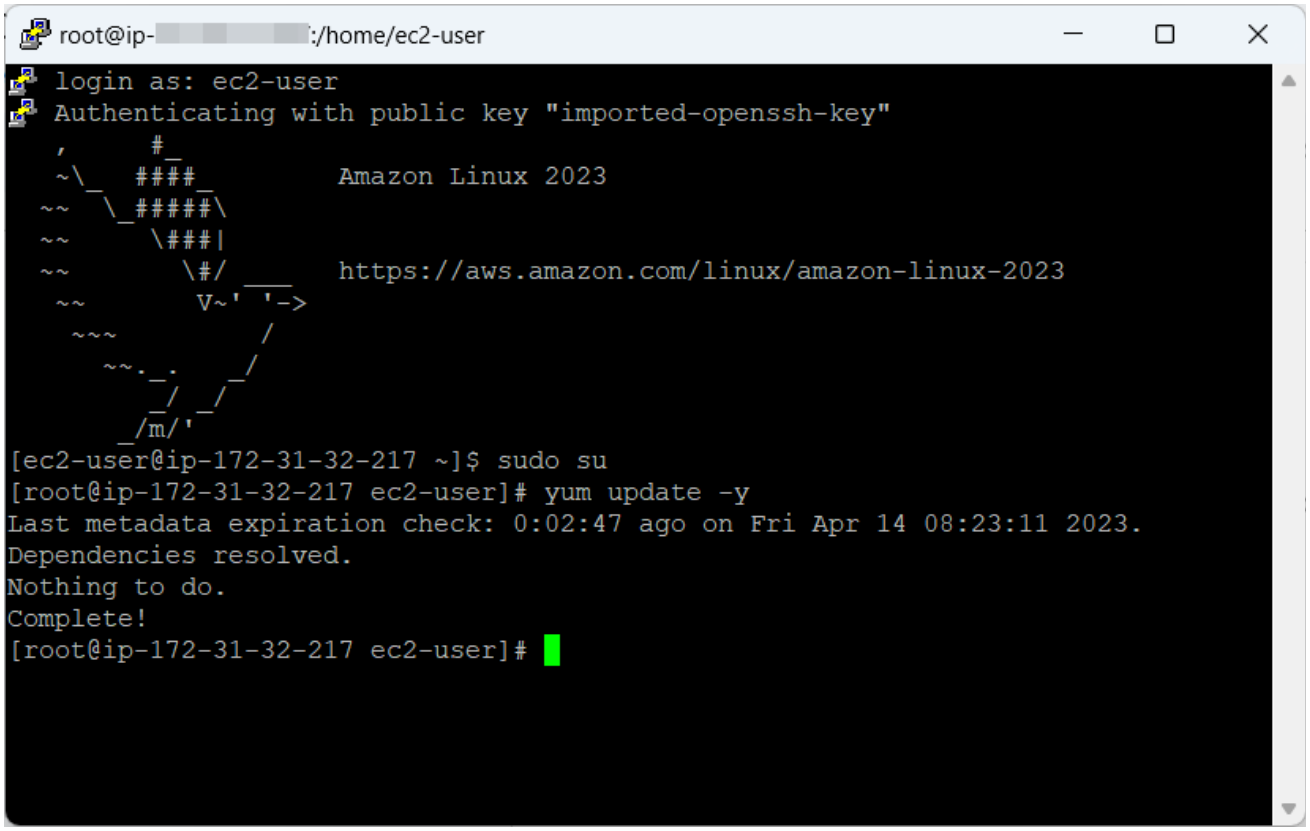
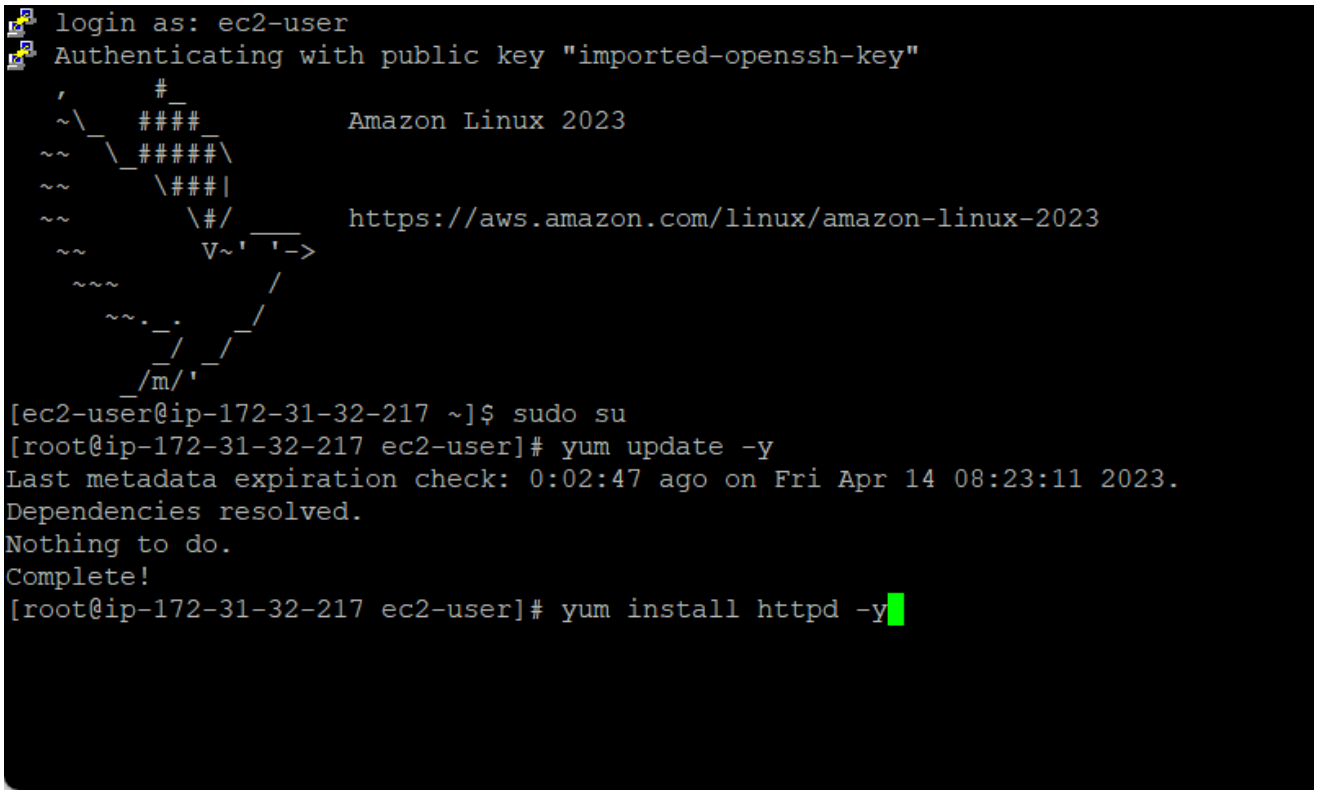
5. Creating Web Servers on AWS EC2 Instances

For Amazon Linux Instance

Launch your Amazon Linux Instance > Change user to root using $sudo su
Update yum using $yum update -y



Install **httpd** package using $yum install httpd -y



After the installation, Move to the web server html directory using $cd /var/www/html
Create a file named **index.html** and store some text into it using $echo “your_text” > index.html

```
  Verifying        : httpd-core-2.4.56-1.amzn2023.x86_64                  8/12
  Verifying        : apr-util-1.6.3-1.amzn2023.0.1.x86_64                 9/12
  Verifying        : mailcap-2.1.49-3.amzn2023.0.3.noarch                10/12
  Verifying        : httpd-filesystem-2.4.56-1.amzn2023.noarch            11/12
  Verifying        : generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch    12/12

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-httpd-18.0.0-12.amzn2023.0.3.noarch
  httpd-2.4.56-1.amzn2023.x86_64
  httpd-core-2.4.56-1.amzn2023.x86_64
  httpd-filesystem-2.4.56-1.amzn2023.noarch
  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.noarch
  mod_http2-2.0.11-2.amzn2023.x86_64
  mod_lua-2.4.56-1.amzn2023.x86_64

Complete!
[root@ip-172-31-32-217 ec2-user]# cd /var/www/html
[root@ip-172-31-32-217 html]# echo "Welcome to my web page" > index.html
[root@ip-172-31-32-217 html]#
```

