

Министерство науки и высшего образования Российской Федерации
Федеральное государственное бюджетное образовательное учреждение
высшего образования
«Вятский государственный университет»
Колледж ВятГУ

ОТЧЕТ
ПО ЛАБОРАТОРНОЙ РАБОТЕ №8
«Построение КС с подсетями при помощи программы Net-Simulator»
«Компьютерные сети»

Выполнил: студент учебной группы
ИСПк-202-52-00
Машинина Алиса Алексеевна

Преподаватель:
Шахторин Илья Дмитриевич

Киров
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Цель работы – изучить функционал программы **Net-Simulator**. И построить несколько компьютерных сетей с подсетями.

Задание:

1. Изучить теоретический материал
2. Построить компьютерные сети с подсетями

Задание 1

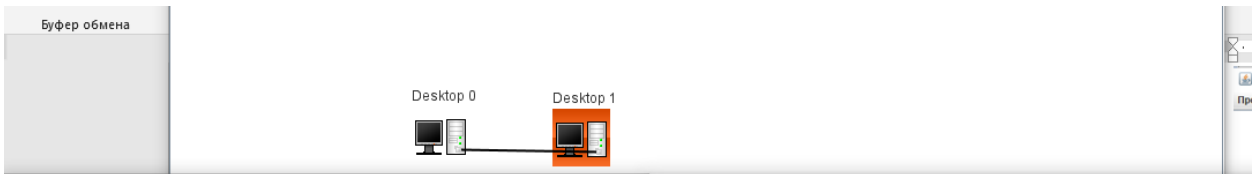
The screenshot shows the NET-Simulator interface with two desktops, Desktop 0 and Desktop 1, connected by a network line. A terminal window titled "Терминал - Desktop 0" is open, displaying the following text:

```
Welcome to console of the NET-Simulator virtual device!  
  
Type help for list of commands. To get help for the command  
type <command> -h.  
Press Ctrl+L to refresh the screen.  
  
=>ifconfig eth0 192.168.1.1 -netmask 255.255.255.0 -up  
=>ifconfig -a  
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:2:0  
      inet addr:192.168.1.1  Bcast:192.168.1.255  Mask:255.255.255.0  
      UP  
      RX packets:0 errors:0 dropped:0  
      TX packets:0 errors:0 dropped:0  
      RX bytes:0 TX bytes:0
```

Below the terminal window, there is a small black box with the text "at java" and "at java" on two lines, followed by "=>".

The screenshot shows the NET-Simulator interface with two desktops, Desktop 0 and Desktop 1, connected by a network line. A terminal window titled "Терминал - Desktop 1" is open, displaying the following text:

```
Welcome to console of the NET-Simulator virtual device!  
  
Type help for list of commands. To get help for the command  
type <command> -h.  
Press Ctrl+L to refresh the screen.  
  
=>ifconfig eth0 192.168.1.2 -netmask 255.255.255.0 -up  
=>ifconfig -a  
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:8:0  
      inet addr:192.168.1.2  Bcast:192.168.1.255  Mask:255.255.255.0  
      UP  
      RX packets:0 errors:0 dropped:0  
      TX packets:0 errors:0 dropped:0
```



```
Терминал - Desktop 0
Файл Схема Шрифт
Welcome to console of the NET-Simulator virtual device!

Type help for list of commands. To get help for the command
type <command> -h.
Press Ctrl+L to refresh the screen.

=>ifconfig eth0 192.168.1.1 -netmask 255.255.255.0 -up
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:2:0
      inet addr:192.168.1.1  Bcast:192.168.1.255  Mask:255.255.255.0
      UP
      RX packets:0 errors:0 dropped:0
      TX packets:0 errors:0 dropped:0
      RX bytes:0 TX bytes:0

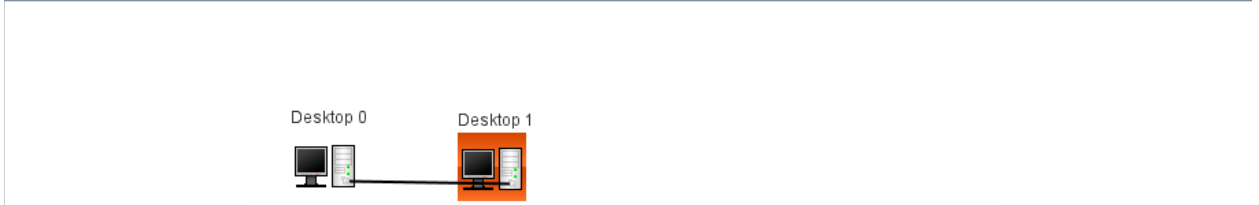
=>|
```

```
Терминал - Desktop 1
Файл Схема Шрифт
Welcome to console of the NET-Simulator virtual device!

Type help for list of commands. To get help for the command
type <command> -h.
Press Ctrl+L to refresh the screen.

=>ifconfig eth0 192.168.1.2 -netmask 255.255.255.0 -up
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:8:0
      inet addr:192.168.1.2  Bcast:192.168.1.255  Mask:255.255.255.0
      UP
      RX packets:0 errors:0 dropped:0
      TX packets:0 errors:0 dropped:0
      RX bytes:0 TX bytes:0

=>|
```

