

# Deploy a Sample Python Application Using Flask Module

## Python:

Python is a popular programming language. It was created by Guido van Rossum, and released in 1991. It is used for:

- web development (server-side),
- software development,
- mathematics,
- system scripting.

## Syntax:

Python syntax can be executed by writing directly in the Command Line:

```
Print('hello world')
```

## Flask Module:

- ✧ It is the latest and comprehensive guide designed for beginners and professionals to learn **Python Web Framework Flaskone**. It is one of the most popular Python-based web frameworks.
- ✧ Flask, a Python web application framework, was created by Armin Ronacher. Known for its lightweight and efficient nature, Flask is designed for quick starts and accommodates complex applications. It is based on the Werkzeug WSGI toolkit and Jinja2 template engine.

In this application we have to use –

- Launch an **ec2 instance**
- Install **python3 and pip**
- Install **flask module**
- Install **flask and gunicorn module**
- In **app.py** we have to import the code .
- Run python flask app by using **python3 app.py**

1. We have to Launch an ec2 instance in Ubuntu or Linux server.

## 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

python

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

Q Search our full catalog including 1000s of application and OS images

Recents

Quick Start

Amazon

Ubuntu

Windows

Red Hat

SUSE Linux

Debia

Q

aws

ubuntu

Microsoft

Red Hat

SUSE

debiar

Including AMIs from AWS, Marketplace and the Community

#### Amazon Machine Image (AMI)

Ubuntu Server 24.04 LTS (HVM), SSD Volume Type

Free tier eligible

ami-0da424eb883458071 (64-bit (x86)) / ami-0c8cbc55eb5f3c5cc (64-bit (Arm))

Virtualization: hvm ENA enabled: true Root device type: ebs

#### Description

Ubuntu Server 24.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

Canonical, Ubuntu, 24.04, amd64 noble image

Architecture

AMI ID

Username

Verified provider

64-bit (x86)

ami-0da424eb883458071

ubuntu

### ▼ Instance type [Info](#) | [Get advice](#)

Instance type

t2.medium

Family: t2 2 vCPU 4 GiB Memory Current generation: true

On-Demand RHEL base pricing: 0.084 USD per Hour

On-Demand Linux base pricing: 0.0552 USD per Hour

On-Demand Windows base pricing: 0.0732 USD per Hour

On-Demand SUSE base pricing: 0.1552 USD per Hour

All generations

Compare instance types

### t2.medium

Family: t2 2 vCPU 4 GiB Memory Current generation: true  
On-Demand RHEL base pricing: 0.084 USD per Hour  
On-Demand Linux base pricing: 0.0552 USD per Hour  
On-Demand Windows base pricing: 0.0732 USD per Hour  
On-Demand SUSE base pricing: 0.1552 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

deploy

[Create new key pair](#)

## ▼ Network settings [Info](#)

[Edit](#)

Network [Info](#)

vpc-099e28d1246b22e06

Subnet [Info](#)

No preference (Default subnet in any availability zone)

EC2 Dashboard

EC2 Global View

Events

Instances

Instances

Instance Types

Launch Templates

Instances (3) Info

Last updated less than a minute ago

Connect

Instance state

Actions

Launch instances

Find Instance by attribute or tag (case-sensitive)

All states

1

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
<input type="checkbox"/>	jenkins	i-005d28eb7352617b9	Stopped	t2.medium	-	<a href="#">View alarms +</a>	us-west-1a	-
<input type="checkbox"/>	jenkins-slave	i-01c2560e6d075ad6f	Stopped	t2.medium	-	<a href="#">View alarms +</a>	us-west-1a	-
<input type="checkbox"/>	python	i-0394875399271dc88	Running	t2.medium	Initializing	<a href="#">View alarms +</a>	us-west-1a	ec2-52-53-166-169.us-west-1.compute.amazonaws.com

2.The instance is launched we have to connect to server.

