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MSC(CS) Part I

Cloud Computing Practical Assignment No 4

Working and Implementation of Infrastructure as a service
Task 1: Launch Your Amazon EC2 Instance. Write the shell script in User Data box. The script will:

- Install an Apache web server (httpd)
- Configure the web server to automatically start on boot
- Run the Web server once it has finished installing
- Create a simple web page

Task 2: Monitor Your Instance
Task 3: Update Your Security Group and Access the Web Server
Task 4: Resize Your Instance: Instance Type and EBS Volume
Task 5: Test Termination Protection

First of all open Virtual Lab. After opening the lab, you will get an interface like Fig 1.

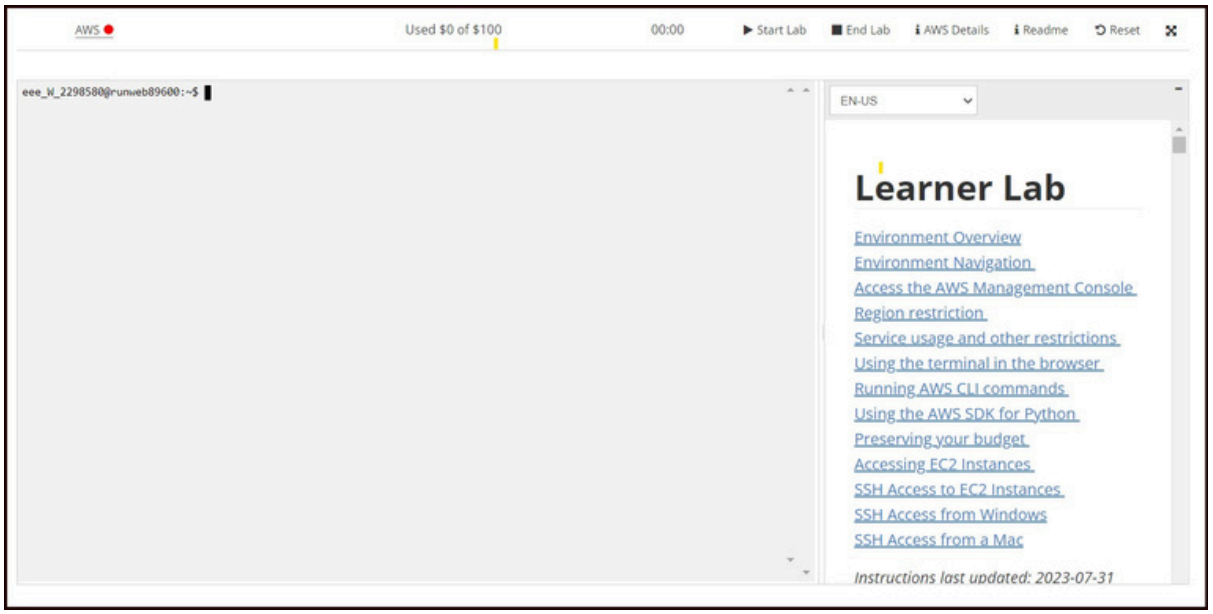

Fig 1

Then click on the Start Lab button. When the circle icon to the right of the AWS link in the upper-left corner turns green, it indicates that the lab environment is ready to use this we can see in Fig 2. To launch the AWS Management Console in a new tab, select the AWS link

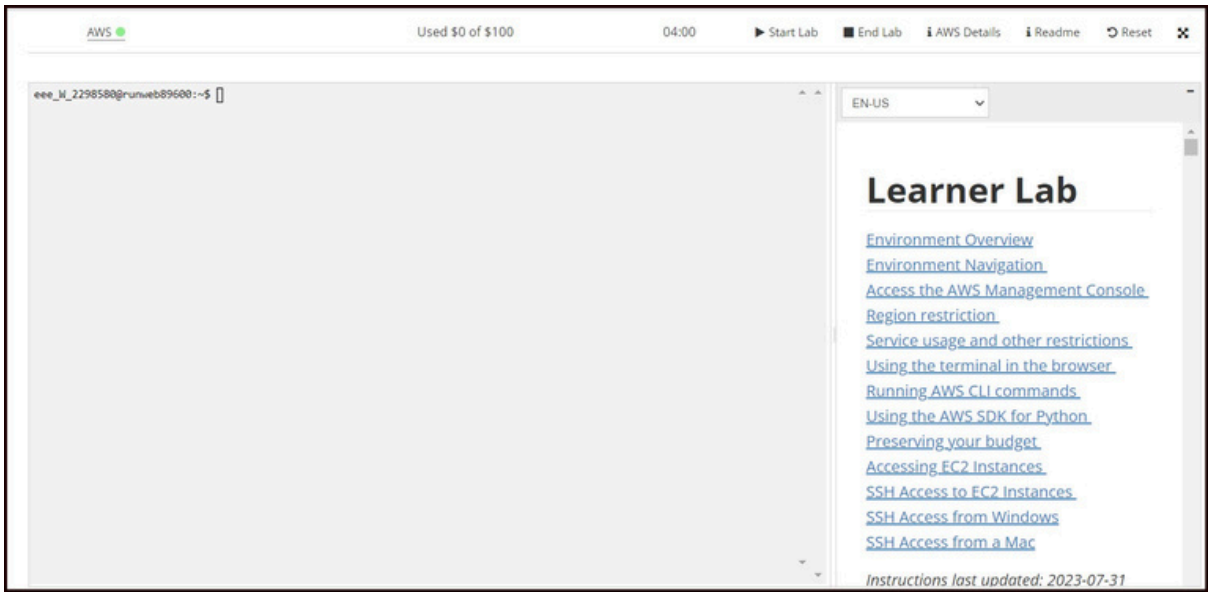

Fig 2

After selecting AWS link new console is open on new tab which we can see in Fig 3. In that we select the EC2 (Elastic Cloud Computing) service. You can see that service in Fig 3. If you have used it before then you can see that service in recently visited service. If you don't see EC2 service then follow the path Services => Compute => EC2.

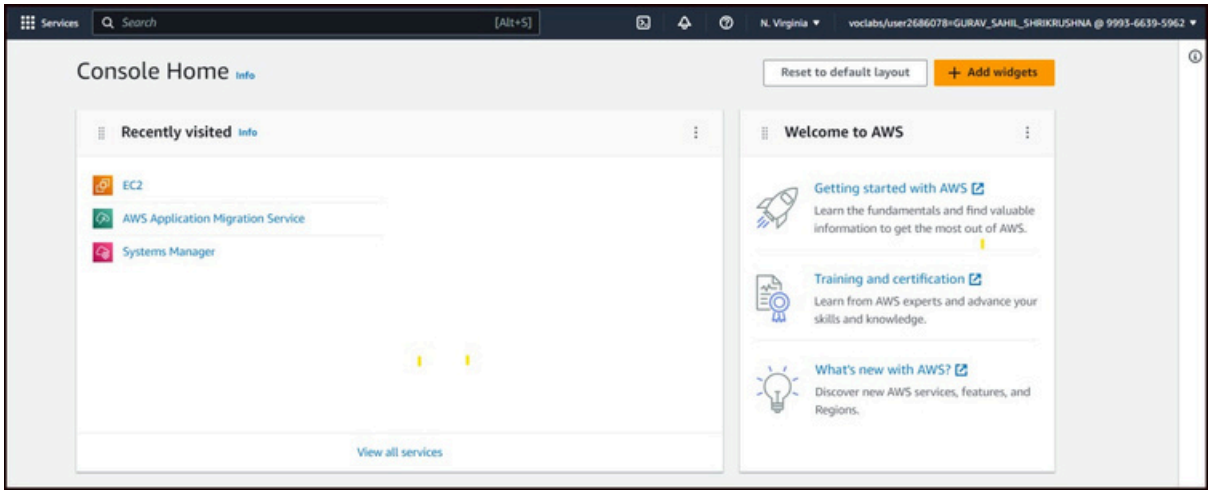

Fig 3

After selecting the EC2 service the new interface will be shown like in Fig 4. In that click on Launch Instance.

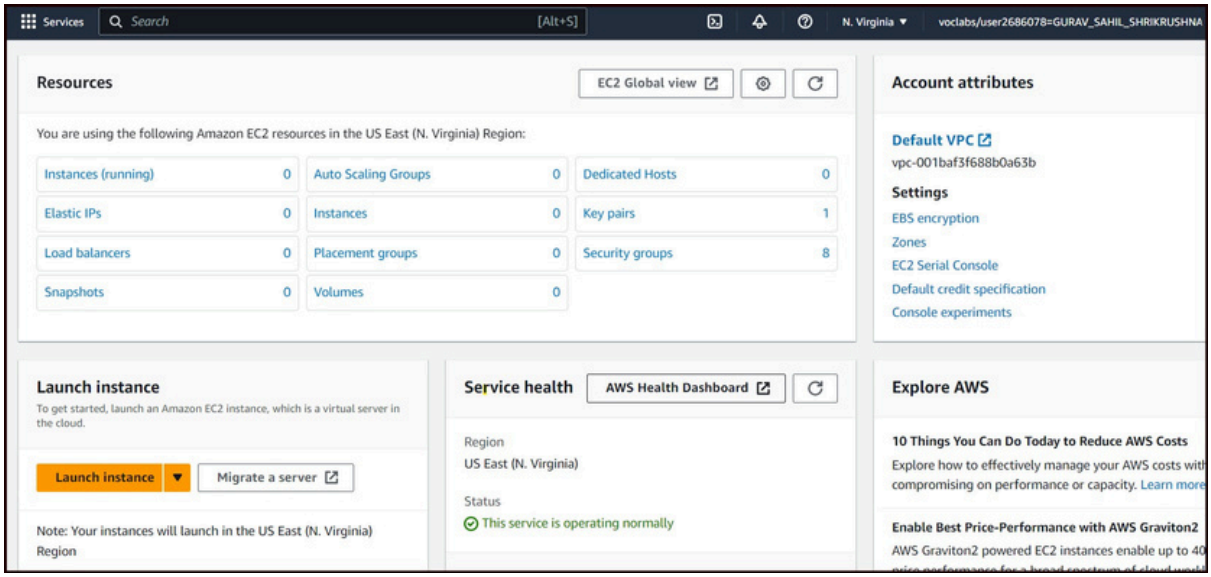

Fig 4

After clicking on Launch Instance some information regarding that instance will appear which we need to fill. That we can see in Fig 5.

