

Защита по лабораторной работе №12

student

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Информация

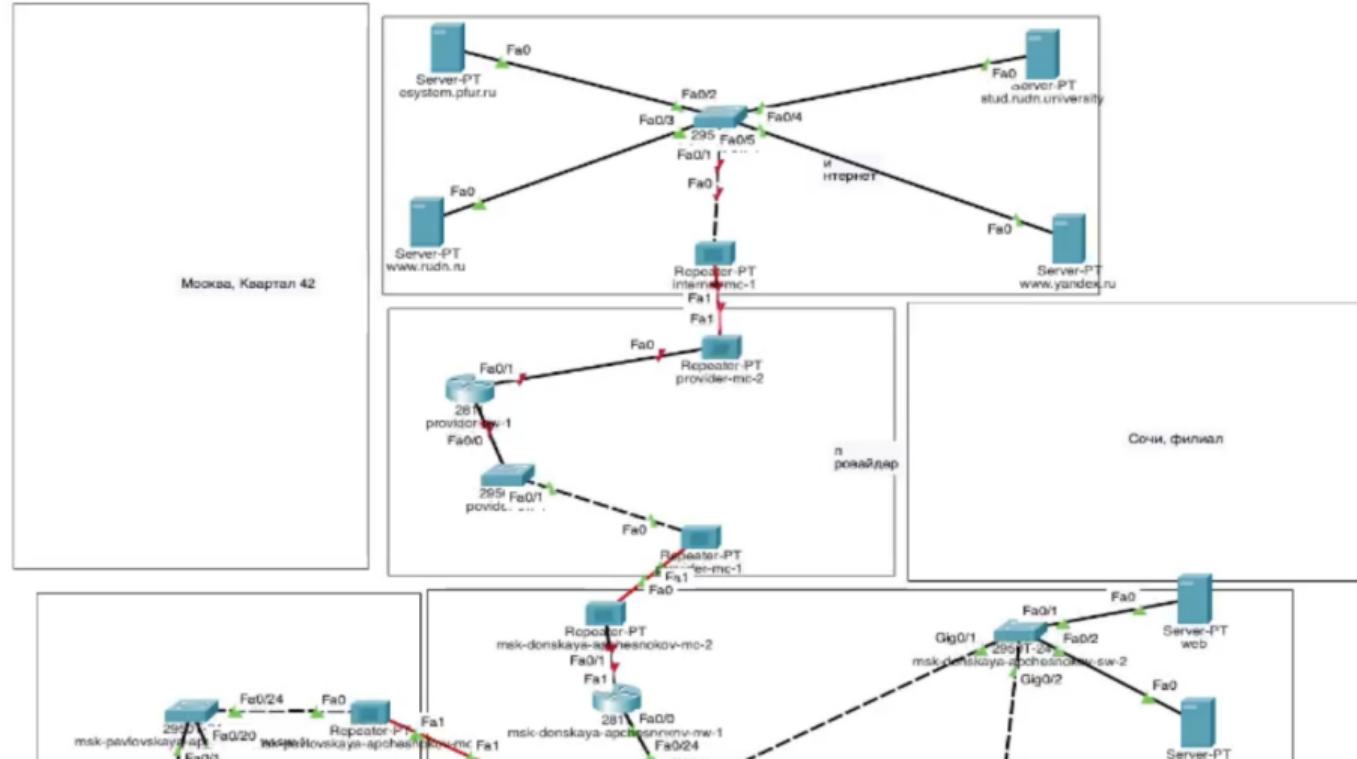
Информация



Цель

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.

Выделяем области для новых частей сети .



Размещаем все необходимые устройства .

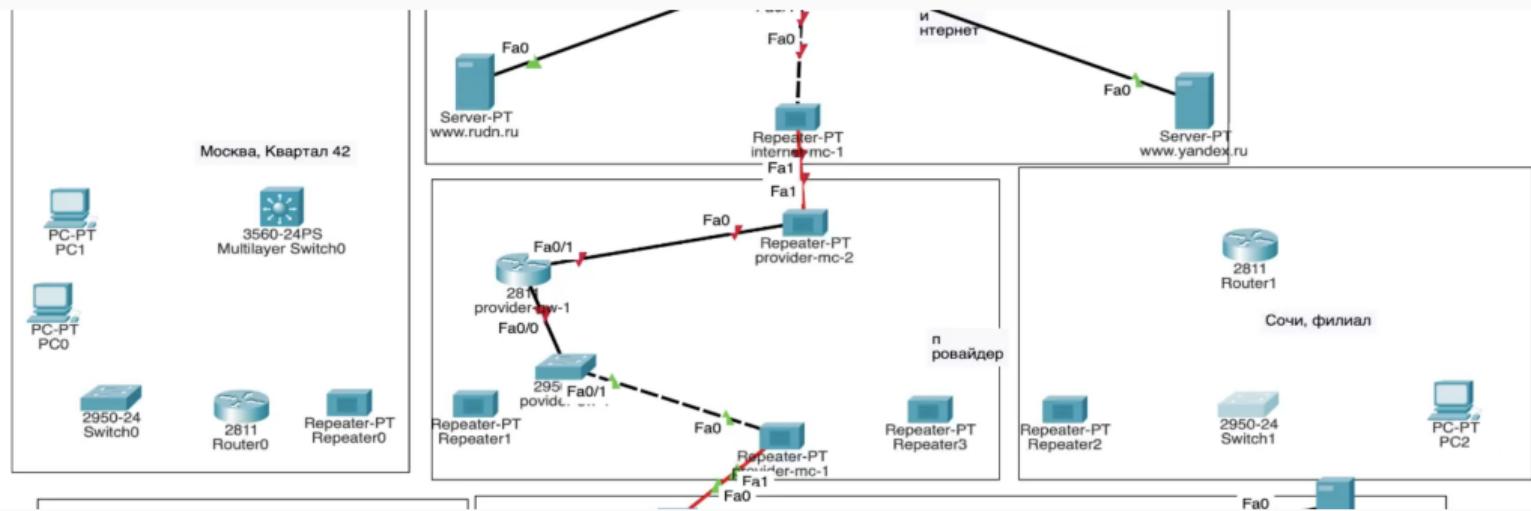


Рис. 3: на территории новых областей

Называем наши устройства в соответствии с соглашением об именовании .

