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НИЖЕГОРОДСКИЙ ГОСУДАРСТВЕННЫЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ
ИМ. Р.Е. АЛЕКСЕЕВА
ИНСТИТУТ РАДИОЭЛЕКТРОНИКИ И ИНФОРМАЦИОННЫХ
ТЕХНОЛОГИЙ

Курс “Сети и телекоммуникации”
Отчет по лабораторной работе №1

Выполнил: студент группы 18 В-1

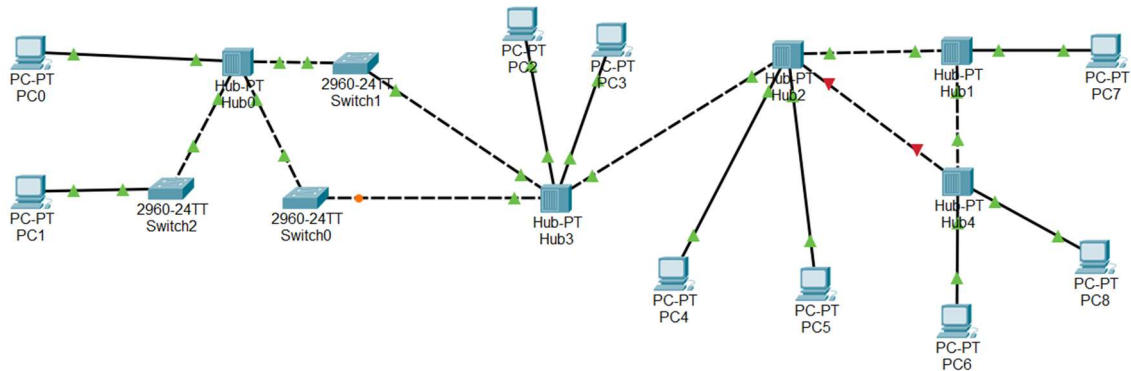
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Нижний Новгород 2020

Задание:

3 Вариант



Компьютер PC1 имеет IP-адрес 10.2.0.1.

Компьютер PC0 имеет IP-адрес 172.198.99.252.

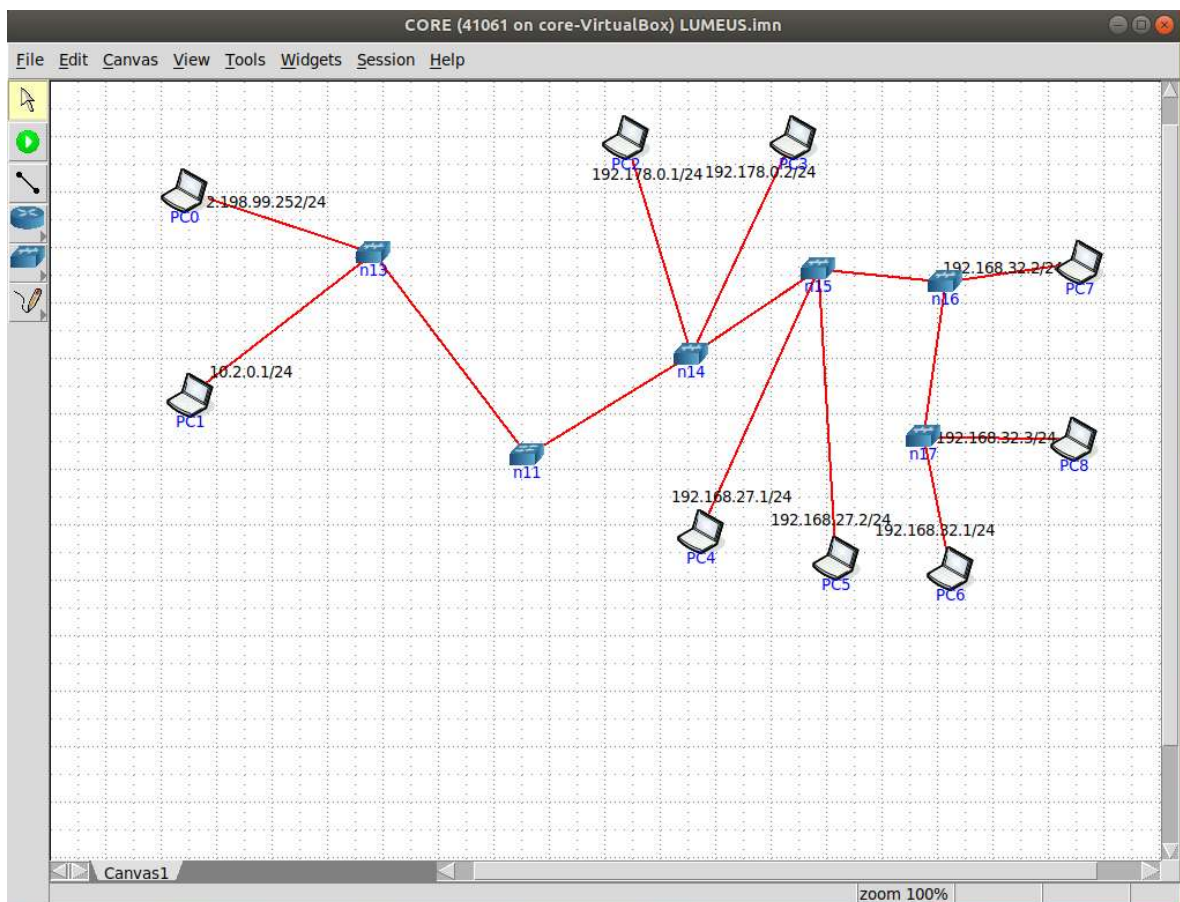
Компьютеры PC2 и PC3 находятся в одной подсети 192.178.0.0.

