

## Practical 5

(Static Website Hosting using AWS EC2)

22MIP10001

Name: Arpita Rajput  
Reg. No. 22MIP10001

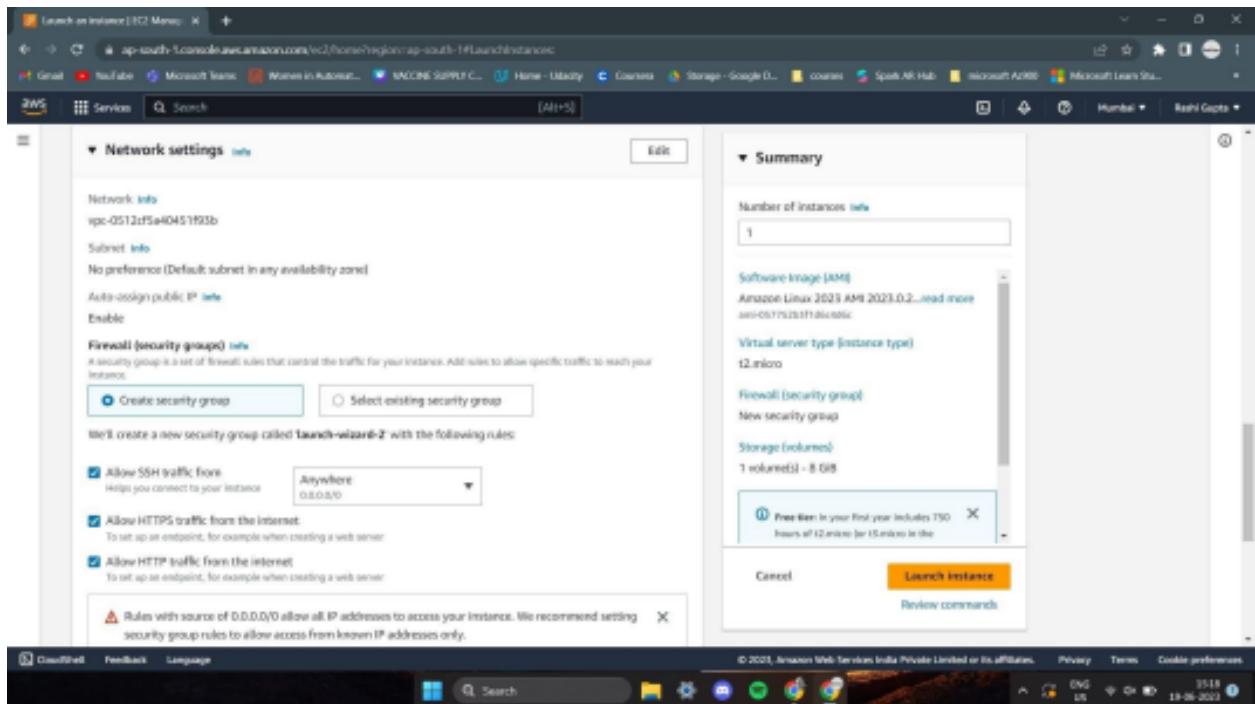
## Step 1 : Launch an EC2 instance

The screenshot shows the AWS EC2 landing page. On the left, there's a navigation sidebar with options like Dashboard, EC2 Global View, Events, Instances (with sub-options like Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations), Images (AMIs, AMI Catalog), and Elastic Block Store (Volumes, Snapshots, Lifecycle Manager). The main content area has a dark header "Amazon Elastic Compute Cloud (EC2)" with the sub-header "Create, manage, and monitor virtual servers in the cloud." Below this is a text block about EC2's broadest and deepest compute platform, followed by a "Launch a virtual server" section with a "Launch instance" button and a "View dashboard" link. A "Benefits and features" section highlights "EC2 offers ultimate scalability and control" with a list of bullet points: Highest level of control, Widest variety of server size options, Widest availability of operating systems, and Global scalability. To the right, there's a "Get started" section with a "Get started walkthroughs" button and a "Get started tutorial" link. The bottom of the page includes standard AWS footer links and a timestamp.

## Step 2 : Create an EC2 instance (test\_instance)

The screenshot shows the "Launch an instance" wizard. Step 1 is titled "Name and tags". It has a "Name" input field containing "test\_instance" and a "Add additional tags" link. Step 2 is titled "Application and OS Images (Amazon Machine Image)". It shows a search bar with "Search our full catalog including 1000s of application and OS images" and a "Recent" tab selected, displaying icons for Amazon Linux, macOS, Ubuntu, Windows, Red Hat, SUSE Linux, and Debian. A "Quick Start" tab is also present. To the right, there's a summary section with "Number of instances" set to 1, "t3.micro" selected, "Firewall (security group)" set to "New security group", and "Storage (volumes)" set to "1 volume(s) - 30 GiB". A callout box provides information about the Free tier. At the bottom are "Cancel", "Launch instance", and "Preview code" buttons. The bottom of the page includes standard AWS footer links and a timestamp.

