

# Лабораторная работа №10

Настройка списков управления доступом (ACL).

Махорин Иван Сергеевич

1032211221

НПИБД-02-21

# Новый проект

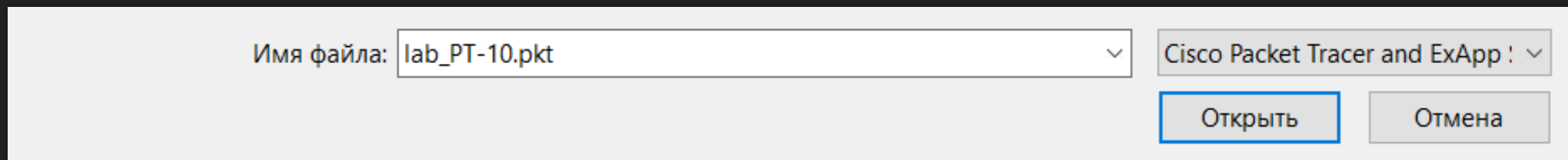
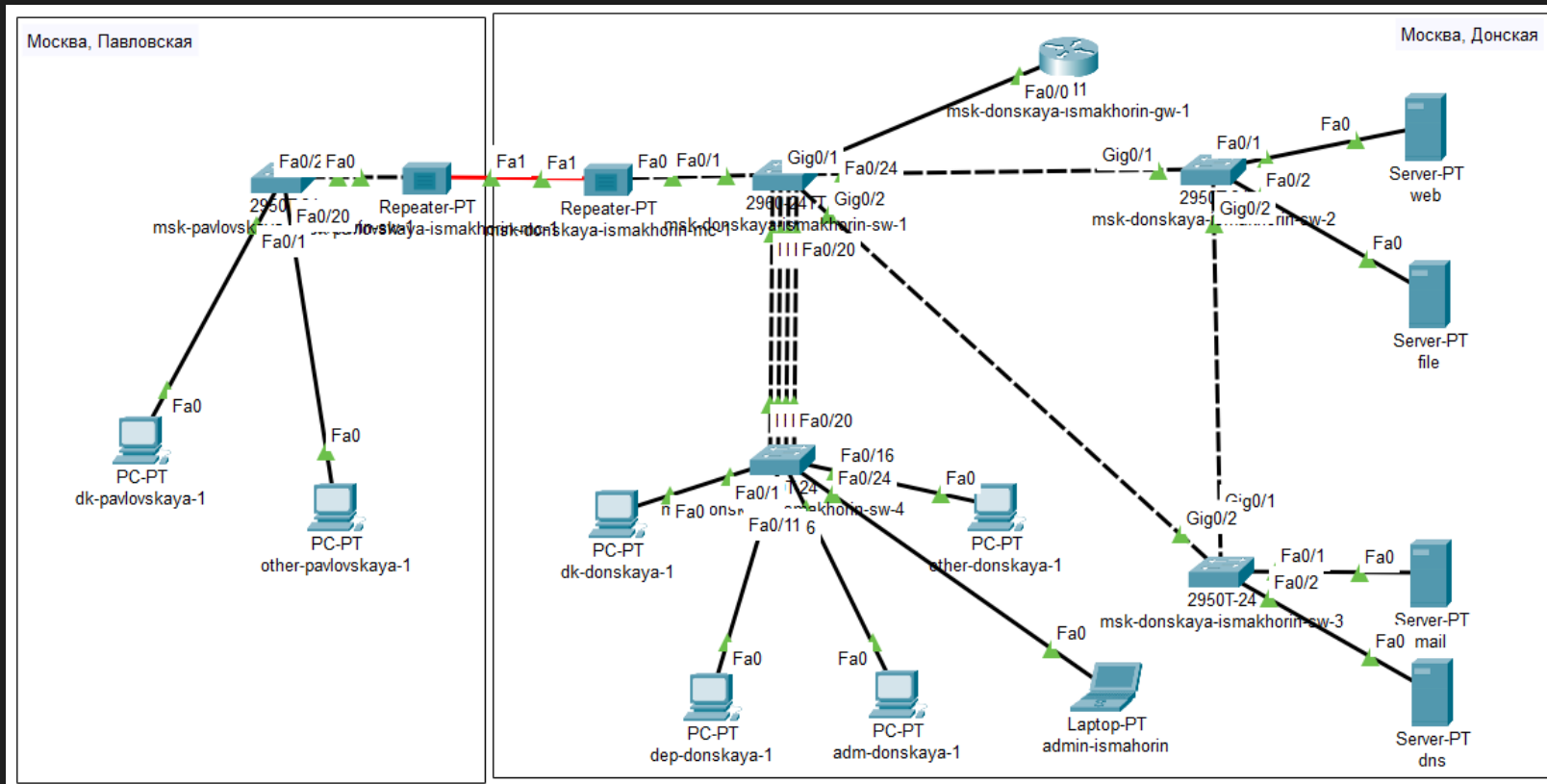


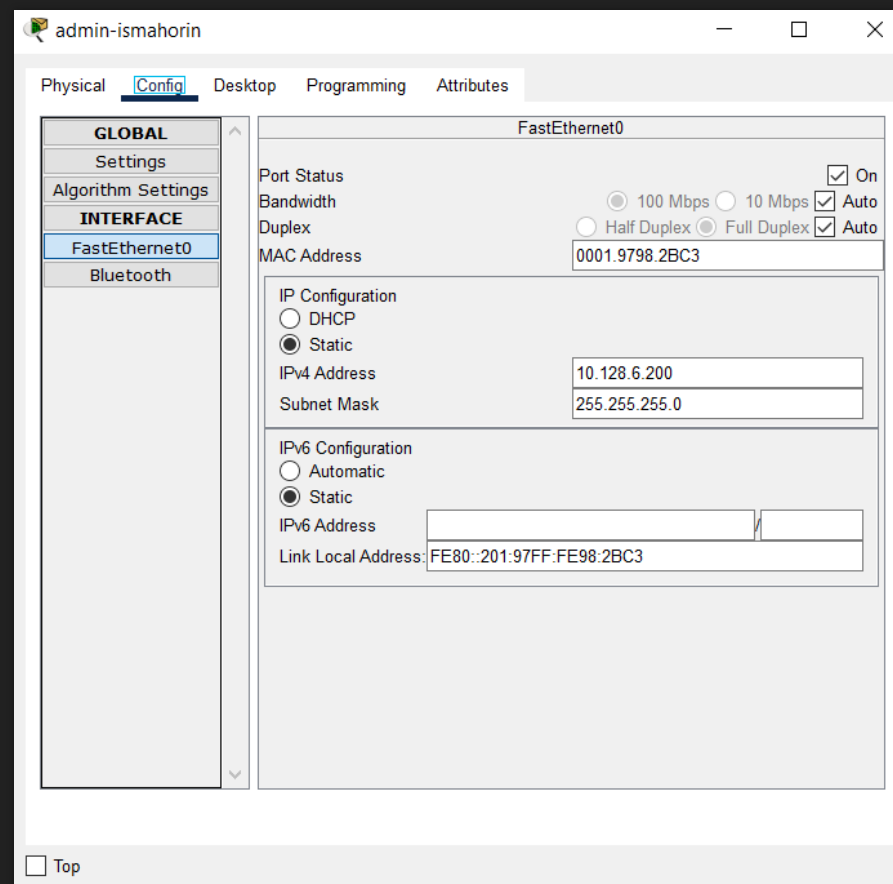
Рис. 1.1. Открытие проекта lab\_PT-10.pkt.

