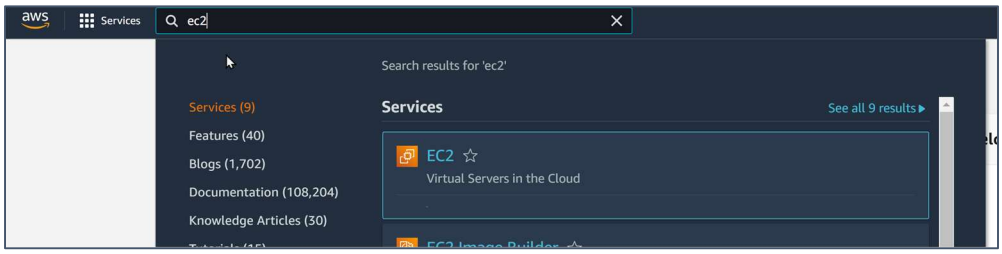
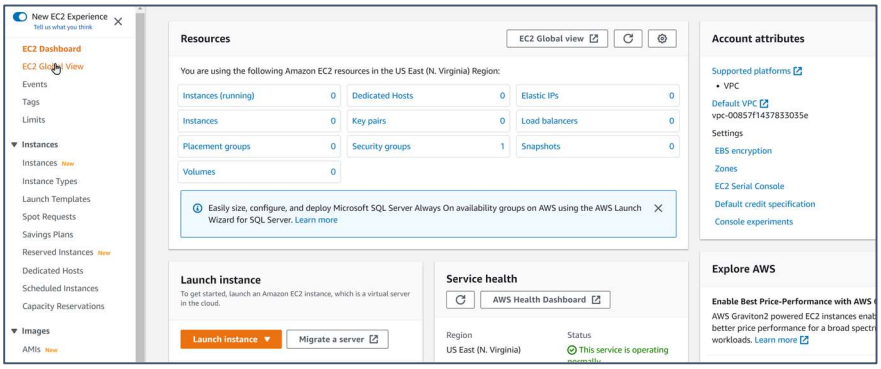
AWS EC2 Configuration

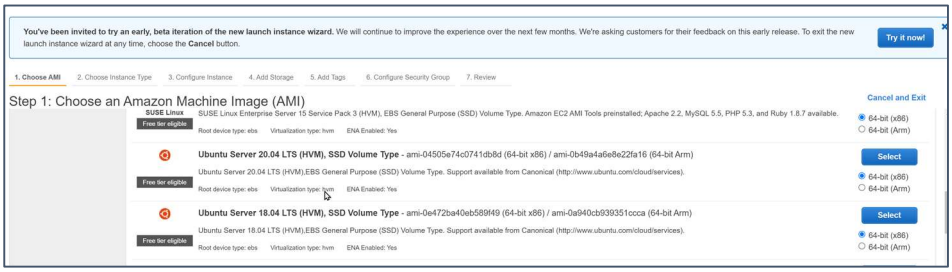
Navigate to EC2 homepage (use search option for quick find)



