МИНЕСТЕРСТВО ОБРАЗОВАНИЯ РЕСПУБЛИКИ БЕЛАРУСЬ

УЧЕРЕЖДЕНИЕ ОБРАЗОВАНИЯ

«Брестский государственный технический университет»

Кафедра «Интеллектуальные информационные технологии»

Лабораторная работа №8

По дисциплине «Аппаратно-программное обеспечение ЭВМ и сетей»

За 6 семестр

Тема: «НАСТРОЙКА ДИНАМИЧЕСКОЙ МАРШРУТИЗАЦИИ С ПОМОЩЬЮ ПРОТОКОЛА RIP НА УСТРОЙСТВАХ CISCO»

Выполнила:

студентка 3 курса

группы АС-56

Карпенко М.В.

Проверил:

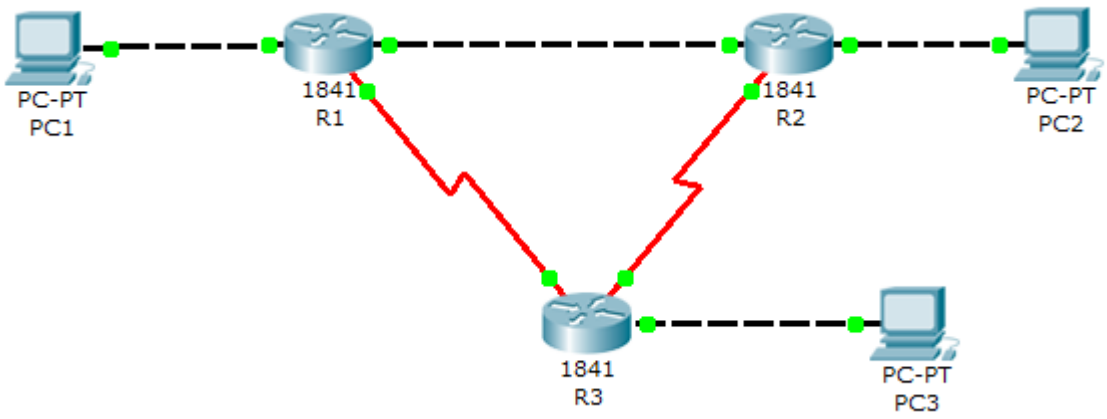
Булей Е.В.

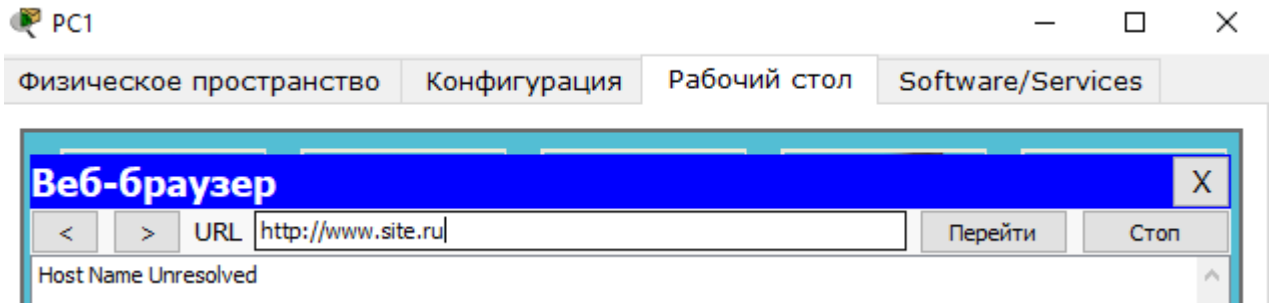
Брест 2022

Вариант 4

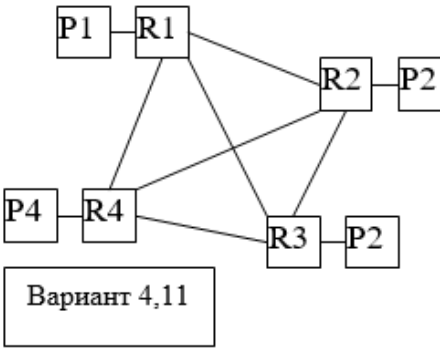
Задание.

