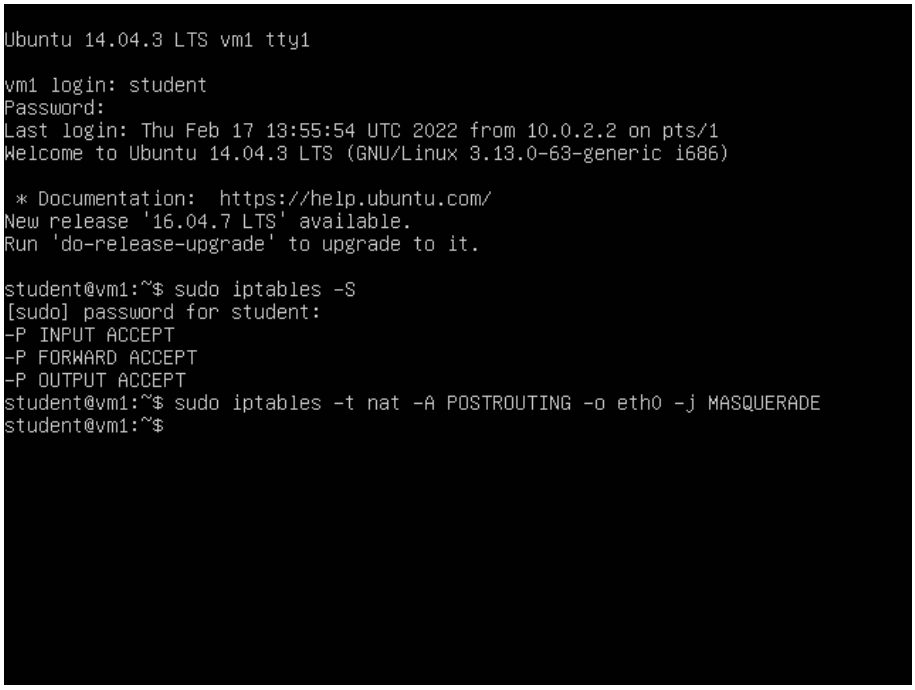
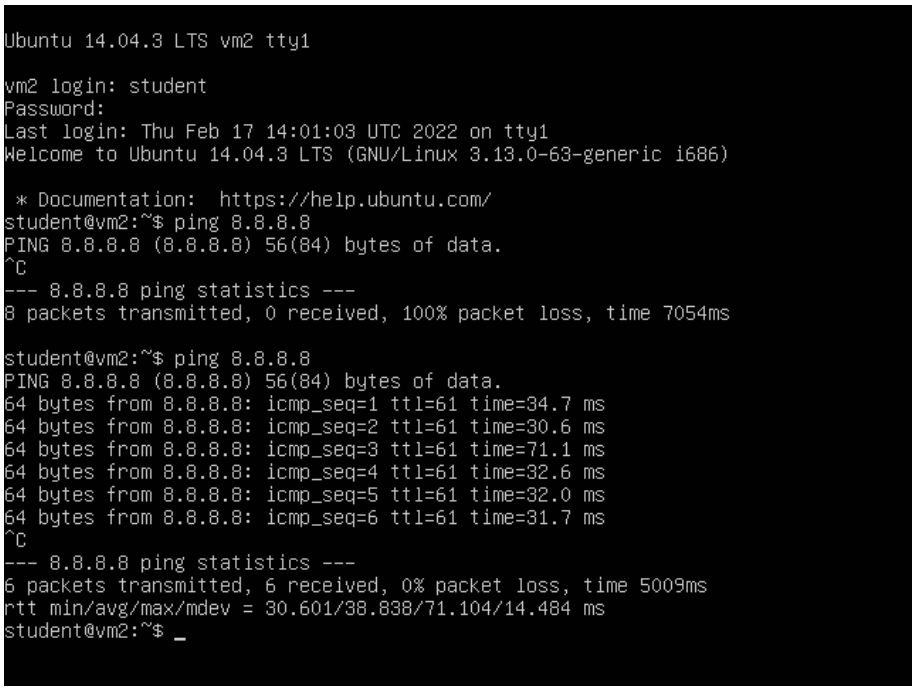
IP routing