# Подсоединение ноутбука



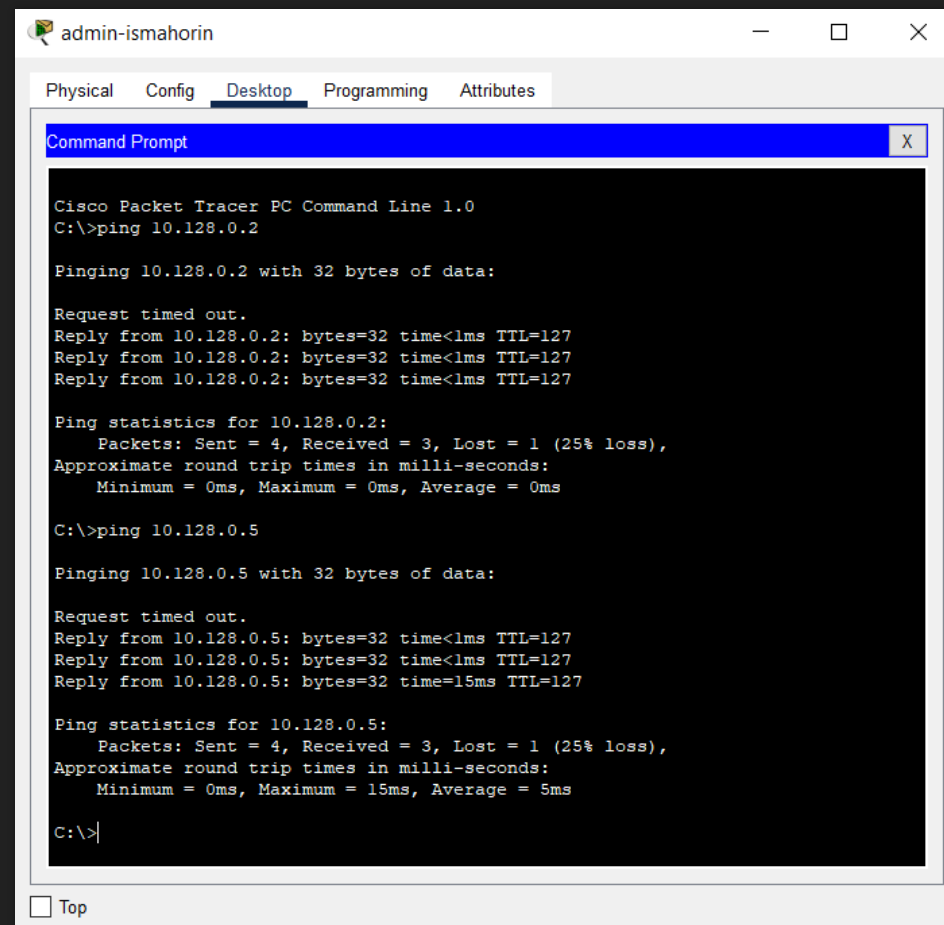
**Рис. 1.2.** Подсоединение ноутбука к порту 24 коммутатора msk-donskaya-ismakhorin-sw-4 и изменение названия.

# Присвоение адресов



**Рис. 1.3.** Присвоение оконечному устройству статического адреса 10.128.6.200, gateway-адреса 10.128.6.1 и адреса DNS-сервера 10.128.0.5.

# Проверка



The screenshot shows a Cisco Packet Tracer PC Command Line window for a device named 'admin-ismahorin'. The window has tabs for Physical, Config, Desktop, Programming, and Attributes, with 'Desktop' selected. Inside the window is a 'Command Prompt' window with the following text:

```
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<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 = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

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<1ms TTL=127
Reply from 10.128.0.5: bytes=32 time<1ms TTL=127
Reply from 10.128.0.5: bytes=32 time=15ms TTL=127

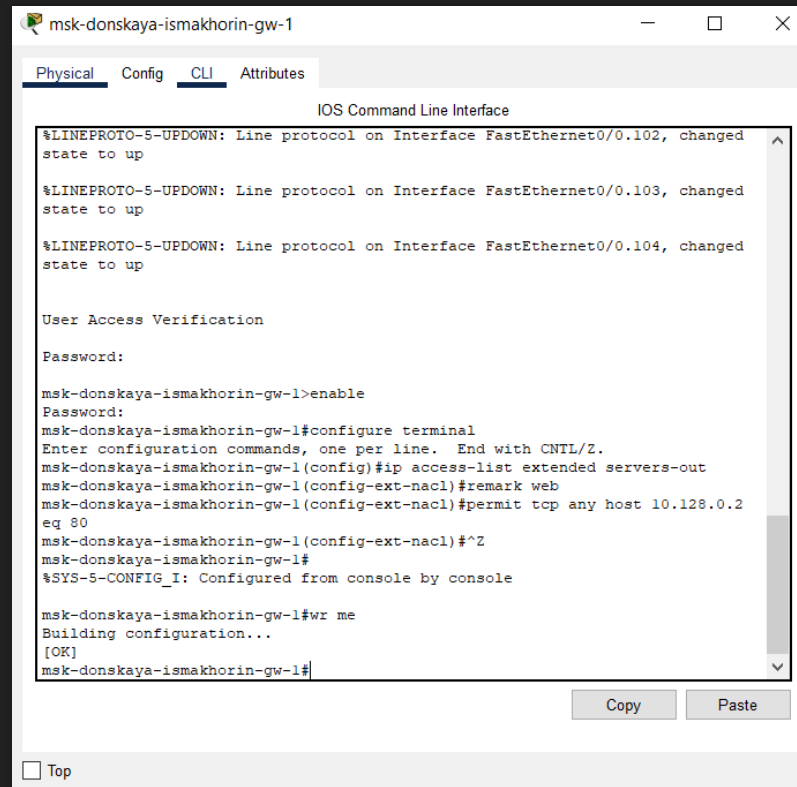
Ping statistics for 10.128.0.5:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 15ms, Average = 5ms

C:\>
```

At the bottom of the window, there is a checkbox labeled 'Top' which is currently unchecked.

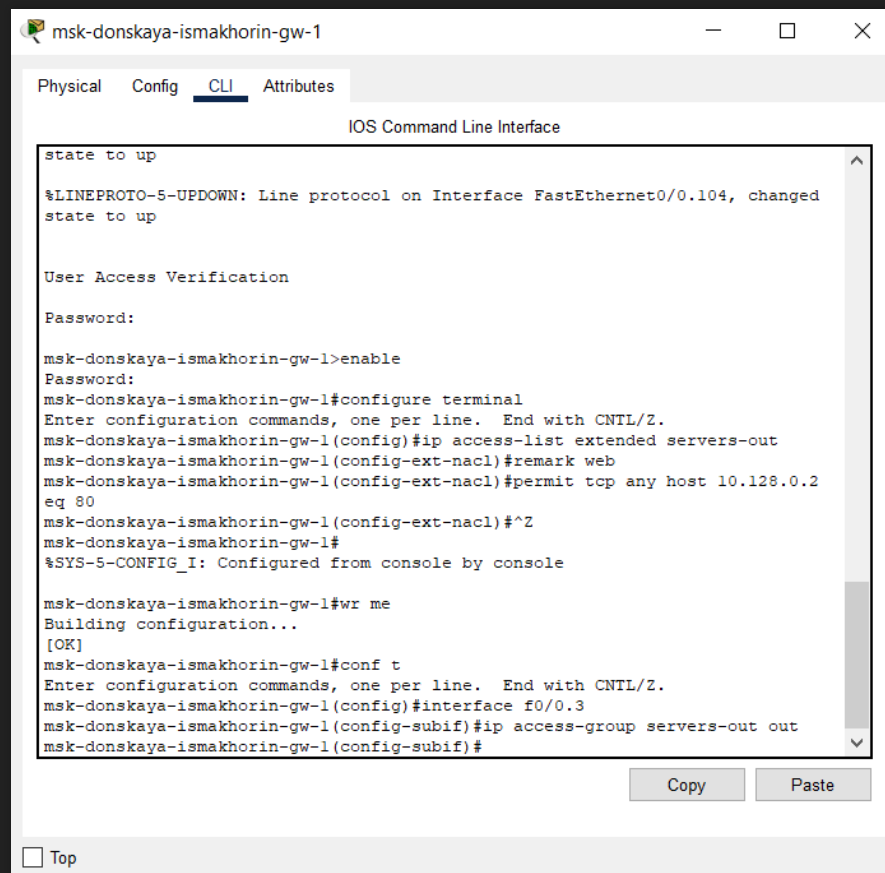
Рис. 1.4. Проверка (пингуем с admin-ismahorin 10.128.0.2 и 10.128.0.5).

# Настройка доступа к web-серверу



**Рис. 1.5.** Настройка доступа к web-серверу по порту tcp 80 (создан список контроля доступа с названием servers-out; указано, что ограничения предназначены для работы с web-сервером; дано разрешение доступа по протоколу TCP всем пользователям сети на доступ к web-серверу, имеющему адрес 10.128.0.2, через порт 80).

