Network Engineering 2019 Exercises - Unit 3

0.1 Netmask Calculation

What is the netmask for this network?

> 22.137.175.192/26

Put your answer on a single line in `unit3/answers.txt`, with 960: at the beginning of the line, e.g., `960:255.255.255.0`

What is the netmask for this network?

> 0.0.0.0/1

Put your answer on a single line in `unit3/answers.txt`, with 961: at the beginning of the line, e.g., `961:255.255.255.0`

What is the netmask for this network?

> 123.186.231.128/27

Put your answer on a single line in `unit3/answers.txt`, with 962: at the beginning of the line, e.g., `962:255.255.255.0`

What is the netmask for this network?

> 24.63.252.120/29

Put your answer on a single line in `unit3/answers.txt`, with 963: at the beginning of the line, e.g., `963:255.255.255.0`

What is the netmask for this network?

> 89.116.93.88/30

Put your answer on a single line in `unit3/answers.txt`, with 964: at the beginning of the line, e.g., `964:255.255.255.0`

What is the netmask for this network?

> 64.0.0.0/3

Put your answer on a single line in `unit3/answers.txt`, with 965: at the beginning of the line, e.g., `965:255.255.255.0`

What is the netmask for this network?

> 13.28.4.0/23

Put your answer on a single line in `unit3/answers.txt`, with 966: at the beginning of the line, e.g., `966:255.255.255.0`

What is the netmask for this network?

28.128.0.0/11

Put your answer on a single line in `unit3/answers.txt`, with 967: at the beginning of the line, e.g., `967:255.255.255.0`

What is the netmask for this network?

96.0.0.0/4

Put your answer on a single line in `unit3/answers.txt`, with 968: at the beginning of the line, e.g., `968:255.255.255.0`

What is the netmask for this network?

7.77.140.12/0

Put your answer on a single line in `unit3/answers.txt`, with 969: at the beginning of the line, e.g., `969:255.255.255.0`

What is the netmask for this network?

68.214.178.32/28

Put your answer on a single line in `unit3/answers.txt`, with 970: at the beginning of the line, e.g., `970:255.255.255.0`

What is the netmask for this network?

20.0.0.0/6

Put your answer on a single line in `unit3/answers.txt`, with 971: at the beginning of the line, e.g., `971:255.255.255.0`

What is the netmask for this network?

119.168.200.49/0

Put your answer on a single line in `unit3/answers.txt`, with 972: at the beginning of the line, e.g., `972:255.255.255.0`

What is the netmask for this network?

112.138.2.120/29

Put your answer on a single line in `unit3/answers.txt`, with 973: at the beginning of the line, e.g., `973:255.255.255.0`

What is the netmask for this network?

21.224.0.0/11

Put your answer on a single line in `unit3/answers.txt`, with 974: at the beginning of the line, e.g., `974:255.255.255.0`

What is the netmask for this network?

122.0.0.0/9

Put your answer on a single line in `unit3/answers.txt`, with 975: at the beginning of the line, e.g., `975:255.255.255.0`

What is the netmask for this network?

116.0.0.0/7

Put your answer on a single line in `unit3/answers.txt`, with 976: at the beginning of the line, e.g., `976:255.255.255.0`

What is the netmask for this network?

68.10.227.200/30

Put your answer on a single line in `unit3/answers.txt`, with 977: at the beginning of the line, e.g., `977:255.255.255.0`

What is the netmask for this network?

64.0.0.0/5

Put your answer on a single line in `unit3/answers.txt`, with 978: at the beginning of the line, e.g., `978:255.255.255.0`

What is the netmask for this network?

109.248.124.16/28

Put your answer on a single line in `unit3/answers.txt`, with 979: at the beginning of the line, e.g., `979:255.255.255.0`

What is the netmask for this network?

38.0.0.0/7

Put your answer on a single line in `unit3/answers.txt`, with 980: at the beginning of the line, e.g., `980:255.255.255.0`

What is the netmask for this network?

88.112.21.0/26

Put your answer on a single line in `unit3/answers.txt`, with 981: at the beginning of the line, e.g., `981:255.255.255.0`

What is the netmask for this network?

30.0.0.0/7

Put your answer on a single line in `unit3/answers.txt`, with 982: at the beginning of the line, e.g., `982:255.255.255.0`

What is the netmask for this network?

