School of Computer Science, Engineering and Applications(SCSEA)
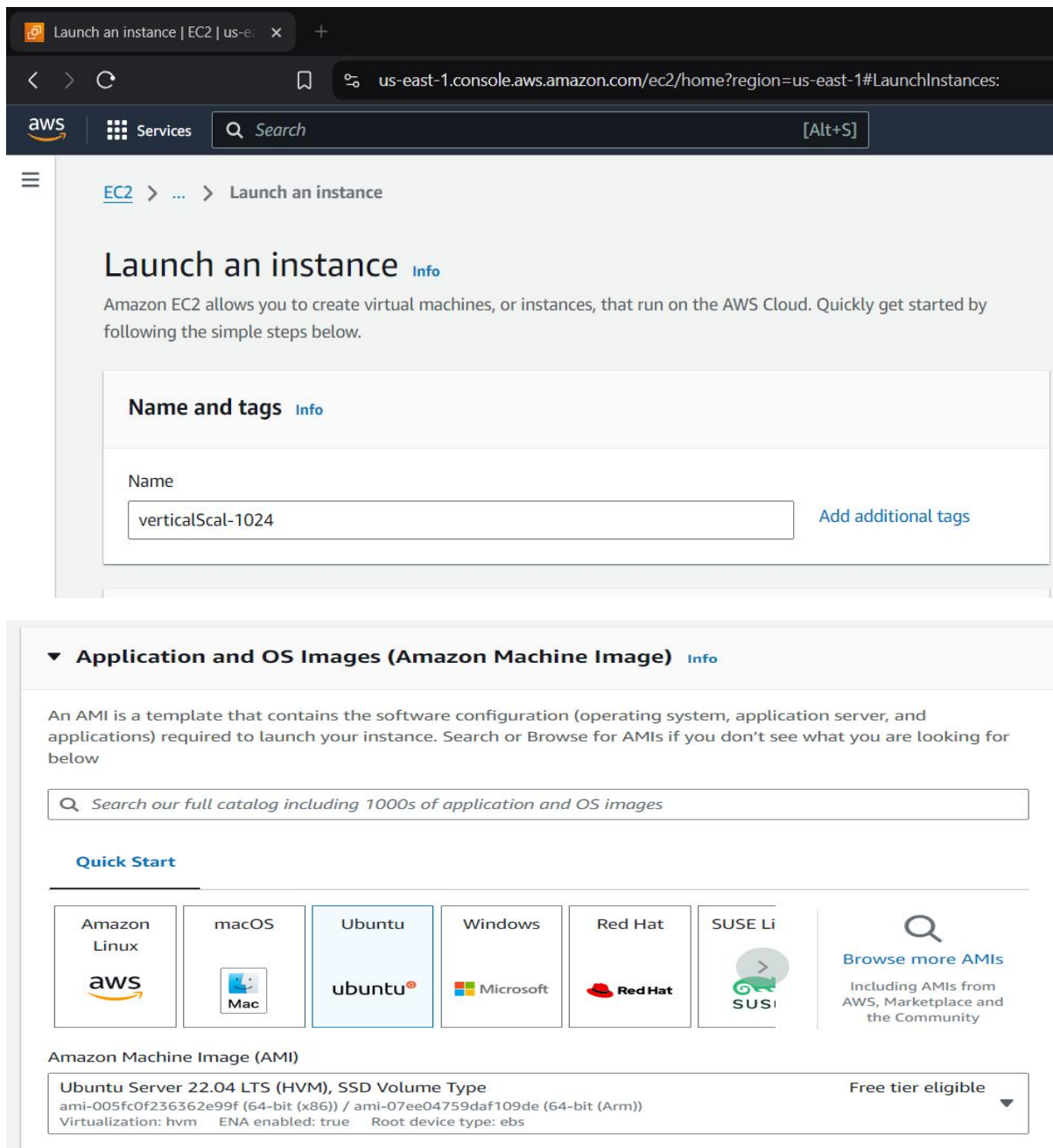## B.C.A. TY (CCSA)
Subject : Infrastructure Orchestration (P)