# Добавление списка управления



```
msk-donskaya-ismakhorin-gw-1
Physical Config CLI Attributes
IOS Command Line Interface

state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.104, changed
state to up

User Access Verification

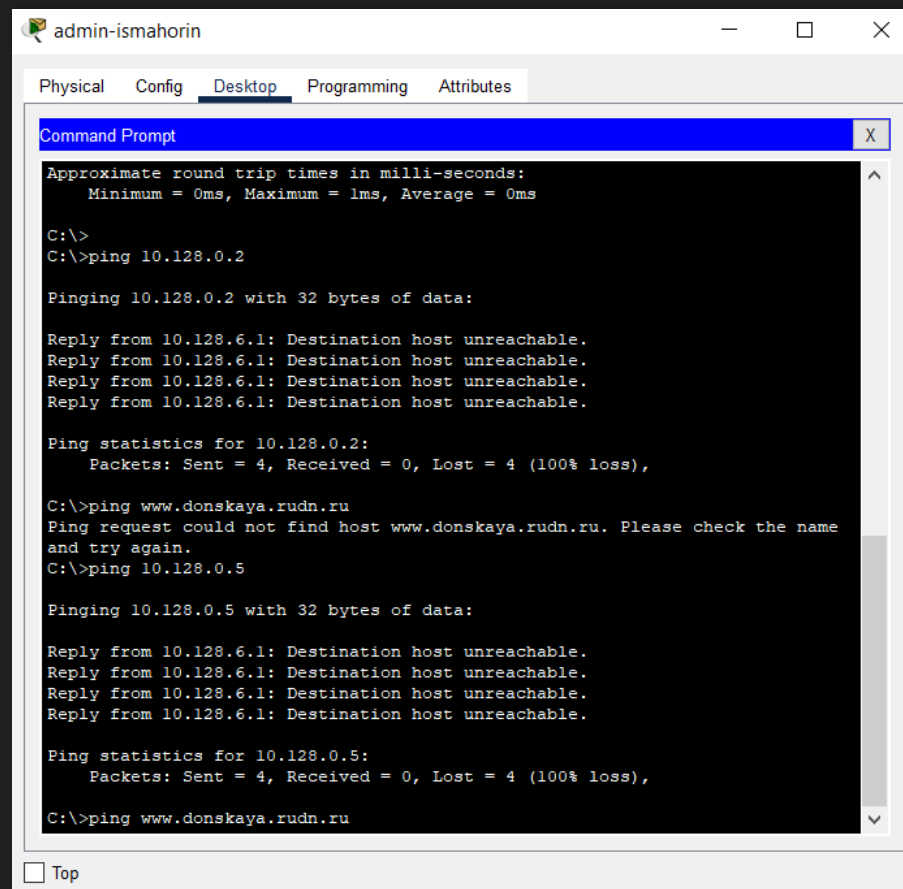
Password:

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

msk-donskaya-ismakhorin-gw-1#wr me
Building configuration...
[OK]
msk-donskaya-ismakhorin-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-ismakhorin-gw-1(config)#interface f0/0.3
msk-donskaya-ismakhorin-gw-1(config-subif)#ip access-group servers-out out
msk-donskaya-ismakhorin-gw-1(config-subif)#
```

**Рис. 1.6.** Добавление списка управления доступом к интерфейсу (к интерфейсу f0/0.3 подключается список прав доступа serversout и применяется к исходящему трафику).

# Проверка



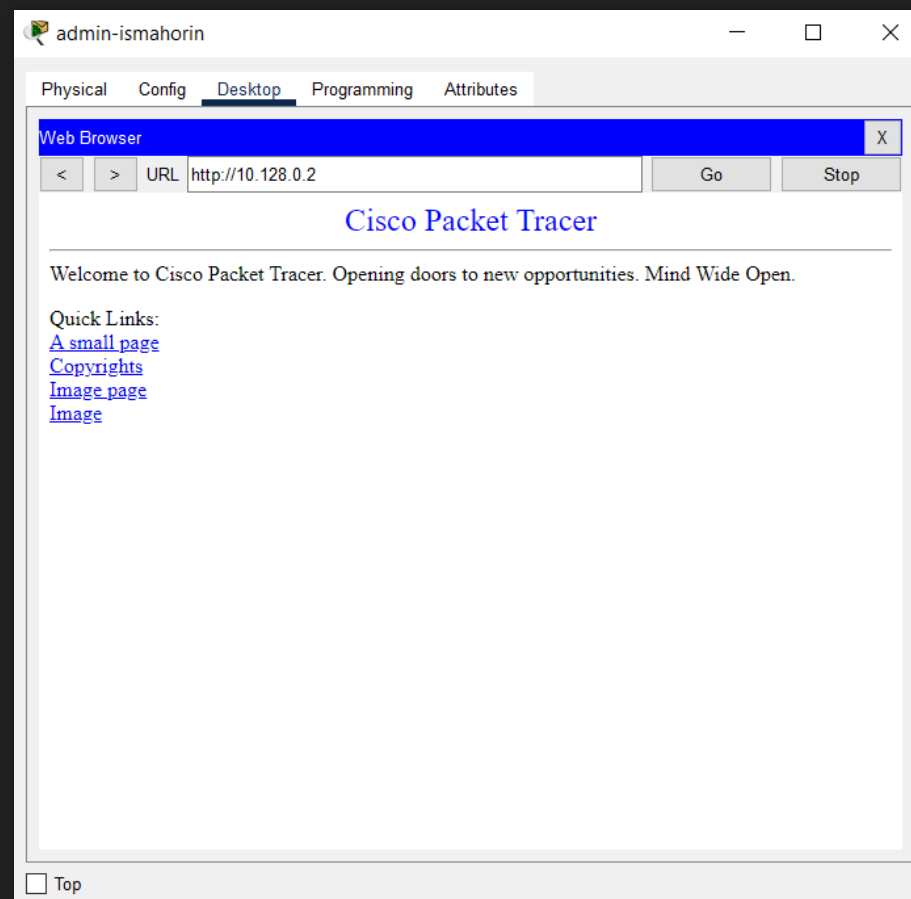
The screenshot shows a Windows Command Prompt window titled "admin-ismahorin". The window has tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes", with "Desktop" selected. The Command Prompt displays the following text:

```
Approximate round trip times in milli-seconds:  
    Minimum = 0ms, Maximum = 1ms, Average = 0ms  
  
C:\>  
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 www.donskaya.rudn.ru  
Ping request could not find host www.donskaya.rudn.ru. Please check the name  
and try again.  
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:\>ping www.donskaya.rudn.ru
```

