



HACETTEPE UNIVERSITY

DEPARTMENT OF
COMPUTER ENGINEERING

BBM453: Computer Networks Laboratory Lab 9:Router

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Group 14
Source IP : 192.168.0.27

Dec 07,2021

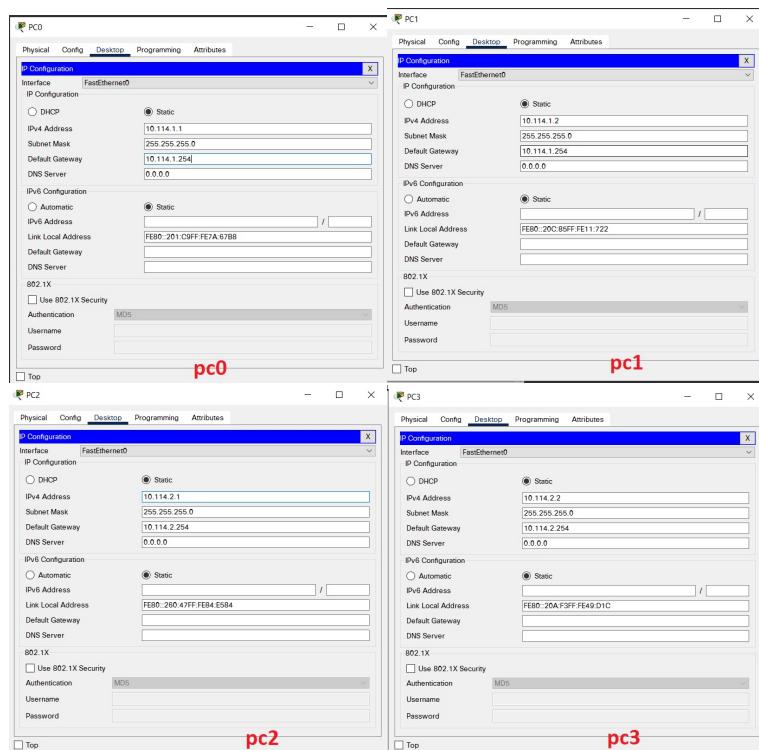
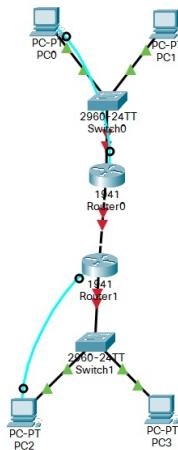
SOLUTIONS

EXPERIMENT STEPS

1. You should use one router, one switch and at least one PC for your group, and plug required cables and activate required connections. So you are going to create your own local area network with Router as a gateway. In the next lab, you're going to connect your groups and create a WAN (wide area network) as seen in Figure-2.

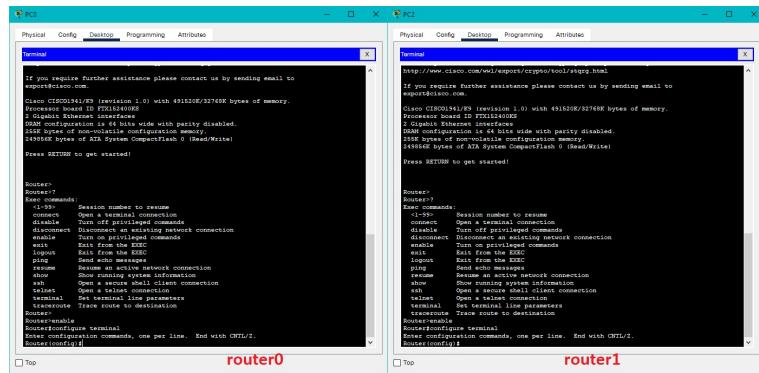
We created a network as described in the pdf.

Logical Physical x: 538, y: 344



2. You should enter enable mode if you want to configure anything on router. Show commands can be used in user or enable mode (outside of config mode). You can also use ? symbol for displaying usable commands in that mode and their simple explanations.

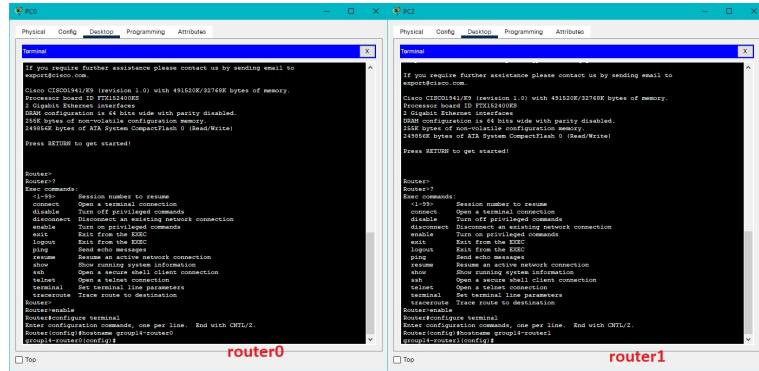
We tested the commands.



