

Name:- Divyang Bagla

Panel:- CC1

Roll No.:- PA35

Subject:- Cloud Computing

Assignment – 3

Creating EC2 Instance

The screenshot displays the AWS Management Console's 'Launch Instance Wizard' at the 'Step 1: Choose an Amazon Machine Image (AMI)' stage. The browser address bar shows the URL: `us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchInstanceWizard`. The console header includes the AWS logo, a search bar, and navigation tabs for '1. Choose AMI', '2. Choose Instance Type', '3. Configure Instance', '4. Add Storage', '5. Add Tags', '6. Configure Security Group', and '7. Review'. Below the header, a 'Cancel and Exit' link is present. The main content area features a search bar with the placeholder text 'Search for an AMI by entering a search term e.g. "Windows"'. A 'Quick Start' section on the left lists 'My AMIs', 'AWS Marketplace', and 'Community AMIs', with a 'Free tier only' filter. The main list shows two Amazon Linux 2 AMIs (HVM) with SSD Volume Type. The first AMI has ID `ami-002068ed284fb165b` (64-bit x86) and `ami-0a5899928eba2e7bd` (64-bit Arm). The second AMI has ID `ami-056b1936002ca8ede` (64-bit x86) and `ami-0b09f36be87d32fff` (64-bit Arm). Both AMIs are marked as 'Free tier eligible'. The 'macOS Monterey 12.0.1' AMI (ID `ami-071bb7b6031fd9da7`) is also listed. The bottom of the screen shows the Windows taskbar with a search bar, application icons, and system information including 26°C, 58% battery, and the date 08-12-2021.

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchInstanceWizard:

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance families Current generation Show/Hide Columns

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz, -, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	t2	t2.micro	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t2	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t3	t3.nano	2	0.5	FRS only	Yes	1 In 10 5 Gbps	Yes

Cancel Previous Review and Launch Next: Configure Instance Details

Feedback English (US) © 2021, Amazon Internet Services Private Ltd. or its affiliates. Privacy Terms Cookie preferences

Type here to search 32% 26°C Mostly sunny 17:18 08-12-2021

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchInstanceWizard:

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances 1 Launch into Auto Scaling Group

Purchasing option ☐ Request Spot instances

Network vpc-06855e4008ef30ad1 (default) Create new VPC

Subnet No preference (default subnet in any Availability Zone) Create new subnet

Auto-assign Public IP Use subnet setting (Enable)

Hostname type Use subnet setting (IP name)

DNS Hostname ☒ Enable IP name IPv4 (A record) DNS requests ☒ Enable resource-based IPv4 (A record) DNS requests ☐ Enable resource-based IPv6 (AAAA record) DNS requests

Placement group ☐ Add Instance to placement group

Capacity Reservation Open

Domain join directory No directory Create new directory

Cancel Previous Review and Launch Next: Add Storage

Feedback English (US) © 2021, Amazon Internet Services Private Ltd. or its affiliates. Privacy Terms Cookie preferences

Type here to search 53% 26°C Mostly sunny 17:19 08-12-2021

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchInstanceWizard:

Search for services, features, blogs, docs, and more

Services

1. Choose AMI2. Choose Instance Type3. Configure Instance4. Add Storage5. Add Tags6. Configure Security Group7. Review

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	Encryption
Root	/dev/xvda	snap-08c6656b1c27d23c5	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

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.

Shared file systems

You currently don't have any file systems on this instance. Select "Add file system" button below to add a file system.

