CR1350 Assignment 1 Spring 2025

* Explain how an app (e.g. a browser or email client) sends and receives data over a network

When client apps like a browser or Outlook send a request they start by looking for the web server, next they establish an open line of communication using predefined protocols, finally the client sends any requests and the server returns it's responses.

* Choose one user-facing application (e.g., Chrome, Outlook, VS Code connected to GitHub).
* Describe what happens step by step when it connects to a remote server:
* What protocols are used? (e.g. HTTP, DNS, TCP)
* Which OSI layers are involved?
* Use basic commands to explore local networking setup and make sense of IP addresses.
* Open command prompt and run the following commands on your lab computer:
* ipconfig

C:\Users\christian.barrett>ipconfig

Windows IP Configuration

Ethernet adapter vEthernet (Default Switch):

Connection-specific DNS Suffix . :

Link-local IPv6 Address . . . . . : fe80::3432:71b5:4b2:aa0c%13

IPv4 Address. . . . . . . . . . . : 172.31.240.1

Subnet Mask . . . . . . . . . . . : 255.255.240.0

Default Gateway . . . . . . . . . :

Ethernet adapter vEthernet (LAN Segment):

Connection-specific DNS Suffix . :

Link-local IPv6 Address . . . . . : fe80::ff2:ee25:f359:dfbf%9

Autoconfiguration IPv4 Address. . : 169.254.95.106

Subnet Mask . . . . . . . . . . . : 255.255.0.0

Default Gateway . . . . . . . . . :

Ethernet adapter Ethernet:

Connection-specific DNS Suffix . : K202Domain.CSN.com

Link-local IPv6 Address . . . . . : fe80::6069:c847:c68c:203%12

IPv4 Address. . . . . . . . . . . : 192.168.200.62

Subnet Mask . . . . . . . . . . . : 255.255.255.0

Default Gateway . . . . . . . . . : 192.168.200.1

Ethernet adapter Ethernet 2:

Connection-specific DNS Suffix . :

Link-local IPv6 Address . . . . . : fe80::3c8b:8160:783e:ef79%4

IPv4 Address. . . . . . . . . . . : 192.168.52.1

Subnet Mask . . . . . . . . . . . : 255.255.255.0

Default Gateway . . . . . . . . . :

Ethernet adapter Ethernet 3:

Connection-specific DNS Suffix . :

Link-local IPv6 Address . . . . . : fe80::5b11:3a11:60f9:f7a7%5

IPv4 Address. . . . . . . . . . . : 192.168.142.1

Subnet Mask . . . . . . . . . . . : 255.255.255.0

Default Gateway . . . . . . . . . :

* ping google.com

C:\Users\christian.barrett>ping google.com

Pinging google.com [172.217.165.14] with 32 bytes of data:

Reply from 172.217.165.14: bytes=32 time=36ms TTL=112

Reply from 172.217.165.14: bytes=32 time=35ms TTL=112

Reply from 172.217.165.14: bytes=32 time=38ms TTL=112

Reply from 172.217.165.14: bytes=32 time=35ms TTL=112

Ping statistics for 172.217.165.14:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 35ms, Maximum = 38ms, Average = 36ms

* tracert google.com

C:\Users\christian.barrett>tracert google.com

Tracing route to google.com [172.217.165.14]

over a maximum of 30 hops:

1 <1 ms <1 ms <1 ms 192.168.200.1

2 \* \* \* Request timed out.

3 <1 ms <1 ms <1 ms 10.200.20.142

4 <1 ms <1 ms <1 ms 10.200.34.254

5 1 ms <1 ms <1 ms 172.16.2.9

6 1 ms <1 ms <1 ms 172.16.1.50

7 <1 ms <1 ms <1 ms 172.28.251.250

8 2 ms 1 ms 1 ms 96.30.191.254

9 1 ms 1 ms 1 ms 198.165.161.109

10 1 ms 8 ms 1 ms 198.165.161.101

11 1 ms 1 ms 1 ms stjs1rtr3.network.canarie.ca [199.212.24.110]

12 \* \* \* Request timed out.

13 30 ms 30 ms 28 ms google.peer.qix.ca [198.179.18.72]

14 45 ms 28 ms 30 ms 142.251.51.179

15 29 ms 34 ms 44 ms 142.251.236.38

16 \* \* \* Request timed out.

17 35 ms 35 ms 43 ms 142.250.46.185

18 35 ms 35 ms 40 ms 192.178.99.29

19 36 ms 38 ms 40 ms 216.239.41.175

20 36 ms 35 ms 37 ms yyz12s06-in-f14.1e100.net [172.217.165.14]

Trace complete.

* Record the output.
* Answer the following questions:
* What is your private IP address?

192.168.200.62

* What is your default gateway?

192.168.200.1

* What do the hops in tracert show?

Each hop in the list provides information on the round trip time and IP address of each devices successfully reached along the route to the target.

* Is your address IPv4 and IPv6, and how do you know?

Link-local IPv6 Address . . . . . : fe80::6069:c847:c68c:203%12

IPv4 Address. . . . . . . . . . . : 192.168.200.62

Due Date: Friday, 30 May 2025 @ 3:30 PM