3. If there is any configuration settings stored in your Router, which may be left from previous lab sessions, you have to reset your router to factory default setting according to Cisco procedures documented in files in FTP directory of the course.

As TA stated, our router are already at reset since we are using simulator.

4. First you have to give appropriate names to your Router, according to your section/group number using hostname command



5. In this step, each group runs simple show commands, snapshot and discuss the results.

We had problem with `dir all-filesystems` command. It was trying to access disk space. So we had to show them individually.

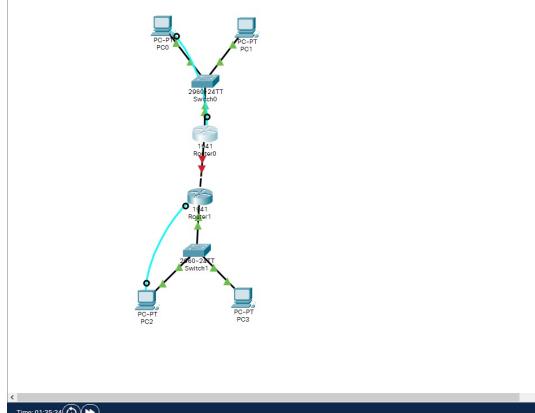


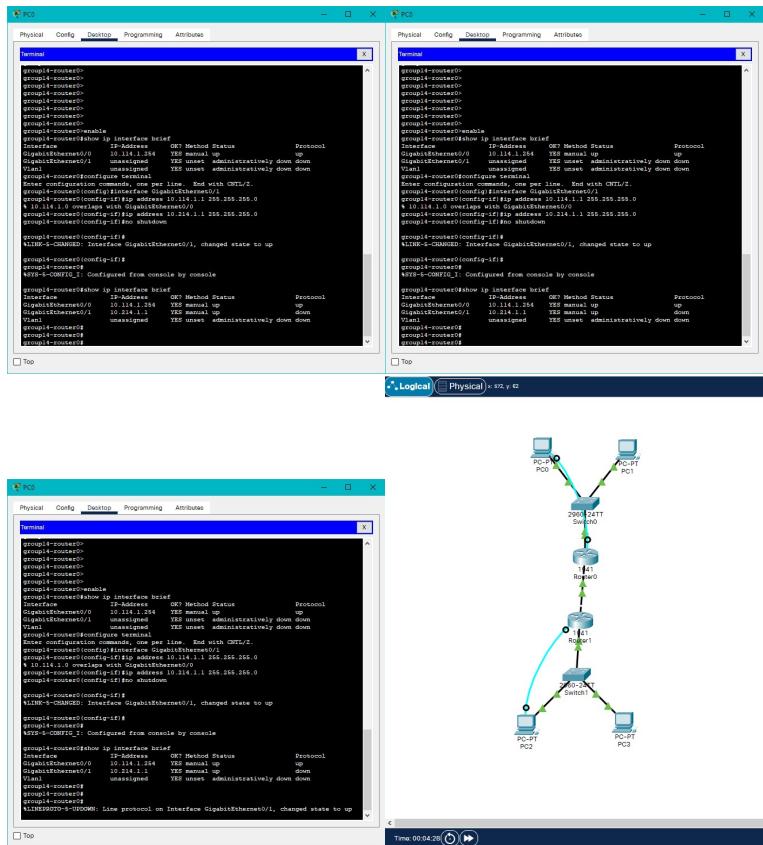
6. Configure IP address of your PC and Router according to Figure 2 - Lab Topology.

Configured them according to pdf. There are 3 sub networks, 1 between routers and 2 inside routers.

The figure displays four terminal windows from a Cisco device, likely a router or switch, showing configuration and monitoring details for two interfaces: GigabitEthernet0/0 and GigabitEthernet0/1.

