

5-2 Activity: Packet Tracer

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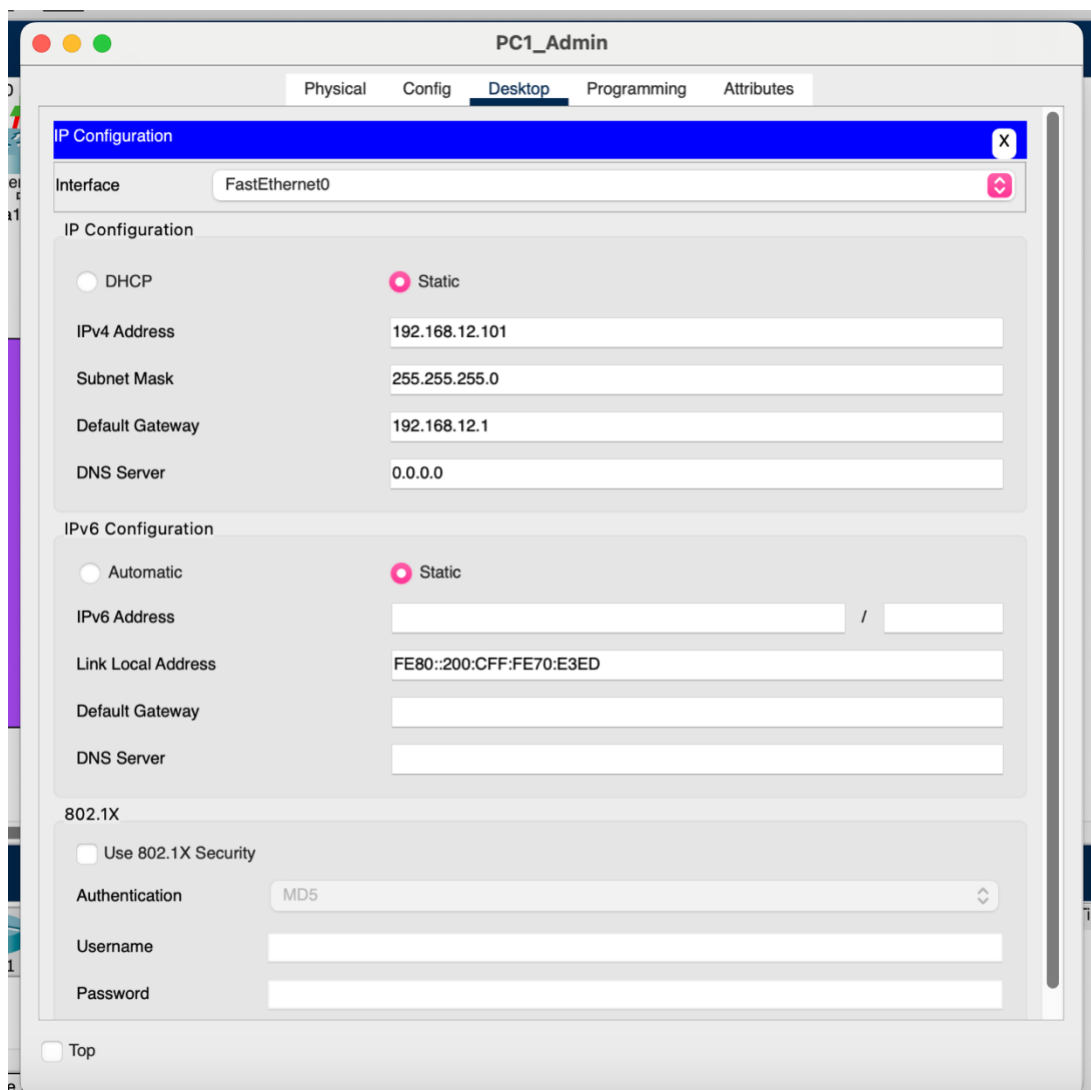
Southern New Hampshire University

CYB-210

Professor Siddiqi

5 April 2024

- I. Change **network addressing** (subnet masks, IP addressing, and default gateway) for the new network configuration.
 - A. Provide a screenshot with at least one IP **Configuration** dialog window evidencing the correct configuration of the static routing with appropriate subnet masks, IP address, and default gateway.