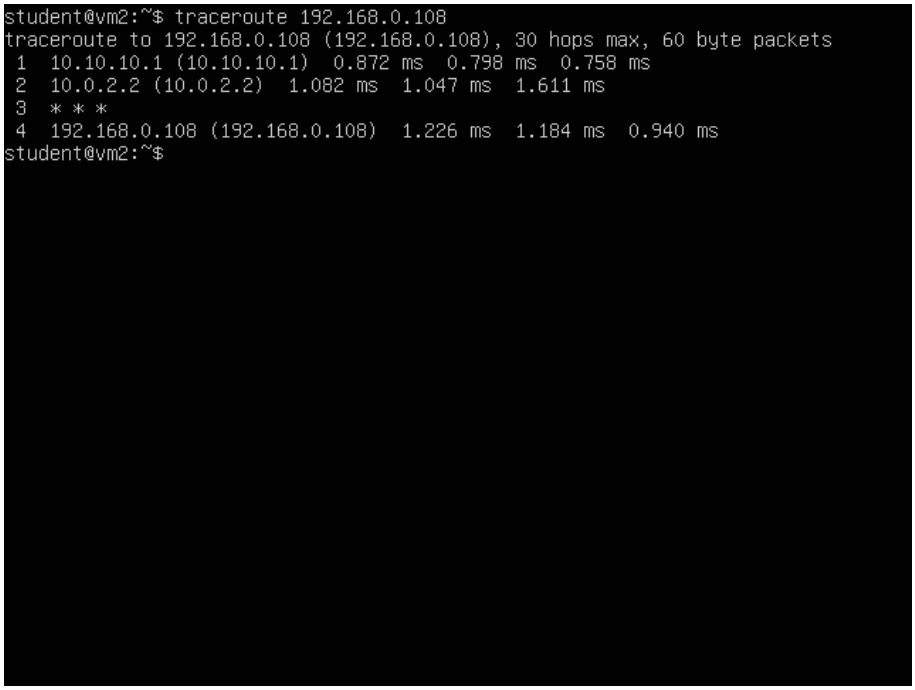
1. Create virtual machines connection according to figure

2. VM2 has one interface (internal), VM1 has 2 interfaces (NAT and internal). Configure all network
interfaces in order to make VM2 has an access to the Internet (iptables, forward, masquerade).