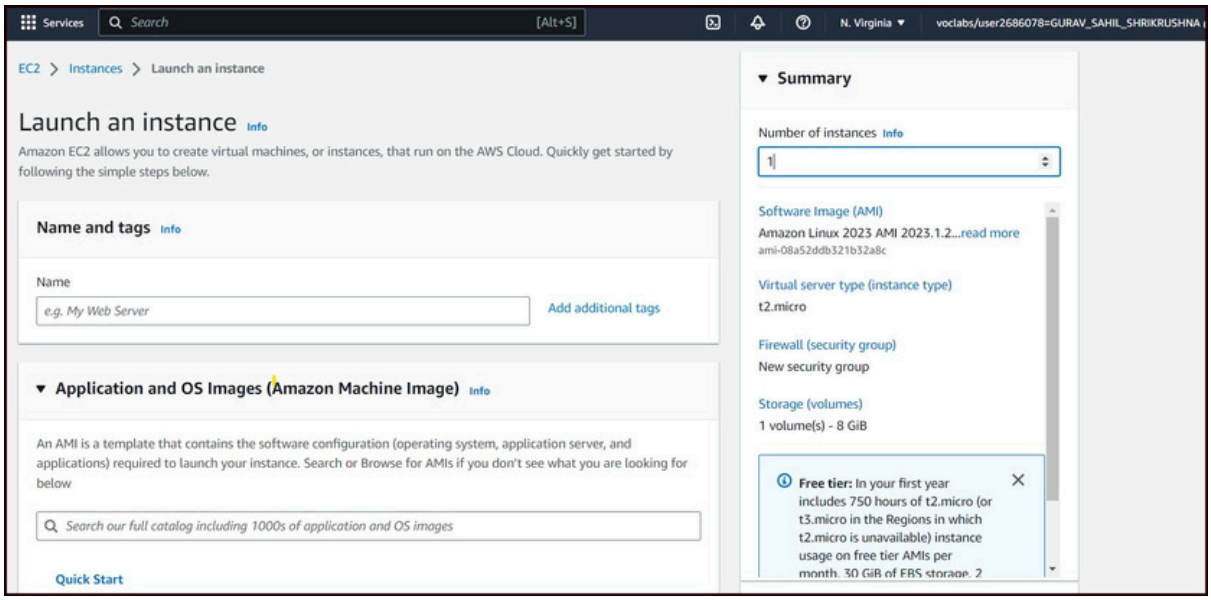

Fig 5

If we create more than one instance then how can we identify our instance? For that reason inside name and tags we write some name for instance so later we can identify them. so here in Fig 6 you can see i named it Web server. Then we need to select the Amazon Machine Image. In this we can specify which operating system (OS) and application server you need to launch in your instance. Here I select Amazon Linux.

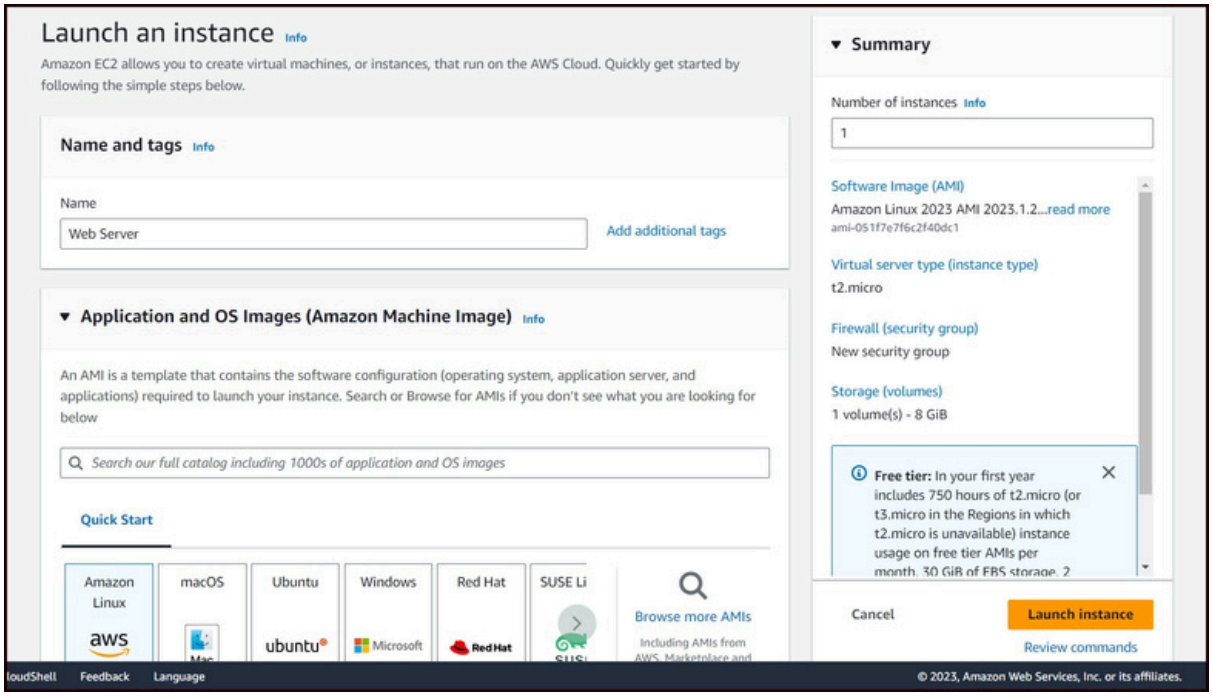

Fig 6

Select the default key pair in Key Pair. Then click on Edit button in Network Settings as shown in Fig 7

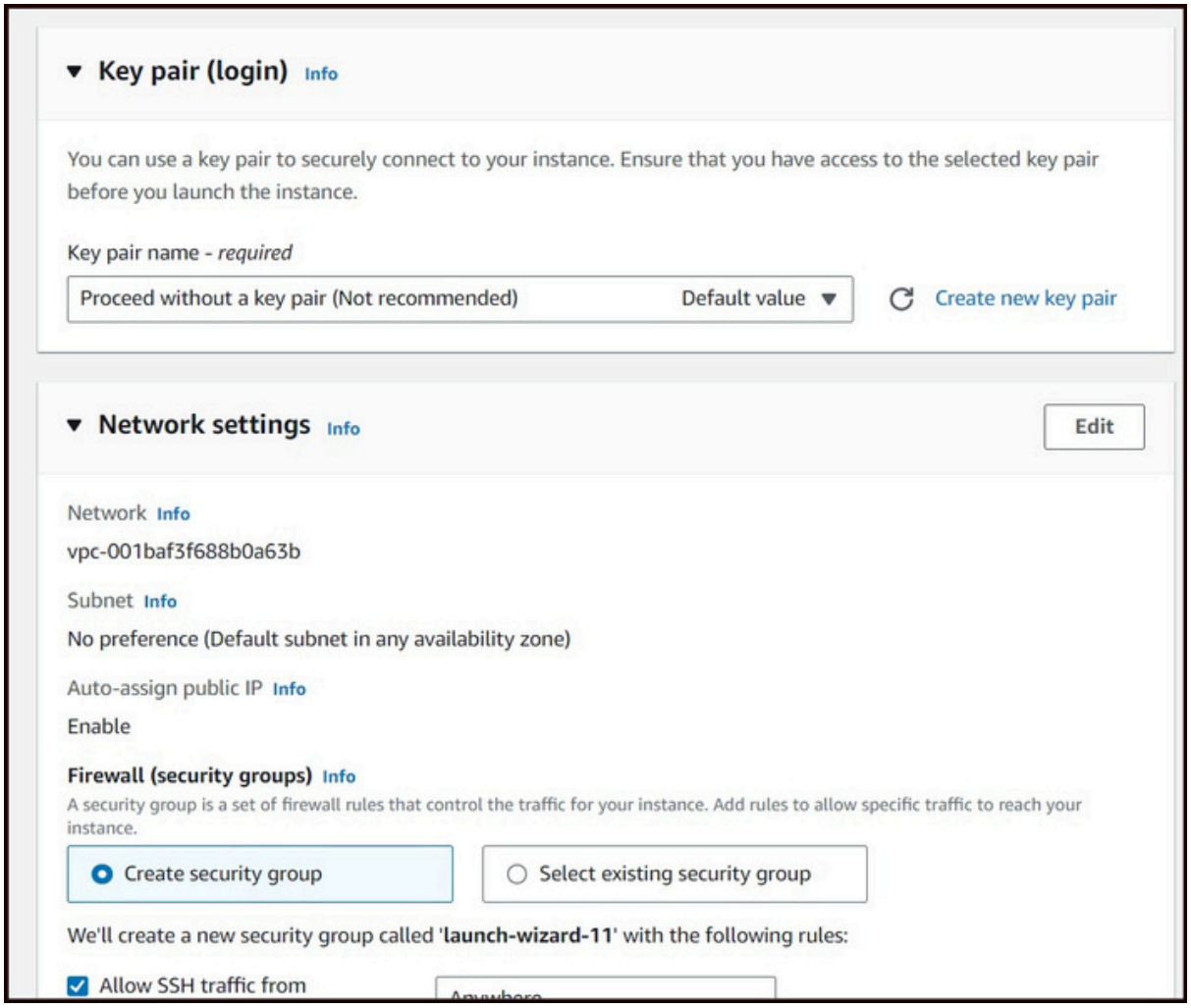

Fig 7

In Network Settings set the security group name as "Web Server Security Group" and the description as "Security group for my web server" as shown in Fig 8. Under Inbound security group rules, notice that one rule exists. Remove this rule. In the *Configure storage* section, keep the default settings

