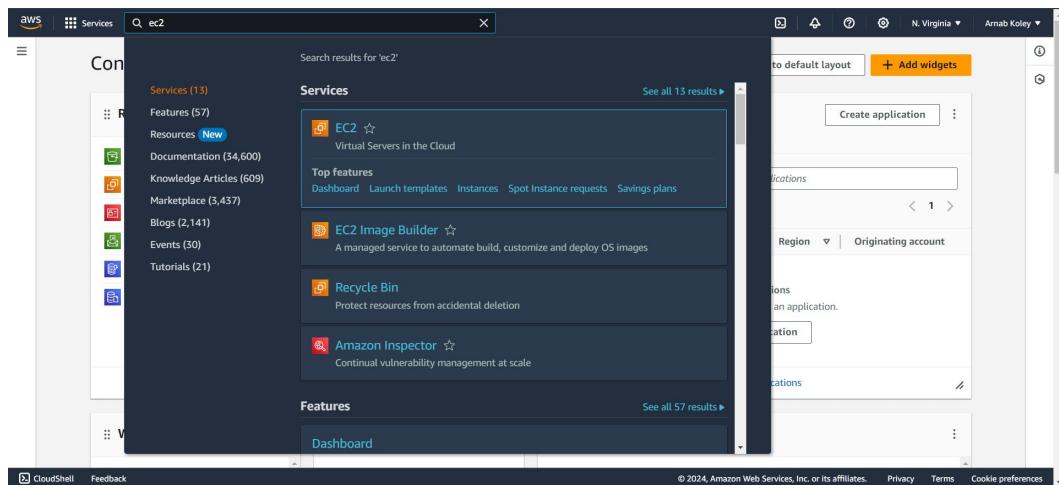


Assignment No : 07

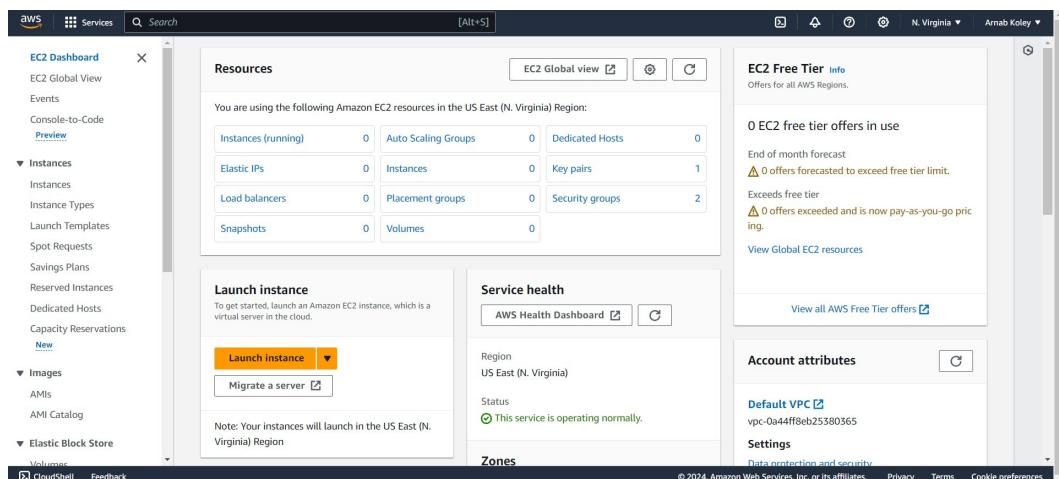
Problem Statement : Hosting a website on EC2.

Answer :