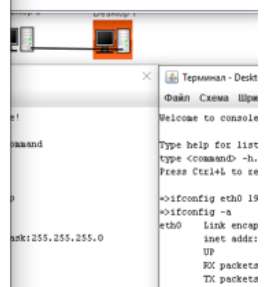


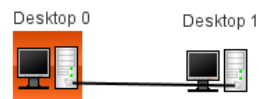
```
Терминал - Desktop 1
Файл Схема Шрифт

=>ifconfig eth0 192.168.1.2 -netmask 255.255.255.0 -up
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:8:0
      inet addr:192.168.1.2  Bcast:192.168.1.255  Mask:255.255.255.0
      UP
      RX packets:0 errors:0 dropped:0
      TX packets:0 errors:0 dropped:0
      RX bytes:0 TX bytes:0

=>ping 192.168.1.1
PING 192.168.1.1
Press Ctrl+C to abort.
64 bytes from 192.168.1.1: icmp_seq=0 ttl=63 time=234 ms
64 bytes from 192.168.1.1: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=7 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=8 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=9 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=10 ttl=63 time=0 ms

=>|
```





```

Терминал - Desktop 0
Файл Схема Шрифт

Press Ctrl+L to refresh the screen.

=>ifconfig eth0 192.168.1.1 -netmask 255.255.255.0 -up
=>ifconfig -a
eth0  Link encap:Ethernet HWaddr 0:0:0:0:2:0
      inet addr:192.168.1.1 Bcast:192.168.1.255 Mask:255.255.255.0
      UP
      RX packets:0 errors:0 dropped:0
      TX packets:0 errors:0 dropped:0
      RX bytes:0 TX bytes:0

=>ping 192.168.1.2
PING 192.168.1.2
Press Ctrl+C to abort.
64 bytes from 192.168.1.2: icmp_seq=0 ttl=63 time=219 ms
64 bytes from 192.168.1.2: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=7 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=8 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=9 ttl=63 time=0 ms
=>
  
```

```

Терминал - Desktop 1
Файл Схема Шрифт

=>ifconfig eth0 192.168.1.2 -netmask 255.255.255.0 -up
=>ifconfig -a
eth0  Link encap:Ethernet HWaddr 0:0:0:0:8:0
      inet addr:192.168.1.2 Bcast:192.168.1.255 Mask:
      UP
  
```



```

Терминал - Desktop 0
Файл Схема Шрифт

Press Ctrl+L to refresh the screen.

=>ifconfig eth0 192.168.1.1 -netmask 255.255.255.0 -up
=>ifconfig -a
eth0  Link encap:Ethernet HWaddr 0:0:0:0:2:0
      inet addr:192.168.1.1 Bcast:192.168.1.255 Mask:255.255.255.0
      UP
      RX packets:0 errors:0 dropped:0
      TX packets:0 errors:0 dropped:0
      RX bytes:0 TX bytes:0

=>ping 192.168.1.2
PING 192.168.1.2
Press Ctrl+C to abort.
64 bytes from 192.168.1.2: icmp_seq=0 ttl=63 time=219 ms
64 bytes from 192.168.1.2: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=7 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=8 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=9 ttl=63 time=0 ms
=>
  
```

```

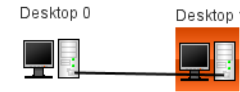
Терминал - Desktop 1
Файл Схема Шрифт

=>ifconfig eth0 192.168.1.2 -netmask 255.255.255.0 -up
=>ifconfig -a
eth0  Link encap:Ethernet HWaddr 0:0:0:0:8:0
      inet addr:192.168.1.2 Bcast:192.168.1.255 Mask:255.255.255.0
      UP
      RX packets:0 errors:0 dropped:0
      TX packets:0 errors:0 dropped:0
      RX bytes:0 TX bytes:0

=>ping 192.168.1.1
PING 192.168.1.1
Press Ctrl+C to abort.
64 bytes from 192.168.1.1: icmp_seq=0 ttl=63 time=234 ms
64 bytes from 192.168.1.1: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=7 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=8 ttl=63 time=0 ms
=>
  