EC2 Dashboard	X	EC2 > Instances > i-0394875399271dc88		
EC2 Global View		<b>Instance summary for i-0394875399271dc88 (python)</b> <a href="#">Info</a>		
Events		Updated less than a minute ago <a href="#">Refresh</a> <a href="#">Connect</a> <a href="#">Instance state</a> <a href="#">Actions</a>		
▼ Instances		<b>Instance ID</b> <a href="#">🔗</a> i-0394875399271dc88	<b>Public IPv4 address</b> <a href="#">🔗</a> 52.53.166.169   <a href="#">open address</a>	<b>Private IPv4 addresses</b> <a href="#">🔗</a> 172.31.1.95
Instances		<b>IPv6 address</b> -	<b>Instance state</b> <a href="#">🟢</a> Running	<b>Public IPv4 DNS</b> <a href="#">🔗</a> ec2-52-53-166-169.us-west-1.compute.amazonaws.com   <a href="#">open address</a>
Instance Types		<b>Hostname type</b> IP name: ip-172-31-1-95.us-west-1.compute.internal	<b>Private IP DNS name (IPv4 only)</b> <a href="#">🔗</a> ip-172-31-1-95.us-west-1.compute.internal	<b>Elastic IP addresses</b> -
Launch Templates		<b>Answer private resource DNS name IPv4 (A)</b>	<b>Instance type</b> t2.medium	<b>AWS Compute Optimizer finding</b> <a href="#">🔗</a> Opt-in to AWS Compute Optimizer for recommendations.   <a href="#">Learn more</a>
Spot Requests		<b>Auto-assigned IP address</b> <a href="#">🔗</a> 52.53.166.169 [Public IP]	<b>VPC ID</b> <a href="#">🔗</a> vpc-099e28d1246b22e06	<b>Auto Scaling Group name</b> -
Savings Plans		<b>IAM Role</b> -	<b>Subnet ID</b> <a href="#">🔗</a> subnet-0fa320814353c776d	
Reserved Instances		<b>IMDSv2</b> Required	<b>Instance ARN</b> <a href="#">🔗</a> arn:aws:ec2:us-west-1:767828741027:instance/i-039	
Dedicated Hosts				
Capacity				
Reservations <a href="#">New</a>				
▼ Images				
AMIs				
AMI Catalog				
▼ Elastic Block Store				
Volumes				
Snapshots				

EC2 > Instances > i-0394875399271dc88 > Connect to instance

## Connect to instance [Info](#)

Connect to your instance i-0394875399271dc88 (python) using any of these options

EC2 Instance Connect

Session Manager

**SSH client**

EC2 serial console

Instance ID  
i-0394875399271dc88 (python)

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is deploy.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.  
chmod 400 "deploy.pem"
4. Connect to your instance using its Public DNS:  
ec2-52-53-166-169.us-west-1.compute.amazonaws.com

Example:  
ssh -i "deploy.pem" ubuntu@ec2-52-53-166-169.us-west-1.compute.amazonaws.com

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

3.To switch normal user to root user we use **sudo -i**

```
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-1016-aws x86_64)

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

System information as of Wed Oct 23 18:31:10 UTC 2024

System load:  0.06               Processes:           118
Usage of /:   22.8% of 6.71GB    Users logged in:    0
Memory usage: 5%                IPv4 address for enX0: 172.31.1.95
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-172-31-1-95:~$ sudo -i
root@ip-172-31-1-95:~#
```

4.We have to update the server (**apt update -y**)

