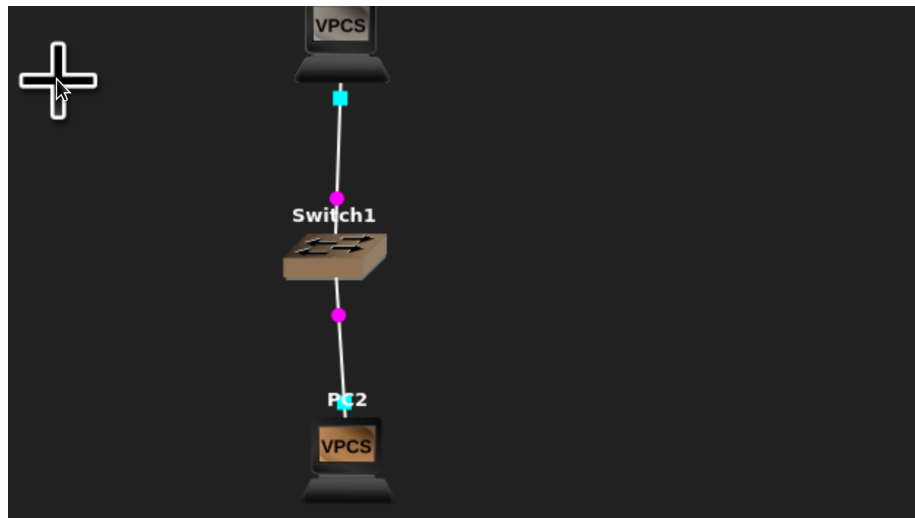


Lsg Vorschlag RUT Ü05 Maximilian Maag

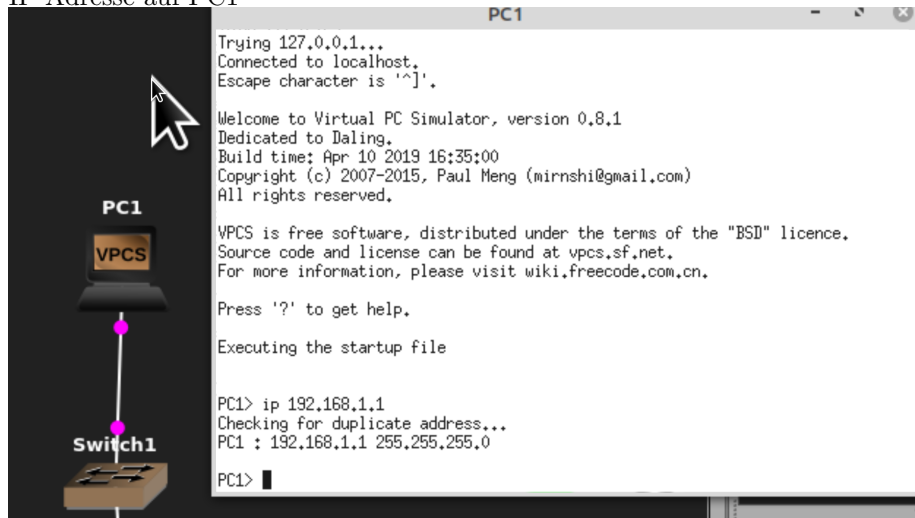
Aufgabe 5.1

a)



b)

IP Adresse auf PC1



IP Adresse auf PC2

```
PC2
ping 127.0.0.1...
Connected to localhost.
Escape character is '^]'.

Welcome to Virtual PC Simulator, version 0.8.1
Dedicated to Daling.
Build time: Apr 10 2019 16:35:00
Copyright (c) 2007-2015, Paul Meng (mirnshi@gmail.com)
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VPCS is free software, distributed under the terms of the "BSD" licence.
Source code and license can be found at vpcs.sf.net.
For more information, please visit wiki.freecode.com.cn.

Press '?' to get help.

Executing the startup file

PC2> ip 192.168.1.2
Checking for duplicate address...
PC2 : 192.168.1.2 255.255.255.0

PC2> |
```

c)