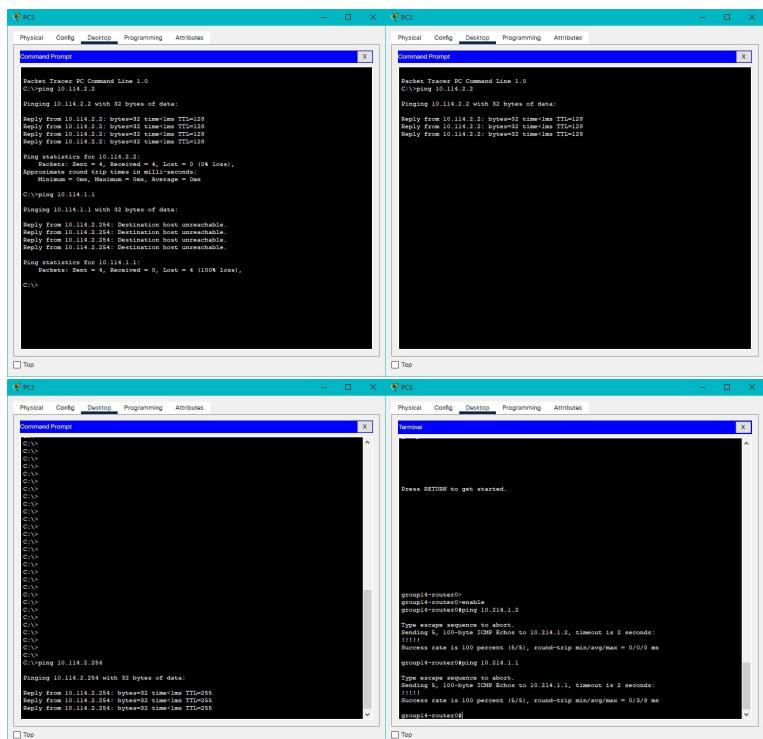
- GigabitEthernet0/0:** Administratively down, line protocol up (connected). Hardware is in CM Gigabit Ethernet, address is 0009.0e49.4701. MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec, reliability 255/255, txload 1/255, rxload 1/255. Encapsulation ARPA, loopback not set. Full-duplex, 100Mb/s, media type is Sx45. Full-duplex, 100Mb/s, media type is Sx45. Line discipline: 802.3 IEEE, input queue discipline: fIFO. Last clearing of "show interface": never. Last input 00:00:00, output 00:00:00, output hang never. Last clearing of "show interface counters": never. Input queue discipline: 0/75/0 (max/max). Output queue discipline: 0/75/0 (max/max). 5 minute input rate 0 bits/sec, 0 packets/sec. 5 minute output rate 0 bits/sec, 0 packets/sec. Received 0 broadcasts, 0 runts, 0 giants, 0 throttles. 0 watching, 1031 multicast, 0 pause input. 0 packets output, 0 bytes, 0 underruns. 0 unknown protocol drops. 0 collisions, 3 interface resets. 0 output errors. 0 lost carrier, 0 no carrier. 0 backlog, 0 late collision, 0 deferred. 0 discarded. 0 input buffers swapped out. 0 output buffers swapped out. 0 discarded. 0 output buffers swapped out. GigabitEthernet0/0 is administratively down, line protocol is down (disabled). Hardware is in CM Gigabit Ethernet, address is 0009.0e49.4702 (this 0009.0e49.4702). MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec, reliability 255/255, txload 1/255, rxload 1/255. Encapsulation ARPA, loopback not set. Keepalive set (ID selected). Last clearing of "show interface": never. Last input 00:00:00, output 00:00:00, output hang never. Last clearing of "show interface counters": never. Input queue discipline: fIFO. Output queue discipline: 0/75/0 (max/max). Total output drops: 0. Queueing strategy: FIFO. Discard strategy:尾丢弃 (tail drop). 5 minute input rate 0 bits/sec, 0 packets/sec. 5 minute output rate 0 bits/sec, 0 packets/sec. Received 0 broadcasts, 0 runts, 0 giants, 0 throttles. 0 watching, 1031 multicast, 0 pause input. 0 packets output, 0 bytes, 0 underruns. 0 unknown protocol drops. 0 collisions, 3 interface resets. 0 output errors. 0 lost carrier, 0 no carrier. 0 backlog, 0 late collision, 0 deferred. 0 discarded. 0 input buffers swapped out. 0 output buffers swapped out. 0 discarded. 0 output buffers swapped out. GigabitEthernet0/0 is administratively down, line protocol is down (disabled). Hardware is in CM Gigabit Ethernet, address is 0009.0e49.4703 (this 0009.0e49.4703). MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec, reliability 255/255, txload 1/255, rxload 1/255. Encapsulation ARPA, loopback not set. Keepalive set (ID selected). Last clearing of "show interface": never. Last input 00:00:00, output 00:00:00, output hang never. Last clearing of "show interface counters": never. Input queue discipline: fIFO. Output queue discipline: 0/75/0 (max/max). Total output drops: 0. Queueing strategy: FIFO. Discard strategy:尾丢弃 (tail drop). 5 minute input rate 0 bits/sec, 0 packets/sec. 5 minute output rate 0 bits/sec, 0 packets/sec. Received 0 broadcasts, 0 runts, 0 giants, 0 throttles. 0 watching, 1031 multicast, 0 pause input. 0 packets output, 0 bytes, 0 underruns. 0 unknown protocol drops. 0 collisions, 3 interface resets. 0 output errors. 0 lost carrier, 0 no carrier. 0 backlog, 0 late collision, 0 deferred. 0 discarded. 0 input buffers swapped out. 0 output buffers swapped out. 0 discarded. 0 output buffers swapped out.
- GigabitEthernet0/1:** Administratively down, line protocol up (connected). Hardware is in CM Gigabit Ethernet, address is 0009.0e49.4704, MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec, reliability 255/255, txload 1/255, rxload 1/255. Encapsulation ARPA, loopback not set. Full-duplex, 100Mb/s, media type is Sx45. Full-duplex, 100Mb/s, media type is Sx45. Line discipline: 802.3 IEEE, input queue discipline: fIFO. Last clearing of "show interface": never. Last input 00:00:00, output 00:00:00, output hang never. Last clearing of "show interface counters": never. Input queue discipline: 0/75/0 (max/max). Output queue discipline: 0/75/0 (max/max). 5 minute input rate 0 bits/sec, 0 packets/sec. 5 minute output rate 0 bits/sec, 0 packets/sec. Received 0 broadcasts, 0 runts, 0 giants, 0 throttles. 0 watching, 1031 multicast, 0 pause input. 0 packets output, 0 bytes, 0 underruns. 0 unknown protocol drops. 0 collisions, 3 interface resets. 0 output errors. 0 lost carrier, 0 no carrier. 0 backlog, 0 late collision, 0 deferred. 0 discarded. 0 input buffers swapped out. 0 output buffers swapped out. 0 discarded. 0 output buffers swapped out. GigabitEthernet0/1 is administratively down, line protocol is down (disabled). Hardware is in CM Gigabit Ethernet, address is 0009.0e49.4705 (this 0009.0e49.4705). MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec, reliability 255/255, txload 1/255, rxload 1/255. Encapsulation ARPA, loopback not set. Keepalive set (ID selected). Last clearing of "show interface": never. Last input 00:00:00, output 00:00:00, output hang never. Last clearing of "show interface counters": never. Input queue discipline: fIFO. Output queue discipline: 0/75/0 (max/max). Total output drops: 0. Queueing strategy: FIFO. Discard strategy:尾丢弃 (tail drop). 5 minute input rate 0 bits/sec, 0 packets/sec. 5 minute output rate 0 bits/sec, 0 packets/sec. Received 0 broadcasts, 0 runts, 0 giants, 0 throttles. 0 watching, 1031 multicast, 0 pause input. 0 packets output, 0 bytes, 0 underruns. 0 unknown protocol drops. 0 collisions, 3 interface resets. 0 output errors. 0 lost carrier, 0 no carrier. 0 backlog, 0 late collision, 0 deferred. 0 discarded. 0 input buffers swapped out. 0 output buffers swapped out. 0 discarded. 0 output buffers swapped out.