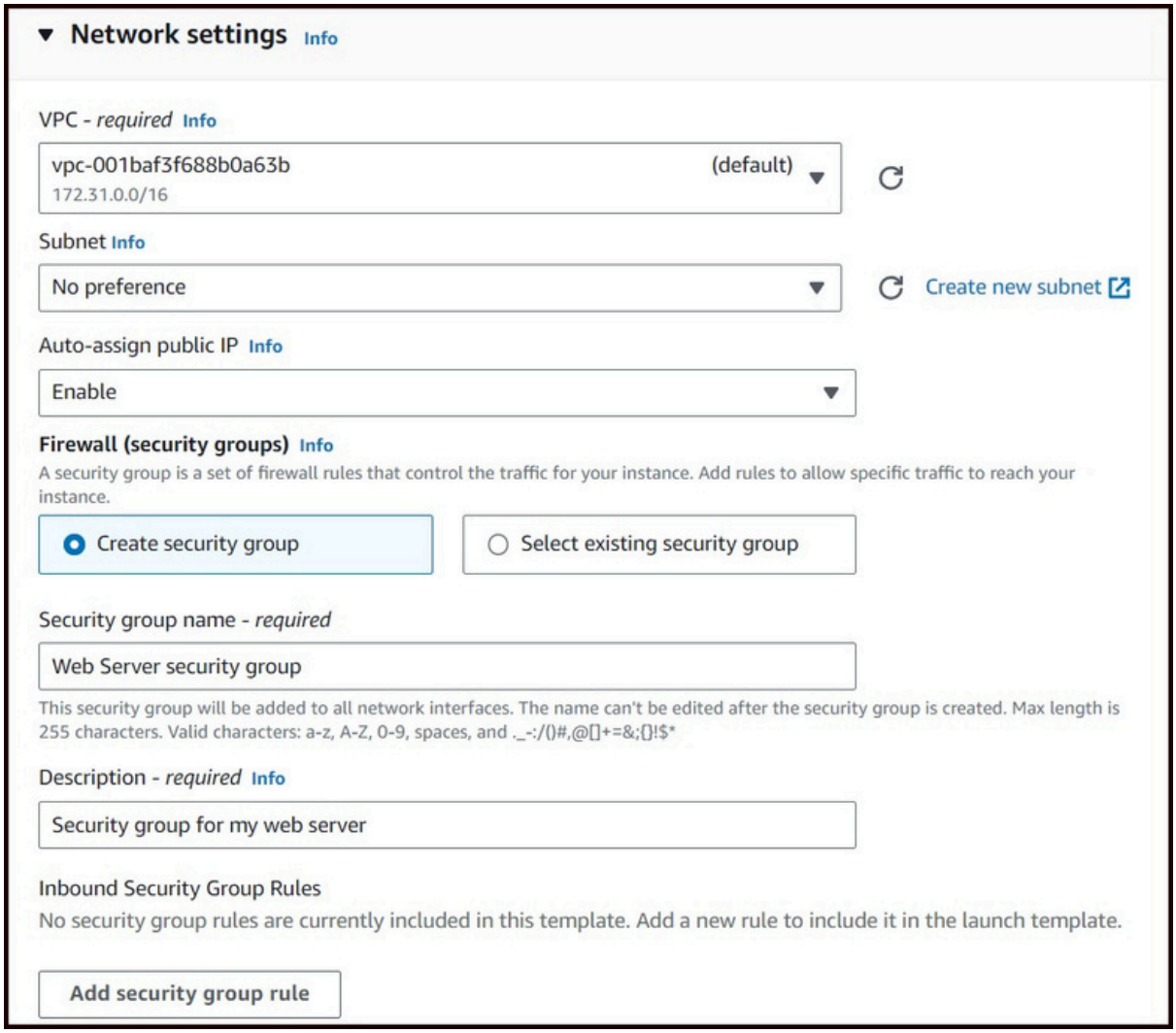

Fig 8

After that expand Advanced Details option, Enable Termination Protection option as shown in Fig 9

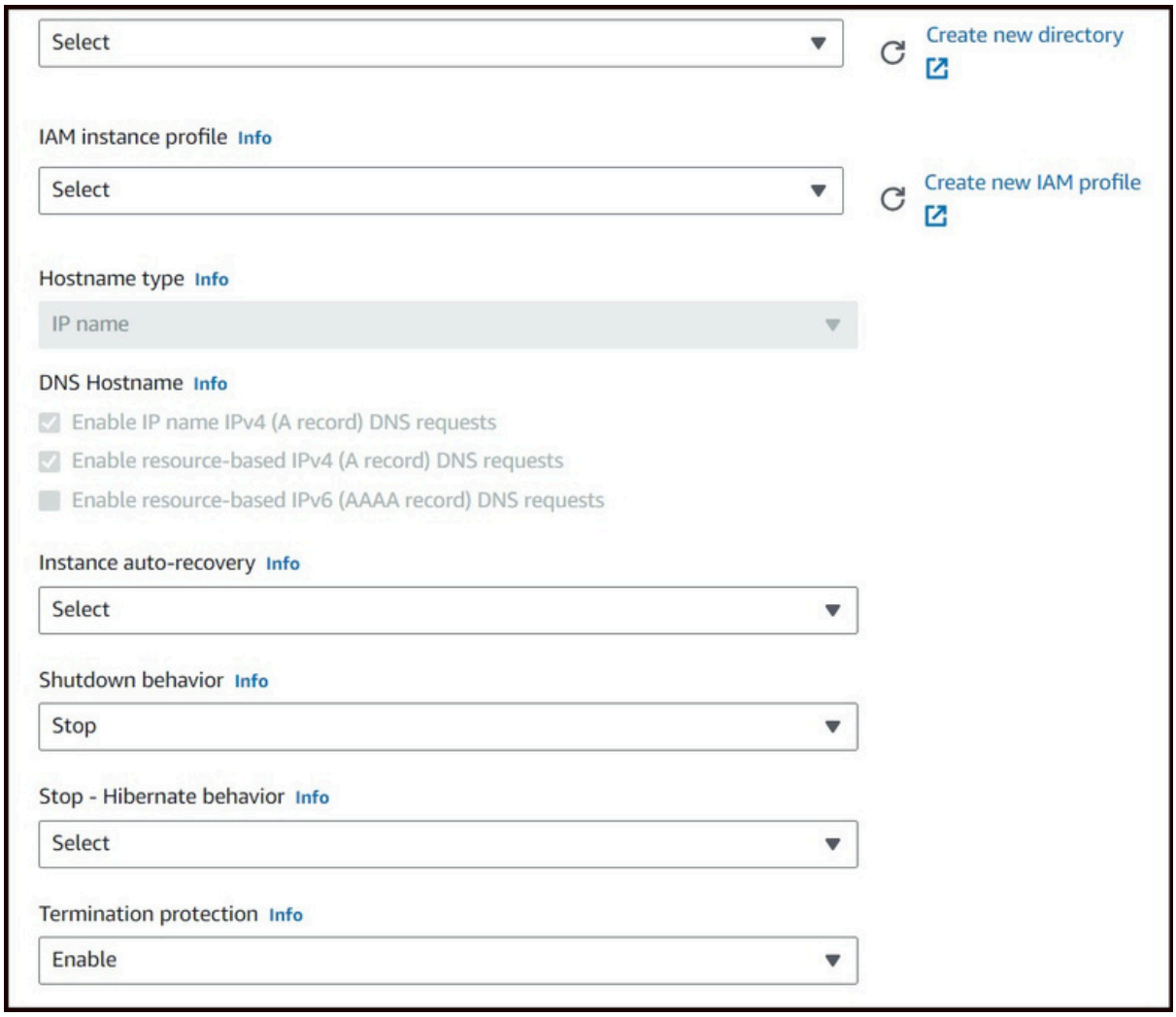

Fig 9

Scroll to the bottom of the page and then copy and paste the code shown below into the User data box as shown in Fig 10. And then click on Launch instance.

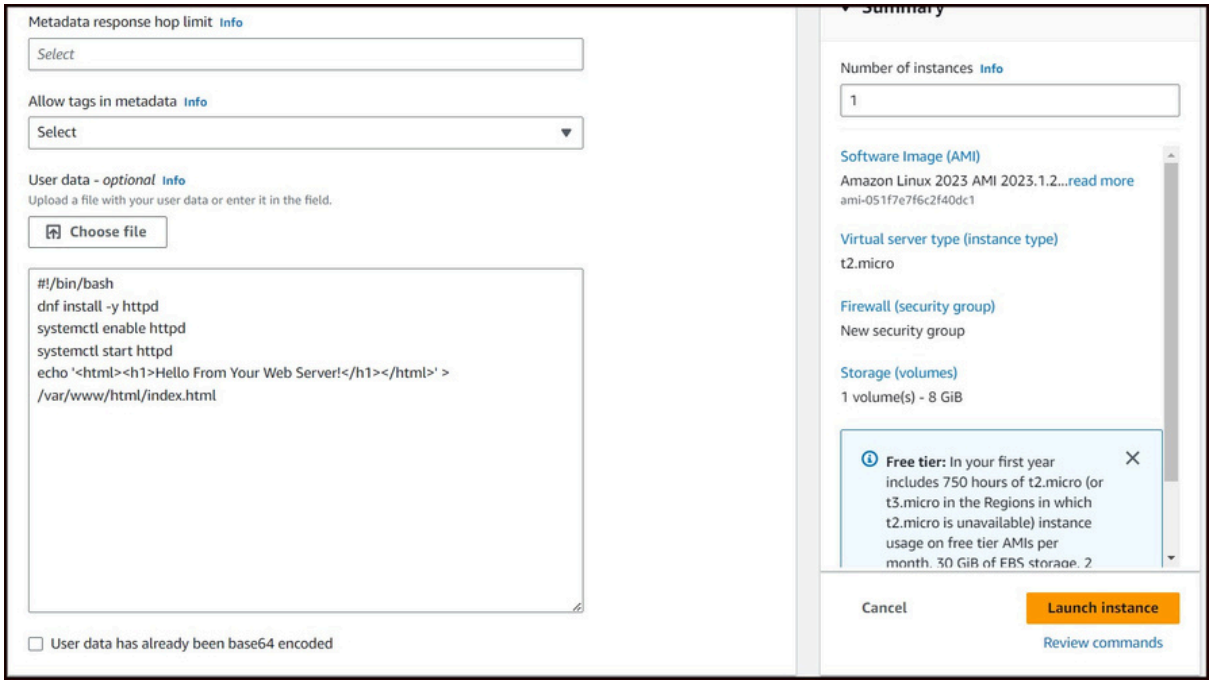

Fig 10

After launching the instance if the instance is created successfully then success message is received as shown in Fig 11

