



2) Launch one ec2 using Ubuntu image and add script in user data to install Nginx.

```
ubuntu@ip-172-31-46-236: ~
$ ssh -i "first_server1.pem" ec2-user@3.90.231.197
ec2-user@3.90.231.197: Permission denied (publickey).

Administrator@DESKTOP-I16IA90 MINGW64 ~/Downloads
$ ssh -i "first_server1.pem" ubuntu@3.90.231.197
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.8.0-1029-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Fri Jul 25 12:33:51 UTC 2025

System load:  0.01           Temperature:   -273.1 C
Usage of /:   29.1% of 6.71GB Processes:      115
Memory usage: 22%           Users logged in: 0
Swap usage:   0%            IPv4 address for ens5: 172.31.46.236

Expanded Security Maintenance for Applications is not enabled.

94 updates can be applied immediately.
60 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

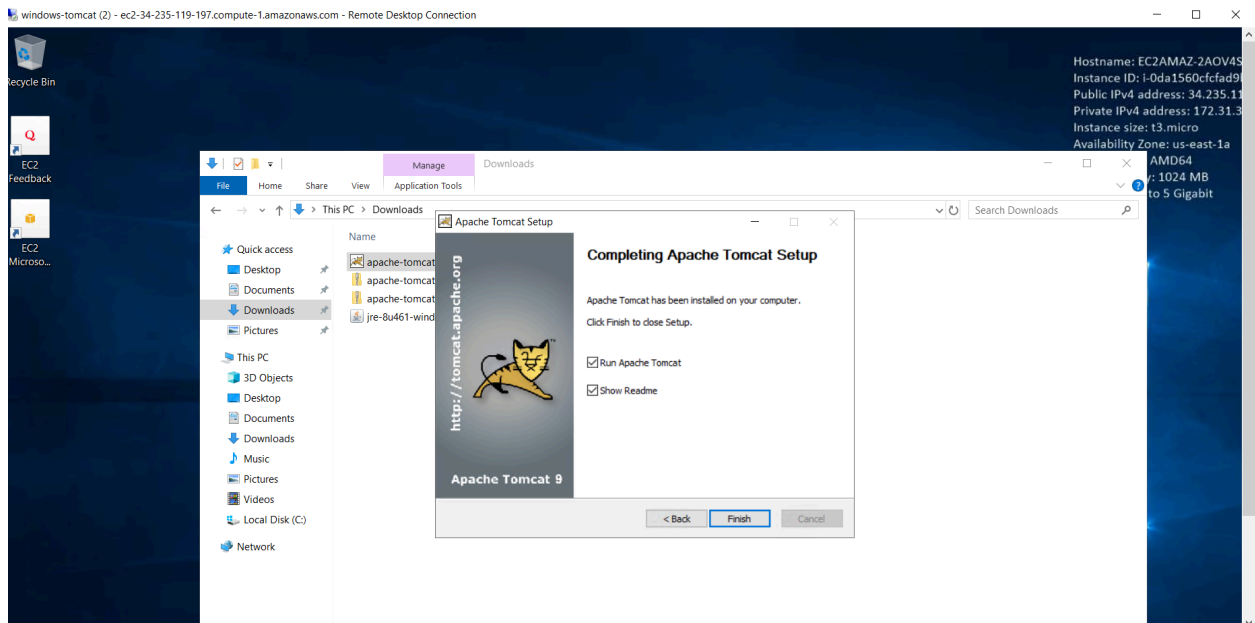
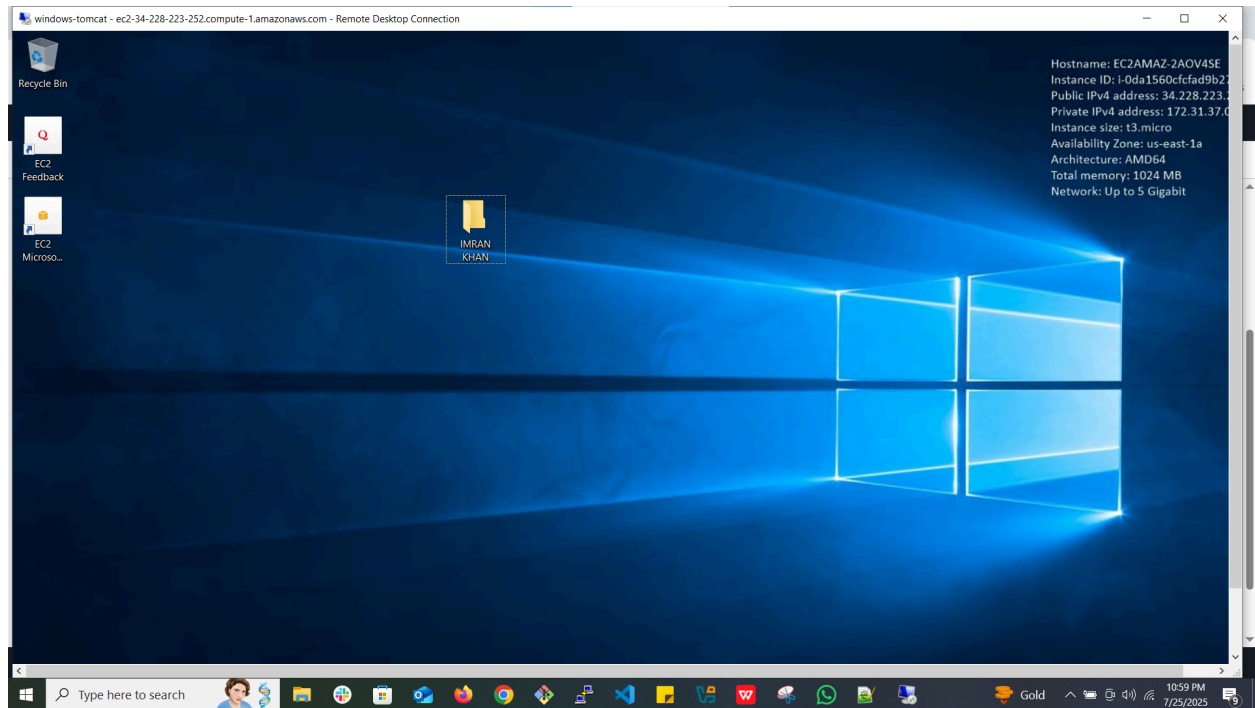
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

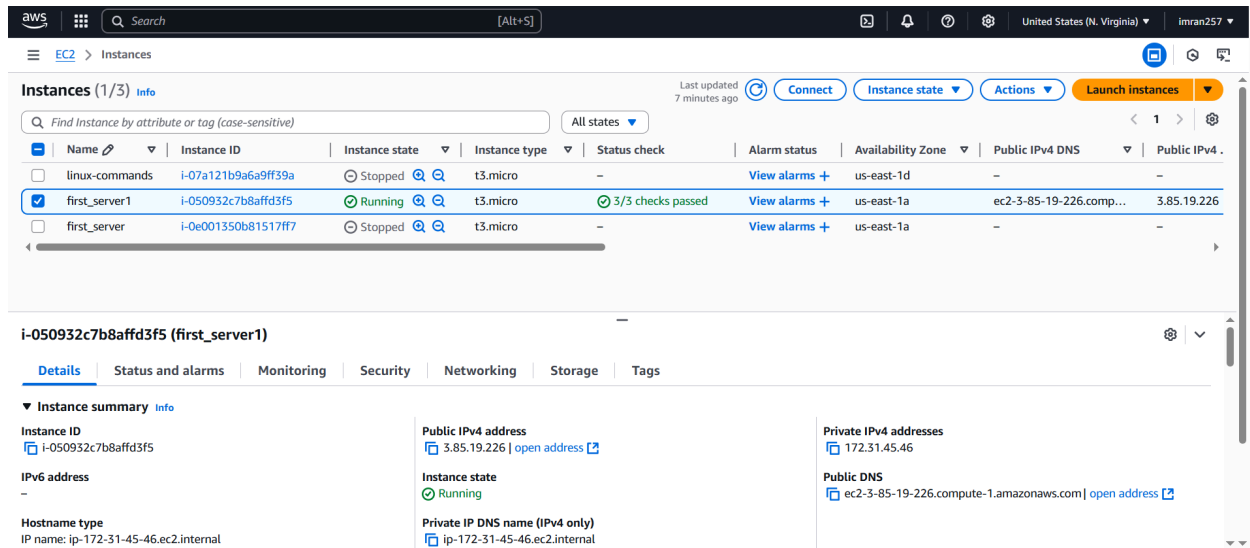
ubuntu@ip-172-31-46-236:~$ systemctl status nginx
● nginx.service - A high performance web server and a reverse proxy server
   Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: enabled)
   Active: active (running) since Fri 2025-07-25 12:30:05 UTC; 4min 45s ago
     Docs: man:nginx(8)
   Process: 541 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
   Process: 596 ExecStart=/usr/sbin/nginx -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
   Main PID: 610 (nginx)
    Tasks: 3 (limit: 1072)
   Memory: 3.7M (peak: 3.9M)
      CPU: 22ms
   CGroup: /system.slice/nginx.service
           └─610 "nginx: master process /usr/sbin/nginx -g daemon on; master_process on;"
             └─612 "nginx: worker process"
               └─613 "nginx: worker process"

Jul 25 12:30:04 ip-172-31-46-236 systemd[1]: Starting nginx.service - A high performance web server and a reverse proxy server:
Jul 25 12:30:05 ip-172-31-46-236 systemd[1]: Started nginx.service - A high performance web server and a reverse proxy server:
```

