

CS315: Assignment-6

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1. What is the IP address of the client that sends the HTTP GET request in the **nat-inside-wireshark-trace1-1.pcapng** trace? What is the source port number of the TCP segment in this datagram containing the HTTP GET request? What is the destination IP address of this HTTP GET request? What is the destination port number of the TCP segment in this datagram containing the HTTP GET request?

Ans: IP address of the client that sends the HTTP GET request is: **192.168.10.11**

Source port number of the TCP segment is: **53924**

Destination IP address is: **138.76.29.8**

Destination port number is: **80**

2. At what time is the corresponding HTTP 200 OK message from the web server forwarded by the NAT router to the client on the router's LAN side?

Ans: The time at which the corresponding HTTP 200 OK message is forwarded from the web server to client on the router's LAN side is: **0.030672101 seconds**

3. What are the source and destination IP addresses and TCP source and destination ports on the IP datagram carrying this HTTP 200 OK message?

Ans: source IP address: **138.76.29.8**

Destination IP address: **192.168.10.11**

TCP source port: **80**

TCP destination port: **53924**

```
Internet Protocol Version 4, Src: 138.76.29.8, Dst: 192.168.10.11
Transmission Control Protocol, Src Port: 80, Dst Port: 53924, Seq: 1, Ack: 331, Len: 547
Source Port: 80
Destination Port: 53924
[Stream index: 0]
```

4. At what time does this HTTP GET message appear in the *nat-outside-wireshark-trace1-1.pcapng* trace file?

Ans: The HTTP GET message appear at: **0.027356291 second**

4	0.027356291	10.0.1.254	138.76.29.8	HTTP	396 GET / HTTP/1.1
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5. What are the source and destination IP addresses and TCP source and destination port numbers on the IP datagram carrying this HTTP GET (as recorded in the *nat-outside-wireshark-trace1-1.pcapng* trace file)?

Ans: Source IP address: **10.0.1.254**

Destination IP address: **138.76.29.8**

TCP source port: **53924**

TCP destination port: **80**

Internet Protocol Version 4, Src: 10.0.1.254, Dst: 138.76.29.8					
Transmission Control Protocol, Src Port: 53924, Dst Port: 80, Seq: 1, Ack: 1, Len: 330					
Source Port: 53924					
Destination Port: 80					

6. Which of these four fields are different from your answer to question 1 above?

Ans: The fields which are different from question 1 above is **Source IP address**.

7. Are any fields in the HTTP GET message changed?

Ans: **Yes**, the fields **Checksum**, **Interface ID**, **Header Checksum**, **Time to Live** have changed in the HTTP GET message.

8. Which of the following fields in the IP datagram carrying the HTTP GET are changed from the datagram received on the local area network (inside) to the corresponding datagram forwarded on the Internet side (outside) of the NAT router: Version, Header Length, Flags, Checksum?

Ans: Version: **No change**

Header length: **No Change**

Flags: **No Change**

Checksum: **Changesno change**

9. At what time does this message appear in the *nat-outside-wireshark-trace1-1.pcapng* trace file?

Ans: The HTTP reply containing “200 OK” appears at: **0.030625966**

10. What are the source and destination IP addresses and TCP source and destination port numbers on the IP datagram carrying this HTTP reply (“200 OK”) message (as recorded in the *nat-outside-wireshark-trace1-1.pcapng* trace file)?

Ans: Source IP address: **138.76.29.8**

Destination IP address: **10.0.1.254**

TCP source port: **80**

TCP destination port: **53924**

```
Internet Protocol Version 4, Src: 138.76.29.8, Dst: 10.0.1.254
Transmission Control Protocol, Src Port: 80, Dst Port: 53924, Seq: 1, Ack: 331, Len: 547
Source Port: 80
Destination Port: 53924
```

11. What are the source and destination IP addresses and TCP source and destination port numbers on the IP datagram carrying the HTTP reply (“200 OK”) that is forwarded from the router to the destination host in the right of Figure 1?

Ans: Source IP address: **138.76.29.8**

Destination IP address: **192.168.10.11**

Source Port: **80**

Destination Port: **53924**