Add file system

CancelPreviousReview and LaunchNext: Add Tags

FeedbackEnglish (US)

© 2021, Amazon Internet Services Private Ltd. or its affiliates. PrivacyTermsCookie preferences

Type here to search

53%26°C Mostly sunny17:2008-12-2021

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchInstanceWizard:

Search for services, features, blogs, docs, and more

Services

1. Choose AMI2. Choose Instance Type3. Configure Instance4. Add Storage5. Add Tags6. Configure Security Group7. Review

Step 5: Add Tags

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. A copy of a tag can be applied to volumes, instances or both. Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

Key	Value	Instances	Volumes	Network Interfaces
cc-lab-3	cloud-computing-lab-three	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Add another tag (Up to 50 tags maximum)

CancelPreviousReview and LaunchNext: Configure Security Group

FeedbackEnglish (US)

© 2021, Amazon Internet Services Private Ltd. or its affiliates. PrivacyTermsCookie preferences

Type here to search

54%26°C Mostly sunny17:2108-12-2021

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchInstanceWizard:

ServicesSearch for services, features, blogs, docs, and more[Alt+S]

1. Choose AMI2. Choose Instance Type3. Configure Instance4. Add Storage5. Add Tags6. Configure Security Group7. Review

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group:

Create a new security group

Select an existing security group

Security group name: launch-wizard-1

Description: launch-wizard-1 created 2021-12-08T17:21:28.753+05:30

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
HTTPS	TCP	443	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop

Add Rule

Warning

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

CancelPreviousReview and Launch

FeedbackEnglish (US)

© 2021, Amazon Internet Services Private Ltd. or its affiliates. PrivacyTermsCookie preferences

Type here to search

55%

26°C Mostly sunny

17:2108-12-2021

Launch instance wizard | EC2 M...

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchInstanceWizard:

ServicesSearch for services, features, blogs, docs, and more[Alt+S]

1. Choose AMI2. Choose Instance Type3. Configure Instance4. Add Storage5. Add Tags6. Configure Security Group7. Review

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

Improve your instances' security. Your security group, launch-wizard-1, 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](#)

AMI Details

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type - ami-002068ed284fb165b

Free tier eligible

Amazon Linux 2 comes with five years support. It provides Linux kernel 5.10 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is n...

Root Device Type: ebsVirtualization type: hvm

Edit AMI

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

Edit instance type

Security Groups

Edit security groups

CancelPreviousLaunch

FeedbackEnglish (US)

© 2021, Amazon Internet Services Private Ltd. or its affiliates. PrivacyTermsCookie preferences

Type here to search

55%

26°C Mostly sunny

17:2208-12-2021

Ec2 Instance created

The screenshot shows the AWS Management Console for the us-east-2 region. A green banner at the top indicates "Successfully started i-00faf93cec00ce481". The left sidebar shows the navigation menu with "Instances" selected. The main content area displays the "Instances (1/1) Info" page. A table lists the instance details:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DN
-	i-00faf93cec00ce481	Pending	t2.micro	-	No alarms	us-east-2b	-

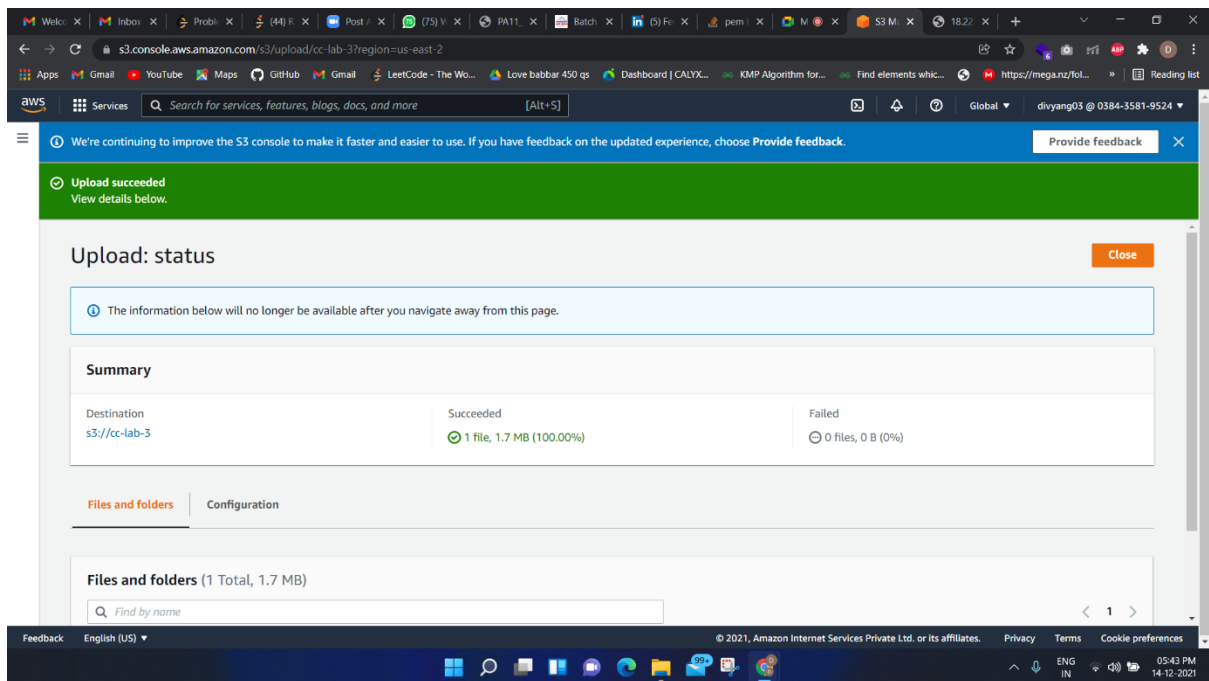
Below the table, the "Instance: i-00faf93cec00ce481" details are shown, including tabs for Details, Security, Networking, Storage, Status checks, Monitoring, and Tags. The "Details" tab is active, showing the Instance summary with fields for Instance ID, Public IPv4 address, Private IPv4 addresses, IPv6 address, Instance state, and Public IPv4 DNS.