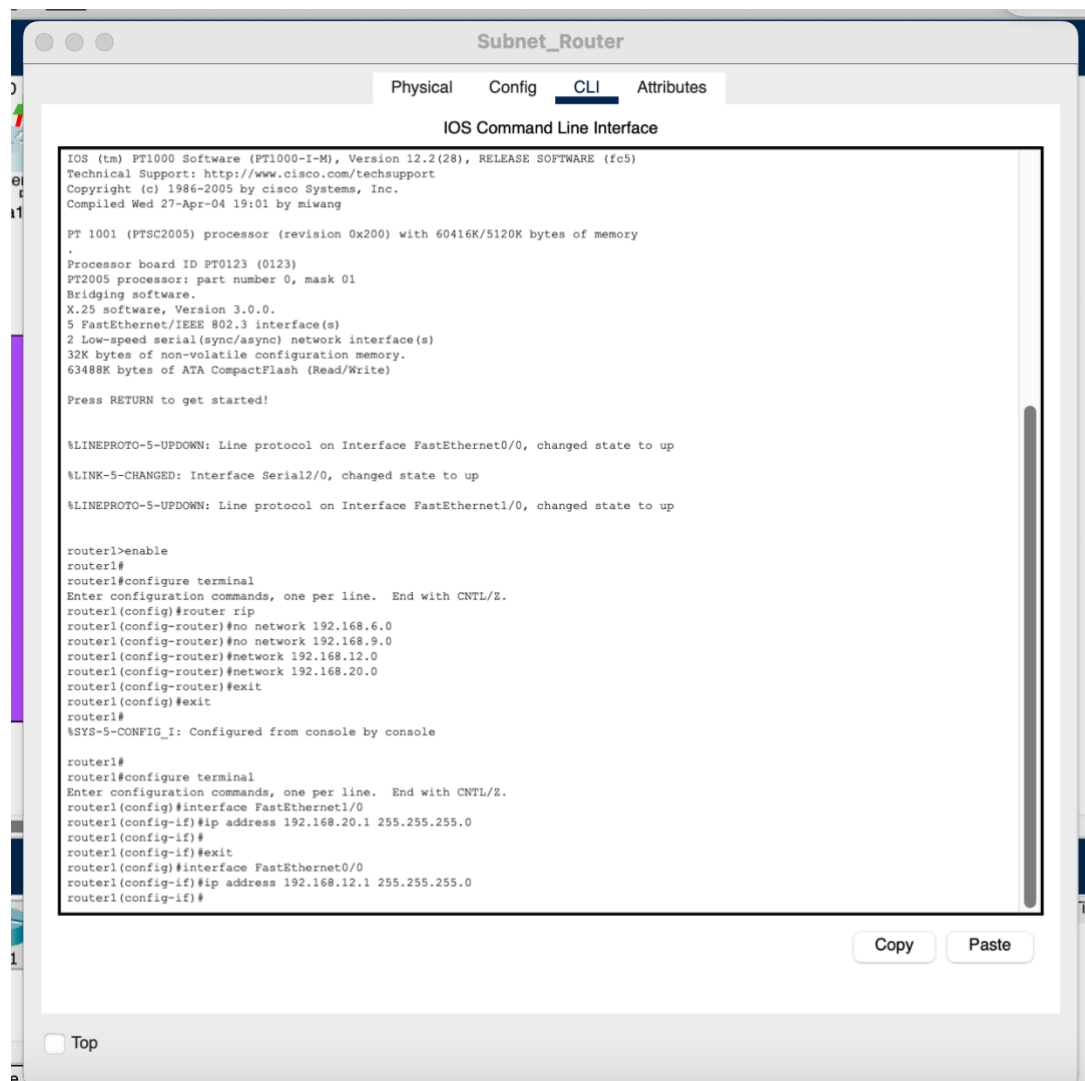


B. Provide an **explanation** of the steps taken to properly configure and test functionality in the simulated network.

I clicked on PC_1Admin I then clicked on desktop, and IP Configuration. I then changed the IP address and default gateway to match the new addresses. I used the same steps to change the other IP addresses in the new configuration spreadsheet.