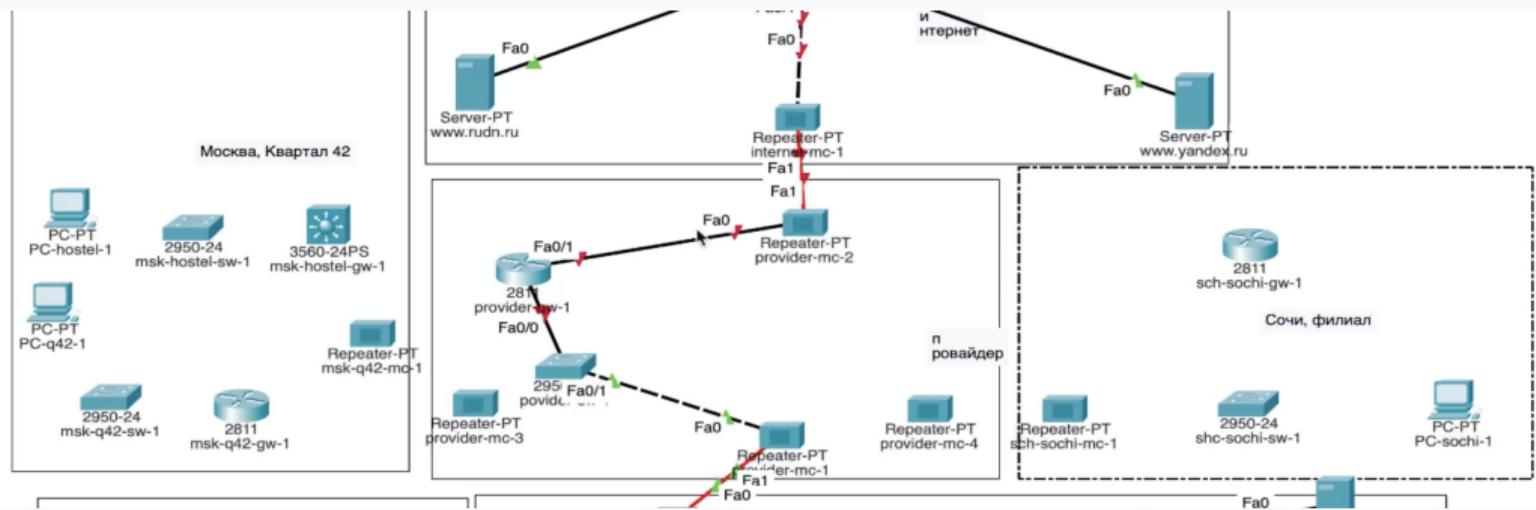
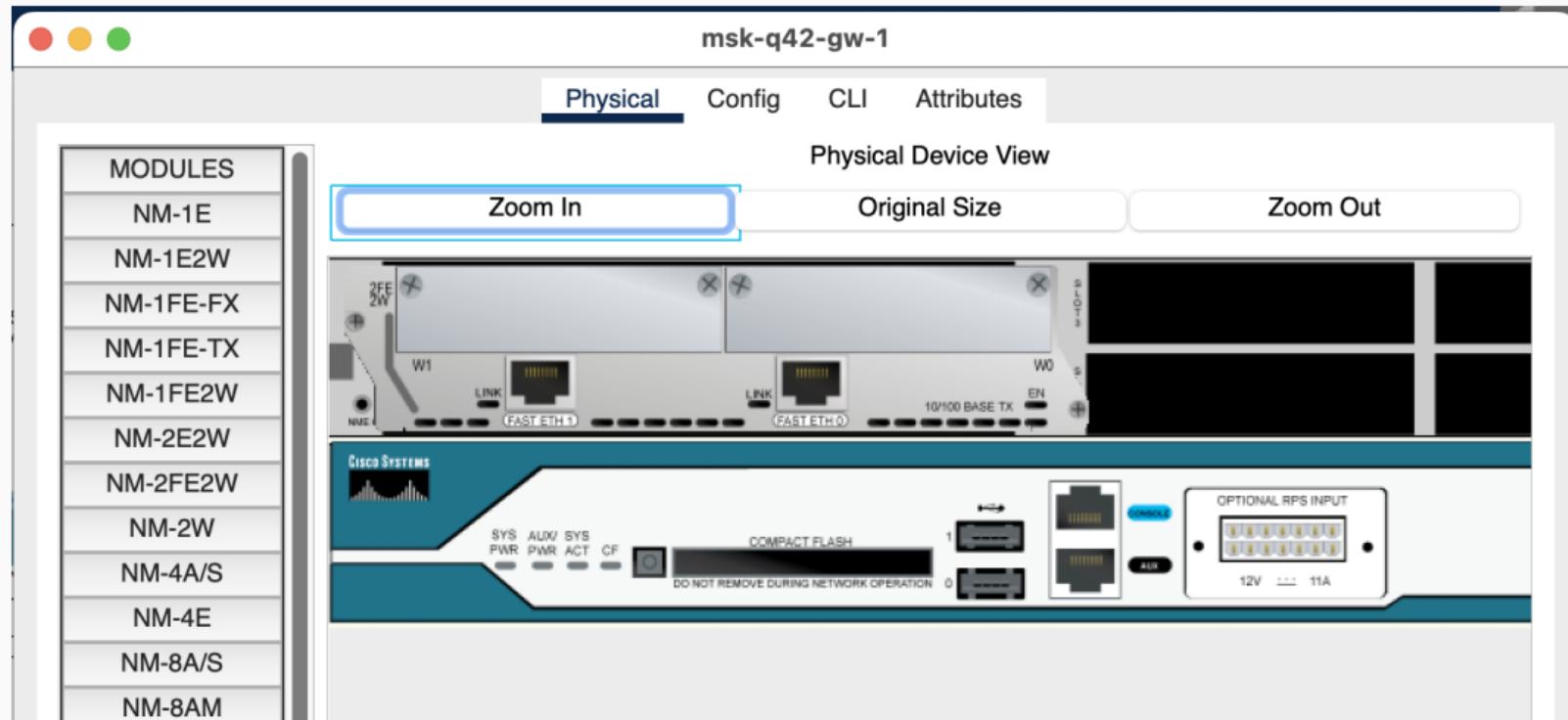