```

NET-Simulator

Проект Устройства Сервис



Desktop 0 Desktop 1

```
Терминал - Desktop 0
Файл Схема Шрифт


TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0

=>ping 192.168.1.2
PING 192.168.1.2
Press Ctrl+C to abort.
64 bytes from 192.168.1.2: icmp_seq=0 ttl=63 time=219 ms
64 bytes from 192.168.1.2: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=7 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=8 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=9 ttl=63 time=0 ms
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:2:0
      inet addr:192.168.1.1 Bcast:192.168.1.255 Mask:255.255.255.0
      UP
      RX packets:25 errors:0 dropped:0
      TX packets:25 errors:0 dropped:0
      RX bytes:0 TX bytes:0
```

=>ping 192.168.1.1
PING 192.168.1.1

NET-Simulator

Проект Устройства Сервис

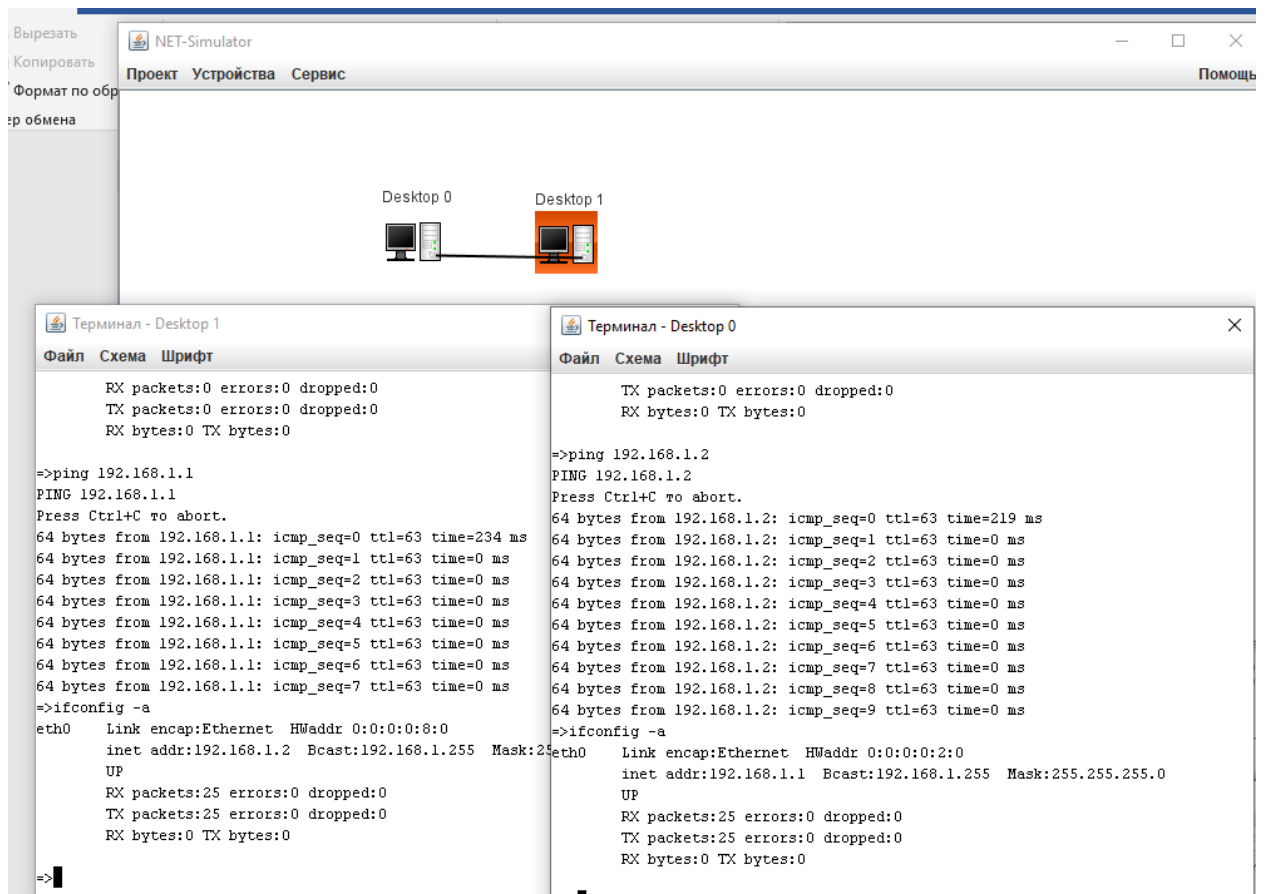


Desktop 0 Desktop 1

```
Терминал - Desktop 1
Файл Схема Шрифт

RX packets:0 errors:0 dropped:0
TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0

=>ping 192.168.1.1
PING 192.168.1.1
Press Ctrl+C to abort.
64 bytes from 192.168.1.1: icmp_seq=0 ttl=63 time=234 ms
64 bytes from 192.168.1.1: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=7 ttl=63 time=0 ms
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:8:0
      inet addr:192.168.1.2 Bcast:192.168.1.255 Mask:255.255.255.0
      UP
      RX packets:25 errors:0 dropped:0
      TX packets:25 errors:0 dropped:0
      RX bytes:0 TX bytes:0
```



