**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Waris Damkham\_\_\_\_\_\_\_\_\_\_\_\_ ID:\_\_\_\_\_\_\_\_\_6388014\_\_\_\_ Section:\_\_1\_\_\_\_\_\_\_\_\_\_**

**LAB4 Answer Sheets**

**Instructions:** Answer the questions and save this file as

***SecID-YourID-Firstname*-Lab4-NAT-2022-AnswerSheet.pdf**

1. Trace the HTTP messages, and answer the following questions
   1. In which device does the IP address get translated?

**Ans: Border Gateway Router**

* 1. What is the IP address visible to the outside world?

**Ans: Source IP: 172.17.0.2**

* 1. How does the IP address of PC0 and PC1 get translated when PC0 and PC1 send a request to Google? (from which IP to which?)
* **PC0: 192.168.200.101 to 172.16.0.2**
* **PC1:** **192.168.200.102 to 172.16.0.2**

1. Go to the CLI of the gateway router and input the following commands:

border-gateway> enable

border-gateway# show ip nat translations

* 1. Write down the output

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Line#** | **Pro** | **Inside Global** | **Inside Local** | **Outside Local** | **Outside Global** |
| 1 | UDP | 172.16.0.2.1032 | 192.168.200.1032 | 172.17.0.2:53 | 172.17.0.2:53 |
| 2 | UDP | 172.16.0.2.1033 | 192.168.200.1033 | 172.17.0.2:53 | 172.17.0.2:53 |
| 3 | TCP | 172.16.0.2.1031 | 192.168.200.1031 | 172.17.0.2:80 | 172.17.0.2:80 |
| 4 | TCP | 172.16.0.2.1032 | 192.168.200.1032 | 172.17.0.2:80 | 172.17.0.2:80 |

* 1. Which lines show the DNS requests and which lines show the HTTP requests? And how do you distinguish between them?

**Ans: DNS requests appeared at first 2 line and continues with http requests port number DNS use port: 53 and HTTP use port:80**

* 1. Explain what the following columns mean
* **Inside Global: The private IP address of the private network.**
* **Inside Local: The registered public IP address allocated to host of the private network when it is initiating communication with the outside network.**
* **Outside Local: The registered IP address allocated to the host on the internet.**
* **Outside Global: The local IP address allocated to the host at the public domain.**
  1. Run the below command on the border-gateway. Screen capture the results and paste the results here.

border-gateway# show ip nat statistics

Text

Description automatically generated

* 1. Use the below command to clear the NAT table on the border-gateway. After that, try to show the NAT statistic again. If you do successfully, the “total translations” should be reset to ZERO. Screen capture the results and paste the results here.

border-gateway# clear ip nat translation \*

border-gateway# show ip nat statistics

Text, letter

Description automatically generated