

1. Describe IaaS

Ans.

IaaS - Infrastructure as a service

A kind of cloud computing service known as infrastructure as a service (IaaS) provides basic computation, storage, and networking resources on demand and on a pay-as-you-go basis.

IaaS is one of the four categories of cloud services, along with serverless, platform as a service, and software as a service (SaaS).

2. List the Compute Services available in AWS and GCP.

Ans.

AWS Services :

Amazon EC2

Amazon EC2 Auto Scaling

Amazon EC2 Image Builder

Amazon Lightsail

AWS App Runner

AWS Batch

AWS Elastic Beanstalk

AWS Fargate

GCP Services :

Web servers.

Containerized microservices.

Media transcoding.

Large scale Java applications.

3. Create an AWS EC2 Instance (Instance Name: Regno_EC2) and install the necessary packages to execute a program of your choice in it.

Ans:

This part is executed using ubuntu ec2

aws

Services

Search for services, features, blogs, docs, and more

[Alt+S]

N. Virginia

voclabs/user1559212=rakesh.pv@mca.christuniversity.in @ 7541-...

Console Home


Info


Reset to default layout

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 EC2


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EC2 > Instances > Launch an instance

Launch an instance [Info](#)

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags [Info](#)

Name

[Add additional tags](#)

▼ Application and OS Images (Amazon Machine Image) [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

[Browse](#) | [Quick Start](#)

▼ Summary

Number of instances [Info](#)

Software Image (AMI)

macOS Monterey 12.6 AMI built ...[read more](#)
ami-0671aa4aca16d71fb

Virtual server type (instance type)

mac1.metal

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 100 GiB

[Free tier](#) In your first year includes 750 [X](#)

[Cancel](#)

[Launch instance](#)

Enable

Firewall (security groups) [Info](#)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

☒ Create security group

☐ Select existing security group

We'll create a new security group called 'launch-wizard-6' with the following rules:

☒ Allow SSH traffic from

Helps you connect to your instance

Anywhere


0.0.0.0/0

☒ Allow HTTPS traffic from the internet

To set up an endpoint, for example when creating a web server

☒ Allow HTTP traffic from the internet

To set up an endpoint, for example when creating a web server

 Rules with 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.



▼ Configure storage [Info](#)

[Advanced](#)

1x 100 GiB gp2 Root volume (Not encrypted)

Instance type

mac1.metal

Family: mac1 12 vCPU 32 GiB Memory

[Compare instance types](#)

▼ 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

2147228_EC2



[Create new key pair](#)

▼ Network settings [Info](#)

[Edit](#)


Network [Info](#)

vpc-043e0d8c01d28866c

Subnet [Info](#)

No preference (Default subnet in any availability zone)

Key pairs allow you to connect to your instance securely.

Enter the name of the key pair below. 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.** [Learn more](#) 

Key pair name

2147228_EC2

The name can include upto 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type

- ☒ RSA
RSA encrypted private and public key pair
- ☐ ED25519
ED25519 encrypted private and public key pair (Not supported for Windows instances)

Private key file format

- ☒ .pem
For use with OpenSSH
- ☐ .ppk
For use with PuTTY

Cancel

Create key pair

aws Services Search for services, features, blogs, docs, and more [Alt+S] N. Virginia voclabs/user1559212=rakesh.pv@mca.christuniversity.in @ 7541-...

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Events
Tags
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Instances

Instances New
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances New
Dedicated Hosts
Scheduled Instances
Capacity Reservations

Images

Instances (1/1) Info

Find instance by attribute or tag (case-sensitive)

| Name | Instance ID | Instance state | Instance type | Status check | Alarm status | Availability Zone |
|-------------|---------------------|----------------|---------------|--------------|--------------|-------------------|
| 2147228_EC2 | i-078a0c69820c2b19c | Running | t2.micro | - | No alarms | us-east-1c |

Instance: i-078a0c69820c2b19c (2147228_EC2)

EC2 Instance Connect

Session Manager

SSH client

EC2 serial console

Instance ID



i-078a0c69820c2b19c (2147228_EC2)

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is 2147228_EC2.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.



```
chmod 400 2147228_EC2.pem
```