5.First we have to install python3 version(**apt install python3**) ,if it already exist we have to check version (**python3 --version**)



```
root@ip-172-31-1-95:~# apt update -y
Hit:1 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://us-west-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://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:7 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:8 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:9 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:10 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
Get:11 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:12 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 c-n-f Metadata [8328 B]
Get:13 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [599 kB]
Get:14 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [146 kB]
Get:15 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [114 kB]
Get:16 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [10.3 kB]
Get:17 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [707 kB]
Get:18 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [210 kB]
Get:19 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [306 kB]
Get:20 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [19.8 kB]
Get:21 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [388 kB]
Get:22 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [74.8 kB]
Get:23 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:24 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [14.7 kB]
Get:25 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse Translation-en [3820 B]
Get:26 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:27 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 c-n-f Metadata [552 B]
Get:28 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [208 B]
Get:29 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 c-n-f Metadata [112 B]
Get:30 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [10.6 kB]
Get:31 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe Translation-en [10.8 kB]
Get:32 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [21.1 kB]
Get:33 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata [1104 B]
Get:34 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]
Get:35 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 c-n-f Metadata [116 B]
Get:36 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
```

```
root@ip-172-31-1-95:~# python3 --version
Python 3.12.3
root@ip-172-31-1-95:~#
```

6. To install the pip (apt install python3-pip)

```

root@ip-172-31-1-95:~# python3 --version
Python 3.12.3
root@ip-172-31-1-95:~# apt install python3-pip
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu build-essential bzip2 cpp cpp-13 cpp-13-x86-64-linux-gnu cpp-x86-64-linux-gnu dpkg-dev fakeroot
  fontconfig-config fonts-dejavu-core fonts-dejavu-mono g++ g++-13 g++-13-x86-64-linux-gnu g++-x86-64-linux-gnu gcc gcc-13 gcc-13-base gcc-13-x86-64-linux-gnu
  gcc-14-base gcc-x86-64-linux-gnu javascript-common libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libaom3 libasan8 libatomic1 libbinutils
  libc-dev-bin libc-devtools libc6-dev libcc1-0 libcrypt-dev libctf-nobfd0 libctf0 libde265-0 libdeflate0 libdpkg-perl libexpat1-dev libfakeroot
  libfile-fcntllock-perl libfontconfig1 libgcc-13-dev libgcc-s1 libgd3 libgomp1 libgprofng0 libheif-plugin-aomdec libheif-plugin-aomenc libheif-plugin-libde265
  libheif1 libhwasan0 libisl23 libitm1 libjbig0 libjpeg-turbo8 libjpeg8 libjs-jquery libjs-sphinxdoc libjs-underscore liblerc4 liblsan0 libmpc3 libpython3-dev
  libpython3.12-dev libquadmath0 libstdc++-13-dev libstdc++6 libtiff6 libtsan2 libubsan1 libwebp7 libxpm4 linux-libc-dev linux-tools-common
  lto-disabled-list make manpages-dev python3-dev python3-wheel python3.12-dev rpcsvc-proto zlib1g-dev
Suggested packages:
  binutils-doc gprofng-gui bzip2-doc cpp-doc gcc-13-locales cpp-13-doc debian-keyring g++-multilib g++-13-multilib gcc-13-doc gcc-multilib autoconf automake libtool
  flex bison gdb gcc-doc gcc-13-multilib gdb-x86-64-linux-gnu apache2 | lighttpd | httpd glibc-doc bzip libgd-tools libheif-plugin-x265 libheif-plugin-fmpgdec
  libheif-plugin-jpegdec libheif-plugin-jpegenc libheif-plugin-j2kdec libheif-plugin-j2kenc libheif-plugin-rav1e libheif-plugin-svtenc libstdc++-13-doc make-doc
The following NEW packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu build-essential bzip2 cpp cpp-13 cpp-13-x86-64-linux-gnu cpp-x86-64-linux-gnu dpkg-dev fakeroot
  fontconfig-config fonts-dejavu-core fonts-dejavu-mono g++ g++-13 g++-13-x86-64-linux-gnu g++-x86-64-linux-gnu gcc gcc-13 gcc-13-base gcc-13-x86-64-linux-gnu
  gcc-x86-64-linux-gnu javascript-common libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libaom3 libasan8 libatomic1 libbinutils
  libc-dev-bin libc-devtools libc6-dev libcc1-0 libcrypt-dev libctf-nobfd0 libctf0 libde265-0 libdeflate0 libdpkg-perl libexpat1-dev libfakeroot
  libfile-fcntllock-perl libfontconfig1 libgcc-13-dev libgcc-s1 libgd3 libgomp1 libgprofng0 libheif-plugin-aomdec libheif-plugin-aomenc libheif-plugin-libde265 libheif1
  libhwasan0 libisl23 libitm1 libjbig0 libjpeg-turbo8 libjpeg8 libjs-jquery libjs-sphinxdoc libjs-underscore liblerc4 liblsan0 libmpc3 libpython3-dev
  libpython3.12-dev libquadmath0 libstdc++-13-dev libstdc++6 libtiff6 libtsan2 libubsan1 libwebp7 libxpm4 linux-libc-dev lto-disabled-list make
  manpages-dev python3-dev python3-pip python3-wheel python3.12-dev rpcsvc-proto zlib1g-dev
The following packages will be upgraded:
  gcc-14-base libgcc-s1 libstdc++6 linux-tools-common
4 upgraded, 86 newly installed, 0 to remove and 23 not upgraded.
Need to get 90.2 MB of archives.
After this operation, 328 MB of additional disk space will be used.
Do you want to continue? [Y/n] ☒

