

Лабораторная работа №10

Администрирование локальных сетей

Ищенко Ирина

Российский университет дружбы народов, Москва, Россия

- Ищенко Ирина Олеговна
- 1132226529
- уч. группа: НПИбд-02-22
- Факультет физико-математических и естественных наук

Освоить настройку прав доступа пользователей к ресурсам сети.

Выполнение лабораторной работы

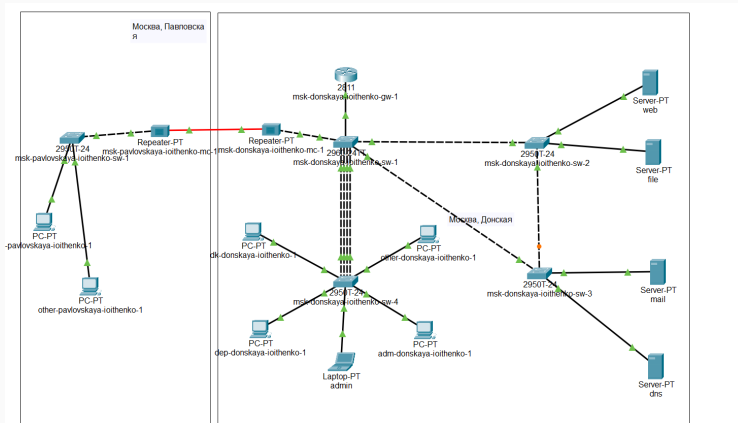


Рис. 1: Добавление ноутбука

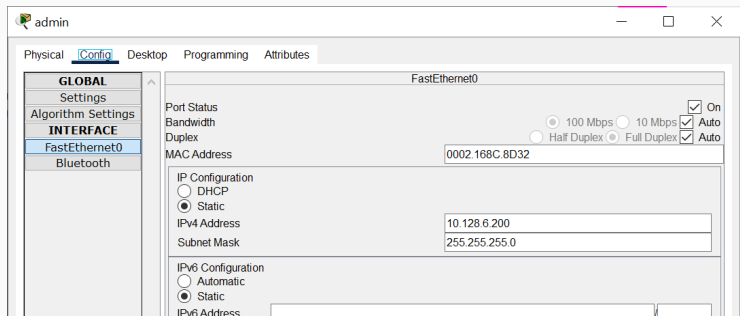


Рис. 2: IP

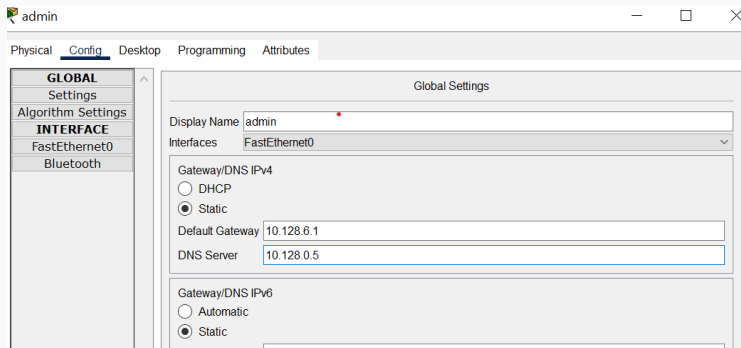
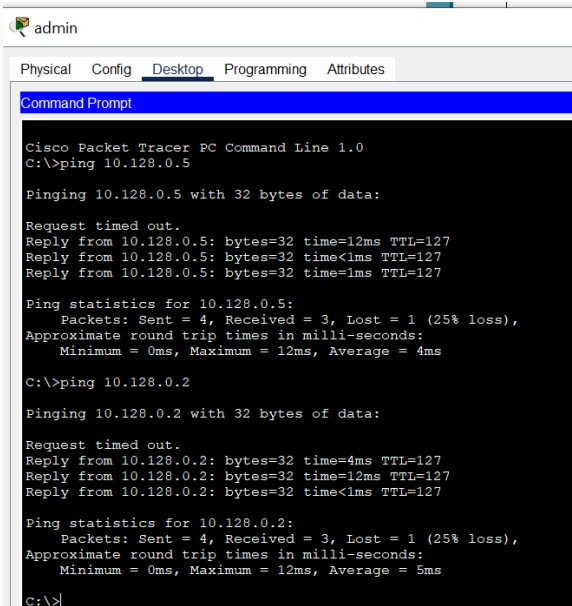