99.128.0.0/9

Put your answer on a single line in `unit3/answers.txt`, with 983: at the beginning of the line, e.g., `983:255.255.255.0`

What is the netmask for this network?

31.198.192.0/18

Put your answer on a single line in `unit3/answers.txt`, with 984: at the beginning of the line, e.g., `984:255.255.255.0`

What is the netmask for this network?

40.148.0.0/15

Put your answer on a single line in `unit3/answers.txt`, with 985: at the beginning of the line, e.g., `985:255.255.255.0`

What is the netmask for this network?

63.53.152.0/21

Put your answer on a single line in `unit3/answers.txt`, with 986: at the beginning of the line, e.g., `986:255.255.255.0`

What is the netmask for this network?

17.192.194.21/0

Put your answer on a single line in `unit3/answers.txt`, with 987: at the beginning of the line, e.g., `987:255.255.255.0`

What is the netmask for this network?

98.204.0.0/14

Put your answer on a single line in `unit3/answers.txt`, with 988: at the beginning of the line, e.g., `988:255.255.255.0`

What is the netmask for this network?

44.69.74.120/29

Put your answer on a single line in `unit3/answers.txt`, with 989: at the beginning of the line, e.g., `989:255.255.255.0`

What is the netmask for this network?

0.0.0.0/1

Put your answer on a single line in `unit3/answers.txt`, with 990: at the beginning of the line, e.g., `990:255.255.255.0`

What is the netmask for this network?

37.67.37.134/31

Put your answer on a single line in `unit3/answers.txt`, with 991: at the beginning of the line, e.g., `991:255.255.255.0`

What is the netmask for this network?

39.162.0.0/17

Put your answer on a single line in `unit3/answers.txt`, with 992: at the beginning of the line, e.g., `992:255.255.255.0`

What is the netmask for this network?

127.0.0.0/10

Put your answer on a single line in `unit3/answers.txt`, with 993: at the beginning of the line, e.g., `993:255.255.255.0`

What is the netmask for this network?

69.152.233.128/26

Put your answer on a single line in `unit3/answers.txt`, with 994: at the beginning of the line, e.g., `994:255.255.255.0`

What is the netmask for this network?

5.153.114.96/27

Put your answer on a single line in `unit3/answers.txt`, with 995: at the beginning of the line, e.g., `995:255.255.255.0`

What is the netmask for this network?

48.0.0.0/5

Put your answer on a single line in `unit3/answers.txt`, with 996: at the beginning of the line, e.g., `996:255.255.255.0`

What is the netmask for this network?

33.213.239.148/31

Put your answer on a single line in `unit3/answers.txt`, with 997: at the beginning of the line, e.g., `997:255.255.255.0`

What is the netmask for this network?

82.255.156.32/27

Put your answer on a single line in `unit3/answers.txt`, with 998: at the beginning of the line, e.g., `998:255.255.255.0`

What is the netmask for this network?

87.232.68.0/23

Put your answer on a single line in `unit3/answers.txt`, with 999: at the beginning of the line, e.g., `999:255.255.255.0`

0.2 Variable Length Sub-net Masking

What is the VLSM name of the network corresponding to the following?

112.47.183.174 netmask 255.255.128.0

Put your answer on a single line in `unit3/answers.txt`, with 1000: at the beginning of the line, e.g., `1000:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

87.100.29.39 netmask 255.255.255.248

Put your answer on a single line in `unit3/answers.txt`, with 1001: at the beginning of the line, e.g., `1001:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

61.60.163.7 netmask 255.255.255.240

Put your answer on a single line in `unit3/answers.txt`, with 1002: at the beginning of the line, e.g., `1002:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

102.67.181.189 netmask 255.255.255.240

Put your answer on a single line in `unit3/answers.txt`, with 1003: at the beginning of the line, e.g., `1003:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

107.111.163.202 netmask 255.255.255.192

Put your answer on a single line in `unit3/answers.txt`, with 1004: at the beginning of the line, e.g., `1004:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

24.208.223.26 netmask 240.0.0.0

Put your answer on a single line in `unit3/answers.txt`, with 1005: at the beginning of the line, e.g., `1005:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

57.11.151.123 netmask 128.0.0.0

Put your answer on a single line in `unit3/answers.txt`, with 1006: at the beginning of the line, e.g., `1006:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

18.146.38.99 netmask 224.0.0.0

Put your answer on a single line in `unit3/answers.txt`, with 1007: at the beginning of the line, e.g., `1007:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

