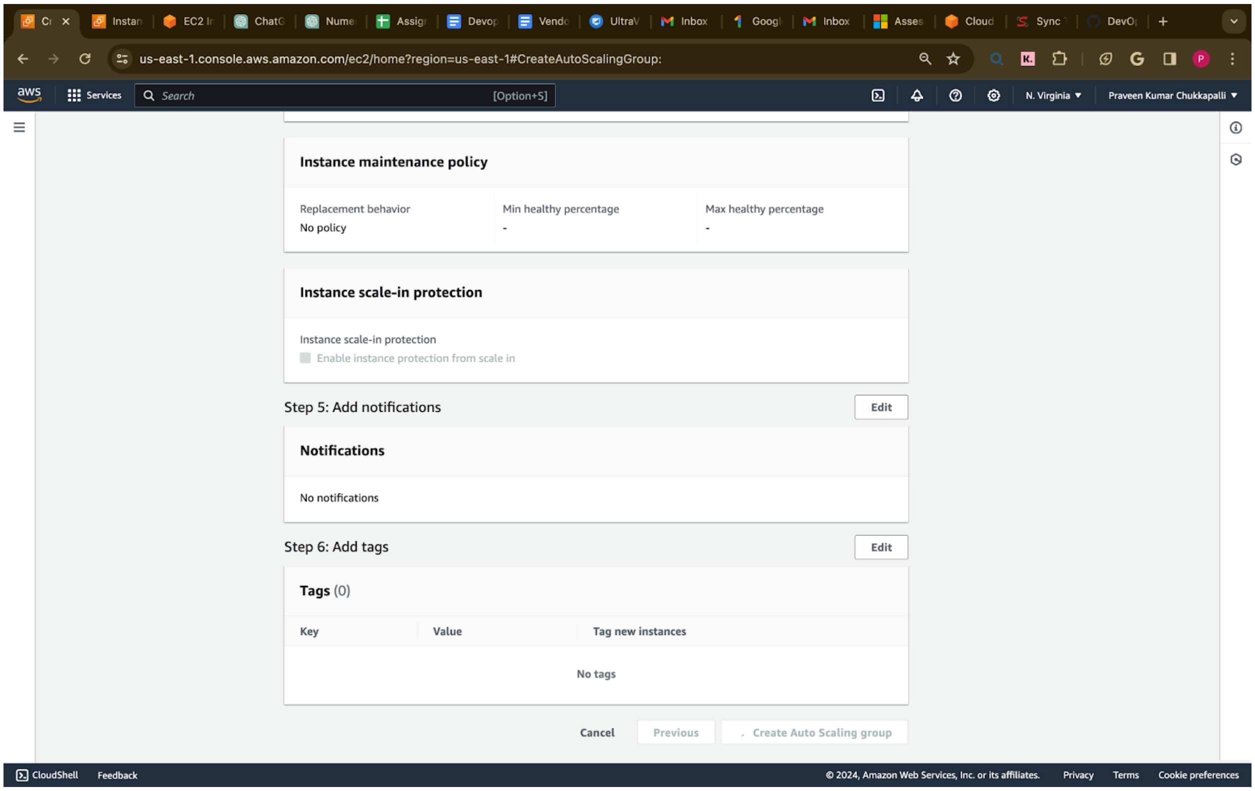

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateAutoScalingGroup:

Instance maintenance policy

Replacement behavior
No policy

Min healthy percentage
-

Max healthy percentage
-

Instance scale-in protection

Instance scale-in protection
□ Enable instance protection from scale in

Step 5: Add notifications

Notifications

No notifications

Step 6: Add tags

Tags (0)