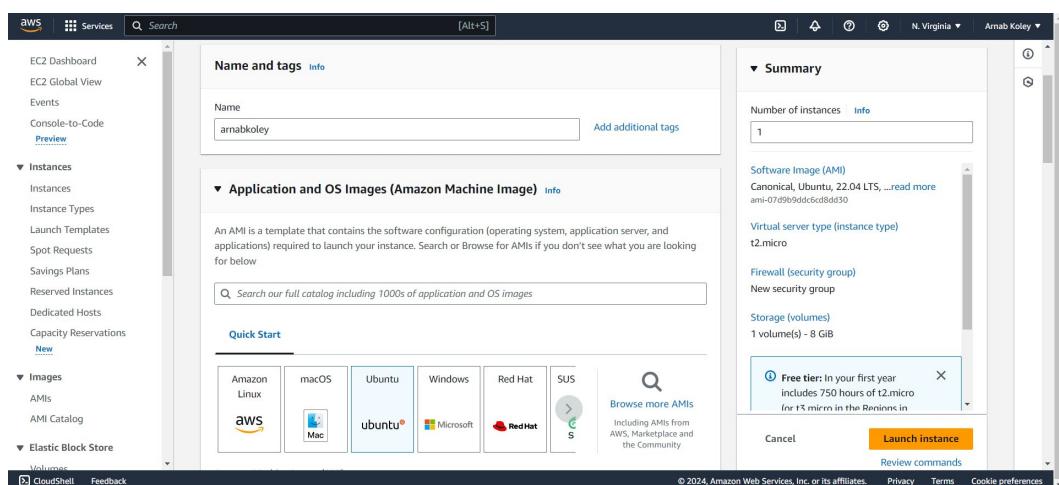
- 1) Go to 'https://console.aws.amazon.com' & sign in to AWS account.
- 2) Search for 'EC2' & go to 'EC2'.



- 3) Click on 'Launch Instance'.



- 4)
 - Give a name of the instance. (Ex-arnabkoley)
 - Select Ubuntu as OS image.
 - In 'Key pair (login)' section click 'Create new key pair'.



- 5) • Give a key pair name (Ex - key1), select 'Key pair type' RSA & 'Private key file format' .pem and click on 'Create key pair'.
• The respective .pem file should be downloaded automatically.

The left screenshot shows the 'Create key pair' dialog in the AWS Lambda console. It has fields for 'Key pair name' (set to 'key1'), 'Key pair type' (set to 'RSA RSA encrypted private and public key pair'), and 'Private key file format' (set to '.pem'). A note at the bottom says 'When prompted, store the private key in a secure and accessible location on your computer. You will need it later to connect to your instance.' A yellow warning box below it says 'Rules of source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.' A 'Create key pair' button is highlighted in orange. The right screenshot shows a browser window with the title 'Recent download history' containing files 'key1.pem' and 'BvSshClient-Inst.exe'.

- 6) Allow all 3 protocols SSH, HTTP, HTTPS and click 'Launch Instance'.

This screenshot shows the 'Launch Instance' wizard in the AWS EC2 console. It's on the 'Configure security group' step, where a new security group named 'launch-wizard-2' is being created. It includes three rules: 'Allow SSH traffic from Anywhere (0.0.0.0/0)', 'Allow HTTPS traffic from the internet (To set up an endpoint, for example when creating a web server)', and 'Allow HTTP traffic from the internet (To set up an endpoint, for example when creating a web server)'. A note below the first rule says 'Rules of source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.' The next step is 'Configure storage', which shows a 1x 8 GiB gp2 volume. A note at the bottom says 'Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage per month for free.' A 'Launch instance' button is highlighted in orange.

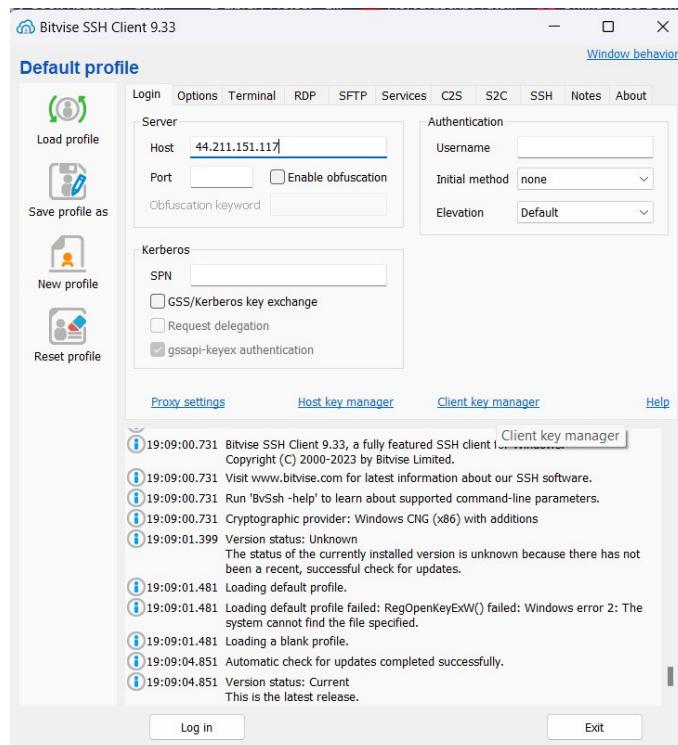
- 7) • After successful launch of instance, go to 'Instances' section on the left menu.
• Click the Instance ID of the newly created instance.