39.98.13.242 netmask 128.0.0.0

Put your answer on a single line in `unit3/answers.txt`, with 1008: at the beginning of the line, e.g., `1008:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

74.145.130.13 netmask 255.128.0.0

Put your answer on a single line in `unit3/answers.txt`, with 1009: at the beginning of the line, e.g., `1009:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

126.150.119.187 netmask 255.255.224.0

Put your answer on a single line in `unit3/answers.txt`, with 1010: at the beginning of the line, e.g., `1010:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

90.36.97.164 netmask 255.255.255.240

Put your answer on a single line in `unit3/answers.txt`, with 1011: at the beginning of the line, e.g., `1011:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

46.52.123.248 netmask 255.255.255.192

Put your answer on a single line in `unit3/answers.txt`, with 1012: at the beginning of the line, e.g., `1012:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

7.188.236.28 netmask 248.0.0.0

Put your answer on a single line in `unit3/answers.txt`, with 1013: at the beginning of the line, e.g., `1013:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

     1.86.94.213 netmask 240.0.0.0

Put your answer on a single line in `unit3/answers.txt`, with 1014: at the beginning of the line, e.g., `1014:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

     115.250.155.188 netmask 224.0.0.0

Put your answer on a single line in `unit3/answers.txt`, with 1015: at the beginning of the line, e.g., `1015:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

     96.34.50.182 netmask 224.0.0.0

Put your answer on a single line in `unit3/answers.txt`, with 1016: at the beginning of the line, e.g., `1016:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

     32.235.105.32 netmask 255.255.255.248

Put your answer on a single line in `unit3/answers.txt`, with 1017: at the beginning of the line, e.g., `1017:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

     52.131.152.32 netmask 255.255.255.248

Put your answer on a single line in `unit3/answers.txt`, with 1018: at the beginning of the line, e.g., `1018:10.0.0.0/8`

What is the VLSM name of the network corresponding to the following?

     61.107.36.57 netmask 255.192.0.0

Put your answer on a single line in `unit3/answers.txt`, with 1019: at the beginning of the line, e.g., `1019:10.0.0.0/8`

0.3 Configure Network Interfaces using the ifconfig and ip commands

What is `ifconfig` command equivalent to the following `ip` command sequence (apply any options in the order listed)?

   ip address add 25.184.31.23/19 dev eth0; ip link set eth0 down

Put your answer on a single line in **unit3/answers.txt**, with 1020: at the beginning of the line, e.g., `1020:ip blah blah; ip again with other options; ip again with yet other options`

What is `ifconfig` command equivalent to the following `ip` command sequence (apply any options in the order listed)?

   ip address add 126.3.16.34/16 dev eth0

Put your answer on a single line in **unit3/answers.txt**, with 1021: at the beginning of the line, e.g., `1021:ip blah blah; ip again with other options; ip again with yet other options`

What is the `ifconfig` command to setup interface eth0 with the following network settings (apply any options in the order listed)?

   125.150.152.179 netmask 112.0.0.0/4, MTU = 2051, PPP remote
   address 66.36.26.66, but not running

Put your answer on a single line in **unit3/answers.txt**, with 1022: at the beginning of the line, e.g., `1022:ifconfig moo0 1.2.3.4 netmask 255.0.0.0 -broadcast`

What is the `ifconfig` command to setup interface eth0 with the following network settings (apply any options in the order listed)?

   17.102.193.93 netmask 17.102.193.88/29, MTU = 4032, PPP remote
   address 7.122.31.128, TX queue length = 1036

Put your answer on a single line in **unit3/answers.txt**, with 1023: at the beginning of the line, e.g., `1023:ifconfig moo0 1.2.3.4 netmask 255.0.0.0 -broadcast`

What is `ip` command sequence equivalent to the following `ifconfig` command (apply any options in the order listed)?

   ifconfig eth0 5.225.54.29 netmask 255.248.0.0 mtu 607 promisc

Put your answer on a single line in **unit3/answers.txt**, with 1024: at the beginning of the line, e.g., `1024:ip blah blah; ip again with other options; ip again with yet other options`

What is `ip` command sequence to setup interface eth0 with the following network settings (apply any options in the order listed)?