Name of the Student: **Shrushti Krishna Shrivastav**   **PRN: 20220801024**

Title of Practical :   **Vertical Scaling: Upgrading EC2 Instance Types for Better Performance**

STEP1: Login and launch one ec2 instance

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▼ **Instance type** Info | Get advice

Instance type

t2.micro   Free tier eligible
Family: t2   1 vCPU   1 GiB Memory   Current generation: true
On-Demand Linux base pricing: 0.0124 USD per Hour
On-Demand Windows base pricing: 0.017 USD per Hour
On-Demand RHEL base pricing: 0.0268 USD per Hour
On-Demand Ubuntu Pro base pricing: 0.0142 USD per Hour
On-Demand SUSE base pricing: 0.0124 USD per Hour

🔘 All generations
Compare instance types

Additional costs apply for AMIs with pre-installed software

▼ **Key pair (login)** Info

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*

IOdemo1   ↻ Create new key pair

▼ **Network settings** Info

Network | Info

vpc-0662aa9456cd34d0a | -defaultVPC-

Subnet | Info

No preference (Default subnet in any availability zone)

Auto-assign public IP | Info

Enable

Additional charges apply when outside of free tier allowance

Firewall (security groups) | Info
A security group is a set of firewall rules that control the traffic for your instance. Add rules to al
instance.

⭘ Create security group   🔘 Select existing security group

Common security groups | Info

Select security groups

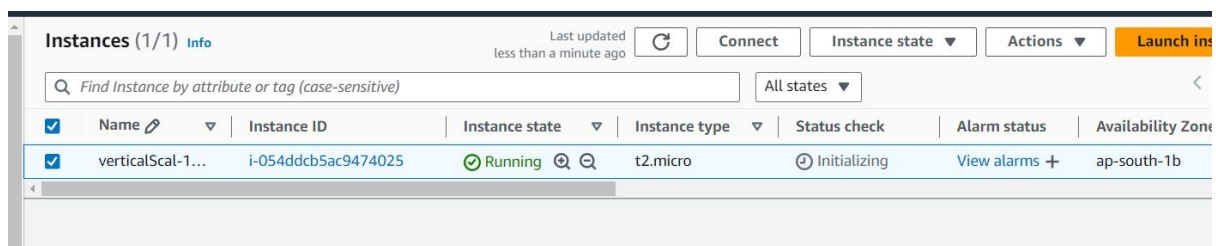SG-CCSA-TY-1024   sg-08f4e0d7ab53772a8 ✕
VPC: vpc-0662aa9456cd34d0a

Security groups that you add or remove here will be added to or removed from all your network

