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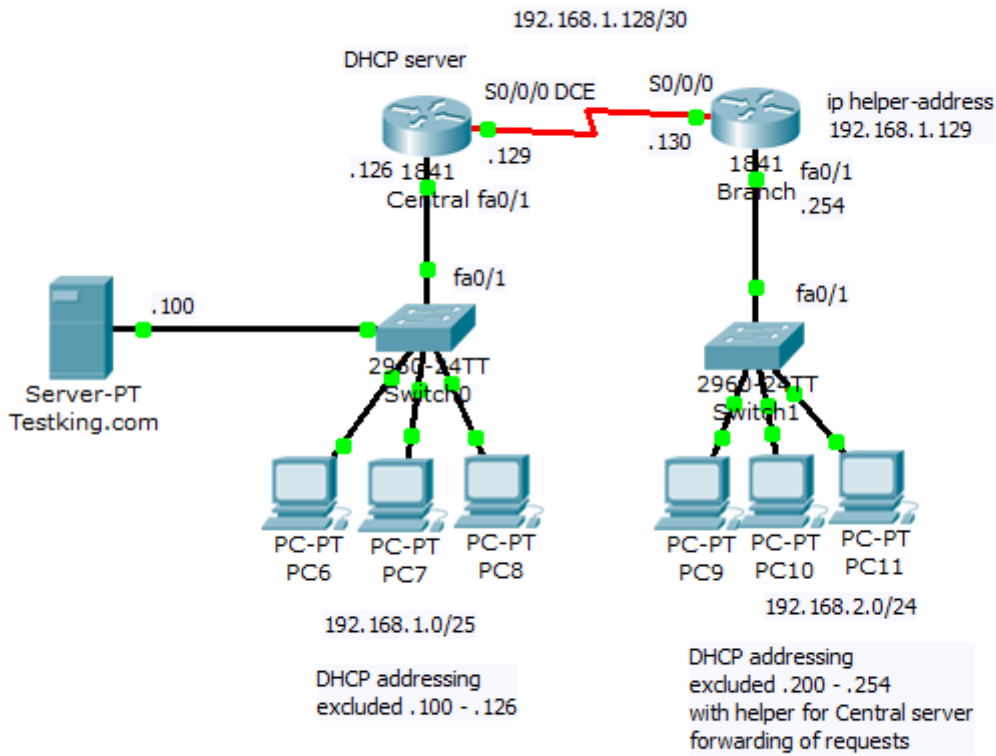
2. Packet and frame delivery

When data segment is encapsulated into packet appropriate PC must examine destination address when preparing frame creation. If destination IP is on same network as sending PC data are sent to appropriate host. Else data are sent to network interface that act as a default gateway.

This process use and-ing destination IP in binary format with binary format of network mask and next make comparison with configured network address. If they are unequal data are send to default gateway (MAC address of default gateway is set as destination address of frame). In this scenario you are encouraged to create PDU in simulation mode and examine packet delivery. Interesting are also PDU at appropriate protocol stack (Transport, network and data link layer).

Topology of our scenario is

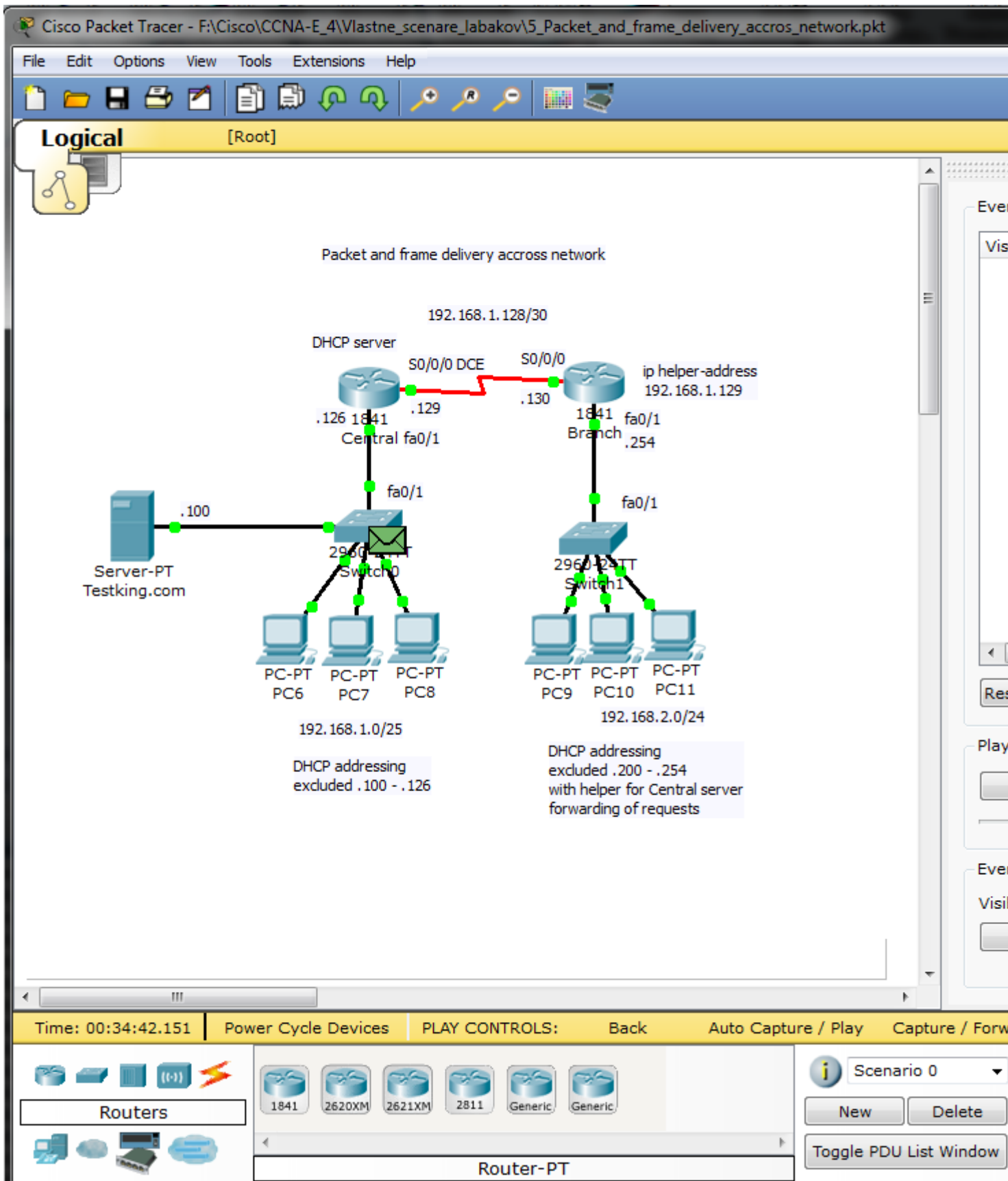
Packet and frame delivery accross network