> 95.64.199.8 netmask 0.0.0.0/1, but not running, without ARP

Put your answer on a single line in `unit3/answers.txt`, with 1025: at the beginning of the line, e.g., `1025:ip blah blah; ip again with other options; ip again with yet other options`

What is `ip` command sequence to setup interface eth0 with the following network settings (apply any options in the order listed)?

> 63.18.0.52 netmask 56.0.0.0/5

Put your answer on a single line in `unit3/answers.txt`, with 1026: at the beginning of the line, e.g., `1026:ip blah blah; ip again with other options; ip again with yet other options`

What is `ip` command sequence to setup interface eth0 with the following network settings (apply any options in the order listed)?

> 54.179.230.114 netmask 48.0.0.0/5

Put your answer on a single line in `unit3/answers.txt`, with 1027: at the beginning of the line, e.g., `1027:ip blah blah; ip again with other options; ip again with yet other options`

What is the `ifconfig` command to setup interface eth0 with the following network settings (apply any options in the order listed)?

> 62.179.34.153 netmask 62.176.0.0/14, MTU = 3547, without ARP, in promiscuous mode

Put your answer on a single line in `unit3/answers.txt`, with 1028: at the beginning of the line, e.g., `1028:ifconfig moo0 1.2.3.4 netmask 255.0.0.0 -broadcast`

What is `ifconfig` command equivalent to the following `ip` command sequence (apply any options in the order listed)?

> ip address add 106.10.138.31/7 dev eth0; ip link set eth0 down; ip link set dev eth0 promisc on

Put your answer on a single line in `unit3/answers.txt`, with 1029: at the beginning of the line, e.g., `1029:ip blah blah; ip again with other options; ip again with yet other options`

What is `ip` command sequence equivalent to the following `ifconfig` command (apply any options in the order listed)?

ifconfig eth0 109.109.210.194 netmask 255.255.255.254 mtu 2376

Put your answer on a single line in `unit3/answers.txt`, with 1030: at the beginning of the line, e.g., `1030:ip blah blah; ip again with other options; ip again with yet other options`

What is `ip` command sequence to setup interface eth0 with the following network settings (apply any options in the order listed)?

21.15.181.4 netmask 21.0.0.0/8, MTU = 2406, TX queue length = 3749

Put your answer on a single line in `unit3/answers.txt`, with 1031: at the beginning of the line, e.g., `1031:ip blah blah; ip again with other options; ip again with yet other options`

What is `ip` command sequence to setup interface eth0 with the following network settings (apply any options in the order listed)?

107.36.151.164 netmask 107.36.0.0/16, MTU = 2470, in promiscuous mode

Put your answer on a single line in `unit3/answers.txt`, with 1032: at the beginning of the line, e.g., `1032:ip blah blah; ip again with other options; ip again with yet other options`

What is the `ifconfig` command to setup interface eth0 with the following network settings (apply any options in the order listed)?

92.130.91.94 netmask 92.130.88.0/22, TX queue length = 3945

Put your answer on a single line in `unit3/answers.txt`, with 1033: at the beginning of the line, e.g., `1033:ifconfig moo0 1.2.3.4 netmask 255.0.0.0 -broadcast`

What is `ip` command sequence to setup interface eth0 with the following network settings (apply any options in the order listed)?

35.125.174.20 netmask 35.125.174.16/29, MTU = 1530, without ARP, in promiscuous mode

Put your answer on a single line in `unit3/answers.txt`, with 1034: at the beginning of the line, e.g., `1034:ip blah blah; ip again with other options; ip again with yet other options`

What is `ip` command sequence equivalent to the following `ifconfig` command (apply any options in the order listed)?

ifconfig eth0 100.88.122.5 netmask 255.255.255.0 txqueuelen 3590

Put your answer on a single line in `unit3/answers.txt`, with 1035: at the beginning of the line, e.g., `1035:ip blah blah; ip again with other options; ip again with yet other options`

What is `ip` command sequence equivalent to the following `ifconfig` command (apply any options in the order listed)?

ifconfig eth0 44.165.108.237 netmask 255.255.0.0 mtu 2586

Put your answer on a single line in `unit3/answers.txt`, with 1036: at the beginning of the line, e.g., `1036:ip blah blah; ip again with other options; ip again with yet other options`

What is `ip` command sequence equivalent to the following `ifconfig` command (apply any options in the order listed)?

ifconfig eth0 73.43.164.75 netmask 255.252.0.0 mtu 2667 promisc

Put your answer on a single line in `unit3/answers.txt`, with 1037: at the beginning of the line, e.g., `1037:ip blah blah; ip again with other options; ip again with yet other options`

What is the `ifconfig` command to setup interface eth0 with the following network settings (apply any options in the order listed)?