Ping von PC1 nach PC2 aufgezeichnet mit WireShark

Aufzeichnen von - [PC1 Ethernet0 to Switch1 Ethernet1]					
Datei Bearbeiten Ansicht Navigation Aufzeichnen Analyse Statistiken Telefonie Wireless Tools Hilfe					
Anzeigefilter anwenden ... <Ctrl-/>					
No.	Time	Source	Destination	Protocol	Length Info
1	0.000000	Private 66:68:00	Broadcast	ARP	64 who has 192.168.1.2? Tell 192.168.1.1
2	0.000142	Private 66:68:00	Private 66:68:00	ARP	64 192.168.1.2 is at 00:50:79:66:68:01
3	0.001059	192.168.1.1	192.168.1.2	ICMP	98 Echo (ping) request id=8x57b5, seq=1/256, tt
4	0.001137	192.168.1.2	192.168.1.1	ICMP	98 Echo (ping) reply id=8x57b5, seq=1/256, tt
5	1.002180	192.168.1.1	192.168.1.2	ICMP	98 Echo (ping) request id=8x58b5, seq=2/512, tt
6	1.002324	192.168.1.2	192.168.1.1	ICMP	98 Echo (ping) reply id=8x58b5, seq=2/512, tt
7	2.003511	192.168.1.1	192.168.1.2	ICMP	98 Echo (ping) request id=8x59b5, seq=3/768, tt
8	2.003658	192.168.1.2	192.168.1.1	ICMP	98 Echo (ping) reply id=8x59b5, seq=3/768, tt
9	3.004744	192.168.1.1	192.168.1.2	ICMP	98 Echo (ping) request id=8x5ab5, seq=4/1024, tt
10	3.004904	192.168.1.2	192.168.1.1	ICMP	98 Echo (ping) reply id=8x5ab5, seq=4/1024, tt
11	4.005976	192.168.1.1	192.168.1.2	ICMP	98 Echo (ping) request id=8x5bb5, seq=5/1280, tt
12	4.006094	192.168.1.2	192.168.1.1	ICMP	98 Echo (ping) reply id=8x5bb5, seq=5/1280, tt

Frame 1: 64 bytes on wire (512 bits), 64 bytes captured (512 bits) on interface -, id 0

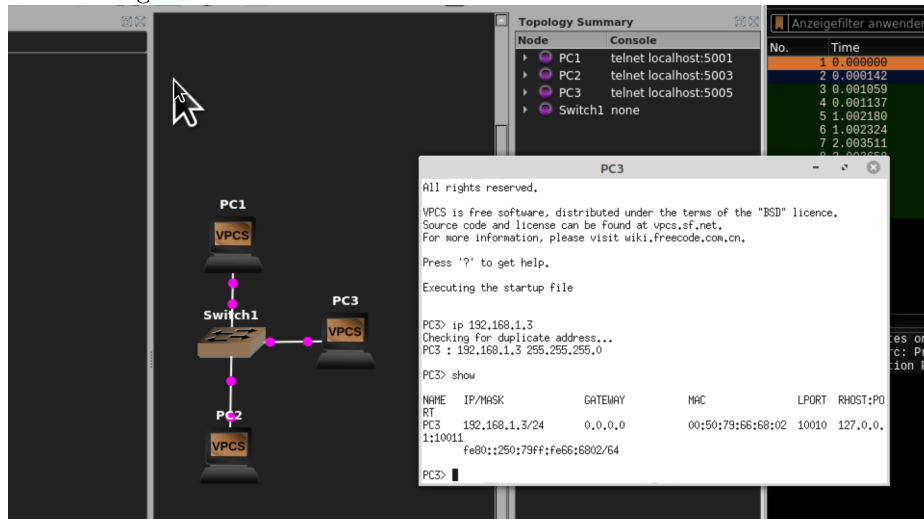
Ethernet II, Src: Private 66:68:00 (00:50:79:66:68:00), Dst: Broadcast (ff:ff:ff:ff:ff:ff)

Address Resolution Protocol (request)

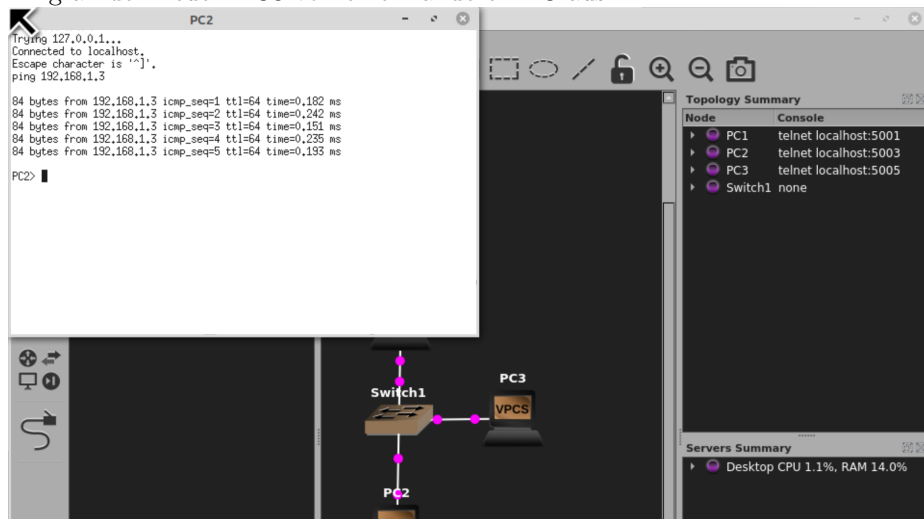
Aufgabe 5.2

a)

Erweiterung des Netzwerks um einen weiteren PC.