## Step 3 : Create a security group



## Step 4 : Instance successfully initiated

The screenshot shows the AWS EC2 Instances page after the instance has been successfully launched. A green success message box at the top reads: "Success: Successfully initiated launch of instance (i-0e6eda2c33c2042f1)".

Below the message, a 'Next Steps' section provides links to other AWS services:

- Create billing and free tier usage alerts
- Connect to your instance
- Connect an RDS database
- Create EBS snapshot policy
- Manage detailed monitoring
- Create Load Balancer
- Create AWS budget
- Manage CloudWatch alarms

A search bar and navigation links are located at the bottom of the page.

## Step 5 : Instance started running

The screenshot shows the AWS EC2 Instances page. At the top, there are navigation links for 'EC2' and 'Instances'. Below the header, a search bar and a 'Find Instance by attribute or tag (case-sensitive)' input field are present. A dropdown menu shows 'All states' and a filter for 'Instance state = running'. The main table lists two instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...
vsksir	i-01fabaf0c2c3eea53	Running	t2.micro	2/2 checks passed	View alarms +	ap-southeast-2a	ec2-54-253-73-25.ap-s...	54.253.73.25
<b>test_instance</b>	i-0e6eda2c33c2042f1	Running	t3.micro	3/3 checks passed	View alarms +	ap-southeast-2c	ec2-13-239-16-174.ap-...	13.239.16.174

Below the table, a detailed view for the instance 'i-0e6eda2c33c2042f1 (test\_instance)' is shown. The 'Details' tab is selected, displaying the following information:

- Instance summary**: Instance ID: i-0e6eda2c33c2042f1, Public IP: 13.239.16.174, Instance state: Running.
- Public IP4 address**: 13.239.16.174 [open address].
- Private IP4 addresses**: 172.31.31.102.
- Public IPv4 DNS**: ec2-13-239-16-174.ap-southeast-2.compute.amazonaws.com [open address].

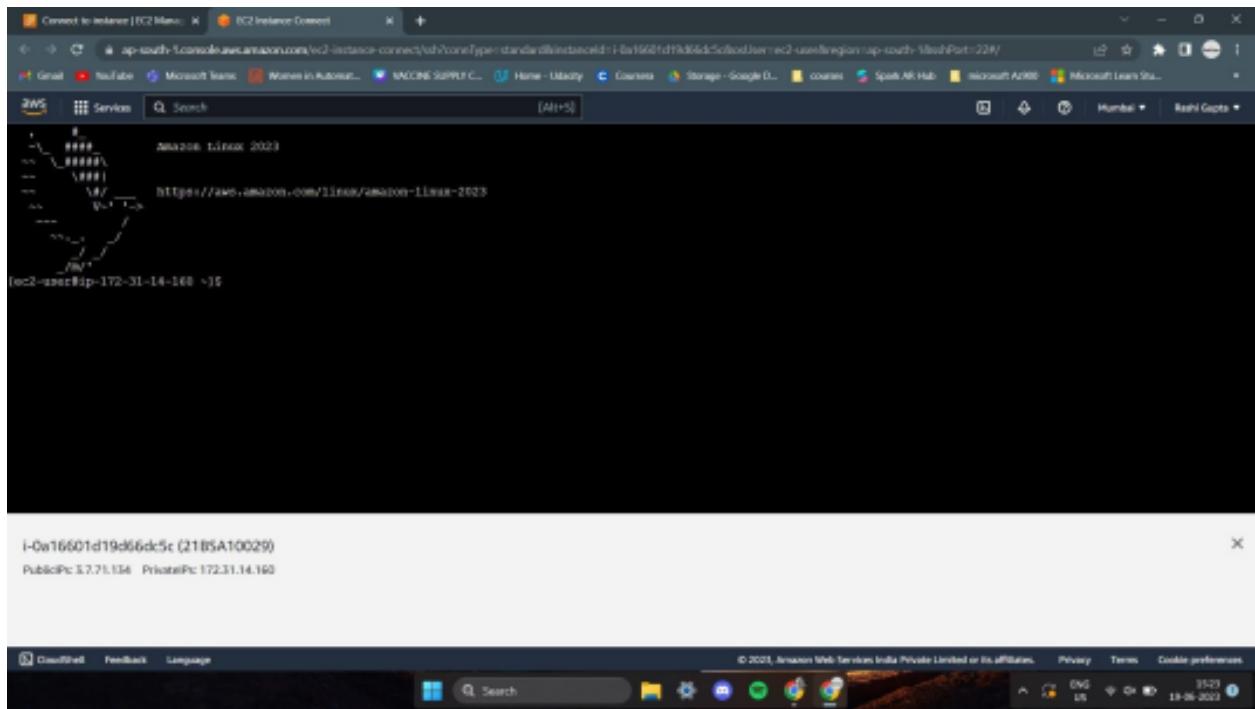
## Step 6 : Connect to instance

The screenshot shows the 'Connect to instance' dialog box. At the top, it says 'Connect to your instance i-0a16601d19d56dc5c (2185A10020) using any of these options'. There are four tabs: 'EC2 Instance Connect' (selected), 'Session Manager', 'SSH client', and 'EC2 serial console'. The 'EC2 Instance Connect' tab shows the following details:

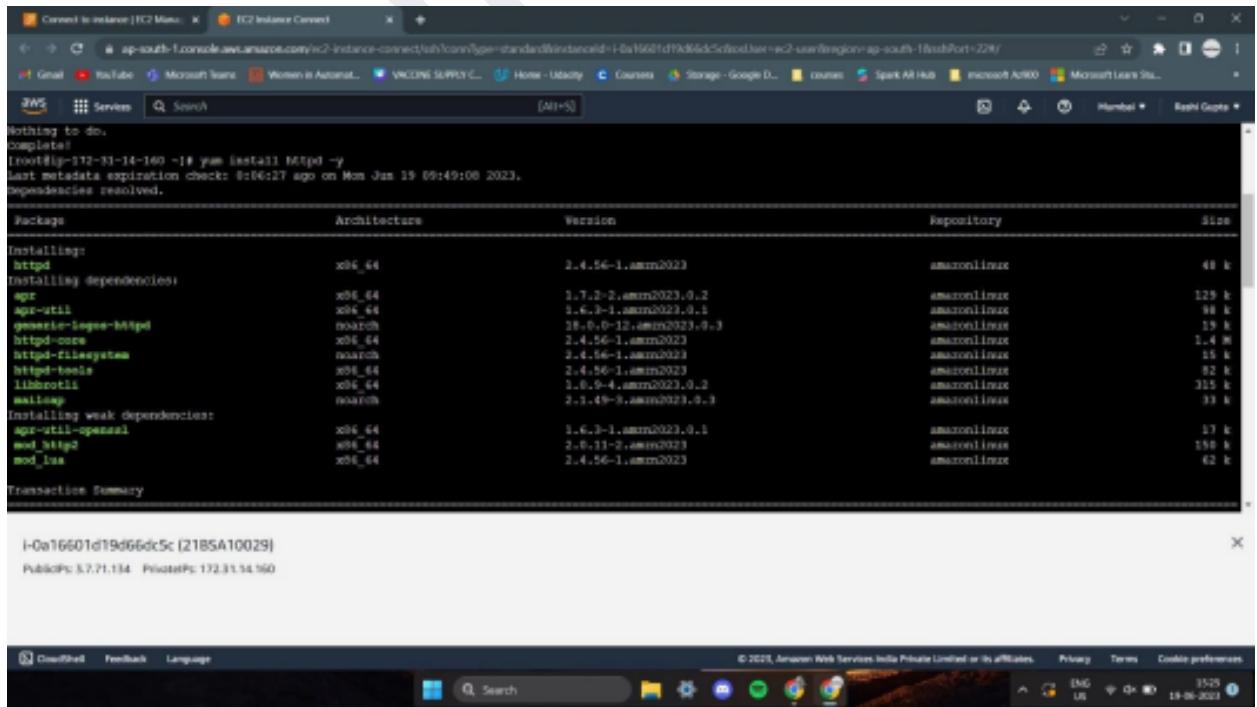
- Instance ID**: i-0a16601d19d56dc5c (2185A10020).
- Connection Type**:
  - Connect using EC2 Instance Connect: Connect using the EC2 Instance Connect browser-based client, with a public IPv4 address.
  - Connect using EC2 Instance Connect Endpoint: Connect using the EC2 Instance Connect browser-based client, with a private IPv4 address and a VPC endpoint.
- Public IP address**: 3.7.71.134.
- User name**: ec2-user (Note: In most cases, the default user name, ec2-user, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.)

At the bottom right, there are 'Cancel' and 'Connect' buttons. The 'Connect' button is highlighted in orange. The browser's address bar shows the URL: ap-south-1.console.aws.amazon.com/v2/home?region=ap-south-1&ConnectToinstanceId=i-0a16601d19d56dc5c.