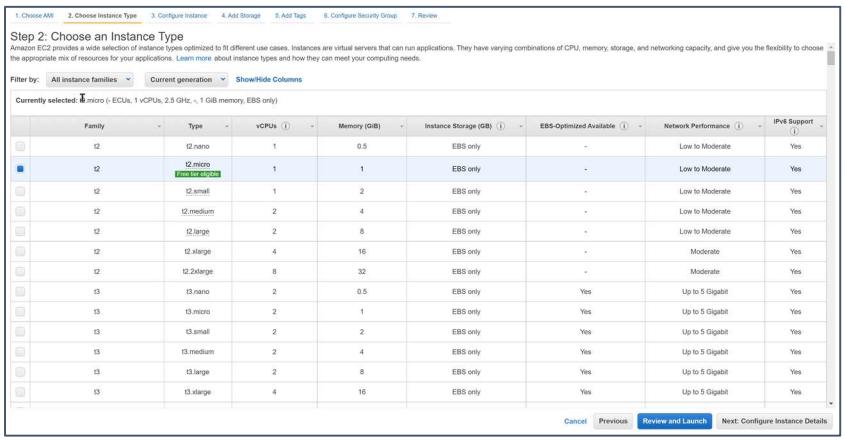
Click, Launch Instance



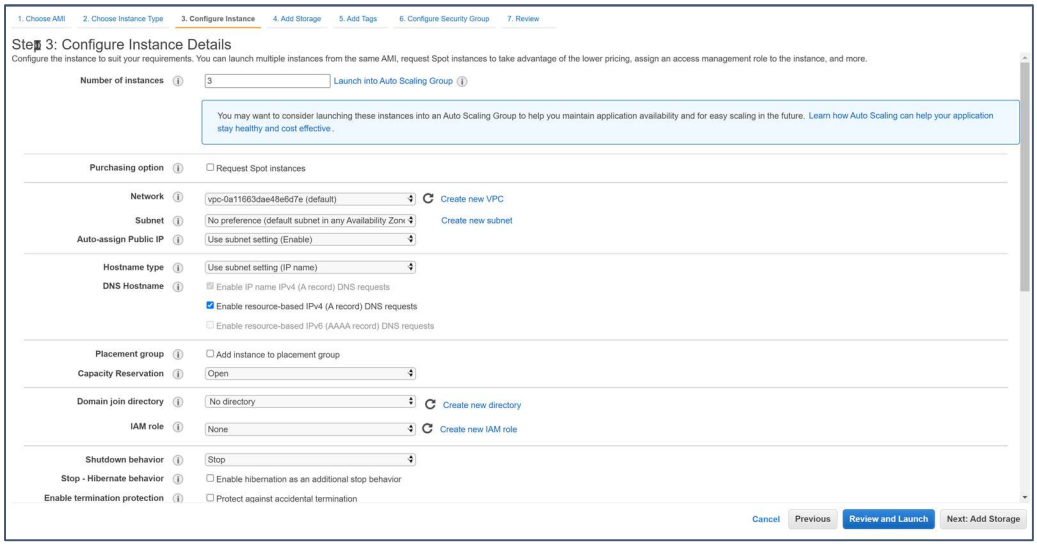
Select Ubuntu Server 18.04 image



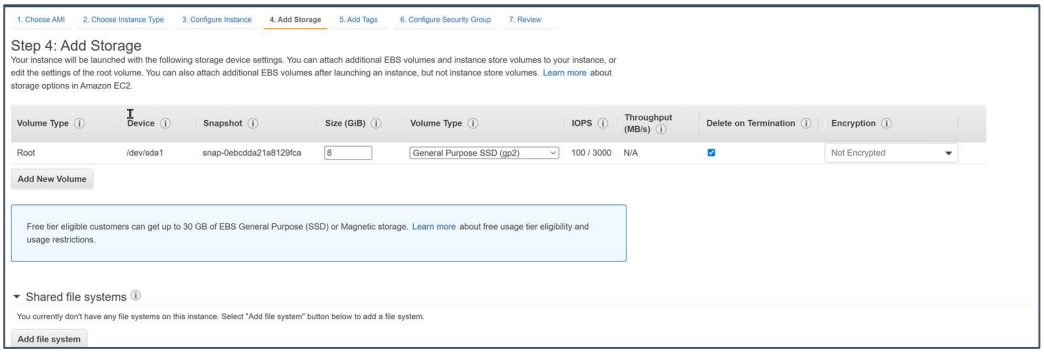
Select the Free tier eligible (t2 micro) Instance Type.