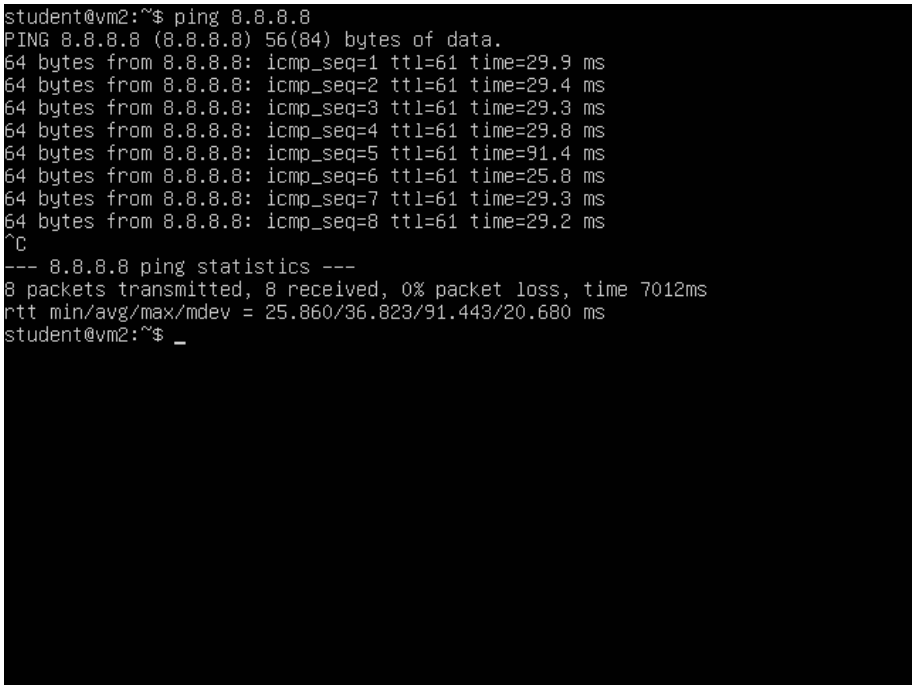




3. Check the route from VM2 to Host.



4. Check the access to the Internet, (just ping, for example, 8.8.8.8).

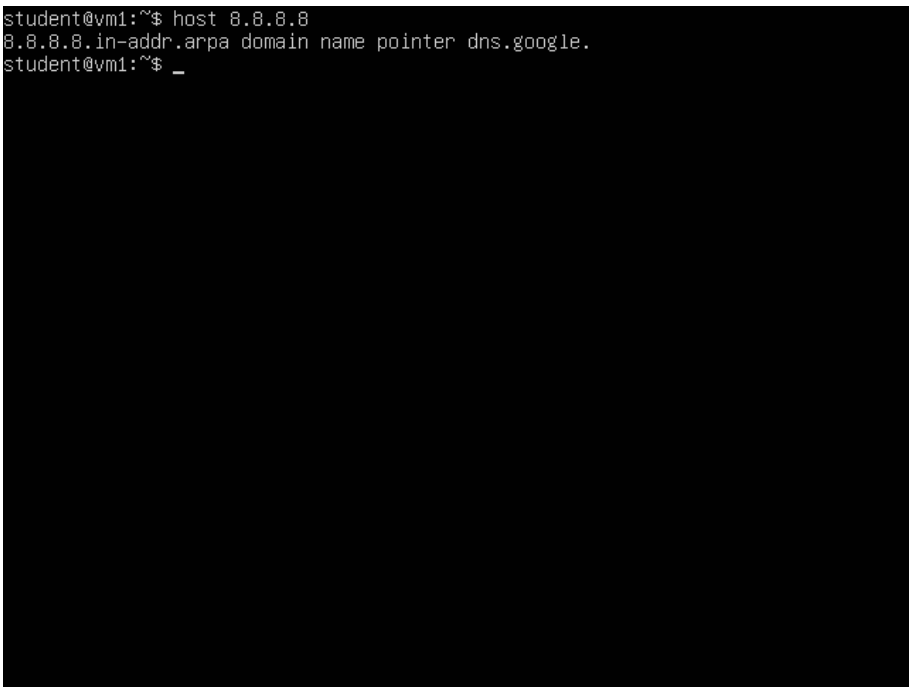


5. Determine, which resource has an IP address 8.8.8.8.

host

```
yaroslav@nitro-5:~$ host 8.8.8.8
8.8.8.8.in-addr.arpa domain name pointer dns.google.
```

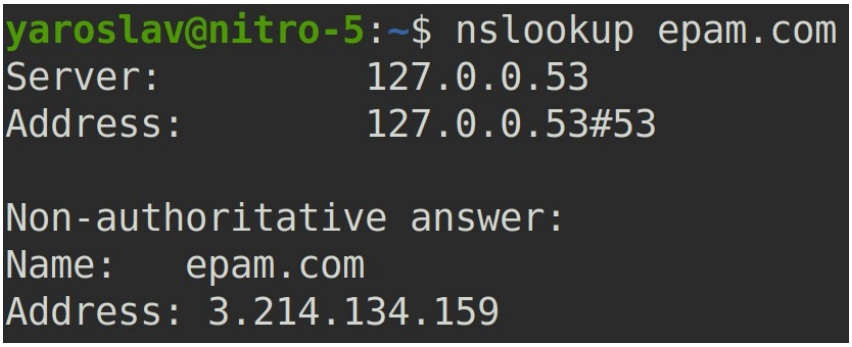
vm1



vm2

6. Determine, which IP address belongs to resource epam.com.

host



vm1

```
student@vm1:~$ host 8.8.8.8
8.8.8.8.in-addr.arpa domain name pointer dns.google.
student@vm1:~$ nslookup epam.com
Server:         10.0.2.3
Address:        10.0.2.3#53

Non-authoritative answer:
Name:   epam.com
Address: 3.214.134.159

student@vm1:~$ _
```

vm2

```
student@vm2:~$ host 8.8.8.8
;; connection timed out; no servers could be reached
student@vm2:~$ nslookup epam.com
;; connection timed out; no servers could be reached

student@vm2:~$ _
```