3) Launch one windows server and install tomcat in windows.



#### 4) Take snapshot of the instane created in Task 1.



The screenshot displays the AWS Management Console's EC2 Instances page. At the top, there's a navigation bar with the AWS logo, a search bar, and user information. Below this, the 'Instances (1/3)' section is visible, showing a table of instances. The 'first\_server1' instance is selected and highlighted in blue. Below the table, the details for the selected instance 'i-050932c7b8affd3f5 (first\_server1)' are shown. The details are organized into sections: 'Instance summary', 'Public IPv4 address', 'Private IPv4 addresses', 'Instance state', 'Public DNS', and 'Private IP DNS name (IPv4 only)'. The instance is currently in a 'Running' state.

| Name           | Instance ID         | Instance state | Instance type | Status check      | Alarm status  | Availability Zone | Public IPv4 DNS         | Public IPv4 |
|----------------|---------------------|----------------|---------------|-------------------|---------------|-------------------|-------------------------|-------------|
| linux-commands | i-07a121b9a6a9ff39a | Stopped        | t3.micro      | -                 | View alarms + | us-east-1d        | -                       | -           |
| first_server1  | i-050932c7b8affd3f5 | Running        | t3.micro      | 3/3 checks passed | View alarms + | us-east-1a        | ec2-3-85-19-226.comp... | 3.85.19.226 |
| first_server   | i-0e001350b81517ff7 | Stopped        | t3.micro      | -                 | View alarms + | us-east-1a        | -                       | -           |

**i-050932c7b8affd3f5 (first\_server1)**

**Instance summary**

Instance ID  
i-050932c7b8affd3f5

IPv6 address  
-

Hostname type  
IP name: ip-172-31-45-46.ec2.internal

**Public IPv4 address**  
3.85.19.226 | [open address](#)

**Instance state**  
Running

**Private IP DNS name (IPv4 only)**  
ip-172-31-45-46.ec2.internal

**Private IPv4 addresses**  
172.31.45.46

**Public DNS**  
ec2-3-85-19-226.compute-1.amazonaws.com | [open address](#)

5) Assign password less authentication for ec2 created on Task 2.

