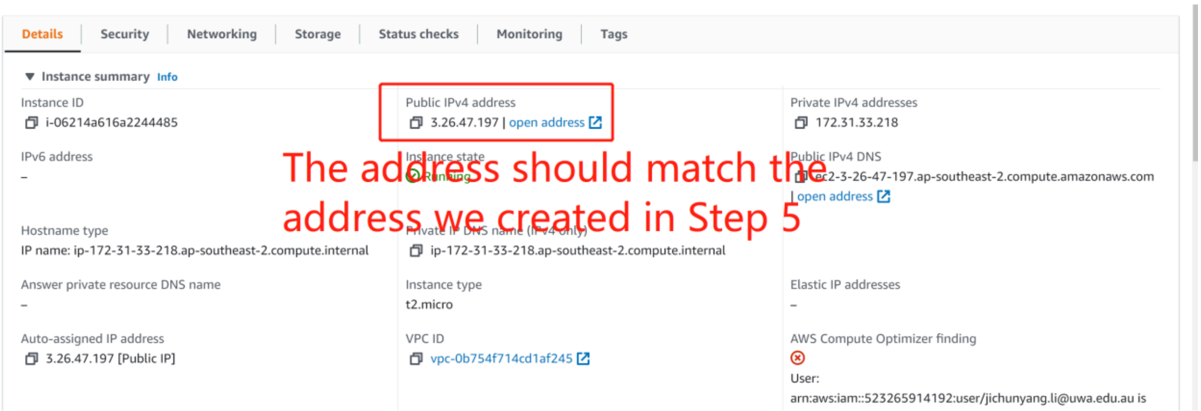
Instructions for Lab 2 Note

DO NOT COPY SCREENSHOTS IN THIS FILE TO YOUR LAB NOTE, COPYING WILL BE REGRADED AS PLAGIARISM, YOU WILL GET ZERO MARK FOR THIS LAB!!!

Part 1: Create an EC2 instance using awscli

Please follow the lab instructions to complete step 1 to step 6, the final expected results should be as following screenshots.

Step 7 – Look at the instance using the AWS console



▼ Instance summary Info

Instance ID
i-06214a616a2244485

Public IPv4 address
3.26.47.197 | open address

Private IPv4 addresses
172.31.33.218

IPv6 address
–

Instance state
Running

Public IPv4 DNS
ec2-3-26-47-197.ap-southeast-2.compute.amazonaws.com | open address

