

Лаборатория работа 12

Настройка NAT

ПОДГОТОВИЛА: КИМ РЕАЧНА
ГРУППА: НПИБД-02-20

Цель работы:

Приобретение практических навыков по настройке доступа локальной сети к внешней сети посредством NAT.

Задание:

- Сделать первоначальную настройку маршрутизатора provider-kim-gw-1 и коммутатора provider-kim-sw-1
- Настроить интерфейсы маршрутизатора provider-kim-gw-1 и коммутатора provider-kim-sw-1
- Настроить интерфейсы маршрутизатора сети «Донская» для доступа к сети провайдера
- Настроить на маршрутизаторе сети «Донская» NAT
- Настроить доступ из внешней сети в локальную сеть организации
- Проверить работоспособность заданных настроек

```
provider-kim-gw-1>en
provider-kim-gw-1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
provider-kim-gw-1(config)#line vty 0 4
provider-kim-gw-1(config-line)#password cisco
provider-kim-gw-1(config-line)#login
provider-kim-gw-1(config-line)#exit
provider-kim-gw-1(config)#line console 0
provider-kim-gw-1(config-line)#password cisco
provider-kim-gw-1(config-line)#login
provider-kim-gw-1(config-line)#exit
provider-kim-gw-1(config)#enable secret cisco
provider-kim-gw-1(config)#service password-encryption
provider-kim-gw-1(config)#username admin privilege 1 secret cisco
provider-kim-gw-1(config)#^Z
provider-kim-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

provider-kim-gw-1#wr m
Building configuration...
[OK]
provider-kim-gw-1#
```

```
provider-kim-sw-1>en
provider-kim-sw-1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
provider-kim-sw-1(config)#line vty 0 4
provider-kim-sw-1(config-line)#password cisco
provider-kim-sw-1(config-line)#login
provider-kim-sw-1(config-line)#exit
provider-kim-sw-1(config)#line console 0
provider-kim-sw-1(config-line)#password cisco
provider-kim-sw-1(config-line)#login
provider-kim-sw-1(config-line)#exit
provider-kim-sw-1(config)#enable secret cisco
provider-kim-sw-1(config)#service password-encryption
provider-kim-sw-1(config)#username admin privilege 1 secret cisco
provider-kim-sw-1(config)#^Z
provider-kim-sw-1#
%SYS-5-CONFIG_I: Configured from console by console

provider-kim-sw-1#wr m
Building configuration...
[OK]
provider-kim-sw-1#
```

```

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

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

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

provider-kim-gw-1(config-if)#exit
provider-kim-gw-1(config)#int f0/0.4
provider-kim-gw-1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.4, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.4, changed state to up

provider-kim-gw-1(config-subif)#encapsulation dot1Q 4
provider-kim-gw-1(config-subif)#ip address 198.51.100.1 255.255.255.240
provider-kim-gw-1(config-subif)#description msk-donskaya
provider-kim-gw-1(config-subif)#exit
provider-kim-gw-1(config)#int f0/1
provider-kim-gw-1(config-if)#no shutdown

provider-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

provider-kim-gw-1(config-if)#ip address 192.0.2.1 255.255.255.0
provider-kim-gw-1(config-if)#description internet
provider-kim-gw-1(config-if)#exit
provider-kim-gw-1(config)#exit
provider-kim-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

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

```

```

provider-kim-sw-1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
provider-kim-sw-1(config)#int f0/1
provider-kim-sw-1(config-if)#switchport mode trunk

provider-kim-sw-1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down

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

provider-kim-sw-1(config-if)#exit
provider-kim-sw-1(config)#int f0/2
provider-kim-sw-1(config-if)#switchport mode trunk

provider-kim-sw-1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up

provider-kim-sw-1(config-if)#exit
provider-kim-sw-1(config)#vlan 4
provider-kim-sw-1(config-vlan)#name nat
provider-kim-sw-1(config-vlan)#exit
provider-kim-sw-1(config)#int vlan4
provider-kim-sw-1(config-if)#
%LINK-5-CHANGED: Interface Vlan4, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan4, changed state to up

provider-kim-sw-1(config-if)#no shutdown
provider-kim-sw-1(config-if)#exit
provider-kim-sw-1(config)#exit
provider-kim-sw-1#
%SYS-5-CONFIG_I: Configured from console by console

provider-kim-sw-1#wr m
Building configuration...