Рис. 4: назвали

Добавляем дополнительный интерфейс

NM-2FE2W .

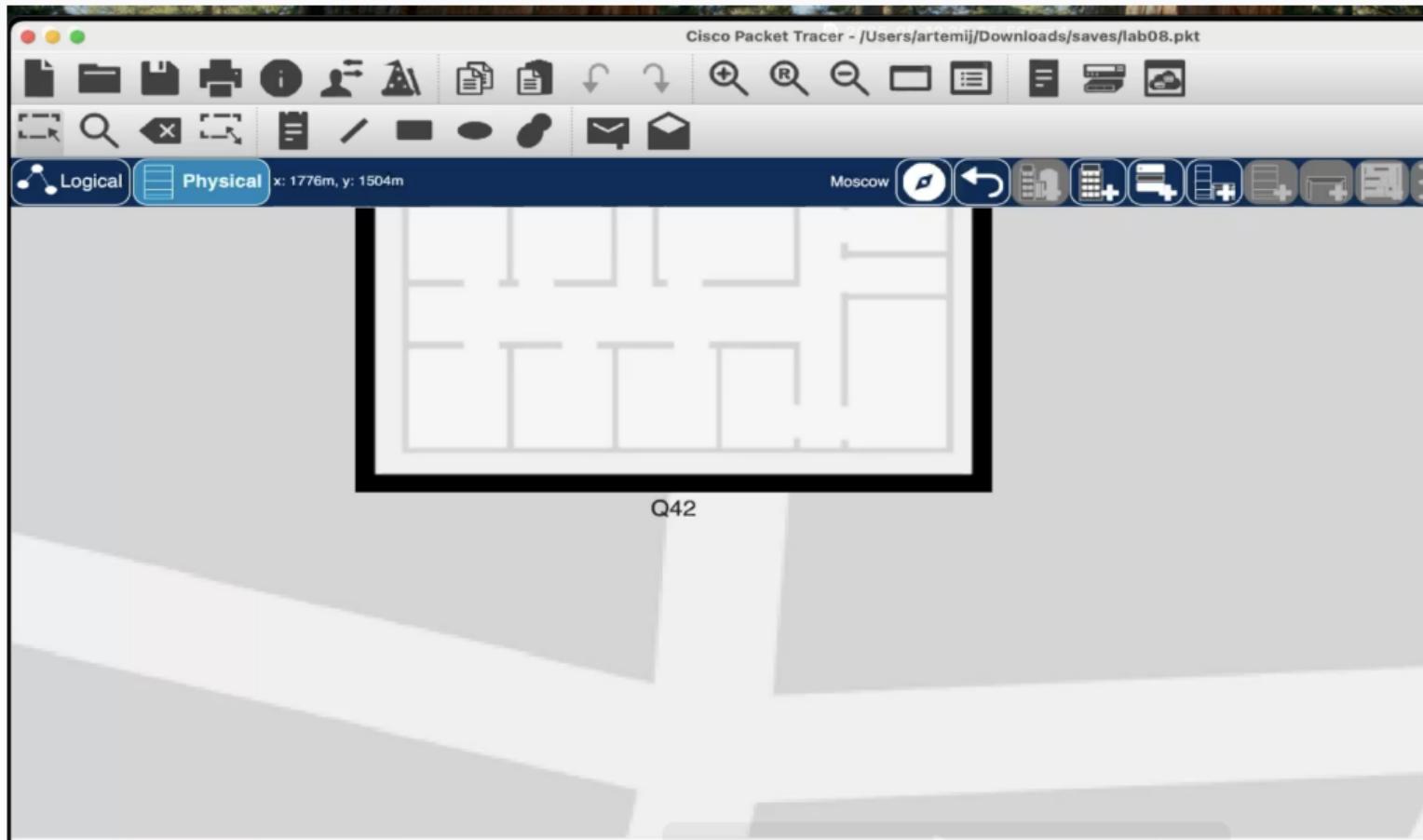


Заменим модули на повторителях .

