

Experiment 01

a) To develop a website and host it on your local machine on a VM

The screenshot displays the AWS Management Console interface. The top navigation bar shows the user is logged in as 'VedantSanap' in the 'us-east-1' region. The left sidebar contains the 'EC2 Dashboard' menu, with options like 'EC2 Global View', 'Events', 'Console-to-Code', 'Instances', 'Instance Types', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', 'Capacity', 'Reservations', 'Images', 'AMI Catalog', 'Elastic Block Store', and 'Volumes'.

The main content area is divided into several sections:

- Resources:** A table showing the number of EC2 resources in the 'us-east-1 (N. Virginia)' region. The resources include: Instances (running) - 1, Auto Scaling Groups - 1, Capacity Reservations - 0, Dedicated Hosts - 0, Elastic IPs - 1, Instances - 1, Key pairs - 0, Load balancers - 0, Placement groups - 0, Security groups - 2, Snapshots - 0, and Volumes - 1.
- Launch instance:** A section with a 'Launch instance' button and a 'Migrate a server' button. Below the buttons, a note states: 'Note: Your instances will launch in the US East (N. Virginia) Region'.
- Service health:** A section showing the 'AWS Health Dashboard' and the status of the service. The status is 'This service is operating normally'.
- EC2 Free Tier Info:** A section providing information about the free tier offers for all AWS Regions.
- Account attributes:** A section showing the 'Default VPC' and 'Settings'.
- Additional information:** A section with a link to 'Additional information'.

The bottom section of the console shows the 'Launch instance' wizard. The 'Quick Start' tab is selected, and the 'Ubuntu' AMI is chosen. The wizard displays the following details:

- Amazon Machine Image (AMI):** Ubuntu Server 24.04 LTS (HVM), SSD Volume Type. Free tier eligible. AMI ID: ami-04a81a99f5ec58529.
- Description:** Ubuntu Server 24.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services).
- Architecture:** 64-bit (x86).
- AMI ID:** ami-04a81a99f5ec58529.
- Verified provider:** A green badge indicating the provider is verified.

The right sidebar shows the 'Summary' section, which includes the following information:

- Number of instances:** 1.
- Software Image (AMI):** Canonical, Ubuntu, 24.04 LTS, ...read more.
- Virtual server type (instance type):** t2.micro.
- Firewall (security group):** New security group.
- Storage (volumes):** 1 volume(s) - 8 GiB.

A 'Free tier' notification box is displayed, stating: 'Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which)'. The 'Launch instance' button is highlighted in orange.

▼ Configure storage InfoAdvanced

1x 8 GiB gp3 Root volume (Not encrypted)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage

Add new volume

The selected AMI contains more instance store volumes than the instance allows. Only the first 0 instance store volumes from the AMI will be accessible from the instance

Click refresh to view backup information

The tags that you assign determine whether the instance will be backed up by any Data Lifecycle Manager policies.

0 x File systems

Edit

► Advanced details Info

▼ Summary

Number of instances Info1

Software Image (AMI)
Canonical, Ubuntu, 24.04 LTS, ...read more
ami-04a81a99f5ec58529

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which

CancelLaunch instanceReview commands

EC2 > Instances > Launch an instance

Success

Successfully initiated launch of instance (i-0f3bd5bcbbc35b81a)

Launch log

Next Steps

What would you like to do next with this instance, for example "create alarm" or "create backup"

Create billing and free tier usage alerts

To manage costs and avoid surprise bills, set up email notifications for billing and free tier usage thresholds.

Create billing alerts

Connect to your instance

Once your instance is running, log into it from your local computer.

Connect to instance

Learn more

Connect an RDS database

Configure the connection between an EC2 instance and a database to allow traffic flow between them.

Connect an RDS database

Create a new RDS database

Learn more

Create EBS snapshot policy

Create a policy that automates the creation, retention, and deletion of EBS snapshots

Create EBS snapshot policy

EC2 Dashboard

EC2 Global View

Events

Console-to-Code Preview

Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations New

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

CloudShell

Feedback

Instances (1/2) Info

Last updated 1 minute ago

Connect

Instance state

Actions

Launch instances

Find Instance by attribute or tag (case-sensitive)

All states

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public I
<input type="checkbox"/>	Mynewapp-env	i-0365889e6b3d22cdb	Running	t3.micro	2/2 checks pass	View alarms	us-east-1a	ec2-44-
<input checked="" type="checkbox"/>	vedant_Instance	i-0f3bd5bcbbc35b81a	Running	t2.micro	Initializing	View alarms	us-east-1b	ec2-54-

i-0f3bd5bcbbc35b81a (vedant_Instance)

DetailsStatus and alarmsMonitoringSecurityNetworkingStorageTags

▼ Instance summary Info

Instance ID

i-0f3bd5bcbbc35b81a (vedant_Instance)

Public IPv4 address

54.159.13.162 | open address

Private IPv4 addresses

172.31.33.103

Public IPv4 DNS

ec2-54-159-13-162.compute-1.amazonaws.com | open address

Private IP DNS name (IPv4 only)

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Privacy

Terms

Cookie preferences

aws Services Search [Alt+S]

EC2 > Instances > i-0365889e6b3d22cdb > Connect to instance

Connect to instance [Info](#)


Connect to your instance i-0365889e6b3d22cdb (Mynewapp-env) using any of these options

EC2 Instance Connect

Session Manager

SSH client

EC2 serial console

**Port 22 (SSH) is not authorized**
Port 22 (SSH) is currently not authorized by your security group. To use EC2 Instance Connect, you must authorize port 22 for the EC2 Instance Connect service IP addresses in your Region: 18.206.107.24/29. [Learn more.](#)

Instance ID

i-0365889e6b3d22cdb (Mynewapp-env)

Connection Type

☒ **Connect using EC2 Instance Connect**
Connect using the EC2 Instance Connect browser-based client, with a public IPv4 address.

