Lab Notebook 1

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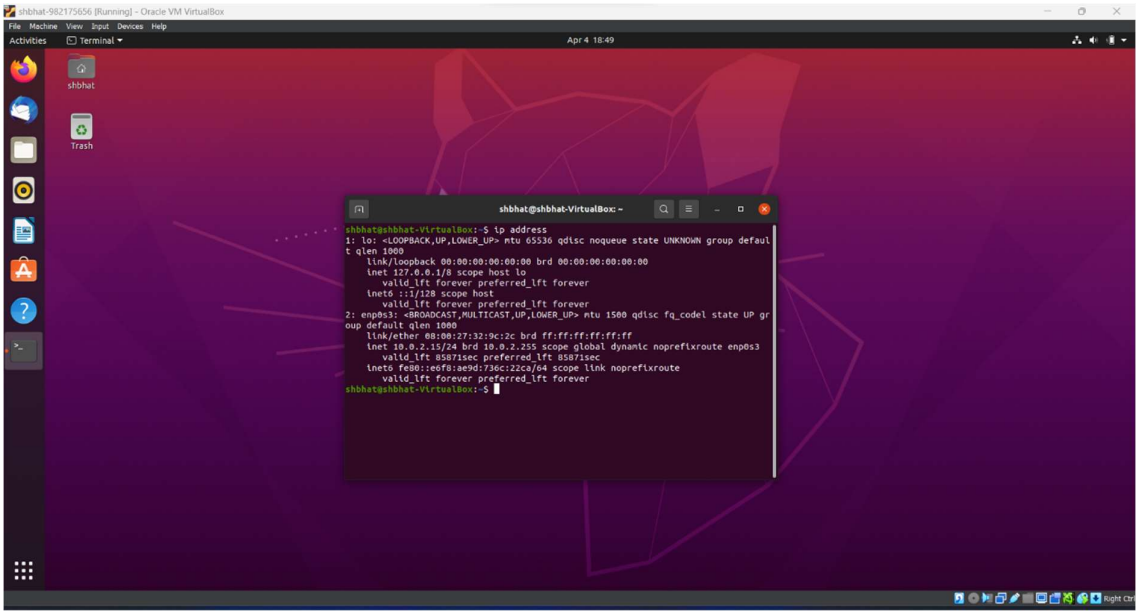
Section 1.2

ARP #1

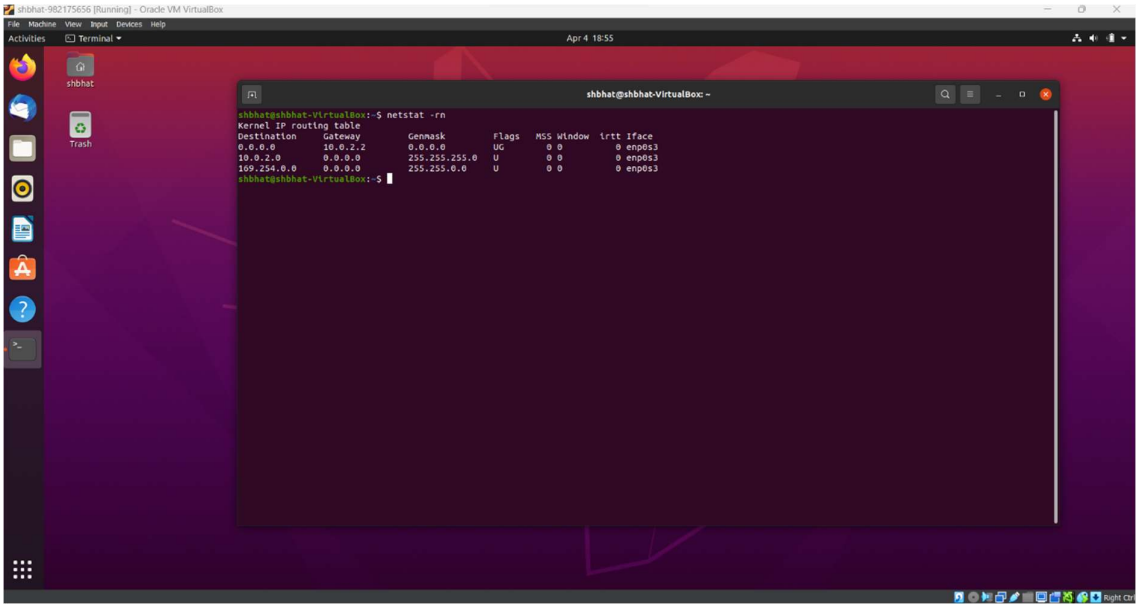
1) Use the ip command to find the IP address and hardware address of the local virtual ethernet card interface.