Key	Value	Tag new instances

No tags

Edit
Cancel
Previous
Create Auto Scaling group
CloudShell
Feedback
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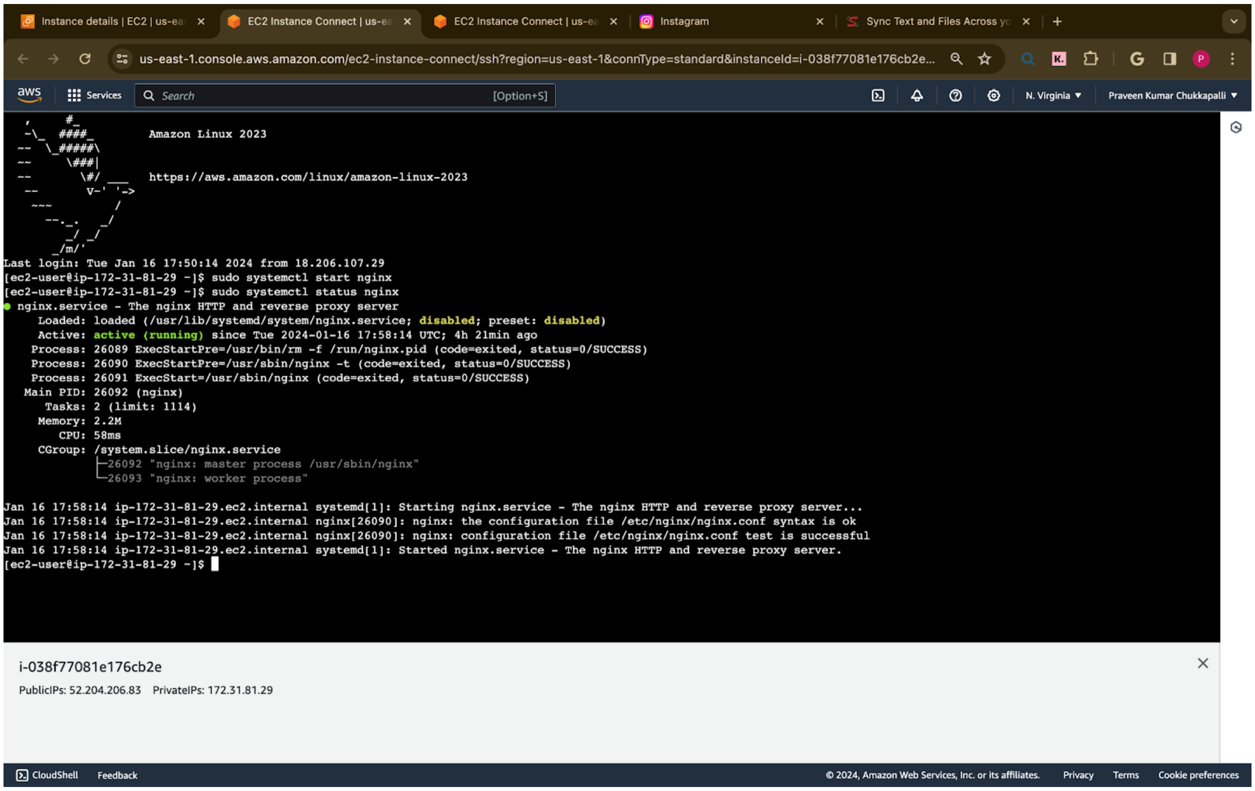
Privacy
Terms
Cookie preferences

Checking whether the created the instance has the nginx server as we have instructed in userdata column :