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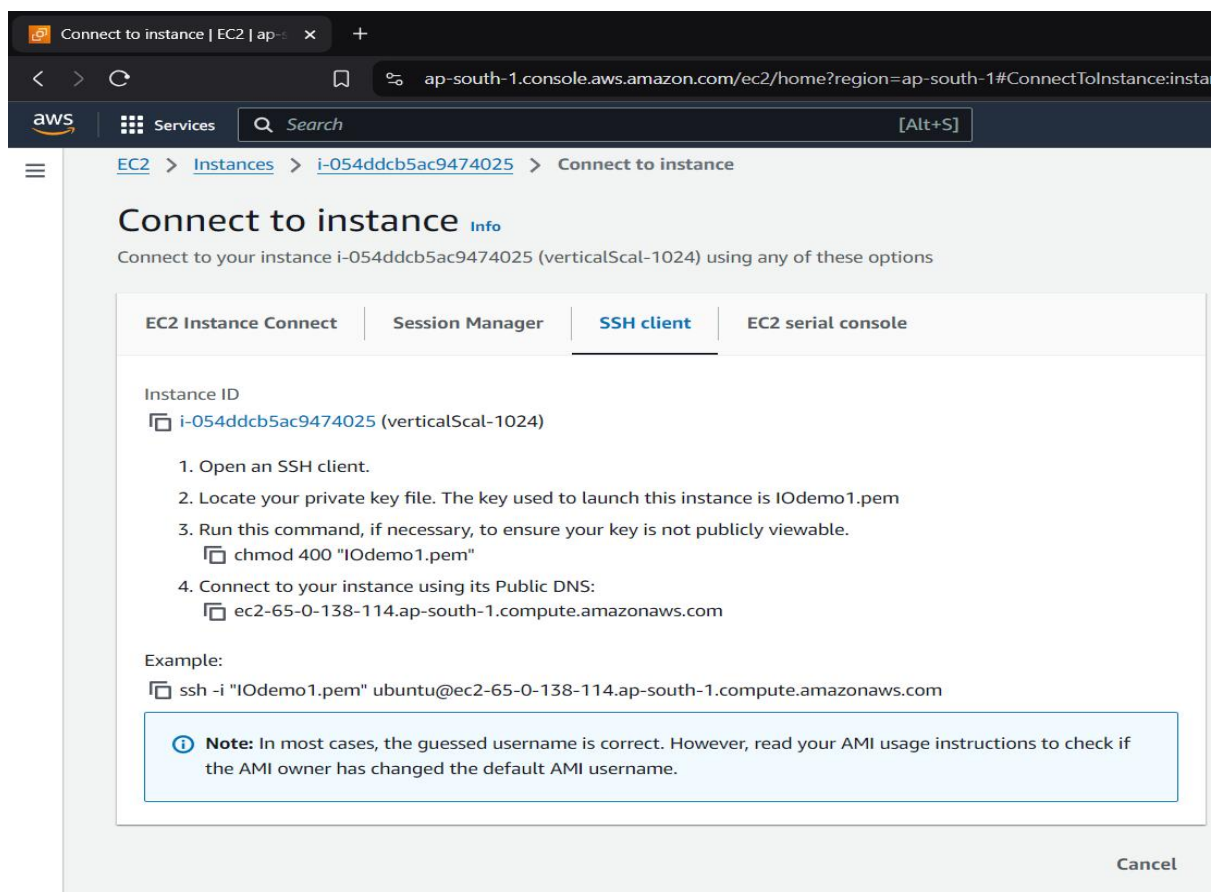**Name of the Student:**   **Shrushti Krishna Shrivastav**   **PRN: 20220801024**

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Once instance is launched connect via SSH

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STEP2: connect via SSH

Go to the path where your keypair is downloaded

```
C:\Users\shrushti\OneDrive\Desktop>
C:\Users\shrushti\OneDrive\Desktop>ssh -i "IOdemo1.pem" ubuntu@ec2-65-0-138-114.ap-south-1.compute.amazonaws.com
The authenticity of host 'ec2-65-0-138-114.ap-south-1.compute.amazonaws.com (65.0.138.114)' can't be established.
ED25519 key fingerprint is SHA256:g0U2Qb3Xvw87qDD5AI0tXijDLwbyi7Gk/TPeGaiGlPc.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-65-0-138-114.ap-south-1.compute.amazonaws.com' (ED25519) to the list of known hosts.
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-1015-aws x86_64)
```

Now update and then install apache2 server

```
ubuntu@ip-172-31-10-188:~$
ubuntu@ip-172-31-10-188:~$ sudo apt-get update -y
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
```

```
ubuntu@ip-172-31-10-188:~$
ubuntu@ip-172-31-10-188:~$ sudo apt-get install apache2 -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
```

Check if apache2 is installed : go to instance and paste public ipv4 address on browser--

EC2 > Instances > i-054ddcb5ac9474025

Instance summary for i-054ddcb5ac9474025 (verticalScal-1024) Info

Updated less than a minute ago

⊘ Public IPv4 address copied

Instance ID

🗇 i-054ddcb5ac9474025

🗇 65.0.138.114 | open address ↗

IPv6 address

–

Instance state

⊘ Running

![D Y PATIL INTERNATIONAL UNIVERSITY AKURDI PUNE]

