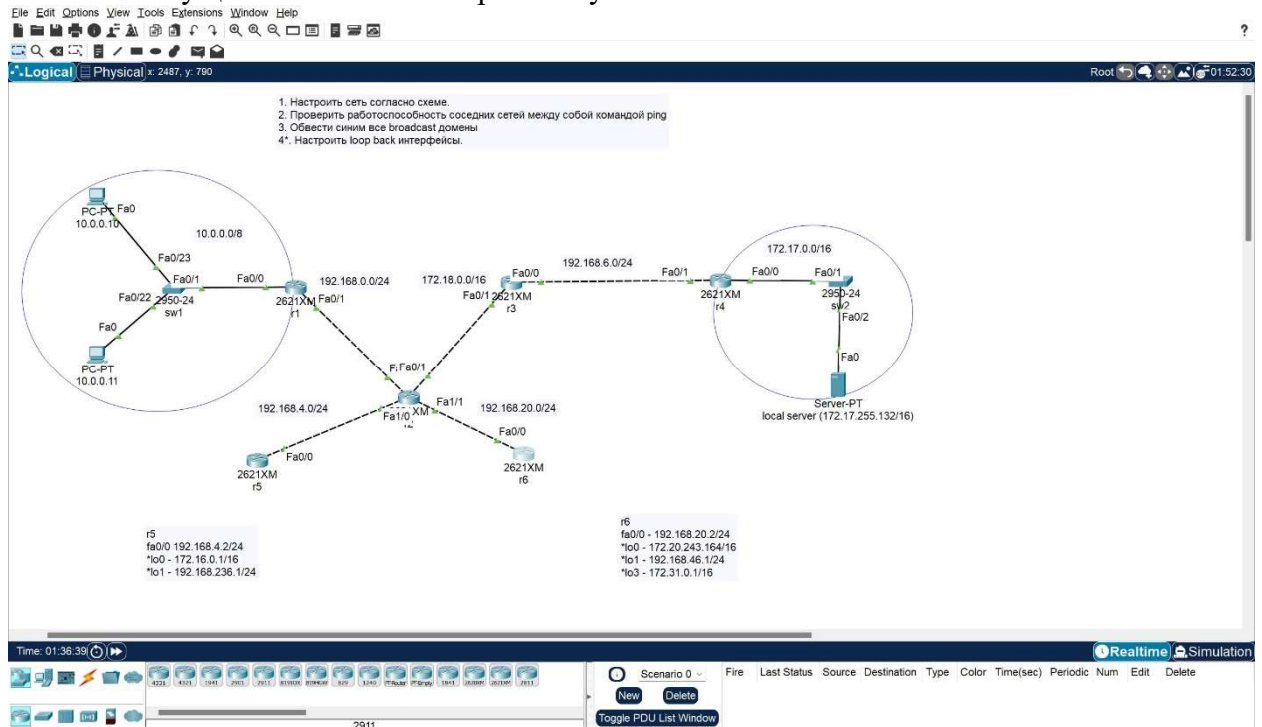


Компьютерные сети

Семинар 2

Домашнее задание

1. Восстановленная сеть с поднятыми линками,
3. В качестве Broadcast domain выступают 2-е сети:
 - 10.0.0.0/8 и 172.17.0.0/16 т.к в данных сетях имеются устройства способные осуществлять broadcast рассылку.



2. Проверить работоспособность соседних сетей между собой командой ping:

- ping с сервера Server-PT(172.17.255.132/16) на роутер r4 (192.168.6.2/24)

```
local server (172.17.255.132/16)
```

```
Physical Config Services Desktop Programming Attributes
Command Prompt
Approximate round trip times in milli-seconds:
  Minimum = 0ms, Maximum = 26ms, Average = 6ms

C:\>
ping 172.17.0.1

Pinging 172.17.0.1 with 32 bytes of data:

Reply from 172.17.0.1: bytes=32 time=30ms TTL=255
Reply from 172.17.0.1: bytes=32 time<1ms TTL=255
Reply from 172.17.0.1: bytes=32 time<1ms TTL=255
Reply from 172.17.0.1: bytes=32 time<1ms TTL=255

Ping statistics for 172.17.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 30ms, Average = 7ms

C:\>clear
Invalid Command.

C:\>ping 192.168.6.2

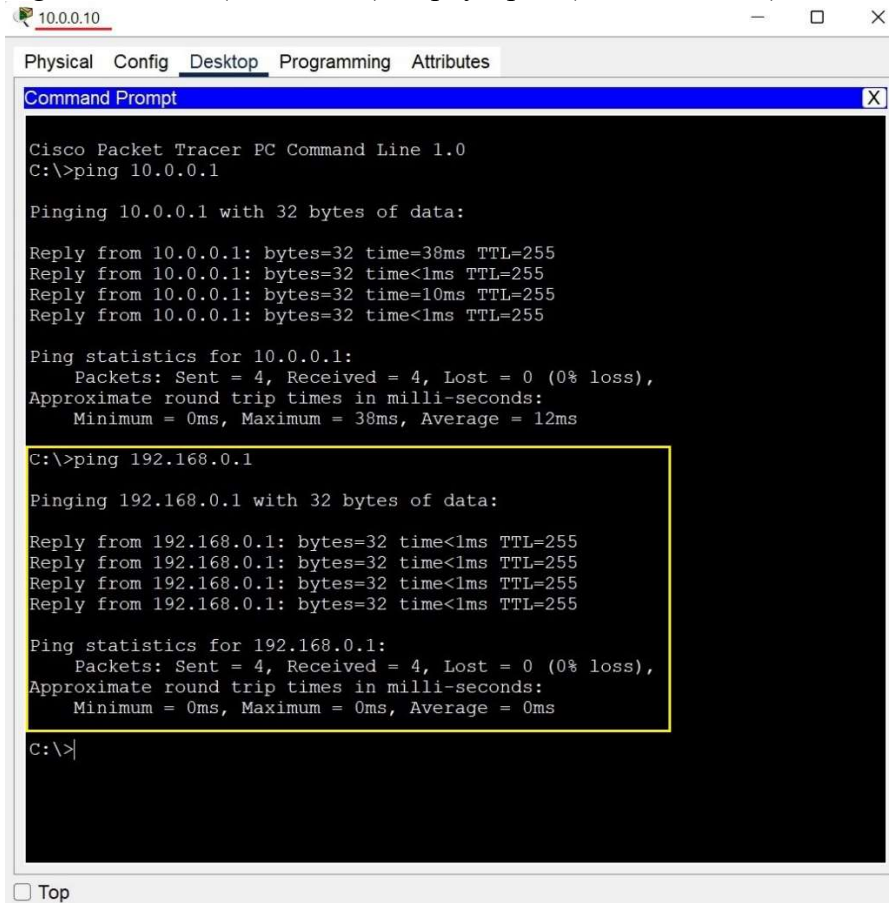
Pinging 192.168.6.2 with 32 bytes of data:

Reply from 192.168.6.2: bytes=32 time<1ms TTL=255
Reply from 192.168.6.2: bytes=32 time<1ms TTL=255
Reply from 192.168.6.2: bytes=32 time<1ms TTL=255
Reply from 192.168.6.2: bytes=32 time=11ms TTL=255

Ping statistics for 192.168.6.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 11ms, Average = 2ms

C:\>
```

- ping с ПК PC-PT(10.0.0.10/8) на роутер r1 (192.168.0.1/24)



The screenshot shows a Cisco Packet Tracer PC Command Line window for a device named 10.0.0.10. The window has tabs for Physical, Config, Desktop, Programming, and Attributes, with Desktop selected. The Command Prompt shows the following output:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

Reply from 10.0.0.1: bytes=32 time=38ms TTL=255
Reply from 10.0.0.1: bytes=32 time<1ms TTL=255
Reply from 10.0.0.1: bytes=32 time=10ms TTL=255
Reply from 10.0.0.1: bytes=32 time<1ms TTL=255

Ping statistics for 10.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 38ms, Average = 12ms

C:\>ping 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>|
```

At the bottom of the window, there is a checkbox labeled "Top" which is currently unchecked.

4. Настроить loopback интерфейсы

- роутер r5

r5

Physical Config CLI Attributes

IOS Command Line Interface

```
Received 0 broadcasts, 0 runs, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
0 input packets with dribble condition detected
0 packets output, 0 bytes, 0 underruns
0 output errors, 0 collisions, 2 interface resets
0 babbles, 0 late collision, 0 deferred
0 lost carrier, 0 no carrier
0 output buffer failures, 0 output buffers swapped out
Loopback0 is up, line protocol is up (connected)
Hardware is Loopback
Internet address is 172.16.0.1/16
MTU 1514 bytes, BW 8000000 Kbit, DLY 5000 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation LOOPBACK, loopback not set
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Queueing strategy: fifo
Output queue 0/0, 0 drops; input queue 0/75, 0 drops
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts, 0 runs, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    0 input packets with dribble condition detected
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 0 collisions, 0 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
Loopback1 is up, line protocol is up (connected)
Hardware is Loopback
Internet address is 192.168.236.1/24
MTU 1514 bytes, BW 8000000 Kbit, DLY 5000 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation LOOPBACK, loopback not set
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Queueing strategy: fifo
Output queue 0/0, 0 drops; input queue 0/75, 0 drops
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts, 0 runs, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    0 input packets with dribble condition detected
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 0 collisions, 0 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out

Router#
```

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Physical
Config
CLI
Attributes

IOS Command Line Interface

```

5 minute output rate 0 bits/sec, 0 packets/sec
 0 packets input, 0 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
 0 input packets with dribble condition detected
 0 packets output, 0 bytes, 0 underruns
 0 output errors, 0 collisions, 2 interface resets
 0 babbles, 0 late collision, 0 deferred
 0 lost carrier, 0 no carrier
 0 output buffer failures, 0 output buffers swapped out
Loopback0 is up, line protocol is up (connected)
Hardware is Loopback
Internet address is 172.20.243.164/16
MTU 1514 bytes, BW 8000000 Kbit, DLY 5000 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation LOOPBACK, loopback not set
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Queueing strategy: fifo
Output queue 0/0, 0 drops; input queue 0/75, 0 drops
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
 0 packets input, 0 bytes, 0 no buffer
  Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
 0 input packets with dribble condition detected
 0 packets output, 0 bytes, 0 underruns
 0 output errors, 0 collisions, 0 interface resets
 0 babbles, 0 late collision, 0 deferred
 0 lost carrier, 0 no carrier
 0 output buffer failures, 0 output buffers swapped out
Loopback1 is up, line protocol is up (connected)
Hardware is Loopback
Internet address is 192.168.46.1/24
MTU 1514 bytes, BW 8000000 Kbit, DLY 5000 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation LOOPBACK, loopback not set
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Queueing strategy: fifo
Output queue 0/0, 0 drops; input queue 0/75, 0 drops
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
 0 packets input, 0 bytes, 0 no buffer
  Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
 0 input packets with dribble condition detected
 0 packets output, 0 bytes, 0 underruns
 0 output errors, 0 collisions, 0 interface resets
 0 babbles, 0 late collision, 0 deferred
 0 lost carrier, 0 no carrier
 0 output buffer failures, 0 output buffers swapped out
Loopback3 is up, line protocol is up (connected)

```

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Physical
Config
CLI
Attributes

IOS Command Line Interface

