ELEC-5220

Info. Networks

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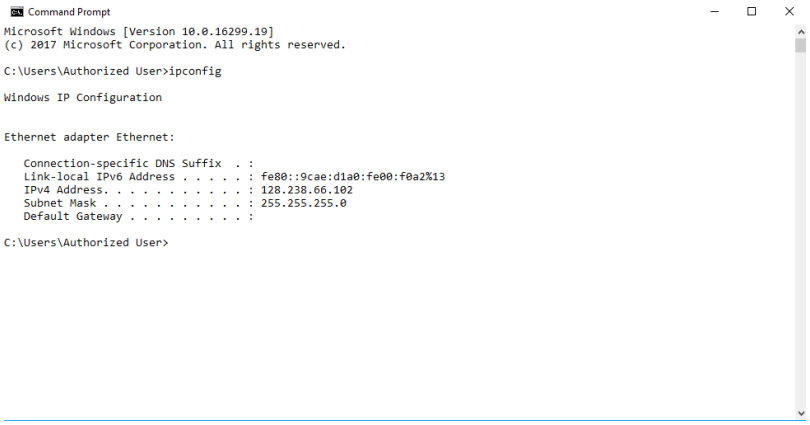
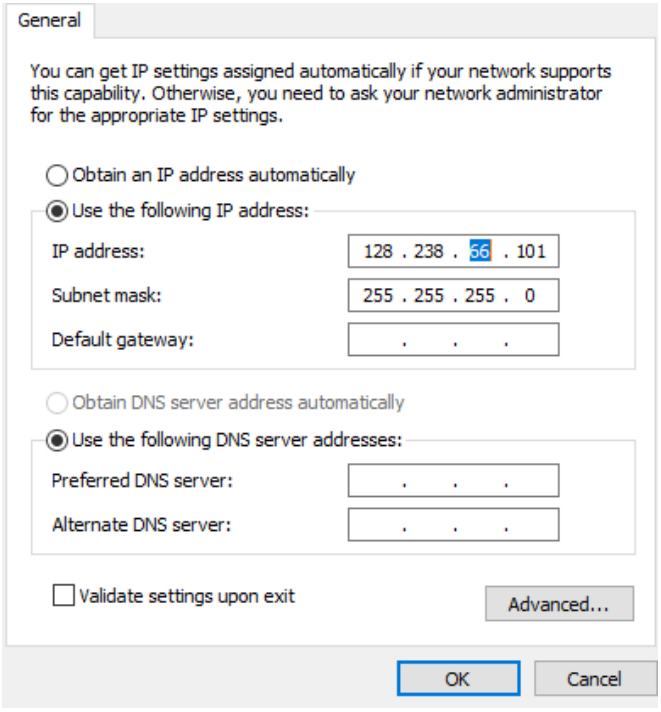
Lab 5

Introduction

In this lab, we worked with a partner with IP addressing and subnetting. Below shows the ipconfig command screenshot. Theres also a client setup screenshot below.