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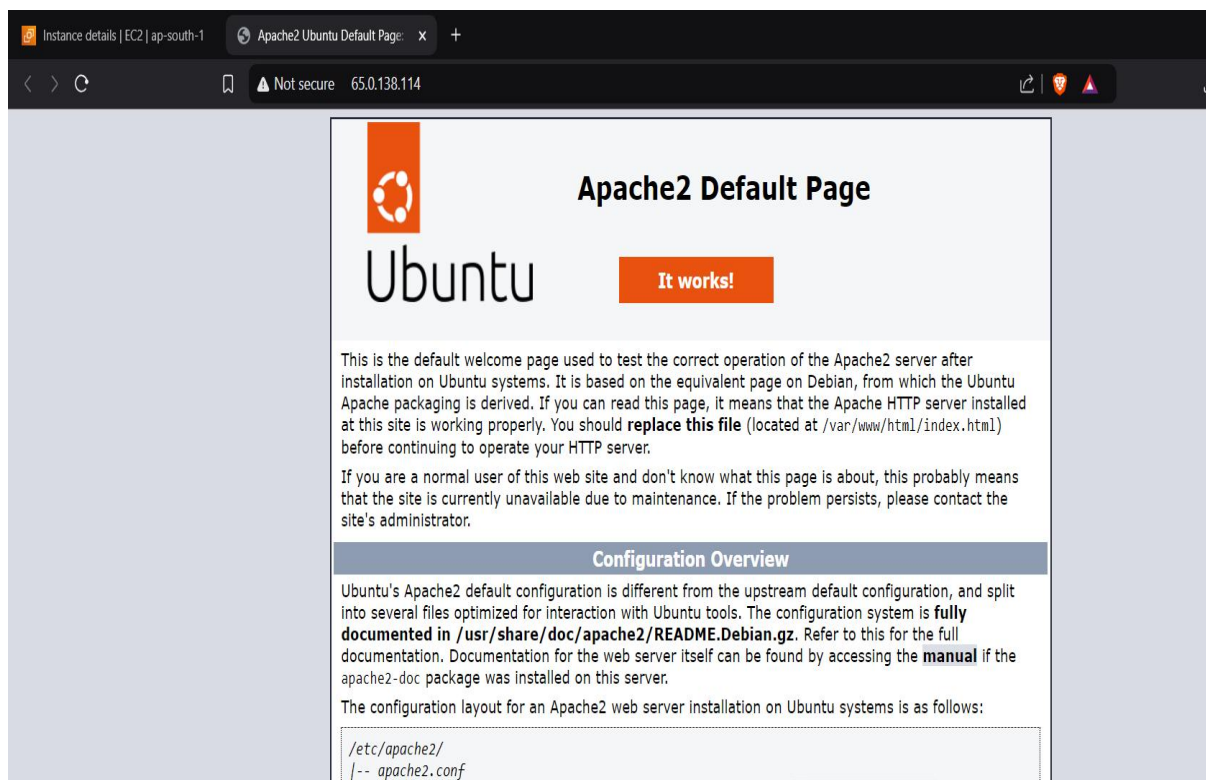## B.C.A. TY (CCSA)
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Ensure its http only (in Security Group we gave permission for http only and not hhtps)

You can also check through cmd via command: systemctl status apache2

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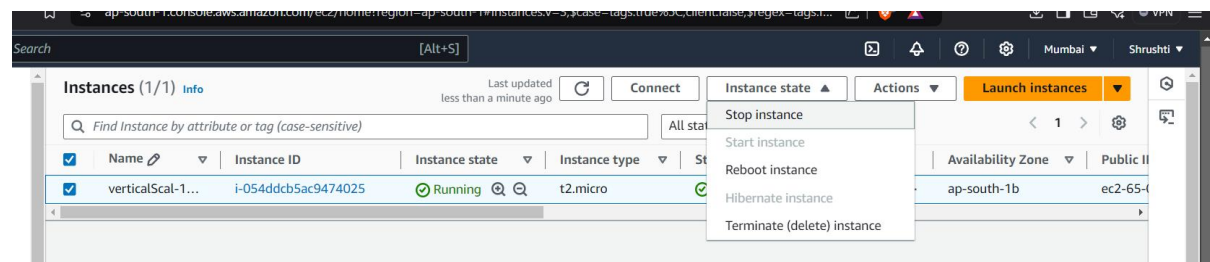
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STEP3: create one file

```
ubuntu@ip-172-31-10-188:~$ touch file1.txt
ubuntu@ip-172-31-10-188:~$ ls
file1.txt
ubuntu@ip-172-31-10-188:~$
```