1. Загрузив lab5-b.pdf, изучить материал; выполнить этапы настройки динамической маршрутизации с помощью протокола rip на устройствах Cisco.





2. Собрать схему сети согласно выданному варианту задания; распределить IP-адреса по аналогии с примером в lab5-b.pdf; составить таблицу сетевых адресов; сконфигурировать устройства.



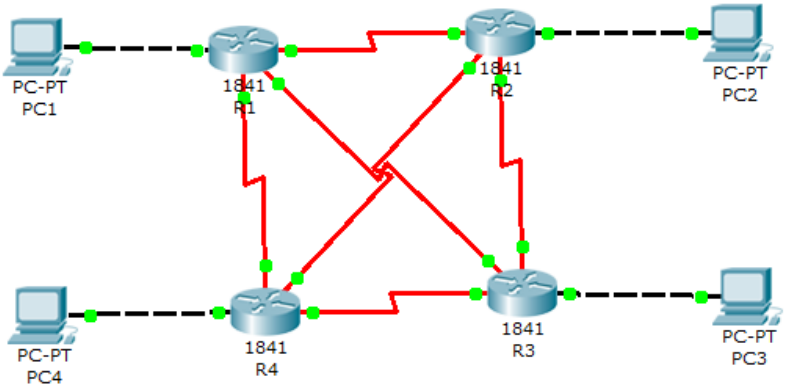


Таблица сетевых адресов

Device	Interface	IP Address	Mask	Default Gateway
R1	Fa0/0	192.168.1.1	255.255.255.0	N/A
	S0/0/0	10.0.0.1	255.255.255.252	N/A

	S0/1/1	10.0.0.5	255.255.255.252	N/A
	S0/1/0	10.0.0.9	255.255.255.252	N/A
R2	Fa0/0	192.168.2.1	255.255.255.0	N/A
	S0/0/0	10.0.0.2	255.255.255.252	N/A
	S0/1/1	10.0.0.13	255.255.255.252	N/A
	S0/1/0	10.0.0.17	255.255.255.252	N/A
R3	Fa0/0	192.168.3.1	255.255.255.0	N/A
	S0/0/0	10.0.0.21	255.255.255.252	N/A
	S0/1/1	10.0.0.6	255.255.255.252	N/A
	S0/1/0	10.0.0.18	255.255.255.252	N/A
R4	Fa0/0	192.168.4.1	255.255.255.0	N/A
	S0/0/0	10.0.0.22	255.255.255.252	N/A
	S0/1/1	10.0.0.14	255.255.255.252	N/A
	S0/1/0	10.0.0.10	255.255.255.252	N/A
P1	N/A	192.168.1.27	255.255.255.0	192.168.1.1
P2	N/A	192.168.2.27	255.255.255.0	192.168.2.1
P3	N/A	192.168.3.27	255.255.255.0	192.168.3.1
P4	N/A	192.168.4.27	255.255.255.0	192.168.4.1