5.100.85.230 netmask 5.100.85.230/0, PPP remote address 123.37.228.62, TX queue length = 1295

Put your answer on a single line in `unit3/answers.txt`, with 1038: at the beginning of the line, e.g., `1038:ifconfig moo0 1.2.3.4 netmask 255.0.0.0 -broadcast`

What is `ip` command sequence to setup interface eth0 with the following network settings (apply any options in the order listed)?

42.21.16.16 netmask 42.0.0.0/11

Put your answer on a single line in `unit3/answers.txt`, with 1039: at the beginning of the line, e.g., `1039:ip blah blah; ip again with other options; ip again with yet other options`

0.4 Configure Network Interfaces using /etc/network/interfaces file

0.4.1 Prepare unit3/iface0-solution.txt

Produce an `interfaces` file in `unit3/iface0-solution.txt`, that contains the following:

- A template called ruins0, that specifies an MTU of 625 and MAC address 2C:D1:07:4F:D6:A1.

- A template called castle1, that specifies an MTU of 6032 and MAC address 41:94:F4:7F:0D:42.

- A template called wealth2, that specifies an MTU of 5071 and MAC address 42:9B:7E:52:86:B3.

- An interface named wlan0, with IPv4 settings configured by DHCPand inherits the template wealth2.

- An interface named jam1, with IPv4 address 53.100.5.7 and netmask 255.255.255.0, and inherits the template wealth2.

- An interface named eth2, with IPv4 address 55.94.127.175 and netmask 255.255.255.255.

- An interface named wlan3, with IPv4 settings configured by DHCPand inherits the template ruins0.

- An interface named wlan4, with IPv4 address 32.95.32.117 and netmask 224.0.0.0, and inherits the template wealth2.

- An interface named jam5, with IPv4 address 96.83.147.167 and netmask 255.255.255.128.

- An interface named wlan6, with IPv4 address 116.226.66.202 and netmask 255.0.0.0.

0.4.2 Prepare unit3/iface1-solution.txt

Produce an `interfaces` file in `unit3/iface1-solution.txt`, that contains the following:

- A template called castle0, that specifies an MTU of 4751 and MAC address 76:59:7F:7B:C4:81.

- A template called wealth1, that specifies an MTU of 6367 and MAC address 03:BA:C4:25:30:A7.

- An interface named ftdi0, with IPv4 settings configured by DHCPand inherits the template castle0.

- An interface named eth1, with IPv4 address 5.196.112.59 and netmask 255.255.255.240, and inherits the template wealth1.

- An interface named eth2, with IPv4 settings configured by DHCPand inherits the template wealth1.

0.4.3 Prepare unit3/iface2-solution.txt

Produce an `interfaces` file in `unit3/iface2-solution.txt`, that contains the following:

- A template called castle0, that specifies an MTU of 8622 and MAC address 23:E2:CD:26:9D:92.

- A template called moths1, that specifies an MTU of 5441 and MAC address 39:2E:F0:16:54:BB.

- A template called moths2, that specifies an MTU of 3590 and MAC address F6:27:AA:BA:AC:8C.

- A template called ruins3, that specifies an MTU of 981 and MAC address 18:40:DD:FD:E2:AB.

- An interface named wlan0, with IPv4 settings configured by DHCPand inherits the template ruins3.

- An interface named eth1, with IPv4 address 92.228.163.119 and netmask 255.255.255.0.

- An interface named jam2, with IPv4 settings configured by DHCP.

- An interface named jam3, with IPv4 settings configured by DHCP.

- An interface named jam4, with IPv4 address 96.164.216.203 and netmask 255.255.128.0, and inherits the template castle0.

- An interface named eth5, with IPv4 settings configured by DHCPand inherits the template moths2.

- An interface named wlan6, with IPv4 settings configured by DHCP.

0.4.4 Prepare unit3/iface3-solution.txt

Produce an `interfaces` file in `unit3/iface3-solution.txt`, that contains the following:

- A template called wealth0, that specifies an MTU of 7114 and MAC address 01:9B:DC:A5:1D:70.

- A template called moths1, that specifies an MTU of 4946 and MAC address AF:93:1C:7A:04:FC.