II. Change **RIP** to accommodate two new network configurations. Submit a screenshot of the RIP Configuration dialog window and a brief explanation of the steps you took.

A. Provide a screenshot of the **RIP Configuration** dialog window.



The screenshot shows the CLI window of a Subnet_Router. The window has tabs for Physical, Config, CLI, and Attributes. The CLI tab is active, displaying the IOS Command Line Interface. The text in the window shows the router's boot sequence, including the PT1000 Software version 12.2(28), and the configuration of the router. The configuration includes enabling the router, entering configuration mode, and setting up the RIP protocol. The configuration commands are as follows:

```
IOS (tm) PT1000 Software (PT1000-I-M), Version 12.2(28), RELEASE SOFTWARE (fc5)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2005 by cisco Systems, Inc.
Compiled Wed 27-Apr-04 19:01 by miwang

PT 1001 (PTSC2005) processor (revision 0x200) with 60416K/5120K bytes of memory
.
Processor board ID PT0123 (0123)
PT2005 processor: part number 0, mask 01
Bridging software.
X.25 software, Version 3.0.0.
5 FastEthernet/IEEE 802.3 interface(s)
2 Low-speed serial(sync/async) network interface(s)
32K bytes of non-volatile configuration memory.
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
%LINK-5-CHANGED: Interface Serial2/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

router1>enable
router1#
router1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
router1(config)#router rip
router1(config-router)#no network 192.168.6.0
router1(config-router)#no network 192.168.9.0
router1(config-router)#network 192.168.12.0
router1(config-router)#network 192.168.20.0
router1(config-router)#exit
router1(config)#exit
router1#
%SYS-5-CONFIG_I: Configured from console by console

router1#
router1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
router1(config)#interface FastEthernet1/0
router1(config-if)#ip address 192.168.20.1 255.255.255.0
router1(config-if)#
router1(config-if)#exit
router1(config)#interface FastEthernet0/0
router1(config-if)#ip address 192.168.12.1 255.255.255.0
router1(config-if)#
```

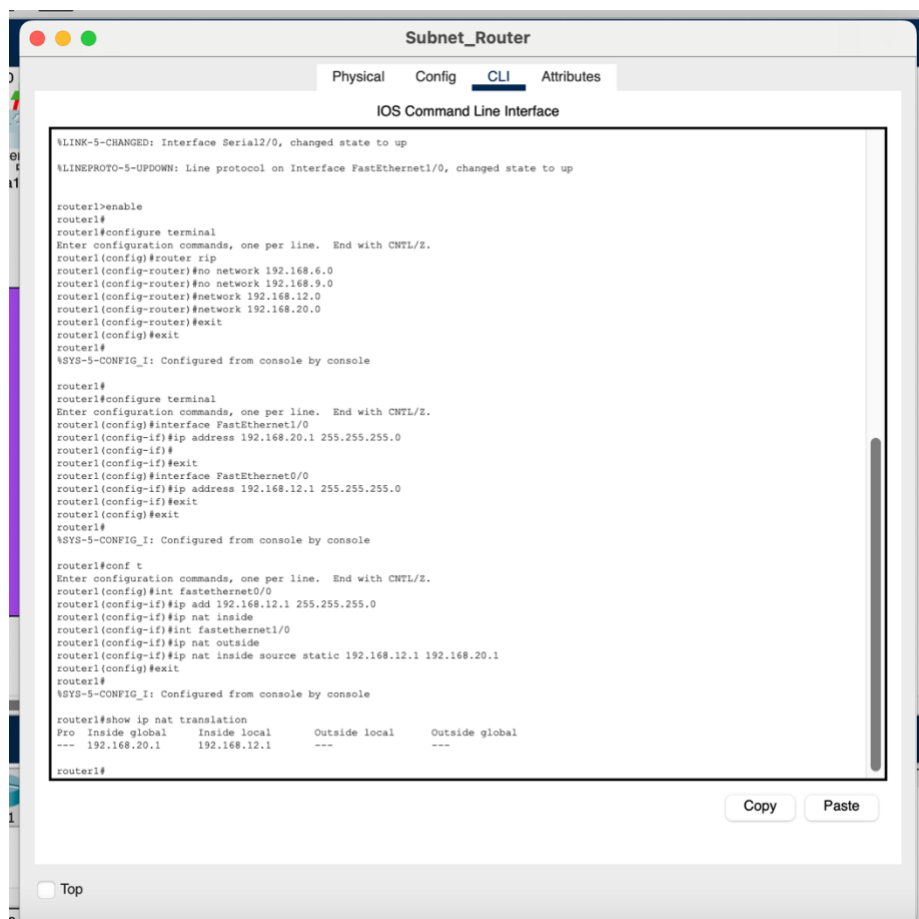
At the bottom of the window, there are buttons for 'Copy' and 'Paste', and a 'Top' button.

