

Network Engineering 2019 Exercises - Unit 3

0.1 Netmask Calculation

What is the netmask for this network?

104.0.0.0/6

Put your answer on a single line in `unit3/answers.txt`, with 0: at the beginning of the line, e.g., 0:255.255.255.0

What is the netmask for this network?

100.60.128.0/19

Put your answer on a single line in `unit3/answers.txt`, with 1: at the beginning of the line, e.g., 1:255.255.255.0

What is the netmask for this network?

116.176.220.80/31

Put your answer on a single line in `unit3/answers.txt`, with 2: at the beginning of the line, e.g., 2:255.255.255.0

What is the netmask for this network?

42.224.0.0/12

Put your answer on a single line in `unit3/answers.txt`, with 3: at the beginning of the line, e.g., 3:255.255.255.0

What is the netmask for this network?

35.136.0.0/13

Put your answer on a single line in `unit3/answers.txt`, with 4: at the beginning of the line, e.g., 4:255.255.255.0

What is the netmask for this network?

61.0.0.0/11

Put your answer on a single line in `unit3/answers.txt`, with 5: at the beginning of the line, e.g., 5:255.255.255.0

What is the netmask for this network?

46.177.65.224/27

Put your answer on a single line in `unit3/answers.txt`, with 6: at the beginning of the line, e.g., 6:255.255.255.0

What is the netmask for this network?

120.0.0.0/6

Put your answer on a single line in `unit3/answers.txt`, with 7: at the beginning of the line, e.g., 7:255.255.255.0

What is the netmask for this network?

64.0.0.0/2

Put your answer on a single line in `unit3/answers.txt`, with 8: at the beginning of the line, e.g., 8:255.255.255.0

What is the netmask for this network?

18.32.8.0/24

Put your answer on a single line in `unit3/answers.txt`, with 9: at the beginning of the line, e.g., 9:255.255.255.0

What is the netmask for this network?

2.0.0.0/8

Put your answer on a single line in `unit3/answers.txt`, with 10: at the beginning of the line, e.g., 10:255.255.255.0

What is the netmask for this network?

17.144.0.0/13

Put your answer on a single line in `unit3/answers.txt`, with 11: at the beginning of the line, e.g., 11:255.255.255.0

What is the netmask for this network?

20.14.15.64/26

Put your answer on a single line in `unit3/answers.txt`, with 12: at the beginning of the line, e.g., 12:255.255.255.0

What is the netmask for this network?

0.0.0.0/3

Put your answer on a single line in `unit3/answers.txt`, with 13: at the beginning of the line, e.g., 13:255.255.255.0

What is the netmask for this network?

127.220.194.50/31

Put your answer on a single line in `unit3/answers.txt`, with 14: at the beginning of the line, e.g., 14:255.255.255.0

What is the netmask for this network?

65.167.196.192/26

Put your answer on a single line in `unit3/answers.txt`, with 15: at the beginning of the line, e.g., 15:255.255.255.0

What is the netmask for this network?

78.106.192.0/18

Put your answer on a single line in `unit3/answers.txt`, with 16: at the beginning of the line, e.g., 16:255.255.255.0

What is the netmask for this network?

81.155.80.0/23

Put your answer on a single line in `unit3/answers.txt`, with 17: at the beginning of the line, e.g., 17:255.255.255.0

What is the netmask for this network?

63.45.186.0/24

Put your answer on a single line in `unit3/answers.txt`, with 18: at the beginning of the line, e.g., 18:255.255.255.0

What is the netmask for this network?

37.113.48.128/26

Put your answer on a single line in `unit3/answers.txt`, with 19: at the beginning of the line, e.g., 19:255.255.255.0

What is the netmask for this network?

67.108.97.32/29

Put your answer on a single line in `unit3/answers.txt`, with 20: at the beginning of the line, e.g., 20:255.255.255.0

What is the netmask for this network?

51.58.176.0/23

Put your answer on a single line in `unit3/answers.txt`, with 21: at the beginning of the line, e.g., `21:255.255.255.0`

What is the netmask for this network?

36.0.0.0/9

Put your answer on a single line in `unit3/answers.txt`, with 22: at the beginning of the line, e.g., `22:255.255.255.0`

What is the netmask for this network?