**Рис. 1.7.** Проверка демонстрации недоступности web-сервера при использовании команды ping по ip-адресу web-сервера.

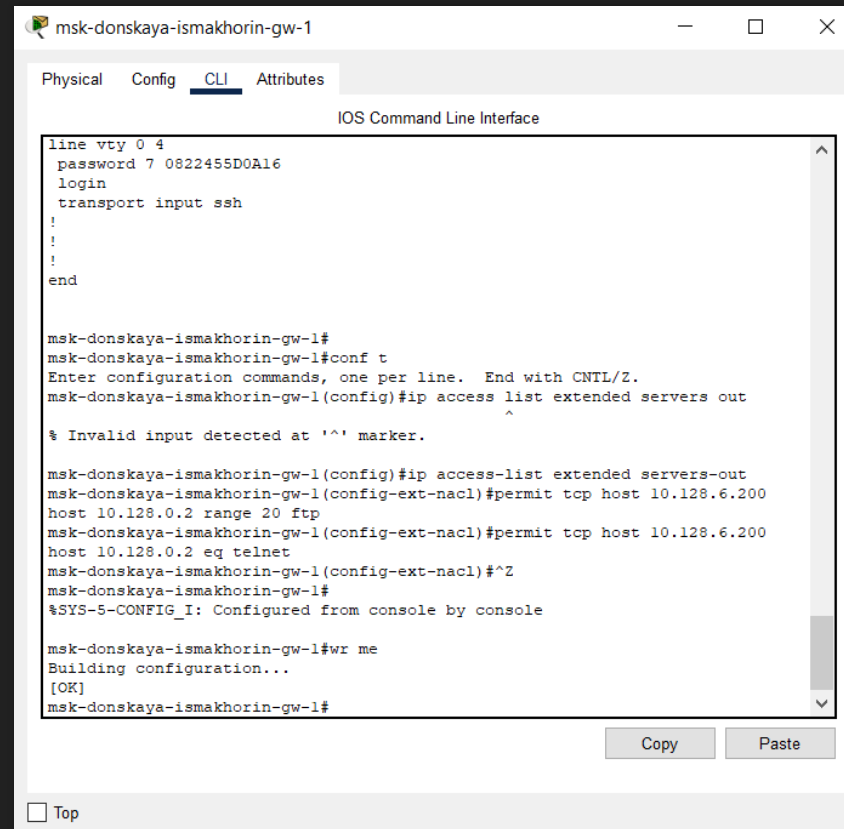


# Проверка



**Рис. 1.8.** Проверка доступа к web-серверу через протокол HTTP (ввод в строке браузера хоста ip-адреса web-сервера).

# Настройка дополнительного доступа



```
msk-donskaya-ismakhorin-gw-1
Physical Config CLI Attributes
IOS Command Line Interface

line vty 0 4
password 7 0822455D0A16
login
transport input ssh
!
!
!
end

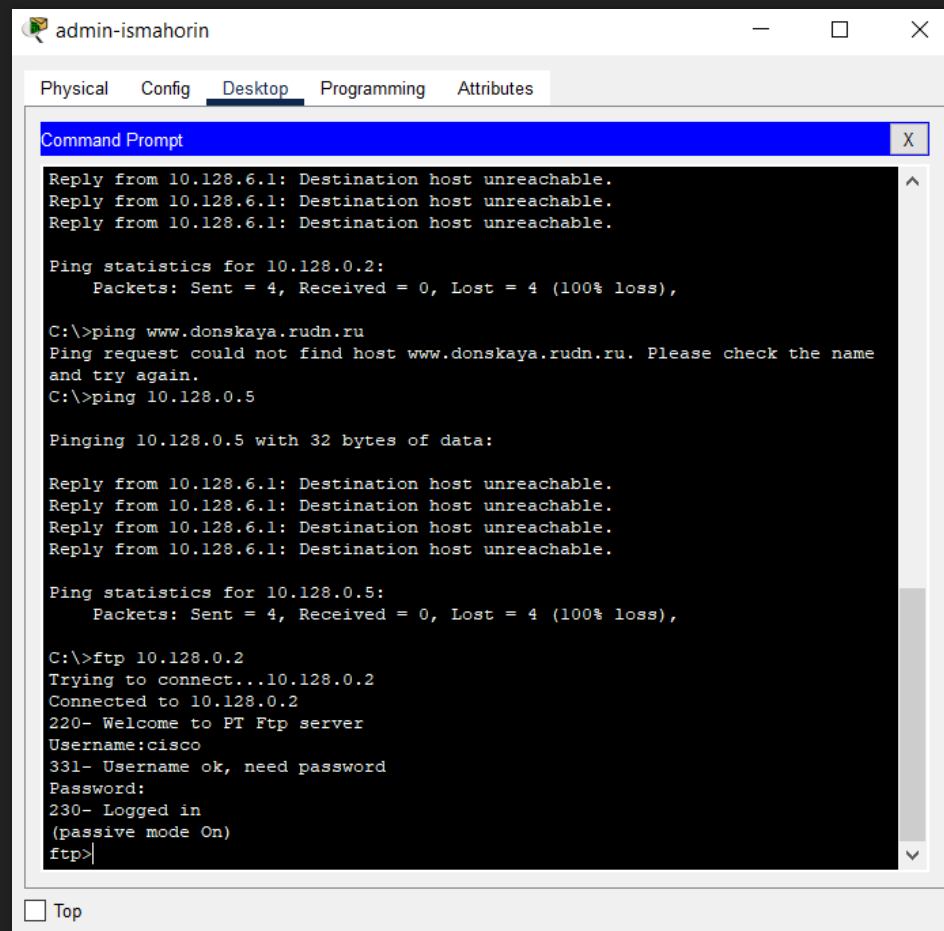
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-ismakhorin-gw-1(config)#ip access list extended servers out
^
% Invalid input detected at '^' marker.

msk-donskaya-ismakhorin-gw-1(config)#ip access-list extended servers-out
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#permit tcp host 10.128.6.200
host 10.128.0.2 range 20 ftp
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#permit tcp host 10.128.6.200
host 10.128.0.2 eq telnet
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#^Z
msk-donskaya-ismakhorin-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-ismakhorin-gw-1#wr me
Building configuration...
[OK]
msk-donskaya-ismakhorin-gw-1#
```

**Рис. 1.9.** Настройка дополнительного доступа для администратора по протоколам Telnet и FTP (в список контроля доступа servers-out добавлено правило, разрешающее устройству администратора с ip-адресом 10.128.6.200 доступ на web-сервер (10.128.0.2) по протоколам FTP и telnet).

# Проверка



The screenshot shows a Cisco Packet Tracer console window titled 'admin-ismahorin'. It contains a 'Command Prompt' window with the following text:

```
Physical Config Desktop Programming Attributes
Command Prompt
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 www.donskaya.rudn.ru
Ping request could not find host www.donskaya.rudn.ru. Please check the name
and try again.
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.

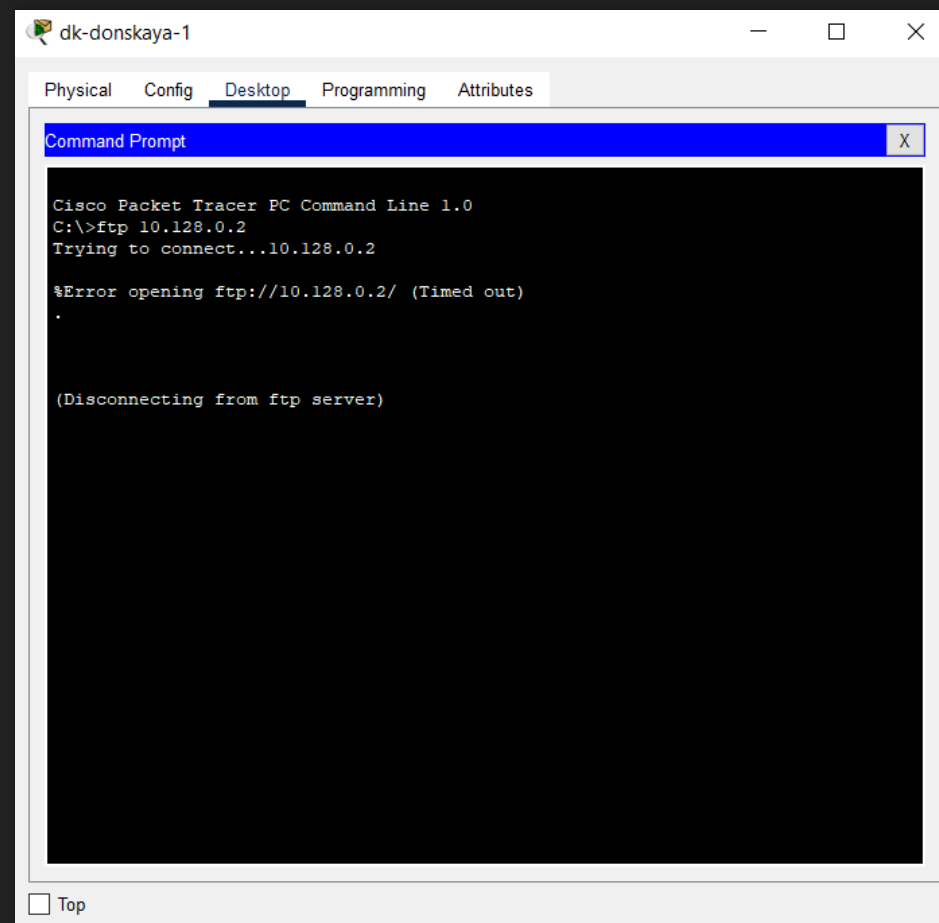
Ping statistics for 10.128.0.5:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>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>
```

At the bottom of the console window, there is a 'Top' button.

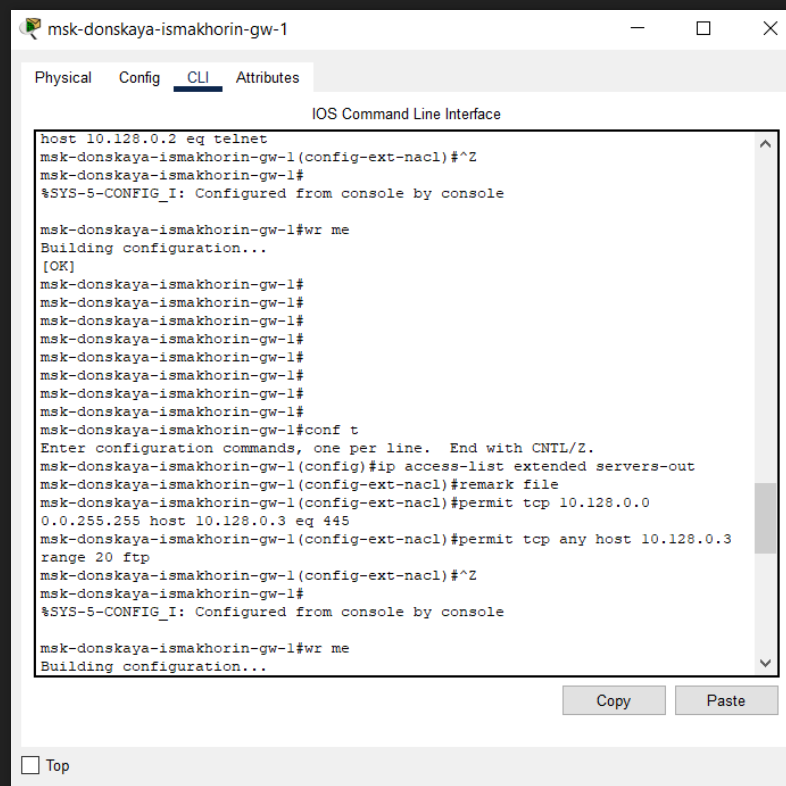
Рис. 1.10. Проверка доступа с узла с ip-адресом 10.128.6.200 по протоколу FTP.

# Проверка



**Рис. 1.11.** Проверка доступа с устройства dk-donskaya-1 по протоколу FTP (доступ запрещён).

# Настройка доступа к файловому серверу



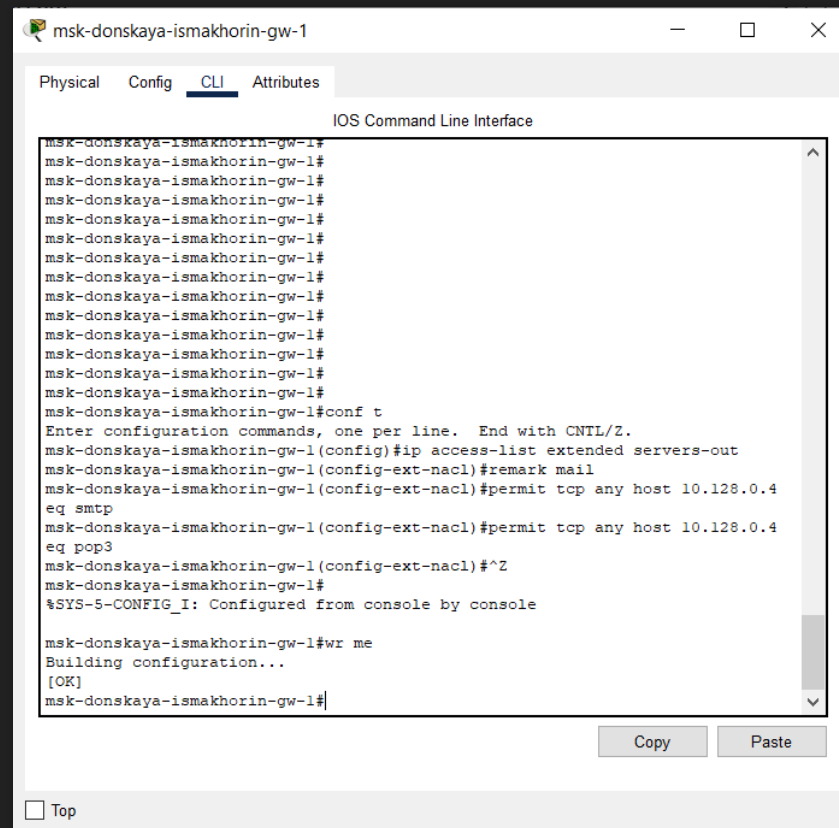
```
msk-donskaya-ismakhorin-gw-1
Physical Config CLI Attributes
IOS Command Line Interface
host 10.128.0.2 eq telnet
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#^Z
msk-donskaya-ismakhorin-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-ismakhorin-gw-1#wr me
Building configuration...
[OK]
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-ismakhorin-gw-1(config)#ip access-list extended servers-out
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#remark file
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#permit tcp 10.128.0.0
0.0.255.255 host 10.128.0.3 eq 445
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#permit tcp any host 10.128.0.3
range 20 ftp
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#^Z
msk-donskaya-ismakhorin-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-ismakhorin-gw-1#wr me
Building configuration...
```

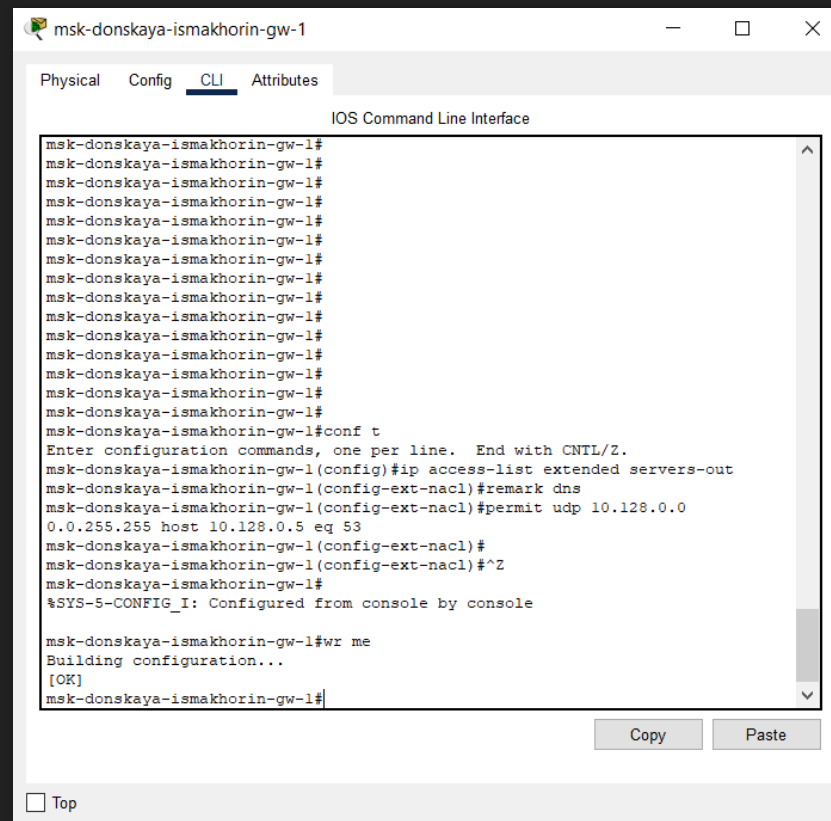
**Рис. 1.12.** Настройка доступа к файловому серверу (в списке контроля доступа `servers-out` указано, что следующие ограничения предназначены для работы с `file`-сервером; всем узлам внутренней сети (10.128.0.0) разрешён доступ по протоколу SMB к каталогам общего пользования; любым узлам разрешён доступ к `file`-серверу по протоколу FTP (запись 0.0.255.255 — обратная маска).

# Настройка доступа к почтовому серверу



**Рис. 1.13.** Настройка доступа к почтовому серверу (в списке контроля доступа servers-out указано, что следующие ограничения предназначены для работы с почтовым сервером; всем разрешён доступ к почтовому серверу по протоколам POP3 и SMTP).