1. Opened ubuntu and first\_server two instances.
2. Copied keygen of ubuntu instance into first\_server instance and give permissions.
3. Now accessed first\_server instance from ubuntu instance.

```

ec2-user@ip-172-31-45-46:~$ https://ubuntu.com/aws/pro

Updated Security Maintenance for Applications is not enabled.

94 updates can be applied immediately.
60 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Sat Jul 26 11:29:07 2025 from 103.143.169.218
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-46-236:~$ ssh-keygen
Generating public/private ed25519 key pair.
Enter file in which to save the key (/home/ubuntu/.ssh/id_ed25519):
/home/ubuntu/.ssh/id_ed25519 already exists.
Overwrite (y/n)? y
ssh-keygen -f -t ed25519 -C 'cat ~/.ssh/id_rsa.pub'
-rsa AAAAB3NzaC1yc2EAAAADAQABAAQCAQC1InqHxN3fzhQHXo5AmAlTgfEh14Sd5S5cbY/NcPmrZ5iKy9rXPkhk
31o6ZmVYYZ+qB/8Xj8Z85K0QmWx5Z0iZvbH51e931ZT2B8X6446XmyNOOTJ0KNGdcckLQhaU/wONwE1BmMcFuXh
Zu2aCQn8-HWtPKvVbH/QLi1A0dmYxZmWmCmbD3qGn1aVnTbIU1Kz+EjgbIXVZVoxmKPRARTgVWFcoYNLO0IstrcldQ
rUfNfmsS98ZvcvWb/agreBXGOfrczQ34Pzb/HBmbUmYnuwCTGn1qSFH5Uj96y/TKoR814570G+/wzu/1C1C1C1oJ
reUx1uZb7jYmWmWmCmbD3qGn1aVnTbIU1Kz+EjgbIXVZVoxmKPRARTgVWFcoYNLO0IstrcldQrUfNfmsS98ZvcvWb
C0urwmcX1YuzB/UBSHCJDPOCMITK1/af+DzmT272993wI+ivayrEShS5E0ODUF9R9gbqCmX7nd+mW4GsaP38B8X9KLm
qZFeZ46L/VZ926S5VZu9hIqocMP11JgtK7jYjppocSPBDB0BYrRe+JWj/FNfs4/KOK39YEjJR7Ctoz413PR9X9
3rGReFW8q4jXmZ5GwCTmg95NxtcxZRPd8akx+/1QT7P9trUCX602F0ZCSLWj5VbOYq= ubuntu@ip-172-31-46
236~$

ubuntu@ip-172-31-46-236:~$ ssh ec2-user@ip-172-31-45-46
The authenticity of host 'ip-172-31-45-46 (172.31.45.46)' can't be established.
ED25519 key fingerprint is SHA256:eegpAlUGE9C5eUlnPQCHyVGDPtXhFGFLMWBHys.
This key is not known by any names and you have not asked to add this key to the list of known hosts.
Warning: Permanently added 'ip-172-31-45-46' (ED25519) to the list of known hosts.

Amazon Linux 2023

https://aws.amazon.com/linux/amazon-linux-2023

Last login: Sat Jul 26 11:38:05 2025 from 103.143.169.218
[ec2-user@ip-172-31-45-46 ~]$ ls
[ec2-user@ip-172-31-45-46 ~]$ touch imran123.txt
[ec2-user@ip-172-31-45-46 ~]$

```

6) Launch any ec2 using spot purchasing option.

[Alt+S]

United States (N. Virginia) imran257

### Instances (1/5)

Find Instance by attribute or tag (case-sensitive)