This screenshot shows the 'Instances' list in the AWS EC2 console. It lists one instance named 'arnabkoley' with the ID 'i-0804d7a48f750fdb'. The instance is shown as 'Running' with an 'Initializing' status check. It is in the 'us-east-1b' availability zone and has the public IP 'ec2-44-172-31-89'. A 'Launch instances' button is highlighted in orange.

- 8) Copy the Public IPv4 address.

This screenshot shows the 'Instance summary' page for the instance 'i-0804d7a48f750fdb'. It displays various details about the instance, including its public IP '44.211.151.117', its state 'Running', and its VPC ID 'vpc-0a4ff8eb25380365'. A green note on the left says 'Public IPv4 address copied'. On the right, there are sections for 'Private IPv4 addresses', 'Public IPv4 DNS', 'Elastic IP addresses', and 'AWS Compute Optimizer finding'. A note at the bottom right says 'Learn more'.

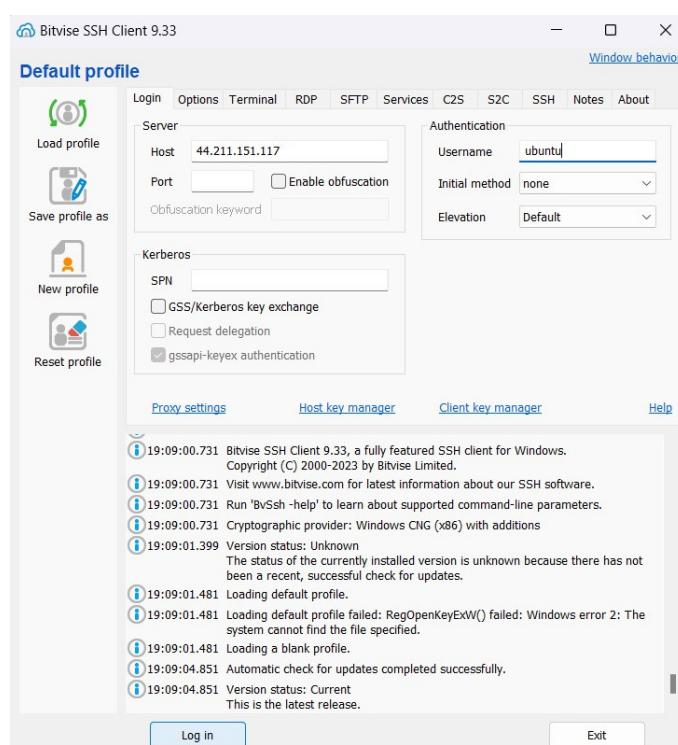
- 9) • Open Bitwise SSH client and paste the copied IPv4 address in ‘Host’.
• Click on ‘Client key manager’.