3. Для собранной схемы сети выполнить настройку динамической маршрутизации с помощью протокола rip маршрутизации.
- схему сети с IP-адресами

```
Gateway of last resort is not set

     10.0.0.0/30 is subnetted, 6 subnets
C       10.0.0.0 is directly connected, Serial0/0/0
C       10.0.0.4 is directly connected, Serial0/1/1
C       10.0.0.8 is directly connected, Serial0/1/0
R       10.0.0.12 [120/1] via 10.0.0.2, 00:00:14, Serial0/0/0
                  [120/1] via 10.0.0.10, 00:00:03, Serial0/1/0
R       10.0.0.16 [120/1] via 10.0.0.2, 00:00:14, Serial0/0/0
                  [120/1] via 10.0.0.6, 00:00:13, Serial0/1/1
R       10.0.0.20 [120/1] via 10.0.0.6, 00:00:13, Serial0/1/1
                  [120/1] via 10.0.0.10, 00:00:03, Serial0/1/0
C    192.168.1.0/24 is directly connected, FastEthernet0/0
R    192.168.2.0/24 [120/1] via 10.0.0.2, 00:00:14, Serial0/0/0
R    192.168.3.0/24 [120/1] via 10.0.0.6, 00:00:13, Serial0/1/1
R    192.168.4.0/24 [120/1] via 10.0.0.10, 00:00:03, Serial0/1/0
R1#
Gateway of last resort is not set

     10.0.0.0/30 is subnetted, 6 subnets
C       10.0.0.0 is directly connected, Serial0/0/0
R       10.0.0.4 [120/1] via 10.0.0.1, 00:00:10, Serial0/0/0
                 [120/1] via 10.0.0.18, 00:00:27, Serial0/1/0
R       10.0.0.8 [120/1] via 10.0.0.1, 00:00:10, Serial0/0/0
                 [120/1] via 10.0.0.14, 00:00:19, Serial0/1/1
C       10.0.0.12 is directly connected, Serial0/1/1
C       10.0.0.16 is directly connected, Serial0/1/0
R       10.0.0.20 [120/1] via 10.0.0.18, 00:00:27, Serial0/1/0
                  [120/1] via 10.0.0.14, 00:00:19, Serial0/1/1
R    192.168.1.0/24 [120/1] via 10.0.0.1, 00:00:10, Serial0/0/0
C    192.168.2.0/24 is directly connected, FastEthernet0/0
R    192.168.3.0/24 [120/1] via 10.0.0.18, 00:00:27, Serial0/1/0
R    192.168.4.0/24 [120/1] via 10.0.0.14, 00:00:19, Serial0/1/1
R2#
```

```
Gateway of last resort is not set

     10.0.0.0/30 is subnetted, 6 subnets
R       10.0.0.0 [120/1] via 10.0.0.5, 00:00:02, Serial0/1/1
                 [120/1] via 10.0.0.17, 00:00:26, Serial0/1/0
C       10.0.0.4 is directly connected, Serial0/1/1
R       10.0.0.8 [120/1] via 10.0.0.5, 00:00:02, Serial0/1/1
                 [120/1] via 10.0.0.22, 00:00:10, Serial0/0/0
R       10.0.0.12 [120/1] via 10.0.0.17, 00:00:26, Serial0/1/0
                  [120/1] via 10.0.0.22, 00:00:10, Serial0/0/0
C       10.0.0.16 is directly connected, Serial0/1/0
C       10.0.0.20 is directly connected, Serial0/0/0
R    192.168.1.0/24 [120/1] via 10.0.0.5, 00:00:02, Serial0/1/1
R    192.168.2.0/24 [120/1] via 10.0.0.17, 00:00:26, Serial0/1/0
C    192.168.3.0/24 is directly connected, FastEthernet0/0
R    192.168.4.0/24 [120/1] via 10.0.0.22, 00:00:10, Serial0/0/0
R3#
```