```

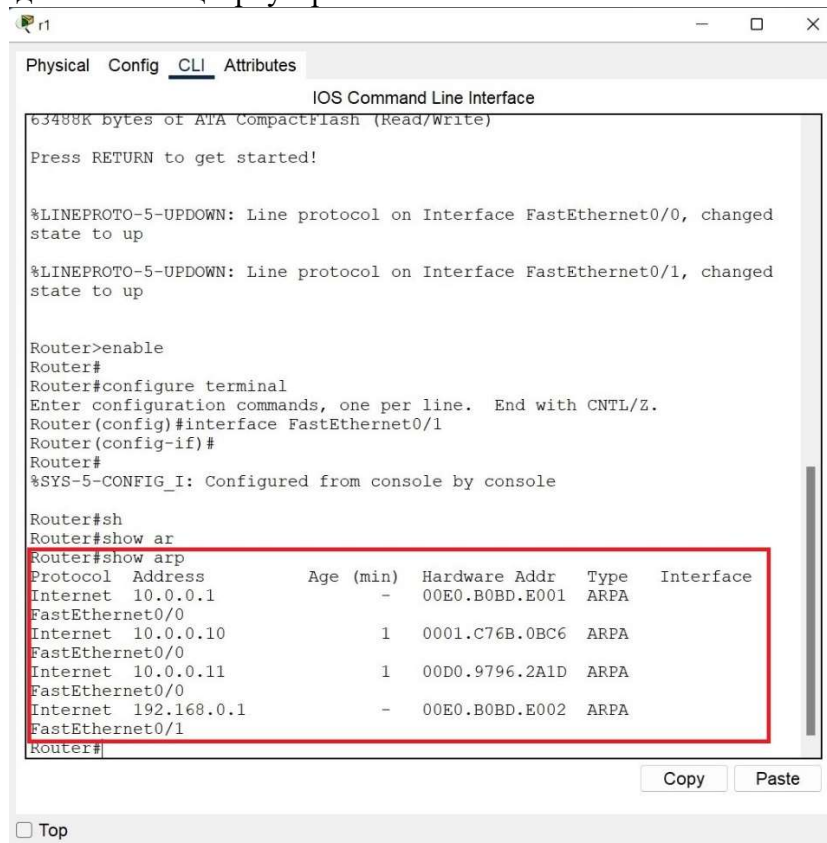
 0 packets input, 0 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
 0 input packets with dribble condition detected
 0 packets output, 0 bytes, 0 underruns
 0 output errors, 0 collisions, 0 interface resets
 0 babbles, 0 late collision, 0 deferred
 0 lost carrier, 0 no carrier
 0 output buffer failures, 0 output buffers swapped out
Loopback1 is up, line protocol is up (connected)
Hardware is Loopback
Internet address is 192.168.46.1/24
MTU 1514 bytes, BW 8000000 Kbit, DLY 5000 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation LOOPBACK, loopback not set
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Queueing strategy: fifo
Output queue 0/0, 0 drops; input queue 0/75, 0 drops
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
 0 packets input, 0 bytes, 0 no buffer
  Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
 0 input packets with dribble condition detected
 0 packets output, 0 bytes, 0 underruns
 0 output errors, 0 collisions, 0 interface resets
 0 babbles, 0 late collision, 0 deferred
 0 lost carrier, 0 no carrier
 0 output buffer failures, 0 output buffers swapped out
Loopback3 is up, line protocol is up (connected)
Hardware is Loopback
Internet address is 172.31.0.1/16
MTU 1514 bytes, BW 8000000 Kbit, DLY 5000 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation LOOPBACK, loopback not set
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Queueing strategy: fifo
Output queue 0/0, 0 drops; input queue 0/75, 0 drops
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
 0 packets input, 0 bytes, 0 no buffer
  Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
 0 input packets with dribble condition detected
 0 packets output, 0 bytes, 0 underruns
 0 output errors, 0 collisions, 0 interface resets
 0 babbles, 0 late collision, 0 deferred
 0 lost carrier, 0 no carrier
 0 output buffer failures, 0 output buffers swapped out

```

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Top

5. Вывод ARP таблицы роутера r1:



```
Physical Config CLI Attributes
IOS Command Line Interface
63488K Bytes of ATA CompactFlash (Read/Write)
Press RETURN to get started!

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed
state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed
state to up

Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/1
Router(config-if)#
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#sh
Router#show ar
Router#show arp
Protocol Address Age (min) Hardware Addr Type Interface
Internet 10.0.0.1 - 00E0.B0BD.E001 ARPA
FastEthernet0/0
Internet 10.0.0.10 1 0001.C76B.0BC6 ARPA
FastEthernet0/0
Internet 10.0.0.11 1 00D0.9796.2A1D ARPA
FastEthernet0/0
Internet 192.168.0.1 - 00E0.B0BD.E002 ARPA
FastEthernet0/1
Router#
```

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