# Настройка доступа к DNS-серверу



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

msk-donskaya-ismakhorin-gw-1#wr me
Building configuration...
[OK]
msk-donskaya-ismakhorin-gw-1#
```

**Рис. 1.14.** Настройка доступа к DNS-серверу (в списке контроля доступа servers-out указано, что следующие ограничения предназначены для работы с DNS-сервером; всем узлам внутренней сети разрешён доступ к DNS-серверу через UDP-порт 53)

# Проверка

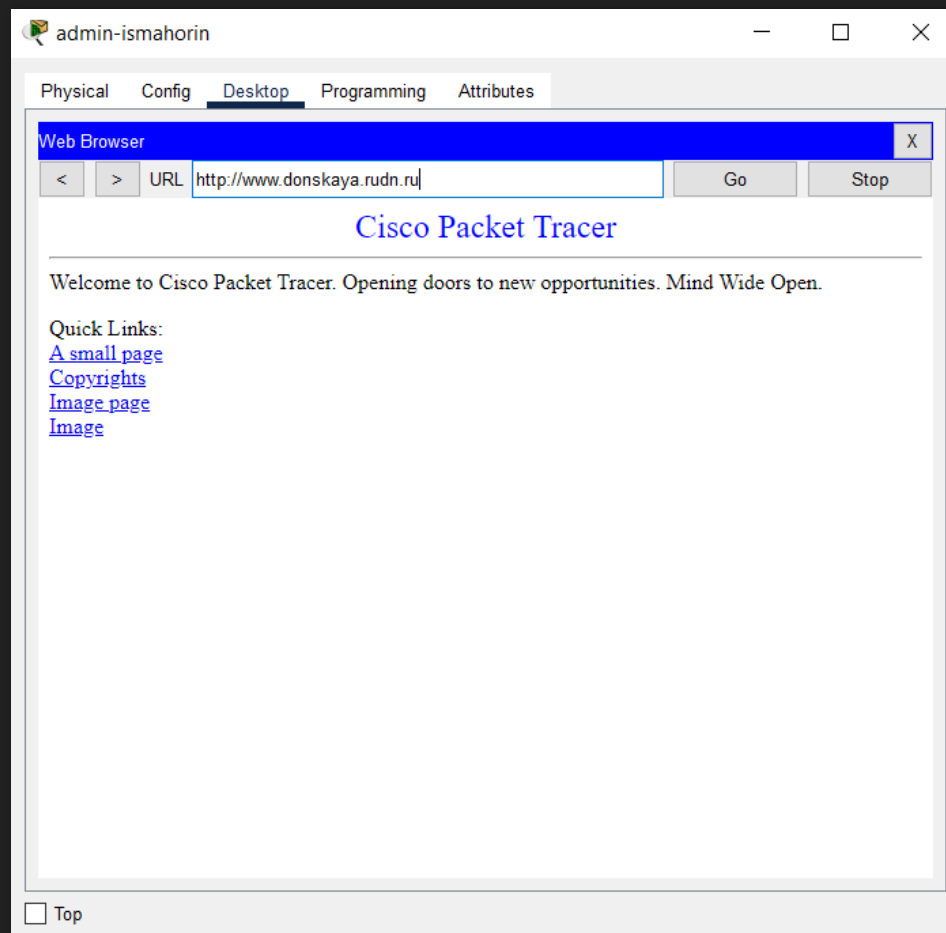
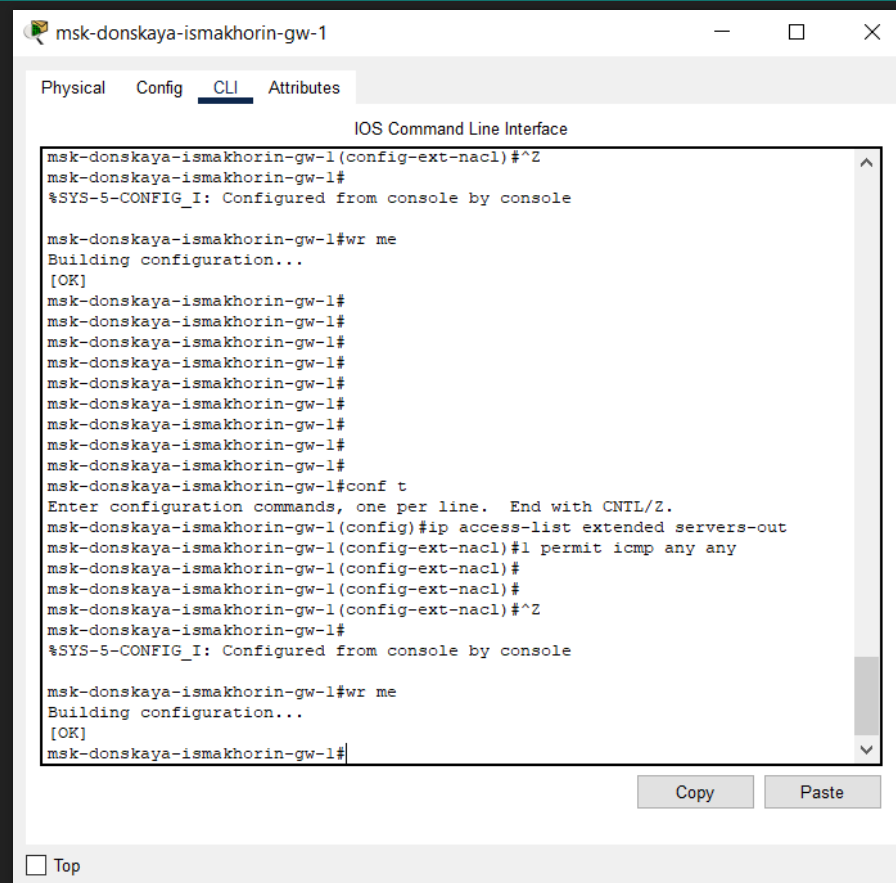


Рис. 1.15. Проверка доступности web-сервера (через браузер) по имени.



# Разрешение icmp-запросов



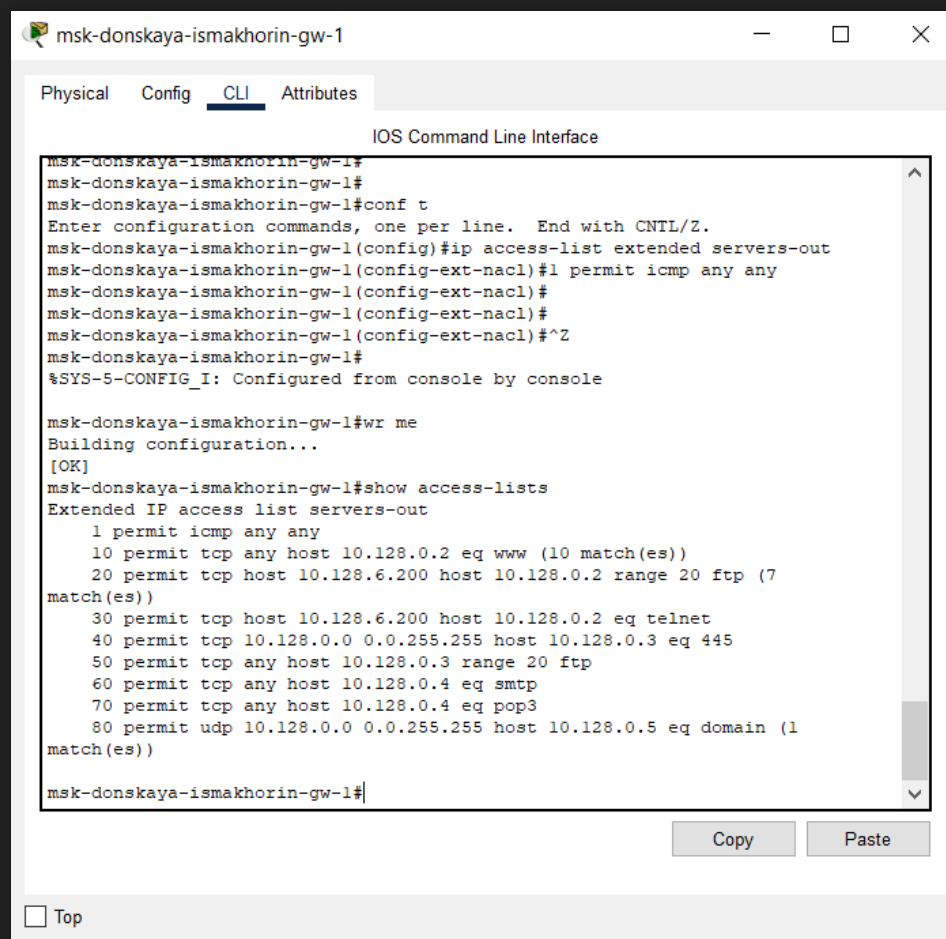
```
msk-donskaya-ismakhorin-gw-1
Physical Config CLI Attributes
IOS Command Line Interface
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#^Z
msk-donskaya-ismakhorin-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-ismakhorin-gw-1#wr me
Building configuration...
[OK]
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-ismakhorin-gw-1(config)#ip access-list extended servers-out
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#1 permit icmp any any
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#^Z
msk-donskaya-ismakhorin-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-ismakhorin-gw-1#wr me
Building configuration...
[OK]
msk-donskaya-ismakhorin-gw-1#
```

**Рис. 1.16.** Разрешение icmp-запросов (демонстрируется явное управление порядком размещения правил — правило разрешения для icmp-запросов добавляется в начало списка контроля доступ).

# Просмотр номеров строк



The screenshot shows a network device CLI window titled "msk-donskaya-ismakhorin-gw-1". The window has tabs for "Physical", "Config", "CLI", and "Attributes", with "CLI" selected. The main area displays the "IOS Command Line Interface". The user has entered the command "show access-lists" to view the configuration of the extended IP access list "servers-out". The output shows the list of rules with their line numbers and details.

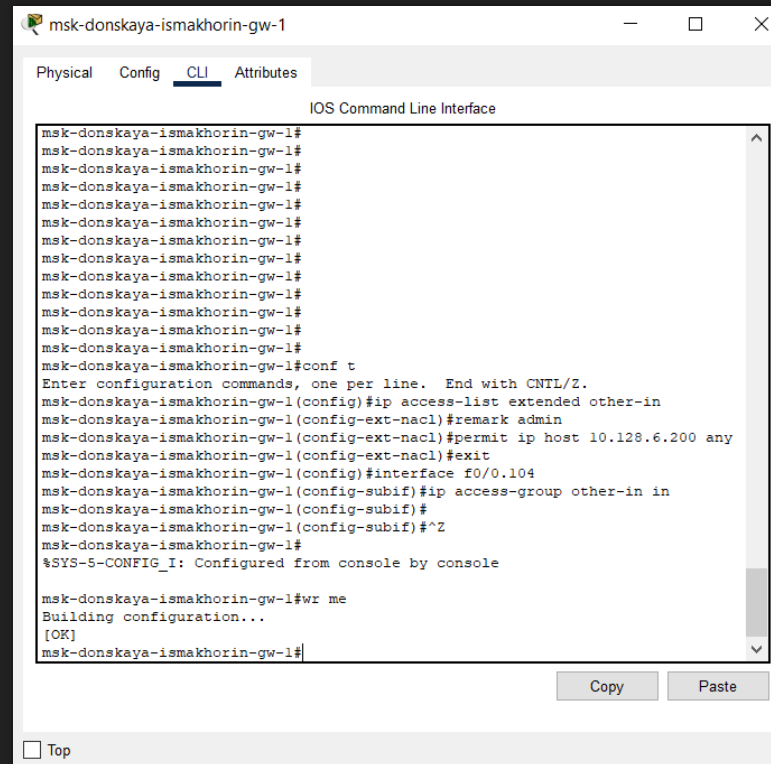
```
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-ismakhorin-gw-1(config)#ip access-list extended servers-out
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#1 permit icmp any any
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#^Z
msk-donskaya-ismakhorin-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-ismakhorin-gw-1#wr me
Building configuration...
[OK]
msk-donskaya-ismakhorin-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 (10 match(es))
  20 permit tcp host 10.128.6.200 host 10.128.0.2 range 20 ftp (7
match(es))
  30 permit tcp host 10.128.6.200 host 10.128.0.2 eq telnet
  40 permit tcp 10.128.0.0 0.0.255.255 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 0.0.255.255 host 10.128.0.5 eq domain (1
match(es))
msk-donskaya-ismakhorin-gw-1#
```

At the bottom of the window, there are "Copy" and "Paste" buttons, and a "Top" button.

Рис. 1.17. Просмотр номеров строк правил в списке контроля доступа.

# Настройка доступа для сети Other

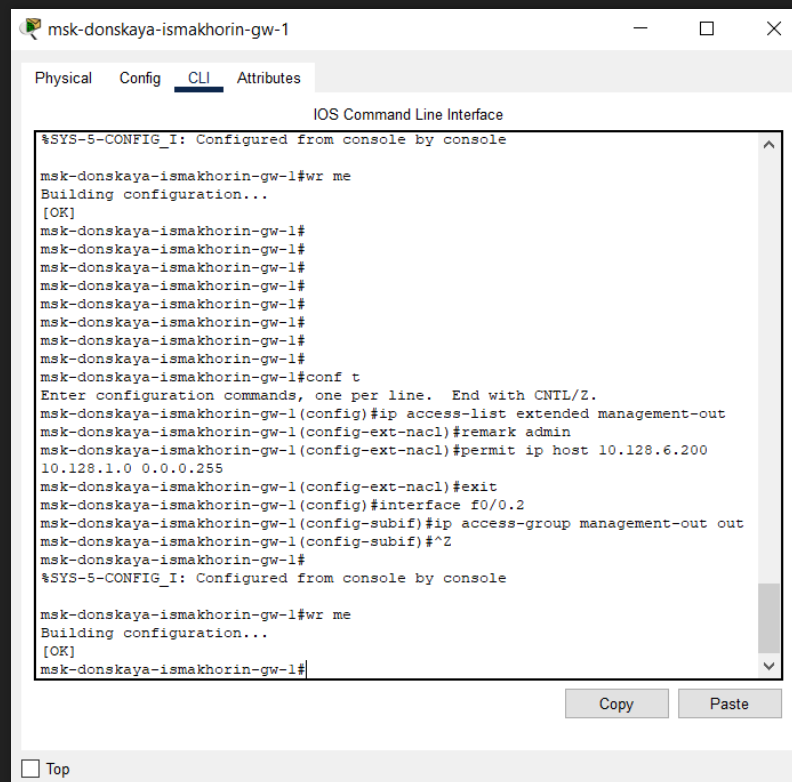


```
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#conf t
msk-donskaya-ismakhorin-gw-1(config)#ip access-list extended other-in
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#remark admin
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#permit ip host 10.128.6.200 any
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#exit
msk-donskaya-ismakhorin-gw-1(config)#interface f0/0.104
msk-donskaya-ismakhorin-gw-1(config-subif)#ip access-group other-in in
msk-donskaya-ismakhorin-gw-1(config-subif)#
msk-donskaya-ismakhorin-gw-1(config-subif)#^Z
msk-donskaya-ismakhorin-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-ismakhorin-gw-1#wr me
Building configuration...
[OK]
msk-donskaya-ismakhorin-gw-1#
```

**Рис. 1.18.** Настройка доступа для сети Other (в списке контроля доступа other-in указано, что следующие правила относятся к администратору сети; разрешение устройству с адресом 10.128.6.200 на любые действия; подключение к интерфейсу f0/0.104 списка прав доступа other-in и применение к входящему трафику).

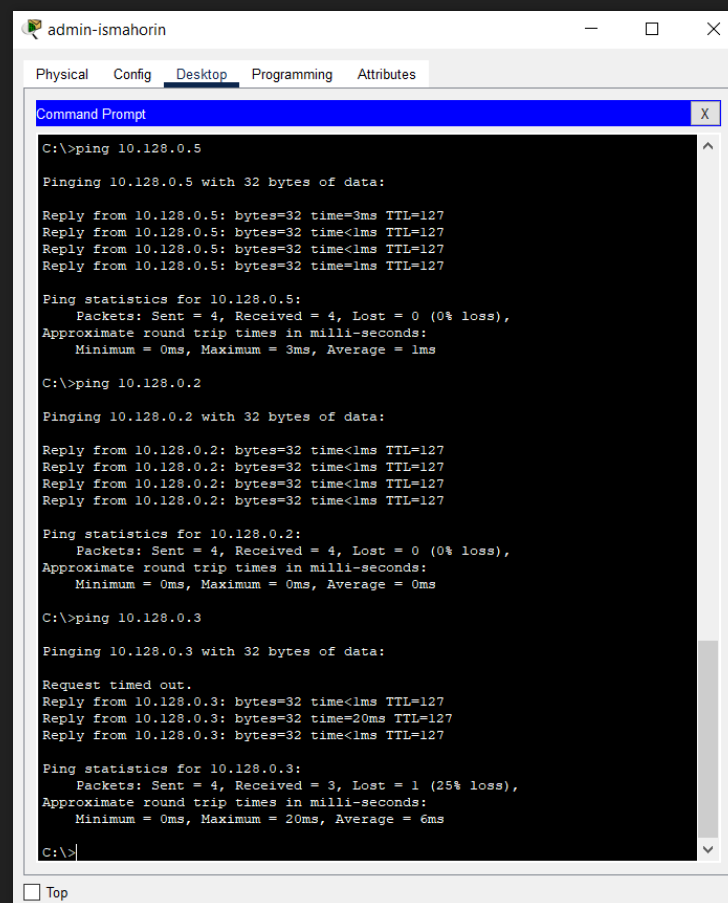
# Настройка доступа администратора



```
msk-donskaya-ismakhorin-gw-1
Physical Config CLI Attributes
IOS Command Line Interface
%SYS-5-CONFIG_I: Configured from console by console
msk-donskaya-ismakhorin-gw-1#wr me
Building configuration...
[OK]
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#
msk-donskaya-ismakhorin-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-ismakhorin-gw-1(config)#ip access-list extended management-out
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#remark admin
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#permit ip host 10.128.6.200
10.128.1.0 0.0.0.255
msk-donskaya-ismakhorin-gw-1(config-ext-nacl)#exit
msk-donskaya-ismakhorin-gw-1(config)#interface f0/0.2
msk-donskaya-ismakhorin-gw-1(config-subif)#ip access-group management-out out
msk-donskaya-ismakhorin-gw-1(config-subif)#^Z
msk-donskaya-ismakhorin-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
msk-donskaya-ismakhorin-gw-1#wr me
Building configuration...
[OK]
msk-donskaya-ismakhorin-gw-1#
```

**Рис. 1.19.** Настройка доступа администратора к сети сетевого оборудования (в списке контроля доступа management-out указано, что устройству администратора с адресом 10.128.6.200 разрешён доступ к сети сетевого оборудования (10.128.1.0); к интерфейсу f0/0.2 подключён список прав доступа management-out и применено к исходящему трафику).

# Проверка корректности правил



```
admin-ismahorin
Physical Config Desktop Programming Attributes
Command Prompt
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=3ms 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
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 = 3ms, Average = 1ms

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:\>ping 10.128.0.3

Pinging 10.128.0.3 with 32 bytes of data:

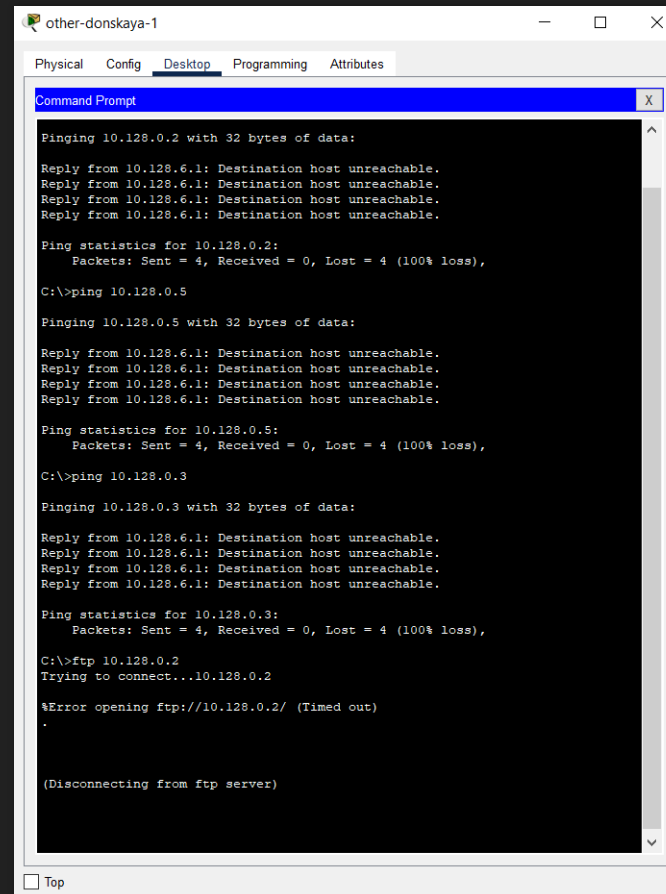
Request timed out.
Reply from 10.128.0.3: bytes=32 time<1ms TTL=127
Reply from 10.128.0.3: bytes=32 time=20ms TTL=127
Reply from 10.128.0.3: bytes=32 time<1ms TTL=127

Ping statistics for 10.128.0.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 20ms, Average = 6ms

C:\>
```

Рис. 1.20. Проверка корректности установленных правил доступа с оконечного устройства admin-ismakhorin.

# Проверка корректности правил



```
other-donskaya-1
Physical Config Desktop Programming Attributes
Command Prompt

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:\>ping 10.128.0.3

Pinging 10.128.0.3 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 10.128.0.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

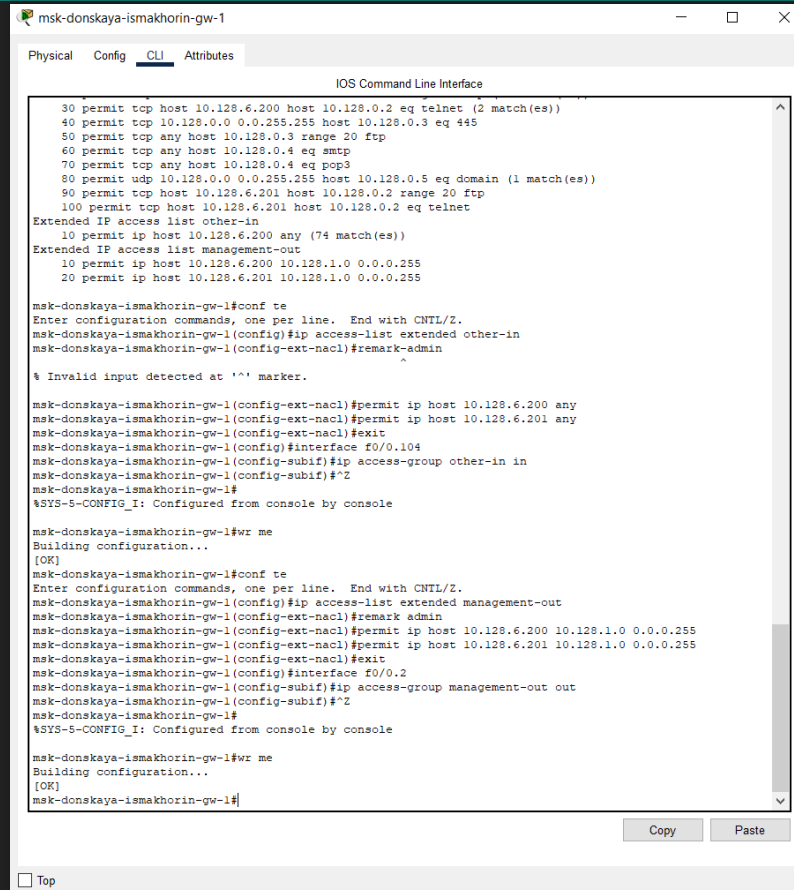
C:\>ftp 10.128.0.2
Trying to connect...10.128.0.2

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

(Disconnecting from ftp server)
```

Рис. 1.21. Проверка корректности установленных правил доступа с оконечного устройства other-donskaya-1.

# Разрешение администратору (Павловская)



```
msh-donskaya-ismakhon-gw-1
Physical Config CLI Attributes
IOS Command Line Interface
30 permit tcp host 10.128.6.200 host 10.128.0.2 eq telnet (2 match(es))
40 permit tcp 10.128.0.0 0.0.255.255 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 0.0.255.255 host 10.128.0.5 eq domain (1 match(es))
90 permit tcp host 10.128.6.201 host 10.128.0.2 range 20 ftp
100 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 (74 match(es))
Extended IP access list management-out
10 permit ip host 10.128.6.200 10.128.1.0 0.0.0.255
20 permit ip host 10.128.6.201 10.128.1.0 0.0.0.255

msh-donskaya-ismakhon-gw-1#conf te
Enter configuration commands, one per line. End with CNTL/Z.
msh-donskaya-ismakhon-gw-1(config)#ip access-list extended other-in
msh-donskaya-ismakhon-gw-1(config-ext-nacl)#remark admin
^
% Invalid input detected at '^' marker.

msh-donskaya-ismakhon-gw-1(config-ext-nacl)#permit ip host 10.128.6.200 any
msh-donskaya-ismakhon-gw-1(config-ext-nacl)#permit ip host 10.128.6.201 any
msh-donskaya-ismakhon-gw-1(config-ext-nacl)#exit
msh-donskaya-ismakhon-gw-1(config)#interface f0/0.104
msh-donskaya-ismakhon-gw-1(config-subif)#ip access-group other-in in
msh-donskaya-ismakhon-gw-1(config-subif)#^Z
msh-donskaya-ismakhon-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

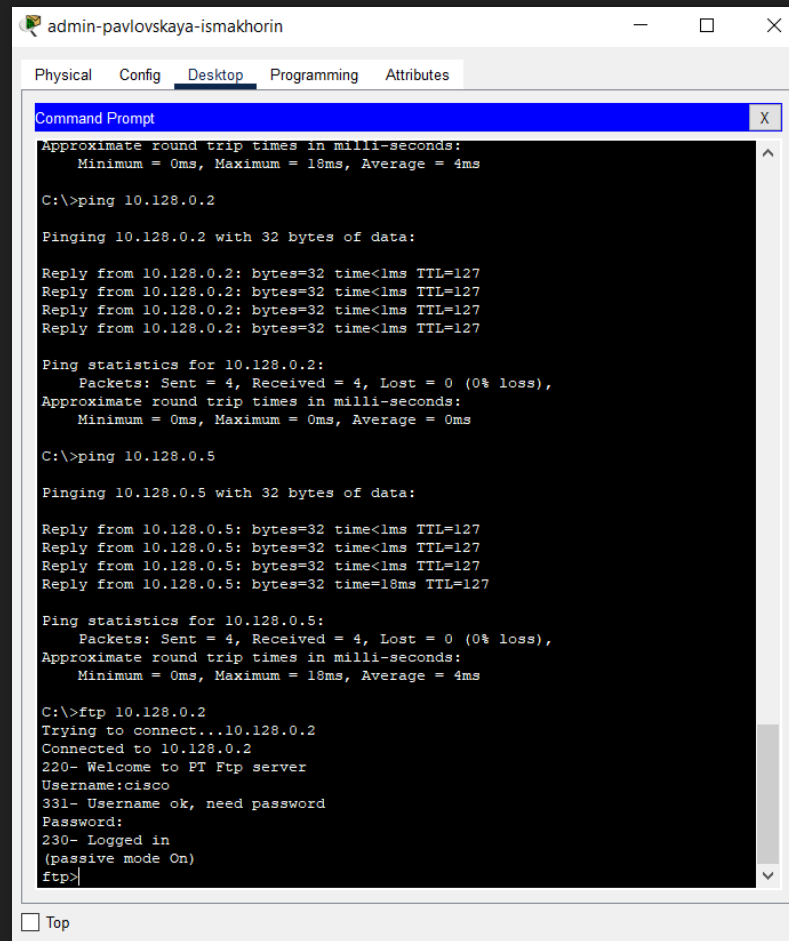
msh-donskaya-ismakhon-gw-1#wr me
Building configuration...
[OK]
msh-donskaya-ismakhon-gw-1#conf te
Enter configuration commands, one per line. End with CNTL/Z.
msh-donskaya-ismakhon-gw-1(config)#ip access-list extended management-out
msh-donskaya-ismakhon-gw-1(config-ext-nacl)#remark admin
msh-donskaya-ismakhon-gw-1(config-ext-nacl)#permit ip host 10.128.6.200 10.128.1.0 0.0.0.255
msh-donskaya-ismakhon-gw-1(config-ext-nacl)#permit ip host 10.128.6.201 10.128.1.0 0.0.0.255
msh-donskaya-ismakhon-gw-1(config-ext-nacl)#exit
msh-donskaya-ismakhon-gw-1(config)#interface f0/0.2
msh-donskaya-ismakhon-gw-1(config-subif)#ip access-group management-out out
msh-donskaya-ismakhon-gw-1(config-subif)#^Z
msh-donskaya-ismakhon-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msh-donskaya-ismakhon-gw-1#wr me
Building configuration...
[OK]
msh-donskaya-ismakhon-gw-1#
```

**Рис. 1.22.** Разрешение администратору из сети Other на Павловской действия, аналогичные действиям администратора сети Other на Донской.



# Проверка разрешений



The screenshot shows a Windows desktop environment. A window titled 'admin-pavlovskaya-ismakhorin' is open, displaying the 'Desktop' tab of a network configuration interface. Below this, a 'Command Prompt' window is open, showing the results of several network commands. The commands executed are 'ping 10.128.0.2', 'ping 10.128.0.5', and 'ftp 10.128.0.2'. The output shows successful ping results for both IP addresses and a successful FTP connection to 10.128.0.2.

```
admin-pavlovskaya-ismakhorin
Physical Config Desktop Programming Attributes

Command Prompt
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 18ms, Average = 4ms

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:\>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<1ms TTL=127
Reply from 10.128.0.5: bytes=32 time<1ms TTL=127
Reply from 10.128.0.5: bytes=32 time=18ms 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 = 18ms, Average = 4ms

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>
```

Рис. 1.23. Проверка разрешений администратора из сети Other на Павловской.



# ВЫВОД

- В ходе выполнения лабораторной работы мы освоили настройку прав доступа пользователей к ресурсам сети.

Спасибо за внимание!