Пакеты не потеряны

Задание 2

Сеть

```

ent.processEvent(Unknown Source)
ner.processEvent(Unknown Source)
ent.dispatchEventImpl(Unknown Source)
ner.dispatchEventImpl(Unknown Source)
ent.dispatchEvent(Unknown Source)
weightDispatcher.retargetMouseEvent(Unknown Source)
weightDispatcher.processMouseEvent(Unknown Source)
weightDispatcher.dispatchEvent(Unknown Source)
ner.dispatchEventImpl(Unknown Source)
.dispatchEventImpl(Unknown Source)
ent.dispatchEvent(Unknown Source)

```

NET-Simulator

Проект Устройства Сервис

```

Welcome to console of the NET-Simulator virtual device!

Type help for list of commands. To get help for the command
type <command> -h.
Press Ctrl+L to refresh the screen.

->ifconfig eth0 192.168.1.1 -netmask 255.255.255.0 -up
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:2:0
      inet addr:192.168.1.1  Bcast:192.168.1.255  Mask:255.255.255.0
      UP
      RX packets:0 errors:0 dropped:0
      TX packets:0 errors:0 dropped:0
      RX bytes:0 TX bytes:0

Терминал - Desktop 1
Welcome to console of the NET-Simulator virtual device!

Type help for list of commands. To get help for the command
type <command> -h.
Press Ctrl+L to refresh the screen.

->ifconfig 192.168.1.2 -netmask 255.255.255.0 -up
Error: No such interface: 192.168.1.2
=>ifconfig etn0 192.168.1.2. -netmask 255.255.255.0 -up
Error: No such interface: etn0
=>ifconfig eth 0 192.168.1.2. -netmask 255.255.255.0 -up
Error: No such interface: eth
=>ifconfig eth0 192.168.1.2. -netmask 255.255.255.0 -up
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:8:0
      inet addr:192.168.1.2  Bcast:192.168.1.255  Mask:255.255.255.0
      UP
      RX packets:0 errors:0 dropped:0
      TX packets:0 errors:0 dropped:0
      RX bytes:0 TX bytes:0

Терминал - Desktop 2
Welcome to console of the NET-Simulator virtual device!

Type help for list of commands. To get help for the command
type <command> -h.
Press Ctrl+L to refresh the screen.

->ifconfig eth0 192.168.1.3 -netmask 255.255.255.0 -up
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:14:0
      inet addr:192.168.1.3  Bcast:192.168.1.255  Mask:255.255.255.0
      UP
      RX packets:0 errors:0 dropped:0
      TX packets:0 errors:0 dropped:0
      RX bytes:0 TX bytes:0

```

Передача с 1 на 2

NET-Simulator

Проект Устройства Сервис

```

UP
RX packets:0 errors:0 dropped:0
TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0

=>ping 192.168.1.2
PING 192.168.1.2
Press Ctrl+C to abort.
64 bytes from 192.168.1.2: icmp_seq=0 ttl=63 time=219 ms
64 bytes from 192.168.1.2: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=7 ttl=63 time=0 ms
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:2:0
      inet addr:192.168.1.1  Bcast:192.168.1.255  Mask:255.255.255.0
      UP
      RX packets:10 errors:0 dropped:0
      TX packets:10 errors:0 dropped:0
      RX bytes:0 TX bytes:0

=>

```

Со 2 на 3

Diagram description: A central HUB 3 is connected to three desktops: Desktop 0 (top left), Desktop 1 (top right), and Desktop 2 (bottom center). Each desktop is represented by a computer icon with a monitor and keyboard.

```

Терминал - Desktop 1
Файл  Схема  Шрифт
RX packets:0 errors:0 dropped:0
TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0

=>ping 192.168.1.3
PING 192.168.1.3
Press Ctrl+C to abort.
64 bytes from 192.168.1.3: icmp_seq=0 ttl=63 time=109 ms
64 bytes from 192.168.1.3: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=7 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=8 ttl=63 time=0 ms
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:0:0
      inet addr:192.168.1.2  Bcast:192.168.1.255  Mask:255.255.255.0
      UP
      RX packets:20 errors:0 dropped:0
      TX packets:20 errors:0 dropped:0
      RX bytes:0 TX bytes:0
=>