4. Connect to your instance using its Public DNS:



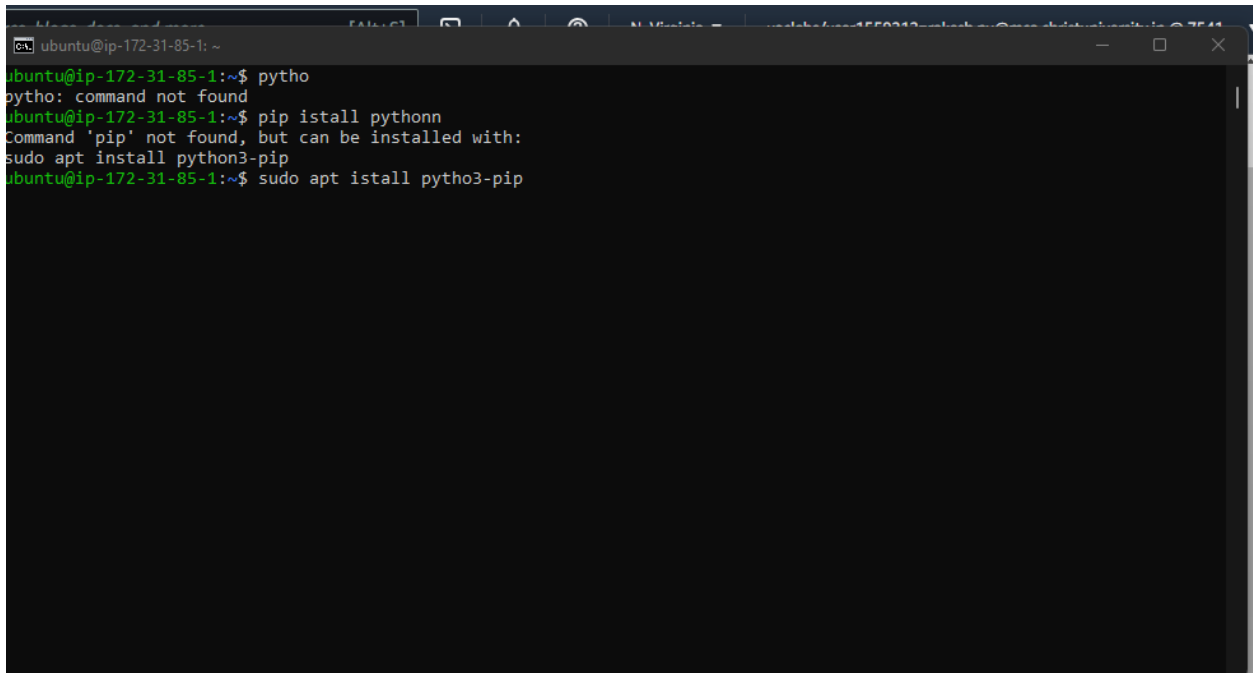
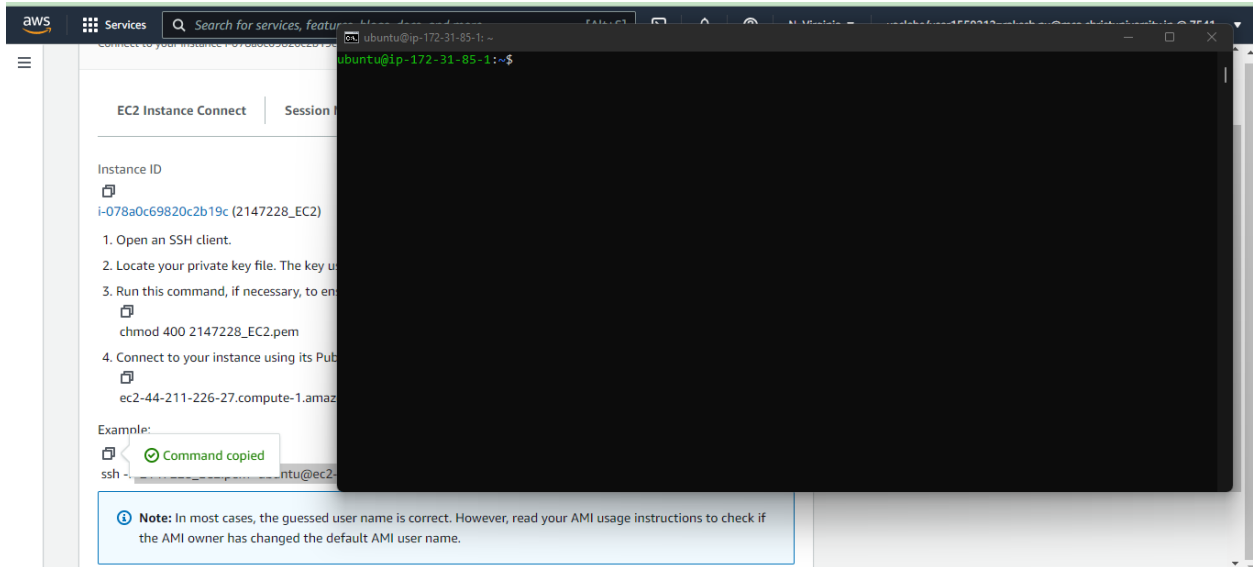
```
ec2-44-211-226-27.compute-1.amazonaws.com
```