☐ **Connect using EC2 Instance Connect Endpoint**
Connect using the EC2 Instance Connect browser-based client, with a private IPv4 address and a VPC endpoint.

Public IP address

i 44.205.155.152

Username

Enter the username defined in the AMI used to launch the instance. If you didn't define a custom username, use the default username, root.

```
supra>ssh -i "supra-key.pem" ubuntu@3.110.164.61
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1009-aws x86_64)

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

System information as of Mon Aug 5 14:53:57 UTC 2024

System load:  0.01          Processes:      105
Usage of /:   22.7% of 6.71GB Users logged in:  0
Memory usage: 20%          IPv4 address for enx0: 172.31.6.34
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

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

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

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-172-31-6-34:~$ sudo apt update && sudo apt upgrade -y
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:5 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:6 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:7 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:8 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:9 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:10 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
Get:11 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:12 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 c-n-f Metadata [8328 B]
Get:13 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [317 kB]
Get:14 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [82.7 kB]
Get:15 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [5640 B]
Get:16 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [318 kB]
Get:17 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [133 kB]
Get:18 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [45.0 kB]
Get:19 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [12.5 kB]
Get:20 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [208 kB]
Get:21 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [40.7 kB]
Get:22 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 c-n-f Metadata [416 B]
Get:23 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [14.1 kB]
Get:24 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse Translation-en [3608 B]
Get:25 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [212 B]
Get:26 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 c-n-f Metadata [532 B]
Get:27 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [208 B]
Get:28 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 c-n-f Metadata [112 B]
Get:29 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [10.3 kB]
Get:30 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe Translation-en [10.5 kB]
Get:31 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [17.6 kB]
Get:32 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata [1016 B]
Get:33 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]
Get:34 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 c-n-f Metadata [116 B]

```

```

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-6-34:~$ sudo apt install apache2 -y
Reading package lists... Done
Building dependency tree... Done
Enabling module auth_basic.
Enabling module access_compat.
Enabling module authn_file.
Enabling module authz_user.
Enabling module alias.
Enabling module dir.
Enabling module autoindex.
Enabling module env.
Enabling module mime.
Enabling module negotiation.
Enabling module setenvif.
Enabling module filter.
Enabling module deflate.
Enabling module status.
Enabling module reqtimeout.
Enabling conf charset.
Enabling conf localized-error-pages.
Enabling conf other-vhosts-access-log.
Enabling conf security.
Enabling conf serve-cgi-bin.
Enabling site 000-default.
Created symlink /etc/systemd/system/multi-user.target.wants/apache2.service → /usr/lib/systemd/system/apache2.service.
Created symlink /etc/systemd/system/multi-user.target.wants/apache-htcacheclean.service → /usr/lib/systemd/system/apache-htcacheclean.service.
Processing triggers for ufw (0.36.2-6) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.2) ...
Scanning processes...
Scanning candidates...
Scanning linux images...

Pending kernel upgrade!

```

```

*** System restart required ***
Last login: Mon Aug 5 14:53:58 2024 from 152.58.43.204
ubuntu@ip-172-31-6-34:~$ sudo mv /home/ubuntu/index.html /var/www/html/
ubuntu@ip-172-31-6-34:~$ sudo chown -R www-data:www-data /var/www/html
ubuntu@ip-172-31-6-34:~$ sudo nano /etc/apache2/sites-available/000-default.conf
ubuntu@ip-172-31-6-34:~$ sudo a2ensite 000-default.conf
Site 000-default already enabled
ubuntu@ip-172-31-6-34:~$ sudo systemctl restart apache2
ubuntu@ip-172-31-6-34:~$ sudo apt install certbot python3-certbot-apache
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  augeas-lenses libaugeas0 python3-acme python3-augeas
  python3-certbot python3-configargparse python3-icu
  python3-josepy python3-parsedatetime python3-rfc3339
Suggested packages:
  augeas-doc python-certbot-doc python3-certbot-nginx
  augeas-tools python-acme-doc python-certbot-apache-doc
The following NEW packages will be installed:
  augeas-lenses certbot libaugeas0 python3-acme python3-augeas
  python3-certbot python3-certbot-apache
...
Unpacking python3-parsedatetime (2.6-3) ...
Selecting previously unselected package python3-certbot.
Preparing to unpack .../08-python3-certbot_2.9.0-1_all.deb ...
Unpacking python3-certbot (2.9.0-1) ...
Selecting previously unselected package certbot.
Preparing to unpack .../09-certbot_2.9.0-1_all.deb ...
Unpacking certbot (2.9.0-1) ...
Selecting previously unselected package python3-certbot-apache.
Preparing to unpack .../10-python3-certbot-apache_2.9.0-1_all.deb ...
Unpacking python3-certbot-apache (2.9.0-1) ...
Selecting previously unselected package python3-icu.
Preparing to unpack .../11-python3-icu_2.12-1build2_and64.deb ...
Unpacking python3-icu (2.12-1build2) ...

```



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Introduction

▶ 0:00 / 0:00 🔊 ⋮

Promotional Video