B. Provide an **explanation** of the steps taken to properly configure and test functionality in the simulated network.

To configure rip I used the commands no router rip and configure rip by using the router rip command. I removed the old networks by using the no network command and then I entered the new IP addresses for the networks.

III. Configure **NAT** on the router. Submit a screenshot of the NAT translations table and a brief explanation of the steps you took.

A. Provide a screenshot of the NAT **Configuration** dialog window evidencing the correct configuration of NAT on the router.



```
Subnet_Router
Physical Config CLI Attributes
IOS Command Line Interface

%LINK-5-CHANGED: Interface Serial2/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

router1>enable
router1#
router1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
router1(config)#router rip
router1(config-router)#no network 192.168.6.0
router1(config-router)#no network 192.168.9.0
router1(config-router)#network 192.168.12.0
router1(config-router)#network 192.168.20.0
router1(config-router)#exit
router1(config)#exit
router1#
%SYS-5-CONFIG_I: Configured from console by console

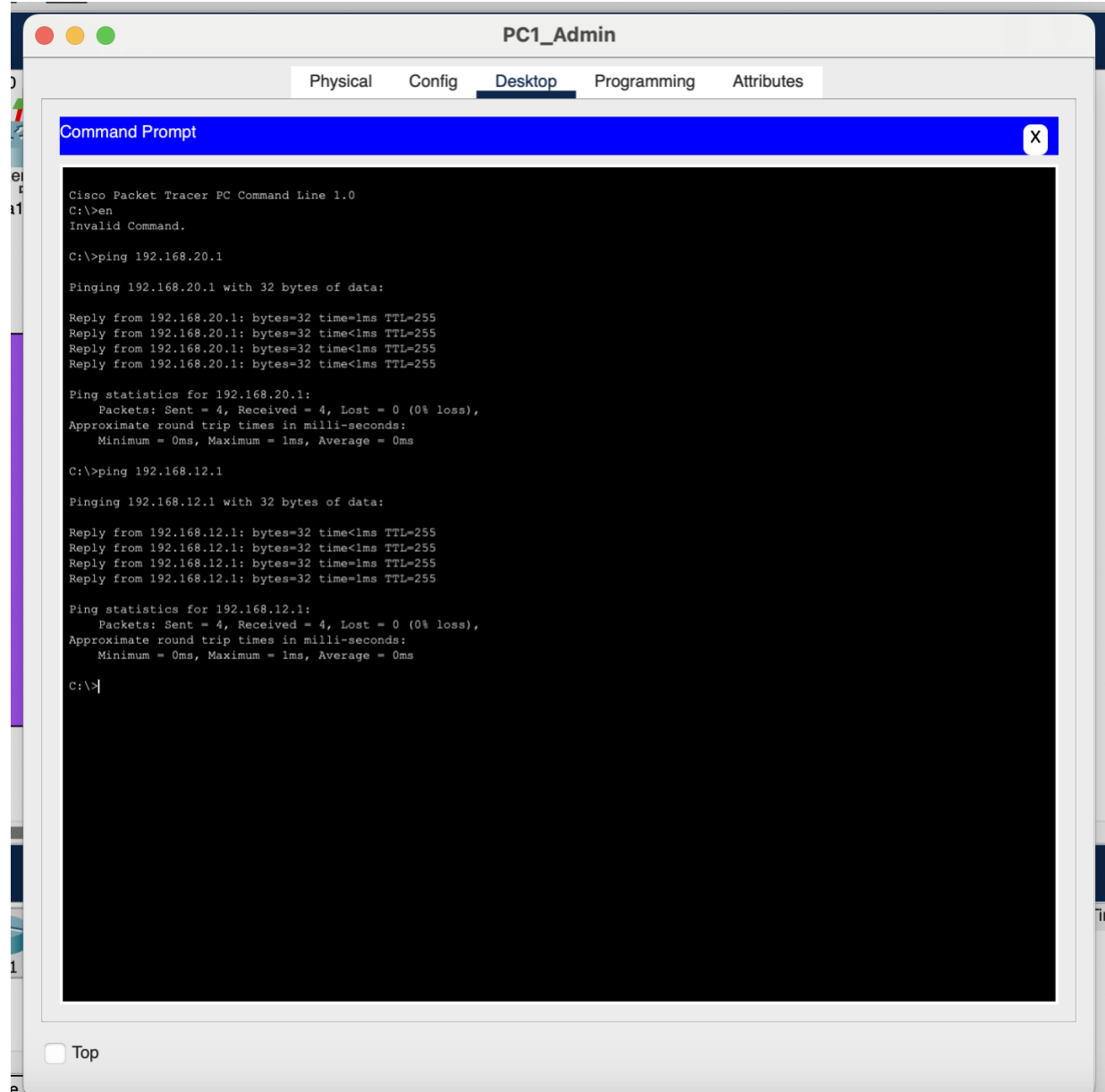
router1#
router1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
router1(config)#interface FastEthernet1/0
router1(config-if)#ip address 192.168.20.1 255.255.255.0
router1(config-if)#
router1(config-if)#exit
router1(config)#interface FastEthernet0/0
router1(config-if)#ip address 192.168.12.1 255.255.255.0
router1(config-if)#exit
router1(config)#exit
router1#
%SYS-5-CONFIG_I: Configured from console by console

router1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
router1(config)#int fastethernet0/0
router1(config-if)#ip add 192.168.12.1 255.255.255.0
router1(config-if)#ip nat inside
router1(config-if)#int fastethernet1/0
router1(config-if)#ip nat outside
router1(config-if)#ip nat inside source static 192.168.12.1 192.168.20.1
router1(config-if)#exit
router1#
%SYS-5-CONFIG_I: Configured from console by console

router1#show ip nat translation
Pro Inside global      Inside local      Outside local      Outside global
--- 192.168.20.1        192.168.12.1      ---               ---
router1#
```

