

W9D1 – Nicholas Di Angelo -

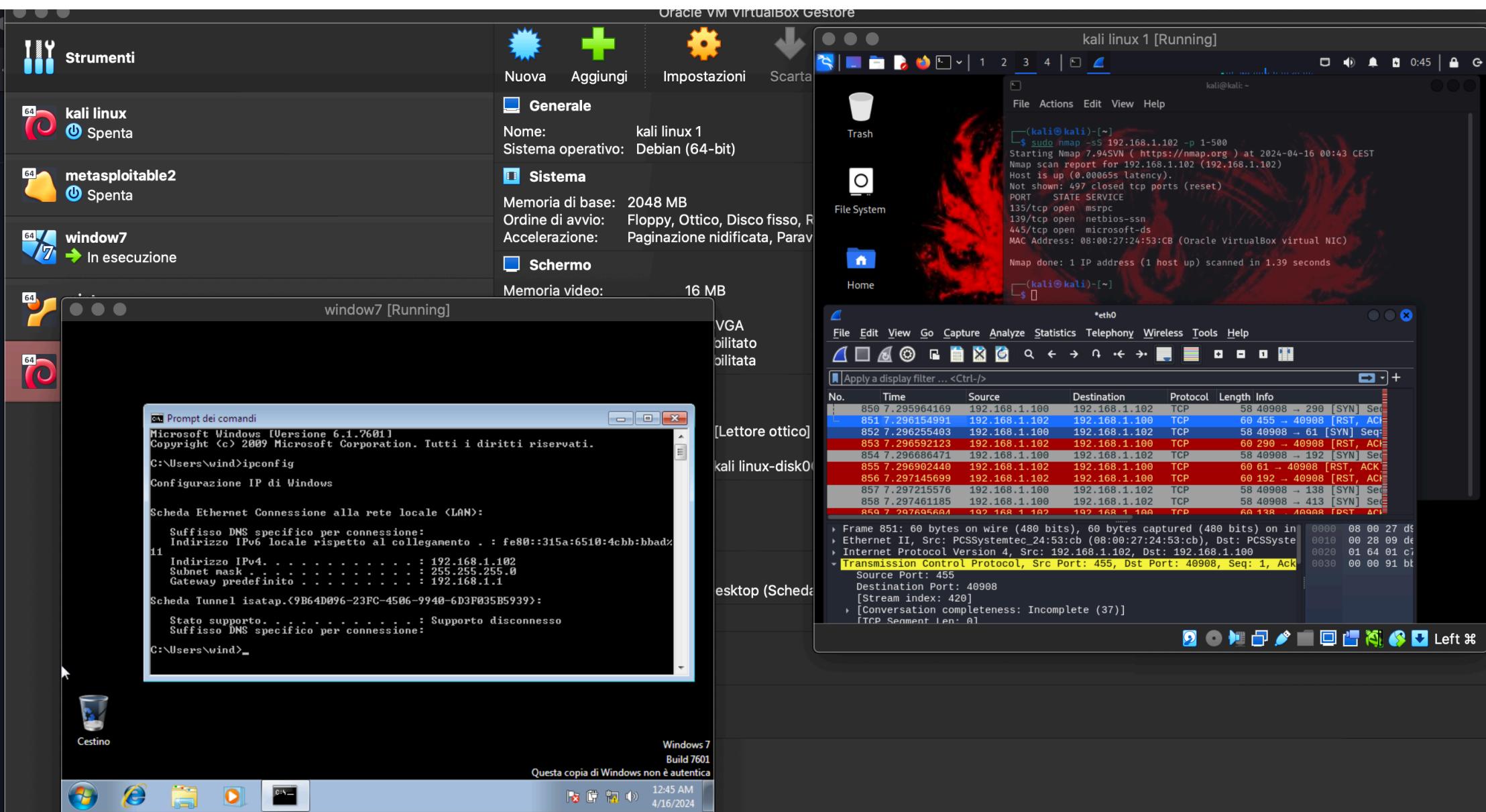
Premesso che il modus operandi del prot. TCP per stabilire una comunicazione è composta da tre step SYN – SYN/ACK – ACK il 3 way handshake viene sfruttato per capire lo stato della porta aperta o chiusa così da creare un eventuale canale di comunicazione

In questo esercizio abbiamo effettuato tre tipologie di scansioni, usando un tool scan (nmap) ,raccolto nonchè analizzato i dati intercettati da wireshark.

Abbiamo effettuato tre diverse scansioni :

- **Sudo nmap -sS ip -p port range** abbiamo detto al tool di effettuare una scansione non invasiva (SYN , SYN-ACK)prendendo comunque dati utili . Tanto è vero che dall'estrapolazione dei dati dal tool wireshark si evince sulla porta 445 il SYN , SYN/ACK ma non l'Acknowledge finale per la conversazione rimmarrà incompleta per non destare sospetto .
- **Sudo nmap -sT ip -p port range** abbiamo effettuato una scansione invasiva poiché contrariamente a quella sopra abbiamo richiesto alla macchina una comunicazione completa del 3 way handshake (SYN , SYN/HACK , HACK) stabilendo così un canale di comunicazione . Tanto è vero che con wairshark abbiamo intercettato gli acknowledge finali e stabilito definitivamente la connessione .
- **Sudo nmap -A ip -p range port** abbiamo raccolto tutti i dati del sistema operativo utilizzato il mac address e ulteriori dati generali utili .