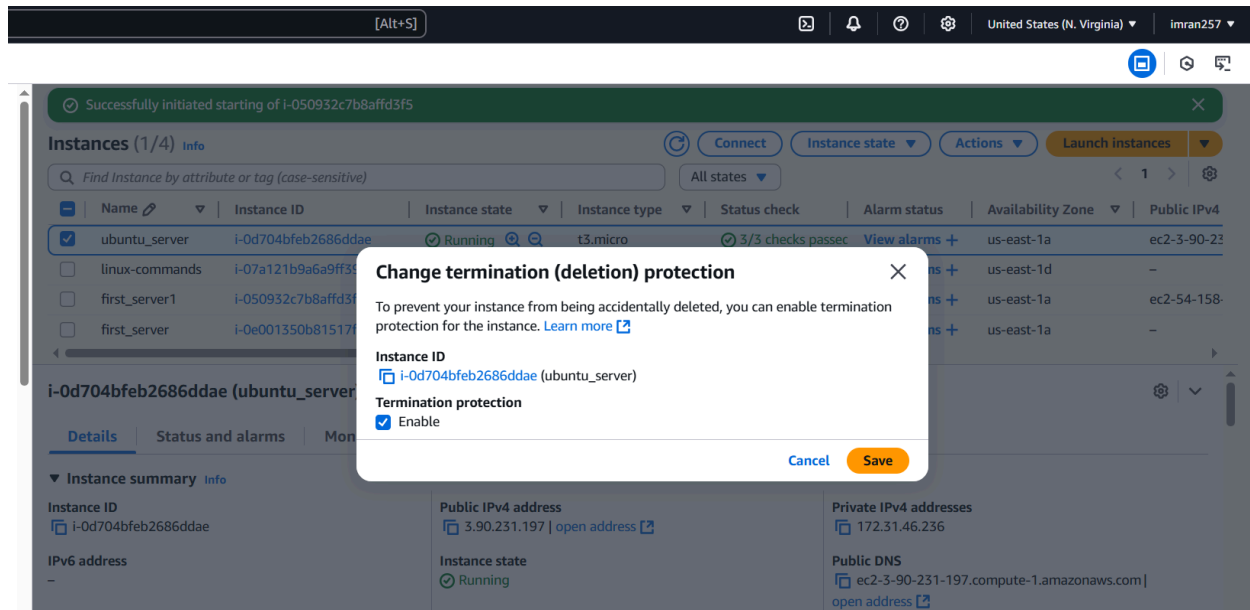
All states

|                                     | Name           | Instance ID          | Instance state | Instance type | Status check      | Alarm status  | Availability Zone | Public IPv4 |
|-------------------------------------|----------------|----------------------|----------------|---------------|-------------------|---------------|-------------------|-------------|
| <input type="checkbox"/>            | ubuntu_server  | i-0d704fbef2686ddae  | Running        | t3.micro      | 3/3 checks passce | View alarms + | us-east-1a        | ec2-3-90-23 |
| <input type="checkbox"/>            | linux_commands | i-07a121b9a6a9ff39a  | Stopped        | t3.micro      | -                 | View alarms + | us-east-1d        | -           |
| <input type="checkbox"/>            | first_server1  | i-050932c7b8affdf3f5 | Running        | t3.micro      | 3/3 checks passce | View alarms + | us-east-1a        | ec2-54-158- |
| <input type="checkbox"/>            | first_server   | i-0e001350b81517ff7  | Stopped        | t3.micro      | -                 | View alarms + | us-east-1a        | -           |
| <input checked="" type="checkbox"/> | spot_purchase  | i-09a0b7feb92de30d2  | Running        | t3.micro      | Initializing      | View alarms + | us-east-1a        | ec2-13-221- |

```
Administrator@DESKTOP-I16IA90 MINGW64 ~/Downloads
$ ssh -i "first_server1.pem" ec2-user@13.221.34.141
The authenticity of host '13.221.34.141 (13.221.34.141)' can't be established
ED25519 key fingerprint is SHA256:OACobiwPoTp3KzMfAPv6rwV3Z8icg9HxosSiGq2Ij9A
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '13.221.34.141' (ED25519) to the list of known hosts

#_
~\##### Amazon Linux 2023
~~~\#####|
~~~\###|
~~~\#/ https://aws.amazon.com/linux/amazon-linux-2023
~~~V~'-'>
~~~~
~~~.-.-
~~~/ /
~/m/'
```

## 7) Enable Termination policy on ec2 created in Task 2.



## 8) Launch one ec2 using Aws CLI.