```



```
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 f0/1
msk-donskaya-kim-gw-1(config-if)#no shutdown

msk-donskaya-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

msk-donskaya-kim-gw-1(config-if)#exit
msk-donskaya-kim-gw-1(config)#int f0/1.4
msk-donskaya-kim-gw-1(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/1.4, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1.4, changed state to up

msk-donskaya-kim-gw-1(config-subif)#encapsulation dot1Q 4
msk-donskaya-kim-gw-1(config-subif)#ip address 198.51.100.2 255.255.255.240
msk-donskaya-kim-gw-1(config-subif)#description internet
msk-donskaya-kim-gw-1(config-subif)#exit
msk-donskaya-kim-gw-1(config)#exit
msk-donskaya-kim-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-donskaya-kim-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-kim-gw-1(config)#ip route 0.0.0.0 0.0.0.0 198.51.100.1
msk-donskaya-kim-gw-1(config)#exit
msk-donskaya-kim-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

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

```
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)#ip nat pool main-pool 198.51.100.2 198.51.100.14 netmask 255.255.255.240
msk-donskaya-kim-gw-1(config)#ip access-list extended nat-inet
msk-donskaya-kim-gw-1(config-ext-nacl)#remark dk
msk-donskaya-kim-gw-1(config-ext-nacl)#permit tcp 10.128.3.0 0.0.0.255 host 192.0.2.11 eq 80
msk-donskaya-kim-gw-1(config-ext-nacl)#permit tcp 10.128.3.0 0.0.0.255 host 192.0.2.12 eq 80
msk-donskaya-kim-gw-1(config-ext-nacl)#remark departments
msk-donskaya-kim-gw-1(config-ext-nacl)#permit tcp 10.128.4.0 0.0.0.255 host 192.0.2.13 eq 80
msk-donskaya-kim-gw-1(config-ext-nacl)#remark adm
msk-donskaya-kim-gw-1(config-ext-nacl)#permit tcp 10.128.5.0 0.0.0.255 host 192.0.2.14 eq 80
msk-donskaya-kim-gw-1(config-ext-nacl)#remark admin
msk-donskaya-kim-gw-1(config-ext-nacl)#permit ip host 10.128.6.200 any
msk-donskaya-kim-gw-1(config-ext-nacl)#^Z
msk-donskaya-kim-gw-1#
%SYS-5-CONFIG_I: Configured from console by console
```

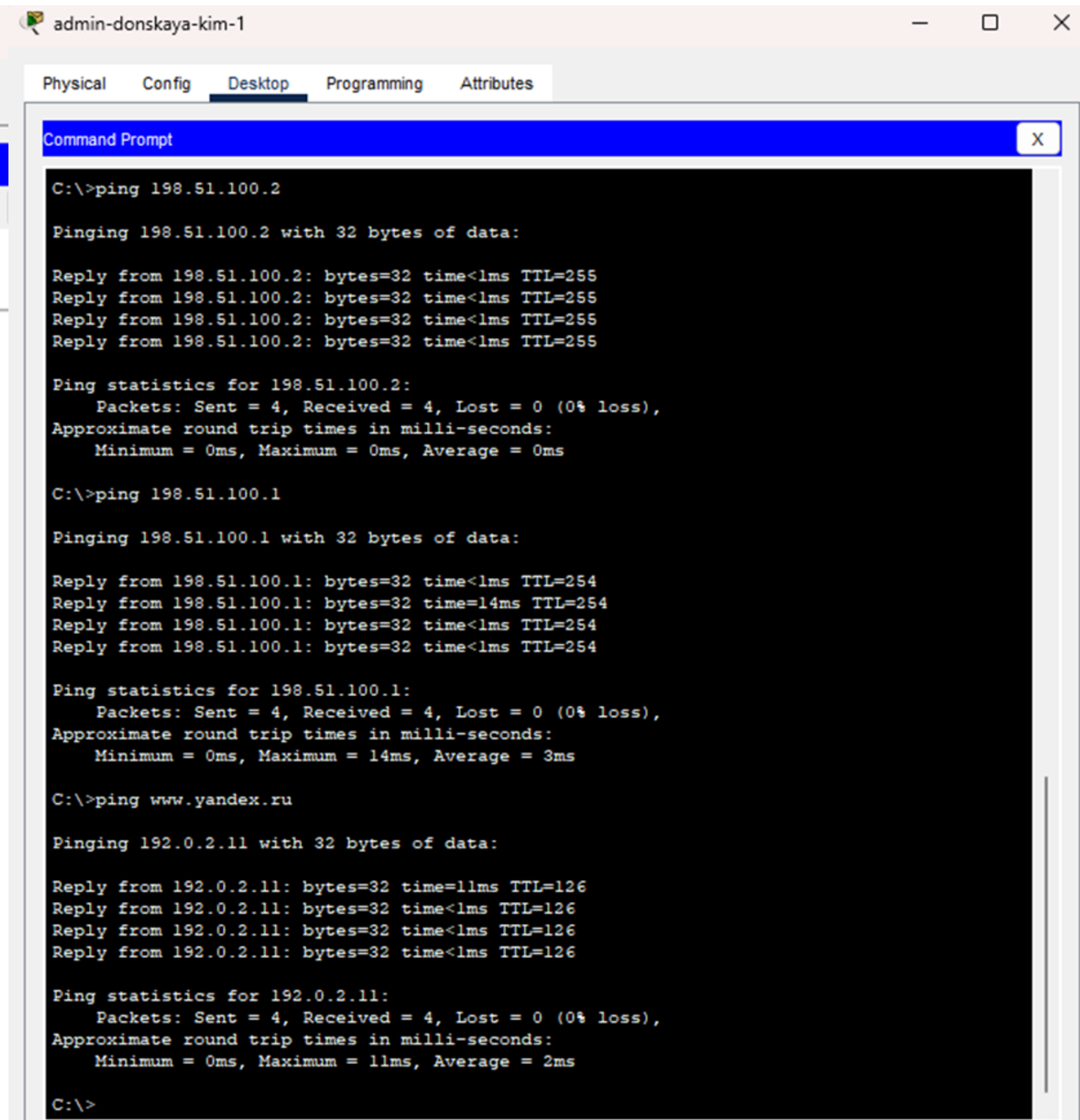
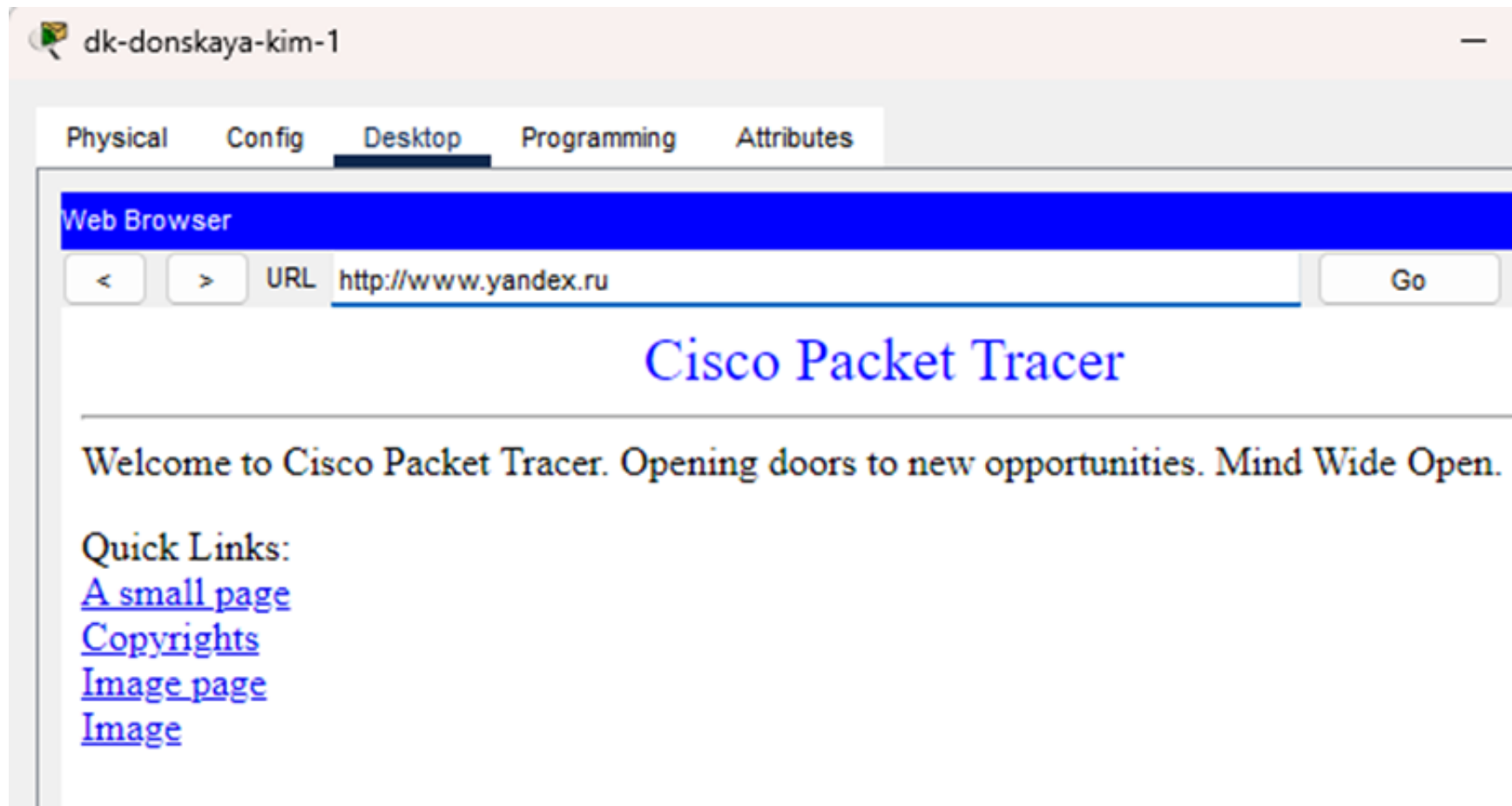
```
msk-donskaya-kim-gw-1#wr m
Building configuration...
[OK]
msk-donskaya-kim-gw-1#
```