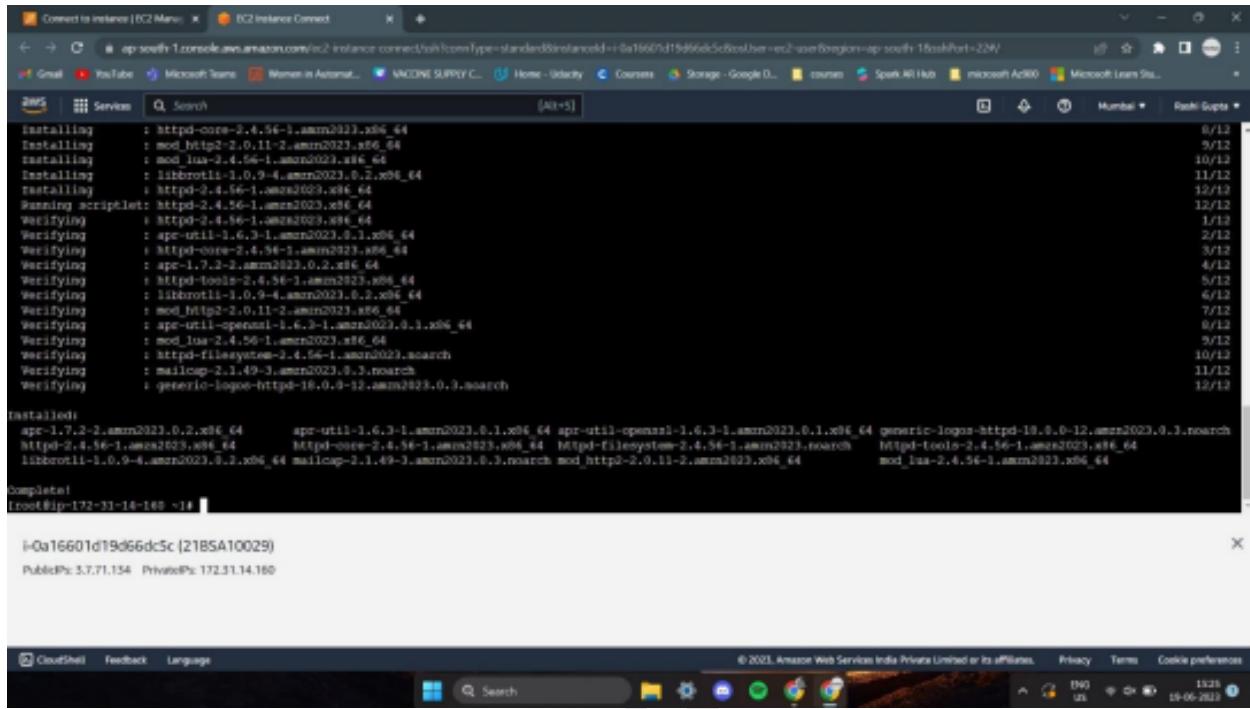
## Step 7 : Open terminal using SSH



## Step 8 : sudo su – (get root access)

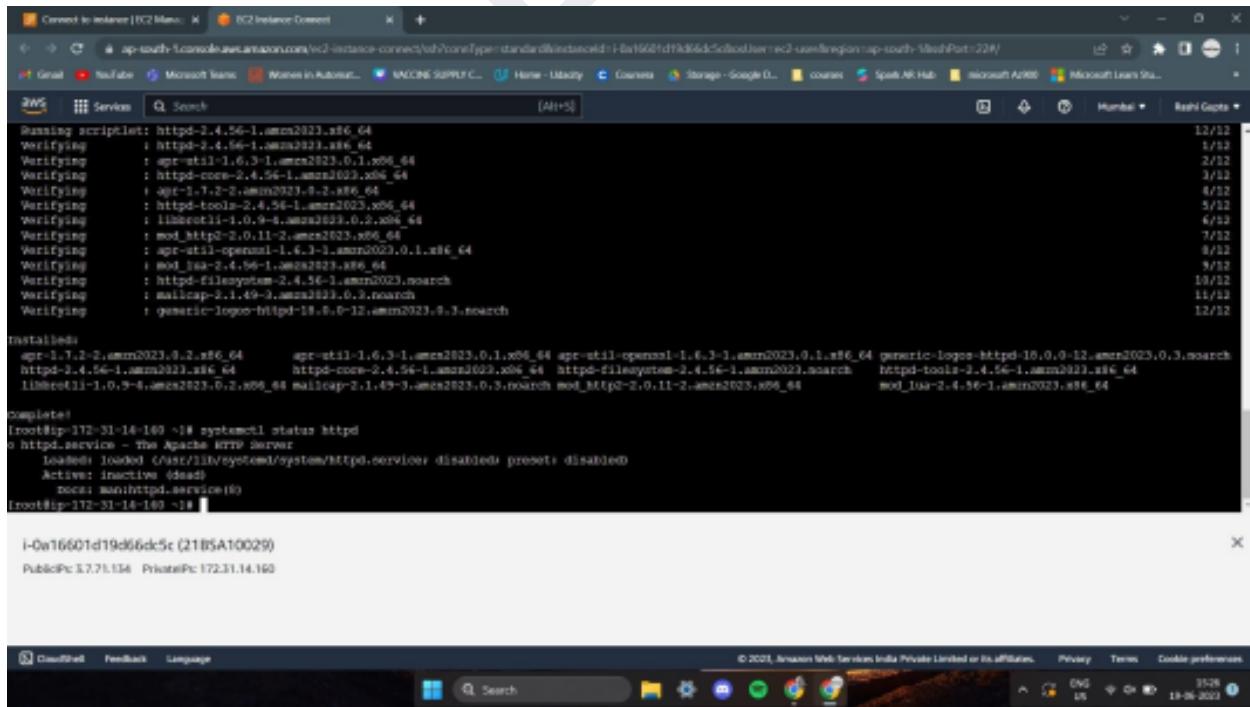


## Step 9 : yum update -y (update the system)



```
Connecting to instance [EC2 Man... | EC2 Instance Connect | +  
Gmail YouTube Microsoft Teams Women in Automat... VACCINE SUPPLY C... Home - Utility Courses Storage - Google D... courses Spark AR Hub microsoft Ac360 Microsoft Learn Stu... Mumbai Reeti Gupta  
AWS Services Search (Alt+F)  
Installing : httpd-core-2.4.56-1.amzn2023.x86_64  
Installing : mod_http2-2.0.11-2.amzn2023.x86_64  
Installing : mod_lua-2.4.56-1.amzn2023.x86_64  
Installing : libbrotli-1.0.9-4.amzn2023.0.2.x86_64  
Installing : httpd-2.4.56-1.amzn2023.x86_64  
Running scriptlets: httpd-2.4.56-1.amzn2023.x86_64  
Verifying : httpd-2.4.56-1.amzn2023.x86_64  
Verifying : apr-util-1.6.3-1.amzn2023.0.1.x86_64  
Verifying : httpd-core-2.4.56-1.amzn2023.x86_64  
Verifying : apr-1.7.2-2.amzn2023.0.2.x86_64  
Verifying : httpd-tools-2.4.56-1.amzn2023.x86_64  
Verifying : libbrotli-1.0.9-4.amzn2023.0.2.x86_64  
Verifying : mod_http2-2.0.11-2.amzn2023.x86_64  
Verifying : apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64  
Verifying : mod_lua-2.4.56-1.amzn2023.x86_64  
Verifying : httpd-fsleyesys-2.4.56-1.amzn2023.search  
Verifying : mailcap-2.1.49-3.amzn2023.0.3.search  
Verifying : generic-logos-httd-18.0.0-12.amzn2023.0.3.search  
Installed:  
apr-1.7.2-2.amzn2023.0.2.x86_64      apr-util-1.6.3-1.amzn2023.0.1.x86_64  apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64  generic-logos-httd-18.0.0-12.amzn2023.0.3.search  
httpd-2.4.56-1.amzn2023.x86_64      httpd-core-2.4.56-1.amzn2023.x86_64  httpd-fsleyesys-2.4.56-1.amzn2023.search      httpd-tools-2.4.56-1.amzn2023.x86_64  
libbrotli-1.0.9-4.amzn2023.0.2.x86_64  mailcap-2.1.49-3.amzn2023.0.3.search  mod_http2-2.0.11-2.amzn2023.x86_64      mod_lua-2.4.56-1.amzn2023.x86_64  
Completed!  
[root@ip-172-31-18-160 ~] #  
  