Hostname type
IP name: ip-172-31-33-218.ap-southeast-2.compute.internal

Private IP DNS name (IPv4 only)
ip-172-31-33-218.ap-southeast-2.compute.internal

Answer private resource DNS name
–

Instance type
t2.micro

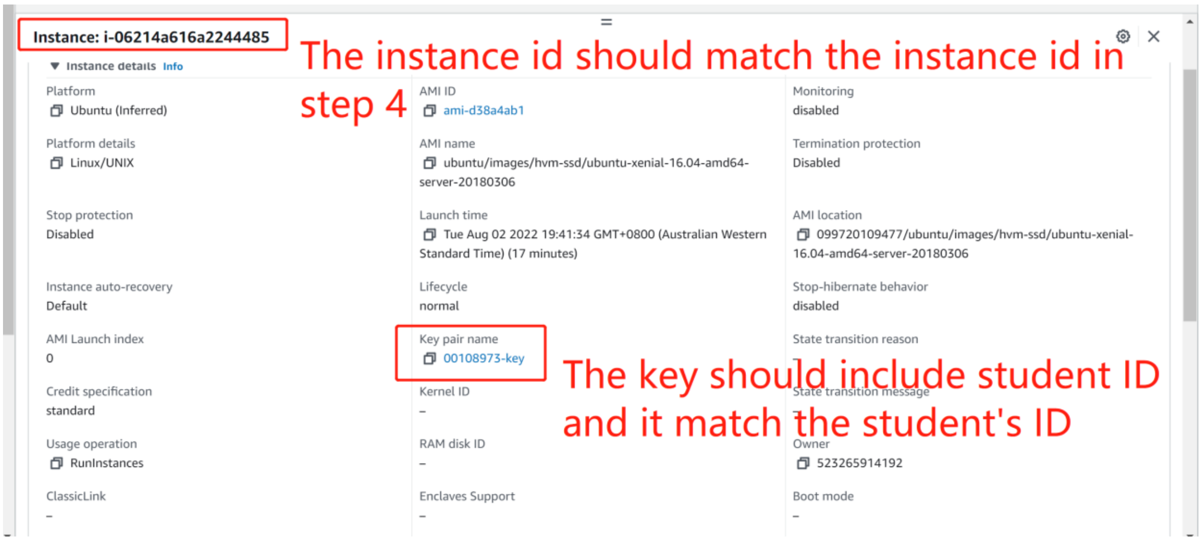
Elastic IP addresses
–

Auto-assigned IP address
3.26.47.197 [Public IP]

VPC ID
vpc-0b754f714cd1af245

AWS Compute Optimizer finding
User: arn:aws:iam::523265914192:user/jichunyang.li@uwa.edu.au is

The address should match the address we created in Step 5



Instance: i-06214a616a2244485

▼ Instance details Info

Platform
Ubuntu (Inferred)

AMI ID
ami-d38a4ab1

Monitoring
disabled

Platform details
Linux/UNIX

AMI name
ubuntu/images/hvm-ssd/ubuntu-xenial-16.04-amd64-server-20180306

Termination protection
Disabled

Stop protection
Disabled

Launch time
Tue Aug 02 2022 19:41:34 GMT+0800 (Australian Western Standard Time) (17 minutes)

AMI location
099720109477/ubuntu/images/hvm-ssd/ubuntu-xenial-16.04-amd64-server-20180306

Instance auto-recovery
Default

Lifecycle
normal

Stop-hibernate behavior
disabled

AMI Launch index
0

Key pair name
00108973-key

State transition reason

Credit specification
standard

Kernel ID
–

State transition message

Usage operation
RunInstances

RAM disk ID
–

Owner
523265914192

ClassicLink
–

Enclaves Support
–

Boot mode
–

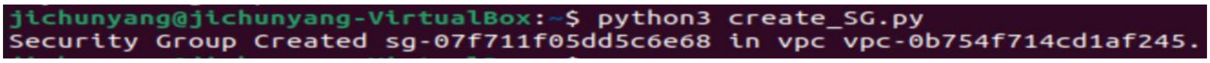
The instance id should match the instance id in step 4

The key should include student ID and it match the student's ID

Part 2: Create an EC2 instance with Python Boto script

Step 1 – Create a security group

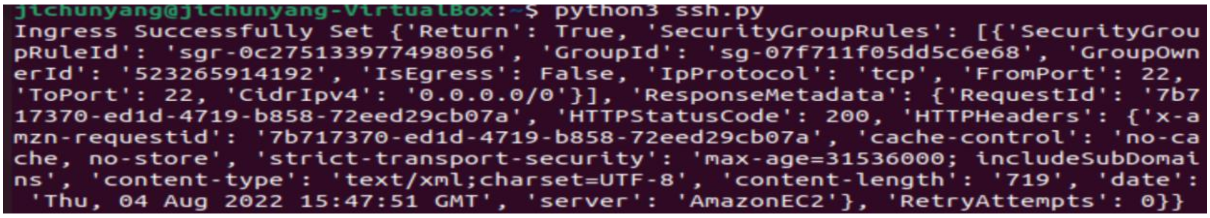
Create a .py file by yourself, the expected result should be the following screenshot.



```
jichunyang@jichunyang-VirtualBox:~$ python3 create_SG.py
Security Group Created sg-07f711f05dd5c6e68 in vpc vpc-0b754f714cd1af245.
```