103.99.128.0/20

Put your answer on a single line in `unit3/answers.txt`, with 23: at the beginning of the line, e.g., `23:255.255.255.0`

What is the netmask for this network?

8.237.128.0/18

Put your answer on a single line in `unit3/answers.txt`, with 24: at the beginning of the line, e.g., `24:255.255.255.0`

What is the netmask for this network?

64.0.0.0/6

Put your answer on a single line in `unit3/answers.txt`, with 25: at the beginning of the line, e.g., `25:255.255.255.0`

What is the netmask for this network?

24.154.112.0/20

Put your answer on a single line in `unit3/answers.txt`, with 26: at the beginning of the line, e.g., `26:255.255.255.0`

What is the netmask for this network?

113.243.0.0/17

Put your answer on a single line in `unit3/answers.txt`, with 27: at the beginning of the line, e.g., `27:255.255.255.0`

What is the netmask for this network?

0.0.0.0/2

Put your answer on a single line in `unit3/answers.txt`, with 28: at the beginning of the line, e.g., `28:255.255.255.0`

What is the netmask for this network?

0.0.0.0/1

Put your answer on a single line in `unit3/answers.txt`, with 29: at the beginning of the line, e.g., `29:255.255.255.0`

What is the netmask for this network?

30.127.245.32/29

Put your answer on a single line in `unit3/answers.txt`, with 30: at the beginning of the line, e.g., `30:255.255.255.0`

What is the netmask for this network?

114.0.0.0/7

Put your answer on a single line in `unit3/answers.txt`, with 31: at the beginning of the line, e.g., `31:255.255.255.0`

What is the netmask for this network?

34.0.0.0/9

Put your answer on a single line in `unit3/answers.txt`, with 32: at the beginning of the line, e.g., `32:255.255.255.0`

What is the netmask for this network?

0.0.0.0/1

Put your answer on a single line in `unit3/answers.txt`, with 33: at the beginning of the line, e.g., `33:255.255.255.0`

What is the netmask for this network?

0.0.0.0/1

Put your answer on a single line in `unit3/answers.txt`, with 34: at the beginning of the line, e.g., `34:255.255.255.0`

What is the netmask for this network?

68.0.0.0/7

Put your answer on a single line in `unit3/answers.txt`, with 35: at the beginning of the line, e.g., 35:255.255.255.0

What is the netmask for this network?

0.0.0.0/1

Put your answer on a single line in `unit3/answers.txt`, with 36: at the beginning of the line, e.g., 36:255.255.255.0

What is the netmask for this network?

119.36.198.0/23

Put your answer on a single line in `unit3/answers.txt`, with 37: at the beginning of the line, e.g., 37:255.255.255.0

What is the netmask for this network?

36.99.185.224/28

Put your answer on a single line in `unit3/answers.txt`, with 38: at the beginning of the line, e.g., 38:255.255.255.0

What is the netmask for this network?

81.234.208.0/22

Put your answer on a single line in `unit3/answers.txt`, with 39: at the beginning of the line, e.g., 39:255.255.255.0

0.2 Variable Length Sub-net Masking

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

88.11.215.143 netmask 255.255.255.0

Put your answer on a single line in `unit3/answers.txt`, with 40: at the beginning of the line, e.g., 40:10.0.0.0/8

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

56.85.88.92 netmask 255.192.0.0

Put your answer on a single line in `unit3/answers.txt`, with 41: at the beginning of the line, e.g., 41:10.0.0.0/8

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

106.35.66.236 netmask 255.255.0.0

Put your answer on a single line in `unit3/answers.txt`, with 42: at the beginning of the line, e.g., `42:10.0.0.0/8`

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

29.78.212.59 netmask 255.255.255.224

Put your answer on a single line in `unit3/answers.txt`, with 43: at the beginning of the line, e.g., `43:10.0.0.0/8`

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

44.216.154.50 netmask 255.254.0.0

Put your answer on a single line in `unit3/answers.txt`, with 44: at the beginning of the line, e.g., `44:10.0.0.0/8`

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

122.109.141.60 netmask 255.255.240.0

Put your answer on a single line in `unit3/answers.txt`, with 45: at the beginning of the line, e.g., `45:10.0.0.0/8`

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

84.34.137.236 netmask 255.255.255.0

Put your answer on a single line in `unit3/answers.txt`, with 46: at the beginning of the line, e.g., `46:10.0.0.0/8`