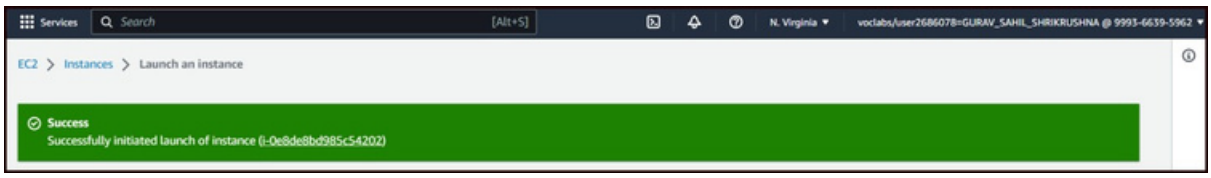

Fig 11

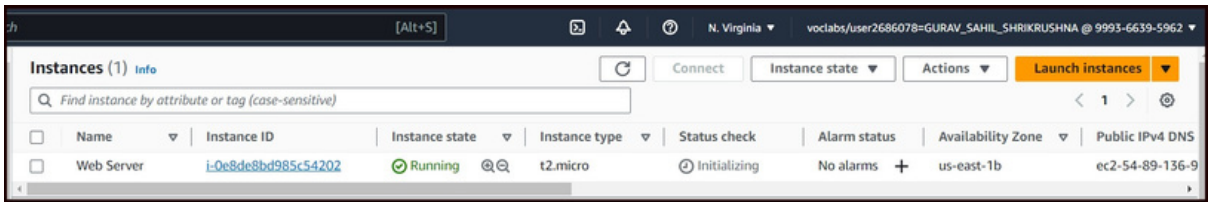

Fig 12

Click on Details to view details of the instance as shown in Fig 13

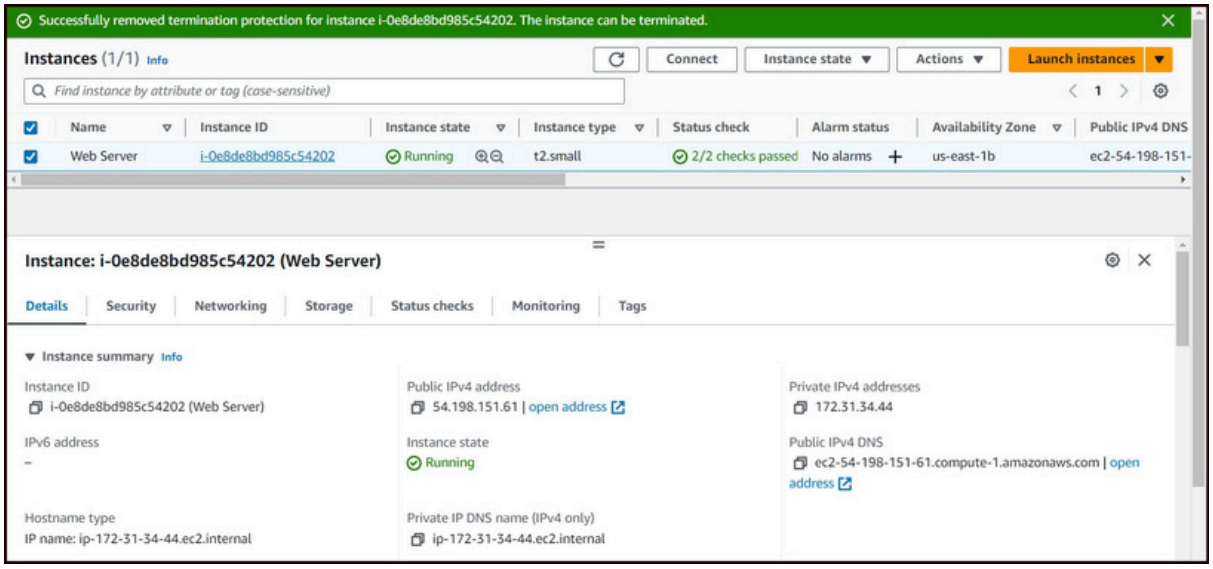

Fig 13

Choose the Monitoring tab to monitoring the instance as shown in Fig 14

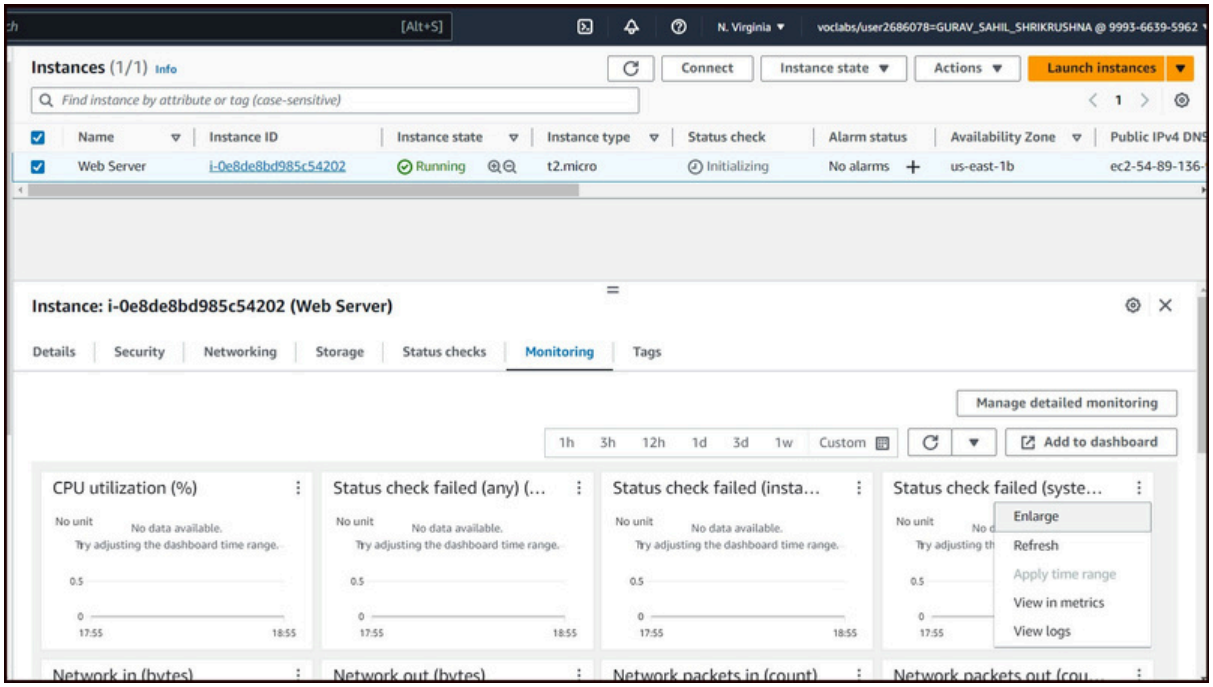

Fig 14

In the Actions menu towards the top of the console, select Monitor and troubleshoot Get system log as shown in Fig 15. The System Log

displays the console output of the instance, which is a valuable tool for problem diagnosis. It is especially useful for troubleshooting kernel problems and service configuration issues that could cause an instance to terminate or become unreachable before its SSH daemon can be started

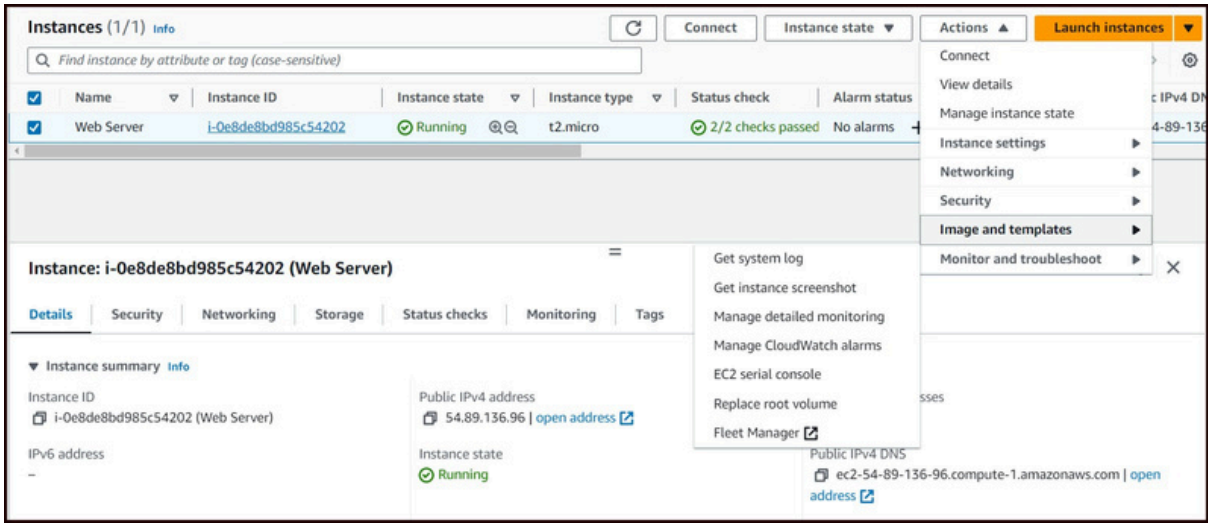

Fig 15

In output HTTP package was installed from the user data that you added when you created the instance in Fig 16