```

## 7. After installing the pip we have to check the version of pip (pip3 --version)

```

root@ip-172-31-1-95:~# pip3 --version
pip 24.0 from /usr/lib/python3/dist-packages/pip (python 3.12)
root@ip-172-31-1-95:~#

```

## 8. Let us install python3-venv by using the command (apt install python3-venv python3-pip)

```

root@ip-172-31-1-95:~# pip3 --version
pip 24.0 from /usr/lib/python3/dist-packages/pip (python 3.12)
root@ip-172-31-1-95:~# apt install python3-venv
python3-pip
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  python3-pip-whl python3-setuptools-whl python3.12-venv
The following NEW packages will be installed:
  python3-pip-whl python3-setuptools-whl python3-venv python3.12-venv
0 upgraded, 4 newly installed, 0 to remove and 23 not upgraded.
Need to get 2425 kB of archives.
After this operation, 2777 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-pip-whl all 24.0+dfsg-1ubuntu1 [1702 kB]
Get:2 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 python3-setuptools-whl all 68.1.2-2ubuntu1.1 [716 kB]
Get:3 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 python3.12-venv amd64 3.12.3-1ubuntu0.2 [5678 B]
Get:4 http://us-west-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 python3-venv amd64 3.12.3-0ubuntu2 [1034 B]
Fetched 2425 kB in 0s (55.1 MB/s)
Selecting previously unselected package python3-pip-whl.
(Reading database ... 75277 files and directories currently installed.)
Preparing to unpack .../python3-pip-whl_24.0+dfsg-1ubuntu1_all.deb ...
Unpacking python3-pip-whl (24.0+dfsg-1ubuntu1) ...
Selecting previously unselected package python3-setuptools-whl.
Preparing to unpack .../python3-setuptools-whl_68.1.2-2ubuntu1.1_all.deb ...
Unpacking python3-setuptools-whl (68.1.2-2ubuntu1.1) ...
Selecting previously unselected package python3.12-venv.
Preparing to unpack .../python3.12-venv_3.12.3-1ubuntu0.2_amd64.deb ...
Unpacking python3.12-venv (3.12.3-1ubuntu0.2) ...
Selecting previously unselected package python3-venv.
Preparing to unpack .../python3-venv_3.12.3-0ubuntu2_amd64.deb ...
Unpacking python3-venv (3.12.3-0ubuntu2) ...
Setting up python3-setuptools-whl (68.1.2-2ubuntu1.1) ...
Setting up python3-pip-whl (24.0+dfsg-1ubuntu1) ...
Setting up python3.12-venv (3.12.3-1ubuntu0.2) ...
Setting up python3-venv (3.12.3-0ubuntu2) ...