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

56.67.127.219 netmask 255.255.255.240

Put your answer on a single line in `unit3/answers.txt`, with 47: at the beginning of the line, e.g., `47:10.0.0.0/8`

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

50.255.249.2 netmask 255.255.255.192

Put your answer on a single line in `unit3/answers.txt`, with 48: at the beginning of the line, e.g., `48:10.0.0.0/8`

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

87.148.120.254 netmask 224.0.0.0

Put your answer on a single line in `unit3/answers.txt`, with 49: at the beginning of the line, e.g., `49:10.0.0.0/8`

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

61.194.64.251 netmask 255.255.255.192

Put your answer on a single line in `unit3/answers.txt`, with 50: at the beginning of the line, e.g., `50:10.0.0.0/8`

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

121.161.222.170 netmask 255.255.255.192

Put your answer on a single line in `unit3/answers.txt`, with 51: at the beginning of the line, e.g., `51:10.0.0.0/8`

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

18.230.133.251 netmask 255.128.0.0

Put your answer on a single line in `unit3/answers.txt`, with 52: at the beginning of the line, e.g., `52:10.0.0.0/8`

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

82.14.237.209 netmask 252.0.0.0

Put your answer on a single line in `unit3/answers.txt`, with 53: at the beginning of the line, e.g., `53:10.0.0.0/8`

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

79.78.240.5 netmask 255.255.255.240

Put your answer on a single line in `unit3/answers.txt`, with 54: at the beginning of the line, e.g., `54:10.0.0.0/8`

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

100.155.183.124 netmask 255.255.240.0

Put your answer on a single line in `unit3/answers.txt`, with 55: at the beginning of the line, e.g., `55:10.0.0.0/8`

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

57.56.101.117 netmask 255.255.255.0

Put your answer on a single line in `unit3/answers.txt`, with 56: at the beginning of the line, e.g., `56:10.0.0.0/8`

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

24.1.21.190 netmask 128.0.0.0

Put your answer on a single line in `unit3/answers.txt`, with 57: at the beginning of the line, e.g., `57:10.0.0.0/8`

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

71.57.140.137 netmask 255.255.255.128

Put your answer on a single line in `unit3/answers.txt`, with 58: at the beginning of the line, e.g., `58:10.0.0.0/8`

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

21.181.175.92 netmask 255.255.255.224

Put your answer on a single line in `unit3/answers.txt`, with 59: at the beginning of the line, e.g., `59:10.0.0.0/8`

0.3 Configure Network Interfaces using the ifconfig and ip commands

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

```
13.52.182.168 netmask 255.255.255.128
```

Put your answer on a single line in unit3/answers.txt, with 60: at the beginning of the line, e.g., 60: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 47.48.93.239/23 dev eth0; ip link set dev eth0 mtu 3997
```

Put your answer on a single line in unit3/answers.txt, with 61: at the beginning of the line, e.g., 61: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)?

```
95.94.127.208 netmask 255.0.0.0
```

Put your answer on a single line in unit3/answers.txt, with 62: at the beginning of the line, e.g., 62: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 84.10.71.28/27 dev eth0; ip link set dev eth0 mtu 2649
```

Put your answer on a single line in unit3/answers.txt, with 63: at the beginning of the line, e.g., 63: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)?

```
59.15.211.121 netmask 224.0.0.0, PPP remote address 6.165.238.100,  
TX queue length = 1534
```

Put your answer on a single line in unit3/answers.txt, with 64: at the beginning of the line, e.g., 64: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)?

111.109.217.172 netmask 255.255.192.0, PPP remote address 76.4.168.175,
TX queue length = 3932

Put your answer on a single line in `unit3/answers.txt`, with 65: at the beginning of the line, e.g., `65: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)?

74.42.195.21 netmask 255.255.255.240

Put your answer on a single line in `unit3/answers.txt`, with 66: at the beginning of the line, e.g., `66: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)?

112.85.165.245 netmask 255.224.0.0, but not running, TX queue
length = 4029

Put your answer on a single line in `unit3/answers.txt`, with 67: at the beginning of the line, e.g., `67: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)?