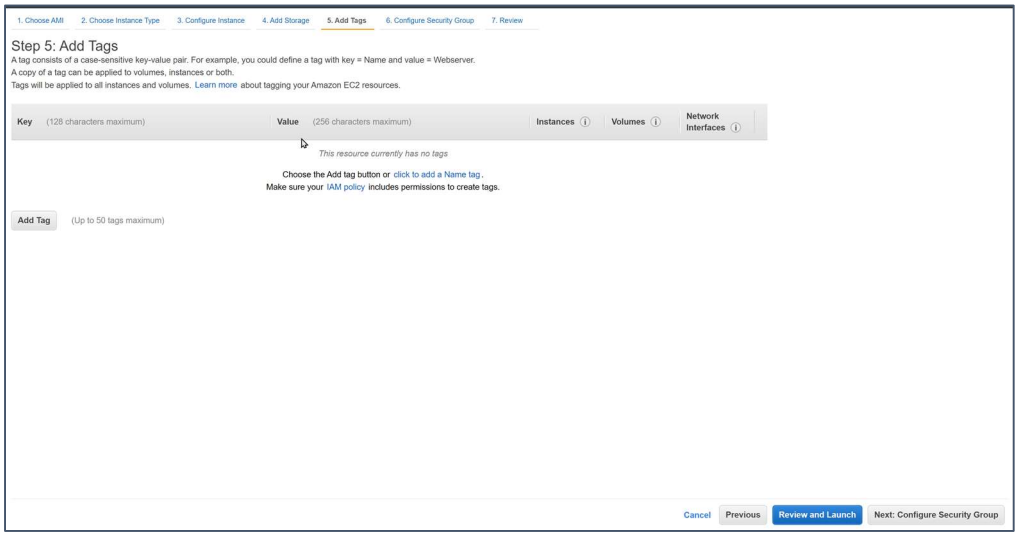
Set the Number of instances to 3 and keep the defaults for other details and continue



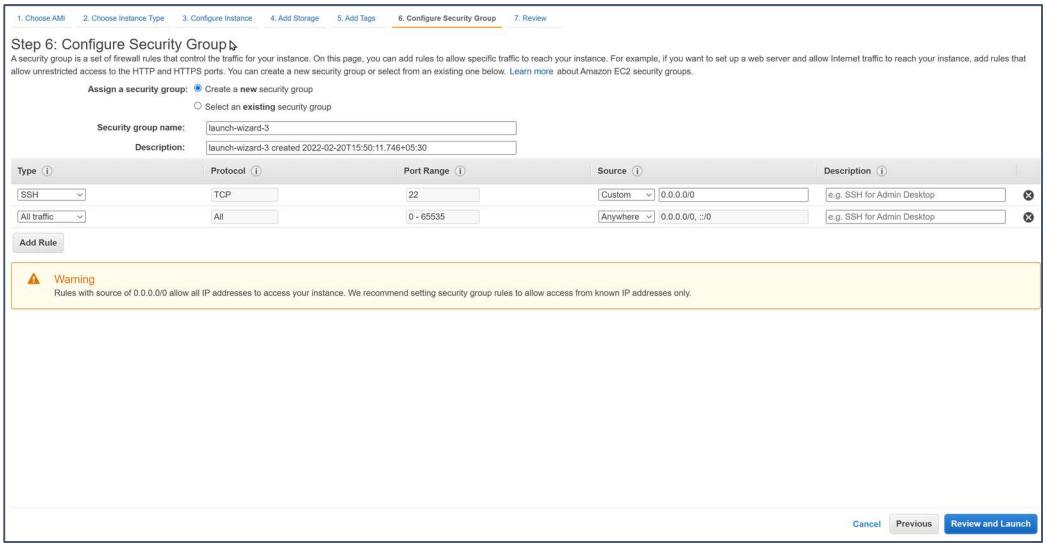
Keep the default storage specifications.



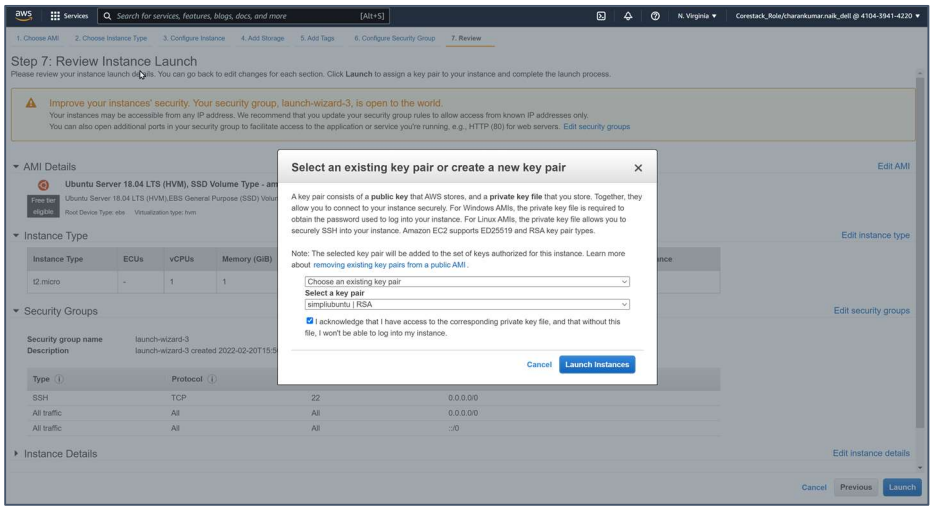
No Tags added, Continue Next to Configure security group



