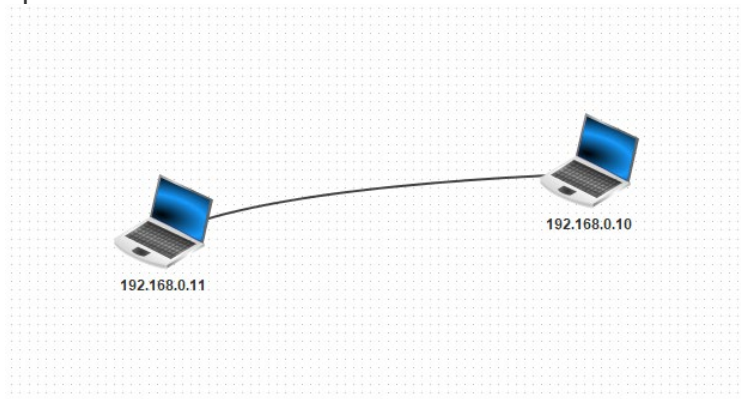


# Opdracht Filius

## Deel 1

### opdracht 1.3.1



### opdracht 1.4.1

Het is aangesloten.

```
192.168.0.10
Command Line
exit          exit terminal application
help          show this list of commands
host          resolve hostname to IP address
ipconfig      show network configuration
mkdir         create directory
move / mv     move/rename file
netstat       show list of connections
ping          test connection to other computer
pwd           print working directory
route         show routing table
touch         create file
tracert       analyse hops of connecting path

=====

root /> ping 192.168.0.11
PING 192.168.0.11 (192.168.0.11)
From 192.168.0.11 (192.168.0.11): icmp_seq=1 ttl=64 time=211ms
From 192.168.0.11 (192.168.0.11): icmp_seq=2 ttl=64 time=106ms
From 192.168.0.11 (192.168.0.11): icmp_seq=3 ttl=64 time=104ms
From 192.168.0.11 (192.168.0.11): icmp_seq=4 ttl=64 time=104ms
--- 192.168.0.11 packet statistics ---
4 packet(s) transmitted, 4 packet(s) received, 0% packet loss

root />
```

### opdracht 1.5.1

De IP-adressen horen bij laag 3(Netwerklaag).

### opdracht 1.6.1

Protocol ICMP wordt gebruikt. Het behoort tot laag 3(Netwerklaag)

### opdracht 1.7.1

De applicatie stuurt het bericht heen en terug. De lagen 4(Transportlaag) en 5(Applicatielaag) worden gebruikt met protocol TCP.

**Data exchange**

No.	Time	Source	Destination	Protocol	Layer	Comment
8	09:28:51.659	192.168.0.11	192.168.0.10	ICMP	Internet	ICMP Echo Reply (pong), TTL: 64, Seq.-Nr.: 3
9	09:28:52.858	192.168.0.10	192.168.0.11	ICMP	Internet	ICMP Echo Request (ping), TTL: 64, Seq.-Nr.: 4
10	09:28:52.859	192.168.0.11	192.168.0.10	ICMP	Internet	ICMP Echo Reply (pong), TTL: 64, Seq.-Nr.: 4
11	09:39:02.785	192.168.0.11	192.168.0.12	ARP	Internet	Search for MAC 192.168.0.12, 192.168.0.11: 2C:8C:F5:E0:8...
12	09:39:02.992	192.168.0.12	192.168.0.11	ARP	Internet	192.168.0.12: F4:C1:8C:A7:79:4F
13	09:39:02.993	192.168.0.11:...	192.168.0.12:...	TCP	Transport	SYN, SEQ: 1082025704
14	09:39:03.197	192.168.0.12:...	192.168.0.11:...	TCP	Transport	SYN, ACK:1082025705, SEQ: 3937389187
15	09:39:03.200	192.168.0.11:...	192.168.0.12:...	TCP	Transport	ACK: 3937389188
16	09:39:32.513	192.168.0.11:...	192.168.0.12:...	Application		Hi this is my first Filius message
17	09:39:32.717	192.168.0.12:...	192.168.0.11:...	TCP	Transport	ACK: 1082025706
18	09:39:32.767	192.168.0.12:...	192.168.0.11:...	Application		Hi this is my first Filius message
19	09:39:32.768	192.168.0.11:...	192.168.0.12:...	TCP	Transport	ACK: 3937389189
20	09:39:44.864	192.168.0.11:...	192.168.0.12:...	Application		And this is my second message
21	09:39:45.066	192.168.0.12:...	192.168.0.11:...	TCP	Transport	ACK: 1082025707
22	09:39:45.117	192.168.0.12:...	192.168.0.11:...	Application		And this is my second message
23	09:39:45.118	192.168.0.11:...	192.168.0.12:...	TCP	Transport	ACK: 3937389190