95.53.52.164 netmask 255.255.255.224, in promiscuous mode, TX
queue length = 1318

Put your answer on a single line in `unit3/answers.txt`, with 68: at the beginning of the line, e.g., `68: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 31.191.232.224/25 dev eth0; ip link set dev eth0 down;
ip link set dev eth0 arp off

Put your answer on a single line in `unit3/answers.txt`, with 69: at the beginning of the line, e.g., `69: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 28.160.197.250 netmask 255.224.0.0 mtu 3225
```

Put your answer on a single line in `unit3/answers.txt`, with 70: at the beginning of the line, e.g., 70: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)?

```
120.223.106.85 netmask 192.0.0.0, PPP remote address 55.158.33.181,  
without ARP, in promiscuous mode
```

Put your answer on a single line in `unit3/answers.txt`, with 71: at the beginning of the line, e.g., 71: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 61.209.80.148 netmask 255.255.224.0 down -arp
```

Put your answer on a single line in `unit3/answers.txt`, with 72: at the beginning of the line, e.g., 72: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 86.67.141.21 netmask 255.128.0.0 promisc txqueuelen  
3944
```

Put your answer on a single line in `unit3/answers.txt`, with 73: at the beginning of the line, e.g., 73: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)?

```
117.224.133.138 netmask 255.128.0.0, MTU = 1916, without ARP
```

Put your answer on a single line in `unit3/answers.txt`, with 74: at the beginning of the line, e.g., 74: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 14.62.71.168/4 dev eth0; ip link set dev eth0 mtu
4399; ip link set dev eth0 arp off
```

Put your answer on a single line in `unit3/answers.txt`, with 75: at the beginning of the line, e.g., 75: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 125.255.157.9/2 dev eth0; ip link set dev eth0 down
```

Put your answer on a single line in `unit3/answers.txt`, with 76: at the beginning of the line, e.g., 76: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 89.123.77.132 netmask 255.255.255.254 down
```

Put your answer on a single line in `unit3/answers.txt`, with 77: at the beginning of the line, e.g., 77: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)?

```
101.150.140.28 netmask 255.240.0.0, but not running, in promiscu-
ous mode
```

Put your answer on a single line in `unit3/answers.txt`, with 78: at the beginning of the line, e.g., 78: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)?

```
35.15.133.108 netmask 255.255.255.224, but not running, without
ARP, in promiscuous mode
```

Put your answer on a single line in `unit3/answers.txt`, with 79: at the beginning of the line, e.g., 79: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 `castle0`, that specifies an MTU of 2842 and MAC address `C3:3E:05:F1:EC:D9`.
- A template called `moths1`, that specifies an MTU of 5419 and MAC address `B7:99:50:A3:E3:14`.
- An interface named `jam0`, with IPv4 settings configured by DHCP.
- An interface named `eth1`, with IPv4 settings configured by DHCP, and inherits the template `castle0`.
- An interface named `eth2`, with IPv4 settings configured by DHCP.

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 1625 and MAC address `69:E6:23:D0:1A:DA`.
- A template called `ruins1`, that specifies an MTU of 8698 and MAC address `7E:4C:7E:51:25:B3`.
- An interface named `ftdi0`, with IPv4 settings configured by DHCP, and inherits the template `ruins1`.
- An interface named `ftdi1`, with IPv4 address `100.66.149.153` and netmask `255.255.0.0`.
- An interface named `eth2`, with IPv4 address `92.73.234.238` and netmask `255.255.255.224`, and inherits the template `ruins1`.

0.4.3 Prepare `unit3/iface2-solution.txt`

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

- A template called `wealth0`, that specifies an MTU of 7813 and MAC address `E9:E2:5E:53:60:AA`.
- A template called `castle1`, that specifies an MTU of 2606 and MAC address `D0:85:FA:54:D8:35`.

- A template called `wealth2`, that specifies an MTU of 4908 and MAC address `66:82:64:98:D9:A8`.
- A template called `moths3`, that specifies an MTU of 6133 and MAC address `65:70:5A:8A:3F:62`.
- A template called `wealth4`, that specifies an MTU of 7029 and MAC address `44:DE:7C:A5:89:4E`.
- An interface named `wlan0`, with IPv4 address `104.78.237.89` and netmask `255.255.224.0`.
- An interface named `eth1`, with IPv4 settings configured by DHCP, and inherits the template `moths3`.
- An interface named `eth2`, with IPv4 settings configured by DHCP.
- An interface named `eth3`, with IPv4 settings configured by DHCP, and inherits the template `wealth0`.
- An interface named `ftdi4`, with IPv4 settings configured by DHCP, and inherits the template `wealth4`.
- An interface named `ftdi5`, with IPv4 settings configured by DHCP, and inherits the template `wealth0`.
- An interface named `ftdi6`, with IPv4 address `103.167.11.105` and netmask `255.254.0.0`, and inherits the template `wealth0`.