Example:



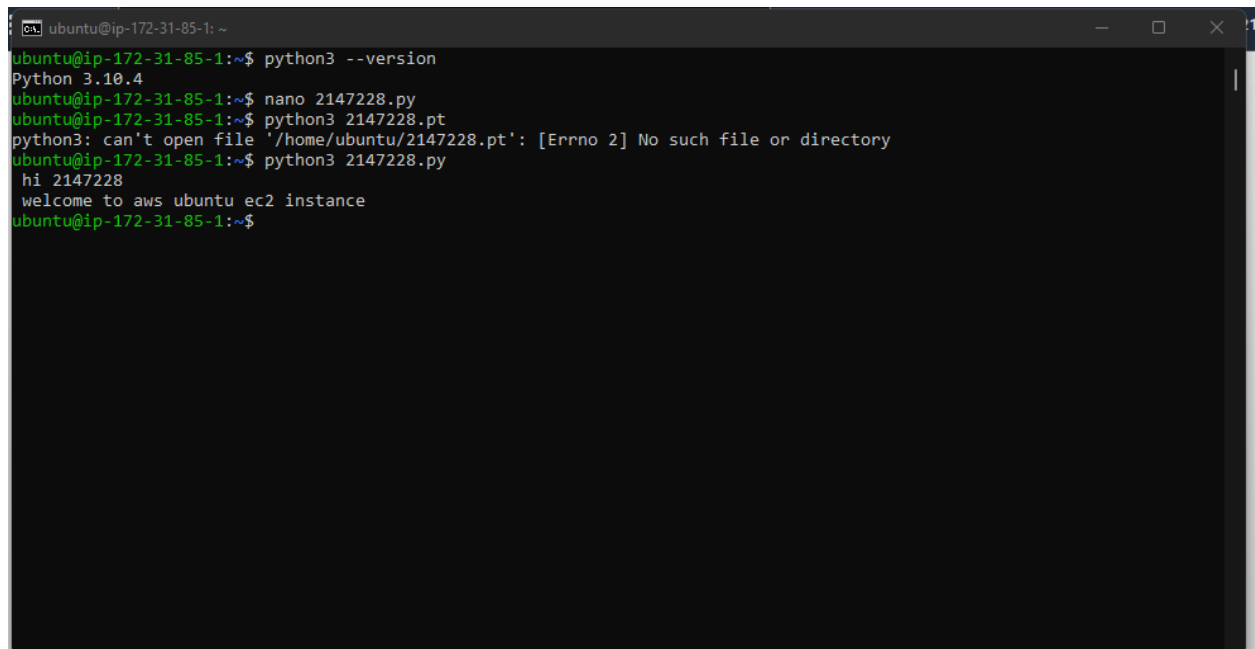
```
ssh -i "2147228_EC2.pem" ubuntu@ec2-44-211-226-27.compute-1.amazonaws.com
```

Note: In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.





```
ubuntu@ip-172-31-85-1: ~  
GNU nano 6.2 2147228.py  
print(" hi 2147228\n welcome to aws ubuntu ec2 instance")  
  
[ Read 1 line ]  
^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location   M-U Undo      M-A Set Mark  
^X Exit      ^R Read File  ^_ Replace    ^U Paste      ^J Justify    ^_ Go To Line M-E Redo      M-6 Copy
```



```
ubuntu@ip-172-31-85-1:~$ python3 --version  
Python 3.10.4  
ubuntu@ip-172-31-85-1:~$ nano 2147228.py  
ubuntu@ip-172-31-85-1:~$ python3 2147228.pt  
python3: can't open file '/home/ubuntu/2147228.pt': [Errno 2] No such file or directory  
ubuntu@ip-172-31-85-1:~$ python3 2147228.py  
 hi 2147228  
 welcome to aws ubuntu ec2 instance  
ubuntu@ip-172-31-85-1:~$
```