## STEP4: change the instance type from t2.micro to t2.medium

First stop the instance to change the instance type

Cmd msg once instance is stopped

```
ubuntu@ip-172-31-10-188:~$ Connection to ec2-65-0-138-114.ap-south-1.compute.amazonaws.com closed by remote host.
Connection to ec2-65-0-138-114.ap-south-1.compute.amazonaws.com closed.
```

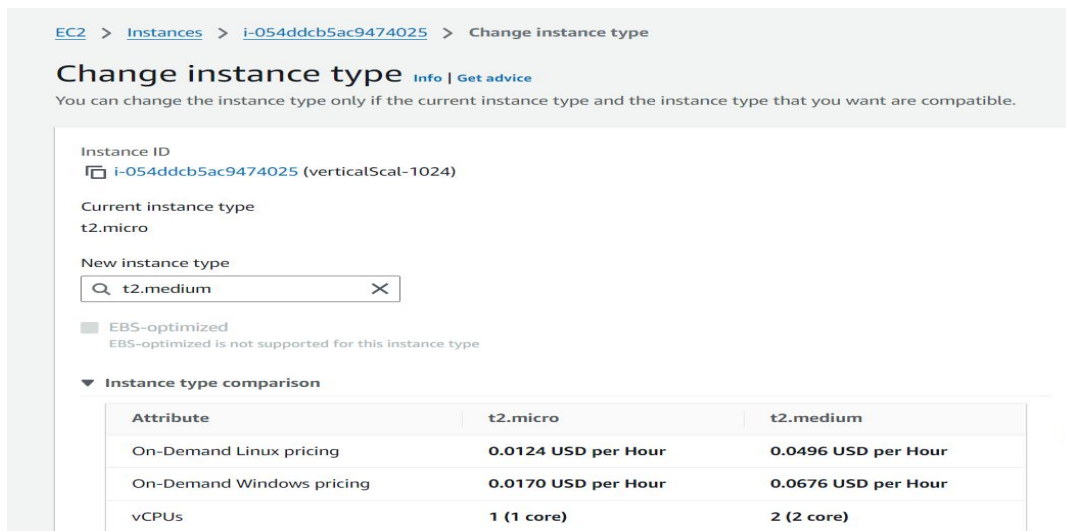Select instance--action--instance setting--change instance type
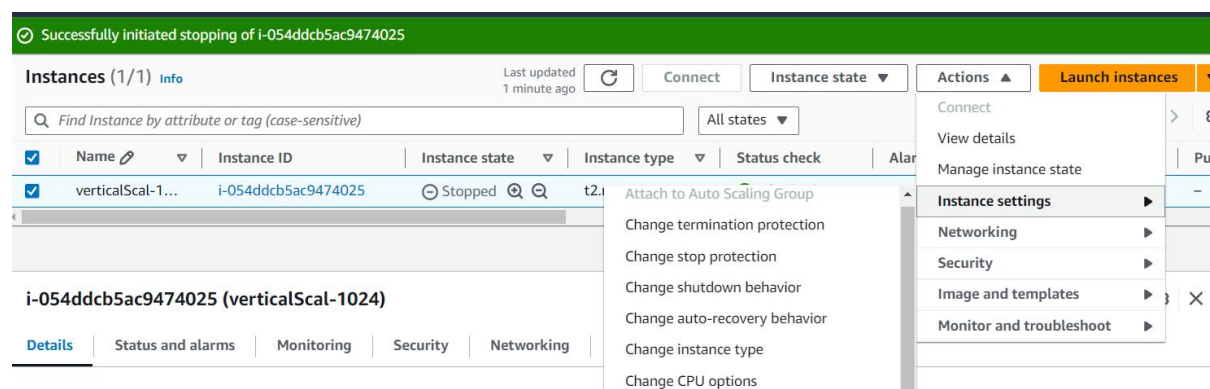
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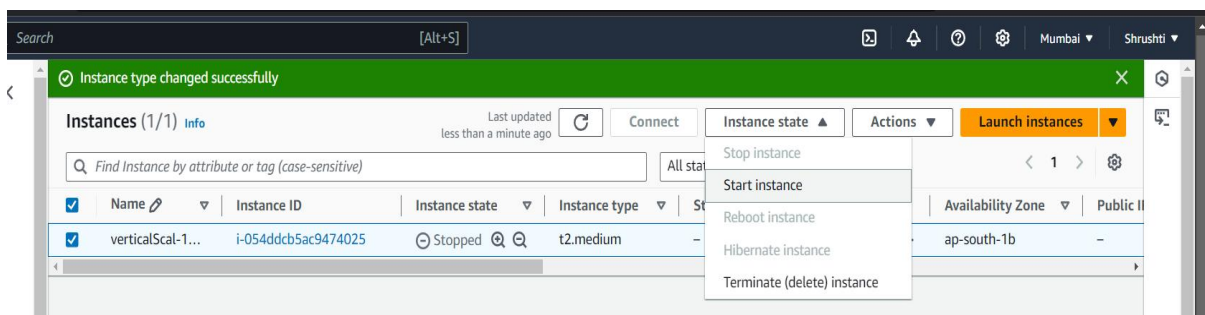