i-0a16601d19d66dc5c (21B5A10029)  
PublicIP: 3.7.71.154 PrivateIP: 172.31.14.160
```

## Step 10 : yum install httpd -y (install httpd web server)



```
Connecting to instance [EC2 Man... | EC2 Instance Connect | +  
Gmail YouTube Microsoft Teams Women in Automat... VACCINE SUPPLY C... Home - Utility Courses Storage - Google D... courses Spark AR Hub microsoft Ac360 Microsoft Learn Stu... Mumbai Reeti Gupta  
AWS Services Search (Alt+F)  
Installing : httpd-2.4.56-1.amzn2023.x86_64  
Verifying : httpd-2.4.56-1.amzn2023.x86_64  
Verifying : apr-util-1.6.3-1.amzn2023.0.1.x86_64  
Verifying : httpd-core-2.4.56-1.amzn2023.x86_64  
Verifying : apr-1.7.2-2.amzn2023.0.2.x86_64  
Verifying : httpd-tools-2.4.56-1.amzn2023.x86_64  
Verifying : libbrotli-1.0.9-4.amzn2023.0.2.x86_64  
Verifying : mod_http2-2.0.11-2.amzn2023.x86_64  
Verifying : apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64  
Verifying : mod_lua-2.4.56-1.amzn2023.x86_64  
Verifying : httpd-fsleyesys-2.4.56-1.amzn2023.search  
Verifying : mailcap-2.1.49-3.amzn2023.0.3.search  
Verifying : generic-logos-httd-18.0.0-12.amzn2023.0.3.search  
Installed:  
apr-1.7.2-2.amzn2023.0.2.x86_64      apr-util-1.6.3-1.amzn2023.0.1.x86_64  apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64  generic-logos-httd-18.0.0-12.amzn2023.0.3.search  
httpd-2.4.56-1.amzn2023.x86_64      httpd-core-2.4.56-1.amzn2023.x86_64  httpd-fsleyesys-2.4.56-1.amzn2023.search      httpd-tools-2.4.56-1.amzn2023.x86_64  
libbrotli-1.0.9-4.amzn2023.0.2.x86_64  mailcap-2.1.49-3.amzn2023.0.3.search  mod_http2-2.0.11-2.amzn2023.x86_64      mod_lua-2.4.56-1.amzn2023.x86_64  
Completed!  
[root@ip-172-31-14-160 ~] # systemctl status httpd  
httpd.service - The Apache HTTP Server  
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)  
     Active: inactive (dead)  
       Docs: man:httd(8)  
[root@ip-172-31-14-160 ~] #  
  
i-0a16601d19d66dc5c (21B5A10029)  
PublicIP: 3.7.71.154 PrivateIP: 172.31.14.160
```