```

С 3 на 1

Diagram description: A central HUB 3 is connected to three desktops: Desktop 0 (top left), Desktop 1 (top right), and Desktop 2 (bottom center). Each desktop is represented by a computer icon with a monitor and keyboard.

```

Терминал - Desktop 2
Файл  Схема  Шрифт
UP
RX packets:0 errors:0 dropped:0
TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0

=>ping 192.168.1.1
PING 192.168.1.1
Press Ctrl+C to abort.
64 bytes from 192.168.1.1: icmp_seq=0 ttl=63 time=219 ms
64 bytes from 192.168.1.1: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=7 ttl=63 time=0 ms
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:14:0
      inet addr:192.168.1.3  Bcast:192.168.1.255  Mask:255.255.255.0
      UP
      RX packets:22 errors:0 dropped:0
      TX packets:20 errors:0 dropped:0
      RX bytes:0 TX bytes:0
=>

```

Все вместе

```

Терминал - Desktop 0
Файл  Схема  Шрифт
UP
RX packets:0 errors:0 dropped:0
TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0

=>ping 192.168.1.2
PING 192.168.1.2
Press Ctrl+C to abort.
64 bytes from 192.168.1.2: icmp_seq=0 ttl=63 time=219 ms
64 bytes from 192.168.1.2: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=7 ttl=63 time=0 ms
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:2:0
      inet addr:192.168.1.1  Bcast:192.168.1.255  Mask:255.255.255.0
      UP
      RX packets:10 errors:0 dropped:0
      TX packets:10 errors:0 dropped:0
      RX bytes:0 TX bytes:0
=>

```

```

Терминал - Desktop 1
Файл  Схема  Шрифт
RX packets:0 errors:0 dropped:0
TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0

=>ping 192.168.1.3
PING 192.168.1.3
Press Ctrl+C to abort.
64 bytes from 192.168.1.3: icmp_seq=0 ttl=63 time=109 ms
64 bytes from 192.168.1.3: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=7 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=8 ttl=63 time=0 ms
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:0:0
      inet addr:192.168.1.2  Bcast:192.168.1.255  Mask:255.255.255.0
      UP
      RX packets:20 errors:0 dropped:0
      TX packets:20 errors:0 dropped:0
      RX bytes:0 TX bytes:0
=>

```

```

Терминал - Desktop 2
Файл  Схема  Шрифт
UP
RX packets:0 errors:0 dropped:0
TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0

=>ping 192.168.1.1
PING 192.168.1.1
Press Ctrl+C to abort.
64 bytes from 192.168.1.1: icmp_seq=0 ttl=63 time=219 ms
64 bytes from 192.168.1.1: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=7 ttl=63 time=0 ms
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:14:0
      inet addr:192.168.1.3  Bcast:192.168.1.255  Mask:255.255.255.0
      UP
      RX packets:22 errors:0 dropped:0
      TX packets:20 errors:0 dropped:0
      RX bytes:0 TX bytes:0
=>

```

2.2

```

Терминал - Desktop 10
Файл Схема Шрифт
UP
RX packets:0 errors:0 dropped:0
TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0

=>ping 192.168.1.1
PING 192.168.1.1
=>ifconfig -a
eth0 Link encap:Ethernet HWaddr 0:0:0:0:86:0
      inet addr:192.168.1.9 Bcast:192.168.1.255 Mask:255.255.255.0
UP
RX packets:10 errors:0 dropped:0
TX packets:10 errors:0 dropped:0
RX bytes:0 TX bytes:0
  
```

Задание 3

```

Терминал - Desktop 1
Файл Схема Шрифт
Welcome to console of the NET-Simulator virtual device!

Type help for list of commands. To get help for the command
type <command> -h.
Press Ctrl+L to refresh the screen.

=>ifconfig eth0 192.168.1.1 -netmask 255.255.255.0 -up
=>ifconfig -a
eth0 Link encap:Ethernet HWaddr 0:0:0:0:14:0
UP
RX packets:0 errors:0 dropped:0
TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0

Терминал - Desktop 2
Файл Схема Шрифт
Welcome to console of the NET-Simulator virtual device!

Type help for list of commands. To get help for the command
type <command> -h.
Press Ctrl+L to refresh the screen.

=>ifconfig eth0 192.168.1.2 -netmask 255.255.255.0 -up
Error: Invalid address: 192.168.1.2
=>ifconfig eth0 192.168.1.2 -netmask 255.255.255.0 -up
=>ifconfig -a
eth0 Link encap:Ethernet HWaddr 0:0:0:0:1A:0
UP
RX packets:0 errors:0 dropped:0
TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0

Терминал - Desktop 3
Файл Схема Шрифт
Welcome to console of the NET-Simulator virtual device!

Type help for list of commands. To get help for the command
type <command> -h.
Press Ctrl+L to refresh the screen.

=>ifconfig eth0 192.168.1.3 -netmask 255.255.255.0 -up
=>ifconfig -a
eth0 Link encap:Ethernet HWaddr 0:0:0:0:20:0
UP
RX packets:0 errors:0 dropped:0
TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0
  