Adding web page zip code in s3 bucket

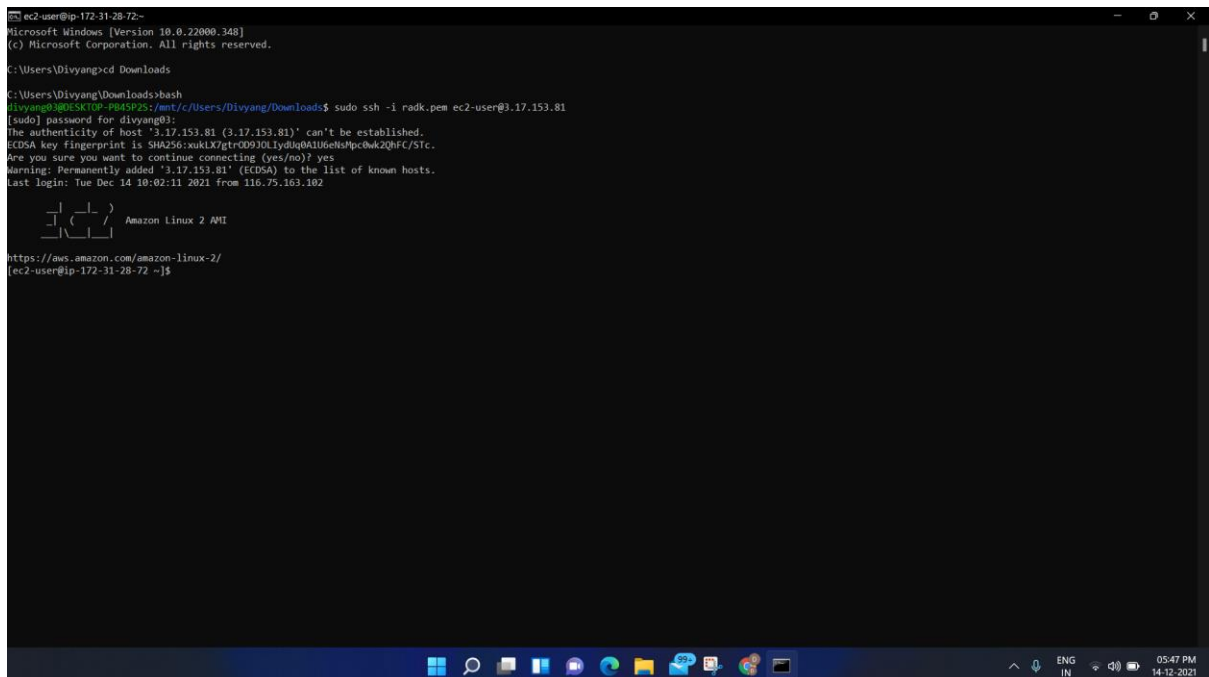
The screenshot shows the AWS S3 console for the us-east-2 region. The "Upload" page is displayed, showing a message: "We're continuing to improve the S3 console to make it faster and easier to use. If you have feedback on the updated experience, choose Provide feedback." Below this, there is a section for "Files and folders (1 Total, 1.7 MB)". A table lists the files and folders to be uploaded:

Name	Folder	Type	Size
to-doList.zip	-	application/x-zip-compressed	1.7 MB

The "Destination" section is also visible, showing the bucket name "to-doList.zip".



Successfully connected to linux AMI



Move to the html directory where the code is to be added

```

root@ip-172-31-28-72:/var/www/html
Microsoft Windows [Version 10.0.22000.348]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Divyang>cd Downloads

C:\Users\Divyang\Downloads>bash
divyang@380e5k109-PB45P25:/mnt/c/Users/Divyang/Downloads$ sudo ssh -i radk.pem ec2-user@3.17.153.81
[sudo] password for divyang03:
The authenticity of host '3.17.153.81 (3.17.153.81)' can't be established.
ECDSA key fingerprint is SHA256:xuKlX7gt+OD9J0Llyd4qBAllU6ells4pcbwk2QhFC/Stc.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '3.17.153.81' (ECDSA) to the list of known hosts.
Last login: Tue Dec 14 10:02:11 2021 from 116.75.163.102

  ____      _
 / ___|  __| | | |
| |  | |__| | | |
| |  | |__| | | |
|_|  |____|_|_|_|

Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-172-31-28-72 ~]$ sudo su
[root@ip-172-31-28-72 ec2-user]# yum update -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
No packages marked for update
[root@ip-172-31-28-72 ec2-user]# cd /var/www/html
[root@ip-172-31-28-72 html]# ls
Simon Game Challenge SimonGame+Challenge.zip index.html index.js sounds styles.css
[root@ip-172-31-28-72 html]#

```

Successfully added to do zip in html folder

```

root@ip-172-31-28-72:~# whoami/hw.html
rm: cannot remove 'Simon Game Challenge': Is a directory
[root@ip-172-31-28-72 html]# ls
Simon Game Challenge index.html index.js sounds styles.css
[root@ip-172-31-28-72 html]# rm -r "Simon Game Challenge"
rm: descend into directory 'Simon Game Challenge'? yes
rm: remove regular file 'Simon Game Challenge/05_Store'? yes
rm: remove directory 'Simon Game Challenge'? yes
[root@ip-172-31-28-72 html]# ls
index.html index.js sounds styles.css
[root@ip-172-31-28-72 html]# rm index.html
rm: remove regular file 'index.html'? yes
[root@ip-172-31-28-72 html]# ls
index.js sounds styles.css
[root@ip-172-31-28-72 html]# rm index.js
rm: remove regular file 'index.js'? yes
[root@ip-172-31-28-72 html]# rm styles.css
rm: remove regular file 'styles.css'? yes
[root@ip-172-31-28-72 html]# ls
sounds
[root@ip-172-31-28-72 html]# rm -r "sounds"
rm: descend into directory 'sounds'? yes
rm: remove regular file 'sounds/blue.mp3'? yes
rm: remove regular file 'sounds/green.mp3'? yes
rm: remove regular file 'sounds/red.mp3'? yes
rm: remove regular file 'sounds/wrong.mp3'? yes
rm: remove regular file 'sounds/yellow.mp3'? yes
rm: remove directory 'sounds'? yes
[root@ip-172-31-28-72 html]# ls
[root@ip-172-31-28-72 html]# wget https://cc-lab-3.s3.us-east-2.amazonaws.com/to-dolist.zip
--2021-12-14 12:33:10-- https://cc-lab-3.s3.us-east-2.amazonaws.com/to-dolist.zip
Resolving cc-lab-3.s3.us-east-2.amazonaws.com (cc-lab-3.s3.us-east-2.amazonaws.com)... 52.219.107.18
Connecting to cc-lab-3.s3.us-east-2.amazonaws.com (cc-lab-3.s3.us-east-2.amazonaws.com)[52.219.107.18]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1833560 (1.7M) [application/zip]
Saving to: 'to-dolist.zip'

100%[=====] 1,833,560 --.-K/s in 0.02s

2021-12-14 12:33:10 (84.5 MB/s) - 'to-dolist.zip' saved [1833560/1833560]

[root@ip-172-31-28-72 html]# ls
to-dolist.zip
[root@ip-172-31-28-72 html]# unzip to-dolist.zip