Рис. 3: Шлюз и адрес DNS-сервера



The screenshot shows the Cisco Packet Tracer PC Command Line interface for a device named 'admin'. The interface has tabs for Physical, Config, Desktop, Programming, and Attributes. The 'Desktop' tab is active, displaying a 'Command Prompt' window. The command prompt shows the execution of two ping commands. The first command is 'C:\>ping 10.128.0.5', which results in a 'Request timed out.' followed by three successful replies from 10.128.0.5 with 32 bytes of data, each taking 12ms, 1ms, and 1ms respectively, all with a TTL of 127. The second command is 'C:\>ping 10.128.0.2', which also results in a 'Request timed out.' followed by three successful replies from 10.128.0.2 with 32 bytes of data, each taking 4ms, 12ms, and 1ms respectively, all with a TTL of 127. Both tests show a 25% loss of packets (1 out of 4 sent).

```
admin
Physical Config Desktop Programming Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.128.0.5

Pinging 10.128.0.5 with 32 bytes of data:

Request timed out.
Reply from 10.128.0.5: bytes=32 time=12ms TTL=127
Reply from 10.128.0.5: bytes=32 time<1ms TTL=127
Reply from 10.128.0.5: bytes=32 time=1ms TTL=127

Ping statistics for 10.128.0.5:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 12ms, Average = 4ms

C:\>ping 10.128.0.2

Pinging 10.128.0.2 with 32 bytes of data:

Request timed out.
Reply from 10.128.0.2: bytes=32 time=4ms TTL=127
Reply from 10.128.0.2: bytes=32 time=12ms TTL=127
Reply from 10.128.0.2: bytes=32 time<1ms TTL=127

Ping statistics for 10.128.0.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 12ms, Average = 5ms

C:\>
```

Рис. 4: Проверка пинга до настройки


```
msk-donskaya-ioithenko-gw-1>enable
Password:
msk-donskaya-ioithenko-gw-1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
msk-donskaya-ioithenko-gw-1(config)#ip access-list extended servers-out
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#remark web
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#permit tcp any host 10.128.0.2 eq 80
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#^Z
msk-donskaya-ioithenko-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
msk-donskaya-ioithenko-gw-1#
```

Рис. 5: Доступ к web-серверу по tcp 80

```
msk-donskaya-ioithenko-gw-1(config-subif)#interface f0/0.3  
msk-donskaya-ioithenko-gw-1(config-subif)#ip access-group servers-out out  
msk-donskaya-ioithenko-gw-1(config-subif)#
```