```

Ping

```

Терминал - Desktop 1
Файл Схема Шрифт
UP
RX packets:0 errors:0 dropped:0
TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0

=>ping 192.168.1.2
PING 192.168.1.2
Press Ctrl+C to abort.
64 bytes from 192.168.1.2: icmp_seq=0 ttl=63 time=218 ms
64 bytes from 192.168.1.2: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=7 ttl=63 time=0 ms
=>ifconfig -a
eth0 Link encap:Ethernet HWaddr 0:0:0:0:14:0
      inet addr:192.168.1.1 Bcast:192.168.1.255 Mask:255.255.255.0
UP
RX packets:10 errors:0 dropped:0
TX packets:10 errors:0 dropped:0
RX bytes:0 TX bytes:0

Терминал - Desktop 2
Файл Схема Шрифт
      inet addr:192.168.1.2 Bcast:192.168.1.255 Mask:255.255.255.0
UP
RX packets:0 errors:0 dropped:0
TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0

=>ping 192.168.1.3
PING 192.168.1.3
Press Ctrl+C to abort.
64 bytes from 192.168.1.3: icmp_seq=0 ttl=63 time=109 ms
64 bytes from 192.168.1.3: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=7 ttl=63 time=0 ms
=>ifconfig -a
eth0 Link encap:Ethernet HWaddr 0:0:0:0:1A:0
      inet addr:192.168.1.2 Bcast:192.168.1.255 Mask:255.255.255.0
UP
RX packets:19 errors:0 dropped:0
TX packets:19 errors:0 dropped:0
RX bytes:0 TX bytes:0

Терминал - Desktop 3
Файл Схема Шрифт
RX packets:0 errors:0 dropped:0
TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0

=>ping 192.168.1.1
PING 192.168.1.1
Press Ctrl+C to abort.
64 bytes from 192.168.1.1: icmp_seq=0 ttl=63 time=218 ms
64 bytes from 192.168.1.1: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=7 ttl=63 time=0 ms
=>ifconfig -a
eth0 Link encap:Ethernet HWaddr 0:0:0:0:20:0
      inet addr:192.168.1.3 Bcast:192.168.1.255 Mask:255.255.255.0
UP
RX packets:20 errors:0 dropped:0
TX packets:20 errors:0 dropped:0
RX bytes:0 TX bytes:0
  
```

Задание 4

The screenshot displays a network simulation environment with three terminal windows and a network diagram. The terminals show the following commands and outputs:

- Terminal - Desktop 1:**

```

ping 192.168.1.2
PING 192.168.1.2
Press Ctrl+C to abort.
64 bytes from 192.168.1.2: icmp_seq=0 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=7 ttl=63 time=0 ms
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:14:0
      inet addr:192.168.1.1  Bcast:192.168.1.255  Mask:255.255.255.0
      UP
      RX packets:10 errors:0 dropped:0
      TX packets:10 errors:0 dropped:0
      RX bytes:0 TX bytes:0

```
- Terminal - Desktop 2:**

```

inet addr:192.168.1.2  Bcast:192.168.1.255  Mask:255.255.255.0
UP
RX packets:0 errors:0 dropped:0
TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0

ping 192.168.1.3
PING 192.168.1.3
Press Ctrl+C to abort.
64 bytes from 192.168.1.3: icmp_seq=0 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.3: icmp_seq=7 ttl=63 time=0 ms
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:14:0
      inet addr:192.168.1.2  Bcast:192.168.1.255  Mask:255.255.255.0
      UP
      RX packets:19 errors:0 dropped:0
      TX packets:19 errors:0 dropped:0
      RX bytes:0 TX bytes:0

```
- Terminal - Desktop 3:**

```

ping 192.168.1.1
PING 192.168.1.1
Press Ctrl+C to abort.
64 bytes from 192.168.1.1: icmp_seq=0 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=1 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=2 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=3 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.1: icmp_seq=7 ttl=63 time=0 ms
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:14:0
      inet addr:192.168.1.1  Bcast:192.168.1.255  Mask:255.255.255.0
      UP
      RX packets:0 errors:0 dropped:0
      TX packets:0 errors:0 dropped:0
      RX bytes:0 TX bytes:0

=>ifconfig eth0 192.168.100.1 -netmask 255.255.255.240 -up
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:14:0
      inet addr:192.168.100.1  Bcast:192.168.100.15  Mask:255.255.255.240
      UP
      RX packets:0 errors:0 dropped:0
      TX packets:0 errors:0 dropped:0
      RX bytes:0 TX bytes:0

=>ifconfig eth0 192.168.100.28 -netmask 255.255.255.240 -up
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:14:0
      inet addr:192.168.100.28  Bcast:192.168.100.31  Mask:255.255.255.240
      UP
      RX packets:0 errors:0 dropped:0
      TX packets:0 errors:0 dropped:0
      RX bytes:0 TX bytes:0

=>ifconfig eth0 192.168.100.15 -netmask 255.255.255.240 -up
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:14:0
      inet addr:192.168.100.15  Bcast:192.168.100.15  Mask:255.255.255.240
      UP
      RX packets:0 errors:0 dropped:0
      TX packets:0 errors:0 dropped:0
      RX bytes:0 TX bytes:0