[1]

Preconfigured scenario ([PKT 5.2 or above](#)) [2].

When you toggle betw. realtime and simulation mode, interface will change to next picture

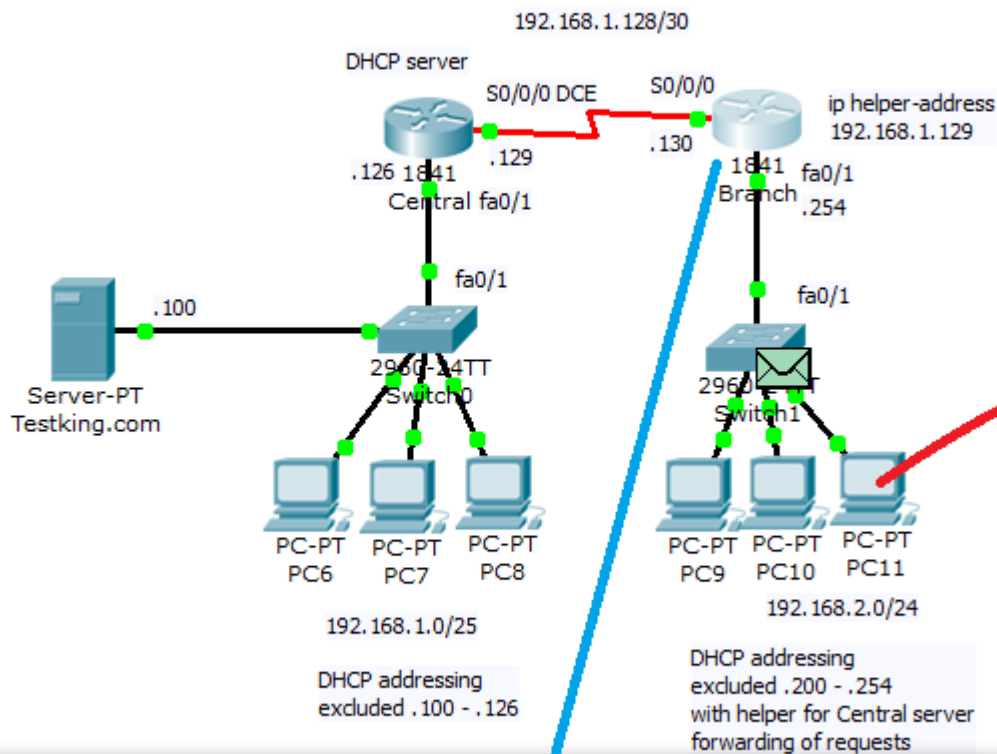


[3]

After appropriate time used for PDU propagation across network (and ARP caching for L2 encapsulation), PC11 can send frame to Branch fa0/1 interface that act as a default gateway.

You can scroll event list and look at PDU emitted by PC11 after ARP process as it show next picture.

Packet and frame delivery across network



PDU Information at Device:

OSI Model Inbound PDU

PDU Formats

Ethernet II

0	4
PREAMBLE: 101010...1011	
TYPE: 0x800	D

IP

0	4	8
4	IHL	DS
ID: 0x4		
TTL: 128		P

Branch

Physical Config CLI

IOS Command Line Interface

```

branch#show interface fa0/1
FastEthernet0/1 is up, line protocol is up (connected)
Hardware is Lance, address is 000a.f329.7902 (bia 000a.f329.7902)
Internet address is 192.168.2.254/24
MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
    reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
ARP type: ARPA, ARP Timeout 04:00:00,
Last input 00:00:08, output 00:00:05, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0 (size/max/drops); Total output drops: 0
Queueing strategy: fifo
Output queue :0/40 (size/max)
5 minute input rate 1 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  7 packets input, 416 bytes, 0 no buffer
Received 6 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
5 packets output, 310 bytes, 0 underruns
0 output errors, 0 collisions, 1 interface resets
0 babbles, 0 late collision, 0 deferred
0 lost carrier, 0 no carrier
--More--
    
```

mac of default gateway

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Links:

[1] http://cdesigner.eu/obsah/ccna/5_1.png

[2] http://cdesigner.eu/obsah/ccna/5_Packet_and_frame_delivery_accros_network.pkt

[3] http://cdesigner.eu/obsah/ccna/5_2.png

[4] http://cdesigner.eu/obsah/ccna/5_3.png

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