Add a new Rule to allow **All traffic** on the EC2 instance and to be accessible form **anywhere**.

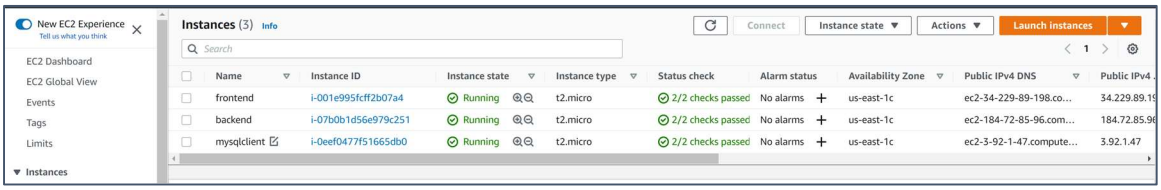


If there is an existing key pair, select that (in this case I already have one) or create a new key pair and Launch the instances.



On the EC2 homepage, note the instances created and named accordingly.

The name is self-explanatory for which purpose those EC2 instances are used.



Access the EC2 instance using the key pair over SSH and on install MySQL on the mysql-client instance.

$ sudo apt update
$ sudo apt install mysql

```
ubuntu@ip-172-31-26-39:~$ sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Get:4 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [1581 kB]
Fetched 1917 kB in 1s (2554 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-26-39:~$ sudo apt-get install mysql
Reading package lists... Done
Building dependency tree
Reading state information... Done
E: Unable to locate package mysql
ubuntu@ip-172-31-26-39:~$ mysql

Command 'mysql' not found, but can be installed with:

sudo apt install mysql-client-core-8.0     # version 8.0.28-0ubuntu0.20.04.3, or
sudo apt install mariadb-client-core-10.3  # version 1:10.3.32-0ubuntu0.20.04.1

ubuntu@ip-172-31-26-39:~$ sudo apt install mysql-client-core-8.0
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  mysql-client-core-8.0
0 upgraded, 1 newly installed, 0 to remove and 26 not upgraded.
Need to get 4429 kB of archives.
After this operation, 66.7 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64 mysql-client-core-8.0 amd64 8.0.28-0ubuntu0.20.04.3 [4429 kB]
Fetched 4429 kB in 0s (52.0 MB/s)
Selecting previously unselected package mysql-client-core-8.0.
(Reading database ... 96130 files and directories currently installed.)
Preparing to unpack .../mysql-client-core-8.0_8.0.28-0ubuntu0.20.04.3_amd64.deb ...
Unpacking mysql-client-core-8.0 (8.0.28-0ubuntu0.20.04.3) ...
Setting up mysql-client-core-8.0 (8.0.28-0ubuntu0.20.04.3) ...
Processing triggers for man-db (2.9.1-1) ...
ubuntu@ip-172-31-26-39:~$
```

