

# COMP8505 ASSIGNMENT 1

## Testing and Supporting Data

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## Test#1

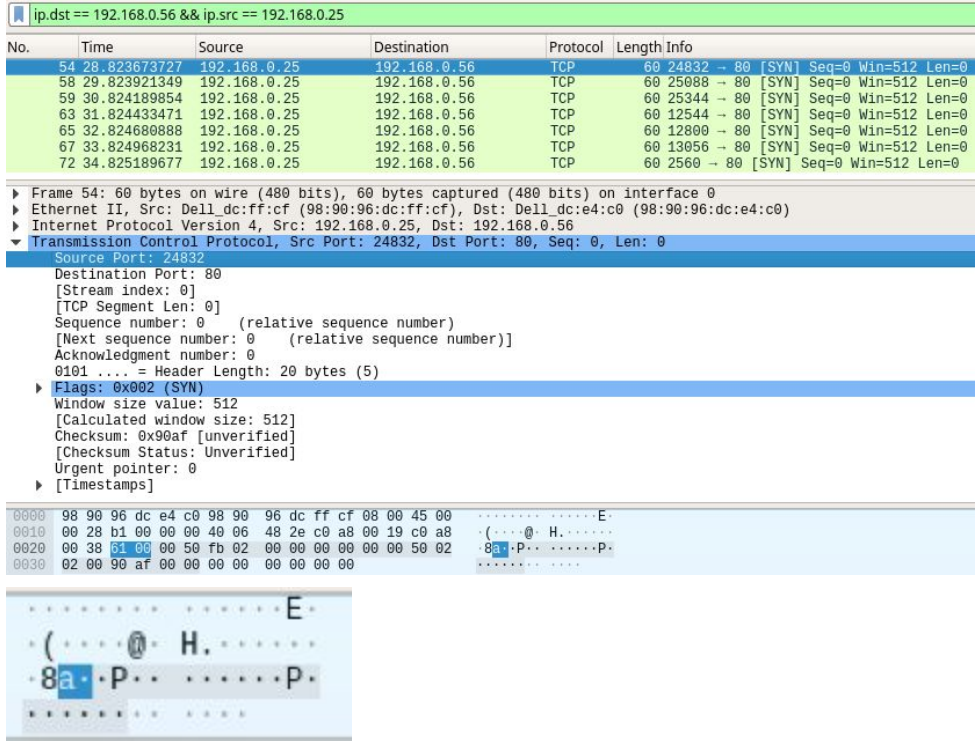
Description	Run Client with -srcp flag
Steps	<ul style="list-style-type: none"><li>Start the program</li><li>Start Client and Server with -srcp flag</li></ul>
Result	<pre>16:10:35(-)root@datacomm-192-168-0-25:Desktop\$ ./covert_tcp -dest 192.168.0.56 -srcp dest_port 80 -file myfile Covert TCP 1.0 (c)1996 Craig H. Rowland (crowland@psionic.com) Not for commercial use without permission. Destination Host: 192.168.0.56 Source Host      : h433 Originating Port: random Destination Port: 80 Encoded Filename: myfile Encoding Type    : TCP Source Port  Client Mode: Sending data.  Sending Data: a Sending Data: b Sending Data: c Sending Data: 1 Sending Data: 2 Sending Data: 3 Sending Data:</pre>
Success	Yes



## Test#2

Description	Run Server with -srcp flag
Steps	<ul style="list-style-type: none"><li>Start the program</li><li>Start Client and Server with -srcp flag</li></ul>
Result	<pre>16:13:25(-)root@localhost:Desktop\$ ./covert_tcp -source 192.168.0.25 -srcp -file myfile -server Covert TCP 1.0 (c)1996 Craig H. Rowland (crowland@psionic.com) Not for commercial use without permission. Listening for data from IP: 192.168.0.25 Listening for data bound for local port: Any Port Decoded Filename: myfile Decoding Type Is: TCP Source Port.  Server Mode: Listening for data.  Receiving Data: a Receiving Data: b Receiving Data: c Receiving Data: 1 Receiving Data: 2 Receiving Data: 3 Receiving Data:</pre>

Success	Yes
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Test#3	
Description	Transfer Character 'a'
Steps	<ul style="list-style-type: none"> <li>Start the program</li> <li>Start Client and Server with -srcp flag</li> </ul>
Result	 <p>The image shows a Wireshark packet capture of a TCP SYN packet. The packet list shows a packet from 192.168.0.25 to 192.168.0.56 on port 80. The packet details show the TCP header with Seq=0, Win=512, and Len=0. The packet bytes show the ASCII character 'a' (0x61).</p>
Success	Yes