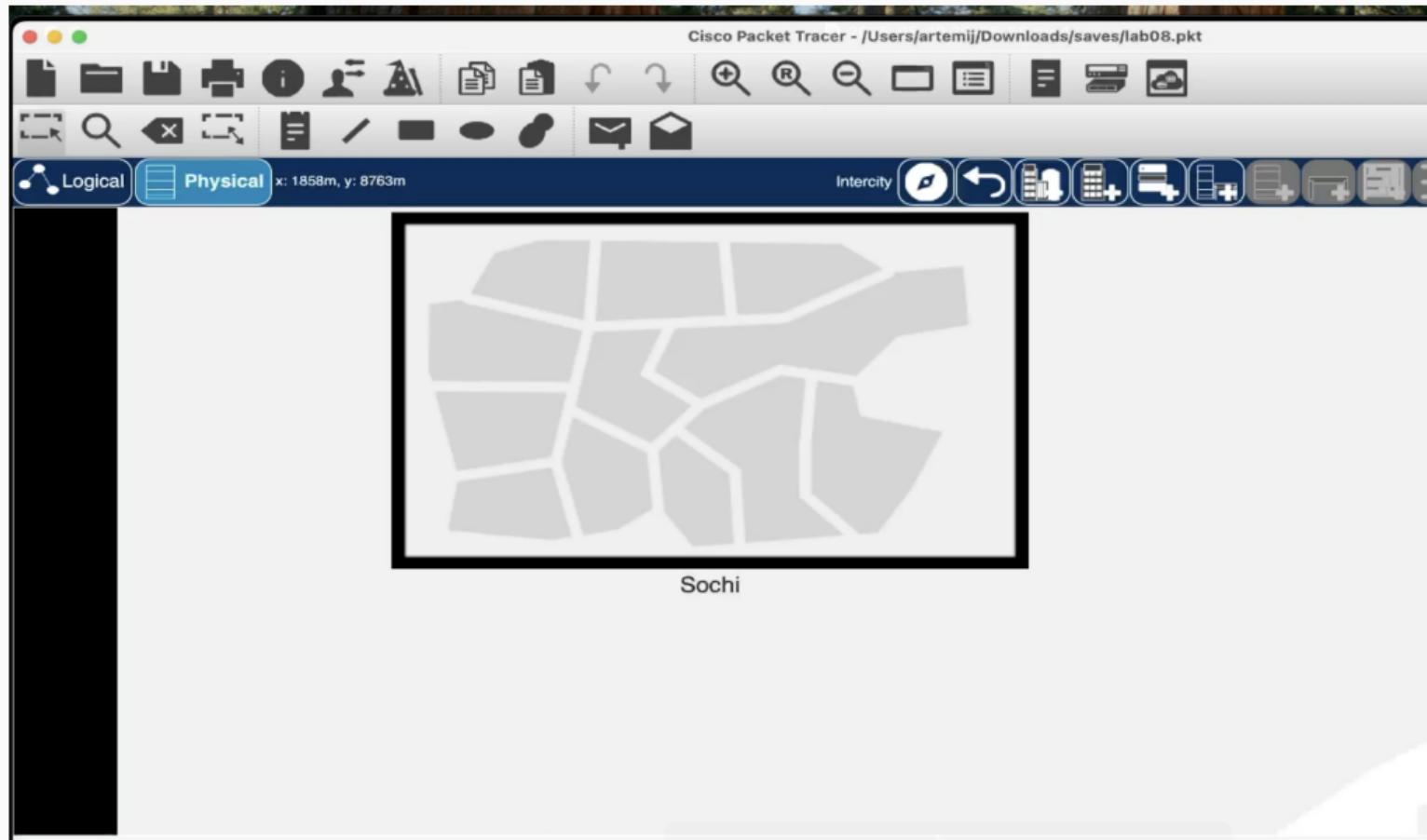


Рис. 6: пример для msk-q42-mc-1

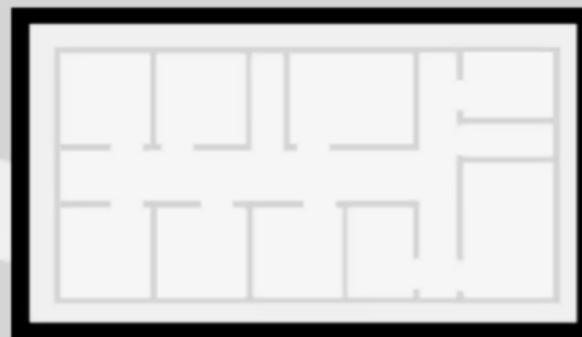
Добавляем в физическую область здание 42 квартала .



Создаем город Sochi .



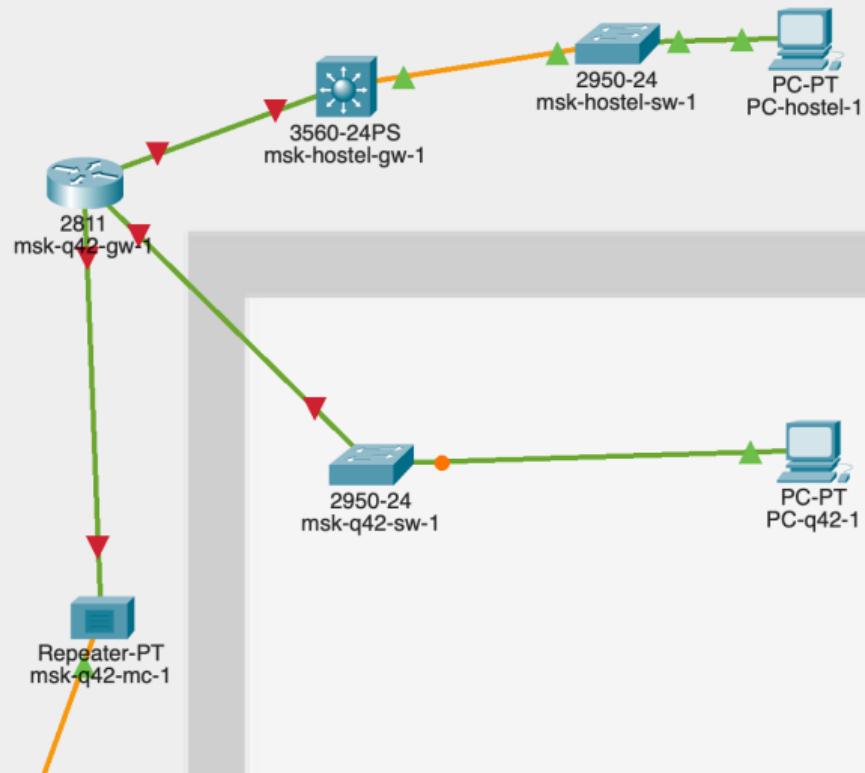
Создаем здание филиала .