On the frontend EC2 instance, install python and boto3

$ sudo apt update

```
ubuntu@ip-172-31-23-255:~$ sudo su
root@ip-172-31-23-255:/home/ubuntu# apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/universe amd64 Packages [8570 kB]
Get:5 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/universe Translation-en [4941 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/multiverse amd64 Packages [151 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/multiverse Translation-en [108 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 Packages [2414 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main Translation-en [459 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/restricted amd64 Packages [634 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/restricted Translation-en [86.5 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 Packages [1786 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/universe Translation-en [387 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/multiverse amd64 Packages [24.2 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/multiverse Translation-en [5980 B]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-backports/main amd64 Packages [10.3 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-backports/main Translation-en [4824 B]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-backports/universe amd64 Packages [11.3 kB]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-backports/universe Translation-en [5772 B]
Get:21 http://security.ubuntu.com/ubuntu bionic-security/main amd64 Packages [2067 kB]
Get:22 http://security.ubuntu.com/ubuntu bionic-security/main Translation-en [366 kB]
Get:23 http://security.ubuntu.com/ubuntu bionic-security/restricted amd64 Packages [610 kB]
Get:24 http://security.ubuntu.com/ubuntu bionic-security/restricted Translation-en [82.8 kB]
Get:25 http://security.ubuntu.com/ubuntu bionic-security/universe amd64 Packages [1172 kB]
Get:26 http://security.ubuntu.com/ubuntu bionic-security/universe Translation-en [270 kB]
Get:27 http://security.ubuntu.com/ubuntu bionic-security/multiverse amd64 Packages [17.6 kB]
Get:28 http://security.ubuntu.com/ubuntu bionic-security/multiverse Translation-en [3660 B]
Fetched 24.4 MB in 5s (4906 kB/s)
Reading package lists... Done
```

$ sudo apt install python3 python3-pip

```
root@ip-172-31-23-255:/home/ubuntu# apt-get install python3-pip python3
Reading package lists... Done
Building dependency tree
Reading state information... Done
python3 is already the newest version (3.6.7-1~18.04).
The following additional packages will be installed:
  dh-python libpython3-dev libpython3.6 libpython3.6-dev libpython3.6-minimal libpython3.6-stdlib python3-crypto python3-dev python3-distutils
  python3-keyring python3-keyrings.alt python3-lib2to3 python3-secretstorage python3-setuptools python3-wheel python3-xdg python3.6 python3.6-dev
  python3.6-minimal
Suggested packages:
  python-crypto-doc gnome-keyring libkf5wallet-bin gir1.2-gnomekeyring-1.0 python-secretstorage-doc python-setuptools-doc python3.6-venv
  python3.6-doc binfmt-support
The following NEW packages will be installed:
  dh-python libpython3-dev libpython3.6-dev python3-crypto python3-dev python3-distutils python3-keyring python3-keyrings.alt python3-lib2to3
  python3-pip python3-secretstorage python3-setuptools python3-wheel python3-xdg python3.6-dev
The following packages will be upgraded:
  libpython3.6 libpython3.6-minimal libpython3.6-stdlib python3.6 python3.6-minimal
5 upgraded, 15 newly installed, 0 to remove and 34 not upgraded.
Need to get 51.9 MB of archives.
After this operation, 84.2 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libpython3.6 amd64 3.6.9-1~18.04ubuntu1.6 [1414 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 python3.6 amd64 3.6.9-1~18.04ubuntu1.6 [203 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libpython3.6-stdlib amd64 3.6.9-1~18.04ubuntu1.6 [1712 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 python3.6-minimal amd64 3.6.9-1~18.04ubuntu1.6 [1609 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libpython3.6-minimal amd64 3.6.9-1~18.04ubuntu1.6 [534 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 python3-lib2to3 all 3.6.9-1~18.04 [77.4 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 python3-distutils all 3.6.9-1~18.04 [144 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 dh-python all 3.20180325ubuntu2 [89.2 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libpython3.6-dev amd64 3.6.9-1~18.04ubuntu1.6 [44.9 MB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libpython3-dev amd64 3.6.7-1~18.04 [7328 B]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 python3-crypto amd64 2.6.1-8ubuntu2 [244 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 python3.6-dev amd64 3.6.9-1~18.04ubuntu1.6 [508 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 python3-dev amd64 3.6.7-1~18.04 [1288 B]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 python3-secretstorage all 2.3.1-2 [12.1 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 python3-keyring all 10.6.0-1 [26.7 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 python3-keyrings.alt all 3.0-1 [16.6 kB]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 python3-pip all 9.0.1-2.3~ubuntu1.18.04.5 [114 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 python3-setuptools all 39.0.1-2 [248 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/universe amd64 python3-wheel all 0.30.0-0.2 [36.5 kB]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 python3-xdg all 0.25-4ubuntu1.1 [31.3 kB]
Fetched 51.9 MB in 1s (44.8 MB/s)
(Reading database ... 64866 files and directories currently installed.)
Preparing to unpack .../00-libpython3.6_3.6.9-1~18.04ubuntu1.6_amd64.deb ...
Unpacking libpython3.6:amd64 (3.6.9-1~18.04ubuntu1.6) over (3.6.9-1~18.04ubuntu1.4) ...
Preparing to unpack .../01-python3.6_3.6.9-1~18.04ubuntu1.6_amd64.deb ...
Unpacking python3.6 (3.6.9-1~18.04ubuntu1.6) over (3.6.9-1~18.04ubuntu1.4) ...
Preparing to unpack .../02-libpython3.6-stdlib_3.6.9-1~18.04ubuntu1.6_amd64.deb ...
```