Step 2 - Authorise inbound traffic for ssh, from port/to port 22 indicates ssh, and CidrIp 0.0.0.0/0 indicates directions

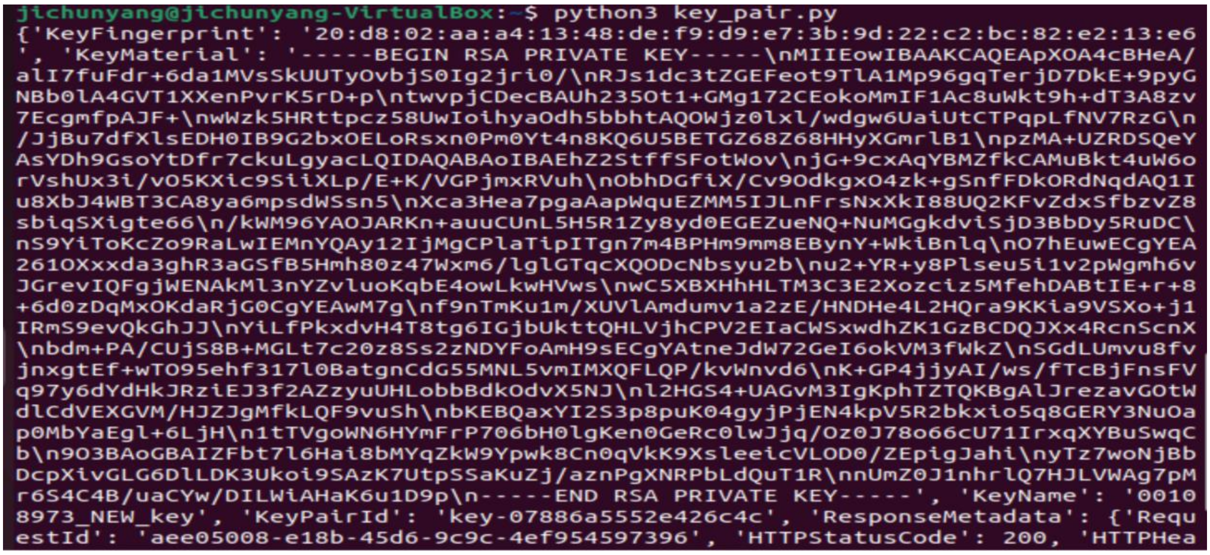
Create a .py file by yourself, the expected result should be the following screenshot.



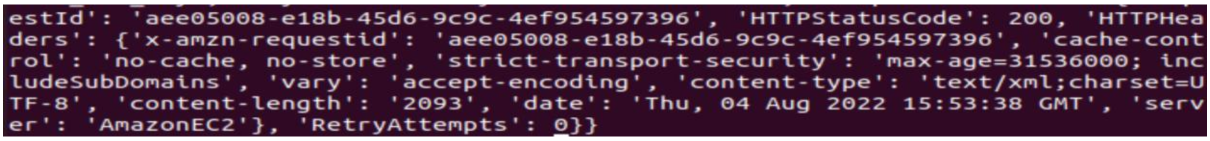
```
jichunyang@jichunyang-VirtualBox:~$ python3 ssh.py
Ingress Successfully Set {'Return': True, 'SecurityGroupRules': [{'SecurityGrou
pRuleId': 'sgr-0c275133977498056', 'GroupId': 'sg-07f711f05dd5c6e68', 'GroupOwn
erId': '523265914192', 'IsEgress': False, 'IpProtocol': 'tcp', 'FromPort': 22,
'ToPort': 22, 'CidrIpv4': '0.0.0.0/0'}], 'ResponseMetadata': {'RequestId': '7b7
17370-ed1d-4719-b858-72eed29cb07a', 'HTTPStatusCode': 200, 'HTTPHeaders': {'x-a
mzn-requestid': '7b717370-ed1d-4719-b858-72eed29cb07a', 'cache-control': 'no-ca
che, no-store', 'strict-transport-security': 'max-age=31536000; includeSubDomai
ns', 'content-type': 'text/xml;charset=UTF-8', 'content-length': '719', 'date':
 'Thu, 04 Aug 2022 15:47:51 GMT', 'server': 'AmazonEC2'}, 'RetryAttempts': 0}}
```

Step 3 – Create the key pair via create_key_pair function to allow ssh into EC2 instance

Create a .py file by yourself, the expected result should be the following screenshot.



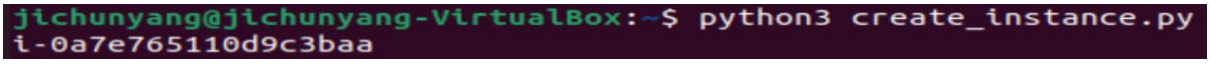
```
jichunyang@jichunyang-VirtualBox:~$ python3 key_pair.py
{'KeyFingerprint': '20:d8:02:aa:a4:13:48:de:f9:d9:e7:3b:9d:22:c2:bc:82:e2:13:e6
', 'KeyMaterial': '-----BEGIN RSA PRIVATE KEY-----\nMIIEowIBAAKCAQEApXOA4cBHeA/
alI7fuFdr+6da1MVsSkUUTyOvbjS0Ig2jri0/\nRJs1dc3tZGEFeot9TlA1Mp96gqTerjD7DkE+9pyG
NBb0lA4GVT1XXenPvrK5rD+p\ntwvpjCDecBAUh235Ot1+GMg172CEokoMmIF1Ac8uWkt9h+dT3A8zv
7EcgmfpAJF+\nwWzk5HRttpcz58UwIoihyaOdh5bbhtAQOWjz0lxl/wdgw6UaiUtCTPqpLfNV7RzG\n
/JjBu7dfXlsEDH0IB9G2bxOELoRsxn0Pm0Yt4n8KQ6U5BETGZ68Z68HHyXGmrlB1\npzMA+UZRDSQeY
AsYDh9GsoYtDfr7ckuLgyacLQIDAQABAoIBAEhZ2StffSFotWov\njG+9cxAqYBMZfkCAMuBkt4uW6o
rVshUx3i/vO5KXic9SiiXLp/E+K/VGPjmxRVuh\nObhDGfiX/Cv9OdkgxO4zk+gSnfFDkORdNqdAQ1I
u8XbJ4WBT3CA8ya6mpsdWSsn5\nXca3Hea7pgaAapWquEZMM5IJLnFrsNxXkI88UQ2KFvZdxSfbzvZ8
sbiqSXigte66\n/kWM96YAOJARKn+auuCUnL5H5R1Zy8yd0EGEZueNQ+NuMGgkdviSjD3BbDy5RuDC\
nS9YiToKcZo9RaLwIEMnYQAy12IjMgCPlaTipITgn7m4BPHm9mm8EBynY+WkiBnlq\nO7hEuwECgYEA
261OXxxda3ghR3aGSfB5Hmh80z47Wxm6/lglGTqcXQODcNbsyu2b\nu2+YR+y8Plseu5i1v2pWgmh6v
JGrevIQFgjWENAkMl3nYZvluoKqbE4owLkwHVws\nwC5XBXHhHLTM3C3E2Xozciz5MfehDABtIE+r+8
+6d0zDqMxOKdaRjG0CgYEAwM7g\nf9nTmKu1m/XUVlAmdumv1a2zE/HNDHe4L2HQra9KKia9VSXo+j1
IRmS9evQkGhJJ\nYiLfPkxdvH4T8tg6IGjbUkttQHLVjhCPV2EIaCWSxwdhZK1GzBCDQJXx4RcnScnX
\nbdm+PA/CUjS8B+MGLt7c20z8Ss2zNDYFoAmH9sECgYAtneJdW72GeI6okVM3fWkZ\nSGdLUmvu8fv
jnxgtEf+wTO95ehf317l0BatgnCdG55MNL5vmIMXQFLQP/kvWnvd6\nK+GP4jjyAI/ws/fTcBjFnsFV
q97y6dYdHkJRziEJ3f2AZzyuUHLobbBdkOdvX5NJ\nl2HGS4+UAGvM3IgKphTZTQKBgAlJrezavGOtW
dlCdVEXGVM/HJZJgMfkLQF9vuSh\nbKEBQaxYI2S3p8puK04gyjPjEN4kpV5R2bkxio5q8GERY3NuOa
p0MbYaEgl+6LjH\n1tTVgoWN6HYmFrP706bH0lgKen0GeRc0lwJjq/Oz0J78o66cU71IrxqXYBuSwqC
b\n9O3BAoGBAIZFbt7l6Hai8bMYqZkW9Ypwk8Cn0qVkK9XsleeicVLOD0/ZEpigJahi\nyTz7woNjBb
DcpXivGLG6DlLDK3Ukoi9SAzK7UtpSSaKuZj/aznPgXNRPbLdQuT1R\nnUmZ0J1nhrlQ7HJLVWAg7pM
r6S4C4B/uaCYw/DILWiAHaK6u1D9p\n-----END RSA PRIVATE KEY-----', 'KeyName': '0010
8973_NEW_key', 'KeyPairId': 'key-07886a5552e426c4c', 'ResponseMetadata': {'Requ
estId': 'aee05008-e18b-45d6-9c9c-4ef954597396', 'HTTPStatusCode': 200, 'HTTPHea
```



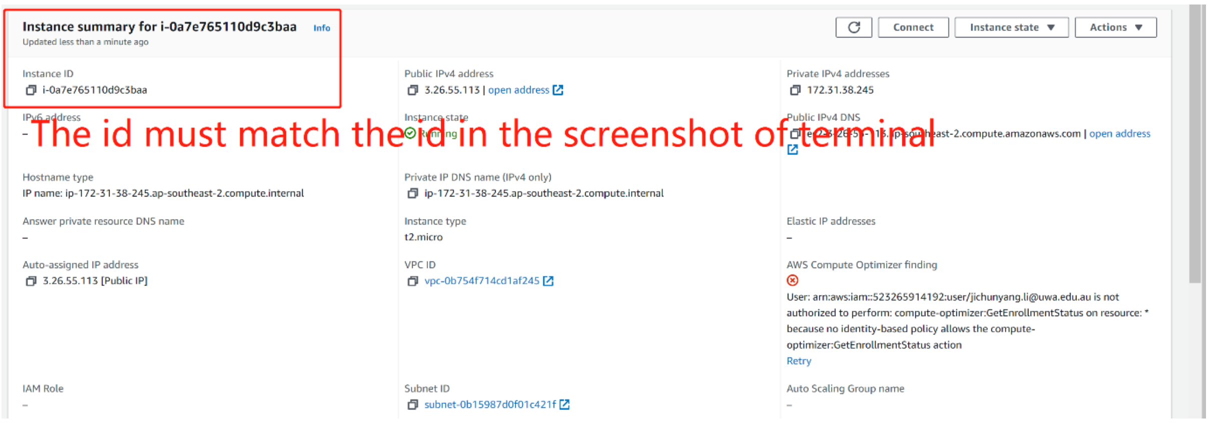
```
estId': 'aee05008-e18b-45d6-9c9c-4ef954597396', 'HTTPStatusCode': 200, 'HTTPHea
ders': {'x-amzn-requestid': 'aee05008-e18b-45d6-9c9c-4ef954597396', 'cache-cont
rol': 'no-cache, no-store', 'strict-transport-security': 'max-age=31536000; inc
ludeSubDomains', 'vary': 'accept-encoding', 'content-type': 'text/xml;charset=U
TF-8', 'content-length': '2093', 'date': 'Thu, 04 Aug 2022 15:53:38 GMT', 'serv
er': 'AmazonEC2'}, 'RetryAttempts': 0}}
```