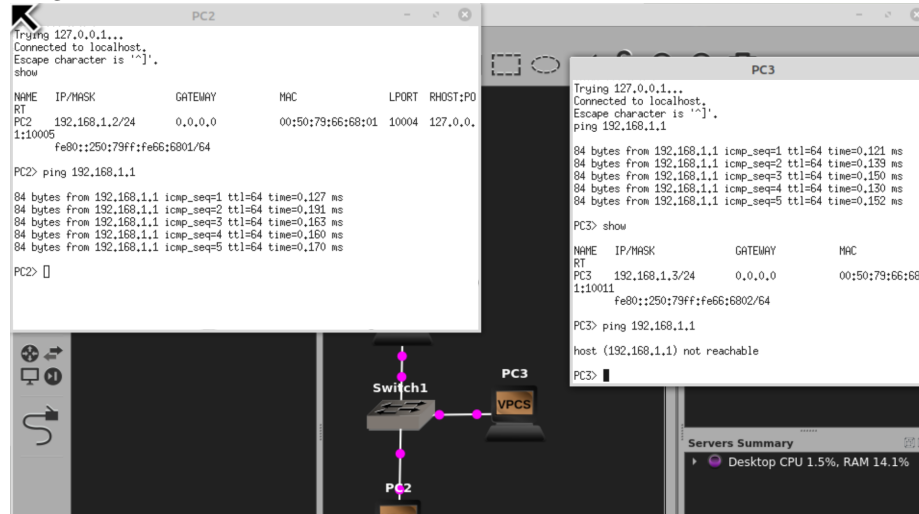


Ping an den neuen PC3 von einem anderen PC aus.



b)

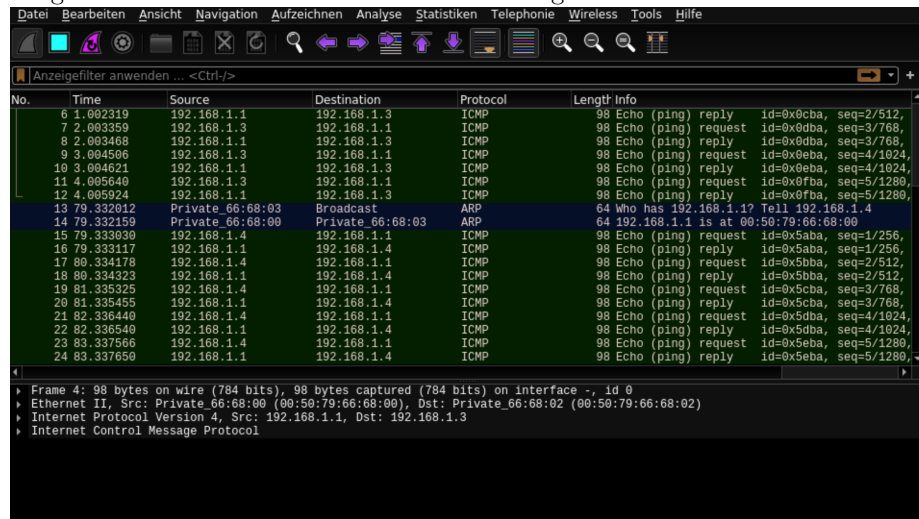
Pingversuch im V-Lan. Rechts mit PC3 an PC1 und links mit PC2 an PC1.