$ sudo pip3 install boto3

```
root@ip-172-31-23-255:/home/ubuntu# pip3 install boto3
Collecting boto3
  Downloading https://files.pythonhosted.org/packages/4b/87/d1fed61bb95ec368178c2efe7a59ba77e1fc03d7bb316ca775a9ed3bfac1/boto3-1.21.3-py3-none-any.
whl (132kB)
    100% |████████████████████████████████| 133kB 7.5MB/s
Collecting jmespath<1.0.0,>=0.7.1 (from boto3)
  Downloading https://files.pythonhosted.org/packages/07/cb/5f001272b6faeb23c1c9e0acc04d48eaaf5c862c17709d20e3469c6e0139/jmespath-0.10.0-py2.py3-no
ne-any.whl
Collecting s3transfer<0.6.0,>=0.5.0 (from boto3)
  Downloading https://files.pythonhosted.org/packages/17/7c/4b60191e38bed78c65e817f7506ef1038a4246a703cb36fb5390a5eaf7ce/s3transfer-0.5.1-py3-none-
any.whl (79kB)
    100% |████████████████████████████████| 81kB 10.4MB/s
Collecting botocore<1.25.0,>=1.24.3 (from boto3)
  Downloading https://files.pythonhosted.org/packages/4e/bf/ac3c39ca27a8e86a84b345ece5afd74478579e7f33f0192033c9454fa802/botocore-1.24.3-py3-none-a
ny.whl (8.5MB)
    100% |████████████████████████████████| 8.5MB 162kB/s
Collecting urllib3<1.27,>=1.25.4 (from botocore<1.25.0,>=1.24.3->boto3)
  Downloading https://files.pythonhosted.org/packages/4e/b8/f5a25b22e803f0578e668daa33ba3701bb37858ec80e08a150bd7d2cf1b1/urllib3-1.26.8-py2.py3-non
e-any.whl (138kB)
    100% |████████████████████████████████| 143kB 8.0MB/s
Collecting python-dateutil<3.0.0,>=2.1 (from botocore<1.25.0,>=1.24.3->boto3)
  Downloading https://files.pythonhosted.org/packages/36/7a/87837f39d0296e723bb9b62bbb257d0355c7f6128853c78955f57342a56d/python_dateutil-2.8.2-py2.
py3-none-any.whl (247kB)
    100% |████████████████████████████████| 256kB 5.0MB/s
Requirement already satisfied: six>=1.5 in /usr/lib/python3/dist-packages (from python-dateutil<3.0.0,>=2.1->botocore<1.25.0,>=1.24.3->boto3)
Installing collected packages: jmespath, urllib3, python-dateutil, botocore, s3transfer, boto3
  Found existing installation: urllib3 1.22
    Not uninstalling urllib3 at /usr/lib/python3/dist-packages, outside environment /usr
Successfully installed boto3-1.21.3 botocore-1.24.3 jmespath-0.10.0 python-dateutil-2.8.2 s3transfer-0.5.1 urllib3-1.26.8
root@ip-172-31-23-255:/home/ubuntu# apt-get install python3-pip python3^C
root@ip-172-31-23-255:/home/ubuntu#
root@ip-172-31-23-255:/home/ubuntu# exit
exit
```

Add AWS region and credentials to access the servers via python script we use to simulate the send-receive messages.