Answer:



2) Perform a netstat -rn to find default router's IP address

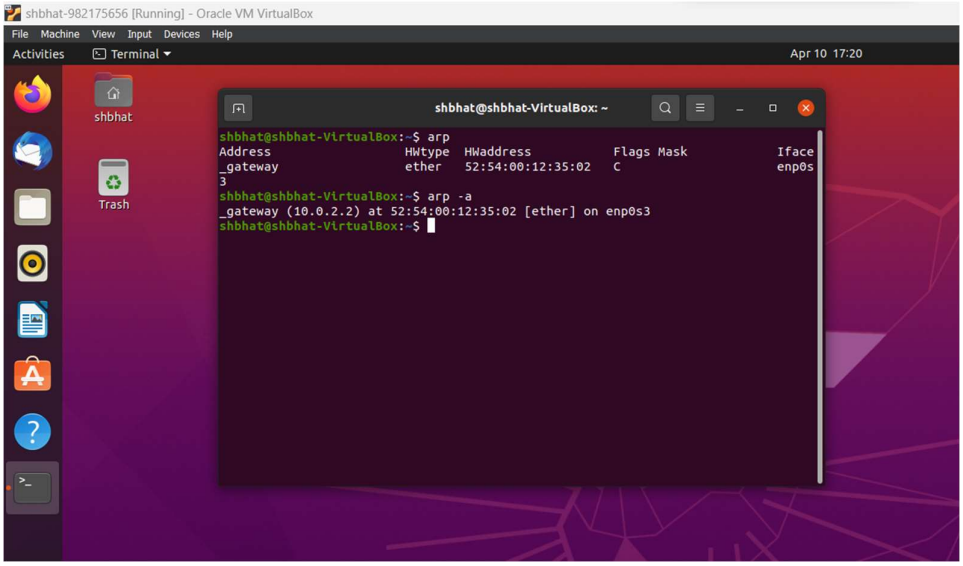
Answer:



3) Ping the default router and use arp to find its hardware address

Answer:

Hardware Address is 52:54:00:12:35:02



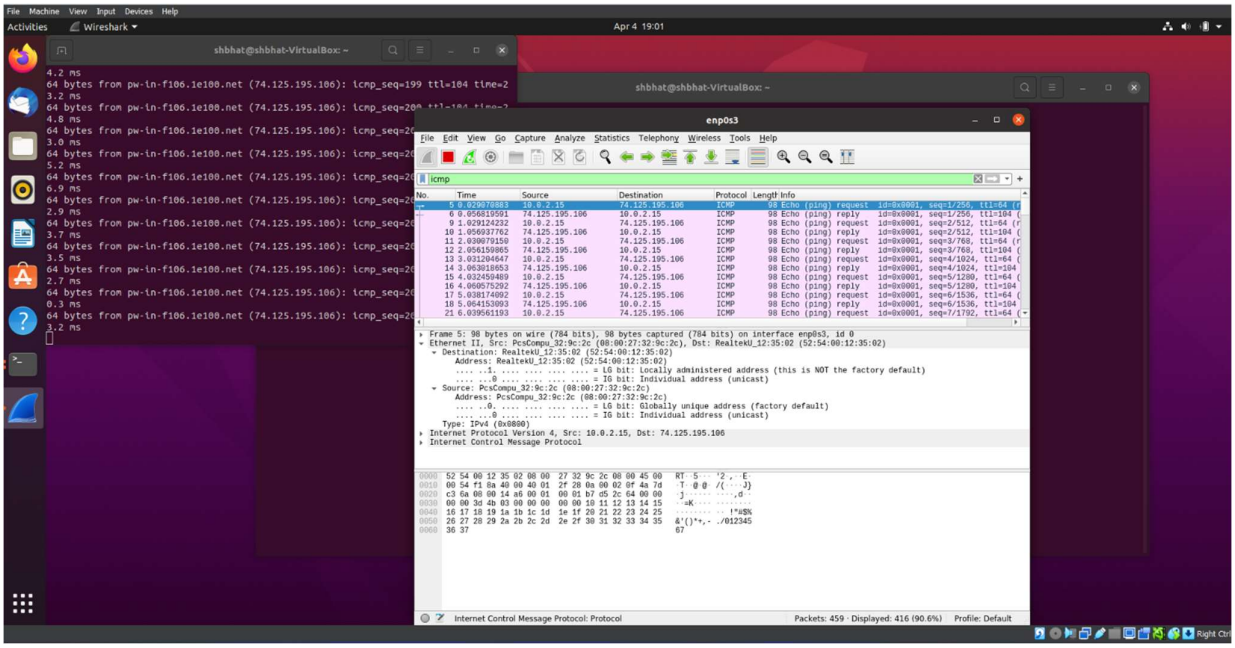
4) Which hardware manufacturer does the destination hardware address of the packet indicate? If Wireshark does not indicate a manufacturer, perform a lookup on the MAC address at https://macaddress.io and show its results instead.