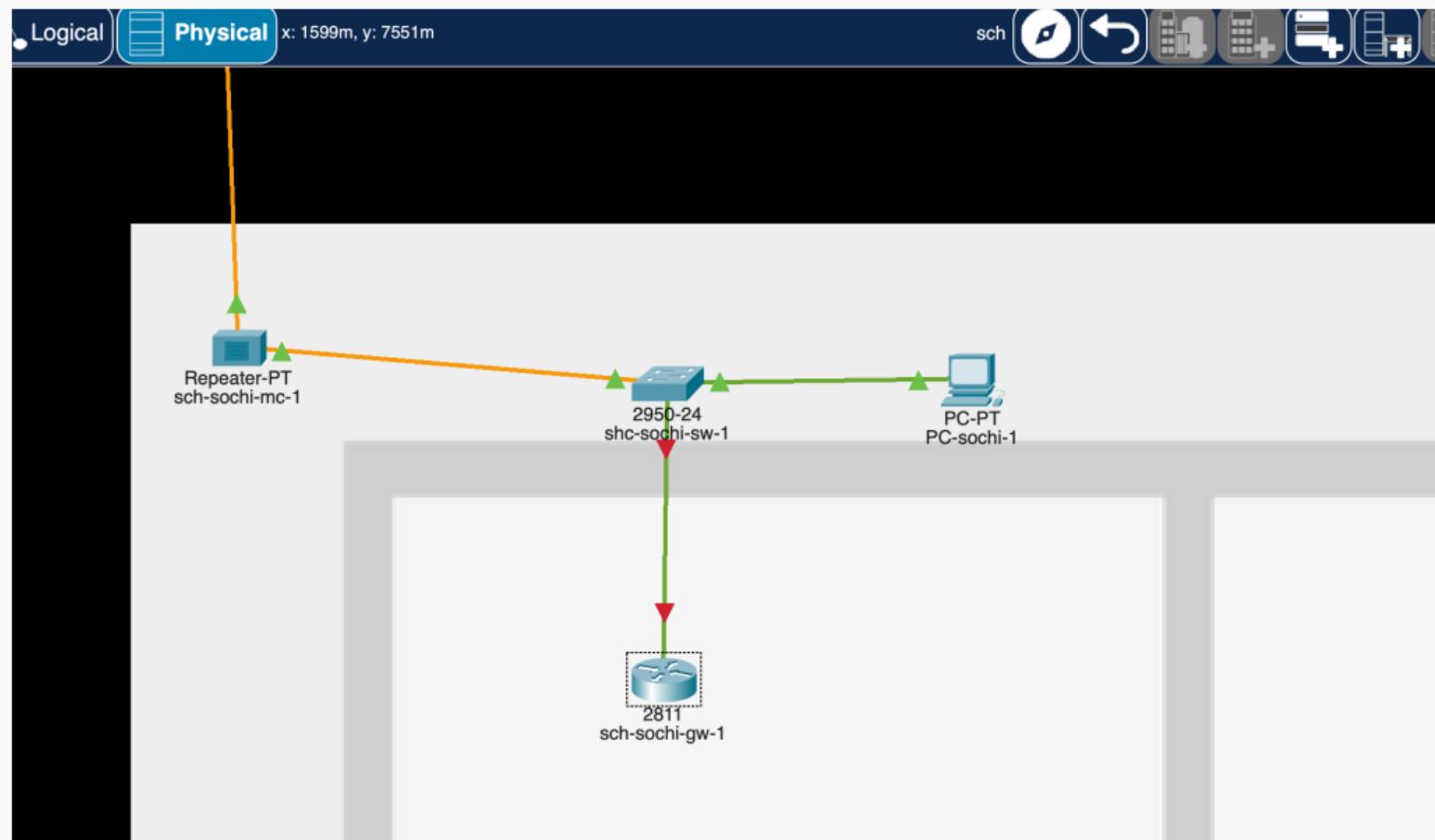
sch



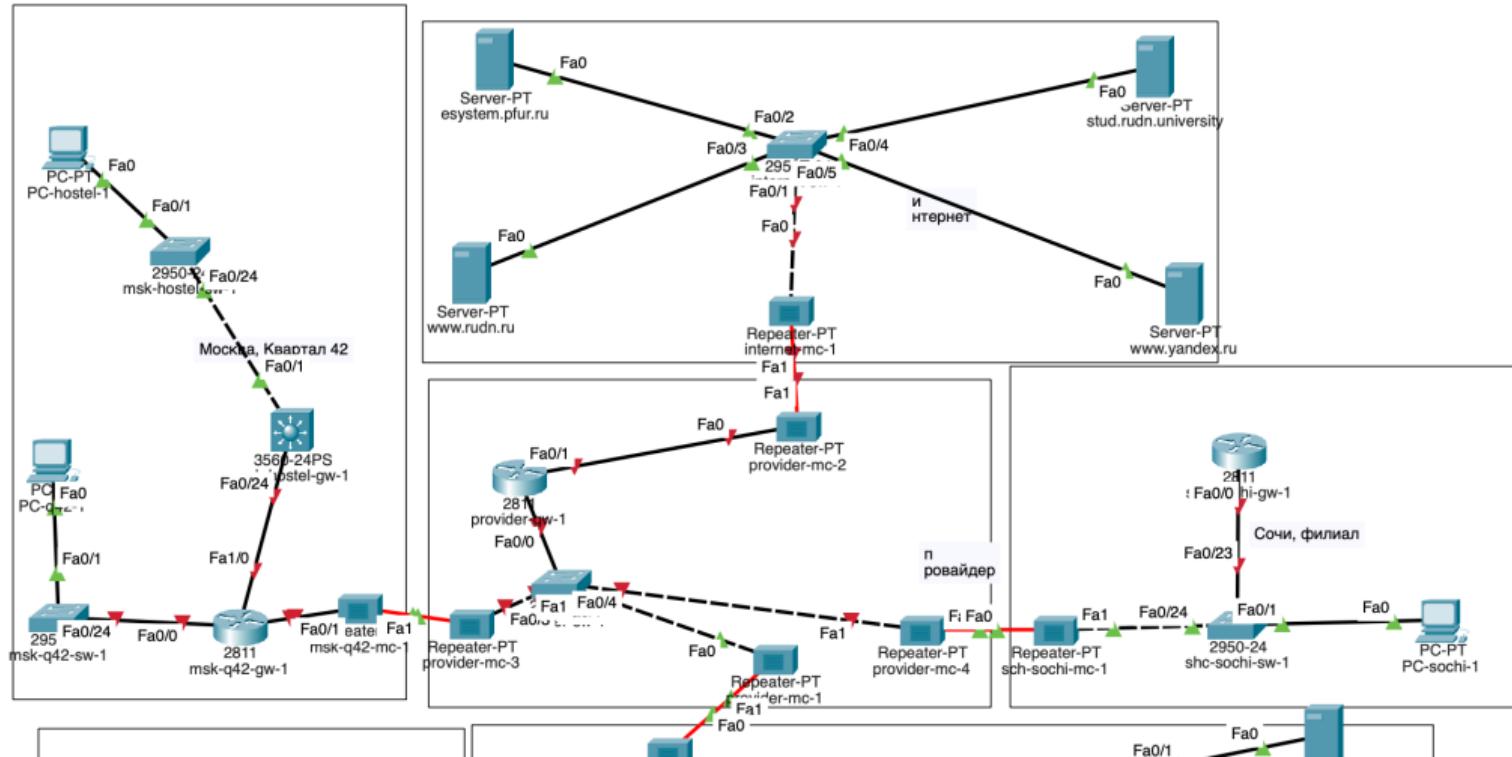
Пример того как должна выглядеть физическая область для пространства q42 .



Пример того как должна выглядеть физическая область для пространства sochi .



Соединяем все устройства .



Первоначальная настройка для маршрутизатора q42 .

msk-q42-gw-1

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Router>ena
Router>enable
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#line vty 0 4
Router(config-line)#passw
Router(config-line)#password cisco
Router(config-line)#login
Router(config-line)#login
Router(config-line)#exit
Router(config)#line console 0
Router(config-line)#passw
Router(config-line)#password cisco
Router(config-line)#login
Router(config-line)#ex
Router(config-line)#ex
% Ambiguous command: "ex"
Router(config-line)#exit
Router(config)#enable secr
Router(config)#enable secret cisco
Router(config)#service pass
Router(config)#service password-encryption
Router(config)#user
Router(config)#username admin priv
Router(config)#username admin privilege 1 secr
Router(config)#username admin privilege 1 secret cisco
Router(config)#ip dom
Router(config)#ip domain
Router(config)#ip domain-
Router(config)#ip domain-n
Router(config)#ip domain-name q42.rudn.edu
Router(config)#crypto
Router(config)#crypto gem
Router(config)#crypto gen
Router(config)#crypto rs
Router(config)#crypto kev
```

Первоначальная настройка для маршрутизатора q42 .

msk-q42-gw-1

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Router(config)#crypto rs
Router(config)#crypto key
Router(config)#crypto key gen
Router(config)#crypto key generate rsa
% Please define a hostname other than Router.
Router(config)#hostname
Router(config)#hostname msk-q42-gw-1
msk-q42-gw-1(config)#crypto key generate rsa
The name for the keys will be: msk-q42-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-gw-1(config)#exit
*Mar 1 0:18:10.34: RSA key size needs to be at least 768 bits for ssh ve:
*Mar 1 0:18:10.35: %SSH-5-ENABLED: SSH 1.5 has been enabled
msk-q42-gw-1(config)#exit
msk-q42-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-q42-gw-1#wr mem
Building configuration...
[OK]
msk-q42-gw-1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
msk-q42-gw-1(config)#line vt
msk-q42-gw-1(config)#line vty 0 4
msk-q42-gw-1(config-line)#tran
msk-q42-gw-1(config-line)#transport inp
msk-q42-gw-1(config-line)#transport input ssh
msk-q42-gw-1(config-line)#ex
msk-q42-gw-1(config-line)#exit
```

Первоначальная настройка для коммутатора q42 .

```
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-q42-sw-1
msk-q42-sw-1(config)#line vty 0 4
msk-q42-sw-1(config-line)#pass
msk-q42-sw-1(config-line)#password cisco
msk-q42-sw-1(config-line)#login|
msk-q42-sw-1(config-line)#exit
msk-q42-sw-1(config-line)#exit
msk-q42-sw-1(config)#line console 0
msk-q42-sw-1(config-line)#passw
msk-q42-sw-1(config-line)#password cisco
msk-q42-sw-1(config-line)#login
msk-q42-sw-1(config-line)#exit
msk-q42-sw-1(config-line)#exit
msk-q42-sw-1(config)#ena
msk-q42-sw-1(config)#enable secre
msk-q42-sw-1(config)#enable secret cisco
msk-q42-sw-1(config)#ervi
msk-q42-sw-1(config)#serve
msk-q42-sw-1(config)#servi
msk-q42-sw-1(config)#service pass
msk-q42-sw-1(config)#service password-encryption
msk-q42-sw-1(config)#use
msk-q42-sw-1(config)#username admin pr
msk-q42-sw-1(config)#username admin privilege 1 se
msk-q42-sw-1(config)#username admin privilege 1 secret cisco
msk-q42-sw-1(config)#ip domain-n
msk-q42-sw-1(config)#ip domain-name
% Incomplete command.
msk-q42-sw-1(config)#ip domain-name q42.rudn.edu
msk-q42-sw-1(config)#cre
msk-q42-sw-1(config)#crypt
msk-q42-sw-1(config)#crypto ke
msk-q42-sw-1(config)#crypto key gen
msk-q42-sw-1(config)#crypto key generate rsa
The name for the keys will be: msk-q42-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]
```