Test#4	
Description	Transfer Character 'b'
Steps	<ul style="list-style-type: none"> <li>Start the program</li> <li>Start Client and Server with -srcp flag</li> </ul>

## Result

ip.dst == 192.168.0.56 && ip.src == 192.168.0.25

No.	Time	Source	Destination	Protocol	Length	Info
54	28.823673727	192.168.0.25	192.168.0.56	TCP	60	24832 → 80 [SYN] Seq=0 Win=512 Len=0
58	29.823921349	192.168.0.25	192.168.0.56	TCP	60	25088 → 80 [SYN] Seq=0 Win=512 Len=0
59	30.824189854	192.168.0.25	192.168.0.56	TCP	60	25344 → 80 [SYN] Seq=0 Win=512 Len=0
63	31.824433471	192.168.0.25	192.168.0.56	TCP	60	12544 → 80 [SYN] Seq=0 Win=512 Len=0
65	32.824680888	192.168.0.25	192.168.0.56	TCP	60	12800 → 80 [SYN] Seq=0 Win=512 Len=0
67	33.824968231	192.168.0.25	192.168.0.56	TCP	60	13056 → 80 [SYN] Seq=0 Win=512 Len=0
72	34.825189677	192.168.0.25	192.168.0.56	TCP	60	2560 → 80 [SYN] Seq=0 Win=512 Len=0

► Frame 58: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface 0  
► Ethernet II, Src: Dell\_dc:ff:cf (98:90:96:dc:ff:cf), Dst: Dell\_dc:e4:c0 (98:90:96:dc:e4:c0)  
► Internet Protocol Version 4, Src: 192.168.0.25, Dst: 192.168.0.56  
▼ Transmission Control Protocol, Src Port: 25088, Dst Port: 80, Seq: 0, Len: 0

Source Port: 25088  
Destination Port: 80  
[Stream index: 1]  
[TCP Segment Len: 0]  
Sequence number: 0 (relative sequence number)  
[Next sequence number: 0 (relative sequence number)]  
Acknowledgment number: 0  
0101 .... = Header Length: 20 bytes (5)  
► Flags: 0x002 (SYN)  
Window size value: 512  
[Calculated window size: 512]  
Checksum: 0xd69a [unverified]  
[Checksum Status: Unverified]  
Urgent pointer: 0  
► [Timestamps]

0000 98 90 96 dc e4 c0 98 90 96 dc ff cf 08 00 45 00 .....E.  
0010 00 28 8c 00 00 00 40 06 6d 2e c0 a8 00 19 c0 a8 .....@.m.....  
0020 00 38 02 00 00 50 b4 17 00 00 00 00 00 50 02 .....8b.P.....P.  
0030 02 00 d6 9a 00 00 00 00 00 00 00 00 .....P.....P.

Success

Yes

## Test#5

Description

Transfer Character 'c'

Steps

- Start the program
- Start Client and Server with -srcp flag

## Result

ip.dst == 192.168.0.56 && ip.src == 192.168.0.25

No.	Time	Source	Destination	Protocol	Length	Info
54	28.823673727	192.168.0.25	192.168.0.56	TCP	60	24832 → 80 [SYN] Seq=0 Win=512 Len=0
58	29.823921349	192.168.0.25	192.168.0.56	TCP	60	25088 → 80 [SYN] Seq=0 Win=512 Len=0
59	30.824189854	192.168.0.25	192.168.0.56	TCP	60	25344 → 80 [SYN] Seq=0 Win=512 Len=0
63	31.824433471	192.168.0.25	192.168.0.56	TCP	60	12544 → 80 [SYN] Seq=0 Win=512 Len=0
65	32.824680888	192.168.0.25	192.168.0.56	TCP	60	12800 → 80 [SYN] Seq=0 Win=512 Len=0
67	33.824968231	192.168.0.25	192.168.0.56	TCP	60	13056 → 80 [SYN] Seq=0 Win=512 Len=0
72	34.825189677	192.168.0.25	192.168.0.56	TCP	60	2560 → 80 [SYN] Seq=0 Win=512 Len=0
▶ Frame 59: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface 0						
▶ Ethernet II, Src: Dell dc:ff:cf (98:90:96:dc:ff:cf), Dst: Dell dc:e4:c0 (98:90:96:dc:e4:c0)						
▶ Internet Protocol Version 4, Src: 192.168.0.25, Dst: 192.168.0.56						
▼ Transmission Control Protocol, Src Port: 25344, Dst Port: 80, Seq: 0, Len: 0						
Source Port: 25344						
Destination Port: 80						
[Stream index: 2]						
[TCP Segment Len: 0]						
Sequence number: 0 (relative sequence number)						
[Next sequence number: 0 (relative sequence number)]						
Acknowledgment number: 0						
0101 .... = Header Length: 20 bytes (5)						
▶ Flags: 0x002 (SYN)						
Window size value: 512						
[Calculated window size: 512]						
Checksum: 0x8891 [unverified]						
[Checksum Status: Unverified]						
Urgent pointer: 0						
▶ [Timestamps]						
0000	98 90 96 dc e4 c0 98 90	96 dc ff cf 08 00 45 00	.....E.			
0010	00 28 5c 00 00 00 40 06	9d 2e c0 a8 00 19 c0 a8	(\...@.....P.			
0020	00 38 63 00 00 50 01 21	00 00 00 00 00 50 02	8c...P.!.....P.			
0030	02 00 88 91 00 00 00 00	00 00 00 00	.....			