Answer:

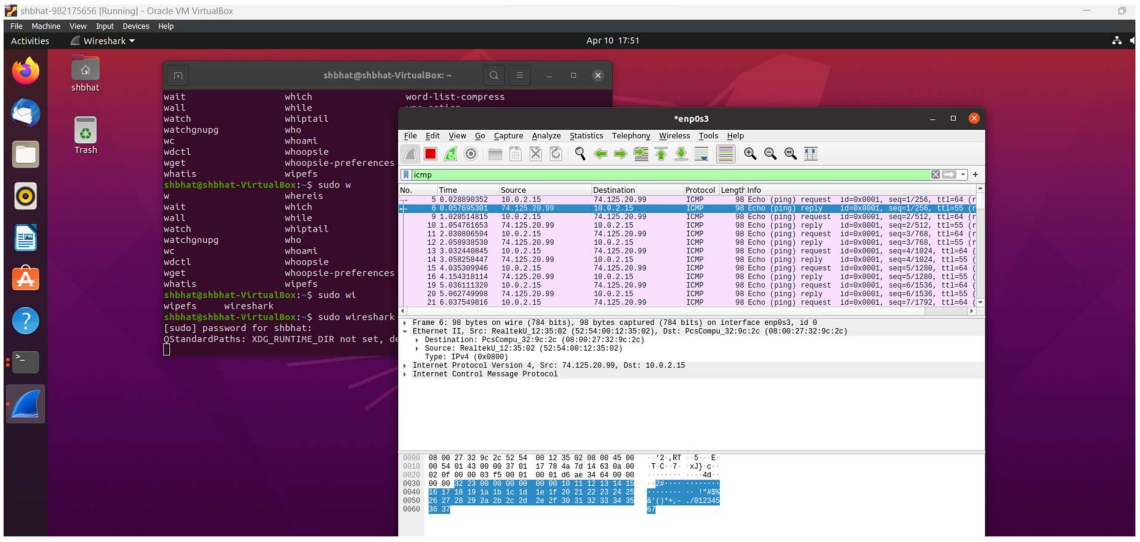
Hardware Manufacturer Address below

Destination: RealtekU_12:35:02 with the address 52:54:00:12:35:02

Screenshot of Wireshark

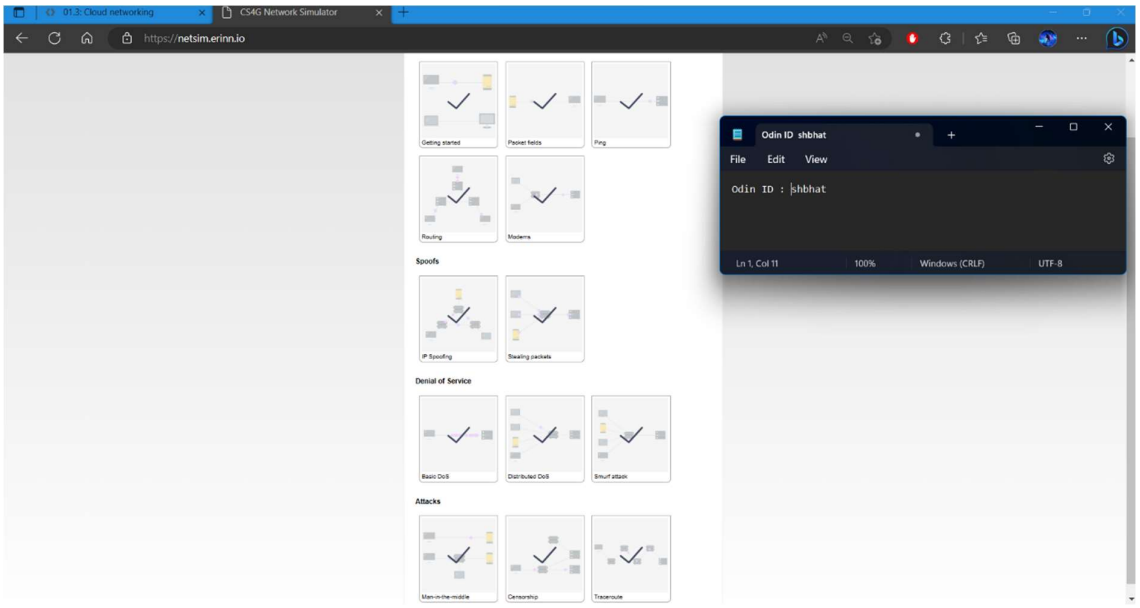


This is the reply packet



Netsim #2

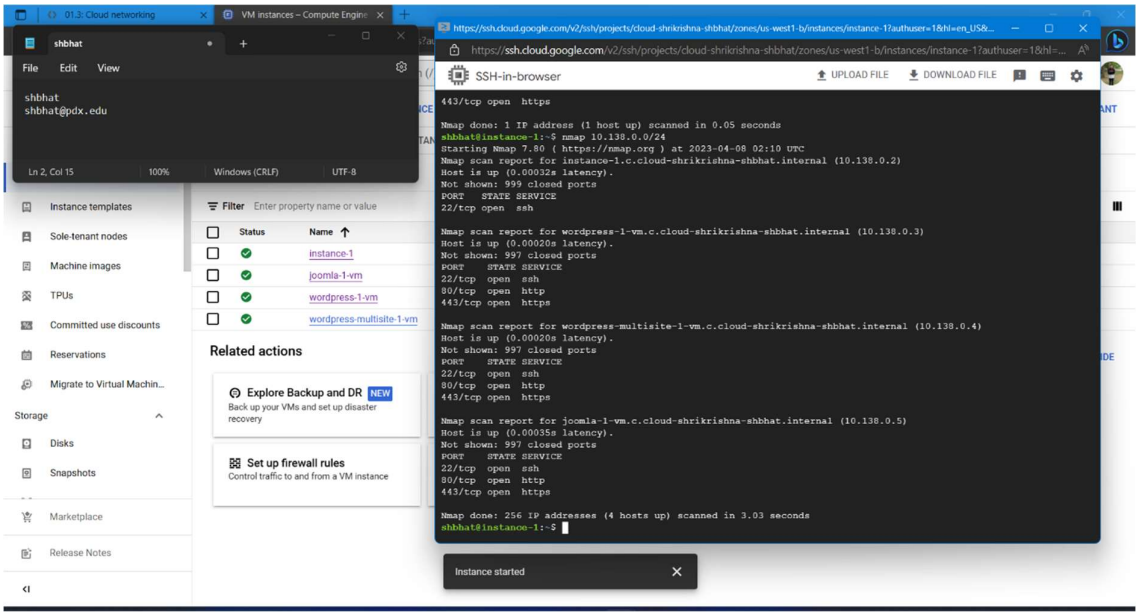
1) Take a screenshot of the completed list of levels including your OdinID



Section 1.3

Network Scanning (nmap) #1

1) nmap command - Show a screenshot of the output for the scan for your lab notebook.



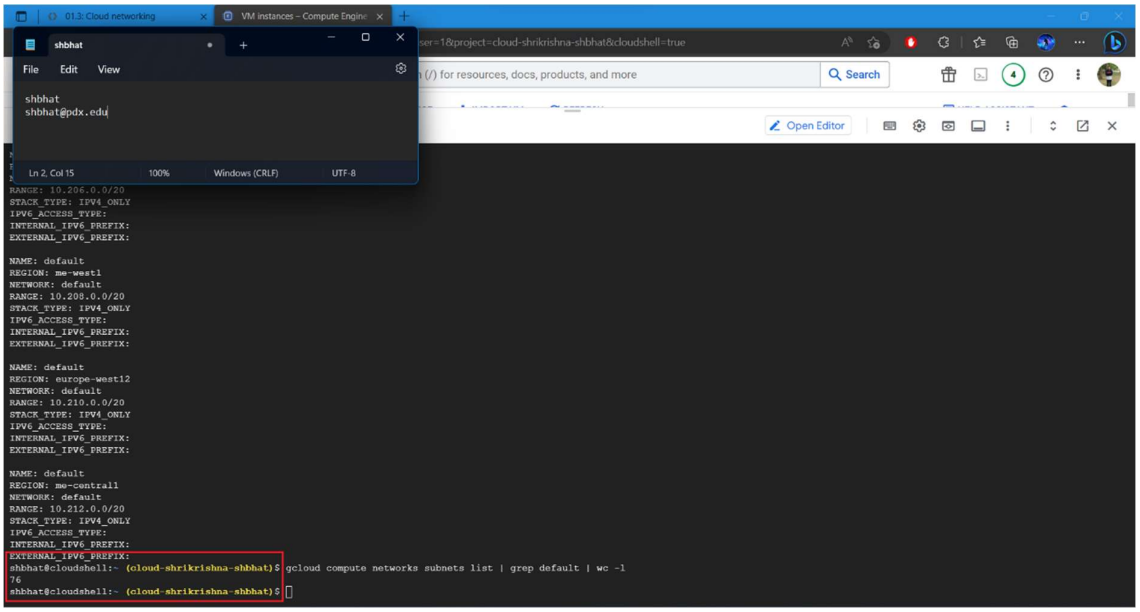
CIDR and subnets #2

1) How many subnetworks are created initially on the default network? How many regions does this correspond to? (Use a pipe to pass output to grep in order to return specific lines of output and then another to pass output to wc to count them: | grep default | wc -l)

Answer:

76 subnetworks were created initially. Since 1 subnetwork is created for each region, there are 76 regions (This is the default settings.)

Added screenshot.



2) Given the CIDR prefix associated with each subnetwork, how many hosts does each subnetwork support?

Answer is 4094 hosts.

The calculation is as follows.

Prefix has /20, hence 32 - 20 will equal to 12. From this we can get the total number of hosts as

(2^12) - 2 = 4096 - 2 = 4094

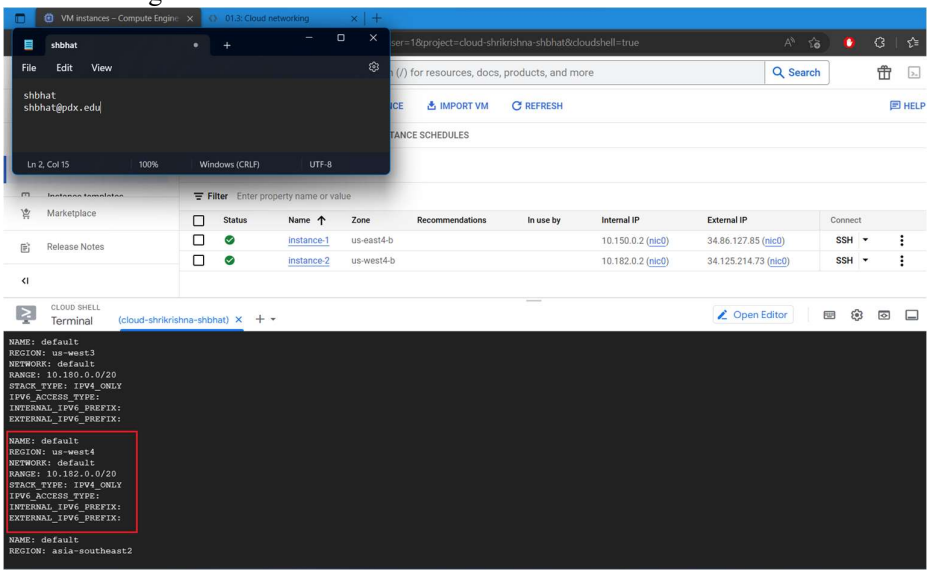
3) Which CIDR subnetworks are these instances brought up in? Do they correspond to the appropriate region based on the prior commands?

Answer:

Instances are: 10.150.0.0/20 and 10.182.0.0/20.

Yes, it belongs to same region as we got from the previous commands.

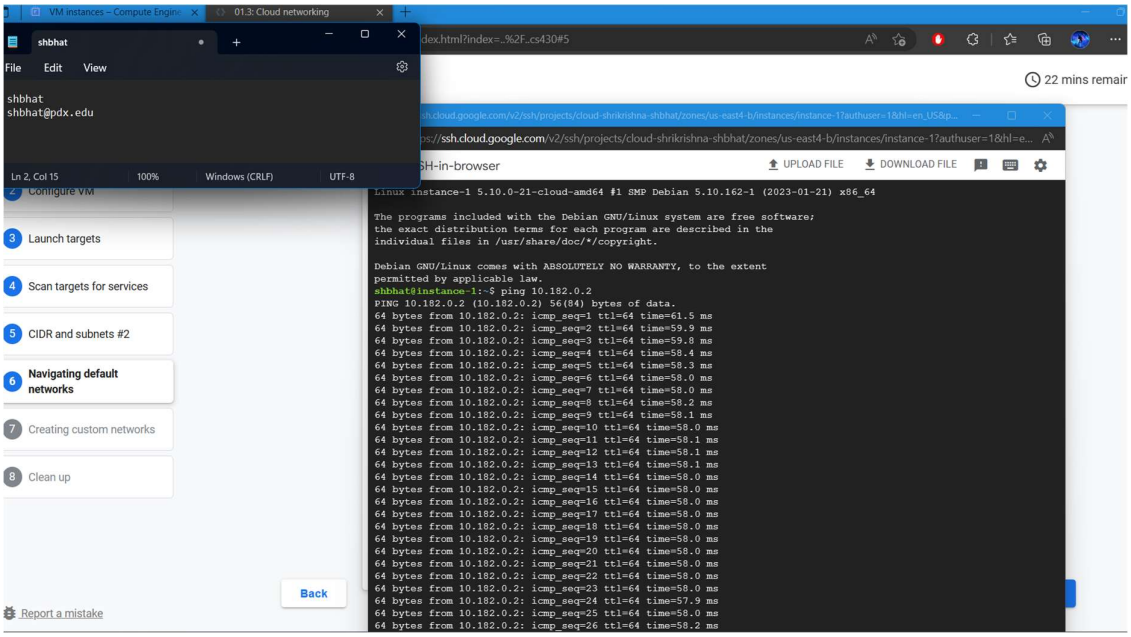
One of the region screenshot is as below



4) From instance-1, perform a ping to the Internal IP address of instance-2. Take a screenshot of the output.

Answer:

Screenshot of Ping



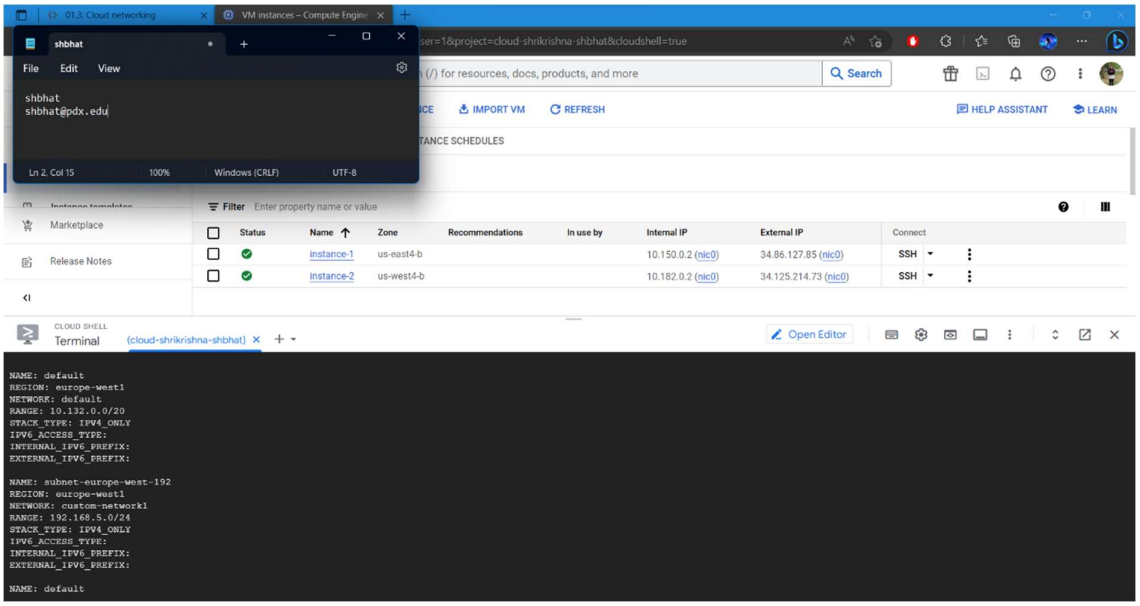
5) From the figure in the previous step. What facilitates this connectivity: the virtual switch or the VPN Gateway?