Start the web server using $service httpd start
To start httpd service whenever machine is restarted, run $chkconfig httpd on

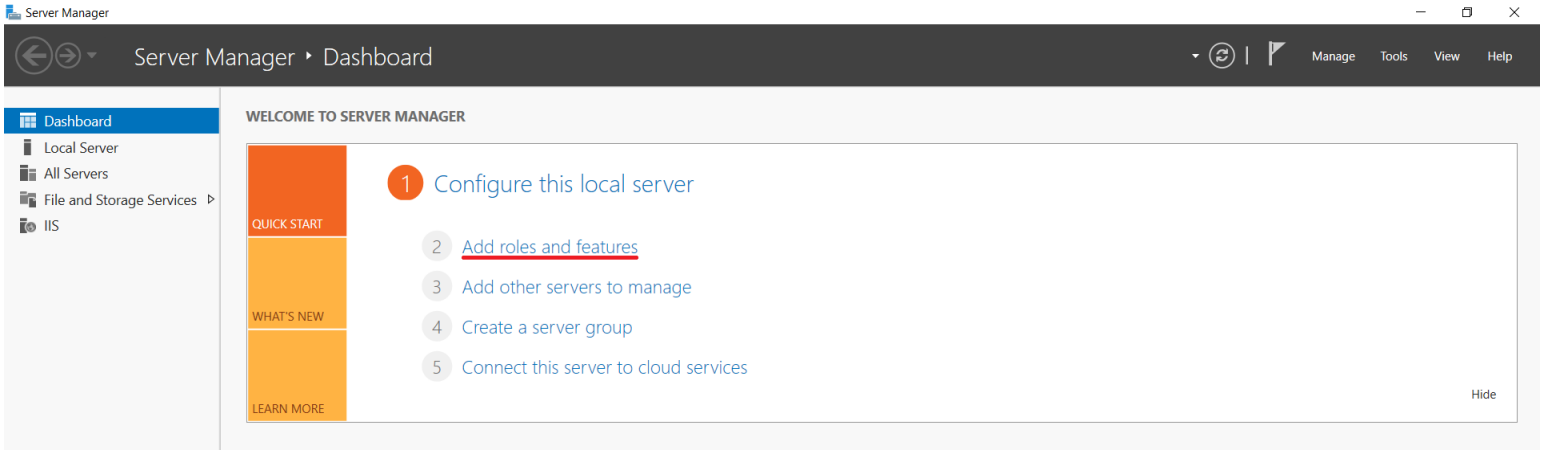
```
Installed:
  apr-1.7.2-2.amzn2023.0.2.x86_64
  apr-util-1.6.3-1.amzn2023.0.1.x86_64
  apr-util-openssl-1.6.3-1.amzn2023.0.1.x86_64
  generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch
  httpd-2.4.56-1.amzn2023.x86_64
  httpd-core-2.4.56-1.amzn2023.x86_64
  httpd-filesystem-2.4.56-1.amzn2023.noarch
  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.noarch
  mod_http2-2.0.11-2.amzn2023.x86_64
  mod_lua-2.4.56-1.amzn2023.x86_64

Complete!
[root@ip-172-31-32-217 ec2-user]# cd /var/www/html
[root@ip-172-31-32-217 html]# echo "Welcome to my web page" > index.html
[root@ip-172-31-32-217 html]# service httpd start
Redirecting to /bin/systemctl start httpd.service
[root@ip-172-31-32-217 html]# chkconfig httpd on
Note: Forwarding request to 'systemctl enable httpd.service'.
Created symlink /etc/systemd/system/multi-user.target.wants/httpd.service → /usr
/lib/systemd/system/httpd.service.
[root@ip-172-31-32-217 html]#
```

Your Amazon Linux EC2 Instance is now hosting a web server.