.....E.

(\...@.....P.

8c...P.!.....P.

.....

Success

Yes

## Test#6

Description

Transfer Character '1'

Steps

- Start the program
- Start Client and Server with -srcp flag

## Result

ip.dst == 192.168.0.56 && ip.src == 192.168.0.25						
No.	Time	Source	Destination	Protocol	Length	Info
54	28.823673727	192.168.0.25	192.168.0.56	TCP	60	24832 → 80 [SYN] Seq=0 Win=512 Len=0
58	29.823921349	192.168.0.25	192.168.0.56	TCP	60	25088 → 80 [SYN] Seq=0 Win=512 Len=0
59	30.824189854	192.168.0.25	192.168.0.56	TCP	60	25344 → 80 [SYN] Seq=0 Win=512 Len=0
63	31.824433471	192.168.0.25	192.168.0.56	TCP	60	12544 → 80 [SYN] Seq=0 Win=512 Len=0
65	32.824680888	192.168.0.25	192.168.0.56	TCP	60	12800 → 80 [SYN] Seq=0 Win=512 Len=0
67	33.824968231	192.168.0.25	192.168.0.56	TCP	60	13056 → 80 [SYN] Seq=0 Win=512 Len=0
72	34.825189677	192.168.0.25	192.168.0.56	TCP	60	2560 → 80 [SYN] Seq=0 Win=512 Len=0
▶ Frame 63: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface 0						
▶ Ethernet II, Src: Dell_dc:ff:cf (98:90:96:dc:ff:cf), Dst: Dell_dc:e4:c0 (98:90:96:dc:e4:c0)						
▶ Internet Protocol Version 4, Src: 192.168.0.25, Dst: 192.168.0.56						
▼ Transmission Control Protocol, Src Port: 12544, Dst Port: 80, Seq: 0, Len: 0						
Source Port: 12544						
Destination Port: 80						
[Stream index: 3]						
[TCP Segment Len: 0]						
Sequence number: 0 (relative sequence number)						
[Next sequence number: 0 (relative sequence number)]						
Acknowledgment number: 0						
0101 .... = Header Length: 20 bytes (5)						
▶ Flags: 0x002 (SYN)						
Window size value: 512						
[Calculated window size: 512]						
Checksum: 0x70af [unverified]						
[Checksum Status: Unverified]						
Urgent pointer: 0						
▶ [Timestamps]						
0000	98 90 96 dc e4 c0 98 90	96 dc ff cf 08 00 45 00	.....E.			
0010	00 28 6f 00 00 00 40 06	8a 2e c0 a8 00 19 c0 a8	.(o..@. ....P.			
0020	00 38 81 00 00 50 4b 03	00 00 00 00 00 50 02	81..PK. ....P.			
0030	02 00 70 af 00 00 00 00	00 00 00 00	..p.....			

.....E.

(o..@. ....P.

81..PK. ....P.

..p.....

Success

Yes

## Test#7

Description

Transfer Character '2'