- A template called ruins2, that specifies an MTU of 6414 and MAC address B8:3E:49:20:C6:E2.

- An interface named jam0, with IPv4 address 80.221.60.195 and netmask 254.0.0.0.

- An interface named ftdi1, with IPv4 settings configured by DHCP.

- An interface named jam2, with IPv4 settings configured by DHCP.

- An interface named wlan3, with IPv4 settings configured by DHCP.

- An interface named ftdi4, with IPv4 address 82.250.4.205 and netmask 192.0.0.0, and inherits the template wealth0.

- An interface named ftdi5, with IPv4 address 46.132.172.205 and netmask 255.255.255.224.

- An interface named wlan6, with IPv4 settings configured by DHCPand inherits the template moths1.

0.4.5   Prepare unit3/iface4-solution.txt

Produce an `interfaces` file in `unit3/iface4-solution.txt`, that contains the following:

- A template called ruins0, that specifies an MTU of 4932 and MAC address DA:A3:63:9D:B5:99.

- A template called moths1, that specifies an MTU of 4835 and MAC address 62:CE:B4:2F:70:4E.

- A template called moths2, that specifies an MTU of 2635 and MAC address 26:80:47:C4:2F:D9.

- A template called ruins3, that specifies an MTU of 7642 and MAC address A2:4D:C1:BC:80:C2.

- A template called wealth4, that specifies an MTU of 5514 and MAC address 65:8B:F8:1B:24:1F.

- An interface named ftdi0, with IPv4 settings configured by DHCP.

- An interface named wlan1, with IPv4 settings configured by DHCPand inherits the template ruins3.

- An interface named wlan2, with IPv4 address 41.84.124.126 and netmask 255.255.255.0, and inherits the template moths2.

0.5 Create and delete routes

0.5.1 Create files `unit3/routes0add.sh` and `unit3/routes0del.sh` that contains commands that will respective establish and delete the following routes

- 50.138.128.0/17 via the IP address of your 2nd VM

- 75.148.76.128/28 via the IP address of your 2nd VM

- 19.22.44.0/22 via the IP address of your 2nd VM

- 110.213.12.208/28 via the IP address of your 2nd VM

- 52.244.128.0/17 via the interface to your 2nd VM

- 112.60.187.196/30 via the interface to your 2nd VM

0.5.2 Create files `unit3/routes1add.sh` and `unit3/routes1del.sh` that contains commands that will respective establish and delete the following routes

- 68.56.206.64/26 via the IP address of your 2nd VM

- 26.239.195.212/30 via the interface to your 2nd VM

- 39.243.45.160/28 via the IP address of your 2nd VM

- 112.253.8.0/26 via the interface to your 2nd VM

- 21.180.51.0/24 via the interface to your 2nd VM

- 43.232.100.60/31 via the interface to your 2nd VM

0.5.3 Create files `unit3/routes2add.sh` and `unit3/routes2del.sh` that contains commands that will respective establish and delete the following routes

- 52.153.94.0/23 via the IP address of your 2nd VM

- 92.140.128.0/20 via the IP address of your 2nd VM

- 49.189.116.12/30 via the IP address of your 2nd VM

- 71.113.164.0/22 via the interface to your 2nd VM

- 115.90.8.0/21 via the interface to your 2nd VM

- 82.226.157.176/28 via the IP address of your 2nd VM

0.5.4 Create files `unit3/routes3add.sh` and `unit3/routes3del.sh` that contains commands that will respective establish and delete the following routes

- 18.227.52.0/24 via the interface to your 2nd VM

- 71.124.0.0/16 via the IP address of your 2nd VM

- 111.154.147.224/28 via the IP address of your 2nd VM

- 49.107.89.64/27 via the IP address of your 2nd VM

- 109.58.100.0/23 via the IP address of your 2nd VM

- 31.15.176.0/20 via the IP address of your 2nd VM

0.5.5 Create files `unit3/routes4add.sh` and `unit3/routes4del.sh` that contains commands that will respective establish and delete the following routes

- 109.166.55.176/28 via the interface to your 2nd VM

- 67.41.172.240/29 via the interface to your 2nd VM

- 82.176.198.0/28 via the interface to your 2nd VM

- 41.169.128.0/17 via the interface to your 2nd VM

- 115.252.82.160/28 via the IP address of your 2nd VM

- 89.52.164.200/29 via the IP address of your 2nd VM