```

Unzipped the folder

```
root@ip-172-31-28-72:/var/www/html
inflating: to-dolist/node_modules/vary/LICENSE
inflating: to-dolist/node_modules/vary/package.json
inflating: to-dolist/node_modules/vary/README.md
creating: to-dolist/node_modules/widest-line/
inflating: to-dolist/node_modules/widest-line/index.d.ts
inflating: to-dolist/node_modules/widest-line/index.js
inflating: to-dolist/node_modules/widest-line/license
inflating: to-dolist/node_modules/widest-line/package.json
inflating: to-dolist/node_modules/widest-line/readme.md
creating: to-dolist/node_modules/wrappy/
inflating: to-dolist/node_modules/wrappy/LICENSE
inflating: to-dolist/node_modules/wrappy/package.json
inflating: to-dolist/node_modules/wrappy/README.md
inflating: to-dolist/node_modules/wrappy/wrappy.js
creating: to-dolist/node_modules/write-file-atomic/
inflating: to-dolist/node_modules/write-file-atomic/CHANGELOG.md
inflating: to-dolist/node_modules/write-file-atomic/index.js
inflating: to-dolist/node_modules/write-file-atomic/LICENSE
inflating: to-dolist/node_modules/write-file-atomic/package.json
inflating: to-dolist/node_modules/write-file-atomic/README.md
creating: to-dolist/node_modules/xdg-basedir/
inflating: to-dolist/node_modules/xdg-basedir/index.d.ts
inflating: to-dolist/node_modules/xdg-basedir/index.js
inflating: to-dolist/node_modules/xdg-basedir/license
inflating: to-dolist/node_modules/xdg-basedir/package.json
inflating: to-dolist/node_modules/xdg-basedir/readme.md
inflating: to-dolist/package-lock.json
inflating: to-dolist/package.json
creating: to-dolist/public/
creating: to-dolist/public/css/
inflating: to-dolist/public/css/styles.css
creating: to-dolist/views/
inflating: to-dolist/views/list.ejs
[root@ip-172-31-28-72 html]# ls
to-dolist to-dolist.zip
[root@ip-172-31-28-72 html]# mv to-dolist/* .
[root@ip-172-31-28-72 html]# ls
app.js node_modules package-lock.json package.json public to-dolist to-dolist.zip views
[root@ip-172-31-28-72 html]# service httpd start
Redirecting to /bin/systemctl start httpd.service
[root@ip-172-31-28-72 html]#
```