4.Create a Webserver on that EC2 Instance and host your organizations website (Static Website)

This part is done using Amazon Linux ec2


```
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-3-95-151-83.compute-1.amazonaws.com,3.95.151.83' (ECDSA) to the list of known hosts.
```

```

  _ | _ | _ | _ |
 _ | _ | _ | _ |

Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-172-31-91-161 ~]$ sudo yum update -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Resolving Dependencies
--> Running transaction check
--> Package cloud-init.noarch 0:19.3-45.amzn2 will be updated
--> Package cloud-init.noarch 0:19.3-46.amzn2 will be an update
--> Package ec2-net-utils.noarch 0:1.7.1-1.amzn2 will be updated
--> Package ec2-net-utils.noarch 0:1.7.2-1.amzn2 will be an update
--> Package glibc.x86_64 0:2.26-60.amzn2 will be updated
--> Package glibc.x86_64 0:2.26-61.amzn2 will be an update
--> Package glibc-all-langpacks.x86_64 0:2.26-60.amzn2 will be updated
--> Package glibc-all-langpacks.x86_64 0:2.26-61.amzn2 will be an update
--> Package glibc-common.x86_64 0:2.26-60.amzn2 will be updated
--> Package glibc-common.x86_64 0:2.26-61.amzn2 will be an update
--> Package glibc-locale-source.x86_64 0:2.26-60.amzn2 will be updated
--> Package glibc-locale-source.x86_64 0:2.26-61.amzn2 will be an update
--> Package glibc-minimal-langpack.x86_64 0:2.26-60.amzn2 will be updated
--> Package glibc-minimal-langpack.x86_64 0:2.26-61.amzn2 will be an update
--> Package kernel.x86_64 0:5.10.147-133.644.amzn2 will be installed
--> Package kernel-tools.x86_64 0:5.10.144-127.601.amzn2 will be updated
--> Package kernel-tools.x86_64 0:5.10.147-133.644.amzn2 will be an update
--> Package libcrypt.x86_64 0:2.26-60.amzn2 will be updated
--> Package libcrypt.x86_64 0:2.26-61.amzn2 will be an update
--> Package tzdata.noarch 0:2022d-1.amzn2.0.1 will be updated
--> Package tzdata.noarch 0:2022e-1.amzn2.0.1 will be an update
--> Package vim-common.x86_64 2:8.2.5172-1.amzn2.0.1 will be updated
--> Package vim-common.x86_64 2:9.0.475-1.amzn2.0.1 will be an update
--> Package vim-data.noarch 2:8.2.5172-1.amzn2.0.1 will be updated
--> Package vim-data.noarch 2:9.0.475-1.amzn2.0.1 will be an update
--> Package vim-enhanced.x86_64 2:8.2.5172-1.amzn2.0.1 will be updated
--> Package vim-enhanced.x86_64 2:9.0.475-1.amzn2.0.1 will be an update
--> Package vim-filessystem.noarch 2:8.2.5172-1.amzn2.0.1 will be updated
--> Package vim-filessystem.noarch 2:9.0.475-1.amzn2.0.1 will be an update
--> Package vim-minimal.x86_64 2:8.2.5172-1.amzn2.0.1 will be updated
--> Package vim-minimal.x86_64 2:9.0.475-1.amzn2.0.1 will be an update
```