us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-038f77081e176cb2e...

```
   ,     #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
Last login: Tue Jan 16 17:50:14 2024 from 18.206.107.29
[ec2-user@ip-172-31-81-29 ~]$ sudo systemctl start nginx
[ec2-user@ip-172-31-81-29 ~]$ sudo systemctl status nginx
● nginx.service - The nginx HTTP and reverse proxy server
     Loaded: loaded (/usr/lib/systemd/system/nginx.service; disabled; preset: disabled)
     Active: active (running) since Tue 2024-01-16 17:58:14 UTC; 4h 21min ago
    Process: 26089 ExecStartPre=/usr/bin/rm -f /run/nginx.pid (code=exited, status=0/SUCCESS)
    Process: 26090 ExecStartPre=/usr/sbin/nginx -t (code=exited, status=0/SUCCESS)
    Process: 26091 ExecStart=/usr/sbin/nginx (code=exited, status=0/SUCCESS)
   Main PID: 26092 (nginx)
      Tasks: 2 (limit: 1114)
     Memory: 2.2M
        CPU: 58ms
     CGroup: /system.slice/nginx.service
             ├─26092 "nginx: master process /usr/sbin/nginx"
             └─26093 "nginx: worker process"

Jan 16 17:58:14 ip-172-31-81-29.ec2.internal systemd[1]: Starting nginx.service - The nginx HTTP and reverse proxy server...
Jan 16 17:58:14 ip-172-31-81-29.ec2.internal nginx[26090]: nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
Jan 16 17:58:14 ip-172-31-81-29.ec2.internal nginx[26090]: nginx: configuration file /etc/nginx/nginx.conf test is successful
Jan 16 17:58:14 ip-172-31-81-29.ec2.internal systemd[1]: Started nginx.service - The nginx HTTP and reverse proxy server.
[ec2-user@ip-172-31-81-29 ~]$ █
```

i-038f77081e176cb2e

PublicIPs: 52.204.206.83 PrivateIPs: 172.31.81.29

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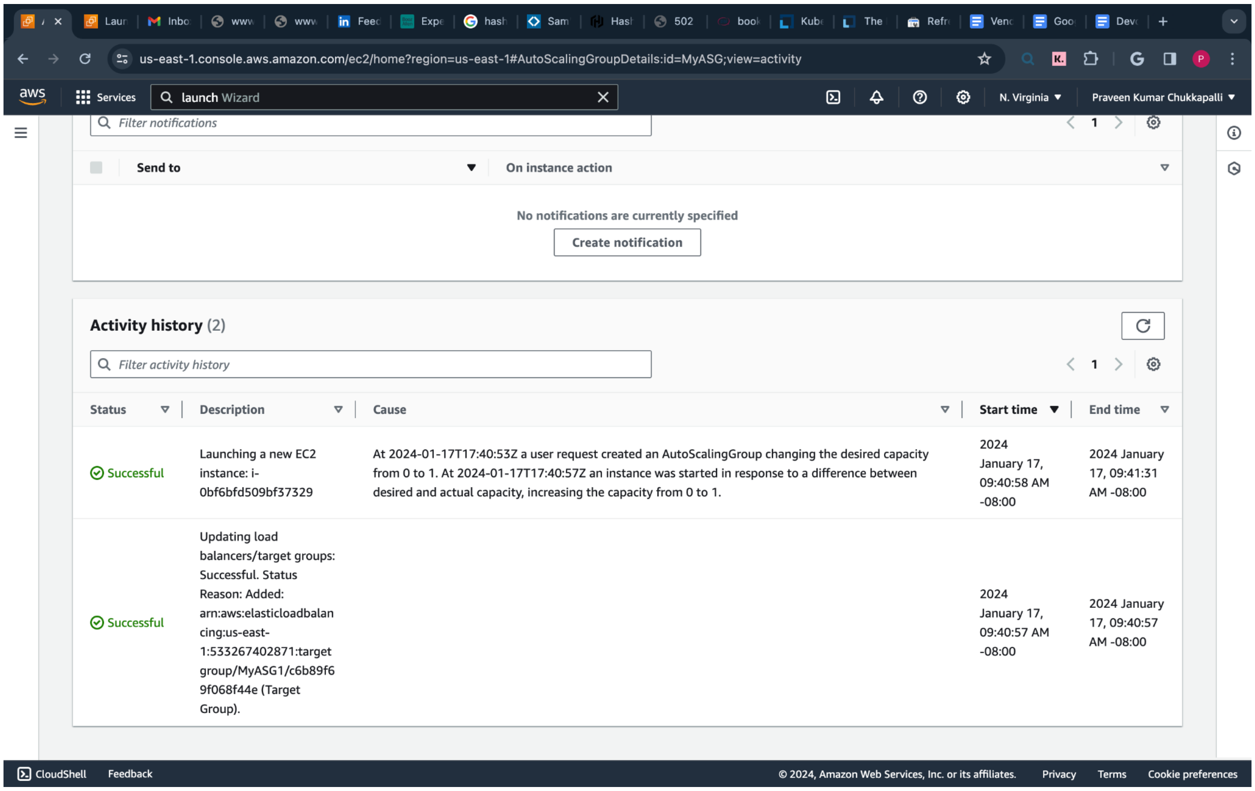
2) Hit ALB DNS and it should distribute traffic to Target Group of Either EC2