**Data exchange**

No.	Time	Source	Destination	Protocol	Layer	Comment
1	09:39:02.890	192.168.0.11	192.168.0.12	ARP	Internet	Search for MAC 192.168.0.12, 192.168.0.11: 2C:8C:F5:E0:83:65
2	09:39:02.890	192.168.0.12	192.168.0.11	ARP	Internet	192.168.0.12: F4:C1:8C:A7:79:4F
3	09:39:03.093	192.168.0.11:...	192.168.0.12:...	TCP	Transport	SYN, SEQ: 1082025704
4	09:39:03.094	192.168.0.12:...	192.168.0.11:...	TCP	Transport	SYN, ACK:1082025705, SEQ: 3937389187
5	09:39:03.302	192.168.0.11:...	192.168.0.12:...	TCP	Transport	ACK: 3937389188
6	09:39:32.614	192.168.0.11:...	192.168.0.12:...	Application		Hi this is my first Filius message
7	09:39:32.614	192.168.0.12:...	192.168.0.11:...	TCP	Transport	ACK: 1082025706
8	09:39:32.665	192.168.0.12:...	192.168.0.11:...	Application		Hi this is my first Filius message
9	09:39:32.871	192.168.0.11:...	192.168.0.12:...	TCP	Transport	ACK: 3937389189
10	09:39:44.965	192.168.0.11:...	192.168.0.12:...	Application		And this is my second message
11	09:39:44.965	192.168.0.12:...	192.168.0.11:...	TCP	Transport	ACK: 1082025707
12	09:39:45.015	192.168.0.12:...	192.168.0.11:...	Application		And this is my second message
13	09:39:45.219	192.168.0.11:...	192.168.0.12:...	TCP	Transport	ACK: 3937389190

### opdracht 1.7.2

Een poort is ook bekend als gate, of port. Er zijn Hardwarepoorten: LPT, COM, USB, PS/2, Toetsenbord, Joystick/MIDI, VGA, HDMI, DisplayPort etc.

Ook zijn er netwerkpoorten, een netwerkpoort is een nummer dat aan gegevens in het TCP/IP-protocol wordt gehangen, naast het IP-adres. Het poortnummer wordt door het ontvangende systeem gebruikt om te bepalen voor welk programma de gegevens zijn bestemd.

En als laatste, een I/O(machine)-poort. Intel-processoren maken gebruik van het concept I/O(In/Out) poort om te bepalen welke hardware moet worden aangesproken. De hardwarepoorten die meestal niet meer worden gebruikt zijn LPT, COM, PS/2, Toetsenbordport en VGA.