## **Step 11 : systemctl status httpd (check status of web server)**

## Step 12 : mkdir temp (create temp folder) / wget download-link-zip



```
Creating: settle-html/js/revolution/fonts/revicons/
Inflating: settle-html/js/revolution/fonts/revicons/revicons90c6.eot
Inflating: settle-html/js/revolution/fonts/revicons/revicons90c6.svg
Inflating: settle-html/js/revolution/fonts/revicons/revicons90c6.ttf
Inflating: settle-html/js/revolution/fonts/revicons/revicons90c6.woff
Creating: settle-html/js/revolution/js/
Inflating: settle-html/js/revolution/js/_DS_Store
Creating: settle-html/js/revolution/js/extensions/
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.actions.min.js
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.carousel.min.js
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.kenburn.min.js
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.layeranimation.min.js
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.migration.min.js
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.navigation.min.js
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.parallax.min.js
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.slideanims.min.js
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.video.min.js
Inflating: settle-html/js/revolution/js/jquery.themepunch.revolution.min.js
Inflating: settle-html/js/revolution/js/jquery.themepunch.tools.min.js
Inflating: settle-html/js/slider-setting.js
root@ip-172-31-14-160 temp]# ls -lrt
total 9564
-rw-r--r--. 1 root root 9789702 Aug 20 2021 settle.zip
rwxr-xr-x. 7 root root 161 Jun 19 10:00 settle-html
root@ip-172-31-14-160 temp]# cd settle-html
root@ip-172-31-14-160 settle-html]#
```

## Step 13 : unzip downloaded website zip folder



```
Inflating: settle-html/js/revolution/fonts/revicons/revicons90c6.eot
Inflating: settle-html/js/revolution/fonts/revicons/revicons90c6.svg
Inflating: settle-html/js/revolution/fonts/revicons/revicons90c6.ttf
Inflating: settle-html/js/revolution/fonts/revicons/revicons90c6.woff
Creating: settle-html/js/revolution/js/
Inflating: settle-html/js/revolution/js/_DS_Store
Creating: settle-html/js/revolution/js/extensions/
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.actions.min.js
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.carousel.min.js
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.kenburn.min.js
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.layeranimation.min.js
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.migration.min.js
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.navigation.min.js
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.parallax.min.js
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.slideanims.min.js
Inflating: settle-html/js/revolution/js/extensions/revolution.extension.video.min.js
Inflating: settle-html/js/revolution/js/jquery.themepunch.revolution.min.js
Inflating: settle-html/js/revolution/js/jquery.themepunch.tools.min.js
Inflating: settle-html/js/slider-setting.js
root@ip-172-31-14-160 temp]# ls -lrt
total 9564
-rw-r--r--. 1 root root 9789702 Aug 20 2021 settle.zip
rwxr-xr-x. 7 root root 161 Jun 19 10:00 settle-html
root@ip-172-31-14-160 temp]# cd settle-html
```