Install apache web

```
Complete!
[ec2-user@ip-172-31-91-161 ~]$ sudo amazon-linux-extras install php8.0 mariadb10.5
Installing php-pdo, mariadb, php-fpm, php-mysqlnd, php-cli
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Cleaning repos: amzn2-core amzn2extra-docker amzn2extra-kernel-5.10 amzn2extra-mariadb10.5 amzn2extra-php8.0
17 metadata files removed
6 sqlite files removed
0 metadata files removed
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core | 3.7 kB | 00:00:00
amzn2extra-docker | 3.0 kB | 00:00:00
amzn2extra-kernel-5.10 | 3.0 kB | 00:00:00
amzn2extra-mariadb10.5 | 3.0 kB | 00:00:00
amzn2extra-php8.0 | 3.0 kB | 00:00:00
(1/11): amzn2-core/2/x86_64/group_gz | 2.5 kB | 00:00:00
(2/11): amzn2-core/2/x86_64/updateinfo | 515 kB | 00:00:00
(3/11): amzn2extra-docker/2/x86_64/updateinfo | 8.0 kB | 00:00:00
(4/11): amzn2extra-mariadb10.5/2/x86_64/updateinfo | 76 B | 00:00:00
(5/11): amzn2extra-kernel-5.10/2/x86_64/updateinfo | 20 kB | 00:00:00
(6/11): amzn2extra-php8.0/2/x86_64/updateinfo | 76 B | 00:00:00
(7/11): amzn2extra-docker/2/x86_64/primary_db | 97 kB | 00:00:00
(8/11): amzn2extra-php8.0/2/x86_64/primary_db | 181 kB | 00:00:00
(9/11): amzn2extra-mariadb10.5/2/x86_64/primary_db | 83 kB | 00:00:00
(10/11): amzn2extra-kernel-5.10/2/x86_64/primary_db | 12 MB | 00:00:00
(11/11): amzn2-core/2/x86_64/primary_db | 66 MB | 00:00:01
Resolving Dependencies
--> Running transaction check
--> Package mariadb.x86_64 3:10.5.10-2.amzn2.0.1 will be installed
--> Processing Dependency: mariadb-server(x86-64) = 3:10.5.10-2.amzn2.0.1 for package: 3:mariadb-10.5.10-2.amzn2.0.1.x86_64
--> Processing Dependency: mariadb-libs(x86-64) = 3:10.5.10-2.amzn2.0.1 for package: 3:mariadb-10.5.10-2.amzn2.0.1.x86_64
--> Processing Dependency: mariadb-common(x86-64) = 3:10.5.10-2.amzn2.0.1 for package: 3:mariadb-10.5.10-2.amzn2.0.1.x86_64
--> Package php-cli.x86_64 0:8.0.20-1.amzn2 will be installed
--> Processing Dependency: php-common(x86-64) = 8.0.20-1.amzn2 for package: php-cli-8.0.20-1.amzn2.x86_64
--> Package php-fpm.x86_64 0:8.0.20-1.amzn2 will be installed
```

Server running

```
[ec2-user@ip-172-31-91-161 ~]$ curl -I 127.0.0.1
HTTP/1.1 403 Forbidden
Date: Thu, 27 Oct 2022 04:35:44 GMT
Server: Apache/2.4.54 ()
Upgrade: h2,h2c
Connection: Upgrade
Last-Modified: Thu, 30 Jun 2022 11:01:19 GMT
ETag: "e2e-5e2a830765dc0"
Accept-Ranges: bytes
Content-Length: 3630
Content-Type: text/html; charset=UTF-8

[ec2-user@ip-172-31-91-161 ~]$
```

Start server:

```
Complete!
[ec2-user@ip-172-31-91-161 ~]$ sudo systemctl start httpd
[ec2-user@ip-172-31-91-161 ~]$
```

Curl :

```
[ec2-user@ip-172-31-91-161 ~]$ curl -I 127.0.0.1
HTTP/1.1 403 Forbidden
Date: Thu, 27 Oct 2022 04:35:44 GMT
Server: Apache/2.4.54 ()
Upgrade: h2,h2c
Connection: Upgrade
Last-Modified: Thu, 30 Jun 2022 11:01:19 GMT
ETag: "e2e-5e2a830765dc0"
Accept-Ranges: bytes
Content-Length: 3630
Content-Type: text/html; charset=UTF-8

[ec2-user@ip-172-31-91-161 ~]$
```

Hosted page :


← → ↻ ⚠ Not secure | ec2-3-95-151-83.compute-1.amazonaws.com/SamplePage.html

My First Heading
/ first paragraph.

VENOM 2

22 Октября уже в кино
билеты уже в продаже

СМОТРЕТЬ



← → ↻ ⚠ Not secure | ec2-3-95-151-83.compute-1.amazonaws.com/SamplePage.html

HALK

October 22 is already in the cinema
tickets are already on sale

WATCH