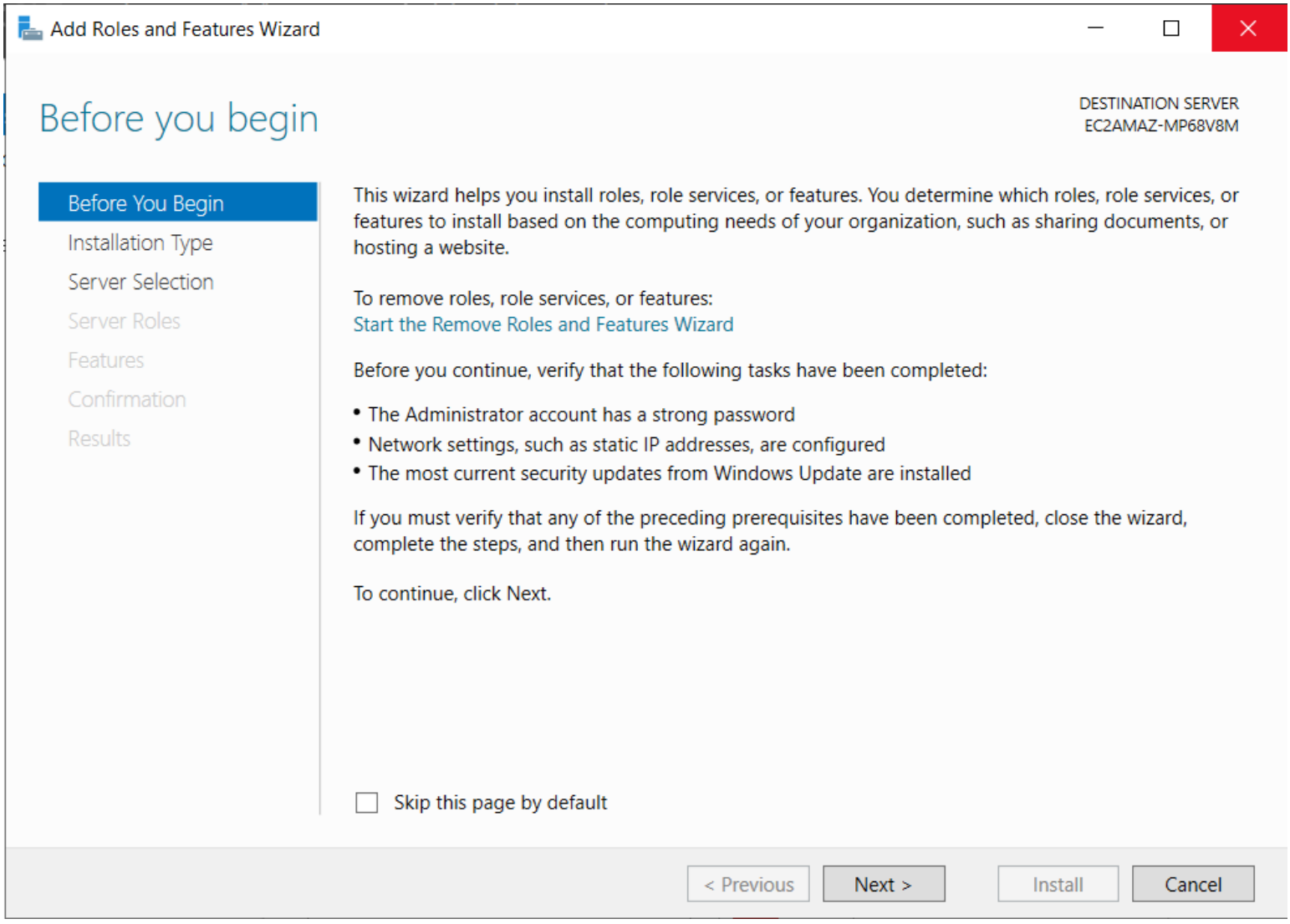
For Windows Instance

Launch your Windows Instance

Open **Server Manager** from the Start Menu

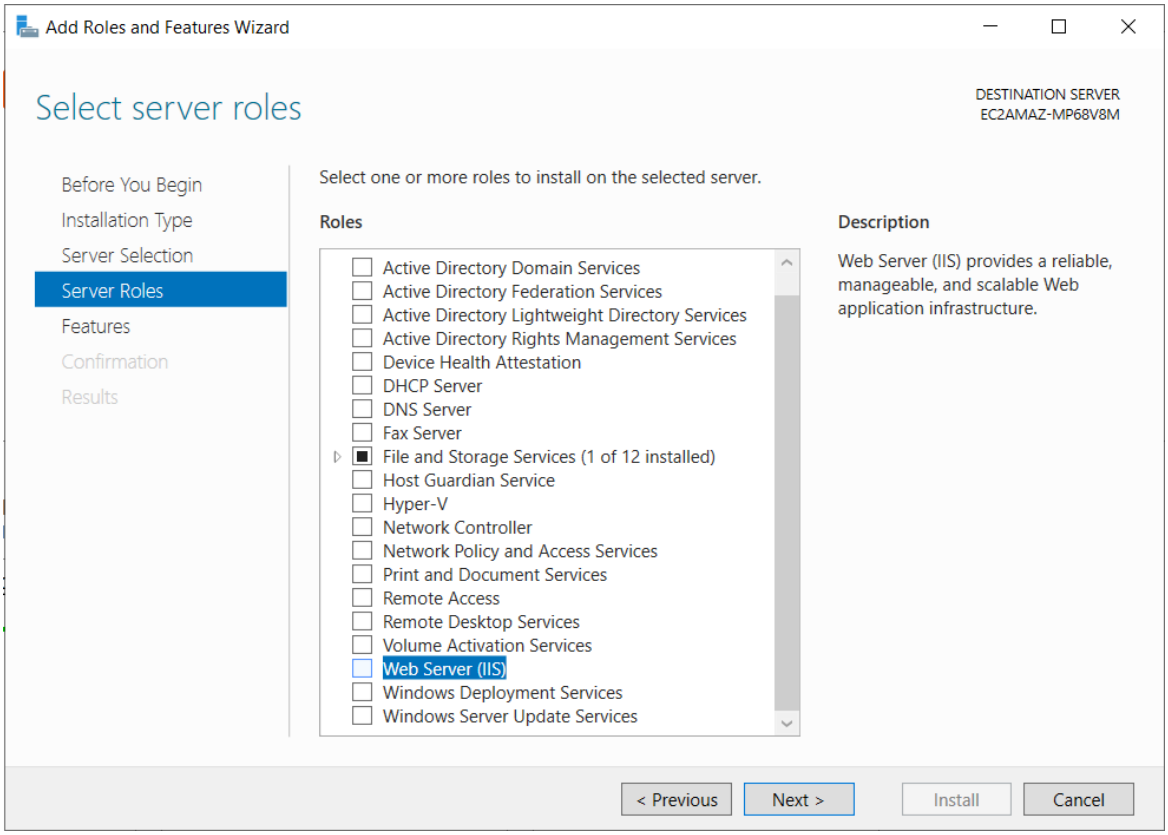


Click on **Add roles and features**

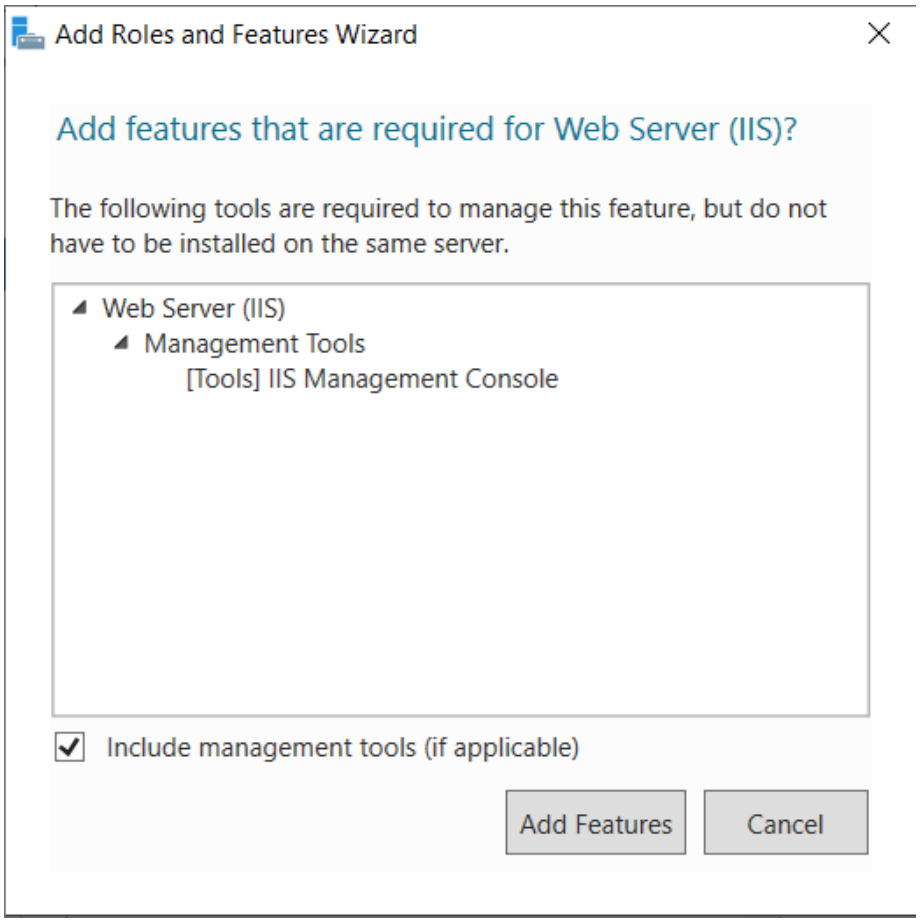


Click on **Next** 3 times

In the **Server Roles** page, scroll down and select **Web Server (IIS)**

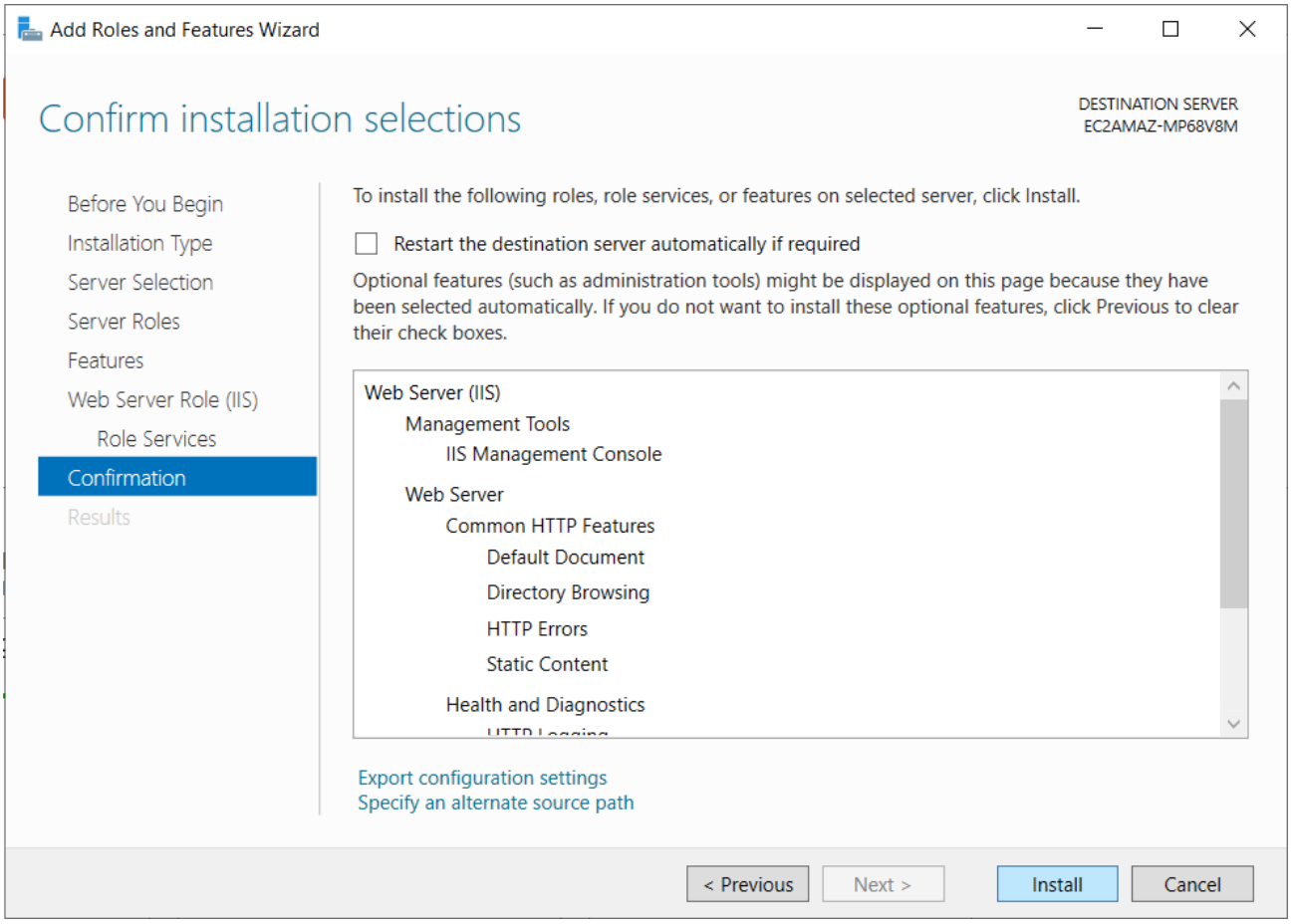


Click on **Add Features**