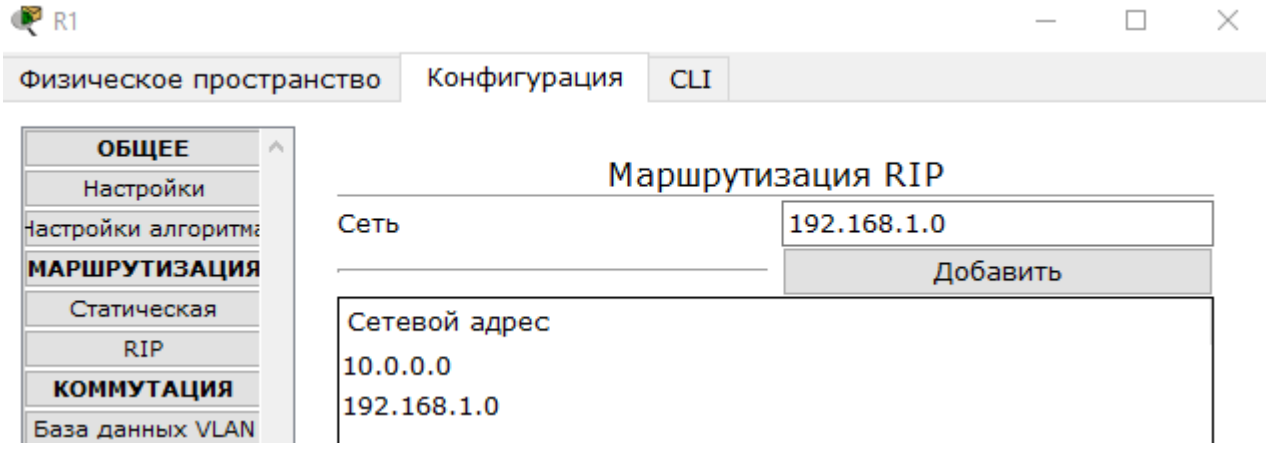
```
Gateway of last resort is not set

     10.0.0.0/30 is subnetted, 6 subnets
R       10.0.0.0 [120/1] via 10.0.0.9, 00:00:15, Serial0/1/0
                 [120/1] via 10.0.0.13, 00:00:10, Serial0/1/1
R       10.0.0.4 [120/1] via 10.0.0.21, 00:00:00, Serial0/0/0
                 [120/1] via 10.0.0.9, 00:00:15, Serial0/1/0
C       10.0.0.8 is directly connected, Serial0/1/0
C       10.0.0.12 is directly connected, Serial0/1/1
R       10.0.0.16 [120/1] via 10.0.0.21, 00:00:00, Serial0/0/0
                  [120/1] via 10.0.0.13, 00:00:10, Serial0/1/1
C       10.0.0.20 is directly connected, Serial0/0/0
R    192.168.1.0/24 [120/1] via 10.0.0.9, 00:00:15, Serial0/1/0
R    192.168.2.0/24 [120/1] via 10.0.0.13, 00:00:10, Serial0/1/1
R    192.168.3.0/24 [120/1] via 10.0.0.21, 00:00:00, Serial0/0/0
C    192.168.4.0/24 is directly connected, FastEthernet0/0
R4#
```