Компьютеры PC4 и PC5 находятся в одной подсети, отличной от других

Задать IP-адреса компьютерам PC6, PC7, PC8

Ход работы

1. Схема сети



2. Ping

Ping PC0-PC1

Two-node Tool

Nodes

source node destination node click to select nodes

Command line

☐ traceroute ☒ ping

Command results

```
vcmd -c /tmp/pycore.41061/PC0 -- ping -R -n 10.2.0.1
PING 10.2.0.1 (10.2.0.1) 56(124) bytes of data.
From 172.198.99.252 icmp_seq=1 Destination Host Unreachable
From 172.198.99.252 icmp_seq=2 Destination Host Unreachable
From 172.198.99.252 icmp_seq=3 Destination Host Unreachable
```

Run

Clear

Close

Ping PC2-PC3

Two-node Tool

Nodes

source node destination node click to select nodes

Command line

☐ traceroute ☒ ping

Command results

```
vcmd -c /tmp/pycore.41061/PC2 -- ping -R -n 192.178.0.2
PING 192.178.0.2 (192.178.0.2) 56(124) bytes of data.
64 bytes from 192.178.0.2: icmp_seq=1 ttl=64 time=0.091 ms
RR:    192.178.0.1
       192.178.0.2
       192.178.0.2
       192.178.0.1

64 bytes from 192.178.0.2: icmp_seq=2 ttl=64 time=0.048 ms (same route)
```

Run

Clear

Close

Ping PC4-PC5

Two-node Tool

Nodes
source node destination node click to select nodes

Command line
☐ traceroute ☒ ping

Command results

```
vcmd -c /tmp/pycore.41061/PC4 -- ping -R -n 192.168.27.2
PING 192.168.27.2 (192.168.27.2) 56(124) bytes of data.
64 bytes from 192.168.27.2: icmp_seq=1 ttl=64 time=0.116 ms
RR:    192.168.27.1
       192.168.27.2
       192.168.27.2
       192.168.27.1

64 bytes from 192.168.27.2: icmp_seq=2 ttl=64 time=0.093 ms (same route)
```

Ping PC6-PC7

Two-node Tool

Nodes
source node destination node click to select nodes

Command line
☐ traceroute ☒ ping

Command results

```
vcmd -c /tmp/pycore.41061/PC6 -- ping -R -n 192.168.32.2
PING 192.168.32.2 (192.168.32.2) 56(124) bytes of data.
64 bytes from 192.168.32.2: icmp_seq=1 ttl=64 time=0.088 ms
RR:    192.168.32.1
       192.168.32.2
       192.168.32.2
       192.168.32.1
```

Ping PC8-PC-4

Two-node Tool

Nodes
source node destination node click to select nodes

Command line
☐ traceroute ☒ ping

Command results

```
vcmd -c /tmp/pycore.41061/PC8 -- ping -R -n 192.168.27.1
```


3. wireshark

The image shows the Wireshark interface capturing traffic from veth7.0.c5. The packet list shows several ICMP Echo (ping) requests and ARP requests. The packet details pane shows the structure of the first packet: Ethernet II, Internet Protocol Version 4, and Internet Control Message Protocol. The packet bytes pane shows the raw data in hexadecimal and ASCII.