Aufgabe 5.3

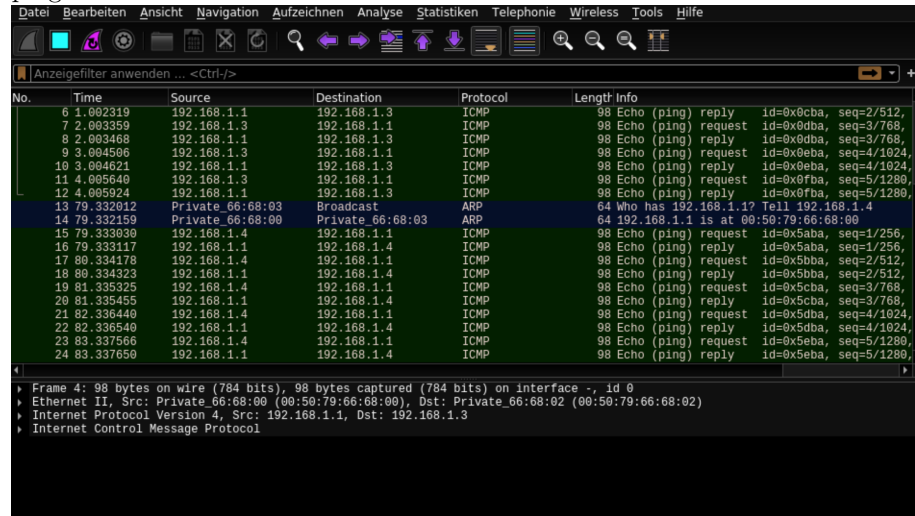
a)

Ping von PC4 auf PC1 über zwei Switches aufgezeichnet mit Wireshark.



b)

Ping innerhalb des V-Lans. Aufzeichnung mit Wireshark. Beispielhaft gezeigt: ping zwischen PC1 und PC4



No.	Time	Source	Destination	Protocol	Length	Info
6	1.002319	192.168.1.1	192.168.1.3	ICMP	98	Echo (ping) reply id=0x0cba, seq=2/512,
7	2.003359	192.168.1.3	192.168.1.1	ICMP	98	Echo (ping) request id=0x0dba, seq=3/768,
8	2.003468	192.168.1.1	192.168.1.3	ICMP	98	Echo (ping) reply id=0x0dba, seq=3/768,
9	3.004596	192.168.1.3	192.168.1.1	ICMP	98	Echo (ping) request id=0x0eba, seq=4/1024,
10	3.004621	192.168.1.1	192.168.1.3	ICMP	98	Echo (ping) reply id=0x0eba, seq=4/1024,
11	4.005640	192.168.1.3	192.168.1.1	ICMP	98	Echo (ping) request id=0x0fba, seq=5/1280,
12	4.005924	192.168.1.1	192.168.1.3	ICMP	98	Echo (ping) reply id=0x0fba, seq=5/1280,
13	79.332012	Private_66:68:03	Broadcast	ARP	64	Who has 192.168.1.1? Tell 192.168.1.4
14	79.332159	Private_66:68:00	Private_66:68:03	ARP	64	192.168.1.1 is at 00:50:79:66:68:00
15	79.333030	192.168.1.4	192.168.1.1	ICMP	98	Echo (ping) request id=0x5aba, seq=1/256,
16	79.333117	192.168.1.1	192.168.1.4	ICMP	98	Echo (ping) reply id=0x5aba, seq=1/256,
17	80.334178	192.168.1.4	192.168.1.1	ICMP	98	Echo (ping) request id=0x5bba, seq=2/512,
18	80.334323	192.168.1.1	192.168.1.4	ICMP	98	Echo (ping) reply id=0x5bba, seq=2/512,
19	81.335325	192.168.1.4	192.168.1.1	ICMP	98	Echo (ping) request id=0x5cba, seq=3/768,
20	81.335455	192.168.1.1	192.168.1.4	ICMP	98	Echo (ping) reply id=0x5cba, seq=3/768,
21	82.336440	192.168.1.4	192.168.1.1	ICMP	98	Echo (ping) request id=0x5dba, seq=4/1024,
22	82.336540	192.168.1.1	192.168.1.4	ICMP	98	Echo (ping) reply id=0x5dba, seq=4/1024,
23	83.337566	192.168.1.4	192.168.1.1	ICMP	98	Echo (ping) request id=0x5eba, seq=5/1280,
24	83.337650	192.168.1.1	192.168.1.4	ICMP	98	Echo (ping) reply id=0x5eba, seq=5/1280,

Frame 4: 98 bytes on wire (784 bits), 98 bytes captured (784 bits) on interface -, id 0
 Ethernet II, Src: Private_66:68:00 (00:50:79:66:68:00), Dst: Private_66:68:02 (00:50:79:66:68:02)
 Internet Protocol Version 4, Src: 192.168.1.1, Dst: 192.168.1.3
 Internet Control Message Protocol

Bei entsprechenden Paketen taucht im Hedder der Tag .1q auf.