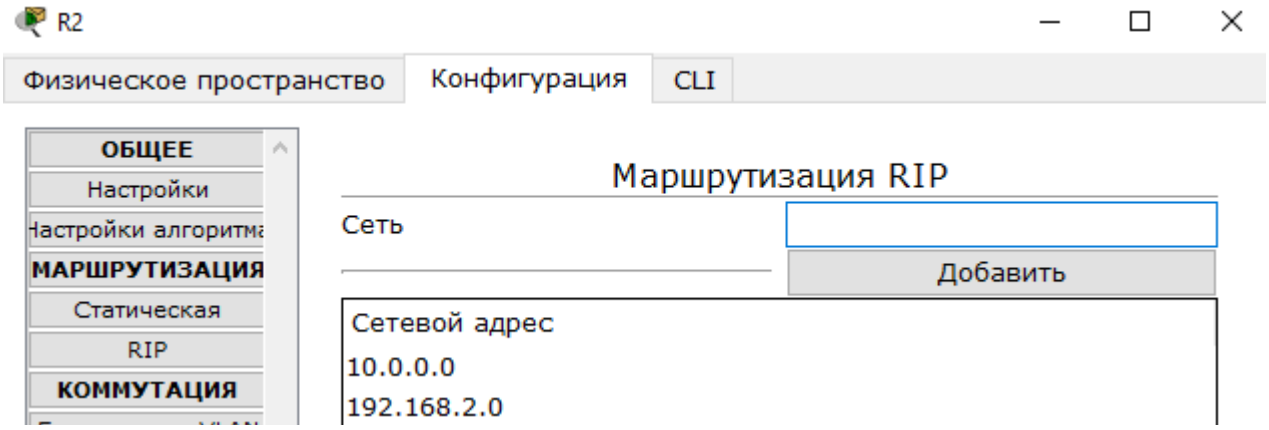
- таблицу IP-адресов

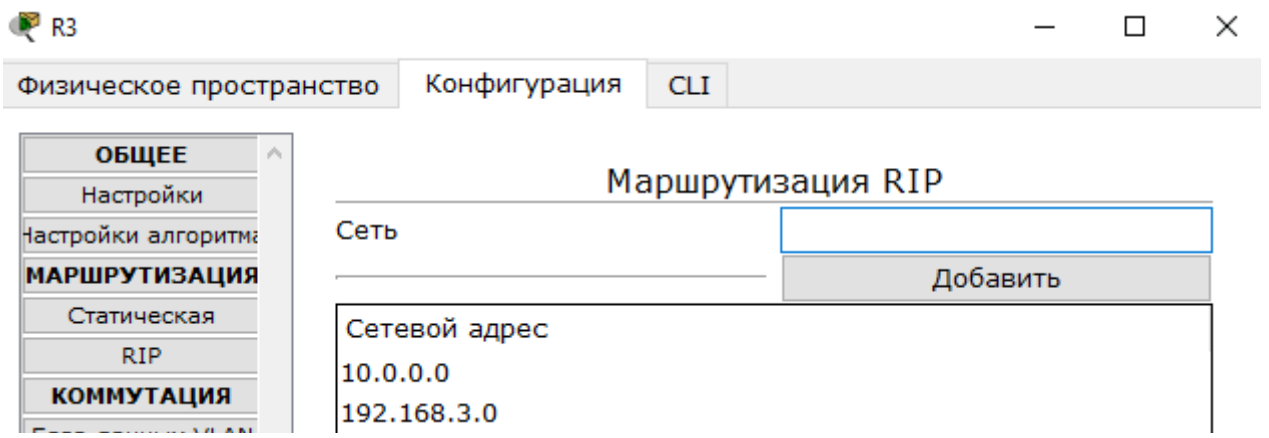
```
R1#sh ip interface brief
Interface              IP-Address      OK? Method Status                Protocol

FastEthernet0/0        192.168.1.1     YES manual up                    up

FastEthernet0/1        unassigned      YES unset  administratively down down

Serial0/0/0            10.0.0.1        YES manual up                    up

Serial0/1/0            10.0.0.9        YES manual up                    up

Serial0/1/1            10.0.0.5        YES manual up                    up

Vlan1                  unassigned      YES unset  administratively down down
R2#sh ip interface brief
Interface              IP-Address      OK? Method Status                Protocol

FastEthernet0/0        192.168.2.1     YES manual up                    up

FastEthernet0/1        unassigned      YES unset  administratively down down

Serial0/0/0            10.0.0.2        YES manual up                    up

Serial0/1/0            10.0.0.17       YES manual up                    up

Serial0/1/1            10.0.0.13       YES manual up                    up

Vlan1                  unassigned      YES unset  administratively down down
```