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	192.168.32.3	192.168.27.1	ICMP	138	Echo (ping) request id=0x0017, seq=4068/58383, ttl=
2	0.192141894	192.168.32.3	192.168.27.1	ICMP	138	Echo (ping) request id=0x0014, seq=4092/64527, ttl=
3	0.287147221	192.168.32.3	192.168.27.1	ICMP	138	Echo (ping) request id=0x0015, seq=4090/64015, ttl=
4	0.319156121	192.168.32.3	192.168.27.1	ICMP	138	Echo (ping) request id=0x0011, seq=4800/49170, ttl=
5	0.447605944	00:00:00:aa:00:07	00:00:00:aa:00:03	ARP	42	Who has 192.168.32.2? Tell 192.168.32.1
6	0.447731285	00:00:00:aa:00:03	00:00:00:aa:00:07	ARP	42	Who has 192.168.32.1? Tell 192.168.32.2
7	0.447968977	00:00:00:aa:00:07	00:00:00:aa:00:03	ARP	42	192.168.32.1 is at 00:00:00:aa:00:07
8	0.448061673	00:00:00:aa:00:03	00:00:00:aa:00:07	ARP	42	192.168.32.2 is at 00:00:00:aa:00:03
9	0.479296453	192.168.32.3	192.168.27.1	ICMP	138	Echo (ping) request id=0x0012, seq=4789/46354, ttl=
10	0.511463810	192.168.32.3	192.168.27.1	ICMP	138	Echo (ping) request id=0x0013, seq=4787/45842, ttl=
11	0.543574919	192.168.32.1	192.168.32.2	ICMP	138	Echo (ping) request id=0x001c, seq=6/1536, ttl=64 (
12	0.543608746	192.168.32.2	192.168.32.1	ICMP	138	Echo (ping) reply id=0x001c, seq=6/1536, ttl=64 (
13	1.024004040	192.168.32.3	192.168.27.1	ICMP	138	Echo (ping) request id=0x0017, seq=4069/58639, ttl=

Frame 1: 138 bytes on wire (1104 bits), 138 bytes captured (1104 bits) on interface 0
Ethernet II, Src: 00:00:00:aa:00:04 (00:00:00:aa:00:04), Dst: 00:00:00:aa:00:07 (00:00:00:aa:00:07)
Internet Protocol Version 4, Src: 192.168.32.3, Dst: 192.168.27.1
Internet Control Message Protocol

Ready to load or capture Packets: 174 · Displayed: 174 (100.0%) Profile: Default

4. ifconfig

```
core@core-VirtualBox: ~  
Файл Правка Вид Поиск Терминал Справка  
core@core-VirtualBox:~$ ifconfig  
b.11.c5: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
    inet6 fe80::e40d:eeff:feff:b471 prefixlen 64 scopeid 0x20<link>  
    ether 62:81:0b:35:3b:3b txqueuelen 1000 (Ethernet)  
    RX packets 503  bytes 42637 (42.6 KB)  
    RX errors 0  dropped 0  overruns 0  frame 0  
    TX packets 39  bytes 4334 (4.3 KB)  
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0  
  
b.13.c5: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
    inet6 fe80::68a3:8ff:fe33:4de0 prefixlen 64 scopeid 0x20<link>  
    ether 0e:5d:0c:02:ae:f8 txqueuelen 1000 (Ethernet)  
    RX packets 506  bytes 42900 (42.9 KB)  
    RX errors 0  dropped 0  overruns 0  frame 0  
    TX packets 37  bytes 4119 (4.1 KB)  
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0  
  
b.14.c5: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
    inet6 fe80::7cb7:d3ff:feda:1841 prefixlen 64 scopeid 0x20<link>  
    ether 12:b2:9f:0b:70:2c txqueuelen 1000 (Ethernet)  
    RX packets 498  bytes 42247 (42.2 KB)  
    RX errors 0  dropped 0  overruns 0  frame 0  
    TX packets 41  bytes 4548 (4.5 KB)  
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0
```