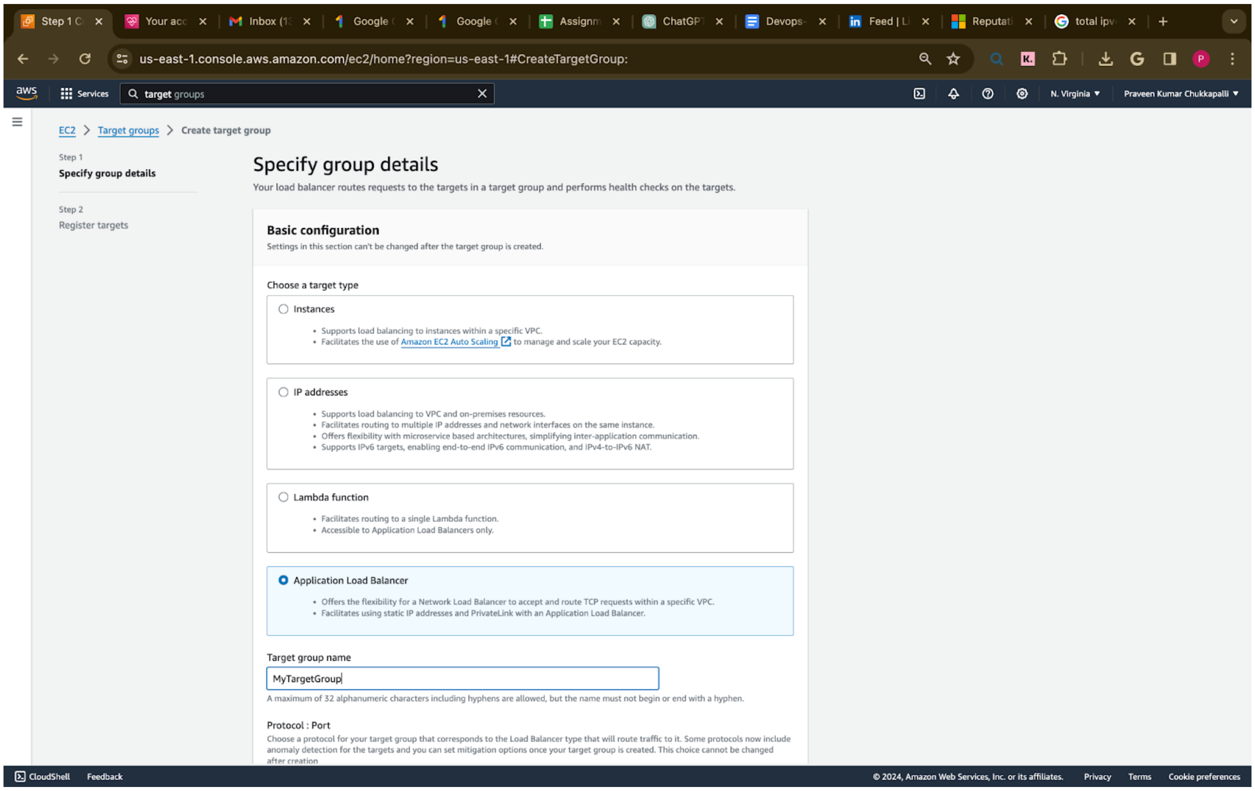
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#AutoScalingGroupDetails:id=MyASG;view=activity

No notifications are currently specified

Activity history (2)