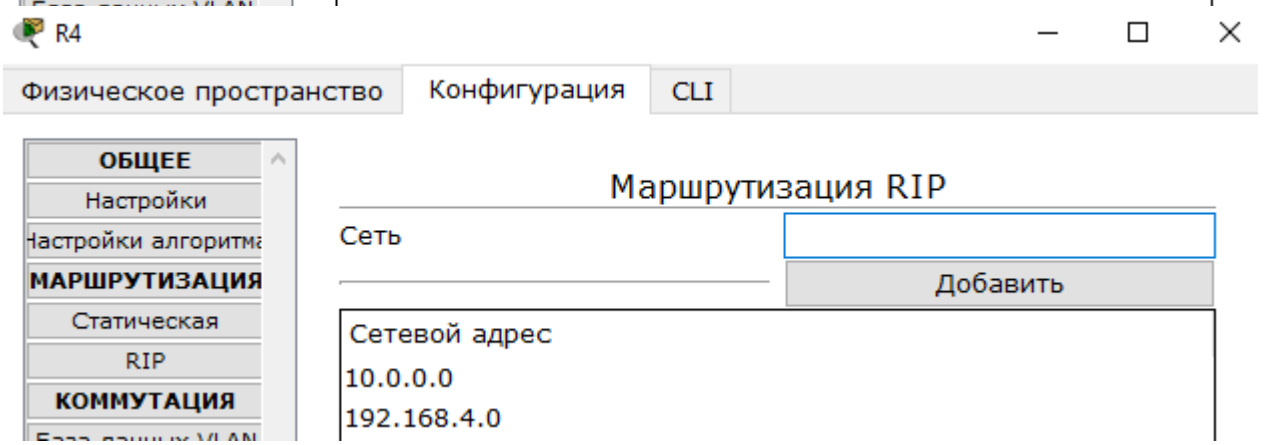
```
R3#sh ip interface brief
Interface              IP-Address      OK? Method Status                Protocol

FastEthernet0/0        192.168.3.1     YES manual up                    up

FastEthernet0/1        unassigned      YES unset  administratively down down

Serial0/0/0            10.0.0.21       YES manual up                    up

Serial0/1/0            10.0.0.18       YES manual up                    up

Serial0/1/1            10.0.0.6        YES manual up                    up

Vlan1                  unassigned      YES unset  administratively down down
R4#sh ip interface brief
Interface              IP-Address      OK? Method Status                Protocol

FastEthernet0/0        192.168.4.1     YES manual up                    up

FastEthernet0/1        unassigned      YES unset  administratively down down

Serial0/0/0            10.0.0.22       YES manual up                    up

Serial0/1/0            10.0.0.10       YES manual up                    up

Serial0/1/1            10.0.0.14       YES manual up                    up

Vlan1                  unassigned      YES unset  administratively down down
```