Первоначальная настройка для коммутатора q42 .

```
msk-q42-sw-1(config)#crypto key gen
msk-q42-sw-1(config)#crypto key generate rsa
The name for the keys will be: msk-q42-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-sw-1(config)#line
*Mar 1 0:42:59.410: RSA key size needs to be at least 768 bits for ssh version 3
*Mar 1 0:42:59.410: %SSH-5-ENABLED: SSH 1.5 has been enabled
msk-q42-sw-1(config)#line vty 0 4
msk-q42-sw-1(config-line)#tr
msk-q42-sw-1(config-line)#transport in
msk-q42-sw-1(config-line)#transport input ssh
msk-q42-sw-1(config-line)#exi
msk-q42-sw-1(config-line)#exit
msk-q42-sw-1(config)#ex
msk-q42-sw-1(config)#exit
msk-q42-sw-1#
%SYS-5-CONFIG_I: Configured from console by console
w
Building configuration...
[OK]
msk-q42-sw-1#wr mem
Building configuration...
[OK]
msk-q42-sw-1#
```

msk-q42-sw-1 con0 is now available

Первоначальная настройка для маршрутизатора hostel .

```
IOS Command Line Interface
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname msk-hostel-gw-1
msk-hostel-gw-1(config)#
msk-hostel-gw-1(config)#line vty 0 4
msk-hostel-gw-1(config-line)#passw
msk-hostel-gw-1(config-line)#password cisco
msk-hostel-gw-1(config-line)#login
msk-hostel-gw-1(config-line)#ex
msk-hostel-gw-1(config-line)#ex
% Ambiguous command: "ex"
msk-hostel-gw-1(config-line)#exit
msk-hostel-gw-1(config)#line cons
msk-hostel-gw-1(config)#line console 0
msk-hostel-gw-1(config-line)#pass
msk-hostel-gw-1(config-line)#password cisco
msk-hostel-gw-1(config-line)#login
msk-hostel-gw-1(config-line)#ex
msk-hostel-gw-1(config-line)#exit
msk-hostel-gw-1(config)#en
msk-hostel-gw-1(config)#enable secre
msk-hostel-gw-1(config)#enable secre
msk-hostel-gw-1(config)#enable secret cisco
msk-hostel-gw-1(config)#serv
msk-hostel-gw-1(config)#service passw
msk-hostel-gw-1(config)#service password-encryption
msk-hostel-gw-1(config)#user
msk-hostel-gw-1(config)#username admin pr
msk-hostel-gw-1(config)#username admin privilege 1 sec
msk-hostel-gw-1(config)#username admin privilege 1 secret cisco
msk-hostel-gw-1(config)#ip ssh v
msk-hostel-gw-1(config)#ip ssh version 2
Please create RSA keys (of at least 768 bits size) to enable SSH v2.
msk-hostel-gw-1(config)#ip domain name hostel.rudn.edu
msk-hostel-gw-1(config)#ip domain-name hostel.rudn.edu
msk-hostel-gw-1(config)#crypto key generate rsa
```

Первоначальная настройка для маршрутизатора hostel .

```
IOS Command Line Interface
msk-hostel-gw-1(config)#ip domain name hostel.rudn.edu
msk-hostel-gw-1(config)#crypto key generate rsa
The name for the keys will be: msk-hostel-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-gw-1(config)#line vty 0 4
*Mar 1 0:46:55.232: RSA key size needs to be at least 768 bits for ssh version 1
*Mar 1 0:46:55.232: %SSH-5-ENABLED: SSH 1.5 has been enabled
msk-hostel-gw-1(config-line)#transport input ssh
msk-hostel-gw-1(config-line)#exit
msk-hostel-gw-1(config-line)#exit
msk-hostel-gw-1(config)#exit
msk-hostel-gw-1#
%SYS-5-CONFIG_I: Configured from console by console

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

msk-hostel-gw-1 con0 is now available

Первоначальная настройка для коммутатора hostel .

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#hostname msk-hostel-sw-1
msk-hostel-sw-1(config)#lin
msk-hostel-sw-1(config)#line vty
msk-hostel-sw-1(config)#line vty 0 4
msk-hostel-sw-1(config-line)#passw
msk-hostel-sw-1(config-line)#password cisco
msk-hostel-sw-1(config-line)#login
msk-hostel-sw-1(config-line)#ex
msk-hostel-sw-1(config-line)#ex
% Ambiguous command: "ex"
msk-hostel-sw-1(config-line)#exit
msk-hostel-sw-1(config)#line cons
msk-hostel-sw-1(config)#line console 0
msk-hostel-sw-1(config-line)#pass
msk-hostel-sw-1(config-line)#password cisco
msk-hostel-sw-1(config-line)#login
msk-hostel-sw-1(config-line)#ex
msk-hostel-sw-1(config-line)#exit
msk-hostel-sw-1(config)#enable secret cisco
msk-hostel-sw-1(config)#service password encryption
^
% Invalid input detected at '^' marker.

msk-hostel-sw-1(config)#service password-encryption
msk-hostel-sw-1(config)#username admin privilege 1 secret cisco
msk-hostel-sw-1(config)#ip domain-name hostel.rudn.edu
msk-hostel-sw-1(config)#crypto key generate rsa
The name for the keys will be: msk-hostel-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
```