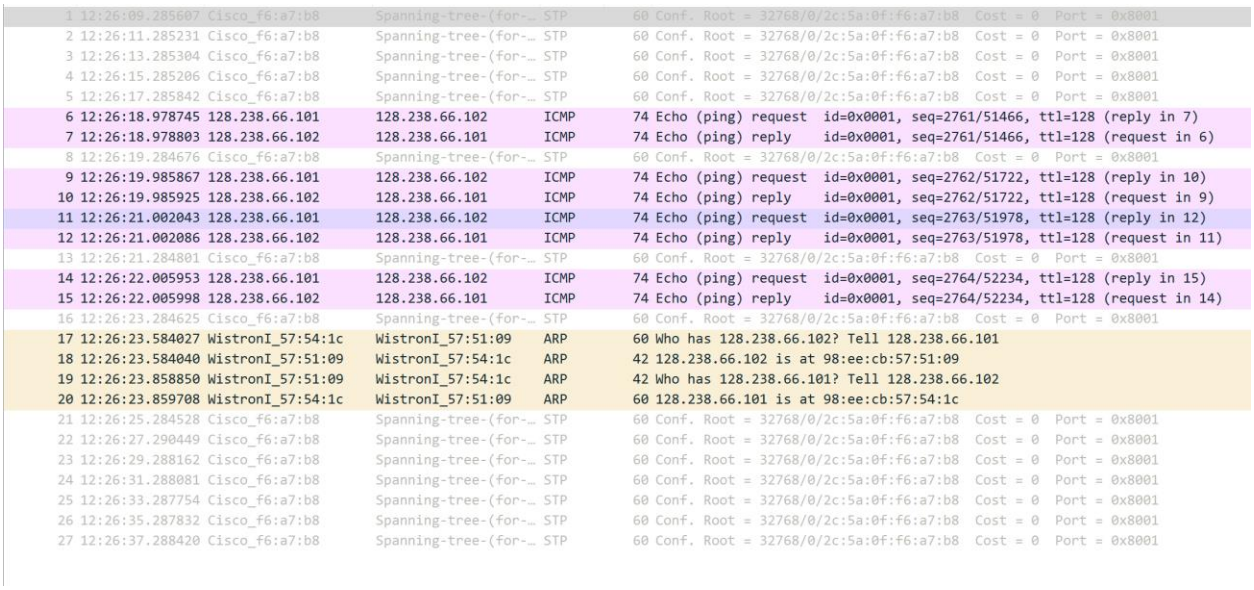


Ipconfig



Client settup

Ex 2.1 : Q1-Q6

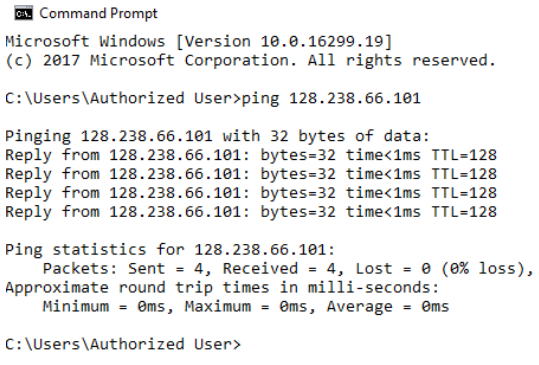


1	12:26:09.285607	Cisco_f6:a7:b8	Spanning-tree-(for-…	STP	60 Conf. Root = 32768/0/2c:5a:0f:f6:a7:b8 Cost = 0 Port = 0x8001
2	12:26:11.285231	Cisco_f6:a7:b8	Spanning-tree-(for-…	STP	60 Conf. Root = 32768/0/2c:5a:0f:f6:a7:b8 Cost = 0 Port = 0x8001
3	12:26:13.285304	Cisco_f6:a7:b8	Spanning-tree-(for-…	STP	60 Conf. Root = 32768/0/2c:5a:0f:f6:a7:b8 Cost = 0 Port = 0x8001
4	12:26:15.285206	Cisco_f6:a7:b8	Spanning-tree-(for-…	STP	60 Conf. Root = 32768/0/2c:5a:0f:f6:a7:b8 Cost = 0 Port = 0x8001
5	12:26:17.285842	Cisco_f6:a7:b8	Spanning-tree-(for-…	STP	60 Conf. Root = 32768/0/2c:5a:0f:f6:a7:b8 Cost = 0 Port = 0x8001
6	12:26:18.978745	128.238.66.101	128.238.66.102	ICMP	74 Echo (ping) request id=0x0001, seq=2761/51466, ttl=128 (reply in 7)
7	12:26:18.978803	128.238.66.102	128.238.66.101	ICMP	74 Echo (ping) reply id=0x0001, seq=2761/51466, ttl=128 (request in 6)
8	12:26:19.284676	Cisco_f6:a7:b8	Spanning-tree-(for-…	STP	60 Conf. Root = 32768/0/2c:5a:0f:f6:a7:b8 Cost = 0 Port = 0x8001
9	12:26:19.985867	128.238.66.101	128.238.66.102	ICMP	74 Echo (ping) request id=0x0001, seq=2762/51722, ttl=128 (reply in 10)
10	12:26:19.985925	128.238.66.102	128.238.66.101	ICMP	74 Echo (ping) reply id=0x0001, seq=2762/51722, ttl=128 (request in 9)
11	12:26:21.002043	128.238.66.101	128.238.66.102	ICMP	74 Echo (ping) request id=0x0001, seq=2763/51978, ttl=128 (reply in 12)
12	12:26:21.002086	128.238.66.102	128.238.66.101	ICMP	74 Echo (ping) reply id=0x0001, seq=2763/51978, ttl=128 (request in 11)
13	12:26:21.284801	Cisco_f6:a7:b8	Spanning-tree-(for-…	STP	60 Conf. Root = 32768/0/2c:5a:0f:f6:a7:b8 Cost = 0 Port = 0x8001
14	12:26:22.005953	128.238.66.101	128.238.66.102	ICMP	74 Echo (ping) request id=0x0001, seq=2764/52234, ttl=128 (reply in 15)
15	12:26:22.005998	128.238.66.102	128.238.66.101	ICMP	74 Echo (ping) reply id=0x0001, seq=2764/52234, ttl=128 (request in 14)
16	12:26:23.284625	Cisco_f6:a7:b8	Spanning-tree-(for-…	STP	60 Conf. Root = 32768/0/2c:5a:0f:f6:a7:b8 Cost = 0 Port = 0x8001