0.4.4 Prepare `unit3/iface3-solution.txt`

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

- A template called `moths0`, that specifies an MTU of 4292 and MAC address `07:1F:B8:6D:11:34`.
- A template called `ruins1`, that specifies an MTU of 6129 and MAC address `EF:4F:89:D4:B6:63`.
- A template called `ruins2`, that specifies an MTU of 5089 and MAC address `C7:E4:24:83:67:D8`.
- A template called `ruins3`, that specifies an MTU of 4090 and MAC address `12:EC:45:39:02:D8`.
- An interface named `wlan0`, with IPv4 address `86.123.213.10` and netmask `255.255.255.0`, and inherits the template `ruins1`.
- An interface named `wlan1`, with IPv4 settings configured by DHCP, and inherits the template `ruins1`.

- An interface named `ftdi2`, with IPv4 settings configured by DHCP, and inherits the template `ruins2`.
- An interface named `ftdi3`, with IPv4 settings configured by DHCP.
- An interface named `ftdi4`, with IPv4 settings configured by DHCP.
- An interface named `wlan5`, with IPv4 settings configured by DHCP.
- An interface named `jam6`, with IPv4 settings configured by DHCP, and inherits the template `ruins1`.

0.4.5 Prepare `unit3/iface4-solution.txt`

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

- A template called `moths0`, that specifies an MTU of 4212 and MAC address `5E:6E:03:28:DA:4C`.
- A template called `moths1`, that specifies an MTU of 7710 and MAC address `19:ED:D2:D3:99:4C`.
- A template called `ruins2`, that specifies an MTU of 4187 and MAC address `00:22:56:9A:D4:18`.
- An interface named `wlan0`, with IPv4 address `74.149.84.254` and netmask `240.0.0.0`, and inherits the template `moths1`.
- An interface named `wlan1`, with IPv4 address `82.4.161.145` and netmask `252.0.0.0`, and inherits the template `ruins2`.
- An interface named `wlan2`, with IPv4 address `94.116.196.217` and netmask `255.255.248.0`, and inherits the template `moths0`.

0.5 Create and delete routes

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

- `28.12.160.0/19` via the interface to your 2nd VM
- `123.207.128.0/18` via the IP address of your 2nd VM
- `99.222.0.0/17` via the IP address of your 2nd VM
- `32.248.142.164/30` via the IP address of your 2nd VM
- `79.163.39.192/26` via the IP address of your 2nd VM
- `75.221.83.252/30` via the IP address of 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

- 76.251.141.48/29 via the IP address of your 2nd VM
- 37.125.64.0/18 via the IP address of your 2nd VM
- 115.32.144.0/22 via the interface to your 2nd VM
- 15.168.0.0/16 via the interface to your 2nd VM
- 21.101.0.0/16 via the IP address of your 2nd VM
- 22.142.254.22/31 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

- 121.52.211.0/24 via the interface to your 2nd VM
- 83.3.134.208/28 via the IP address of your 2nd VM
- 78.158.251.12/30 via the IP address of your 2nd VM
- 37.134.208.0/21 via the interface to your 2nd VM
- 72.120.20.0/22 via the IP address of your 2nd VM
- 55.70.164.0/22 via the interface to 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

- 45.157.245.124/30 via the IP address of your 2nd VM
- 87.73.0.0/16 via the IP address of your 2nd VM
- 12.252.115.32/27 via the IP address of your 2nd VM
- 121.6.48.0/22 via the interface to your 2nd VM
- 74.211.128.0/18 via the interface to your 2nd VM
- 28.212.128.0/21 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

- 68.226.224.0/19 via the IP address of your 2nd VM
- 44.124.98.192/28 via the IP address of your 2nd VM
- 51.83.124.236/30 via the IP address of your 2nd VM
- 108.44.252.128/28 via the IP address of your 2nd VM
- 67.248.225.160/27 via the interface to your 2nd VM
- 94.77.160.0/19 via the interface to your 2nd VM