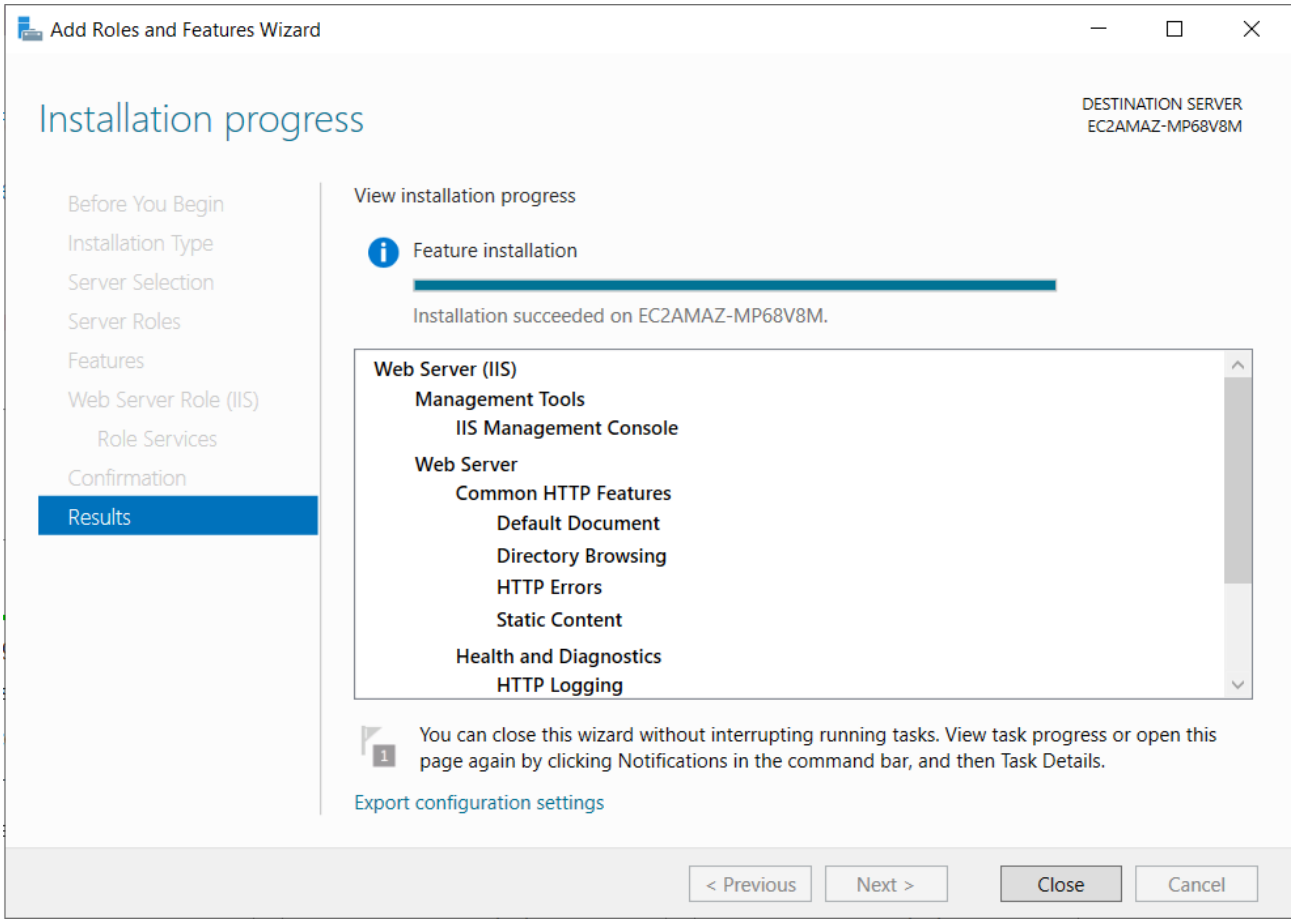


Click on **Next** 3 times

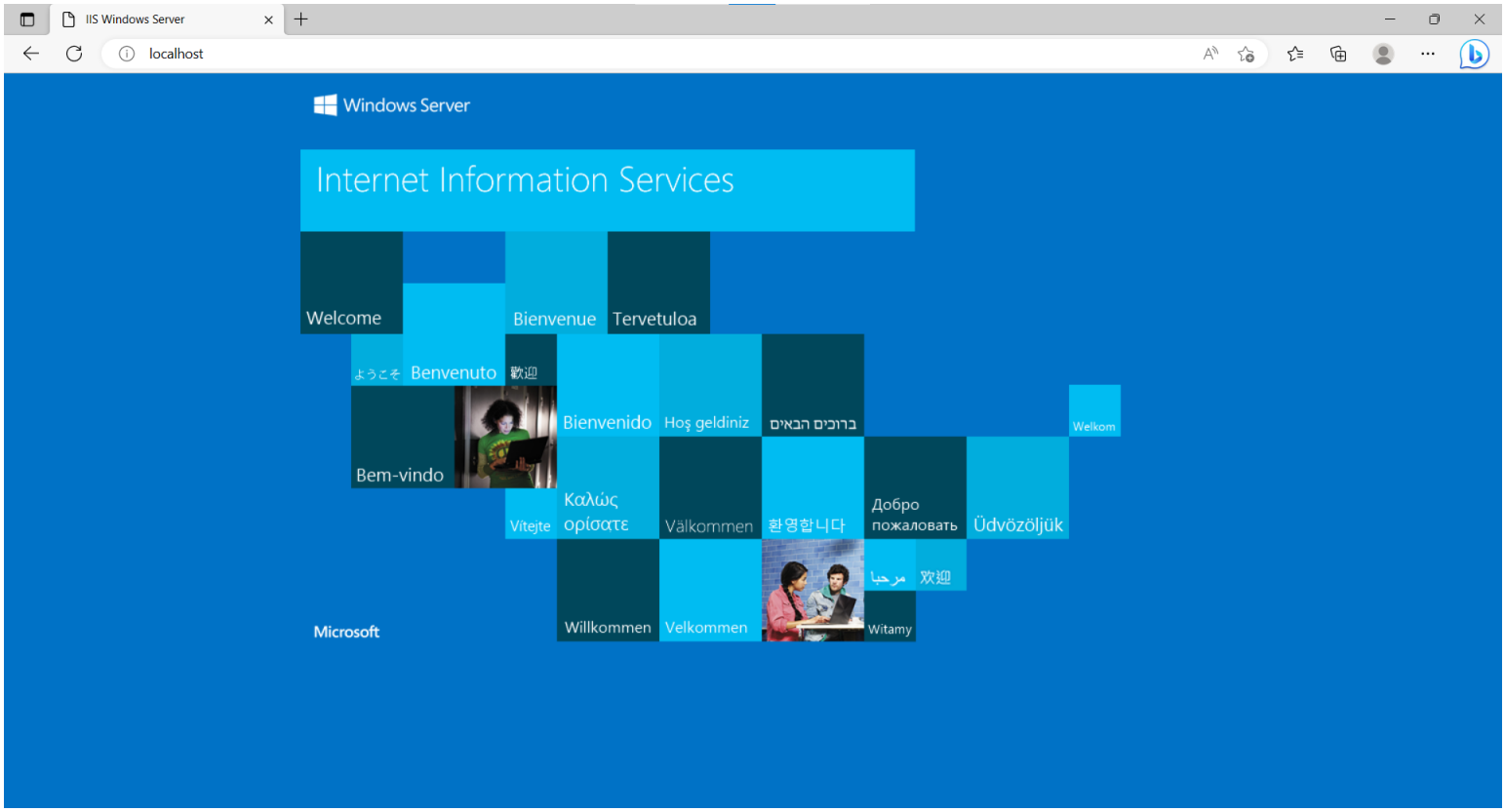
On the **Confirmation** page, click on **Install** and wait for 3-5 mins.



Click on **Close**

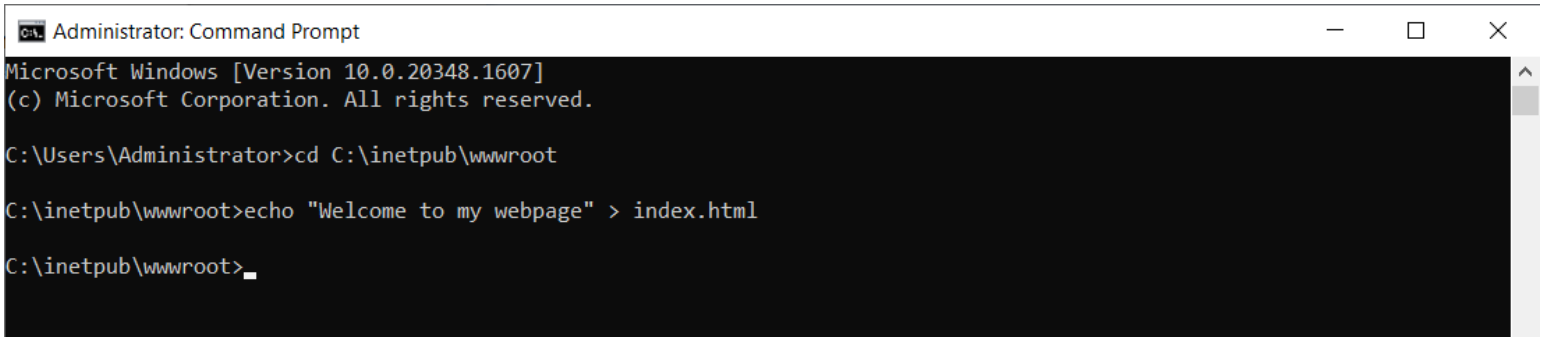


You can open the browser in the instance and enter http://localhost as the url to see the web page.



The web server files are located at C:\inetpub\wwwroot.

Open cmd > type **cd C:\inetpub\wwwroot** and hit enter to move to the web server directory.
To create index.html, type **echo "Welcome to my webpage" > index.html**



You can again go to http://localhost in your instance's browser to see the new web page.

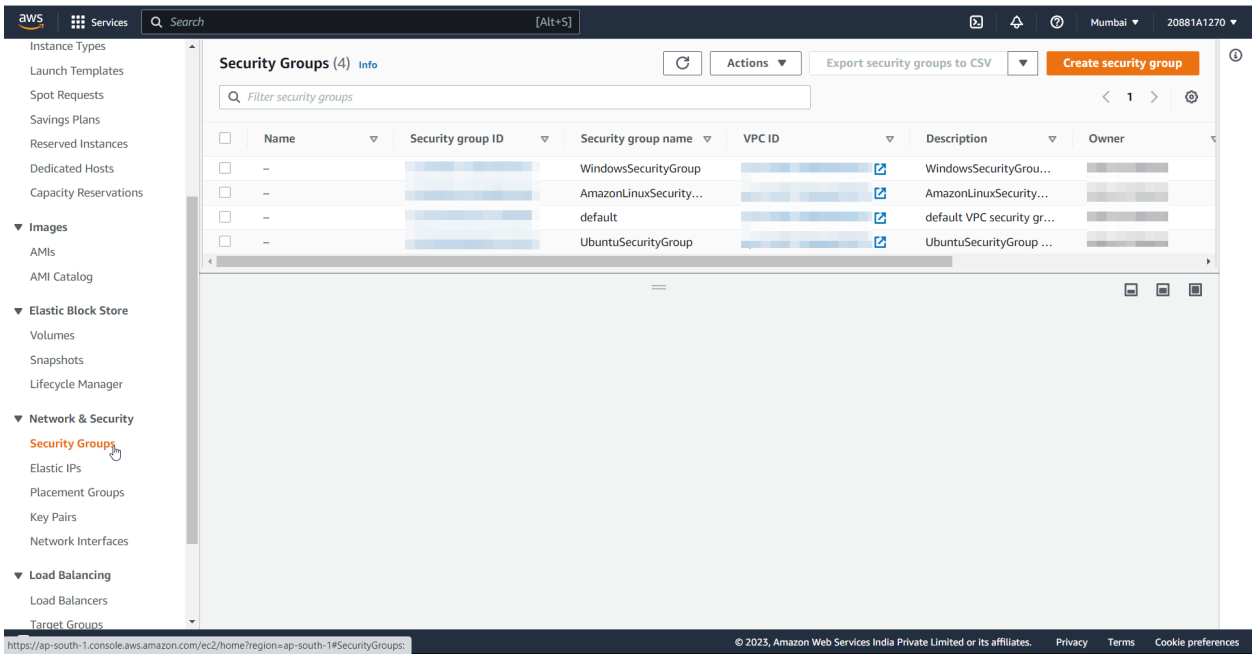
Accessing the Web Server hosted on your EC2 instance from anywhere and on any device

Open a browser and enter the Public IPv4 address of your EC2 instance to access the web server hosted on your instance.