17	12:26:23.584027	WistronI_57:54:1c	WistronI_57:51:09	ARP	60 Who has 128.238.66.102? Tell 128.238.66.101
18	12:26:23.584040	WistronI_57:51:09	WistronI_57:54:1c	ARP	42 128.238.66.102 is at 98:ee:cb:57:51:09
19	12:26:23.858850	WistronI_57:51:09	WistronI_57:54:1c	ARP	42 Who has 128.238.66.101? Tell 128.238.66.102
20	12:26:23.859708	WistronI_57:54:1c	WistronI_57:51:09	ARP	60 128.238.66.101 is at 98:ee:cb:57:54:1c
21	12:26:25.284528	Cisco_f6:a7:b8	Spanning-tree-(for-…	STP	60 Conf. Root = 32768/0/2c:5a:0f:f6:a7:b8 Cost = 0 Port = 0x8001
22	12:26:27.290449	Cisco_f6:a7:b8	Spanning-tree-(for-…	STP	60 Conf. Root = 32768/0/2c:5a:0f:f6:a7:b8 Cost = 0 Port = 0x8001
23	12:26:29.288162	Cisco_f6:a7:b8	Spanning-tree-(for-…	STP	60 Conf. Root = 32768/0/2c:5a:0f:f6:a7:b8 Cost = 0 Port = 0x8001
24	12:26:31.288081	Cisco_f6:a7:b8	Spanning-tree-(for-…	STP	60 Conf. Root = 32768/0/2c:5a:0f:f6:a7:b8 Cost = 0 Port = 0x8001
25	12:26:33.287754	Cisco_f6:a7:b8	Spanning-tree-(for-…	STP	60 Conf. Root = 32768/0/2c:5a:0f:f6:a7:b8 Cost = 0 Port = 0x8001
26	12:26:35.287832	Cisco_f6:a7:b8	Spanning-tree-(for-…	STP	60 Conf. Root = 32768/0/2c:5a:0f:f6:a7:b8 Cost = 0 Port = 0x8001
27	12:26:37.288420	Cisco_f6:a7:b8	Spanning-tree-(for-…	STP	60 Conf. Root = 32768/0/2c:5a:0f:f6:a7:b8 Cost = 0 Port = 0x8001

Wireshark Screenshot

Q1: Are the two "ping" processes successful?

Yes both pings are successful, as you can see below in the screenshot.



```
Command Prompt
Microsoft Windows [Version 10.0.16299.19]
(c) 2017 Microsoft Corporation. All rights reserved.

C:\Users\Authorized User>ping 128.238.66.101

Pinging 128.238.66.101 with 32 bytes of data:
Reply from 128.238.66.101: bytes=32 time<1ms TTL=128
Reply from 128.238.66.101: bytes=32 time<1ms TTL=128
Reply from 128.238.66.101: bytes=32 time<1ms TTL=128
Reply from 128.238.66.101: bytes=32 time<1ms TTL=128

Ping statistics for 128.238.66.101:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\Authorized User>
```

Figure 1

Q2: In the ping request packet, what is the source IP address? What is the destination IP address?