## Step 14 : Folder is unzipped

```
infating: settle-html/js/revolution/fonts/revicons/revicons90c6.eot
infating: settle-html/js/revolution/fonts/revicons/revicons90c6.svg
infating: settle-html/js/revolution/fonts/revicons/revicons90c6.ttf
infating: settle-html/js/revolution/fonts/revicons/revicons90c6.woff
creating: settle-html/js/revolution/js/
creating: settle-html/js/revolution/js/.DS_Store
infating: settle-html/js/revolution/js/extensions/
infating: settle-html/js/revolution/js/extensions/revolution.extension.actions.min.js
infating: settle-html/js/revolution/js/extensions/revolution.extension.carousel.min.js
infating: settle-html/js/revolution/js/extensions/revolution.extension.kenburn.min.js
infating: settle-html/js/revolution/js/extensions/revolution.extension.layeranimation.min.js
infating: settle-html/js/revolution/js/extensions/revolution.extension.migration.min.js
infating: settle-html/js/revolution/js/extensions/revolution.extension.navigation.min.js
infating: settle-html/js/revolution/js/extensions/revolution.extension.parallax.min.js
infating: settle-html/js/revolution/js/extensions/revolution.extension.slideanims.min.js
infating: settle-html/js/revolution/js/extensions/revolution.extension.video.min.js
infating: settle-html/js/revolution/js/jquery.themepunch.revolution.min.js
infating: settle-html/js/revolution/js/jquery.themepunch.tools.min.js
infating: settle-html/js/slider-setting.js
root@ip-172-31-14-160 temp]# ls -lrt
total 9564
rw-r--r--. 1 root root 9789702 Aug 20 2021 settle.zip
rwxr-xr-x. 7 root root 161 Jun 19 10:00 settle-html
root@ip-172-31-14-160 temp]# cd settle-html
root@ip-172-31-14-160 settle-html]# mv * /var/www/html/
```

## Step 15 : cd unzipped-folder-location / ls -lrt (check contents of folder)

```
root@ip-172-31-14-160 settle-html]# ls -lrt
total 0
root@ip-172-31-14-160 settle-html]# ls -lrt
total 0
[root@ip-172-31-14-160 settle-html]# systemctl start httpd
[root@ip-172-31-14-160 settle-html]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
     Active: active (running) since Mon 2023-06-19 10:02:49 UTC; 8s ago
       Docs: man:httpd.service(8)
   Main PID: 25986 (httpd)
      Status: "Started, listening on: port 80"
        Tasks: 177 (limit: 1114)
       Memory: 12.8M
          CPU: 70ms
         CGroup: /system.slice/httpd.service
                 ├─25986 /usr/sbin/httpd -DFOREGROUND
                 ├─25987 /usr/sbin/httpd -DFOREGROUND
                 ├─25988 /usr/sbin/httpd -DFOREGROUND
                 ├─25989 /usr/sbin/httpd -DFOREGROUND
                 └─25990 /usr/sbin/httpd -DFOREGROUND

Jun 19 10:02:49 ip-172-31-14-160.ap-south-1.compute.internal systemd[1]: Starting httpd.service - The Apache HTTP Server...
Jun 19 10:02:49 ip-172-31-14-160.ap-south-1.compute.internal systemd[1]: Started httpd.service - The Apache HTTP Server.
Jun 19 10:02:49 ip-172-31-14-160.ap-south-1.compute.internal httpd[25986]: Server configured, listening on: port 80
root@ip-172-31-14-160 settle-html]#
```

## Step 16 : mv \* /var/www/html/ (move website folder to destination folder)



```
root@ip-172-31-14-160 temp]# ls -lrt
total 9564
-rw-r--r-- 1 root root 9789702 Aug 20 2021 settle.zip
rwxr-xr-x  7 root root   161 Jun 19 10:00 settle.html
root@ip-172-31-14-160 temp]# cd settle-html
root@ip-172-31-14-160 settle-html]# mv * /var/www/html/
root@ip-172-31-14-160 settle-html]#
```

## Step 17 : ls -lrt (checking moved folder)



```
root@ip-172-31-14-160 settle-html]# ls -lrt
total 0
root@ip-172-31-14-160 settle-html]# ls -lrt
total 0
root@ip-172-31-14-160 settle-html]# systemctl start httpd
root@ip-172-31-14-160 settle-html]# systemctl status httpd
httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
     Active: active (running) since Mon 2023-06-19 10:02:49 UTC; 8s ago
       Docs: man:httpd.service(8)
   Main PID: 25986 (httpd)
     Status: "Started, listening on: port 80"
      Tasks: 177 (limit: 1114)
     Memory: 12.8M
        CPU: 70ms
      CGroup: /system.slice/httpd.service
          └─25986 /usr/sbin/httpd -DFOREGROUND
              ├─25987 /usr/sbin/httpd -DFOREGROUND
              ├─25988 /usr/sbin/httpd -DFOREGROUND
              ├─25989 /usr/sbin/httpd -DFOREGROUND
              ├─25990 /usr/sbin/httpd -DFOREGROUND

Jun 19 10:02:49 ip-172-31-14-160.ap-south-1.compute.internal systemd[1]: Starting httpd.service - The Apache HTTP Server...
Jun 19 10:02:49 ip-172-31-14-160.ap-south-1.compute.internal systemd[1]: Started httpd.service - The Apache HTTP Server.
Jun 19 10:02:49 ip-172-31-14-160.ap-south-1.compute.internal httpd[25986]: Server configured, listening on: port 80
root@ip-172-31-14-160 settle-html]#
```

i-0a16601d19d6dc5c (21BSA10029)  
PublicIPs: 3.7.71.134 PrivateIPs: 172.31.14.160

## Step 18 : Change inbound rules to allow HTTP and HTTPS traffic

The screenshot shows the AWS Management Console interface for managing security groups. The user is on the 'Edit inbound rules' page for a specific security group. There are three existing rules listed:

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-09036cbdac5021a60	HTTP	TCP	80	Anywhere (0.0.0.0/0)	
sgr-03c7c1a5ca3a7a1cd	SSH	TCP	22	Anywhere (0.0.0.0/0)	
sgr-0461663f256f564c1	HTTPS	TCP	443	Anywhere (0.0.0.0/0)	

A new rule is being added at the bottom:

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
(New)	HTTP	TCP	80	Anywhere (0.0.0.0/0)	

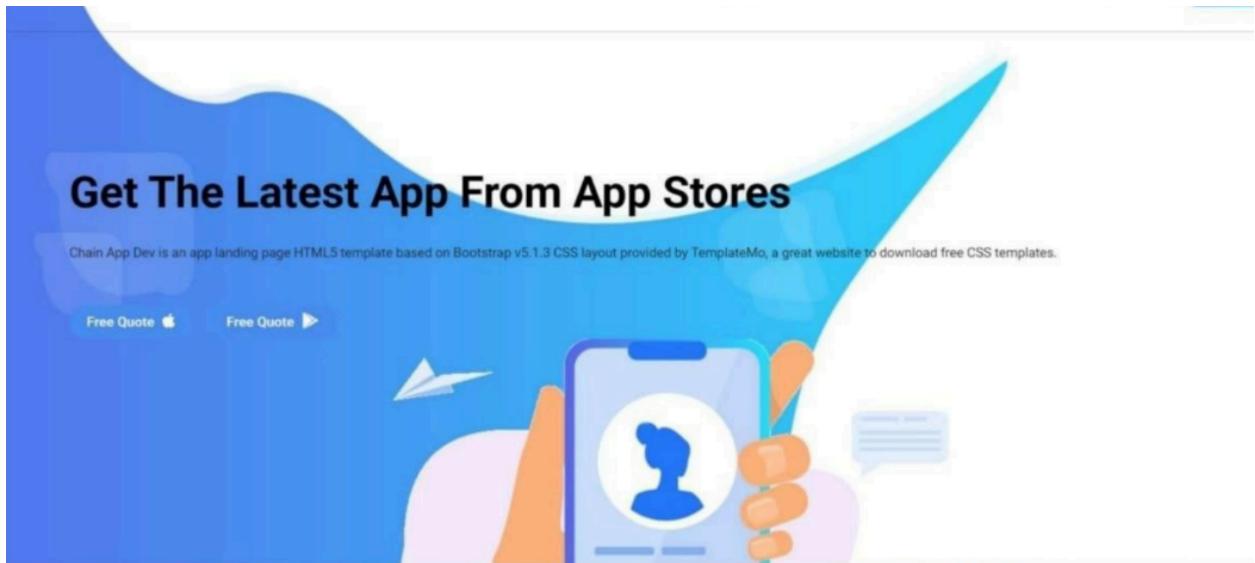
Buttons at the bottom include 'Add rule', 'Cancel', 'Preview changes', and a highlighted 'Save rules' button.

## Step 19 : Server has started running...

```
[root@ip-172-31-14-160 settle-html]# ls -lrt
total 0
[root@ip-172-31-14-160 settle-html]# ls -lrt
total 0
[root@ip-172-31-14-160 settle-html]# systemctl start httpd
[root@ip-172-31-14-160 settle-html]# systemctl status httpd
● httpd.service - The Apache HTTP Server
    Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
      Active: active (running) since Mon 2023-06-19 10:02:49 UTC; 8s ago
        Docs: man:httpd.service(8)
     Main PID: 25986 (httpd)
       Status: "Started, listening on: port 80"
          Tasks: 177 (limit: 1114)
         Memory: 12.8M
            CPU: 70ms
       CGroup: /system.slice/httpd.service
               ├─25986 /usr/sbin/httpd -DFOREGROUND
               ├─25987 /usr/sbin/httpd -DFOREGROUND
               ├─25988 /usr/sbin/httpd -DFOREGROUND
               ├─25989 /usr/sbin/httpd -DFOREGROUND
               └─25990 /usr/sbin/httpd -DFOREGROUND

Jun 19 10:02:49 ip-172-31-14-160.ap-south-1.compute.internal systemd[1]: Starting httpd.service - The Apache HTTP Server...
Jun 19 10:02:49 ip-172-31-14-160.ap-south-1.compute.internal systemd[1]: Started httpd.service - The Apache HTTP Server.
Jun 19 10:02:49 ip-172-31-14-160.ap-south-1.compute.internal httpd[25986]: Server configured, listening on: port 80
[root@ip-172-31-14-160 settle-html]#
```

## Step 20 : Website is hosted on Public IPv4 address.



22MIP100