- ход настройки статической маршрутизации по методике, приведенной в lab5-b.pdf

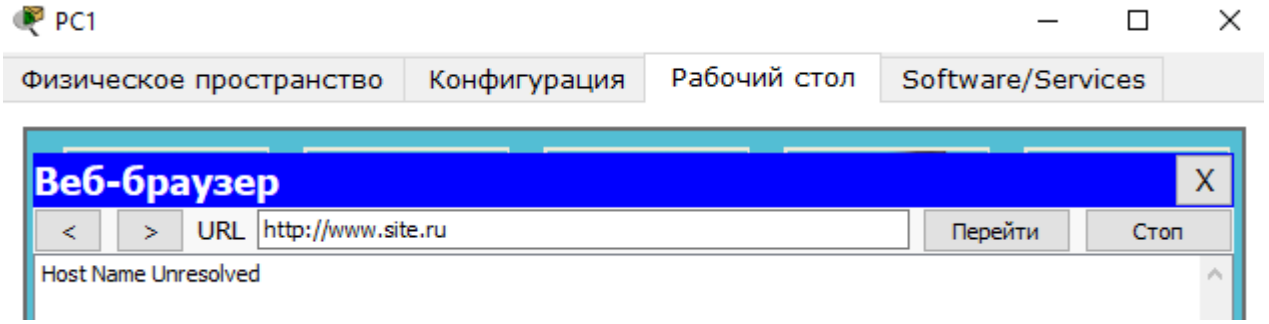


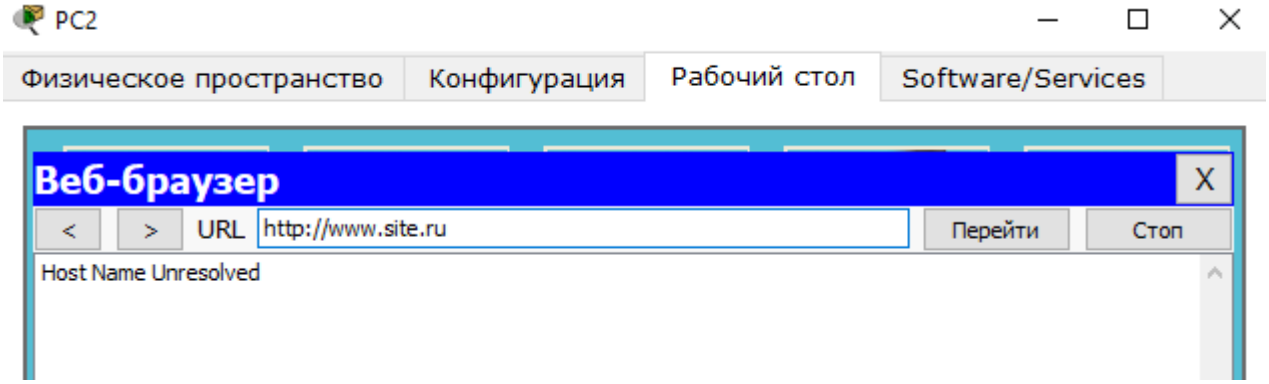






- ход и результаты проверки и тестирования сети по методике, приведенной в lab5-a.pdf

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Физическое пространство
Конфигурация
Рабочий стол
Software/Services
Веб-браузер
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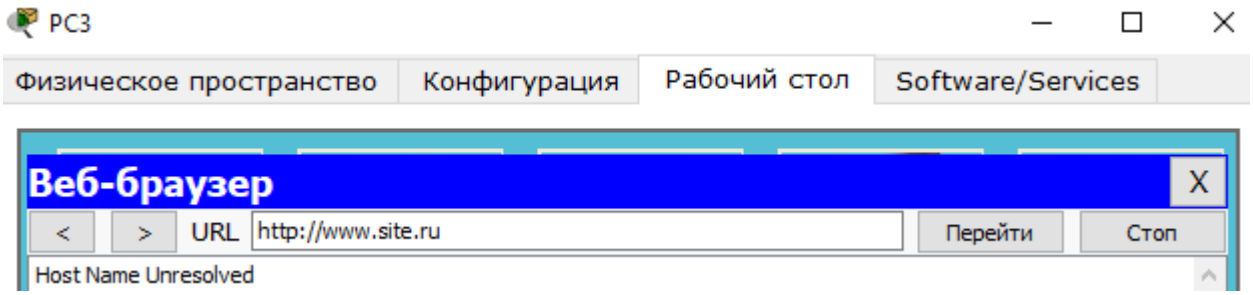
http://www.site.ru
Перейти
Стоп
Host Name Unresolved


PC3
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Конфигурация
Рабочий стол
Software/Services
Веб-браузер
X
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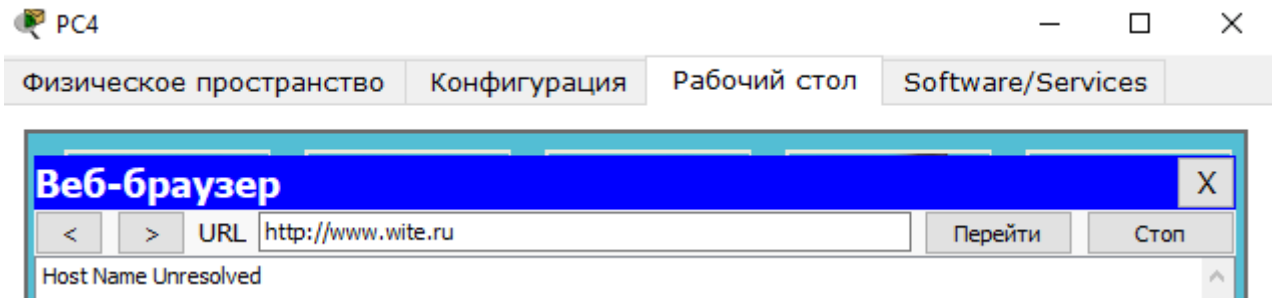
>
URL
http://www.site.ru
Перейти
Стоп
Host Name Unresolved


PC4
Физическое пространство
Конфигурация
Рабочий стол
Software/Services
Веб-браузер
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