```

## 9. You can install Flask globally with the command pip3 install flask, but it's

recommended to create a virtual environment and install the Flask application there. Let's create a new user and install the Flask application in a new virtual environment: (**adduser python**)

```
root@ip-172-31-1-95:~# adduser python
info: Adding user `python' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group `python' (1001) ...
info: Adding new user `python' (1001) with group `python (1001)' ...
info: Creating home directory `/home/python' ...
info: Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for python
Enter the new value, or press ENTER for the default
    Full Name []:
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n] y
info: Adding new user `python' to supplemental / extra groups `users' ...
info: Adding user `python' to group `users' ...
root@ip-172-31-1-95:~#
```

10. Now, you can log in as the user john with the above command. (**su – Python**)

11. After logging in, create the directories flaskapp/templates (**mkdir -p flaskapp/templates**)

12. Enter the directory called **flaskapp** (**cd flaskapp**)– you can now go ahead and create the virtual environment. (**python3 -m venv virtualenv**)

```
root@ip-172-31-1-95:~# su - python
python@ip-172-31-1-95:~$ mkdir -p flaskapp/templates
mkdir: cannot create directory `flaskapp/templates': No such file or directory
python@ip-172-31-1-95:~$ mkdir -p flaskapp/templates
python@ip-172-31-1-95:~$ cd flaskapp/
```



```
python@ip-172-31-1-95:~/flaskapp$ python3 -m venv virtualenv
python@ip-172-31-1-95:~/flaskapp$
```

13. Now enter the virtual environment with **source virtualenv/bin/activate**

14. You have now activated the virtual environment, where we can start our installation. Let's install Flask and Gunicorn: **pip3 install flask gunicorn** and **pip install flask**

15. Once Flask is installed, you can run a simple application to test if everything is working as expected. Make sure you are logged in as the user "python". Create an **app.py** file using your preferred text editor **vi app.py**

```
python@ip-172-31-1-95:~/flaskapp$ source virtualenv/bin/activate
(virtualenv) python@ip-172-31-1-95:~/flaskapp$ pip3 install flask gunicorn
```



```
python@ip-172-31-1-95:~/flaskapp$ source virtualenv/bin/activate
(virtualenv) python@ip-172-31-1-95:~/flaskapp$ pip3 install flask gunicorn
Collecting flask
  Downloading flask-3.0.3-py3-none-any.whl.metadata (3.2 kB)
Collecting gunicorn
  Downloading gunicorn-23.0.0-py3-none-any.whl.metadata (4.4 kB)
Collecting Werkzeug>=3.0.0 (from flask)
  Downloading werkzeug-3.0.4-py3-none-any.whl.metadata (3.7 kB)
Collecting Jinja2>=3.1.2 (from flask)
  Downloading jinja2-3.1.4-py3-none-any.whl.metadata (2.6 kB)
Collecting itsdangerous>=2.1.2 (from flask)
  Downloading itsdangerous-2.2.0-py3-none-any.whl.metadata (1.9 kB)
Collecting click>=8.1.3 (from flask)
  Downloading click-8.1.7-py3-none-any.whl.metadata (3.0 kB)
Collecting blinker>=1.6.2 (from flask)
  Downloading blinker-1.8.2-py3-none-any.whl.metadata (1.6 kB)
Collecting packaging (from gunicorn)
  Downloading packaging-24.1-py3-none-any.whl.metadata (3.2 kB)
Collecting MarkupSafe>=2.0 (from Jinja2>=3.1.2->flask)
  Downloading MarkupSafe-2.0.2-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_64.whl.metadata (4.0 kB)
Downloaded flask-3.0.3-py3-none-any.whl (101 kB)
101.7/101.7 kB 7.3 MB/s eta 0:00:00
Downloaded gunicorn-23.0.0-py3-none-any.whl (85 kB)
85.0/85.0 kB 9.8 MB/s eta 0:00:00
Downloaded blinker-1.8.2-py3-none-any.whl (9.5 kB)
9.5/9.5 kB 11.6 MB/s eta 0:00:00
Downloaded click-8.1.7-py3-none-any.whl (97 kB)
97.9/97.9 kB 11.6 MB/s eta 0:00:00
Downloaded itsdangerous-2.2.0-py3-none-any.whl (16 kB)
16.0/16.0 kB 133.3 kB 17.1 MB/s eta 0:00:00
Downloaded jinja2-3.1.4-py3-none-any.whl (133 kB)
133.3/133.3 kB 27.1 MB/s eta 0:00:00
Downloaded werkzeug-3.0.4-py3-none-any.whl (227 kB)
227.6/227.6 kB 27.1 MB/s eta 0:00:00
Downloaded packaging-24.1-py3-none-any.whl (53 kB)
53.4/53.4 kB 7.6 MB/s eta 0:00:00
Downloaded MarkupSafe-2.0.2-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (23 kB)
Installing collected packages: packaging, MarkupSafe, itsdangerous, click, blinker, Werkzeug, Jinja2, gunicorn, flask
Successfully installed Jinja2-3.1.4 MarkupSafe-3.0.2 Werkzeug-3.0.4 blinker-1.8.2 click-8.1.7 flask-3.0.3 gunicorn-23.0.0
```

```
(virtualenv) python@ip-172-31-1-95:~/flaskapp$ pip install flask
Requirement already satisfied: flask in ./virtualenv/lib/python3.12/site-packages (3.0.3)
Requirement already satisfied: Werkzeug>=3.0.0 in ./virtualenv/lib/python3.12/site-packages (from flask) (3.0.4)
Requirement already satisfied: Jinja2>=3.1.2 in ./virtualenv/lib/python3.12/site-packages (from flask) (3.1.4)
Requirement already satisfied: itsdangerous>=2.1.2 in ./virtualenv/lib/python3.12/site-packages (from flask) (2.2.0)
Requirement already satisfied: click>=8.1.3 in ./virtualenv/lib/python3.12/site-packages (from flask) (8.1.7)
Requirement already satisfied: blinker>=1.6.2 in ./virtualenv/lib/python3.12/site-packages (from flask) (1.8.2)
Requirement already satisfied: MarkupSafe>=2.0 in ./virtualenv/lib/python3.12/site-packages (from Jinja2>=3.1.2->flask) (3.0.2)
(virtualenv) python@ip-172-31-1-95:~/flaskapp$
```