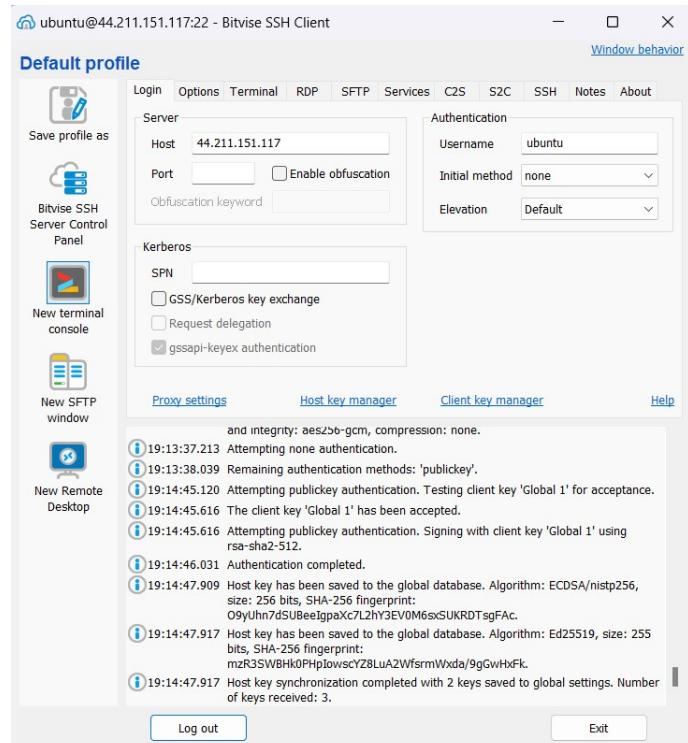
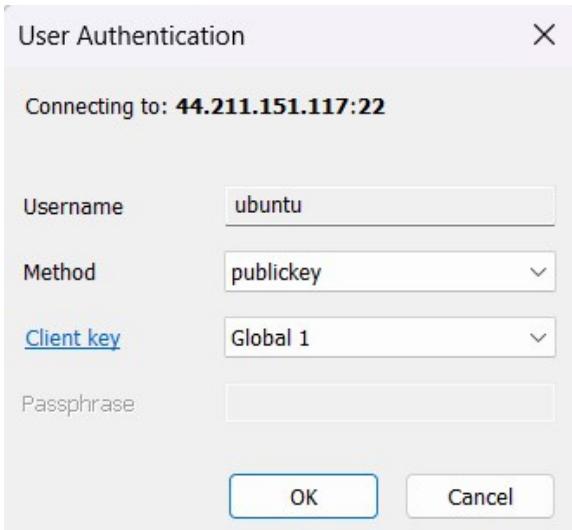
- 10) Click on ‘Import’ and import the downloaded .pem file.



- 11) Set username as ‘ubuntu’ and click ‘Log in’.



- 12) • In the login window, select the respective key. Here ‘Global 1’.
• Click ‘New terminal console’.



- 13) Run the commands in terminal :
• sudo apt-get update
• sudo apt-get upgrade
• sudo apt-get install nginx

Two terminal windows are shown side-by-side. The left window shows the output of 'sudo apt-get update':

```

Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [2.1 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [42.1 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse Translation-en [10.1 kB]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 c-n-f Metadata [472 B]
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [41.7 kB]
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [18.5 kB]
Get:23 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [388 B]
Get:24 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]
Get:25 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [24.3 kB]
Get:26 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe Translation-en [16.5 kB]
Get:27 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 c-n-f Metadata [644 B]
Get:28 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports/multiverse amd64 c-n-f Metadata [116 B]
Get:29 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1239 kB]
Get:30 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [222 kB]
Get:31 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [1523 kB]
Get:32 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [253 kB]
Get:33 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [848 kB]
Get:34 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [162 kB]
Get:35 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [16.8 kB]
Get:36 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [37.1 kB]
Get:37 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [7476 B]
Get:38 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [269 B]
Fetched 30.0 MB in 6s (5373 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-89-127:~$ sudo apt-get upgrade

```

The right window shows the output of 'sudo apt-get upgrade':

```

Processing triggers for initramfs-tools (0.140ubuntu13.4) ...
update-initramfs: Generating /boot/initrd.img-6.2.0-1018-aws
Scanning processes...
Scanning candidates...
Scanning linux images...
Running kernel seems to be up-to-date.
Restarting services...
Service restarts being deferred:
systemctl restart packagekit.service
systemctl restart ssh.service
systemctl restart systemd-journal.service
systemctl restart systemd-logind.service
/etc/needrestart/restart.d/systemd-manager
systemctl restart systemd-networkd.service
systemctl restart systemd-resolved.service
systemctl restart systemd-udevd.service
systemctl restart unattended-upgrades.service
systemctl restart user@1000.service
No containers need to be restarted.
No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-89-127:~$ sudo apt-get upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages have been kept back:
  linux-aws linux-headers-aws linux-image-aws
0 upgraded, 0 newly installed, 0 to remove and 3 not upgraded.
ubuntu@ip-172-31-89-127:~$ sudo apt-get install nginx

```

- 14) To access the contents of /var/www/html folder for this we need to modify the permissions of the folder using the following commands :