Copy Paste

Top



B. Provide an **explanation** of the steps taken to properly configure and test functionality in the simulated network.

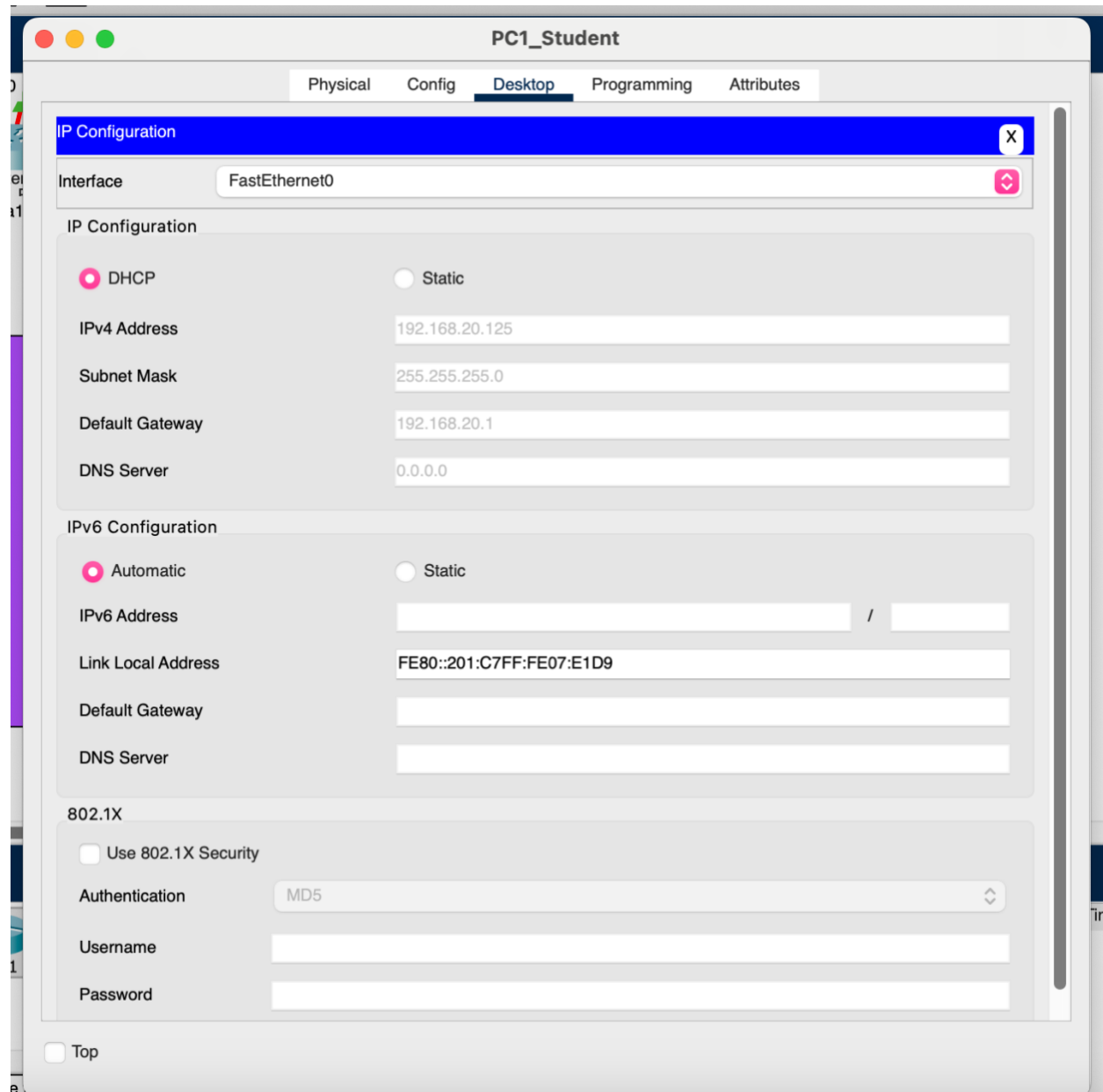
To configure NAT, I started by configuring the interfaces, with f0/0 being inside and f1/0 being outside. When I finished that, I configured the IP addresses both inside and outside. I then Identified the inside source static.

IV. Configure **DHCP** services.

- A. Provide two screenshots evidencing the correct **configuration** of the DHCP server, including a DHCP Configuration dialog window and at least one host device displaying the IP configuration window with an appropriate IP address obtained via DHCP.

The screenshot shows the 'Server_Main' configuration window with the 'Services' tab selected. The 'DHCP' service is configured for the 'FastEthernet0' interface, set to 'On'. The configuration includes a pool named 'StudentPool' with a default gateway of 192.168.20.1, DNS server 0.0.0.0, and a start IP address of 192.168.20.125 with a subnet mask of 255.255.255.0. The maximum number of users is 37. The TFTP and WLC addresses are 0.0.0.0. A table at the bottom lists the configured pools.