Note finali ho effettuato scan map con range port variabili da 1 a 500 , le porte scannerizzate sono sia porte aperte che chiuse nel mio caso ho preso in considerazione la porta 445 TCP Microsoft.ds pronta per un bel payload .





1 2 3 4

*eth0

0:50 |

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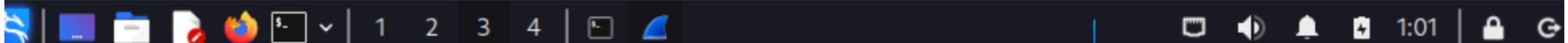
No.	Time	Source	Destination	Protocol	Length	Info
19	6.108285917	192.168.1.100	192.168.1.102	TCP	58	40908 → 22 [SYN] Seq=0 Win=1024 Len=0
22	6.108983619	192.168.1.100	192.168.1.102	TCP	58	40908 → 445 [SYN] Seq=0 Win=1024 Len=0
23	6.109318093	192.168.1.100	192.168.1.102	TCP	58	40908 → 23 [SYN] Seq=0 Win=1024 Len=0
25	6.109578058	192.168.1.100	192.168.1.102	TCP	54	40908 → 445 [RST] Seq=1 Win=0 Len=0
27	6.112849134	192.168.1.100	192.168.1.102	TCP	58	40908 → 53 [SYN] Seq=0 Win=1024 Len=0
28	6.113503021	192.168.1.100	192.168.1.102	TCP	58	40908 → 139 [SYN] Seq=0 Win=1024 Len=0
30	6.114070248	192.168.1.100	192.168.1.102	TCP	58	40908 → 111 [SYN] Seq=0 Win=1024 Len=0
32	6.114418162	192.168.1.100	192.168.1.102	TCP	54	40908 → 139 [RST] Seq=1 Win=0 Len=0
34	6.114808547	192.168.1.100	192.168.1.102	TCP	58	40908 → 25 [SYN] Seq=0 Win=1024 Len=0
35	6.115115606	192.168.1.100	192.168.1.102	TCP	58	40908 → 199 [SYN] Seq=0 Win=1024 Len=0
37	6.115494075	192.168.1.100	192.168.1.102	TCP	58	40908 → 135 [SYN] Seq=0 Win=1024 Len=0
39	6.115816462	192.168.1.100	192.168.1.102	TCP	58	40908 → 24 [SYN] Seq=0 Win=1024 Len=0
41	6.116107858	192.168.1.100	192.168.1.102	TCP	54	40908 → 135 [RST] Seq=1 Win=0 Len=0
43	6.116704654	192.168.1.100	192.168.1.102	TCP	58	40908 → 446 [SYN] Seq=0 Win=1024 Len=0
44	6.117029413	192.168.1.100	192.168.1.102	TCP	58	40908 → 194 [SYN] Seq=0 Win=1024 Len=0
47	6.117672095	192.168.1.100	192.168.1.102	TCP	58	40908 → 460 [SYN] Seq=0 Win=1024 Len=0

- ▶ Frame 22: 58 bytes on wire (464 bits), 58 bytes captured (464 bits) on interface eth0
- ▶ Ethernet II, Src: PCSSystemtec_d9:2c:85 (08:00:27:d9:2c:85), Dst: PCSSystemtec_24:53:00 (08:00:27:00:24:53)
- ▶ Internet Protocol Version 4, Src: 192.168.1.100, Dst: 192.168.1.102
- ▼ Transmission Control Protocol, Src Port: 40908, Dst Port: 445, Seq: 0, Len: 0

Source Port: 40908
 Destination Port: 445
 [Stream index: 8]
 [Conversation completeness: Incomplete (35)]
 [TCP Segment Len: 0]
 Sequence Number: 0 (relative sequence number)
 Sequence Number (raw): 1578605134
 [Next Sequence Number: 1 (relative sequence number)]
 Acknowledgment Number: 0
 Acknowledgment number (raw): 0
 0110 = Header Length: 24 bytes (6)