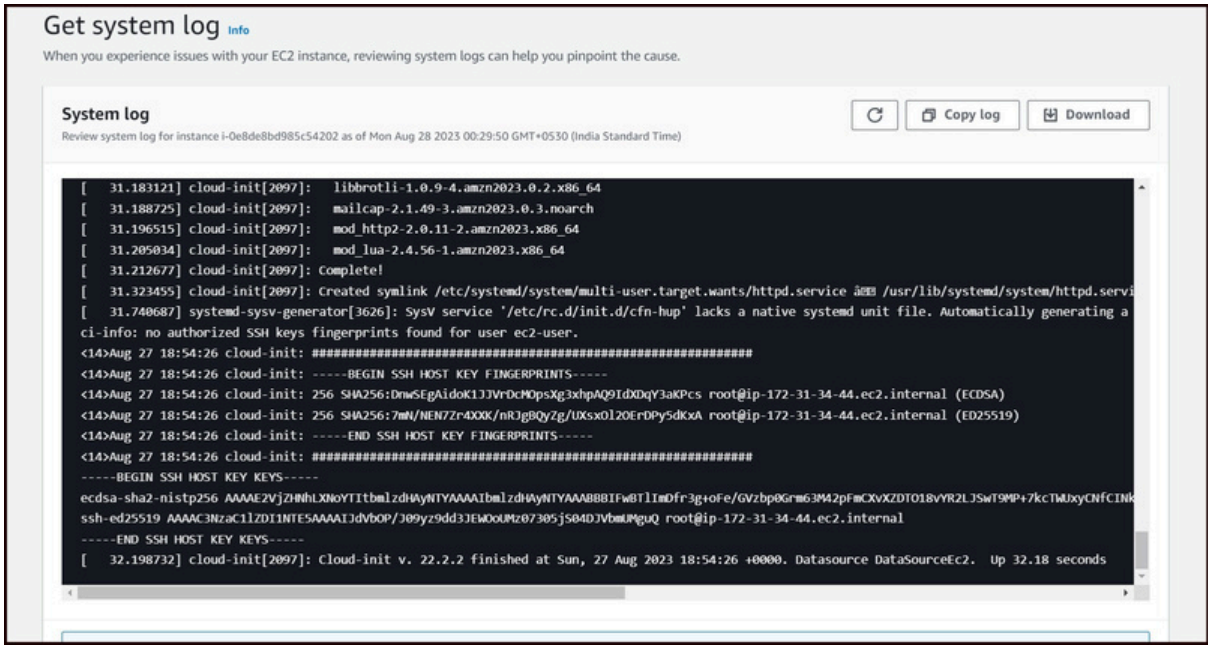

Fig 16

In the Actions menu, select Monitor and troubleshoot Get instance screenshot. That screenshot is similar like Fig 17. This shows you what your Amazon EC2 instance console would look like if a screen were attached to it

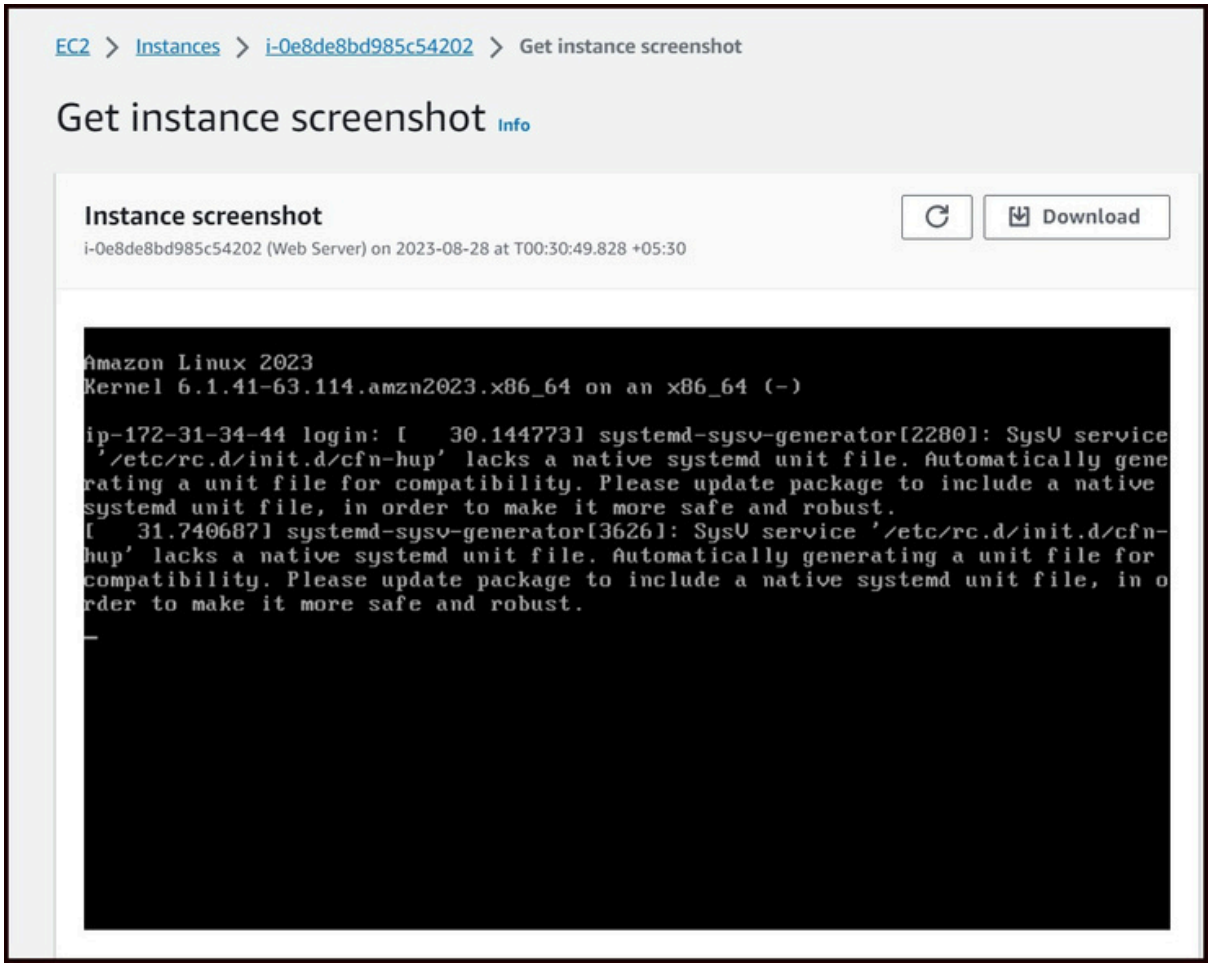

Fig 17

Select the web server, select the Details tab there, copy the public IPv4 address of your instance to your clipboard as shown in Fig 18 and paste it on the new tab.

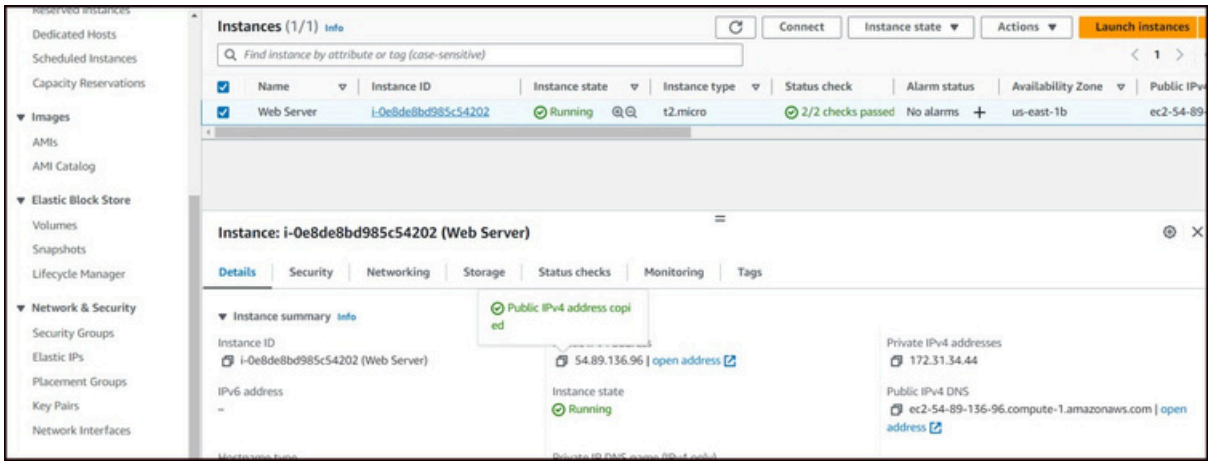

Fig 18

But in Fig 19 we see that currently not able to access your web server because the security group is not allowing inbound traffic on port 80, which is used for HTTP web requests.