```

The network diagram shows five desktops (Desktop 1 to Desktop 5) connected to a central switch (Switch 0). Desktop 1 is connected to Switch 0, Desktop 2 is connected to Switch 0, Desktop 3 is connected to Switch 0, Desktop 4 is connected to Switch 0, and Desktop 5 is connected to Switch 0.

Настройка подсетей 1 сеть

Терминал - Desktop 1

Файл Схема Шрифт

```

64 bytes from 192.168.1.2: icmp_seq=4 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=5 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=6 ttl=63 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=7 ttl=63 time=0 ms
=>ifconfig -a
eth0  Link encap:Ethernet  HWaddr 0:0:0:0:14:0
      inet addr:192.168.1.1  Bcast:192.168.1.255  Mask:255.255.255.0
      UP
      RX packets:10 errors:0 dropped:0
      TX packets:10 errors:0 dropped:0
      RX bytes:0 TX bytes:0

=>route
IP routing table
Destination      Gateway          Netmask          Flags Metric  Iface
192.168.1.0      *                255.255.255.0   U        0         eth0

=>route -add 192.168.100.1 -netmask 255.255.255.240 -dev eth0
Error: The address 192.168.100.1 not allowed with the netmask 255.255.255.240

=>route -add 192.168.100.0 -netmask 255.255.255.240 -dev eth0

=>route
IP routing table
Destination      Gateway          Netmask          Flags Metric  Iface
192.168.100.0   *                255.255.255.240 U        0         eth0
192.168.1.0     *                255.255.255.0   U        0         eth0
~#

```

2 сеть



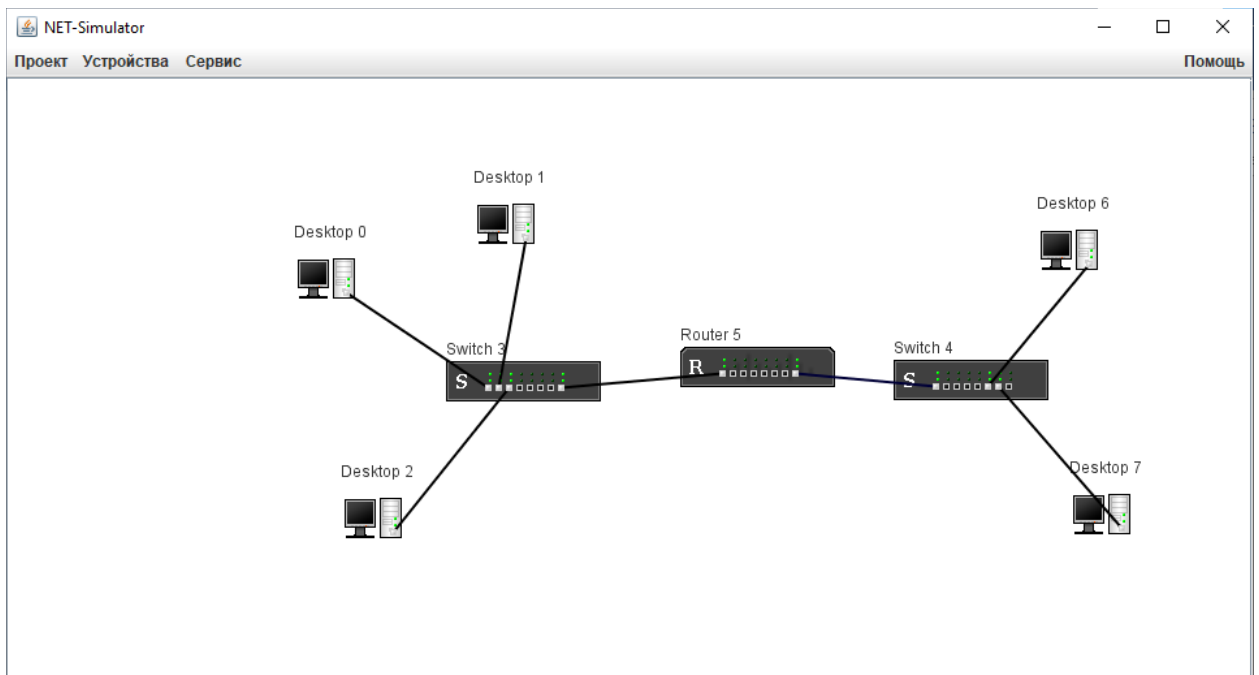
Type help for list of commands. To get help for the command
type <command> -h.
Press Ctrl+L to refresh the screen.

```
=>ifconfig eth0 192.168.100.28 -netmask 255.255.255.240 -up  
=>ifconfig -a  
eth0    Link encap:Ethernet  HWaddr 0:0:0:0:38:0  
        inet addr:192.168.100.28  Bcast:192.168.100.31  Mask:255.255.255.240  
        UP  
        RX packets:0 errors:0 dropped:0  
        TX packets:0 errors:0 dropped:0  
        RX bytes:0 TX bytes:0
```

```
=>route  
IP routing table  
Destination      Gateway          Netmask          Flags Metric Iface  
192.168.100.16   *                255.255.255.240 U        0      eth0  
=>route -add 192.168.1.0 -netmask 255.255.255.0 -dev eth0  
=>route  
IP routing table  
Destination      Gateway          Netmask          Flags Metric Iface  
192.168.100.16   *                255.255.255.240 U        0      eth0  
192.168.1.0      *                255.255.255.0   U        0      eth0  
=>█
```