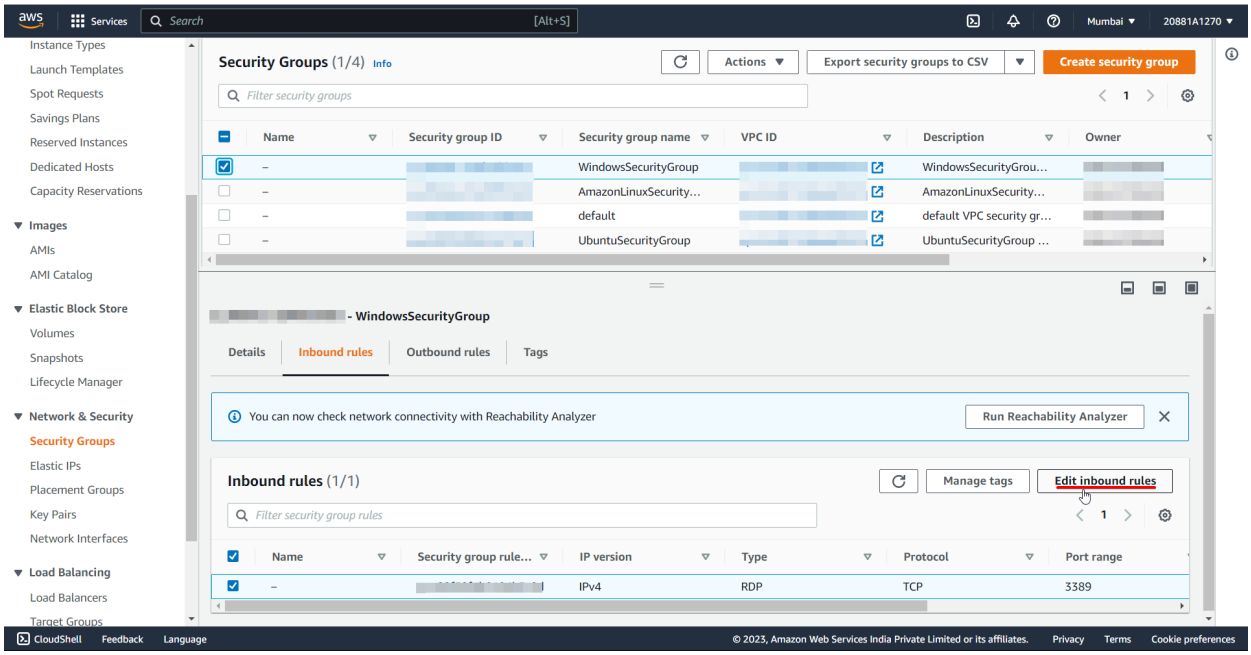
***** Modify your index.html and add any files required accordingly to create your own website.

If you are unable to access the web server, you need to allow HTTP traffic to your EC2 instance from the Inbound rules in your instance's Security Group settings.

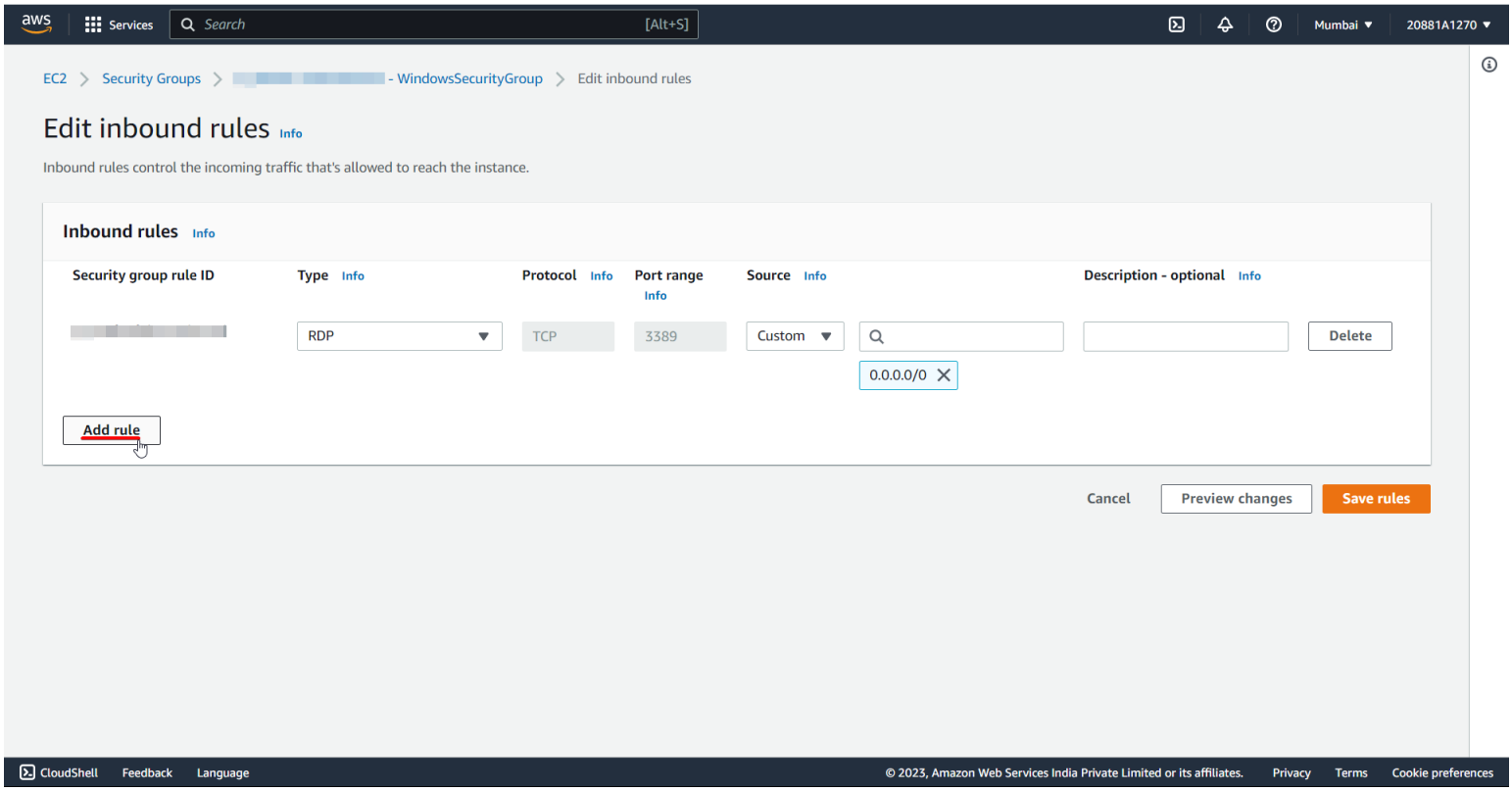
Firstly, go to the **Security Groups** tab and select the Security Group associated with your instance.