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
StudentPool	192.168...	0.0.0.0	192.168...	255.255...	37	0.0.0.0	0.0.0.0
serverPool	0.0.0.0	0.0.0.0	192.168...	255.255...	25	0.0.0.0	0.0.0.0

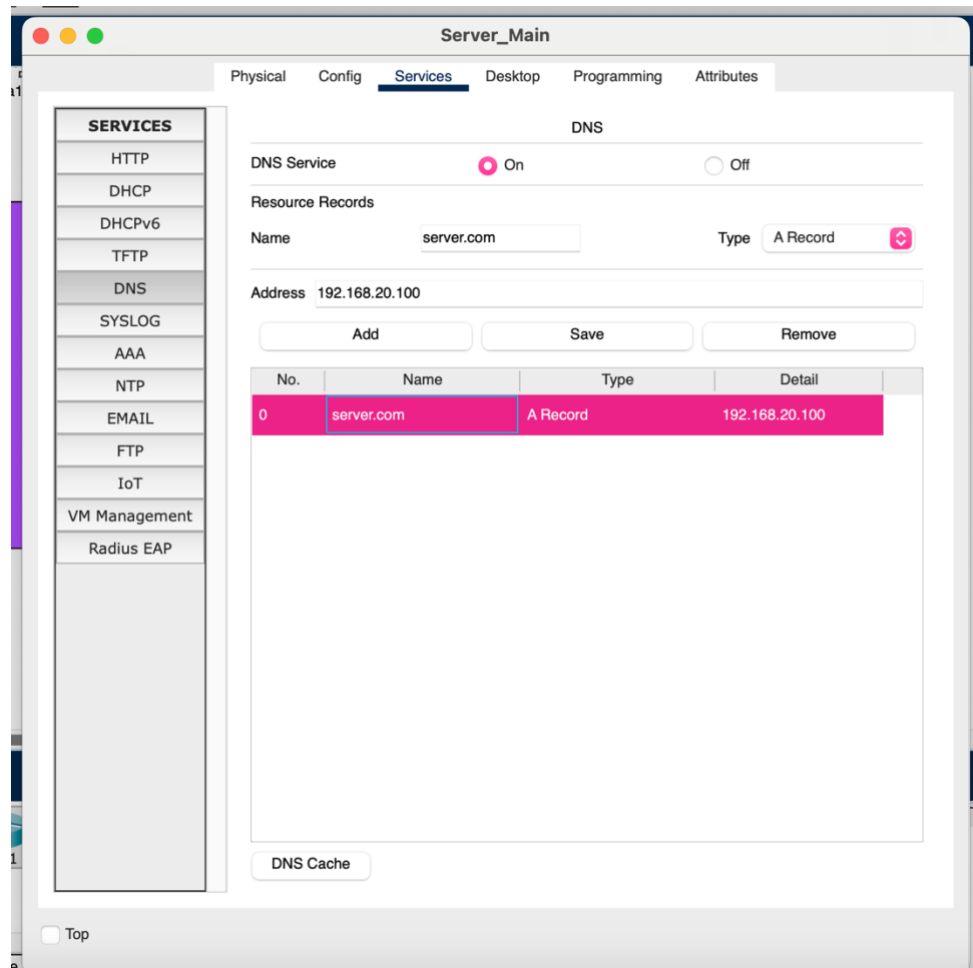


B. Provide an **explanation** of the steps taken to properly configure and test functionality in the simulated network.

To start, I selected the server on the student's network. Then, I clicked on the services tab and then on the DHCP tab. I created the student pool and inserted the name, default gateway, starting IP address, and maximum number of users. I then clicked save and updated the students' PCs by going to them and selecting DHCP for address. I had some issues with it working, so I went to the CLI and used the command "ipconfig /renew," and everything worked after that.

