

Question 1.

a.

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Windows IP Configuration

Host Name . . . . . : DESKTOP-ALLEF5D
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

Wireless LAN adapter Local Area Connection* 1:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
Physical Address. . . . . : 3E-55-76-27-49-BF
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Local Area Connection* 2:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #2
Physical Address. . . . . : BE-55-76-27-49-BF
DHCP Enabled. . . . . : No
Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix . :
Description . . . . . : Realtek 8821CE Wireless LAN 802.11ac PCI-E NIC
Physical Address. . . . . : 3C-55-76-27-49-BF
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
IPv6 Address. . . . . : 2600::381:4425:1966:B446::2265:ced6:Acef(Preferred)
Temporary IPv6 Address. . . . . : 2600::381:4425:1966:d473:67b1:a4ea:4f06(Preferred)
Link-local IPv6 Address . . . . . : fe80::8446:2265:ced6:acef%10(Preferred)
IPv4 Address. . . . . : 172.20.10.2(Preferred)
Subnet Mask . . . . . : 255.255.255.240
Lease Obtained. . . . . : Wednesday, December 7, 2022 1:14:11 PM
Lease Expires . . . . . : Thursday, December 8, 2022 1:14:11 PM
Default Gateway . . . . . : fe80::58b9:65ff:fee5:9664%10
                          172.20.10.1
DHCP Server . . . . . : 172.20.10.1
DHCPv6 IAID . . . . . : 121394550
DHCPv6 Client DUID. . . . . : 00-01-80-01-2A-D6-7B-F4-3C-55-76-27-49-BF
DNS Servers . . . . . : fe80::58b9:65ff:fee5:9664%10
                          172.20.10.1
NetBIOS over Tcpip. . . . . : Enabled
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b.

- Machine IP Address: 172.20.10.2
- Machines MAC Address: 3C-55-76-27-49-BF
- First hop ip address: fe80::58b9:65ff:fee5:9664%10
- DNS server IP address: fe80::58b9:65ff:fee5:9664%10
- 172.20.10.1
- DHCP server IP address: 172.20.10.1

Question 2.

a.

The image shows a Wireshark packet capture window. The top pane displays a list of captured packets. The bottom pane shows the details of the selected packet (No. 383), which is an HTTP continuation frame. The packet is captured on interface \Device\NPF_{A98096FC-C446-4F01-9429-D6C8299CCBF}, id 0. The destination is CloudNet_27:49:bf (3c:55:76:27:49:bf) and the source is 5a:b9:65:e5:96:64 (5a:b9:65:e5:96:64). The packet is of type IPv6 (0x86dd) and is an Internet Protocol Version 6, Src: 2001:1900:2378:1029::1fe, Dst: 2600:381:4425:19e6:d473:67b1:a4ea:4f06. The Transmission Control Protocol (TCP) details show Src Port: 80, Dst Port: 49289, Seq: 206871, Ack: 1, Len: 4110. The Hypertext Transfer Protocol details show the frame is 4184 bytes on wire (33472 bits), 4184 bytes captured (33472 bits) on interface \Device\NPF_{A98096FC-C446-4F01-9429-D6C8299CCBF}, id 0.

No.	Time	Source	Destination	Protocol	Length	Info
351	8.228021	2001:1900:2378:1029::	2600:381:4425:19e6::	HTTP	1444	Continuation
354	8.237712	2001:1900:2378:1029::	2600:381:4425:19e6::	HTTP	1444	Continuation
355	8.241959	2001:1900:2378:1029::	2600:381:4425:19e6::	HTTP	1444	Continuation
357	8.262228	2001:1900:2378:1029::	2600:381:4425:19e6::	HTTP	1444	Continuation
358	8.266089	2001:1900:2378:1029::	2600:381:4425:19e6::	HTTP	1444	Continuation
360	8.272026	2001:1900:2378:1029::	2600:381:4425:19e6::	HTTP	1444	Continuation
369	8.382173	2001:1900:2378:1029::	2600:381:4425:19e6::	HTTP	1444	Continuation
372	8.433839	2001:1900:2378:1029::	2600:381:4425:19e6::	HTTP	4184	[TCP Previous segment not captured] Continuation
373	8.434038	2001:1900:2378:1029::	2600:381:4425:19e6::	HTTP	2814	Continuation
378	8.536861	2001:1900:2378:1029::	2600:381:4425:19e6::	HTTP	1444	Continuation
383	8.537096	2001:1900:2378:1029::	2600:381:4425:19e6::	HTTP	4184	Continuation

Frame 383: 4184 bytes on wire (33472 bits), 4184 bytes captured (33472 bits) on interface \Device\NPF_{A98096FC-C446-4F01-9429-D6C8299CCBF}, id 0

Ethernet II, Src: 5a:b9:65:e5:96:64 (5a:b9:65:e5:96:64), Dst: CloudNet_27:49:bf (3c:55:76:27:49:bf)