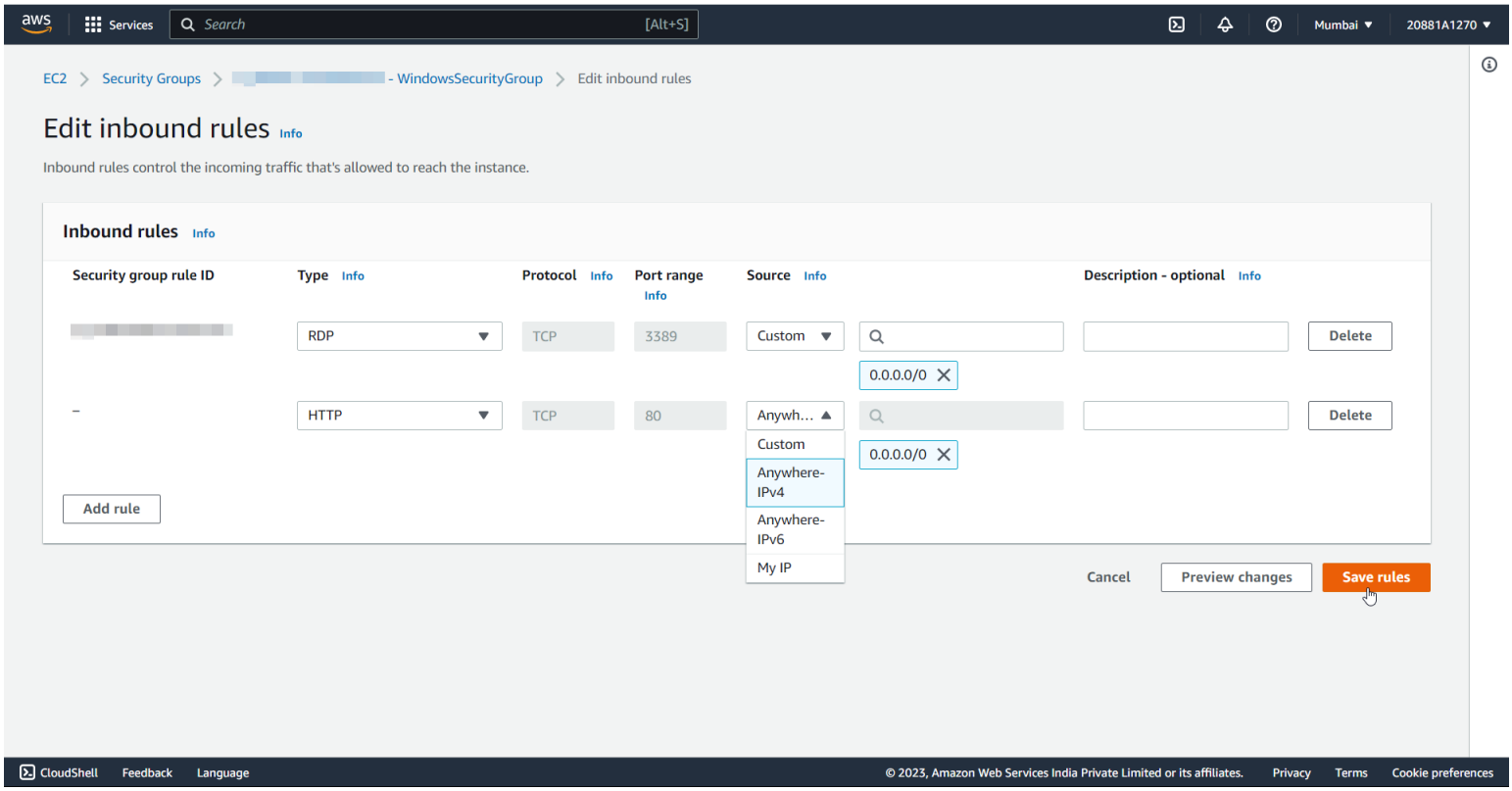
Click on **Edit inbound rules**



Click on **Add rule**



Type = HTTP
Source = Anywhere-IPv4
Click on **Save rules**

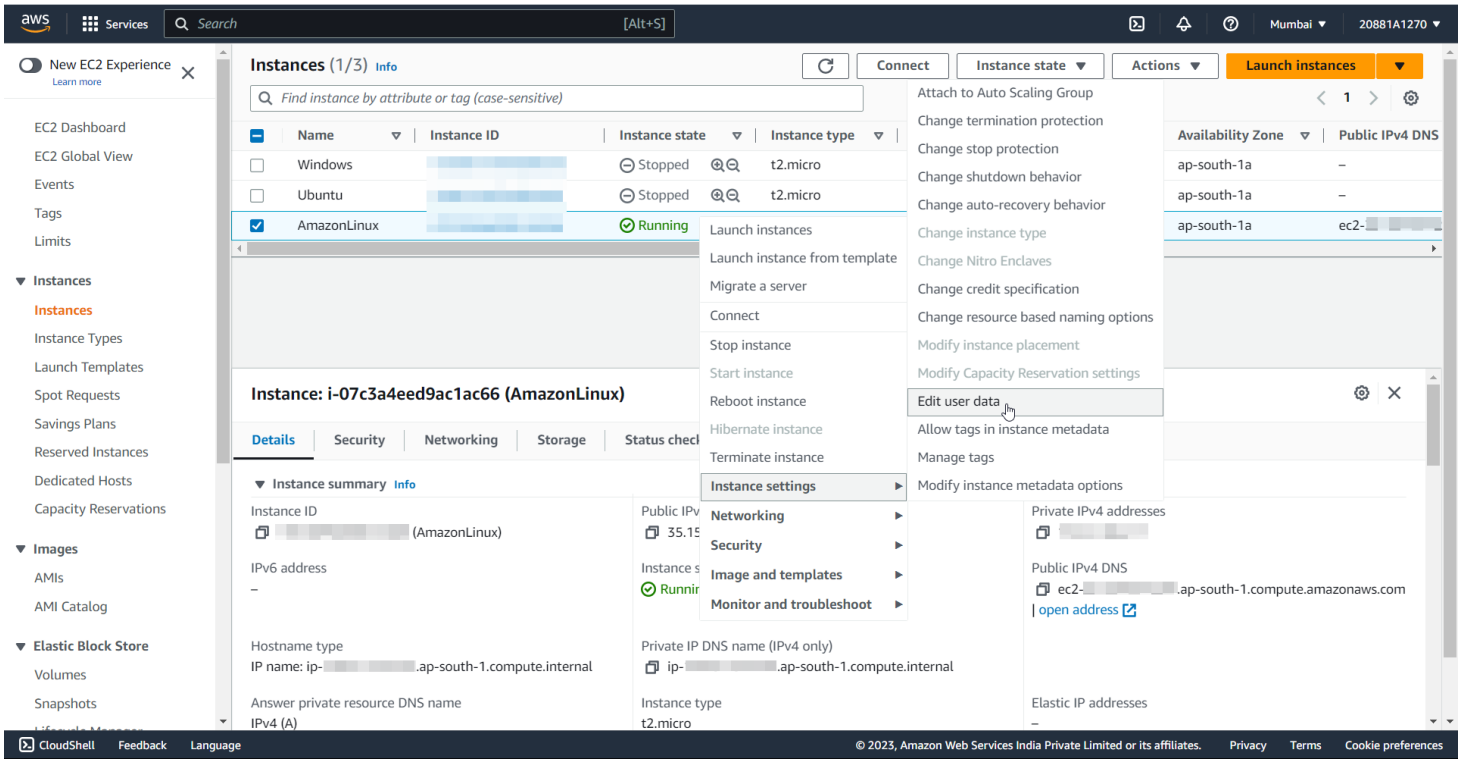


You will now be able to access the web server hosted on your EC2 instance from anywhere.