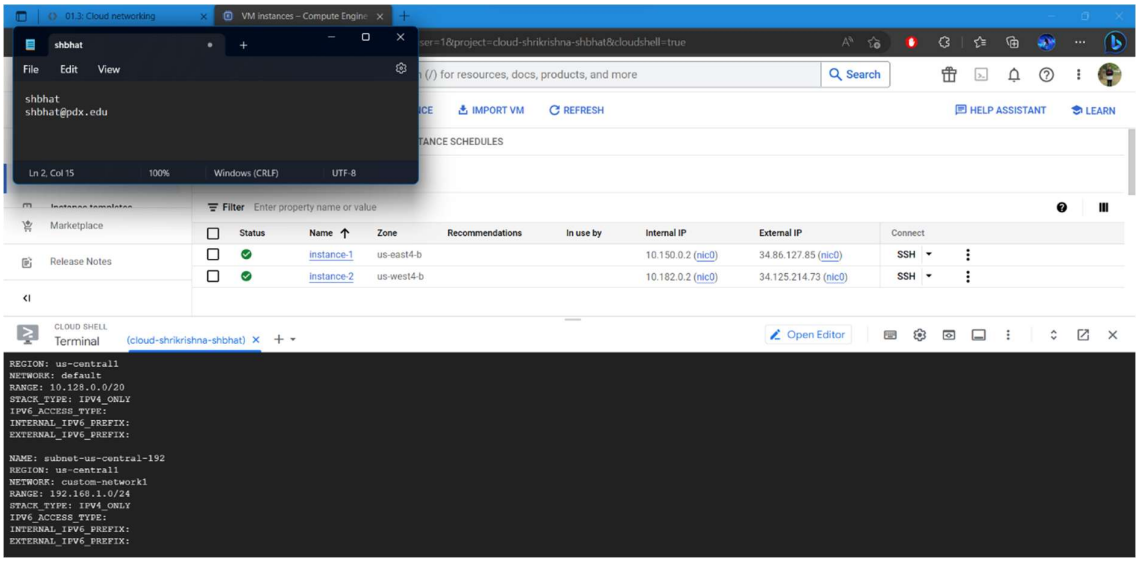
Answer:

Virtual Switch facilitates this connectivity.

6) Take a screenshot of the new subnets created in custom-network1 alongside the default subnetworks in those regions assigned to the default network.

Answer: Screenshots as below



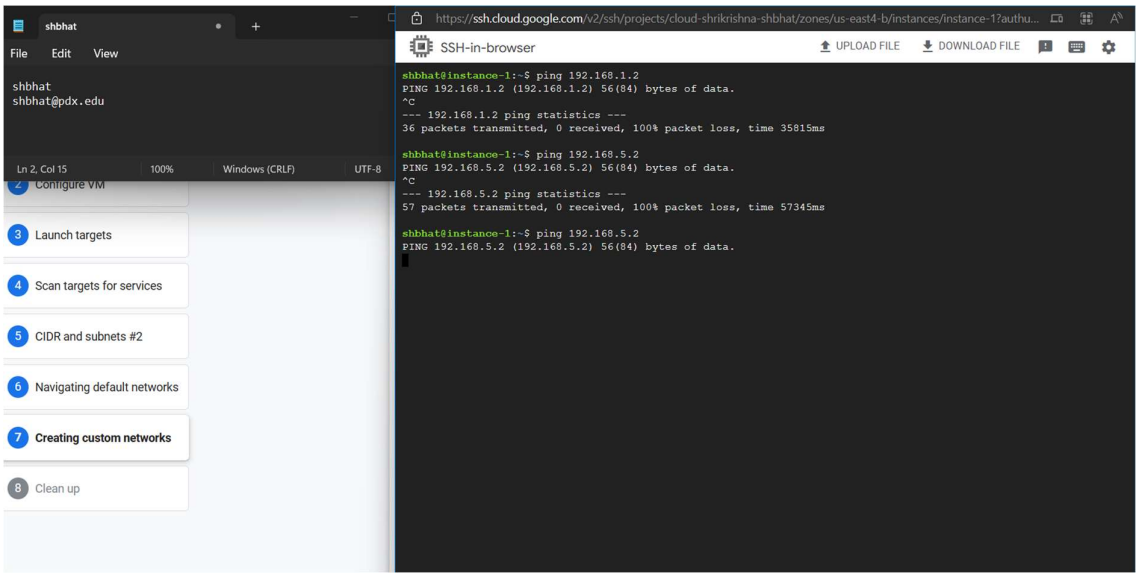


7) Explain why the result is different from instance-2

Answer:

The result was quite different from that of instance 2, the ping did not have any result due the network passing via VPN.

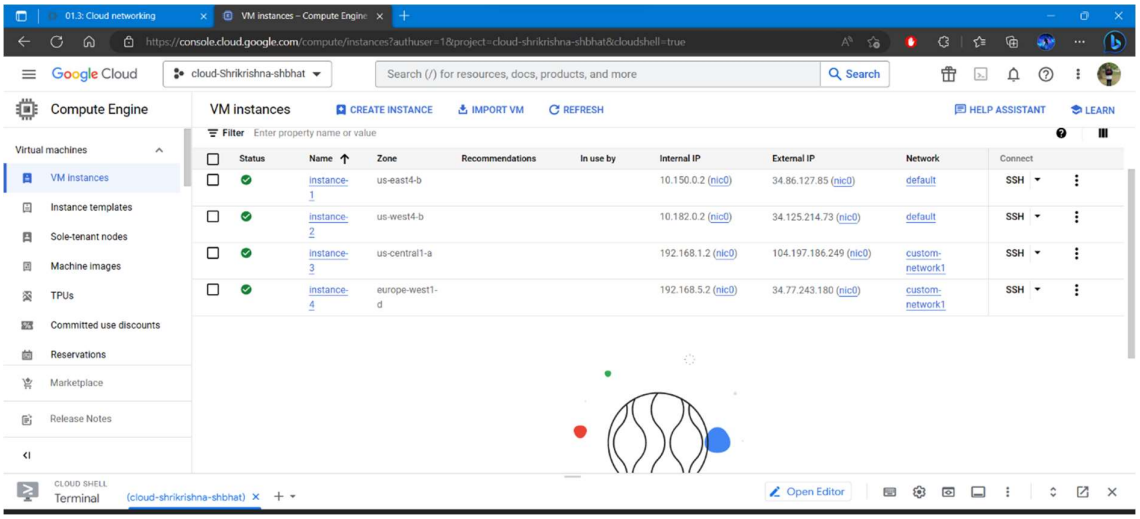
Added screenshot.



8) Take screenshots of all 4 instances in the UI including the network they belong to.

Answer:

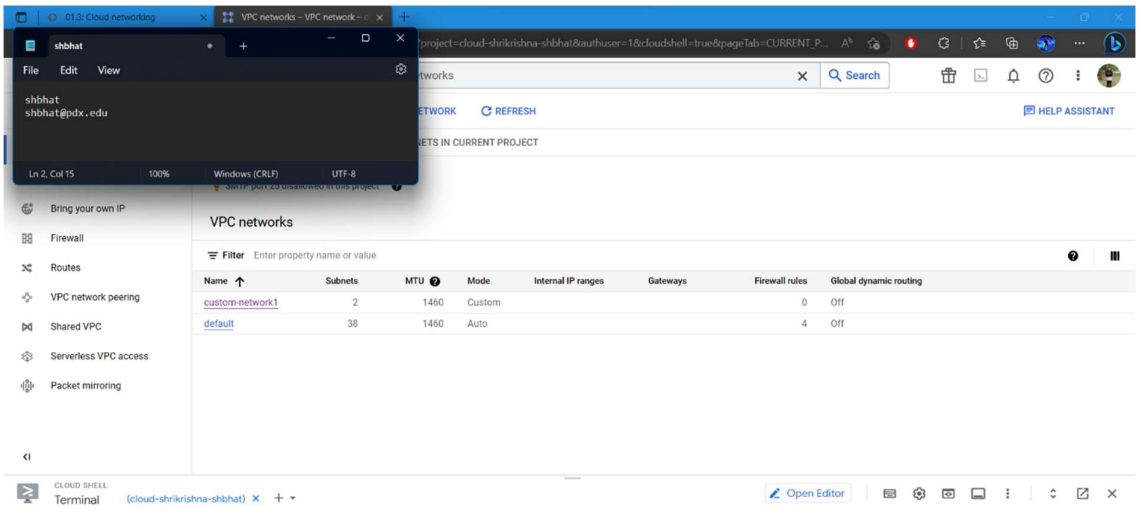
Screenshots as below

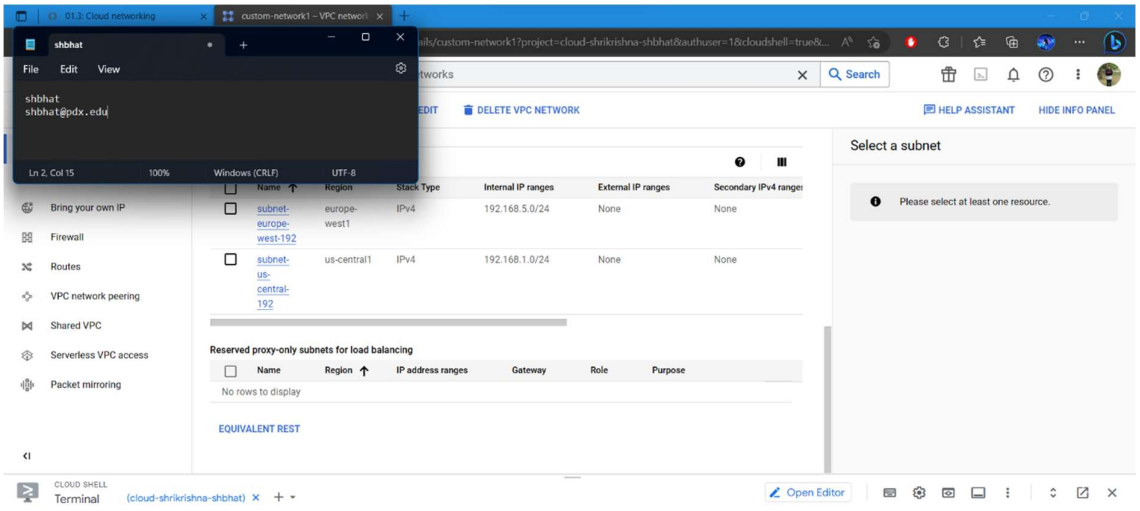


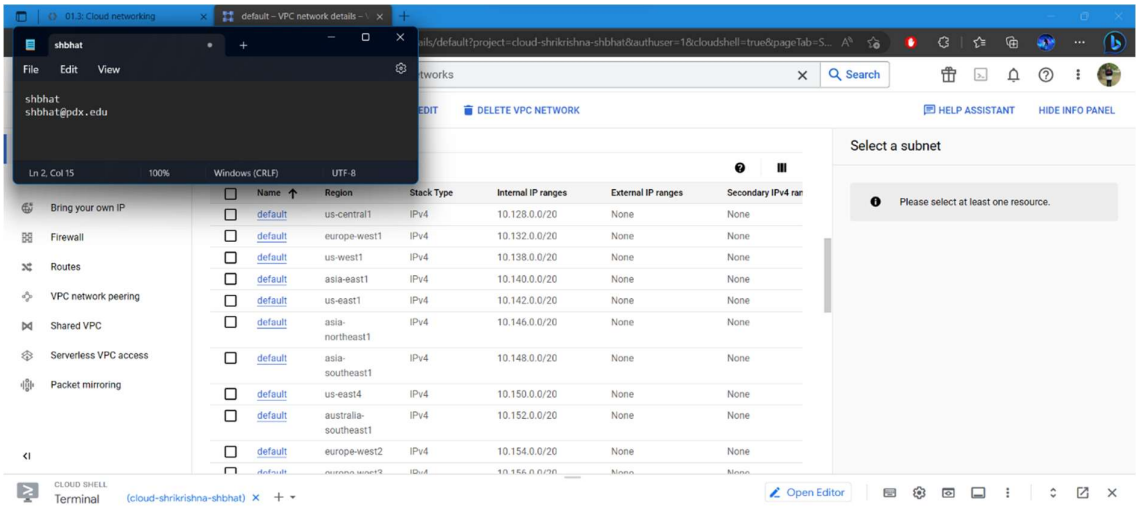
9) Take a screenshot of the subnetworks created for both the default and custom-network1 networks showing their regions.

Answer:

Screenshots as below






01.3: Cloud networking
default – VPC network details –
shbhat
File Edit View
shbhat
shbhat@pdx.edu
Ln 2, Col 15 100% Windows (CRLF) UTF-8
Search
DELETE VPC NETWORK
HELP ASSISTANT
HIDE INFO PANEL
Bring your own IP
Firewall
Routes
VPC network peering
Shared VPC
Serverless VPC access
Packet mirroring
Name Region Stack Type Internal IP ranges External IP ranges Secondary IPv4 ran
default us-central1 IPv4 10.128.0.0/20 None None
default europe-west1 IPv4 10.132.0.0/20 None None
default us-west1 IPv4 10.138.0.0/20 None None
default asia-east1 IPv4 10.140.0.0/20 None None
default us-east1 IPv4 10.142.0.0/20 None None
default asia-northeast1 IPv4 10.146.0.0/20 None None
default asia-southeast1 IPv4 10.148.0.0/20 None None
default us-east4 IPv4 10.150.0.0/20 None None
default australia-southeast1 IPv4 10.152.0.0/20 None None
default europe-west2 IPv4 10.154.0.0/20 None None
Select a subnet
Please select at least one resource.
CLOUD SHELL
Terminal
(cloud-shrikrishna-shbhat)
Open Editor