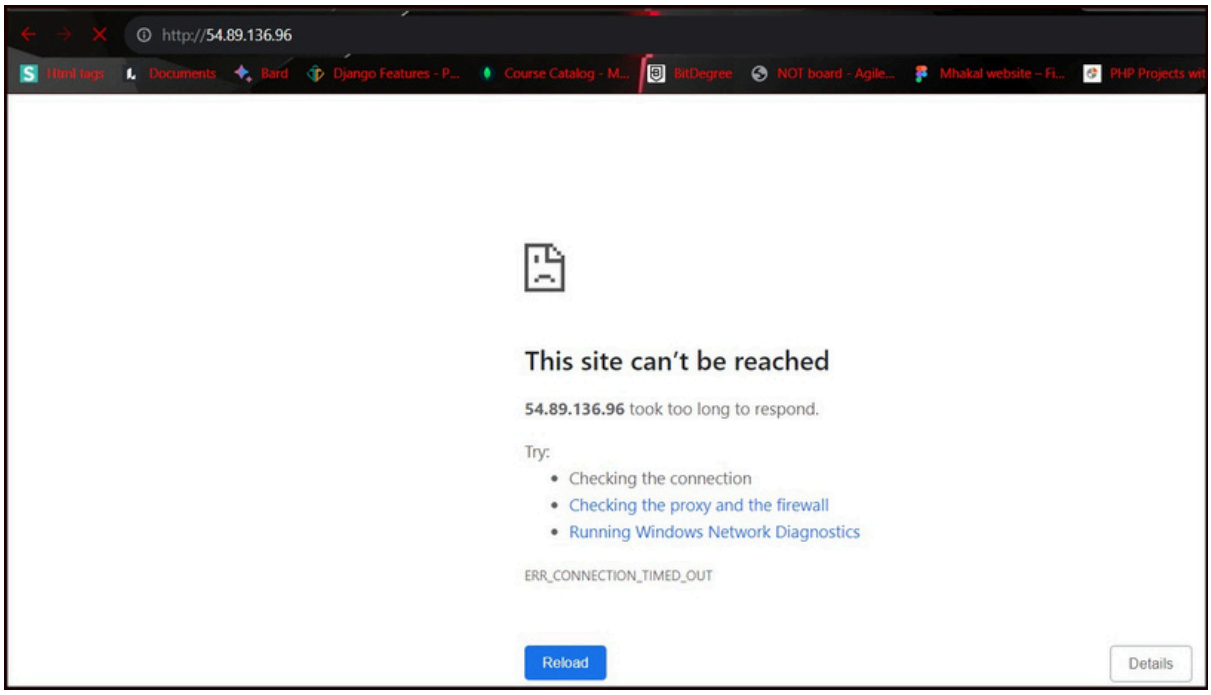

Fig 19

In the left navigation pane, select Security Groups. Then select “Web Server Security Groups” and select the Inbound Rules tab. We can see in Fig 20 that there are currently no inbound rules. Select the Edit Inbound Rules button.

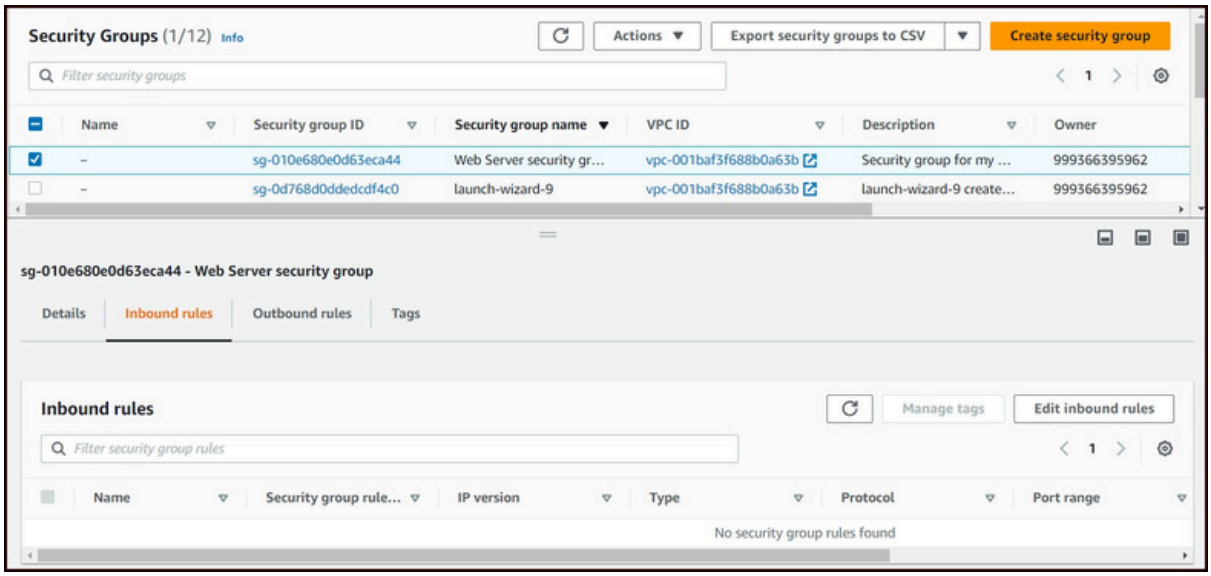

Fig 20

After selecting the "Edit Inbound Rules" button we get a screen like Fig 21, click on Add Rule.

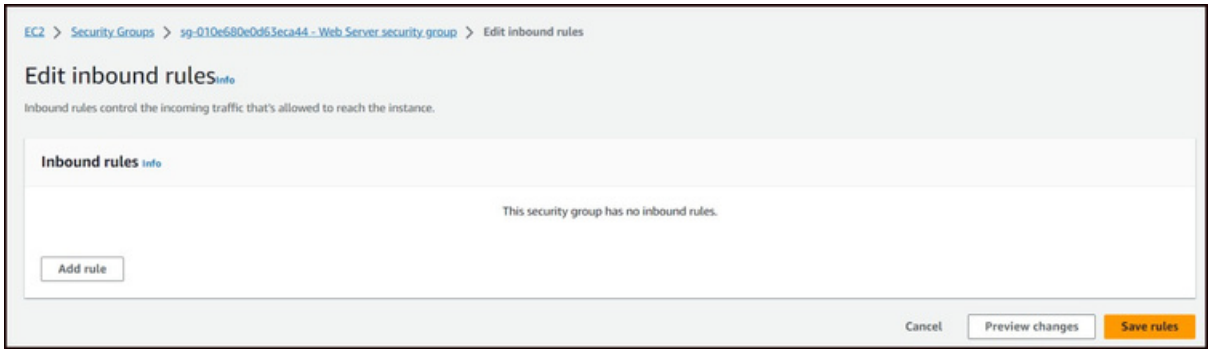

Fig 21

After clicking “Add Rule” we get editable inbound rules, select Type as “HTTP” and Source as "Anywhere-IPv4", similar to Fig 22 and click “Save Rule”.

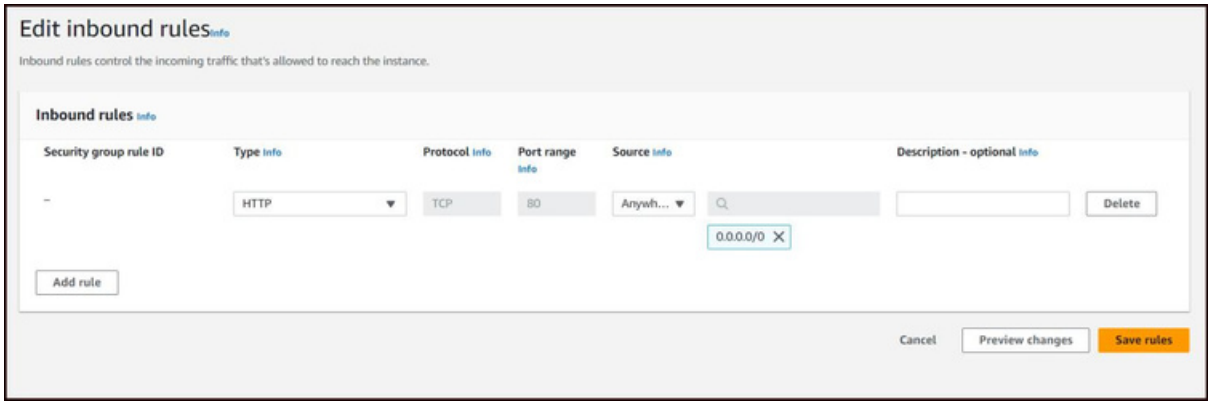

Fig 22

Open the tab we have already pasted the public IPv4 address and refresh it, then we get an output similar to Fig 23.

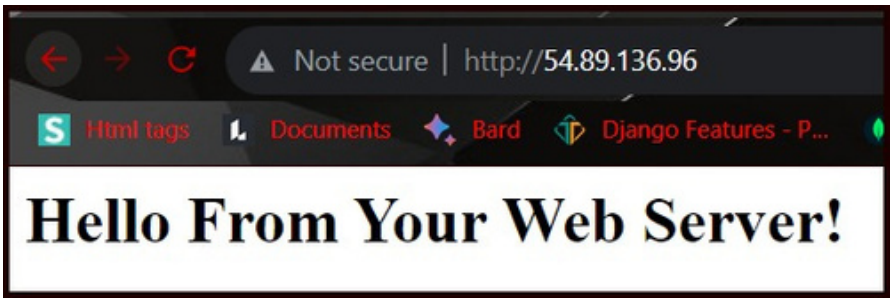

Fig 23

Select the web server, then click at the top of the "Instance State" menu and select "Stop Instance" as shown in Fig 24.

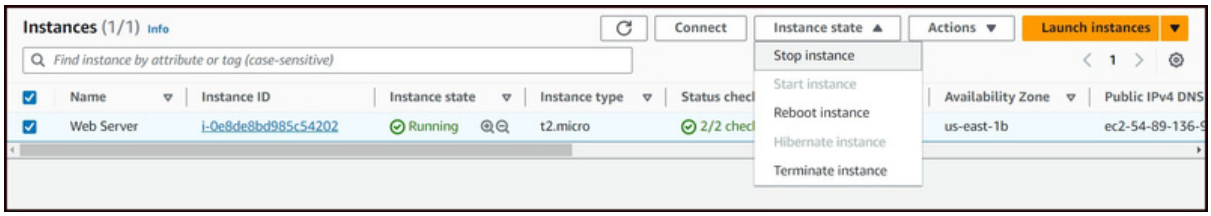

Fig 24

As shown in Fig 25, select the "Action" menu, then select "Instance Settings", there select "Change instance type".