Destination: CloudNet_27:49:bf (3c:55:76:27:49:bf)

Source: 5a:b9:65:e5:96:64 (5a:b9:65:e5:96:64)

Type: IPv6 (0x86dd)

Internet Protocol Version 6, Src: 2001:1900:2378:1029::1fe, Dst: 2600:381:4425:19e6:d473:67b1:a4ea:4f06

Transmission Control Protocol, Src Port: 80, Dst Port: 49289, Seq: 206871, Ack: 1, Len: 4110

Hypertext Transfer Protocol

- Source MAC Address: 27:49:bf (3c:55:76:27:49bf)
- Destination MAC Address: 5a:b9:65:e5:96:64
- Type : IPv6

b.

Wireshark interface showing a packet capture from a Wi-Fi interface. The packet list on the left shows several ICMP Echo (ping) requests from 192.168.1.87 to 8.8.8.8, all of which have timed out. The selected packet (No. 4773) is an ICMP Echo request. The packet details pane on the right shows the structure of the ICMP Echo request, including the type, code, checksum, and the differentiated services field. The packet bytes pane at the bottom shows the raw data of the packet in hexadecimal and ASCII.

No.	Time	Source	Destination	Protocol	Length	Info
4593	322.430661	192.168.1.87	8.8.8.8	ICMP	74	Echo (ping) request id=0x0001, seq=263/1793, ttl=2 (no response found!)
4594	322.430691	104.187.116.1	192.168.1.87	ICMP	102	Time-to-live exceeded (Time to live exceeded in transit)
4601	323.433099	192.168.1.87	8.8.8.8	ICMP	74	Echo (ping) request id=0x0001, seq=264/2049, ttl=2 (no response found!)
4602	323.442822	104.187.116.1	192.168.1.87	ICMP	102	Time-to-live exceeded (Time to live exceeded in transit)
4610	324.455031	192.168.1.87	8.8.8.8	ICMP	74	Echo (ping) request id=0x0001, seq=265/2305, ttl=2 (no response found!)
4611	324.604708	104.187.116.1	192.168.1.87	ICMP	102	Time-to-live exceeded (Time to live exceeded in transit)
4619	325.476288	192.168.1.87	8.8.8.8	ICMP	74	Echo (ping) request id=0x0001, seq=266/2561, ttl=2 (no response found!)
4620	325.526571	104.187.116.1	192.168.1.87	ICMP	102	Time-to-live exceeded (Time to live exceeded in transit)
4763	335.381965	192.168.1.87	8.8.8.8	ICMP	74	Echo (ping) request id=0x0001, seq=267/2817, ttl=2 (no response found!)
4773	335.390440	104.187.116.1	192.168.1.87	ICMP	102	Time-to-live exceeded (Time to live exceeded in transit)
4782	336.392823	192.168.1.87	8.8.8.8	ICMP	74	Echo (ping) request id=0x0001, seq=268/3073, ttl=2 (no response found!)
4785	336.400717	104.187.116.1	192.168.1.87	ICMP	102	Time-to-live exceeded (Time to live exceeded in transit)

> Frame 4773: 102 bytes on wire (816 bits), 102 bytes captured (816 bits) on interface \Device\NPF{A98096FC-C446-4F01-9429-D6C8299CCBF}, id 0
> Ethernet II, Src: AR15Gro_09:a2:10 (fc:ae:34:09:a2:10), Dst: CloudNet_27:49:bf (3c:55:76:27:49:bf)
> Internet Protocol Version 4, Src: 104.187.116.1, Dst: 192.168.1.87
✓ Internet Control Message Protocol
Type: 11 (Time-to-live exceeded)
Code: 0 (Time to live exceeded in transit)
Checksum: 0xf4ff [correct]
[Checksum Status: Good]
Unused: 00000000
✓ Internet Protocol Version 4, Src: 192.168.1.87, Dst: 8.8.8.8
0100 = Version: 4
.... 0101 = Header Length: 20 bytes (5)
> Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)

0000 3c 55 76 27 49 bf fc ae 34 09 a2 10 08 00 45 28 <U'I... 4...E(
0010 00 58 f6 ee 00 00 3f 01 e5 d2 68 bb 74 01 c0 a8 X...?..h.t...
0020 01 57 0b 00 f4 ff 00 00 00 00 45 00 00 3c e3 46 W.....E...<F
0030 00 00 01 01 04 6c c0 a8 01 57 08 08 08 08 00l...W.....
0040 4c 50 00 01 01 0b 61 62 63 64 65 66 67 68 69 6a LP....ab cdefghij
0050 b6 6c 6d 6e 6f 70 71 72 73 74 75 76 77 61 62 63 klmnopq rstuvwab
0060 64 65 66 67 68 69 defghi