Source IP was 128.238.66.101

Q3: In the reply packet, what is the source IP address? What is the destination IP address?

Source IP was 128.238.66.102 and Destination IP was 128.238.66.101.

Q4: List all IP header fields in the request and reply to packets (or take a screenshot of them).

Figure 2 shows request and Figure 3 shows the reply.

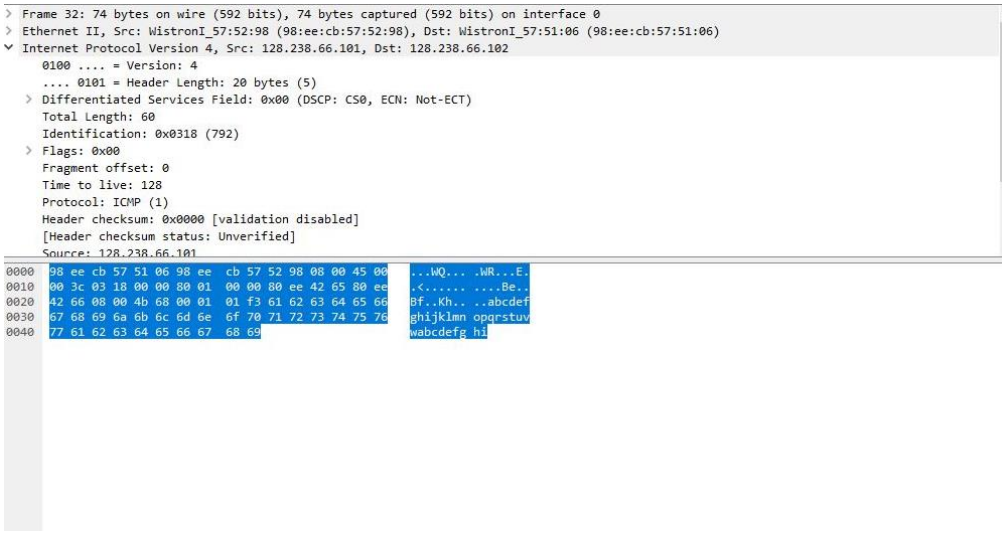


Figure 2

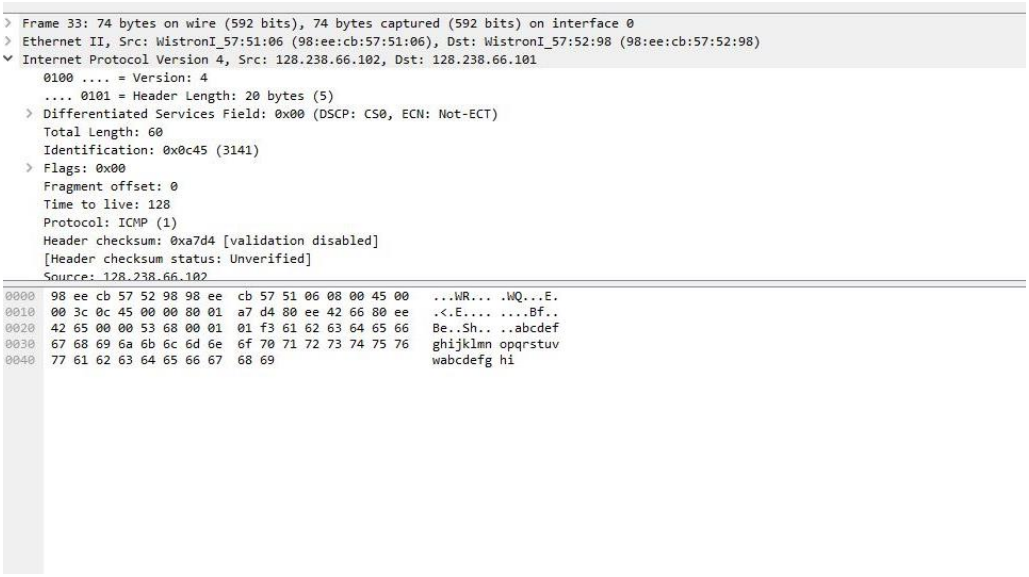


Figure 3

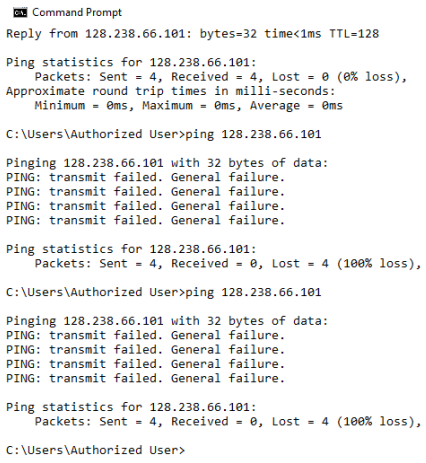
Q5: What is the subnet ID for host 1?

It is 128.238.66.0

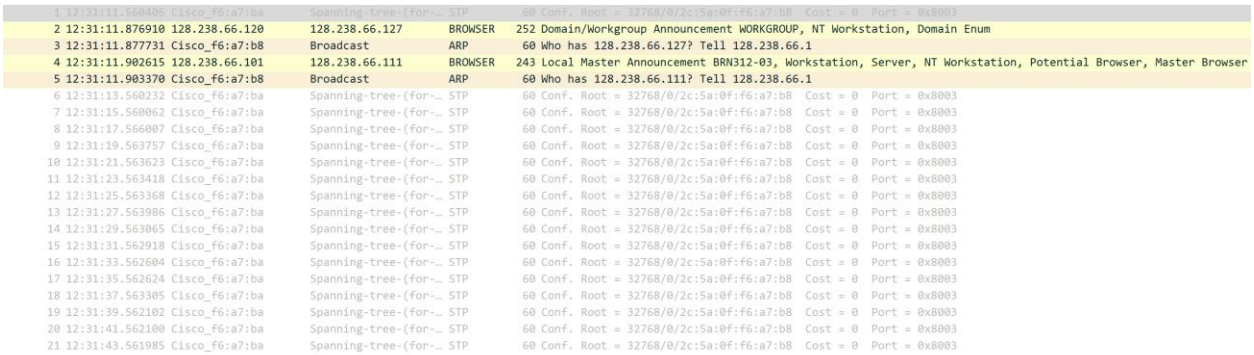
Q6: What is the subnet ID for host 2?

It is 128.238.66.0

Ex 2.2 : Q7-Q8



Ping



Wireshark Screenshot

Q7: What is the subnet ID for each computer?

Host 1's subnet was 128.238.66.96 and Host 2's subnet was was 128.238.66.112

Q8: Are the two ping processes successful?

No, as we can see from the ping screenshot above for my ping, it was not successful. My partners ping was also not successful. This is due to change in Network ID.

Ex 2.3 : Q9-Q11

```
C:\Users\Authorized User>ping 128.238.66.101

Pinging 128.238.66.101 with 32 bytes of data:
PING: transmit failed. General failure.
PING: transmit failed. General failure.
PING: transmit failed. General failure.
PING: transmit failed. General failure.

Ping statistics for 128.238.66.101:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\Users\Authorized User>
```

Ping (failure)

```
C:\Users\Authorized User>ping 128.238.66.120

Pinging 128.238.66.120 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 128.238.66.120:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\Users\Authorized User>
```

Ping (timeout)

Q9: What is the subnet ID for each computer?

Host 1's ID is 128.238.66.0 and Host 2's ID is 128.238.66.112

Q10: Can host 1 send the ping request? Is the "ping" process successful? Why?

Yes, it can send a ping request, but there is a timeout. So, the request is not successful.

Q11: Can host 2 send the ping request? Is the "ping" process successful? Why?

No. No request is sent at all and the pinging process is unsuccessful. There was a general failure.