Первоначальная настройка для коммутатора hostel .

```
       a few minutes.

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

msk-hostel-sw-1(config)#line vty 0 4
*Mar 1 0:44:23.779: RSA key size needs to be at least 768 bits for ssh versi
*Mar 1 0:44:23.779: %SSH-5-ENABLED: SSH 1.5 has been enabled
msk-hostel-sw-1(config-line)##transport input ssh
^
% Invalid input detected at '^' marker.

msk-hostel-sw-1(config-line)##transport input ssh
msk-hostel-sw-1(config-line)#exi
msk-hostel-sw-1(config-line)#exit
msk-hostel-sw-1(config)#exi
msk-hostel-sw-1(config)#exit
msk-hostel-sw-1#
%SYS-5-CONFIG_I: Configured from console by console

msk-hostel-sw-1#wr m
Building configuration...
[OK]
msk-hostel-sw-1#
msk-hostel-sw-1 con0 is now available
```

Первоначальная настройка для коммутатора sochi .

```
shc-sochi-sw-1>ena
shc-sochi-sw-1>enable
shc-sochi-sw-1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
shc-sochi-sw-1(config)#lin
shc-sochi-sw-1(config)#line vty 0 4
shc-sochi-sw-1(config-line)#password cisco
shc-sochi-sw-1(config-line)#login
shc-sochi-sw-1(config-line)#exi
shc-sochi-sw-1(config-line)#exit
shc-sochi-sw-1(config)#line con
shc-sochi-sw-1(config)#line console 0
shc-sochi-sw-1(config-line)#passw
shc-sochi-sw-1(config-line)#password cisco
shc-sochi-sw-1(config-line)#login
shc-sochi-sw-1(config-line)#exitn
                                ^
% Invalid input detected at '^' marker.

shc-sochi-sw-1(config-line)#exit
shc-sochi-sw-1(config)#enable sec
shc-sochi-sw-1(config)#enable secret cisco
shc-sochi-sw-1(config)#service passw
shc-sochi-sw-1(config)#service password-encryption
shc-sochi-sw-1(config)#username admin privilege 1 secret cisco
shc-sochi-sw-1(config)#ip domain name sochi.rudn.edu
shc-sochi-sw-1(config)#ip domain-name sochi.rudn.edu
shc-sochi-sw-1(config)#crypto key generate rsa
The name for the keys will be: shc-sochi-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.
```

Первоначальная настройка для коммутатора sochi .

```
shc-sochi-sw-1(config)#ip domain name sochi.rudn.edu
shc-sochi-sw-1(config)#ip domain-name sochi.rudn.edu
shc-sochi-sw-1(config)#crypto key generate rsa
The name for the keys will be: shc-sochi-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]: 2048
% Generating 2048 bit RSA keys, keys will be non-exportable...[OK]

shc-sochi-sw-1(config)#line vty 0 4
*Mar 1 0:54:2.410: %SSH-5-ENABLED: SSH 1.99 has been enabled
shc-sochi-sw-1(config-line)#transport input ssh
shc-sochi-sw-1(config-line)#exit
shc-sochi-sw-1(config-line)#exit
shc-sochi-sw-1(config)#ex
shc-sochi-sw-1(config)#exit
shc-sochi-sw-1#
%SYS-5-CONFIG_I: Configured from console by console
wr
Building configuration...
[OK]
shc-sochi-sw-1#wr mem
Building configuration...
[OK]
shc-sochi-sw-1#
```

Первоначальная настройка для маршрутизатора sochi .

```
sch-sochi-gw-1>ena
sch-sochi-gw-1>enable
sch-sochi-gw-1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
sch-sochi-gw-1(config)#line con
sch-sochi-gw-1(config)#line vty 0 4
sch-sochi-gw-1(config-line)#passw
sch-sochi-gw-1(config-line)#password cisco
sch-sochi-gw-1(config-line)#login
sch-sochi-gw-1(config-line)#exi
sch-sochi-gw-1(config-line)#exit
sch-sochi-gw-1(config)#line console 0
sch-sochi-gw-1(config-line)#pass
sch-sochi-gw-1(config-line)#password cisco
sch-sochi-gw-1(config-line)#login
sch-sochi-gw-1(config-line)#exi
sch-sochi-gw-1(config-line)#exit
sch-sochi-gw-1(config)#ena
sch-sochi-gw-1(config)#enable secre
sch-sochi-gw-1(config)#enable secret cisco
sch-sochi-gw-1(config)#service pass
sch-sochi-gw-1(config)#service password-encryption
sch-sochi-gw-1(config)#username admin privilege 1 secret cisco
sch-sochi-gw-1(config)#ip doma
sch-sochi-gw-1(config)#ip domain
sch-sochi-gw-1(config)#ip domain-
sch-sochi-gw-1(config)#ip domain-n
sch-sochi-gw-1(config)#ip domain-name sochi.rudn.edu
sch-sochi-gw-1(config)#crypt
sch-sochi-gw-1(config)#crypto key
sch-sochi-gw-1(config)#crypto key gen
sch-sochi-gw-1(config)#crypto key generate rsA
sch-sochi-gw-1(config)#crypto key generate rsa
```

Первоначальная настройка для маршрутизатора sochi .

```
Choose the size of the key modulus in the range of 512 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-gw-1(config)#line vty 0 4  
*Mar 1 0:50:36.800: RSA key size needs to be at least 768 bits for ssh vers:  
*Mar 1 0:50:36.800: %SSH-5-ENABLED: SSH 1.5 has been enabled  
sch-sochi-gw-1(config-line)#line vty 0 4  
sch-sochi-gw-1(config-line)#transport input ssh  
sch-sochi-gw-1(config-line)#ex  
sch-sochi-gw-1(config-line)#exit  
sch-sochi-gw-1(config)#exi  
sch-sochi-gw-1(config)#exit  
sch-sochi-gw-1#  
%SYS-5-CONFIG_I: Configured from console by console  
  
sch-sochi-gw-1#wr m  
Building configuration...  
[OK]  
sch-sochi-gw-1#
```

```
sch-sochi-gw-1 con0 is now available
```

Спасибо за внимание.