Рис. 6: Список управления доступом к интерфейсу

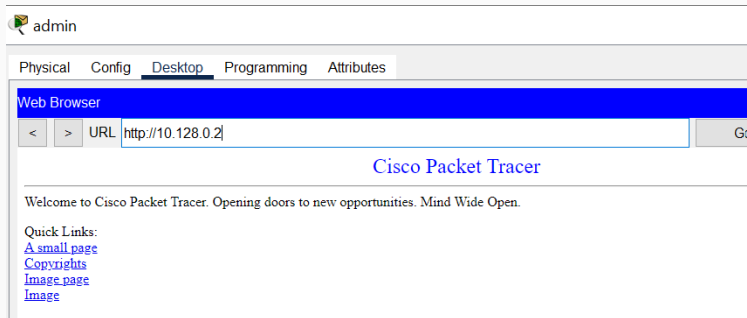


Рис. 7: Проверка доступа по HTTP

```
C:\>ping 10.128.0.2

Pinging 10.128.0.2 with 32 bytes of data:

Reply from 10.128.6.1: Destination host unreachable.
Reply from 10.128.6.1: Destination host unreachable.
Reply from 10.128.6.1: Destination host unreachable.
Reply from 10.128.6.1: Destination host unreachable.

Ping statistics for 10.128.0.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 10.128.0.5

Pinging 10.128.0.5 with 32 bytes of data:

Reply from 10.128.6.1: Destination host unreachable.
Reply from 10.128.6.1: Destination host unreachable.
Reply from 10.128.6.1: Destination host unreachable.
Reply from 10.128.6.1: Destination host unreachable.

Ping statistics for 10.128.0.5:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

Рис. 8: Проверка пингом

```
msh-donskaya-ioithenko-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msh-donskaya-ioithenko-gw-1(config)#ip access-list extended servers-out
msh-donskaya-ioithenko-gw-1(config-ext-nacl)#permit tcp host 10.128.6.200 host 10.128.0.2
range 20 ftp
msh-donskaya-ioithenko-gw-1(config-ext-nacl)#permit tcp host 10.128.6.200 host 10.128.0.2 eq
telnet
msh-donskaya-ioithenko-gw-1(config-ext-nacl)#^Z
msh-donskaya-ioithenko-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
msh-donskaya-ioithenko-gw-1#
```

Рис. 9: Доступ для admin по Telnet и FTP

 admin

Reply from 10.128.6.1: Destination host unreachable.

Ping statistics for 10.128.0.5:

Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ftp 10.128.0.2

Trying to connect...10.128.0.2

Connected to 10.128.0.2

220- Welcome to PT Ftp server

Username:cisco

331- Username ok, need password

Password:

230- Logged in

(passive mode On)

ftp>

☐ Top

Рис. 10: Проверка FTP

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ftp 10.128.0.2
Trying to connect...10.128.0.2

%Error opening ftp://10.128.0.2/ (Timed out)
.

(Disconnecting from ftp server)
```

Рис. 11: Проверка FTP

```
msk-donskaya-ioithenko-gw-1(config)#ip access-list extended servers-out
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#remark file
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#permit tcp 10.128.0.0 0.0.255.255 host 10.128.0.3
eq 445
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#permit tcp any host 10.128.0.3 range 20 ftp
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#^Z
msk-donskaya-ioithenko-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-ioithenko-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-ioithenko-gw-1(config)#ip access-list extended servers-out
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#remark mail
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#permit tcp any host 10.128.0.4 eq smtp
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#permit tcp any host 10.128.0.4 eq pop3
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#^Z
msk-donskaya-ioithenko-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-ioithenko-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-ioithenko-gw-1(config)#ip access-list extended servers-out
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#remark dns
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#permit udp 10.128.0.0 0.0.255.255 host 10.128.0.5
eq 53
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#^Z
msk-donskaya-ioithenko-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-ioithenko-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-ioithenko-gw-1(config)#ip access-list extended servers-out
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#permit icmp any any
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#
```

Рис. 12: Файловый, почтовый и DNS сервер


```
msh-donskaya-ioithenko-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msh-donskaya-ioithenko-gw-1(config)#ip access-list extended other-in
msh-donskaya-ioithenko-gw-1(config-ext-nacl)#remark admin
msh-donskaya-ioithenko-gw-1(config-ext-nacl)#permit ip host 10.128.6.200 any
msh-donskaya-ioithenko-gw-1(config-ext-nacl)#exit
msh-donskaya-ioithenko-gw-1(config)##interface f0/0.104
      ^
% Invalid input detected at '^' marker.

msh-donskaya-ioithenko-gw-1(config)#interface f0/0.104
msh-donskaya-ioithenko-gw-1(config-subif)#ip access group other in in
      ^
% Invalid input detected at '^' marker.

msh-donskaya-ioithenko-gw-1(config-subif)#ip access-group other-in in
msh-donskaya-ioithenko-gw-1(config-subif)#
```