$ sudo mkdir .aws

```
ubuntu@ip-172-31-23-255:~$ sudo mkdir .aws
```

$ sudo nano .aws/config

```
ubuntu@ip-172-31-23-255:~$ sudo nano .aws/config
```

and add the region details here

```
  GNU nano 2.9.3

[default]
region=us-east-1
```

$ sudo nano .aws/credentials (user1 credentials created under IAM services)

```
ubuntu@ip-172-31-23-255:~$ sudo nano .aws/credentials
```

```
[default]
aws_access_key_id = AKIAV7EAYOHGKLCYI42Z
aws_secret_access_key = 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
```

```
  GNU nano 2.9.3                                                .aws/credentials

[default]
aws_access_key_id = AKIAV7EAYOHGKLCYI42Z
aws_secret_access_key = 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
```

Add the following code snippet in a file send.py on the frontend server.

```
import sys
import boto3

sqs=boto3.client('sqs')
queue_url='https://sqs.us-east-1.amazonaws.com/410439414220/myqueue'

response=sqs.send_message(
    QueueUrl=queue_url,
    MessageBody=(sys.argv[1])
    )
print(response['MessageId'])
```

```
ubuntu@ip-172-31-23-255:~$ sudo nano send.py
```

```
  GNU nano 2.9.3                                                    send.py

import sys
import boto3

sqs=boto3.client('sqs')
queue_url='https://sqs.us-east-1.amazonaws.com/410439414220/myqueue'

response=sqs.send_message(
    QueueUrl=queue_url,
    MessageBody=(sys.argv[1])
    )

print(response['MessageId'])
```

Backend

$ sudo apt install python3 python3-pip

```
root@ip-172-31-30-112:/home/ubuntu# apt-get install python3 python3-pip
Reading package lists... Done
Building dependency tree
Reading state information... Done
python3 is already the newest version (3.6.7-1~18.04).
python3 set to manually installed.
The following additional packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu build-essential cpp cpp-7 dh-python dpkg-dev fakeroot g++ g++-7 gcc gcc-7 gcc-7-base
  libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libasan4 libatomic1 libbinutils libc-dev-bin libc6-dev libcc1-0
  libcilkrts5 libdpkg-perl libexpat1-dev libfakeroot libfile-fcntllock-perl libgcc-7-dev libgomp1 libisl19 libitm1 liblsan0 libmpc3 libmpx2
  libpython3-dev libpython3.6-dev libquadmath0 libstdc++-7-dev libtsan0 libubsan0 linux-libc-dev make manpages-dev python-pip-whl python3-crypto
  python3-dev python3-distutils python3-keyring python3-keyrings.alt python3-lib2to3 python3-secretstorage python3-setuptools python3-wheel
  python3-xdg python3.6-dev
Suggested packages:
  binutils-doc cpp-doc gcc-7-locales debian-keyring g++-multilib g++-7-multilib gcc-7-doc libstdc++6-7-dbg gcc-multilib autoconf automake libtool
  flex bison gdb gcc-doc gcc-7-multilib libgcc1-dbg libgomp1-dbg libitm1-dbg libatomic1-dbg libasan4-dbg liblsan0-dbg libtsan0-dbg libubsan0-dbg
  libcilkrts5-dbg libmpx2-dbg libquadmath0-dbg glibc-doc bzr libstdc++-7-doc make-doc python-crypto-doc gnome-keyring libkf5wallet-bin
  gir1.2-gnomekeyring-1.0 python-secretstorage-doc python-setuptools-doc
The following NEW packages will be installed:
  binutils binutils-common binutils-x86-64-linux-gnu build-essential cpp cpp-7 dh-python dpkg-dev fakeroot g++ g++-7 gcc gcc-7 gcc-7-base
  libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libasan4 libatomic1 libbinutils libc-dev-bin libc6-dev libcc1-0
  libcilkrts5 libdpkg-perl libexpat1-dev libfakeroot libfile-fcntllock-perl libgcc-7-dev libgomp1 libisl19 libitm1 liblsan0 libmpc3 libmpx2
  libpython3-dev libpython3.6-dev libquadmath0 libstdc++-7-dev libtsan0 libubsan0 linux-libc-dev make manpages-dev python-pip-whl python3-crypto
  python3-dev python3-distutils python3-keyring python3-keyrings.alt python3-lib2to3 python3-pip python3-secretstorage python3-setuptools
  python3-wheel python3-xdg python3.6-dev
0 upgraded, 57 newly installed, 0 to remove and 13 not upgraded.
Need to get 91.2 MB of archives.
After this operation, 253 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 binutils-common amd64 2.30-21ubuntu1~18.04.7 [197 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libbinutils amd64 2.30-21ubuntu1~18.04.7 [489 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 binutils-x86-64-linux-gnu amd64 2.30-21ubuntu1~18.04.7 [1839 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 binutils amd64 2.30-21ubuntu1~18.04.7 [3388 B]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libc-dev-bin amd64 2.27-3ubuntu1.4 [71.8 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 linux-libc-dev amd64 4.15.0-167.175 [992 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libc6-dev amd64 2.27-3ubuntu1.4 [2585 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 gcc-7-base amd64 7.5.0-3ubuntu1~18.04 [18.3 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 libisl19 amd64 0.19-1 [551 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 libmpc3 amd64 1.1.0-1 [40.8 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 cpp-7 amd64 7.5.0-3ubuntu1~18.04 [8591 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 cpp amd64 4:7.4.0-1ubuntu2.3 [27.7 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libcc1-0 amd64 8.4.0-1ubuntu1~18.04 [39.4 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libgomp1 amd64 8.4.0-1ubuntu1~18.04 [76.5 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libitm1 amd64 8.4.0-1ubuntu1~18.04 [27.9 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libatomic1 amd64 8.4.0-1ubuntu1~18.04 [9192 B]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libasan4 amd64 7.5.0-3ubuntu1~18.04 [358 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 liblsan0 amd64 8.4.0-1ubuntu1~18.04 [133 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libtsan0 amd64 8.4.0-1ubuntu1~18.04 [288 kB]
```