```
msk-donskaya-kim-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-kim-gw-1(config)#ip nat inside source list nat-inet pool main-pool overload
msk-donskaya-kim-gw-1(config)#int f0/0.3
msk-donskaya-kim-gw-1(config-subif)#ip nat inside
msk-donskaya-kim-gw-1(config-subif)#int f0/0.101
msk-donskaya-kim-gw-1(config-subif)#ip nat inside
msk-donskaya-kim-gw-1(config-subif)#exit
msk-donskaya-kim-gw-1(config)#int f0/0.102
msk-donskaya-kim-gw-1(config-subif)#ip nat inside
msk-donskaya-kim-gw-1(config-subif)#exit
msk-donskaya-kim-gw-1(config)#int f0/0.103
msk-donskaya-kim-gw-1(config-subif)#ip nat inside
msk-donskaya-kim-gw-1(config-subif)#exit
msk-donskaya-kim-gw-1(config)#int f0/0.104
msk-donskaya-kim-gw-1(config-subif)#ip nat inside
msk-donskaya-kim-gw-1(config-subif)#exit
msk-donskaya-kim-gw-1(config)#int f0/1.4
msk-donskaya-kim-gw-1(config-subif)#ip nat outside
msk-donskaya-kim-gw-1(config-subif)#^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]
msk-donskaya-kim-gw-1#
```

```
msk-donskaya-kim-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-donskaya-kim-gw-1(config)#ip nat inside source static tcp 10.128.0.2 80 198.51.100.2 80
msk-donskaya-kim-gw-1(config)#ip nat inside source static tcp 10.128.0.3 20 198.51.100.3 20
msk-donskaya-kim-gw-1(config)#ip nat inside source static tcp 10.128.0.3 21 198.51.100.3 21
msk-donskaya-kim-gw-1(config)#ip nat inside source static tcp 10.128.0.4 25 198.51.100.4 25
msk-donskaya-kim-gw-1(config)#ip nat inside source static tcp 10.128.0.4 110 198.51.100.4 110
msk-donskaya-kim-gw-1(config)#ip nat inside source static tcp 10.128.6.200 3389 198.51.100.10 3389
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]
msk-donskaya-kim-gw-1#
```

Вывод

Приобрела практических навыков по настройке доступа локальной сети к внешней сети посредством NAT.

Спасибо за внимание!