Рис. 13: Доступ для сети Other

```
msk-donskaya-ioithenko-gw-1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
msk-donskaya-ioithenko-gw-1(config)#ip access-list extended management-out
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#remark admin
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#permit ip host 10.128.6.200 10.128.1.0 0.0.255.255
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#exit
msk-donskaya-ioithenko-gw-1(config)#interface f0/0.2
msk-donskaya-ioithenko-gw-1(config-subif)#ip access-group management-out out
msk-donskaya-ioithenko-gw-1(config-subif)#^Z
msk-donskaya-ioithenko-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
```

Рис. 14: Доступ к сети сетевого оборудования

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.128.0.2

Pinging 10.128.0.2 with 32 bytes of data:

Request timed out.
Reply from 10.128.0.2: bytes=32 time=10ms TTL=127
Reply from 10.128.0.2: bytes=32 time<1ms TTL=127
Reply from 10.128.0.2: bytes=32 time<1ms TTL=127

Ping statistics for 10.128.0.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 10ms, Average = 3ms

C:\>ping 10.128.0.5

Pinging 10.128.0.5 with 32 bytes of data:

Reply from 10.128.0.5: bytes=32 time<1ms TTL=127
Reply from 10.128.0.5: bytes=32 time=13ms TTL=127
Reply from 10.128.0.5: bytes=32 time<1ms TTL=127
Reply from 10.128.0.5: bytes=32 time<1ms TTL=127

Ping statistics for 10.128.0.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 13ms, Average = 3ms

C:\>ping 10.128.1.2

Pinging 10.128.1.2 with 32 bytes of data:

Reply from 10.128.4.1: Destination host unreachable.
Reply from 10.128.4.1: Destination host unreachable.
Reply from 10.128.4.1: Destination host unreachable.
Reply from 10.128.4.1: Destination host unreachable.

Ping statistics for 10.128.1.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

Рис. 15: Проверка доступа

```
dk-donskaya-ioithenko-1
Physical Config Desktop Programming Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ftp 10.128.0.2
Trying to connect...10.128.0.2

%Error opening ftp://10.128.0.2/ (Timed out)
.

(Disconnecting from ftp server)

C:\>ping 10.128.3.30

Pinging 10.128.3.30 with 32 bytes of data:

Reply from 10.128.3.30: bytes=32 time=9ms TTL=128
Reply from 10.128.3.30: bytes=32 time=10ms TTL=128
Reply from 10.128.3.30: bytes=32 time<1ms TTL=128
Reply from 10.128.3.30: bytes=32 time<1ms TTL=128

Ping statistics for 10.128.3.30:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 10ms, Average = 4ms

C:\>ping 10.128.1.3

Pinging 10.128.1.3 with 32 bytes of data:

Reply from 10.128.3.1: Destination host unreachable.
Reply from 10.128.3.1: Destination host unreachable.
Reply from 10.128.3.1: Destination host unreachable.
Reply from 10.128.3.1: Destination host unreachable.

Ping statistics for 10.128.1.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 10.128.0.2

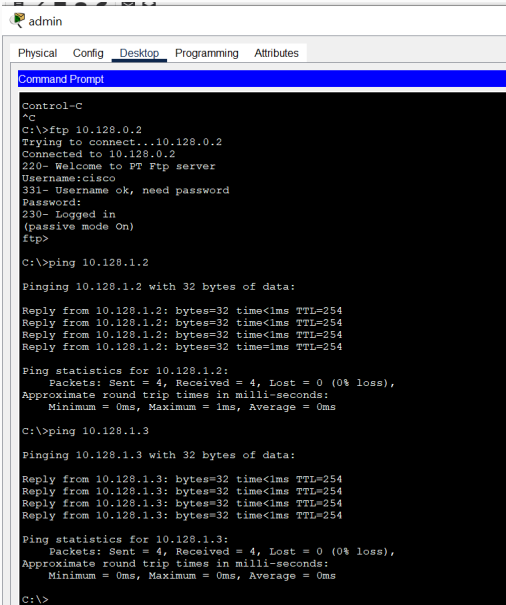
Pinging 10.128.0.2 with 32 bytes of data:

Reply from 10.128.0.2: bytes=32 time<1ms TTL=127
Reply from 10.128.0.2: bytes=32 time<1ms TTL=127
Reply from 10.128.0.2: bytes=32 time<1ms TTL=127
Reply from 10.128.0.2: bytes=32 time<1ms TTL=127

Ping statistics for 10.128.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

Рис. 16: Проверка доступа