Install the node js on linux ami using npm

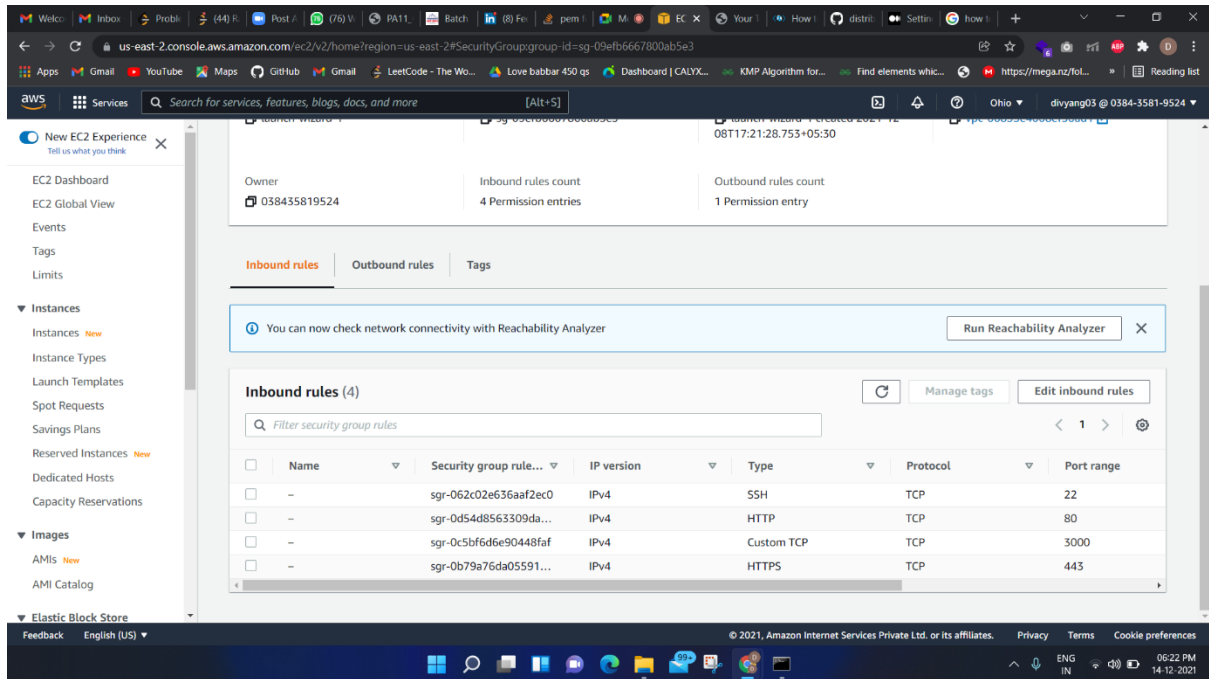
```
ec2-user@ip-172-31-28-72:/var/www/html
[root@ip-172-31-28-72 html]# npm start
bash: npm: command not found
[root@ip-172-31-28-72 html]# node
bash: node: command not found
[root@ip-172-31-28-72 html]# sudo npm i -g pm2
sudo: npm: command not found
[root@ip-172-31-28-72 html]# exit
exit
[ec2-user@ip-172-31-28-72 ~]$ cd /var/www/html
[ec2-user@ip-172-31-28-72 html]$ node server.js
node:internal/modules/cjs/loader:936
  throw err;
  ^

Error: Cannot find module '/var/www/html/server.js'
    at Function.Module.resolveFilename (node:internal/modules/cjs/loader:933:15)
    at Function.Module.load (node:internal/modules/cjs/loader:778:27)
    at Function.executeUserEntryPoint [as runMain] (node:internal/modules/run_main:81:12)
    at node:internal/main/run_main_module:17:47 {
  code: 'MODULE_NOT_FOUND',
  requireStack: []
}

Node.js v17.2.0
[ec2-user@ip-172-31-28-72 html]# ls
app.js node_modules package-lock.json package.json public to-dolist to-dolist.zip views
[ec2-user@ip-172-31-28-72 html]# node app.js
server started on port 3000
^C
[ec2-user@ip-172-31-28-72 html]# npm start
npm ERR! Missing script: "start"
npm ERR!
npm ERR! Did you mean one of these?
npm ERR!   npm star # Mark your favorite packages
npm ERR!   npm stars # View packages marked as favorites
npm ERR!
npm ERR! To see a list of scripts, run:
npm ERR!   npm run

npm ERR! A complete log of this run can be found in:
npm ERR!   /home/ec2-user/.npm/_logs/2021-12-14T12_45_20_807Z-debug.log
[ec2-user@ip-172-31-28-72 html]# npm run
lifecycle scripts included in to-dolist@1.0.0:
  test
    echo "Error: no test specified" && exit 1
[ec2-user@ip-172-31-28-72 html]# node app.js
server started on port 3000
```


Added one inbound rule for port no 3000



App successfully started

