

Лабораторная работа №13

Администрирование локальных сетей

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Информация

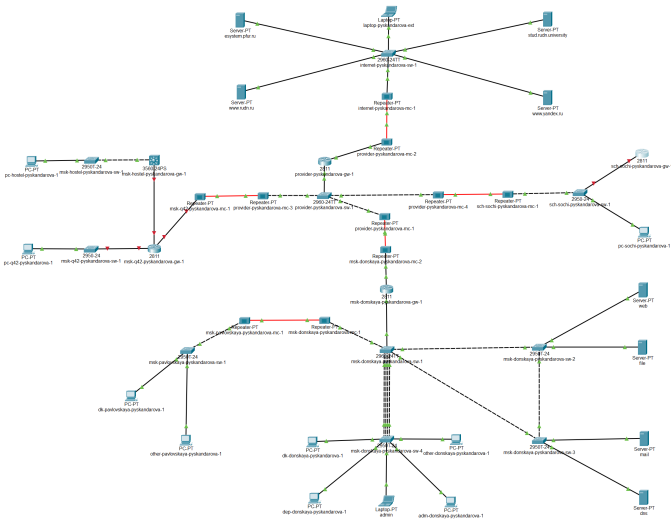
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Вводная часть

Провести подготовительные мероприятия по организации взаимодействия через сеть провайдера посредством статической маршрутизации локальной сети с сетью основного здания, расположенного в 42-м квартале в Москве, и сетью филиала, расположенного в г. Сочи.

Выполнение работы

Схема сети с
дополнительными
площадками



Медиаконвертер с
модулями
PT-REPEATER-NM-1FFE и
PT-REPEATER-NM-1CFE

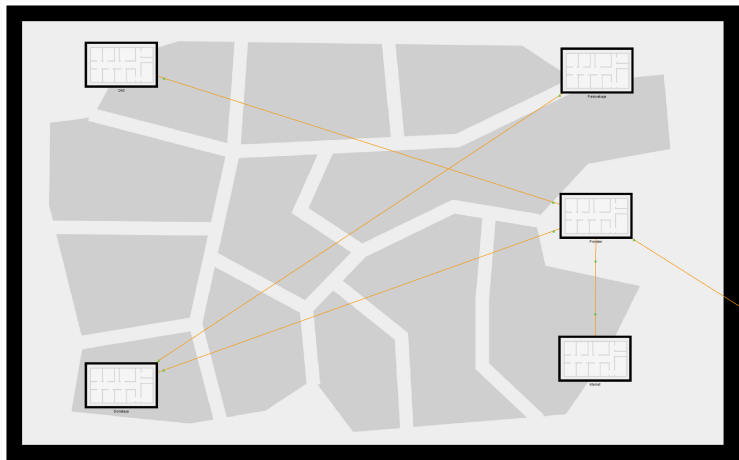




Здание основной
территории организации в
Москве на физической
схеме проекта



Москва и Сочи на
физической схеме проекта



Первоначальная настройка маршрутизатора msk-q42-gw-1

```
msk-q42-pyskandarova-gw-1>enable
msk-q42-pyskandarova-gw-1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
msk-q42-pyskandarova-gw-1(config)#line vte 0 4
^
% Invalid input detected at '^' marker.

msk-q42-pyskandarova-gw-1(config)#line vty 0 4
msk-q42-pyskandarova-gw-1(config-line)#password cisco
msk-q42-pyskandarova-gw-1(config-line)#ogin
^
% Invalid input detected at '^' marker.

msk-q42-pyskandarova-gw-1(config-line)#login
msk-q42-pyskandarova-gw-1(config-line)#exit
msk-q42-pyskandarova-gw-1(config)#line console 0
msk-q42-pyskandarova-gw-1(config-line)#password cisco
msk-q42-pyskandarova-gw-1(config-line)#login
msk-q42-pyskandarova-gw-1(config-line)#exit
msk-q42-pyskandarova-gw-1(config)#enable secret cisco
msk-q42-pyskandarova-gw-1(config)#service password-encryption
^
% Invalid input detected at '^' marker.

msk-q42-pyskandarova-gw-1(config)#service password-encryption
msk-q42-pyskandarova-gw-1(config)#username admin privilege 1 secret cisco
^
% Invalid input detected at '^' marker.

msk-q42-pyskandarova-gw-1(config)#username admin privilege 1 secret cisco
msk-q42-pyskandarova-gw-1(config)#ip domain-name q42.rudn.edu
msk-q42-pyskandarova-gw-1(config)#crypto key generate rsa
The name for the keys will be: msk-q42-pyskandarova-gw-1.q42.rudn.edu
Choose the size of the key modulus in the range of 360 to 4096 for your
General Purpose Keys. Choosing a key modulus greater than 512 may take
a few minutes.

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

msk-q42-pyskandarova-gw-1(config)#line vty 0 4
*Mar 1 0:5:35.57: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:5:35.57: %SSH-5-ENABLED: SSH 1.5 has been enabled
msk-q42-pyskandarova-gw-1(config-line)#transport input ssh
msk-q42-pyskandarova-gw-1(config-line)#
```

Первоначальная настройка коммутатора msk-q42-sw-1

```
msk-q42-pyskandarova-sw-1>enable
msk-q42-pyskandarova-sw-1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
msk-q42-pyskandarova-sw-1(config)#line vty 0 4
msk-q42-pyskandarova-sw-1(config-line)#password cisco
msk-q42-pyskandarova-sw-1(config-line)#login
msk-q42-pyskandarova-sw-1(config-line)#exit
msk-q42-pyskandarova-sw-1(config)#line console 0
msk-q42-pyskandarova-sw-1(config-line)#password cisco
msk-q42-pyskandarova-sw-1(config-line)#login exit
^
% Invalid input detected at '^' marker.

msk-q42-pyskandarova-sw-1(config-line)#login
msk-q42-pyskandarova-sw-1(config-line)#exit
msk-q42-pyskandarova-sw-1(config)#enable secret cisco
msk-q42-pyskandarova-sw-1(config)#service password-encryption
msk-q42-pyskandarova-sw-1(config)#username admin privilege
% Incomplete command.
msk-q42-pyskandarova-sw-1(config)#username admin privilege 1 secret cisco
msk-q42-pyskandarova-sw-1(config)#ip domain-name q42.rudn.edu
msk-q42-pyskandarova-sw-1(config)#crypto key generate rsa
The name for the keys will be: msk-q42-pyskandarova-sw-1.q42.rudn.edu
Choose the size of the key modulus in the range of 360 to 4096 for your
General Purpose Keys. Choosing a key modulus greater than 512 may take
a few minutes.

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

msk-q42-pyskandarova-sw-1(config)#line vty 0 4
*Mar 1 0:9:2.433: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:9:2.433: %SSH-5-ENABLED: SSH 1.5 has been enabled
msk-q42-pyskandarova-sw-1(config-line)#transport input ssh
msk-q42-pyskandarova-sw-1(config-line)#
```

Первоначальная настройка
маршрутизирующего
коммутатора
msk-hostel-gw-1

```
msk-hostel-pyskandarova-gw-1>
msk-hostel-pyskandarova-gw-1>enable
msk-hostel-pyskandarova-gw-1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
msk-hostel-pyskandarova-gw-1(config)#line vty 0 4
msk-hostel-pyskandarova-gw-1(config-line)#password cisco
msk-hostel-pyskandarova-gw-1(config-line)#login
msk-hostel-pyskandarova-gw-1(config-line)#exit
msk-hostel-pyskandarova-gw-1(config)#line console 0
msk-hostel-pyskandarova-gw-1(config-line)#password cisco
msk-hostel-pyskandarova-gw-1(config-line)#login
msk-hostel-pyskandarova-gw-1(config-line)#exit
msk-hostel-pyskandarova-gw-1(config)#enable secret
% Incomplete command.
msk-hostel-pyskandarova-gw-1(config)#enable secret cisco
msk-hostel-pyskandarova-gw-1(config)#service password-encryption
msk-hostel-pyskandarova-gw-1(config)#username admin privilege 1 secret cisco
msk-hostel-pyskandarova-gw-1(config)#ip ssh version 2
Please create RSA keys (of at least 768 bits size) to enable SSH v2.
msk-hostel-pyskandarova-gw-1(config)#ip domain-name hostel.rudn.edu
msk-hostel-pyskandarova-gw-1(config)#crypto key generate rsa\
^
% Invalid input detected at '^' marker.

msk-hostel-pyskandarova-gw-1(config)#crypto key generate rsa
The name for the keys will be: msk-hostel-pyskandarova-gw-1.hostel.rudn.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]:
% Generating 512 bit RSA keys, keys will be non-exportable...[OK]

msk-hostel-pyskandarova-gw-1(config)#line vty 0 4
*Mar 1 0:12:22.13: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:12:22.13: %SSH-5-ENABLED: SSH 1.5 has been enabled
msk-hostel-pyskandarova-gw-1(config-line)#transport input ssh
msk-hostel-pyskandarova-gw-1(config-line)#
```

Первоначальная настройка коммутатора msk-hostel-sw-1

```
msk-hostel-pyskandarova-sw-1>enable
msk-hostel-pyskandarova-sw-1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
msk-hostel-pyskandarova-sw-1(config)#line vty 0 4
msk-hostel-pyskandarova-sw-1(config-line)#password cisco
^
% Invalid input detected at '^' marker.

msk-hostel-pyskandarova-sw-1(config-line)#password cisco
^
% Invalid input detected at '^' marker.

msk-hostel-pyskandarova-sw-1(config-line)#password cisco
msk-hostel-pyskandarova-sw-1(config-line)#login
msk-hostel-pyskandarova-sw-1(config-line)#exit
msk-hostel-pyskandarova-sw-1(config)#line console 0
msk-hostel-pyskandarova-sw-1(config-line)#password cisco
msk-hostel-pyskandarova-sw-1(config-line)#login
msk-hostel-pyskandarova-sw-1(config-line)#exit
msk-hostel-pyskandarova-sw-1(config)#enable secret cisco
msk-hostel-pyskandarova-sw-1(config)#service password-encryption
msk-hostel-pyskandarova-sw-1(config)#username admin privilege 1 secret cisco
^
% Invalid input detected at '^' marker.

msk-hostel-pyskandarova-sw-1(config)#username admin privilege 1 secret cisco
msk-hostel-pyskandarova-sw-1(config)#ip domain-name hostel.rudn.edu
msk-hostel-pyskandarova-sw-1(config)#crypto key generate rsa
The name for the keys will be: msk-hostel-pyskandarova-sw-1.hostel.rudn.edu
Choose the size of the key modulus in the range of 360 to 4096 for your
General Purpose Keys. Choosing a key modulus greater than 512 may take
a few minutes.

How many bits in the modulus [512]: line vty 0 4
% A decimal number between 360 and 4096
How many bits in the modulus [512]: % A decimal number between 360 and 4096
How many bits in the modulus [512]:
% Generating 512 bit RSA keys, keys will be non-exportable...[OK]

msk-hostel-pyskandarova-sw-1(config)#line vty 0 4
*Mar 1 0:16:1.772: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:16:1.772: %SSH-5-ENABLED: SSH 1.5 has been enabled
msk-hostel-pyskandarova-sw-1(config-line)#transport input ssh
msk-hostel-pyskandarova-sw-1(config-line)#
```