Status	Description	Cause	Start time	End time
✓ Successful	Launching a new EC2 instance: i-0bf6bfd509bf37329	At 2024-01-17T17:40:53Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 1. At 2024-01-17T17:40:57Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 1.	2024 January 17, 09:40:58 AM -08:00	2024 January 17, 09:41:31 AM -08:00
✓ Successful	Updating load balancers/target groups: Successful. Status Reason: Added: arn:aws:elasticloadbalancing:us-east-1:533267402871:targetgroup/MyASG1/c6b89f69f068f44e (Target Group).		2024 January 17, 09:40:57 AM -08:00	2024 January 17, 09:40:57 AM -08:00

Creating Target group :



us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTargetGroup:

Specify group details

Your load balancer routes requests to the targets in a target group and performs health checks on the targets.

Basic configuration

Settings in this section can't be changed after the target group is created.

Choose a target type

○ Instances
- Supports load balancing to instances within a specific VPC.
- Facilitates the use of Amazon EC2 Auto Scaling to manage and scale your EC2 capacity.

○ IP addresses
- Supports load balancing to VPC and on-premises resources.
- Facilitates routing to multiple IP addresses and network interfaces on the same instance.
- Offers flexibility with microservice based architectures, simplifying inter-application communication.
- Supports IPv6 targets, enabling end-to-end IPv6 communication, and IPv4-to-IPv6 NAT.

○ Lambda function
- Facilitates routing to a single Lambda function.
- Accessible to Application Load Balancers only.

● Application Load Balancer
- Offers the flexibility for a Network Load Balancer to accept and route TCP requests within a specific VPC.
- Facilitates using static IP addresses and PrivateLink with an Application Load Balancer.

Target group name: MyTargetGroup

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Protocol : Port

Choose a protocol for your target group that corresponds to the Load Balancer type that will route traffic to it. Some protocols now include anomaly detection for the targets and you can set mitigation options once your target group is created. This choice cannot be changed after creation

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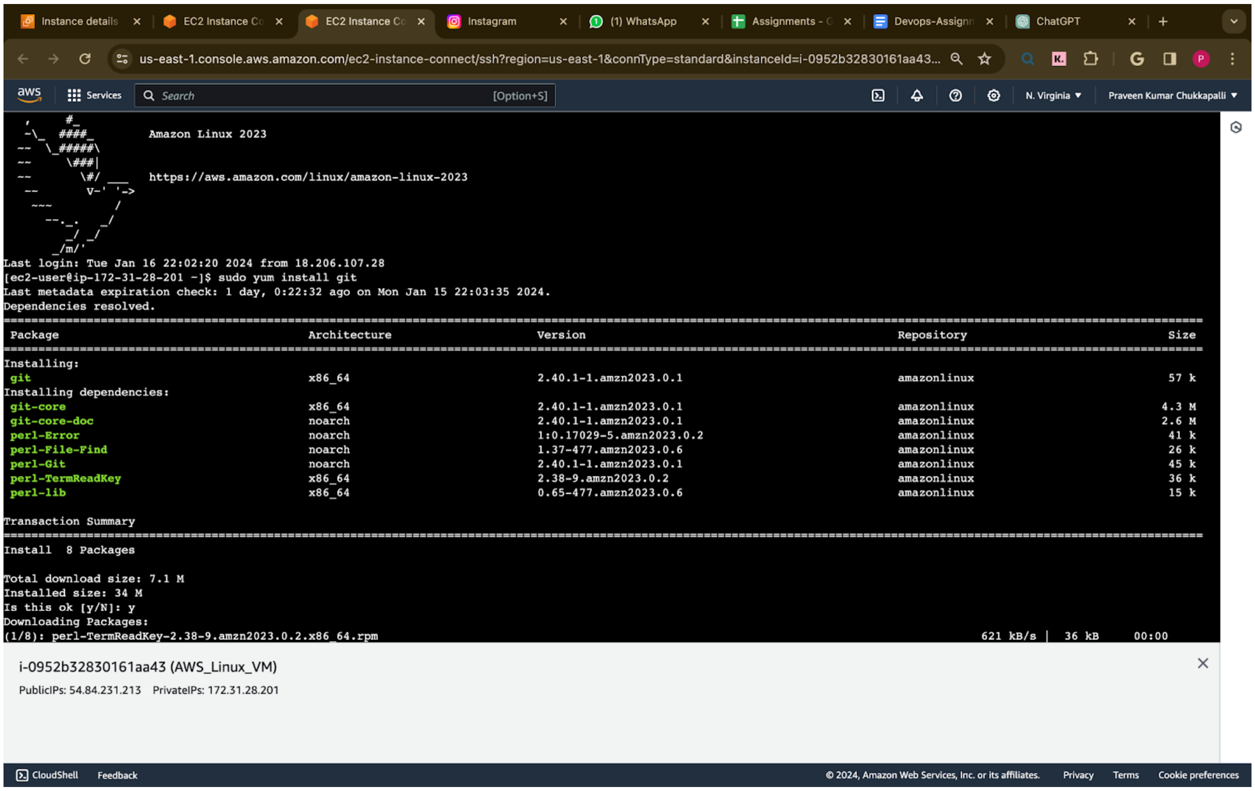
3. Installation of GIT in linux :