```
admin
Physical Config Desktop Programming Attributes
Command Prompt
Control-C
^C
C:\>ftp 10.128.0.2
Trying to connect...10.128.0.2
Connected to 10.128.0.2
220- Welcome to FT Ftp server
Username:cisco
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>

C:\>ping 10.128.1.2

Pinging 10.128.1.2 with 32 bytes of data:

Reply from 10.128.1.2: bytes=32 time<1ms TTL=254
Reply from 10.128.1.2: bytes=32 time<1ms TTL=254
Reply from 10.128.1.2: bytes=32 time<1ms TTL=254
Reply from 10.128.1.2: bytes=32 time=1ms TTL=254

Ping statistics for 10.128.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 10.128.1.3

Pinging 10.128.1.3 with 32 bytes of data:

Reply from 10.128.1.3: bytes=32 time<1ms TTL=254
Reply from 10.128.1.3: bytes=32 time<1ms TTL=254
Reply from 10.128.1.3: bytes=32 time<1ms TTL=254
Reply from 10.128.1.3: bytes=32 time<1ms TTL=254

Ping statistics for 10.128.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

Рис. 17: Проверка доступа

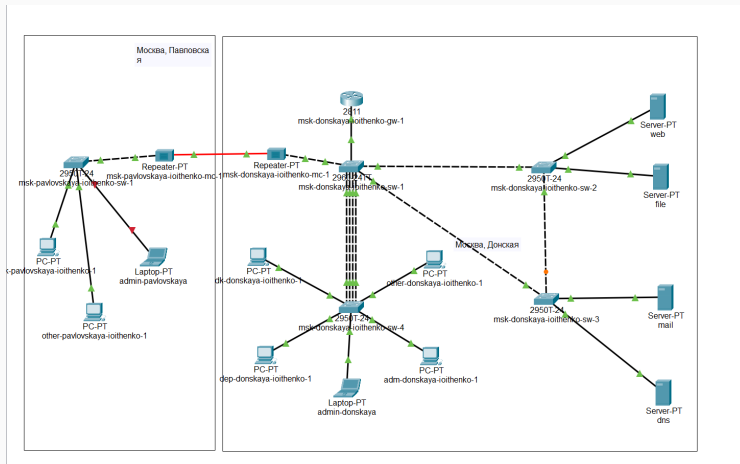


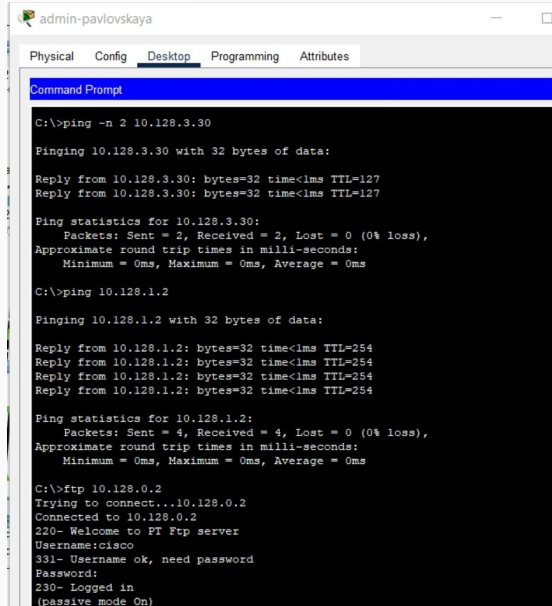
Рис. 18: Размещение устройства

```
msk-donskaya-ioithenko-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-ioithenko-gw-1(config)#ip access-list extended servers-out
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#permit tcp host 10.128.6.201 host 10.128.0.2 range
20 ftp
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#permit tcp host 10.128.6.201 host 10.128.0.2 eq
telnet
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#exit
msk-donskaya-ioithenko-gw-1(config)#ip access-list extended other-in
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#remark admin
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#permit ip host 10.128.6.201 any
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#exit
msk-donskaya-ioithenko-gw-1(config)#interface f0/0.104
msk-donskaya-ioithenko-gw-1(config-subif)#ip access-group other-in in
msk-donskaya-ioithenko-gw-1(config-subif)#exit
msk-donskaya-ioithenko-gw-1(config)#ip access-list extended management-out
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#remark admin
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#permit ip host 10.128.6.201 10.128.1.0 0.0.0.255
msk-donskaya-ioithenko-gw-1(config-ext-nacl)#exit