Задание 5.

Создали сеть



Настраиваем маршрутизатор

```
Терминал - Router 5
Файл Схема Шрифт
Welcome to console of the NET-Simulator virtual device!

Type help for list of commands. To get help for the command
type <command> -h.
Press Ctrl+L to refresh the screen.

=>ifconfig eth0 192.168.1.100 -netmask 255.255.255.0 -up
=>ifconfig eth7 172.16.1.100 -netmask 255.255.0.0 -up
=>ifconfig
eth0   Link encap:Ethernet  HWaddr 0:0:0:0:38:0
       inet addr:192.168.1.100  Bcast:192.168.1.255  Mask:255.255.255.0
       UP
       RX packets:0 errors:0 dropped:0
       TX packets:0 errors:0 dropped:0
       RX bytes:0 TX bytes:0

eth7   Link encap:Ethernet  HWaddr 0:0:0:0:38:7
       inet addr:172.16.1.100  Bcast:172.16.255.255  Mask:255.255.0.0
       UP
       RX packets:0 errors:0 dropped:0
       TX packets:0 errors:0 dropped:0
       RX bytes:0 TX bytes:0

=>
```

Настраиваем подключение компьютеров первой подсети к интерфейсу маршрутизатора eth0.

```
Терминал - Desktop 1
Файл Схема Шрифт
Welcome to console of the NET-Simulator virtual device!

Type help for list of commands. To get help for the command
type <command> -h.
Press Ctrl+L to refresh the screen.

=>ifconfig eth0 192.168.1.1 -netmask 255.255.255.0 -up
=>route -add 0.0.0.0 -netmask 0.0.0.0 -gw 192.168.1.100 -dev eth0
=>route
IP routing table
Destination      Gateway          Netmask          Flags Metric Iface
192.168.1.0      *                255.255.255.0   U      0      eth0
0.0.0.0          192.168.1.100   0.0.0.0         UG     0      eth0
=>
```

Проверяем работоспособность сети командой Ping, судя по информации, которую предоставляет команда ifconfig все пакеты были успешно доставлены.

```
Терминал - Desktop 7
Файл Схема Шрифт
TX packets:0 errors:0 dropped:0
RX bytes:0 TX bytes:0

=>route -add 0.0.0.0 -netmask 0.0.0.0 -gw 172.16.1.100 -dev eth0
=>ping 192.168.1.2
PING 192.168.1.2
Press Ctrl+C to abort.
64 bytes from 192.168.1.2: icmp_seq=0 ttl=62 time=438 ms
64 bytes from 192.168.1.2: icmp_seq=1 ttl=62 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=2 ttl=62 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=3 ttl=62 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=4 ttl=62 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=5 ttl=62 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=6 ttl=62 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=7 ttl=62 time=0 ms
64 bytes from 192.168.1.2: icmp_seq=8 ttl=62 time=0 ms
=>ifconfig
eth0    Link encap:Ethernet  HWaddr 0:0:0:0:52:0
        inet addr:172.16.0.110  Bcast:172.16.255.255  Mask:255.255.0.0
        UP
        RX packets:11 errors:0 dropped:0
        TX packets:11 errors:0 dropped:0
        RX bytes:0 TX bytes:0

=>
```