Instance details
EC2 Instance Co
EC2 Instance Co
Instagram
(1) WhatsApp
Assignments - G
Devops-Assignm
ChatGPT
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-0952b32830161aa43...
aws
Services
Search
[Option+S]
N. Virginia
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```
   ,     #_
   ~\_  ####_        Amazon Linux 2023
  ~~  \_#####\
  ~~     \###|
  ~~       \#/ ___   https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
      ~~._.   _/
         _/ _/
       _/m/'
Last login: Tue Jan 16 22:02:20 2024 from 18.206.107.28
[ec2-user@ip-172-31-28-201 ~]$ sudo yum install git
Last metadata expiration check: 1 day, 0:22:32 ago on Mon Jan 15 22:03:35 2024.
Dependencies resolved.
==========================================================================================================================================
 Package                   Architecture          Version                            Repository                                        Size
==========================================================================================================================================
Installing:
 git                       x86_64                2.40.1-1.amzn2023.0.1              amazonlinux                                       57 k
Installing dependencies:
 git-core                  x86_64                2.40.1-1.amzn2023.0.1              amazonlinux                                      4.3 M
 git-core-doc              noarch                2.40.1-1.amzn2023.0.1              amazonlinux                                      2.6 M
 perl-Error                noarch                1:0.17029-5.amzn2023.0.2           amazonlinux                                       41 k
 perl-File-Find            noarch                1.37-477.amzn2023.0.6              amazonlinux                                       26 k
 perl-Git                  noarch                2.40.1-1.amzn2023.0.1              amazonlinux                                       45 k
 perl-TermReadKey          x86_64                2.38-9.amzn2023.0.2                amazonlinux                                       36 k
 perl-lib                  x86_64                0.65-477.amzn2023.0.6              amazonlinux                                       15 k

Transaction Summary
==========================================================================================================================================
Install  8 Packages

