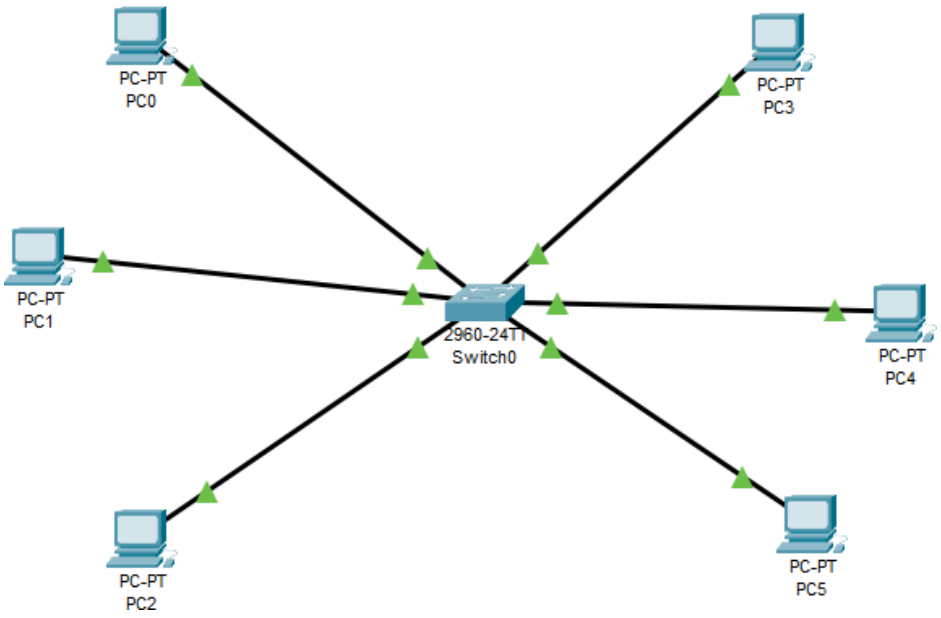
Практическая работа 12 - настройка передачи данных между сетями на маршрутизаторе

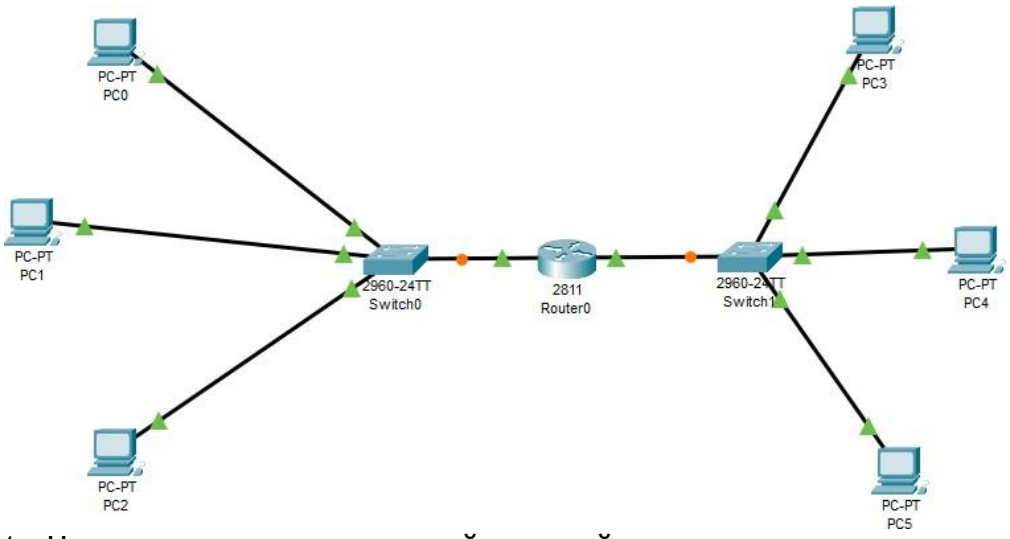
1. Создаю сеть



2. Пропинговываю

```
C:\>ping 192.168.0.2

Pinging 192.168.0.2 with 32 bytes of data:

Reply from 192.168.0.2: bytes=32 time<1ms TTL=128
Reply from 192.168.0.2: bytes=32 time<1ms TTL=128
Reply from 192.168.0.2: bytes=32 time<1ms TTL=128
Reply from 192.168.0.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.169.0.2

Pinging 192.169.0.2 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.169.0.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

3. Изменяю сеть



4. Настраиваю роутер для левой и правой стороны

5. Пропинговываю через роутер

```
Router#ping 192.168.0.0

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.0.0, timeout is 2 seconds:

Reply to request 0 from 192.168.0.3, 0 ms
Reply to request 0 from 192.168.0.2, 0 ms
Reply to request 0 from 192.168.0.1, 0 ms
Reply to request 1 from 192.168.0.3, 1 ms
Reply to request 1 from 192.168.0.2, 1 ms
Reply to request 1 from 192.168.0.1, 1 ms
Reply to request 2 from 192.168.0.3, 0 ms
Reply to request 2 from 192.168.0.2, 0 ms
Reply to request 2 from 192.168.0.1, 0 ms
Reply to request 3 from 192.168.0.3, 0 ms
Reply to request 3 from 192.168.0.2, 0 ms
Reply to request 3 from 192.168.0.1, 0 ms
Reply to request 4 from 192.168.0.3, 0 ms
Reply to request 4 from 192.168.0.2, 0 ms
Reply to request 4 from 192.168.0.1, 0 ms
```

6. Повторно пропинговываю

```
C:\>ping 192.168.0.2

Pinging 192.168.0.2 with 32 bytes of data:

Reply from 192.168.0.2: bytes=32 time<1ms TTL=128
Reply from 192.168.0.2: bytes=32 time=1ms TTL=128
Reply from 192.168.0.2: bytes=32 time<1ms TTL=128
Reply from 192.168.0.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.169.0.2

Pinging 192.169.0.2 with 32 bytes of data:

Reply from 192.168.0.254: Destination host unreachable.
Reply from 192.168.0.254: Destination host unreachable.
Reply from 192.168.0.254: Destination host unreachable.
Request timed out.

Ping statistics for 192.169.0.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

ping внутри одной подсети проходит успешно, между разными подсетями — нет, если маршрутизатор не настроен. Это происходит, потому что компьютеры в разных сетях требуют маршрутизации. Это происходит потому, что компьютеры в одной подсети обмениваются данными напрямую, а для связи между разными подсетями нужен маршрутизатор. Если он не настроен или отсутствуют правильные маршруты и шлюзы, пакеты не могут передаваться между сетями.