## opdracht 1.8.1

```
192.168.0.12 Command Line
exit      exit terminal application
help      show this list of commands
host      resolve hostname to IP address
ipconfig  show network configuration
mkdir     create directory
move / mv move/rename file
netstat   show list of connections
ping      test connection to other computer
pwd       print working directory
route     show routing table
touch     create file
tracert    analyse hops of connecting path

root /> ping 192.168.1.12
PING 192.168.1.12 (192.168.1.12)
From 192.168.1.12 (192.168.1.12): icmp_seq=1 ttl=63 time=816ms
From 192.168.1.12 (192.168.1.12): icmp_seq=2 ttl=63 time=407ms
From 192.168.1.12 (192.168.1.12): icmp_seq=3 ttl=63 time=408ms
From 192.168.1.12 (192.168.1.12): icmp_seq=4 ttl=63 time=408ms
--- 192.168.1.12 packet statistics ---
4 packet(s) transmitted, 4 packet(s) received, 0% packet loss
root />

192.168.0.11 Command Line
exit      exit terminal application
help      show this list of commands
host      resolve hostname to IP address
ipconfig  show network configuration
mkdir     create directory
move / mv move/rename file
netstat   show list of connections
ping      test connection to other computer
pwd       print working directory
route     show routing table
touch     create file
tracert    analyse hops of connecting path

root /> ping 192.168.1.11
PING 192.168.1.11 (192.168.1.11)
From 192.168.1.11 (192.168.1.11): icmp_seq=1 ttl=63 time=810ms
From 192.168.1.11 (192.168.1.11): icmp_seq=2 ttl=63 time=407ms
From 192.168.1.11 (192.168.1.11): icmp_seq=3 ttl=63 time=409ms
From 192.168.1.11 (192.168.1.11): icmp_seq=4 ttl=63 time=408ms
--- 192.168.1.11 packet statistics ---
4 packet(s) transmitted, 4 packet(s) received, 0% packet loss
root />

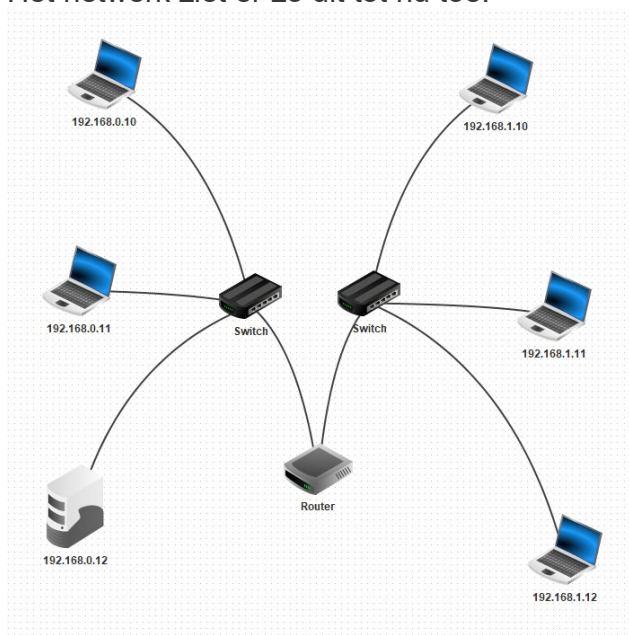
192.168.0.10 Command Line
exit      exit terminal application
help      show this list of commands
host      resolve hostname to IP address
ipconfig  show network configuration
mkdir     create directory
move / mv move/rename file
netstat   show list of connections
ping      test connection to other computer
pwd       print working directory
route     show routing table
touch     create file
tracert    analyse hops of connecting path

root /> ping 192.168.1.10
PING 192.168.1.10 (192.168.1.10)
From 192.168.1.10 (192.168.1.10): icmp_seq=1 ttl=63 time=810ms
From 192.168.1.10 (192.168.1.10): icmp_seq=2 ttl=63 time=407ms
From 192.168.1.10 (192.168.1.10): icmp_seq=3 ttl=63 time=406ms
From 192.168.1.10 (192.168.1.10): icmp_seq=4 ttl=63 time=407ms
--- 192.168.1.10 packet statistics ---
4 packet(s) transmitted, 4 packet(s) received, 0% packet loss
root />
```

## opdracht 1.8.2

Een gateway is een ip adres dat een computer toegang geeft tot een ander netwerk

Het netwerk ziet er zo uit tot nu toe:

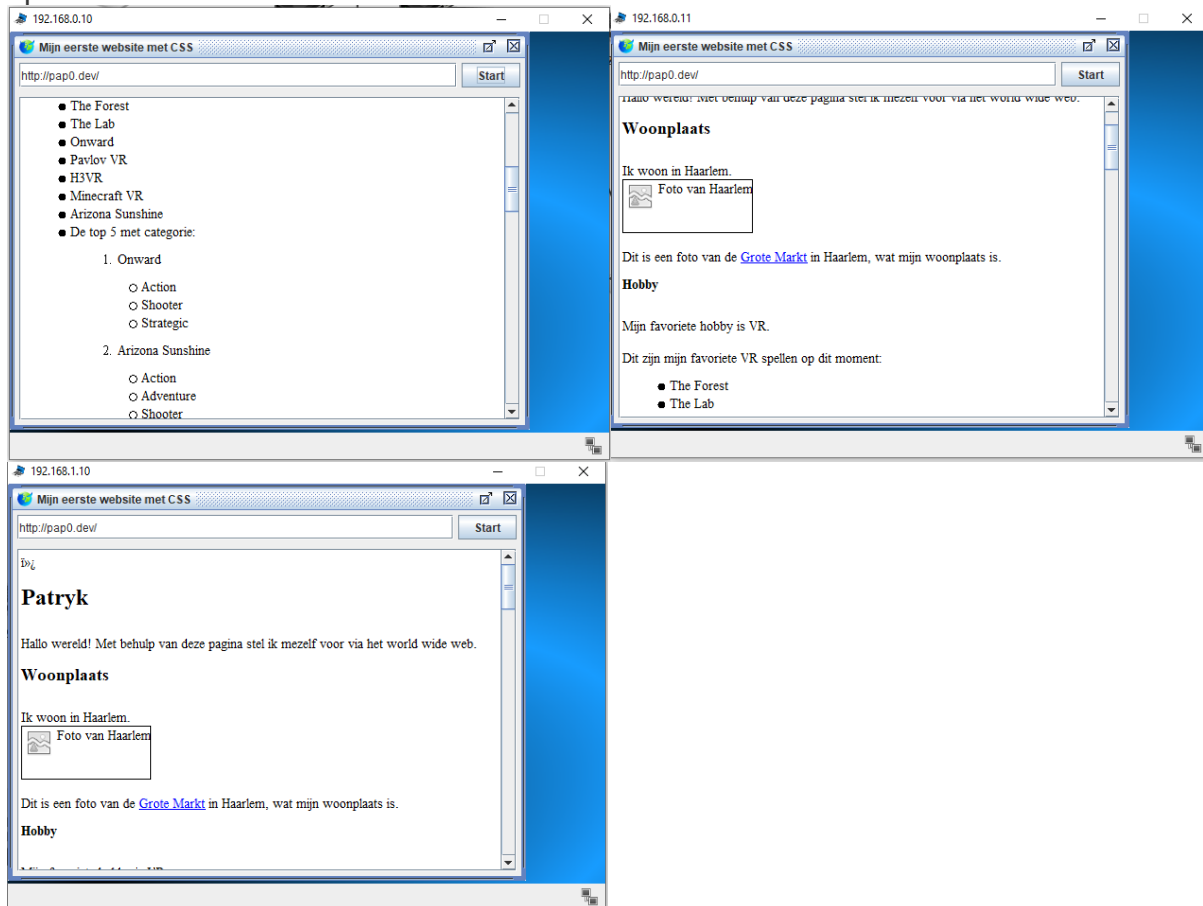


## Deel 2

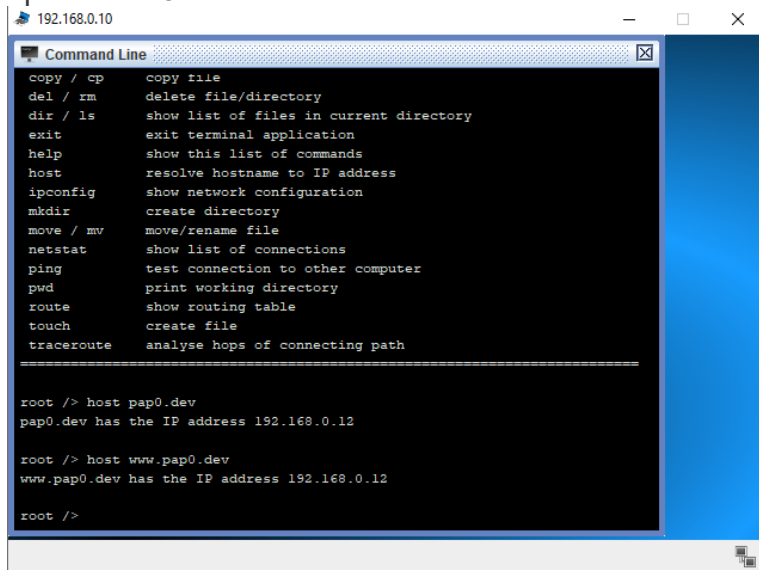
### opdracht 2.2.1



### opdracht 2.3.1



## opdracht 2.3.2



```
192.168.0.10
Command Line
copy / cp      copy file
del / rm      delete file/directory
dir / ls      show list of files in current directory
exit          exit terminal application
help          show this list of commands
host          resolve hostname to IP address
ipconfig      show network configuration
mkdir         create directory
move / mv     move/rename file
netstat       show list of connections