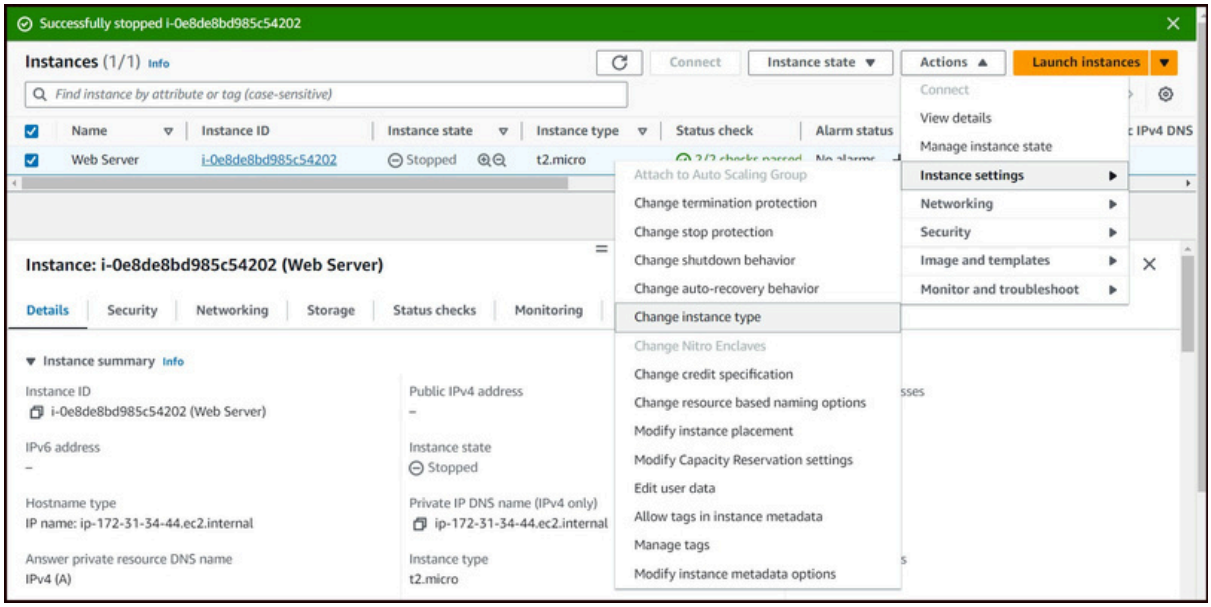

Fig 25

In Change instance type select the instance type as "t2.small" as shown in figure 26 and click on "Apply".

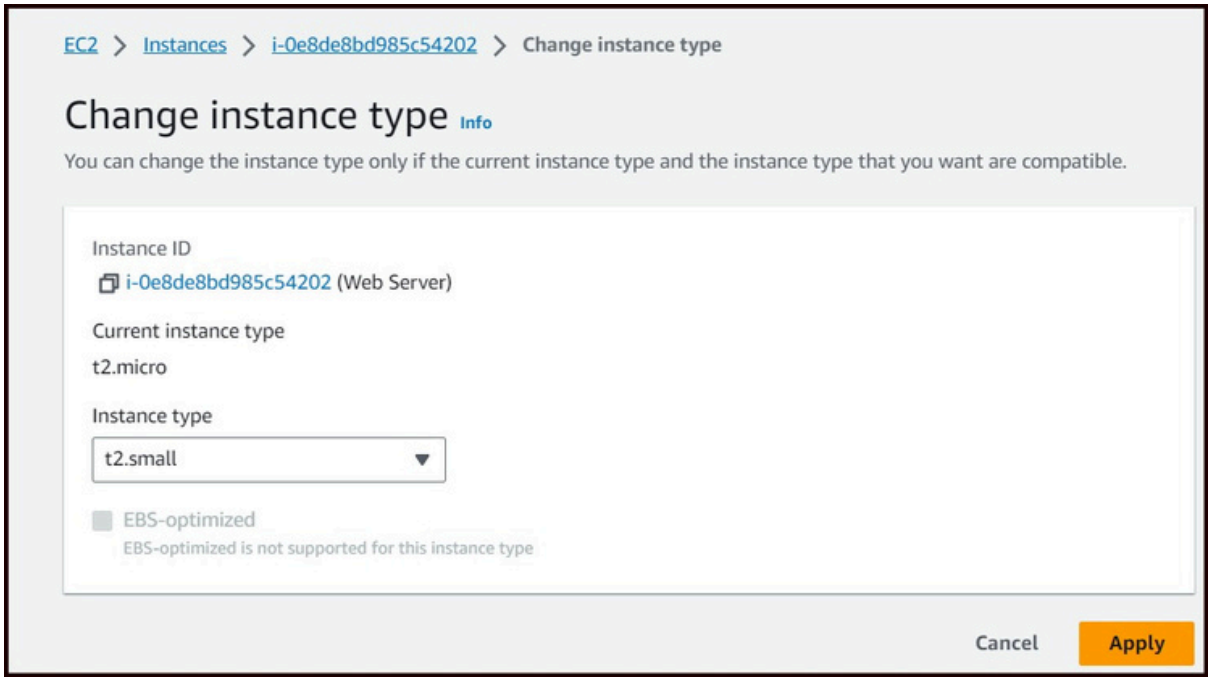

Fig 26

Select the block devices in the instance, click the "Volume ID" link in it as shown in Fig 27

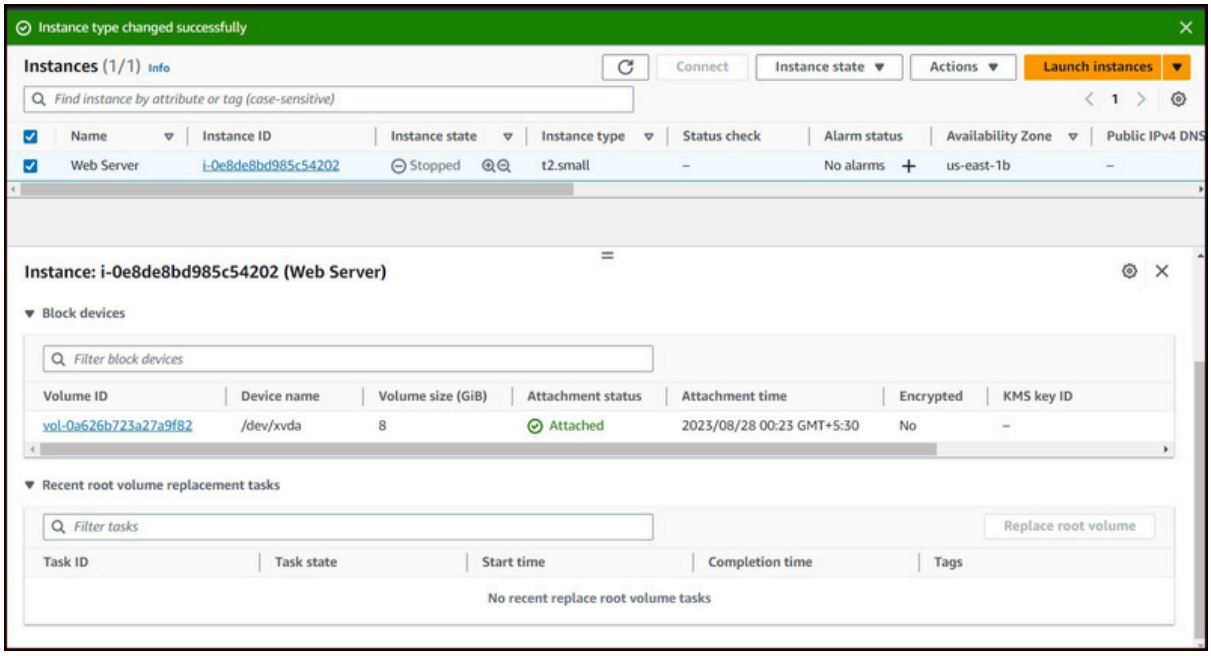

Fig 27

Then we get the screen as in Fig 28, select "Actions" in it and then click "Modify Volume".

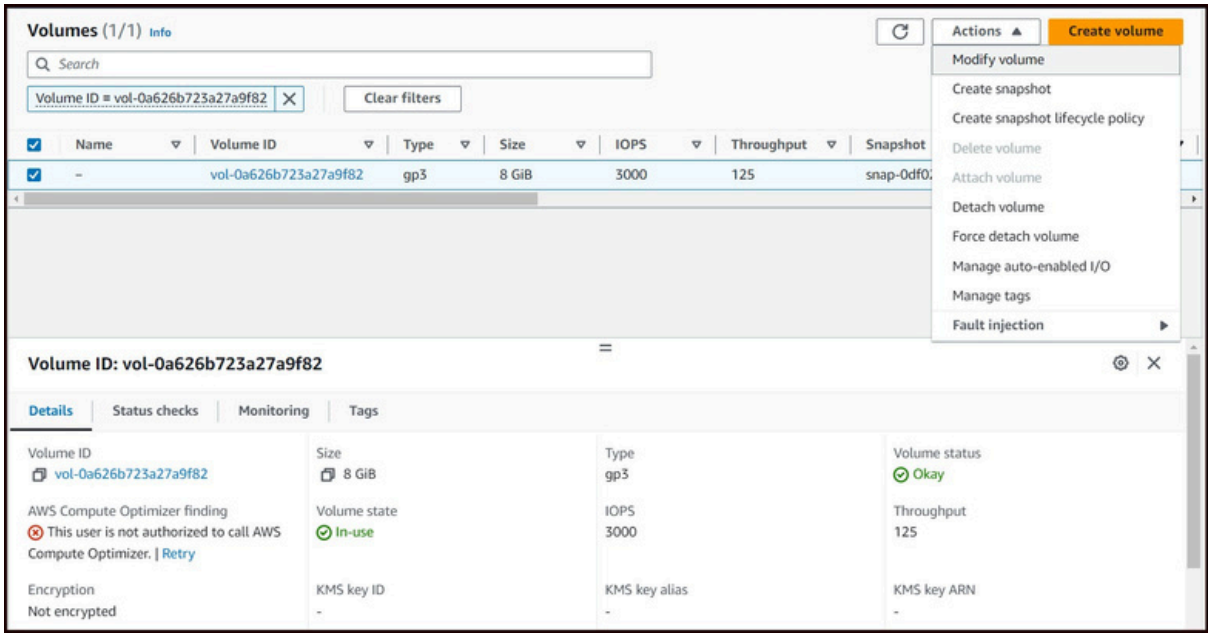

Fig 28

Select size 10 in the modified volume and click "Modify" as shown in Fig 29

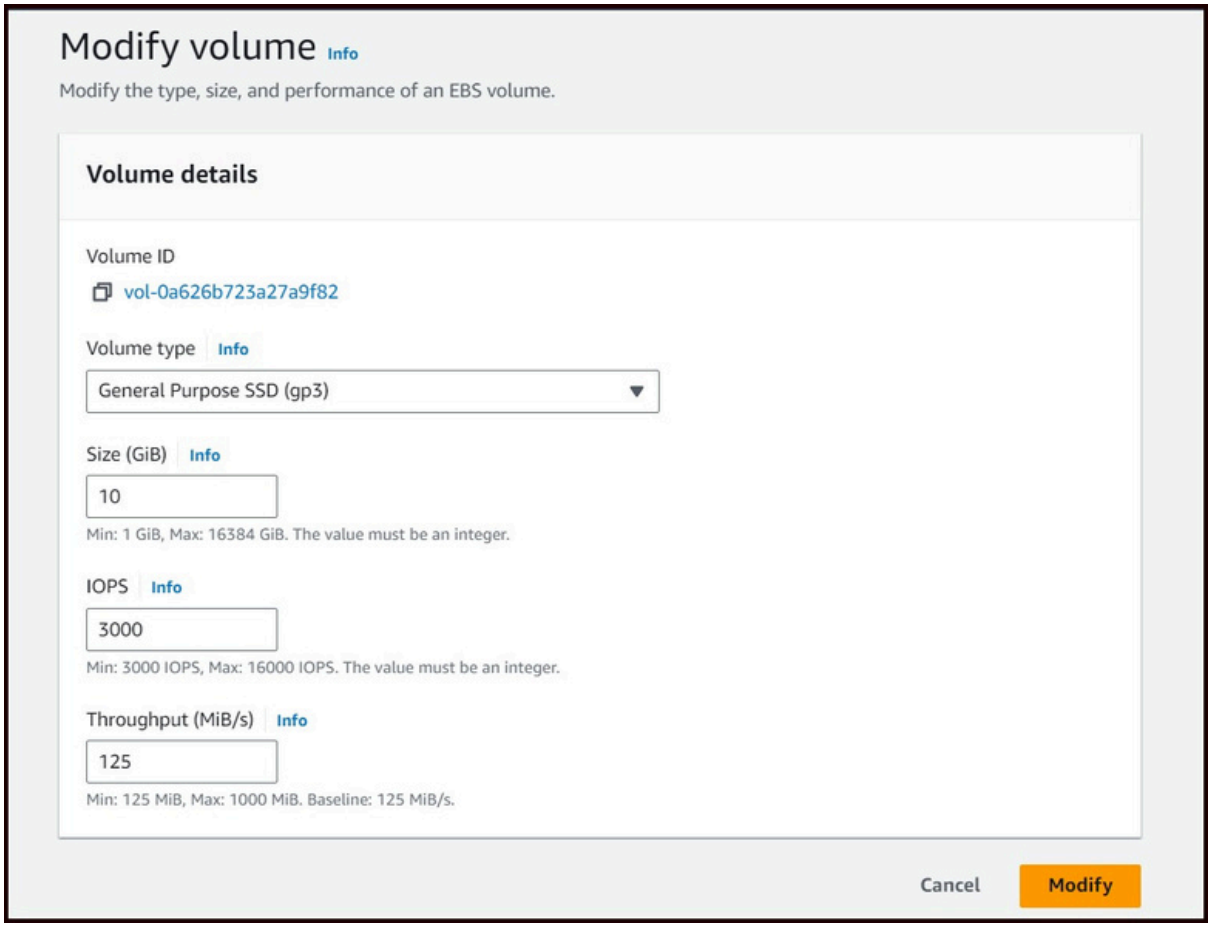

Fig 29

Then we can see in Fig 30 now the size is showing 10 GiB

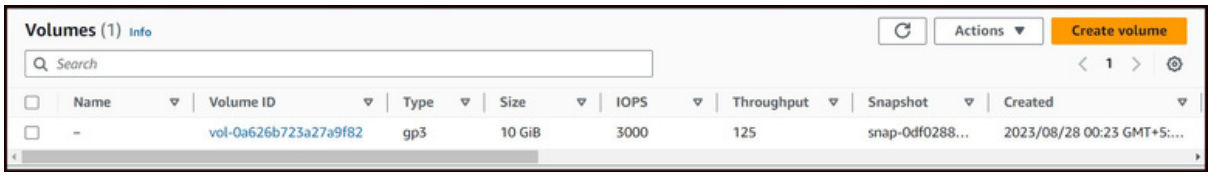

Fig 30

Select the “Web Server” instance and select the “Action” button in it, select “Instance Settings” in it and click on “Change Termination Protection” as shown in Fig 31.

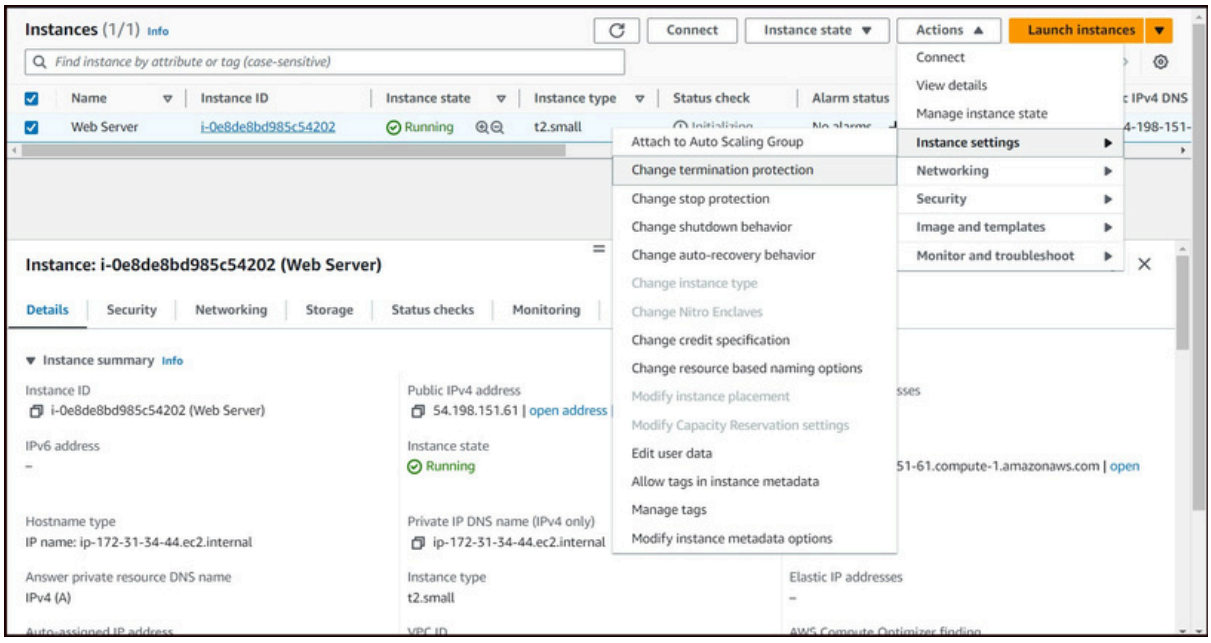

Fig 31

Remove the option tick “Enable” in Change Termination Protection as shown in Fig 32 and then terminate

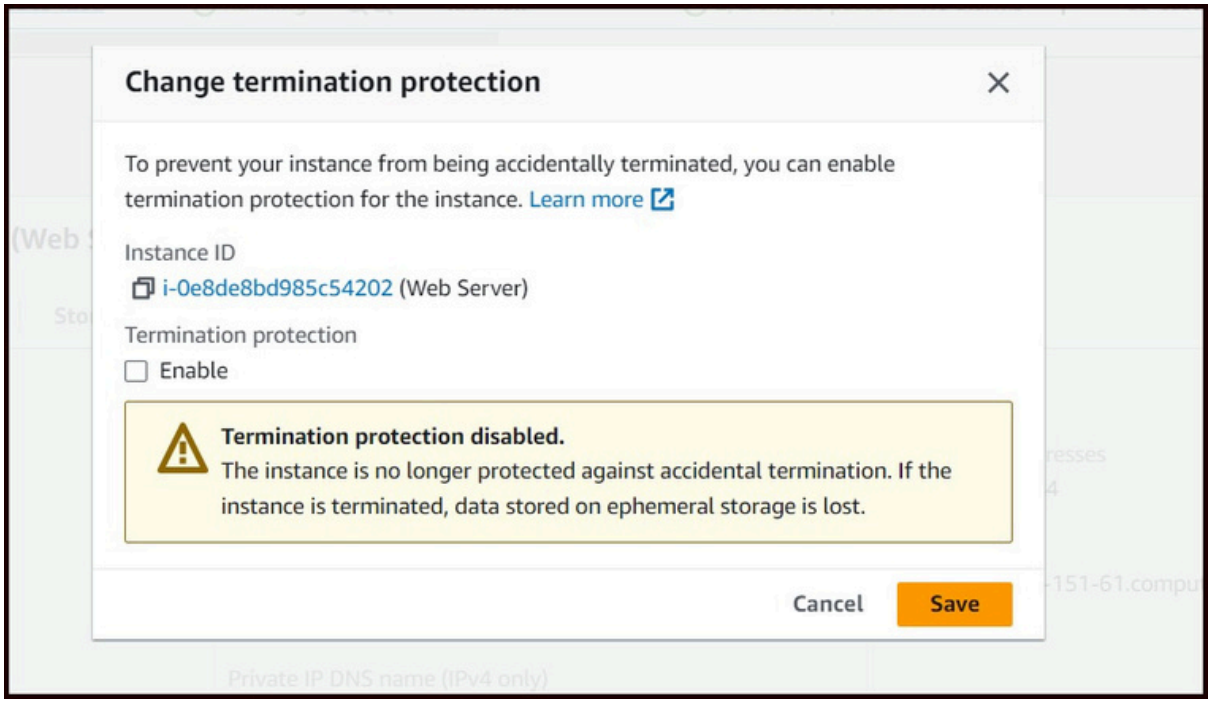

Fig 32