Total download size: 7.1 M
Installed size: 34 M
Is this ok [y/N]: y
Downloading Packages:
(1/8): perl-TermReadKey-2.38-9.amzn2023.0.2.x86_64.rpm                                                     621 kB/s |  36 kB     00:00
```

i-0952b32830161aa43 (AWS_Linux_VM)

PublicIPs: 54.84.231.213   PrivateIPs: 172.31.28.201

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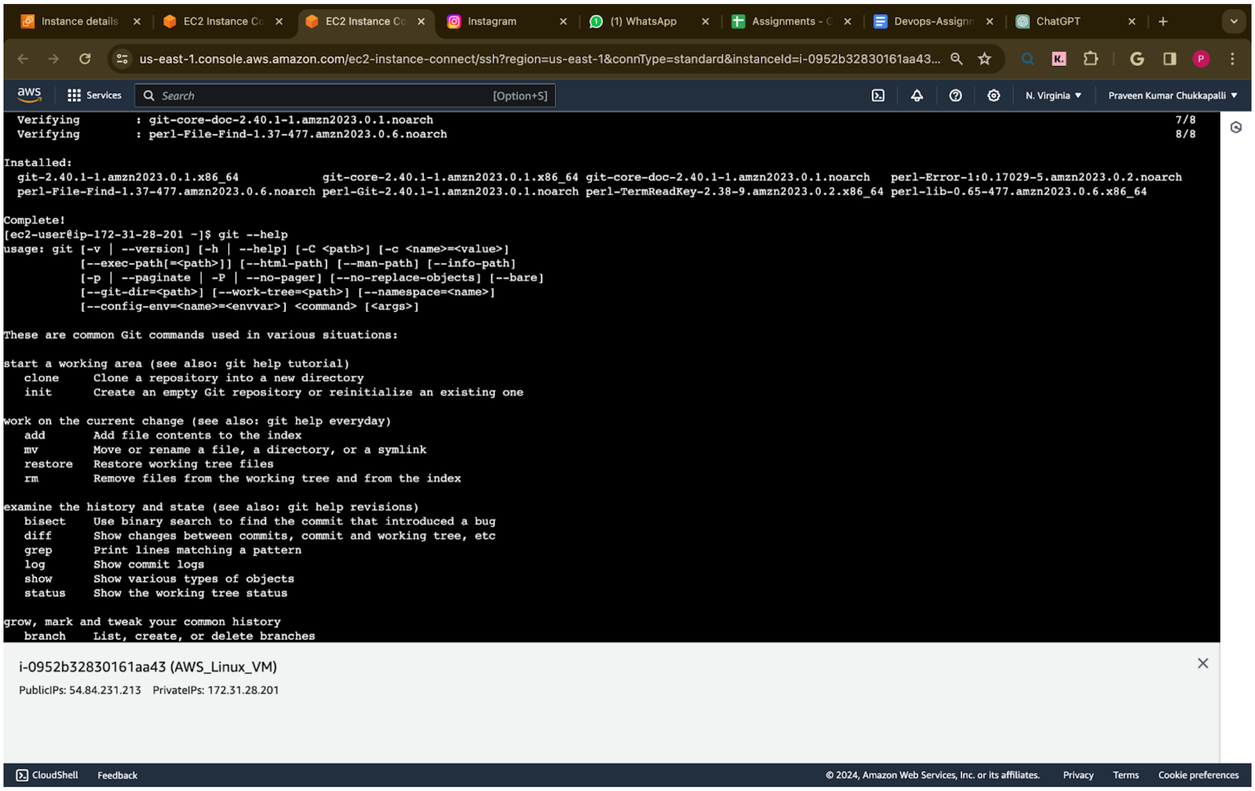
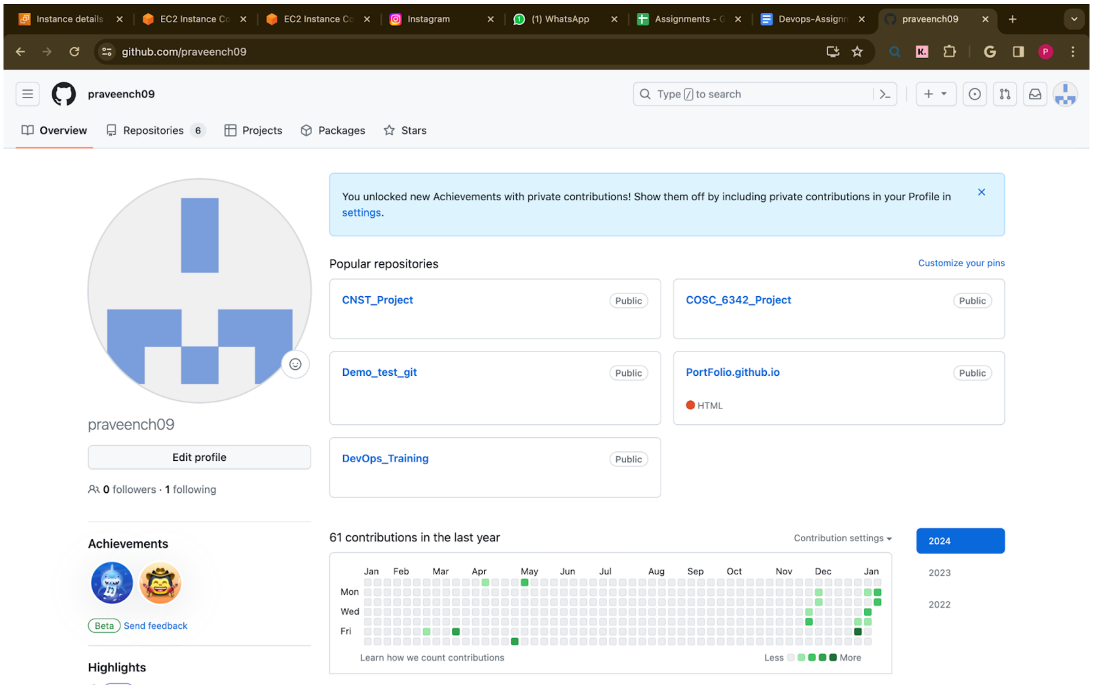

Instance details
EC2 Instance Co
EC2 Instance Co
Instagram
(1) WhatsApp
Assignments - G
Devops-Assignm
ChatGPT
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-0952b32830161aa43...
aws
Services
Search
[Option+S]
N. Virginia
Praveen Kumar Chukkapalli