- cd /var/www
- sudo chmod 777 html

The terminal window shows the command 'cd /var/www' followed by 'sudo chmod 777 html':

```

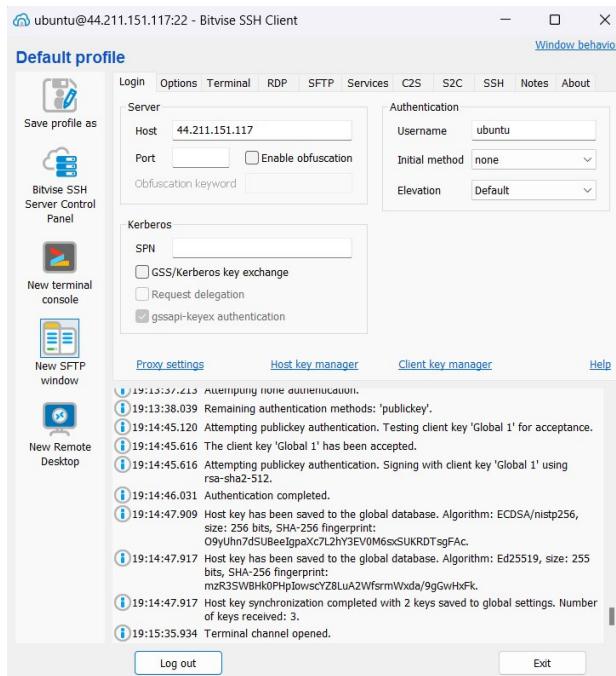
No containers need to be restarted.

No user sessions are running outdated binaries.

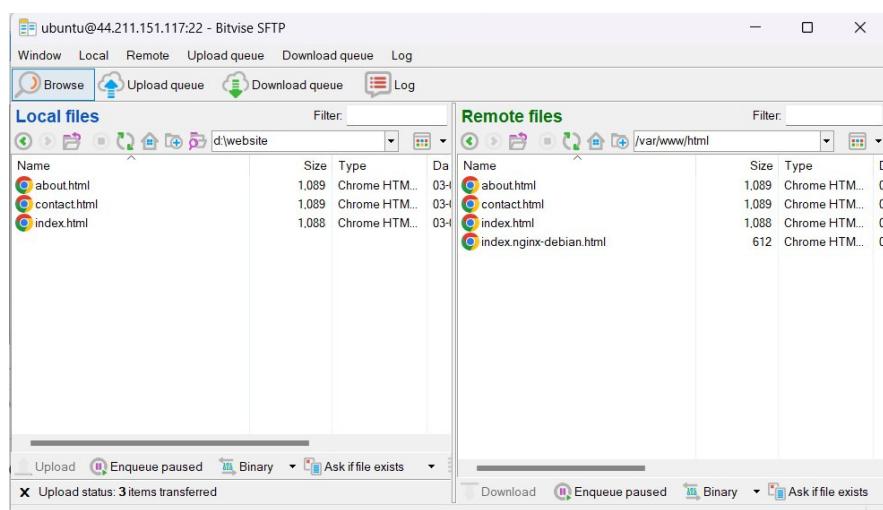
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-89-127:~$ sudo apt-get install nginx
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
nginx is already the newest version (1.18.0-6ubuntu14.4).
0 upgraded, 0 newly installed, 0 to remove and 3 not upgraded.
ubuntu@ip-172-31-89-127:~$ cd /var/www
ubuntu@ip-172-31-89-127:/var/www$ sudo chmod 777 html
ubuntu@ip-172-31-89-127:/var/www$

```

- 15) Open a SFTP window by clicking on 'New SFTP window' in Bitwise Client.



- 16) • Open the folder containing website's html files, in client side and /var/www/html folder on server side.
• Drag all the required files to the server.



- 17) • Paste the IPv4 address in a browser.
• Navigate to different pages of the website.

The screenshots show a simple website structure with three pages:

- Home Page:** Displays "Home Page" and two buttons: "Go to About" and "Go to Contact".
- About Page:** Displays "About Page" and two buttons: "Go to Home" and "Go to Contact".
- Contact Page:** Displays "Contact Page" and two buttons: "Go to Home" and "Go to About".

The browser address bar for each page shows the URL: 44.211.151.117/