V. Configure **DNS** for the server name and IP address.

A. Provide a screenshot of the DNS **Configuration** dialog window evidencing the correct configuration of RIP.

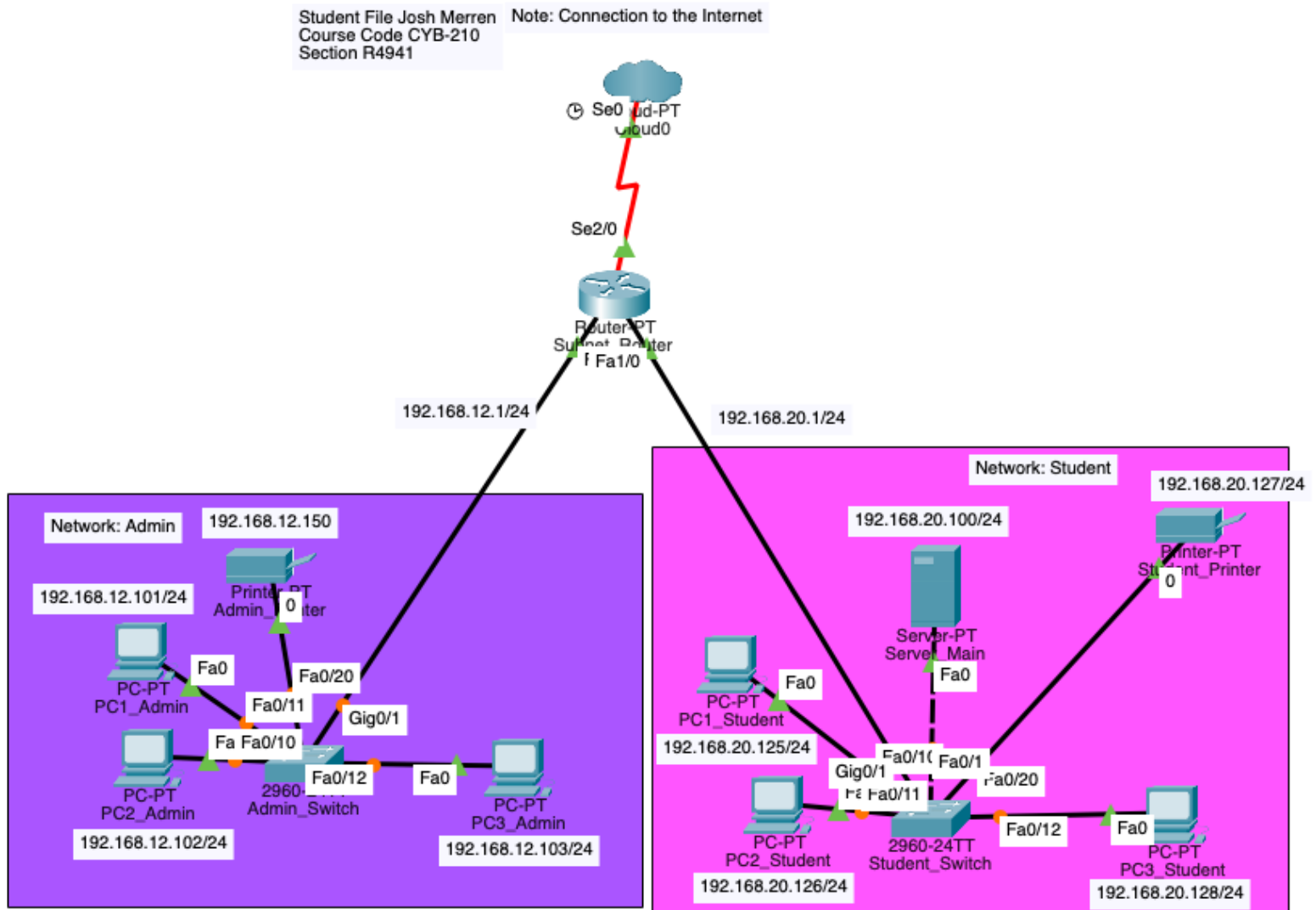


B. Provide an **explanation** of the steps taken to properly configure and test functionality in the simulated network.

I first clicked on the Server_Main and selected the services tab and finally the DNS tab. I removed the old one, and then I filled out the information like the name, type, and address, and then I turned it on and saved it.

VI. Label **all devices and networks** with the IP addresses.

A. Provide a screenshot of the entire functional **network topology** with all devices and networks labeled according to the specifications.



I first clicked on Place Note and clicked where I wanted to add the addresses. I then typed all the addresses for each PC and printer, as the switches didn't need any changes. I then moved them to better locations so they could be read more easily.