```
  Verifying        : git-core-doc-2.40.1-1.amzn2023.0.1.noarch                                                                                     7/8
  Verifying        : perl-File-Find-1.37-477.amzn2023.0.6.noarch                                                                                   8/8

Installed:
  git-2.40.1-1.amzn2023.0.1.x86_64            git-core-2.40.1-1.amzn2023.0.1.x86_64 git-core-doc-2.40.1-1.amzn2023.0.1.noarch   perl-Error-1:0.17029-5.amzn2023.0.2.noarch
  perl-File-Find-1.37-477.amzn2023.0.6.noarch perl-Git-2.40.1-1.amzn2023.0.1.noarch perl-TermReadKey-2.38-9.amzn2023.0.2.x86_64 perl-lib-0.65-477.amzn2023.0.6.x86_64

Complete!
[ec2-user@ip-172-31-28-201 ~]$ git --help
usage: git [-v | --version] [-h | --help] [-C <path>] [-c <name>=<value>]
           [--exec-path[=<path>]] [--html-path] [--man-path] [--info-path]
           [-p | --paginate | -P | --no-pager] [--no-replace-objects] [--bare]
           [--git-dir=<path>] [--work-tree=<path>] [--namespace=<name>]
           [--config-env=<name>=<envvar>] <command> [<args>]

These are common Git commands used in various situations:

start a working area (see also: git help tutorial)
   clone     Clone a repository into a new directory
   init      Create an empty Git repository or reinitialize an existing one

work on the current change (see also: git help everyday)
   add       Add file contents to the index
   mv        Move or rename a file, a directory, or a symlink
   restore   Restore working tree files
   rm        Remove files from the working tree and from the index

examine the history and state (see also: git help revisions)
   bisect    Use binary search to find the commit that introduced a bug
   diff      Show changes between commits, commit and working tree, etc
   grep      Print lines matching a pattern
   log       Show commit logs
   show      Show various types of objects
   status    Show the working tree status

grow, mark and tweak your common history
   branch    List, create, or delete branches
```

i-0952b32830161aa43 (AWS_Linux_VM)

PublicIPs: 54.84.231.213 PrivateIPs: 172.31.28.201

4. Creation of Github account with personal gmail



You unlocked new Achievements with private contributions! Show them off by including private contributions in your Profile in settings.

Popular repositories

CNST_Project Public

COSC_6342_Project Public

Demo_test_git Public

PortFolio.github.io Public

HTML

DevOps_Training Public

praveench09

Edit profile

0 followers · 1 following

Achievements

Highlights

61 contributions in the last year

https://github.com/praveench09/DevOps_Training