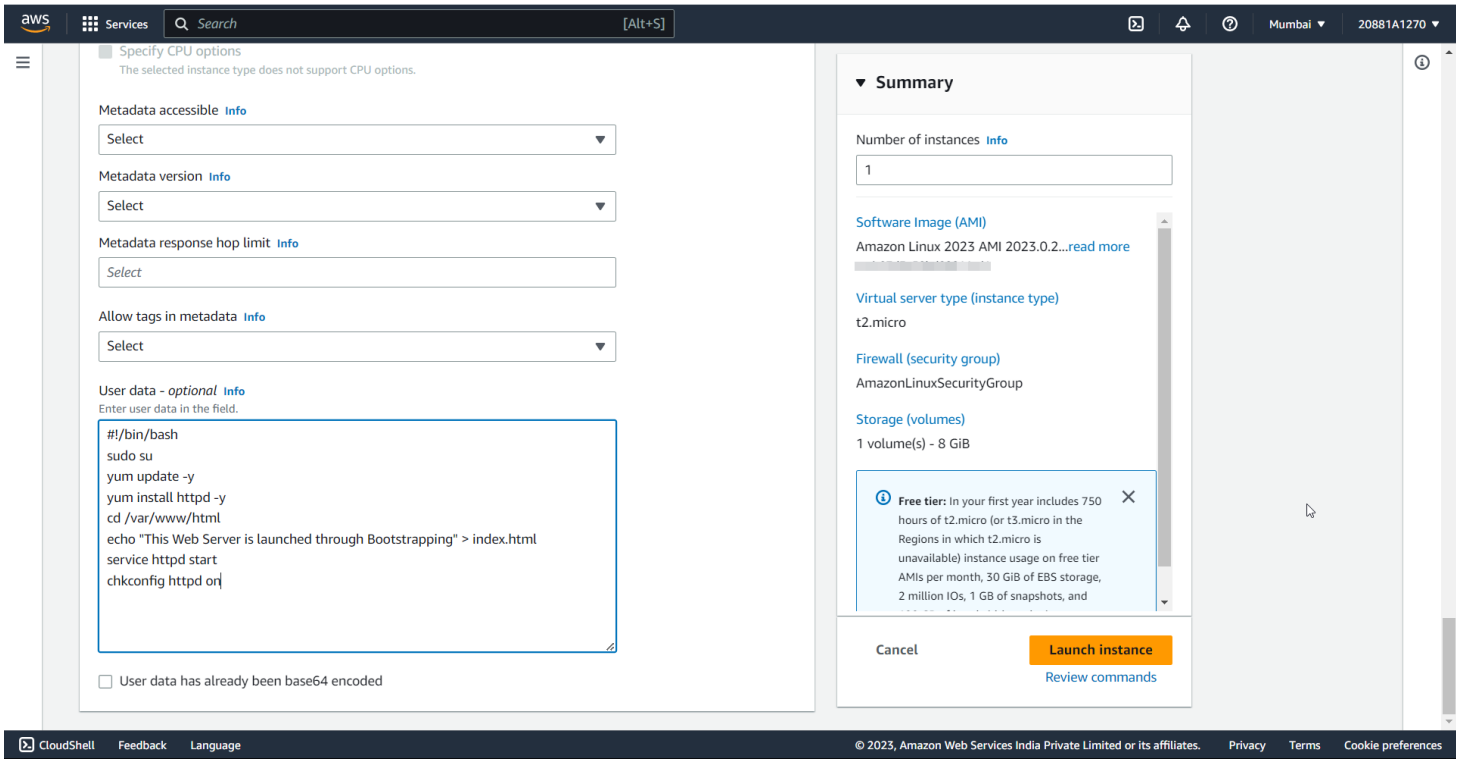
Bootstrapping AWS EC2 instances with user data

When you launch an Amazon ECS container instance, you have the option of passing user data to the instance. The data can be used to run scripts when the instance boots.

The user data can be edited for an already created instance
Right click on the instance > Instance settings > Edit user data

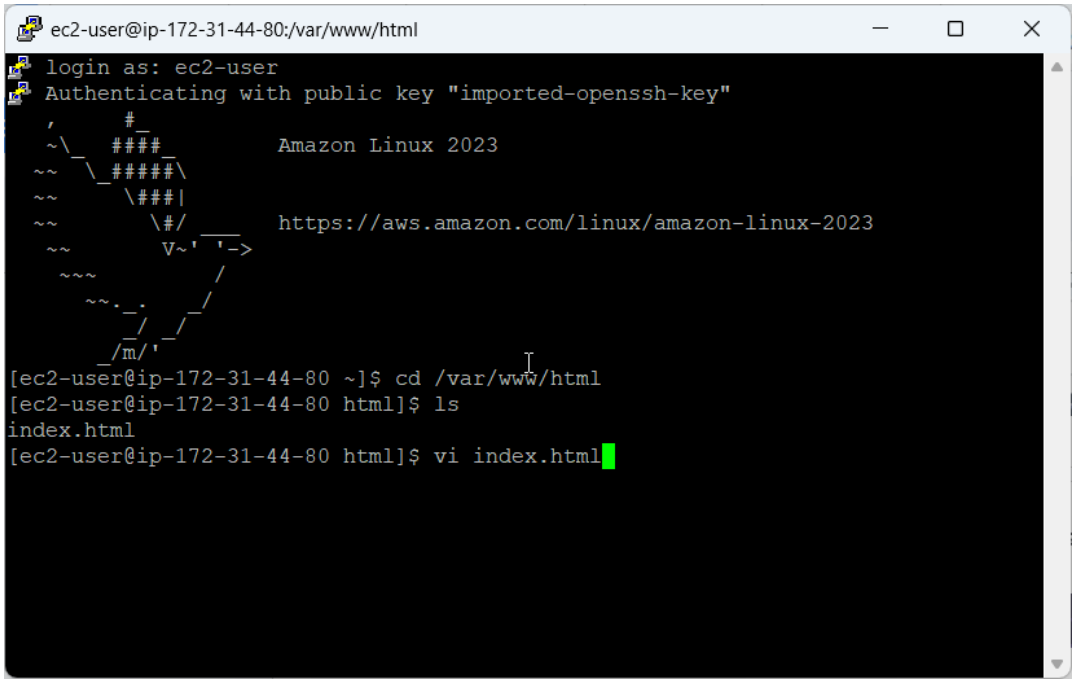


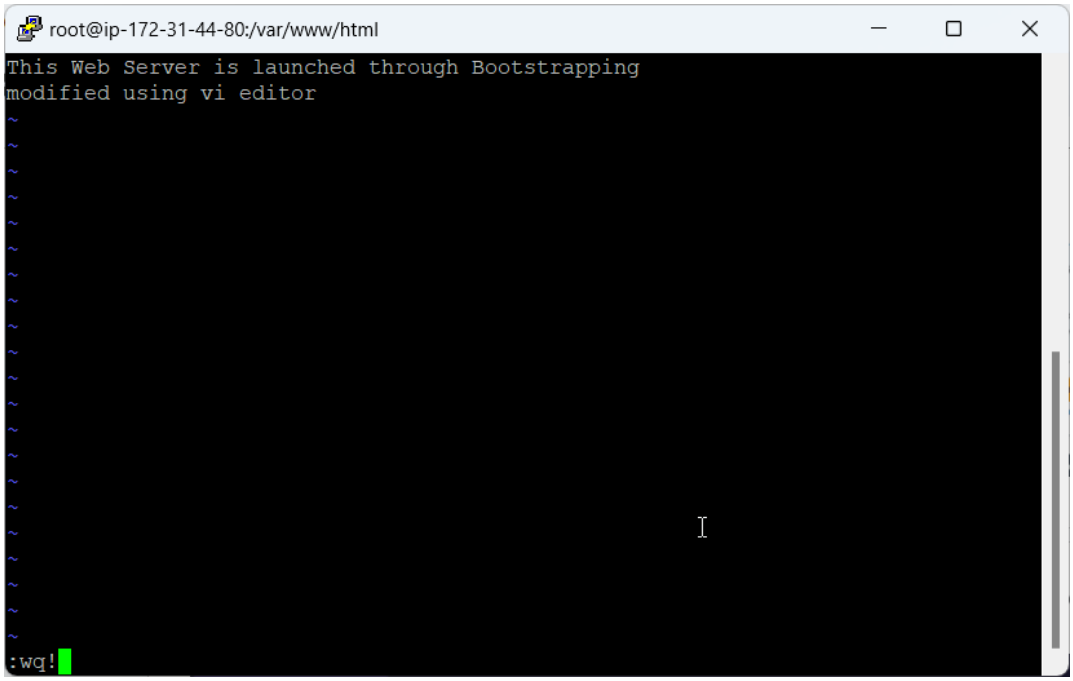
Or, the user data can be given while creating the instance
Select Amazon Linux, Expand **Advanced details** and scroll down to find **User data**
Enter the required commands to launch a web server



Open your browser and enter the public IPv4 address of your instance to directly see the web server without even logging in to the instance.

The index.html file can be modified by logging in to the instance.
Login to the instance > change directory to /var/www/html > type **vi index.html** to edit the file





After saving the file, open your browser and go the instance's public IPv4 address to see the changes