

TNE20003 – Internet and Cybersecurity for Engineering Applications

Portfolio Task – Lab 5 Distinction Task

Aims:

- Explain & understand NAT at deeper level

Preparation:

- View ["NAT & DHCP"](#)

Due Date:

- All tasks in this lab are to be completed and demonstrated to your Lab instructor preferably during or at the end of the current lab, but if you do not complete the tasks you may demonstrate it at the beginning of your next lab class.

Task 1.

Build the network provided in figure 1 with Cisco Packet Tracer

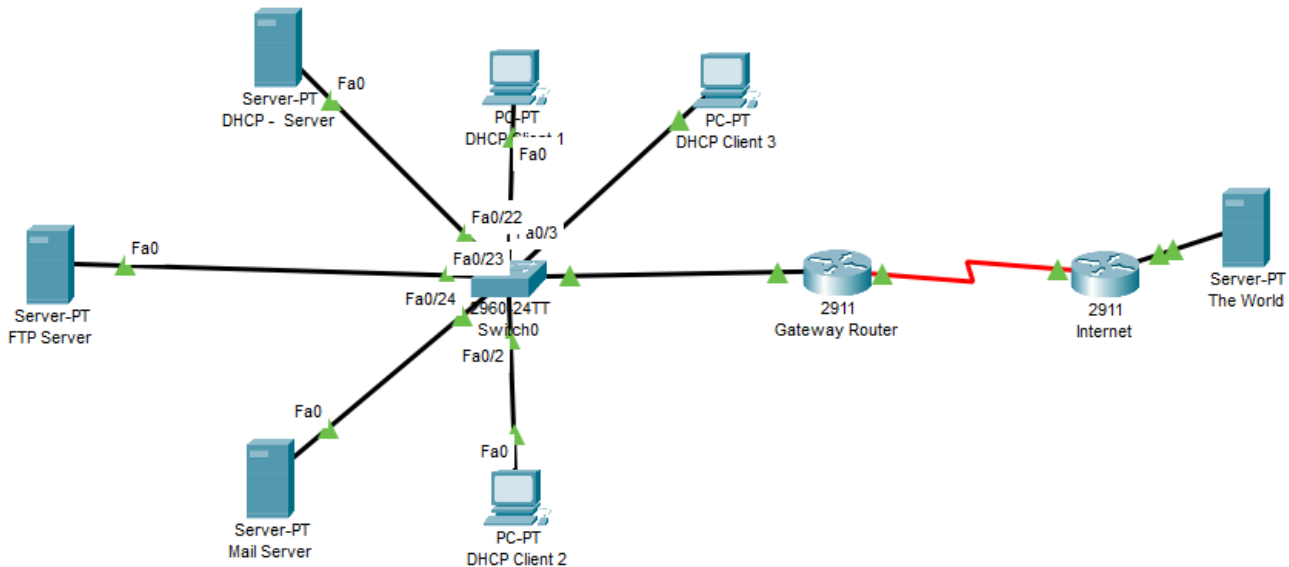


Figure 1

Use the network you built and tested in the Credit task for lab 5 to test and answer the following questions.

Task 2.

1. You have implemented NAT successfully in the Pass task.

- a. Now generate some traffic by pinging from DHCP Client 3 to **The World** server located at 136.186.100.2. What happens?

Goets through

- b. Are there any address translations on the **Gateway** Router# prompt? Explain

Yes

- c. Ping **The World** server located at 136.186.100.2 from the **ftp** server. What happens?

Doesn't ping

d. How far does the ping from the **ftp** server propagate through the network?

e. Were there any translations on the Gateway router? Explain why/why not.

NO

f. Change the IP address of DHCP Client 3 to a static address of 192.168.1.80. Ping **The World** server located at 136.186.100.2 from this **PC**. What happens? Pings. Change in nat

g. Part of your output should be as shown in the picture below:

```
Router# sh ip nat tran
Pro  Inside global      Inside local      Outside local      Outside global
icmp 200.8.8.1:5         192.168.1.80:5   136.186.100.2:5   136.186.100.2:5
```

h. What does the :5 represent? Port

i. Now ping from DHCP Client 2 and see the translations. What do you see? Translation

j. What does inside local mean? Address of src within the private net

k. Change the IP address of DHCP Client 3 to a static address of 192.168.1.180. Ping **The World** server located at 136.186.100.2 from this **PC**. What happens? Pings

l. Were there any translations on the **Gateway** router? Explain why/why not. Yes there was

~~~~~ End of Lab ~~~~~