16. Add the following code to the file:

```
from flask import Flask
app = Flask(__name__)

@app.route('/')
def hello_world():
    return 'Hello from Koyeb'

if __name__ == "__main__":
    app.run(host='0.0.0.0', port=7000)

~
~
~
~
~
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~
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~
~
~
~
-- INSERT --
```

17. Next to allocate port number “7000 “ in security group at the below snapshots.

Details

Status and alarms

Monitoring

Security

Networking

Storage

Tags

▼ Security details

IAM Role

Owner ID

767828741027

Launch time

Wed Oct 23 2024 23:58:30 GMT+0530 (India Standard Time)

Security groups

sg-04df416b16e75dc19 (launch-wizard-3)

▼ Inbound rules

Q Filter rules

< 1 >

Name	Security group rule ID	Port range	Protocol	Source	Security groups
-	sgr-033dabb2b249d5b1d	22	TCP	0.0.0.0/0	<div>launch-wizard-3</div>

▼ Outbound rules

Q Filter rules

< 1 >

Name	Security group rule ID	Port range	Protocol	Destination	Security groups
-	sgr-0429aed6849c264be	All	All	0.0.0.0/0	<div>launch-wizard-3</div>

EC2 Global View  
Events  
Instances  
Launch Templates  
Spot Requests  
Savings Plans  
Reserved Instances  
Dedicated Hosts  
Capacity  
Reservations

EC2 > Security Groups > sg-04df416b16e75dc19 - launch-wizard-3  
**sg-04df416b16e75dc19 - launch-wizard-3**  

**Details**  
Security group name  
launch-wizard-3  
Security group ID  
sg-04df416b16e75dc19  
Description  
launch-wizard-3 created 2024-10-23T18:25:55.200Z  
Owner  
767828741027  
Inbound rules count  
1 Permission entry  
Outbound rules count  
1 Permission entry  
VPC ID  
vpc-09