Steps

- Start the program
- Start Client and Server with -srcp flag

## Result

ip.dst == 192.168.0.56 && ip.src == 192.168.0.25						
No.	Time	Source	Destination	Protocol	Length	Info
54	28.823673727	192.168.0.25	192.168.0.56	TCP	60	24832 → 80 [SYN] Seq=0 Win=512 Len=0
58	29.823921349	192.168.0.25	192.168.0.56	TCP	60	25088 → 80 [SYN] Seq=0 Win=512 Len=0
59	30.824189854	192.168.0.25	192.168.0.56	TCP	60	25344 → 80 [SYN] Seq=0 Win=512 Len=0
63	31.824433471	192.168.0.25	192.168.0.56	TCP	60	12544 → 80 [SYN] Seq=0 Win=512 Len=0
65	32.824680888	192.168.0.25	192.168.0.56	TCP	60	12800 → 80 [SYN] Seq=0 Win=512 Len=0
67	33.824968231	192.168.0.25	192.168.0.56	TCP	60	13056 → 80 [SYN] Seq=0 Win=512 Len=0
72	34.825189677	192.168.0.25	192.168.0.56	TCP	60	2560 → 80 [SYN] Seq=0 Win=512 Len=0
▶ Frame 65: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface 0						
▶ Ethernet II, Src: Dell_dc:ff:cf (98:90:96:dc:ff:cf), Dst: Dell_dc:e4:c0 (98:90:96:dc:e4:c0)						
▶ Internet Protocol Version 4, Src: 192.168.0.25, Dst: 192.168.0.56						
▼ Transmission Control Protocol, Src Port: 12800, Dst Port: 80, Seq: 0, Len: 0						
Source Port: 12800						
Destination Port: 80						
[Stream index: 4]						
[TCP Segment Len: 0]						
Sequence number: 0 (relative sequence number)						
[Next sequence number: 0 (relative sequence number)]						
Acknowledgment number: 0						
0101 ... = Header Length: 20 bytes (5)						
▶ Flags: 0x002 (SYN)						
Window size value: 512						
[Calculated window size: 512]						
Checksum: 0x3c8f [unverified]						
[Checksum Status: Unverified]						
Urgent pointer: 0						
▶ [Timestamps]						
0000	98 90 96 dc e4 c0 98 90	96 dc ff cf 08 00 45 00	.....E.			
0010	00 28 e2 00 00 00 40 06	17 2e c0 a8 00 19 c0 a8	.(...@.....			
0020	00 38 82 00 00 50 7e 23	00 00 00 00 00 50 02	82..P~#.....P.			
0030	02 00 3c 8f 00 00 00 00	00 00 00 00	...<.....			

Success

Yes

## Test#8

Description

Transfer Character '3'

Steps

- Start the program
- Start Client and Server with -srcp flag

Result

ip.dst == 192.168.0.56 && ip.src == 192.168.0.25

No.	Time	Source	Destination	Protocol	Length	Info
54	28.823673727	192.168.0.25	192.168.0.56	TCP	60	24832 → 80 [SYN] Seq=0 Win=512 Len=0
58	29.823921349	192.168.0.25	192.168.0.56	TCP	60	25088 → 80 [SYN] Seq=0 Win=512 Len=0
59	30.824189854	192.168.0.25	192.168.0.56	TCP	60	25344 → 80 [SYN] Seq=0 Win=512 Len=0
63	31.824433471	192.168.0.25	192.168.0.56	TCP	60	12544 → 80 [SYN] Seq=0 Win=512 Len=0
65	32.824680888	192.168.0.25	192.168.0.56	TCP	60	12800 → 80 [SYN] Seq=0 Win=512 Len=0
67	33.824968231	192.168.0.25	192.168.0.56	TCP	60	13056 → 80 [SYN] Seq=0 Win=512 Len=0
72	34.825189677	192.168.0.25	192.168.0.56	TCP	60	2560 → 80 [SYN] Seq=0 Win=512 Len=0

▶ Frame 67: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface 0

▶ Ethernet II, Src: Dell\_dc:ff:cf (98:90:96:dc:ff:cf), Dst: Dell\_dc:e4:c0 (98:90:96:dc:e4:c0)

▶ Internet Protocol Version 4, Src: 192.168.0.25, Dst: 192.168.0.56

▼ Transmission Control Protocol, Src Port: 13056, Dst Port: 80, Seq: 0, Len: 0

Source Port: 13056

Destination Port: 80

[Stream index: 5]

[TCP Segment Len: 0]

Sequence number: 0 (relative sequence number)

[Next sequence number: 0 (relative sequence number)]

Acknowledgment number: 0

0101 ... = Header Length: 20 bytes (5)

▶ Flags: 0x002 (SYN)

Window size value: 512

[Calculated window size: 512]

Checksum: 0x84a1 [unverified]

[Checksum Status: Unverified]

Urgent pointer: 0

▶ [Timestamps]

0000 98 90 96 dc e4 c0 98 90 96 dc ff cf 08 00 45 00 .....E.

0010 00 28 a9 00 00 00 40 06 50 2e c0 a8 00 19 c0 a8 .(....@.P.....

0020 00 38 33 00 00 50 35 11 00 00 00 00 00 50 02 .83..P5.....P.

0030 02 00 84 a1 00 00 00 00 00 00 00 00 .....[SYN]

.....E.

(....@.P.....

.83..P5.....P.

.....[SYN]

Success

Yes