msk-donskaya-ioithenko-gw-1(config)#interface f0/0.2
msk-donskaya-ioithenko-gw-1(config-subif)#ip access-group management-out out
msk-donskaya-ioithenko-gw-1(config-subif)#^Z
msk-donskaya-ioithenko-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
msk-donskaya-ioithenko-gw-1#
```

Рис. 19: Правила

```
msh-donskaya-ioithenko-gw-1#show access-lists
Extended IP access list servers-out
  1 permit icmp any any
  10 permit tcp any host 10.128.0.2 eq www
  20 permit tcp host 10.128.6.200 host 10.128.0.2 range 20 ftp
  30 permit tcp host 10.128.6.200 host 10.128.0.2 eq telnet
  40 permit tcp 10.128.0.0 0.0.0.255 host 10.128.0.3 eq 445
  50 permit tcp any host 10.128.0.3 range 20 ftp
  60 permit tcp any host 10.128.0.4 eq smtp
  70 permit tcp any host 10.128.0.4 eq pop3
  80 permit udp 10.128.0.0 0.0.0.255 host 10.128.0.5 eq domain
  100 permit tcp host 10.128.6.201 host 10.128.0.2 range 20 ftp
  110 permit tcp host 10.128.6.201 host 10.128.0.2 eq telnet
Extended IP access list other-in
  10 permit ip host 10.128.6.200 any
  20 permit ip host 10.128.6.201 any
Extended IP access list management-out
  10 permit ip host 10.128.6.200 10.128.0.0 0.0.0.255
  20 permit ip host 10.128.6.201 10.128.1.0 0.0.0.255
msh-donskaya-ioithenko-gw-1#
```

Рис. 20: Список правил



```
admin-pavlovskaya
Physical Config Desktop Programming Attributes
Command Prompt

C:\>ping -n 2 10.128.3.30

Pinging 10.128.3.30 with 32 bytes of data:

Reply from 10.128.3.30: bytes=32 time<1ms TTL=127
Reply from 10.128.3.30: bytes=32 time<1ms TTL=127

Ping statistics for 10.128.3.30:
    Packets: Sent = 2, Received = 2, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 10.128.1.2

Pinging 10.128.1.2 with 32 bytes of data:

Reply from 10.128.1.2: bytes=32 time<1ms TTL=254
Reply from 10.128.1.2: bytes=32 time<1ms TTL=254
Reply from 10.128.1.2: bytes=32 time<1ms TTL=254
Reply from 10.128.1.2: bytes=32 time<1ms TTL=254

Ping statistics for 10.128.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ftp 10.128.0.2
Trying to connect...10.128.0.2
Connected to 10.128.0.2
220- Welcome to FT Ftp server
Username:cisco
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
```

Рис. 21: Проверка

В ходе выполнения лабораторной работы я освоила настройку прав доступа пользователей к ресурсам сети.