Step 4 – Create the instance via run_instance function and return the instance id

Create a .py file by yourself, the expected result should be the following screenshot.



```
jichunyang@jichunyang-VirtualBox:~$ python3 create_instance.py
i-0a7e765110d9c3baa
```



Instance summary for i-0a7e765110d9c3baa
Updated less than a minute ago

Instance ID
i-0a7e765110d9c3baa

Public IPv4 address
3.26.55.113 | open address

Private IPv4 addresses
172.31.38.245

IPv6 address
–

Instance state
Running

Public IPv4 DNS
ec2-3-26-55-113.ap-southeast-2.compute.amazonaws.com | open address

Hostname type
IP name: ip-172-31-38-245.ap-southeast-2.compute.internal

Private IP DNS name (IPv4 only)
ip-172-31-38-245.ap-southeast-2.compute.internal

Answer private resource DNS name
–

Instance type
t2.micro

Elastic IP addresses
–

Auto-assigned IP address
3.26.55.113 [Public IP]

VPC ID
vpc-0b754f714cd1af245

AWS Compute Optimizer finding
User: arn:aws:iam::523265914192:user/jichunyang.li@uwa.edu.au is not authorized to perform: compute-optimizer:GetEnrollmentStatus on resource: * because no identity-based policy allows the compute-optimizer:GetEnrollmentStatus action

IAM Role
–

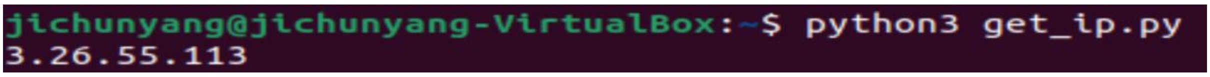
Subnet ID
subnet-0b15987d0f01c421f

Auto Scaling Group name
–

The id must match the id in the screenshot of terminal

Step 5 – Return the public IP of the instance created from previous steps via describe_instance function

Create a .py file by yourself, the expected result should be the following screenshot.



```
jichunyang@jichunyang-VirtualBox:~$ python3 get_ip.py
3.26.55.113
```

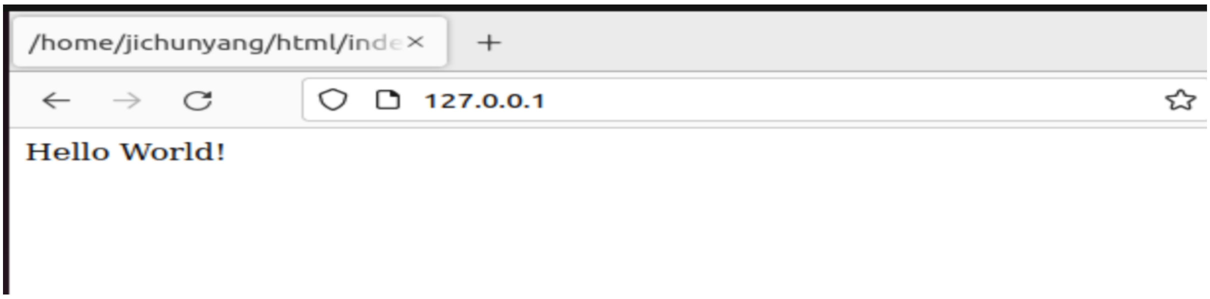
Part 3: Using Docker

If you are using M1 Mac, this link could be useful for you.

https://docs.docker.com/desktop/mac/apple-silicon/

Please follow the lab instructions to complete step 1 to step 6, the final expected results should be as following screenshots.

Step 7 – Open a browser and access address http://localhost or http://127.0.0.1 Confirm you get Hello World! (If you are using Ubuntu, you should access the address with Ubuntu rather than your host)



Hello World!