7. Determine the default gateway for your HOST and display routing table.

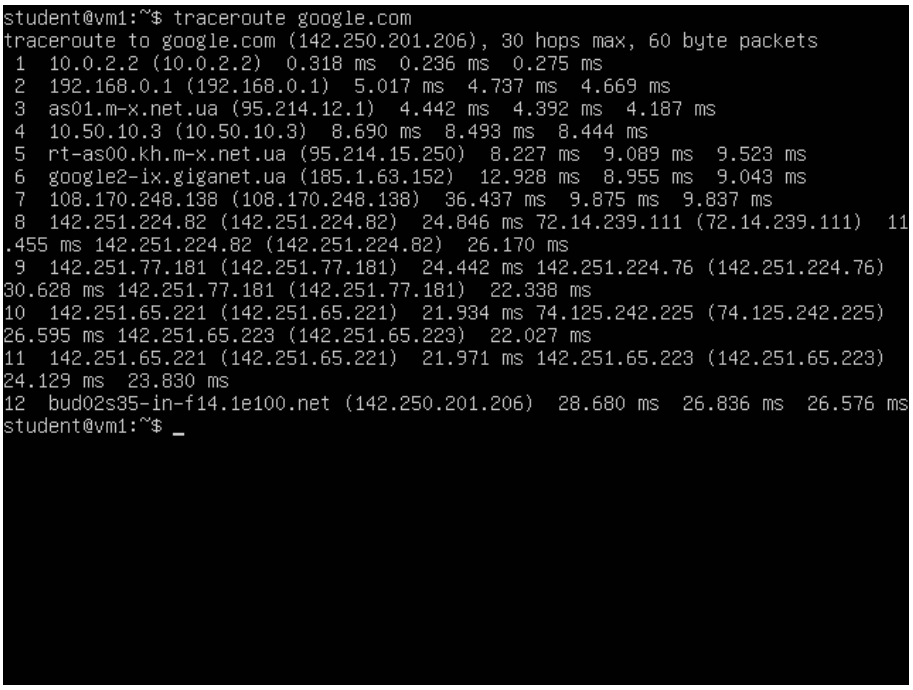
```
yaroslav@nitro-5:~$ route -n
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
0.0.0.0         192.168.0.1     0.0.0.0         UG    600    0        0 wlp7s0
169.254.0.0     0.0.0.0         255.255.0.0     U     1000   0        0 wlp7s0
172.17.0.0      0.0.0.0         255.255.0.0     U     0      0        0 docker0
172.18.0.0      0.0.0.0         255.255.0.0     U     0      0        0 br-1b8e679e31ac
172.19.0.0      0.0.0.0         255.255.0.0     U     0      0        0 br-9b48e19fdfd2
172.20.0.0      0.0.0.0         255.255.0.0     U     0      0        0 br-b54e83196231
172.21.0.0      0.0.0.0         255.255.0.0     U     0      0        0 br-877da4404db2
192.168.0.0     0.0.0.0         255.255.255.0   U     600    0        0 wlp7s0
```

8. Trace the route to google.com.

host

```
yaroslav@nitro-5:~$ traceroute google.com
traceroute to google.com (142.250.201.206), 30 hops max, 60 byte packets
 1  _gateway (192.168.0.1)  4.955 ms  4.923 ms  5.031 ms
 2  as01.m-x.net.ua (95.214.12.1)  6.363 ms  6.388 ms  6.496 ms
 3  10.50.10.3 (10.50.10.3)  9.549 ms  9.941 ms  10.894 ms
 4  rt-as00.kh.m-x.net.ua (95.214.15.250)  10.976 ms  11.116 ms  11.343 ms
 5  google2-ix.giganet.ua (185.1.63.152)  14.701 ms  14.948 ms  14.316 ms
 6  108.170.248.155 (108.170.248.155)  16.258 ms  9.617 ms  10.649 ms
 7  142.251.224.82 (142.251.224.82)  25.568 ms  29.102 ms  29.055 ms
 8  142.251.224.76 (142.251.224.76)  25.398 ms 74.125.242.225 (74.125.242.225)
 9  74.125.242.241 (74.125.242.241)  21.964 ms 74.125.242.225 (74.125.242.225)
10  bud02s35-in-f14.1e100.net (142.250.201.206)  28.692 ms 142.251.65.223 (142
01.206)  25.941 ms
```

vm1



vm2