$ sudo nano .aws/config

```
ubuntu@ip-172-31-30-112:~$ sudo nano .aws/config
```

and add the region details here

```
  GNU nano 2.9.3                                                    .aws/config

[default]
region=us-east-1
```

$ sudo nano .aws/credentials

```
ubuntu@ip-172-31-30-112:~$ sudo nano .aws/credentials
```

$ sudo nano .aws/credentials (user1 credentials created under IAM servies)

```
  GNU nano 2.9.3                                                .aws/credentials

[default]
aws_access_key_id = AKIAV7EAYOHGKLCYI42Z
aws_secret_access_key = 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
```

```
ubuntu@ip-172-31-30-112:~$ sudo nano receive.py
```

Add the following code snippet in a file receive.py on the backend server.

```
import sys
import boto3
import mysql.connector

queue_url = 'https://sqs.us-east-1.amazonaws.com/410439414220/myqueue'
host = 'database-1.cgvs5dpsppxr.us-east-1.rds.amazonaws.com'
user = 'admin'
password = 'admin1234'
database = 'customer'

sqs=boto3.client('sqs')

mydb = mysql.connector.connect(host=host, user=user, password=password, database=database)
mycursor = mydb.cursor()


response = sqs.receive_message(
    QueueUrl=queue_url)

message = response['Messages'][0]

receipt_handle=message['ReceiptHandle']

sqs.delete_message(
    QueueUrl=queue_url,
    ReceiptHandle=receipt_handle
)

print('Received and deleted message: %s' % message["Body"])

customerDetails = message["Body"]
customerDetailsList = customerDetails.split(',')
name = customerDetailsList[0]
country = customerDetailsList[1]
val = (name, country)

sql = "INSERT INTO customers (name, country) VALUES (%s, %s)"

mycursor.execute(sql, val)
mydb.commit()
print("Record inserted in the DB")
```