Select new instance as t3.micro
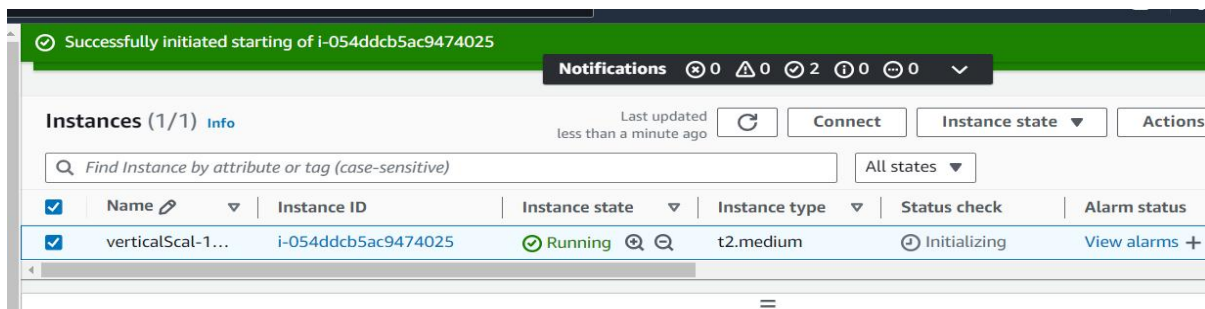
Save changes.

Now start instance and ensure instance type is changed

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Again connect via ssh--

List the files to ensure your data is still safe and not lost.

```
Last login: Wed Nov 20 10:43:59 2024 from 152.57.114.123
ubuntu@ip-172-31-10-188:~$
ubuntu@ip-172-31-10-188:~$
ubuntu@ip-172-31-10-188:~$
ubuntu@ip-172-31-10-188:~$ ls
file1.txt
ubuntu@ip-172-31-10-188:~$
```

Check if apache2 is also running.

```
ubuntu@ip-172-31-10-188:~$ systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: e
     Active: active (running) since Wed 2024-11-20 10:57:05 UTC; 2min 51s ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 374 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS
   Main PID: 458 (apache2)
      Tasks: 55 (limit: 4676)
     Memory: 8.0M
        CPU: 42ms
     CGroup: /system.slice/apache2.service
             ├─458 /usr/sbin/apache2 -k start
             ├─466 /usr/sbin/apache2 -k start
             └─467 /usr/sbin/apache2 -k start
```