ping          test connection to other computer
pwd           print working directory
route         show routing table
touch         create file
tracert       analyse hops of connecting path

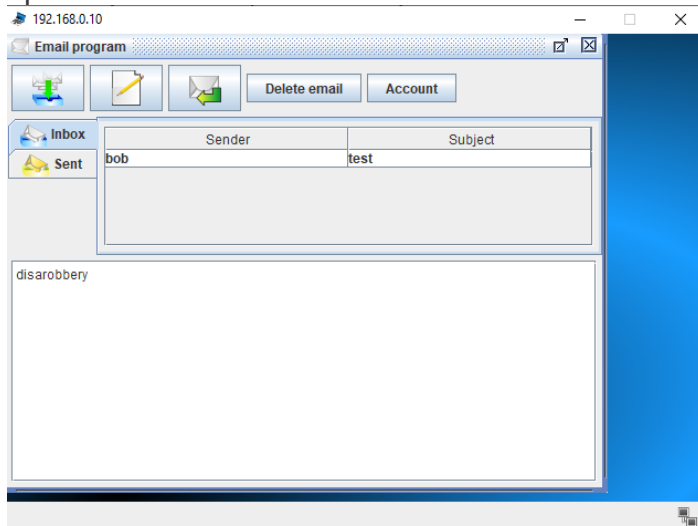
=====

root /> host pap0.dev
pap0.dev has the IP address 192.168.0.12

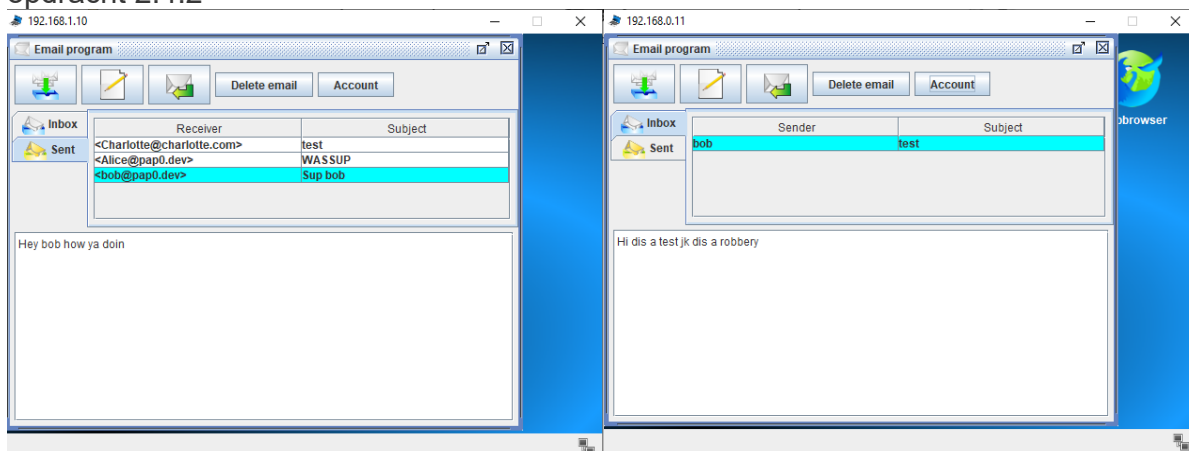
root /> host www.pap0.dev
www.pap0.dev has the IP address 192.168.0.12

root />
```

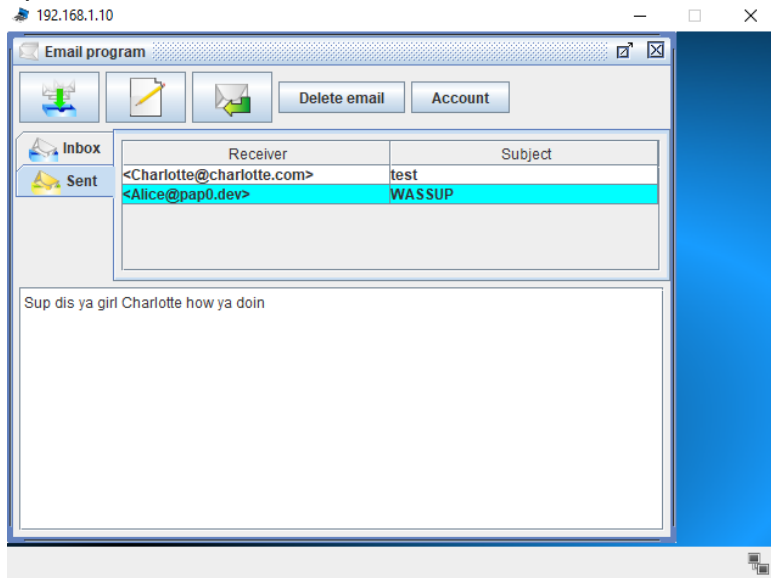
## opdracht 2.4.1



## opdracht 2.4.2



### opdracht 2.4.3



Het netwerk ziet er nu zo uit:

