

Лаборатория работа 16

Настройка VPN

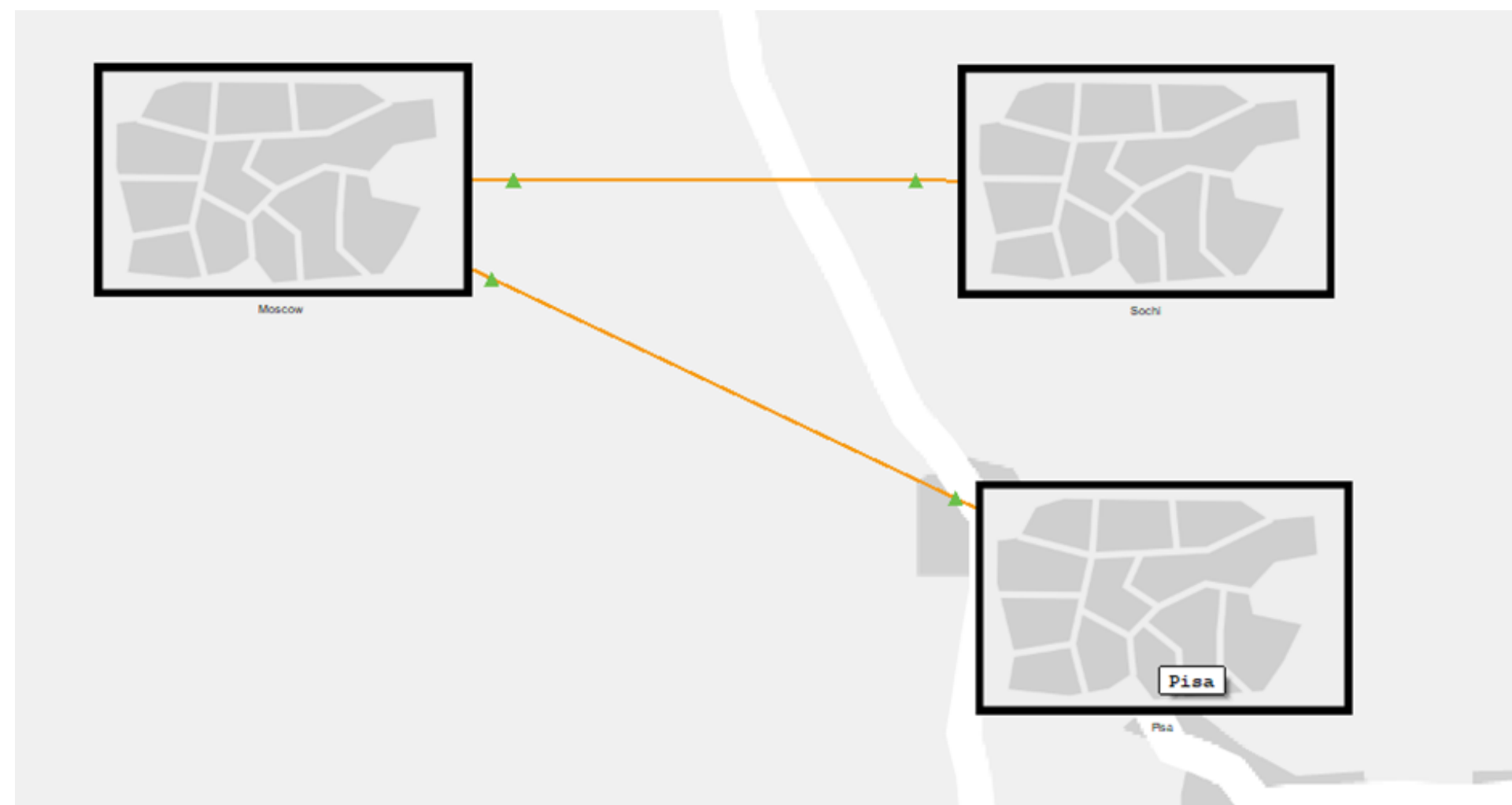
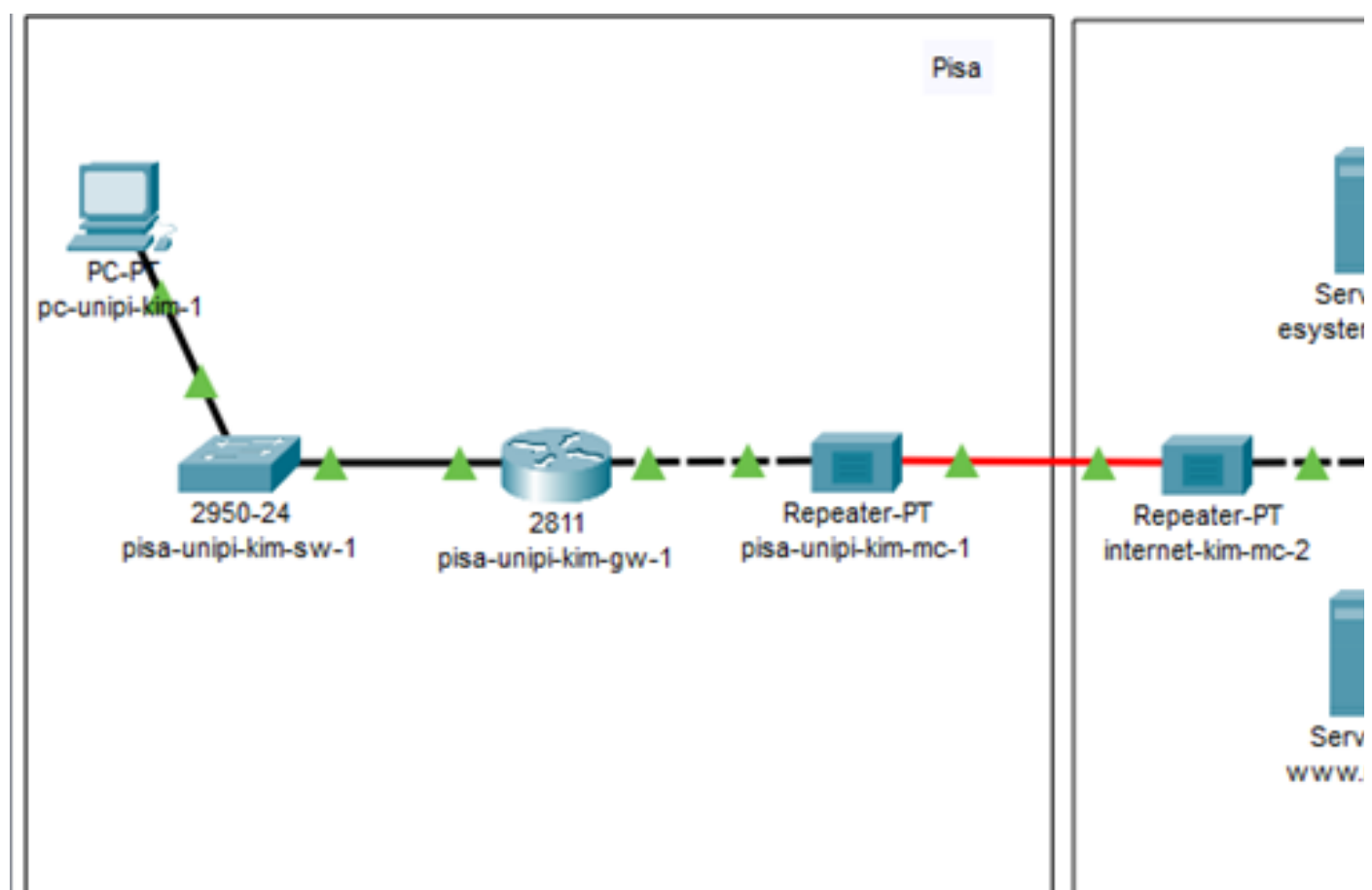
ПОДГОТОВИЛА: КИМ РЕАЧНА
ГРУППА: НПИБД-02-20

Цель работы:

Получение навыков настройки VPN-туннеля через незащищённое Интернет соединение

Задание:

Настроить VPN-туннель между сетью Университета г. Пиза (Италия) и сетью «Донская» в г. Москва.



```

pisa-unipi-kim-gw-1>en
pisa-unipi-kim-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
pisa-unipi-kim-gw-1(config)#line vty 0 4
pisa-unipi-kim-gw-1(config-line)#password cisco
pisa-unipi-kim-gw-1(config-line)#login
pisa-unipi-kim-gw-1(config-line)#exit
pisa-unipi-kim-gw-1(config)#line console 0
pisa-unipi-kim-gw-1(config-line)#password cisco
pisa-unipi-kim-gw-1(config-line)#login
pisa-unipi-kim-gw-1(config-line)#exit
pisa-unipi-kim-gw-1(config)#enable secret cisco
pisa-unipi-kim-gw-1(config)#service password-encryption
pisa-unipi-kim-gw-1(config)#username admin privilege 1 secret cisco
pisa-unipi-kim-gw-1(config)#ip domain-name unipi.edu
pisa-unipi-kim-gw-1(config)#crypto key generate rsa
The name for the keys will be: pisa-unipi-kim-gw-1.unipi.edu
Choose the size of the key modulus in the range of 360 to 2048 for your
  General Purpose Keys. Choosing a key modulus greater than 512 may take
  a few minutes.

```

```

How many bits in the modulus [512]: 2048
% Generating 2048 bit RSA keys, keys will be non-exportable...[OK]

```

```

pisa-unipi-kim-gw-1(config)#line vty 0 4
*Mar 1 0:12:18.498: %SSH-5-ENABLED: SSH 1.99 has been enabled
pisa-unipi-kim-gw-1(config-line)#transport input ssh
pisa-unipi-kim-gw-1(config-line)#^Z
pisa-unipi-kim-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

```

```

pisa-unipi-kim-gw-1#wr m
Building configuration...
[OK]
pisa-unipi-kim-gw-1#

```

```

pisa-unipi-kim-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
pisa-unipi-kim-gw-1(config)#int f0/0
pisa-unipi-kim-gw-1(config-if)#no shutdown

```

```

pisa-unipi-kim-gw-1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

```

```

pisa-unipi-kim-gw-1(config-if)#exit
pisa-unipi-kim-gw-1(config)#int f0/0.401
pisa-unipi-kim-gw-1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.401, changed state to up

```

```

pisa-unipi-kim-gw-1(config-subif)#encapsulation dot1Q 401
pisa-unipi-kim-gw-1(config-subif)#ip address 10.131.0.1 255.255.255.0
pisa-unipi-kim-gw-1(config-subif)#description unipi-main
pisa-unipi-kim-gw-1(config-subif)#exit
pisa-unipi-kim-gw-1(config)#int f0/1
pisa-unipi-kim-gw-1(config-if)#no shutdown

```

```

pisa-unipi-kim-gw-1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

```

```

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

```

```

pisa-unipi-kim-gw-1(config-if)#ip address 192.0.2.20 255.255.255.0
pisa-unipi-kim-gw-1(config-if)#description internet
pisa-unipi-kim-gw-1(config-if)#exit
pisa-unipi-kim-gw-1(config)#ip route 0.0.0.0 0.0.0.0 192.0.2.1
pisa-unipi-kim-gw-1(config)#^Z
pisa-unipi-kim-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

```

```

pisa-unipi-kim-gw-1#wr m
Building configuration...
[OK]
pisa-unipi-kim-gw-1#ping 192.0.2.1

```

```

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.0.2.1, timeout is 2 seconds:
!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 0/4/16 ms

```

```

pisa-unipi-kim-gw-1#ping 192.0.2.1

```

```

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.0.2.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms

```



```

msk-donskaya-kim-gw-1>en
Password:
msk-donskaya-kim-gw-1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
msk-donskaya-kim-gw-1(config)#int Tunnel0

msk-donskaya-kim-gw-1(config-if)#
%LINK-5-CHANGED: Interface Tunnel0, changed state to up

msk-donskaya-kim-gw-1(config-if)#ip address 10.128.255.253 255.255.255.252
msk-donskaya-kim-gw-1(config-if)#tunnel source f0/1.4
msk-donskaya-kim-gw-1(config-if)#tunnel destination 192.0.2.20
msk-donskaya-kim-gw-1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Tunnel0, changed state to up

msk-donskaya-kim-gw-1(config-if)#exit
msk-donskaya-kim-gw-1(config)#int loopback0

msk-donskaya-kim-gw-1(config-if)#
%LINK-5-CHANGED: Interface Loopback0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up

msk-donskaya-kim-gw-1(config-if)#ip address 10.128.254.1 255.255.255.255
msk-donskaya-kim-gw-1(config-if)#exit
msk-donskaya-kim-gw-1(config)#ip route 10.128.254.5 255.255.255.255 10.128.255.254
msk-donskaya-kim-gw-1(config)#^Z
msk-donskaya-kim-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-kim-gw-1#wr m
Building configuration...
[OK]

```

```

pisa-unipi-kim-gw-1>en
Password:
pisa-unipi-kim-gw-1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
pisa-unipi-kim-gw-1(config)#int Tunnel0

pisa-unipi-kim-gw-1(config-if)#
%LINK-5-CHANGED: Interface Tunnel0, changed state to up

pisa-unipi-kim-gw-1(config-if)#ip address 10.128.255.254 255.255.255.252
pisa-unipi-kim-gw-1(config-if)#tunnel source f0/1
pisa-unipi-kim-gw-1(config-if)#tunnel destination 198.51.100.2
pisa-unipi-kim-gw-1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Tunnel0, changed state to up

pisa-unipi-kim-gw-1(config-if)#exit
pisa-unipi-kim-gw-1(config)#int loopback0

pisa-unipi-kim-gw-1(config-if)#
%LINK-5-CHANGED: Interface Loopback0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up

pisa-unipi-kim-gw-1(config-if)#ip address 10.128.254.5 255.255.255.255
pisa-unipi-kim-gw-1(config-if)#exit
pisa-unipi-kim-gw-1(config)#ip route 10.128.254.1 255.255.255.255 10.128.255.253
pisa-unipi-kim-gw-1(config)#router ospf 1
pisa-unipi-kim-gw-1(config-router)#router-id 10.128.254.5
pisa-unipi-kim-gw-1(config-router)#network 10.0.0.0 0.255.255.255 area 0
pisa-unipi-kim-gw-1(config-router)#exit
pisa-unipi-kim-gw-1(config)#exit
pisa-unipi-kim-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

pisa-unipi-kim-gw-1#wr m
Building configuration...
[OK]

```

admin-donskaya-kim-1

Physical Config **Desktop** Programming Attributes

Command Prompt

```
C:\>ping 10.131.0.200

Pinging 10.131.0.200 with 32 bytes of data:

Reply from 10.131.0.200: bytes=32 time<1ms TTL=126
Reply from 10.131.0.200: bytes=32 time<1ms TTL=126
Reply from 10.131.0.200: bytes=32 time=1ms TTL=126
Reply from 10.131.0.200: bytes=32 time=1ms TTL=126

Ping statistics for 10.131.0.200:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping -n 1000 10.131.0.200

Pinging 10.131.0.200 with 32 bytes of data:

Reply from 10.131.0.200: bytes=32 time<1ms TTL=126
Reply from 10.131.0.200: bytes=32 time<1ms TTL=126
Reply from 10.131.0.200: bytes=32 time=18ms TTL=126
Reply from 10.131.0.200: bytes=32 time<1ms TTL=126
Reply from 10.131.0.200: bytes=32 time=1ms TTL=126
Reply from 10.131.0.200: bytes=32 time<1ms TTL=126
Reply from 10.131.0.200: bytes=32 time=11ms TTL=126
Reply from 10.131.0.200: bytes=32 time=1ms TTL=126
Reply from 10.131.0.200: bytes=32 time=11ms TTL=126

Ping statistics for 10.131.0.200:
    Packets: Sent = 9, Received = 9, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 18ms, Average = 4ms

Control-C
^C
C:\>tracert 10.131.0.200

Tracing route to 10.131.0.200 over a maximum of 30 hops:

  0  0 ms    0 ms    0 ms    10.128.6.1
  1  11 ms   0 ms    0 ms    10.128.255.254
  2  0 ms    11 ms   11 ms   10.131.0.200

Trace complete.

C:\>|
```

Вывод

Получила навыков настройки VPN-туннеля через незащищённое Интернет соединение

Спасибо за внимание!