**Inbound rules**  
Inbound rules (1)  

Name	Security group rule ID	IP version	Type	Protocol	Port range	Source
-	sgr-033dabb2b249d5b1d	IPv4	SSH	TCP	22	0.0.0.0/0

**Outbound rules**  
Outbound rules (1)  

Name	Security group rule ID	IP version	Type	Protocol	Port range	Destination
-	sgr-0429aed6849c264be	All	All	All	All	0.0.0.0/0

EC2 > Security Groups > sg-04df416b16e75dc19 - launch-wizard-3 > Edit inbound rules  
**Edit inbound rules**  
Inbound rules control the incoming traffic that's allowed to reach the instance.

Security group rule ID  
sgr-033dabb2b249d5b1d

Type  
SSH

Protocol  
TCP

Port range  
22

Source  
Custom

Description - optional

Add rule

Cancel Preview changes Save rules

18.To run the python flask app i.e., app.py we use **python3 app.py**

```
(virtualenv) python@ip-172-31-1-95:~/flaskapp$ python3 app.py
* Serving Flask app 'app'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on all addresses (0.0.0.0)
* Running on http://127.0.0.1:7000
* Running on http://172.31.1.95:7000
Press CTRL+C to quit
219.91.254.118 - - [23/Oct/2024 19:48:22] code 400, message Bad request version ('**\x13\x01\x13\x02\x13\x03\x04\x05\x06\x07\x08\x09\x0a\x0b\x0c\x0d\x0e\x0f\x10\x11\x12\x13\x14\x15\x16\x17\x18\x19\x1a\x1b\x1c\x1d\x1e\x1f\x20\x21\x22\x23\x24\x25\x26\x27\x28\x29\x30\x31\x32\x33\x34\x35\x36\x37\x38\x39\x40\x41\x42\x43\x44\x45\x46\x47\x48\x49\x50\x51\x52\x53\x54\x55\x56\x57\x58\x59\x60\x61\x62\x63\x64\x65\x66\x67\x68\x69\x70\x71\x72\x73\x74\x75\x76\x77\x78\x79\x80\x81\x82\x83\x84\x85\x86\x87\x88\x89\x90\x91\x92\x93\x94\x95\x96\x97\x98\x99\x00')
219.91.254.118 - - [23/Oct/2024 19:48:22] "GET / HTTP/1.1" 400 -
```

19.Once the code is successful we have to copy the public Ip address and paste in any browser.

EC2 > Instances > i-0394875399271dc88

**Instance summary for i-0394875399271dc88 (vuthen)** [Info](#)

Updated less than a minute ago

Instance ID  
i-0394875399271dc88

IPv6 address  
—

Hostname type  
IP name: ip-172-31-1-95.us-west-1.compute.internal

Answer private resource DNS name  
IPv4 (A)

Auto-assigned IP address  
52.53.166.169 [Public IP]

IAM Role  
—

IMDSv2  
Required

Public IPv4 address copied

52.53.166.169 | [open address](#)

Instance state  
Running

Private IP DNS name (IPv4 only)  
ip-172-31-1-95.us-west-1.compute.internal

Instance type  
t2.medium

VPC ID  
vpc-099e28d1246b22e06

Subnet ID  
subnet-0fa320814353c776d

Instance ARN  
arn:aws:ec2:us-west-1:767828741027:instance/i-0394875399271dc88

← → ↻ 52.53.166.169:7000

52.53.166.169:7000

52.53.166.169:7000 - Google Search

Google

Search Google or type a URL

(71) YouTube Dashboard [L... swathy.shop 54.193.228.68 pipeline-slav... 18.206.98.27 Play 2048 Apache Tomc... Dashboard [L... Add shortcut

Customize Chrome

20.The final output is:

ModifyInboundSecurityGroup x EC2 Instance Connect x Instance details | EC2 | us-west-1 x W3Schools Tryit Editor x 52.53.166.169:7000

← → ↻ Not secure 52.53.166.169:7000

Hello from Koyeb