Первоначальная настройка коммутатора sch-sochi-sw-1

```
sch-sochi-pyskandarova-sw-1>enable
sch-sochi-pyskandarova-sw-1#configure
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
sch-sochi-pyskandarova-sw-1(config)#line vty 0 4
sch-sochi-pyskandarova-sw-1(config-line)#password cisco
sch-sochi-pyskandarova-sw-1(config-line)#login
sch-sochi-pyskandarova-sw-1(config-line)#exit
sch-sochi-pyskandarova-sw-1(config)#line console 0
sch-sochi-pyskandarova-sw-1(config-line)#password cisco
sch-sochi-pyskandarova-sw-1(config-line)#login
sch-sochi-pyskandarova-sw-1(config-line)#exit
sch-sochi-pyskandarova-sw-1(config)#enable secret cisco
sch-sochi-pyskandarova-sw-1(config)#service password-encryption
sch-sochi-pyskandarova-sw-1(config)#username admin privilege 1 secret cisco
sch-sochi-pyskandarova-sw-1(config)#ip domain-name sochi.rudn.edu
sch-sochi-pyskandarova-sw-1(config)#crypto key generate rsa
The name for the keys will be: sch-sochi-pyskandarova-sw-1.sochi.rudn.edu
Choose the size of the key modulus in the range of 360 to 4096 for your
  General Purpose Keys. Choosing a key modulus greater than 512 may take
  a few minutes.

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

sch-sochi-pyskandarova-sw-1(config)#line vty 0 4
*Mar 1 0:19:18.921: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:19:18.921: %SSH-5-ENABLED: SSH 1.5 has been enabled
sch-sochi-pyskandarova-sw-1(config-line)#
sch-sochi-pyskandarova-sw-1(config-line)#transport input ssh
sch-sochi-pyskandarova-sw-1(config-line)#
```


Первоначальная настройка
маршрутизатора
sch-sochi-gw-1

```
sch-sochi-pyskandarova-gw-1>enable
sch-sochi-pyskandarova-gw-1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
sch-sochi-pyskandarova-gw-1(config)#line vty 0 4
sch-sochi-pyskandarova-gw-1(config-line)#passwordd cisco
                                     ^
% Invalid input detected at '^' marker.

sch-sochi-pyskandarova-gw-1(config-line)#password cisco
sch-sochi-pyskandarova-gw-1(config-line)#login
sch-sochi-pyskandarova-gw-1(config-line)#exit
sch-sochi-pyskandarova-gw-1(config)#line console 0
sch-sochi-pyskandarova-gw-1(config-line)#password
% Incomplete command.
sch-sochi-pyskandarova-gw-1(config-line)#password cisco
sch-sochi-pyskandarova-gw-1(config-line)#login
sch-sochi-pyskandarova-gw-1(config-line)#exit
sch-sochi-pyskandarova-gw-1(config)#enable secret cisco
sch-sochi-pyskandarova-gw-1(config)#service password-encryption
sch-sochi-pyskandarova-gw-1(config)#username admin privilege 1 secret cisco
                                     ^
% Invalid input detected at '^' marker.

sch-sochi-pyskandarova-gw-1(config)#username admin privilege 1 secret cisco
sch-sochi-pyskandarova-gw-1(config)#ip domain-name sochi.rudn.edu
sch-sochi-pyskandarova-gw-1(config)#crypto key generate rsa
The name for the keys will be: sch-sochi-pyskandarova-gw-1.sochi.rudn.edu
Choose the size of the key modulus in the range of 360 to 4096 for your
  General Purpose Keys. Choosing a key modulus greater than 512 may take
  a few minutes.

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

sch-sochi-pyskandarova-gw-1(config)#line vty 0 4
*Mar 1 0:22:34.316: RSA key size needs to be at least 768 bits for ssh version 2
*Mar 1 0:22:34.316: %SSH-5-ENABLED: SSH 1.5 has been enabled
sch-sochi-pyskandarova-gw-1(config-line)#transport input ssh
sch-sochi-pyskandarova-gw-1(config-line)#
```

Результаты

Проведены подготовительные мероприятия по организации взаимодействия через сеть провайдера посредством статической маршрутизации локальной сети с сетью основного здания, расположенного в 42-м квартале в Москве, и сетью филиала, расположенного в г. Сочи.