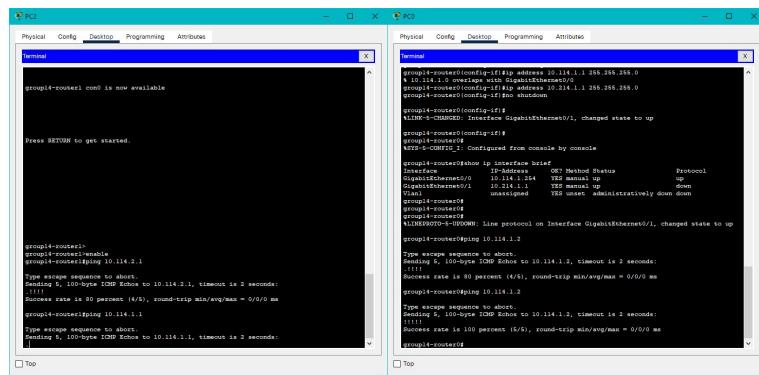




7.Finally you are able to ping in both ways (PC to Router, Router to PC), if every cable connections and IP configurations are correct.

We have done lots of pings to test our connections. PCs can connect to routers and other PCs, routers can connect to PCs and the other router. However we realized a PC can not connect to PC in another network. We could configure that by setting subnet mask 255.255.0.0 for those networks but we followed the pdf.





REFERENCES

LaTex Tutorials
Assignment Paper
Cisco Networking Academy Introduction
Cisco IOS Lan Book
Cisco VLAN Configuration
Cisco Dir Result