0000	08	00	27	24	5
0010	00	2c	35	ed	0
0020	01	66	9f	cc	0
0030	04	00	76	1c	0

```
Destination Port: 445
[Stream index: 8]
- [Conversation completeness: Incomplete (35)]
  ..1. .... = RST: Present
  ....0 .... = FIN: Absent
  .... 0... = Data: Absent
  .... .0.. = ACK: Absent
  .... ..1. = SYN-ACK: Present
  .... ...1 = SYN: Present
  [Completeness Flags: R...SS]
  [TCP Segment Len: 0]
Sequence Number: 1    (relative sequence number)
Sequence Number (raw): 1578605135
[Next Sequence Number: 1    (relative sequence number)]
Acknowledgment Number: 0
```



kali@kali: ~

```
└──(kali㉿kali)-[~]
$ sudo nmap -sS 192.168.1.102 -p 440-445
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-04-16 00:59 CEST
Nmap scan report for 192.168.1.102 (192.168.1.102)
Host is up (0.0002s latency).

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*eth0

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File Manager NetworkMiner Terminal

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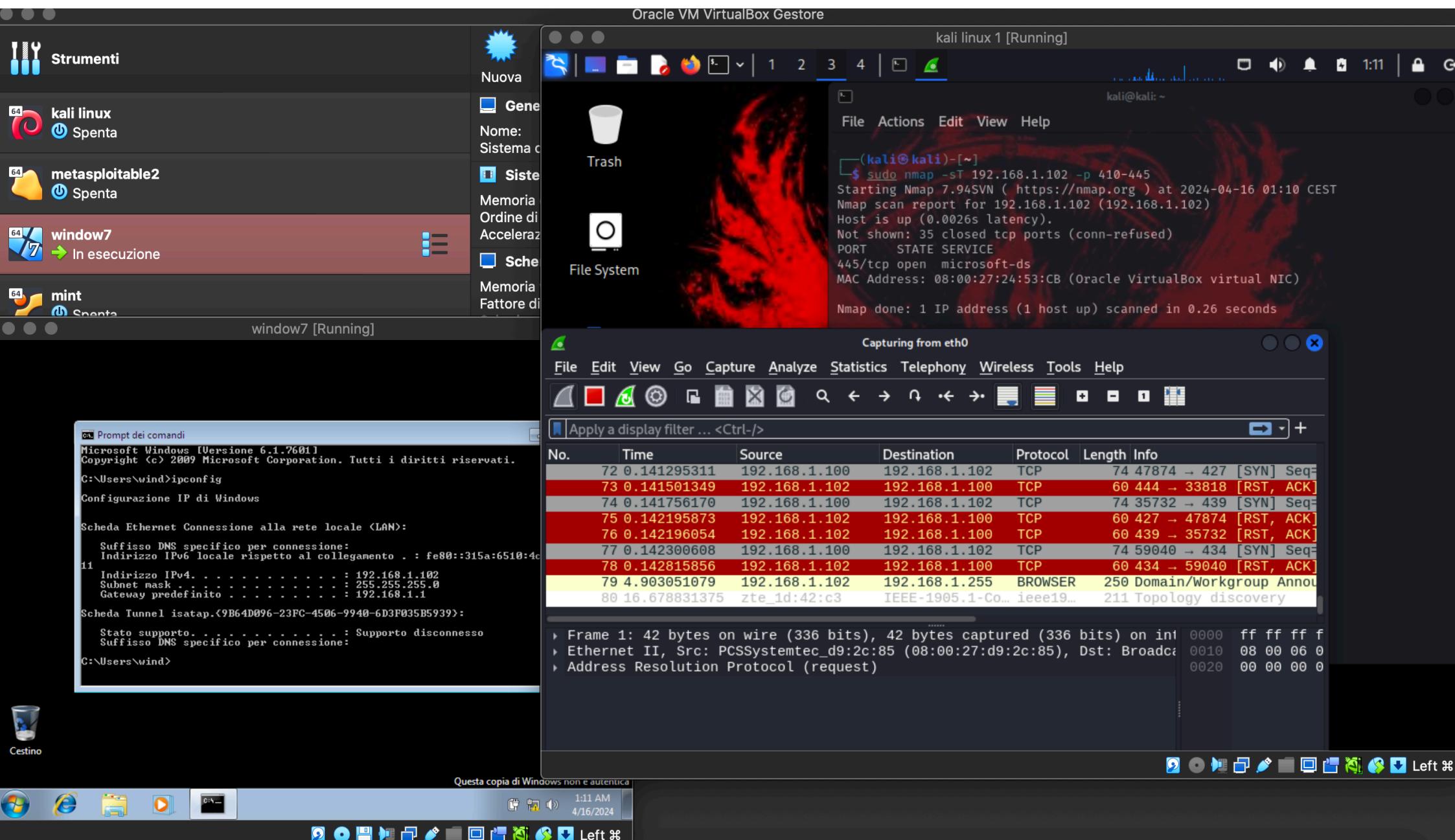
Source	Protocol	Length	Info
Systemtec_d...	ARP	60	192.168.1.102 is at 08:00:27:24:53:cb
0::3624:3ef...	DNS	106	Standard query 0xb48a PTR 102.1.168.192.in-addr.arpa
0::a00:27ff...	DNS	133	Standard query response 0xb48a PTR 102.1.168.192.in-addr.arpa
192.168.1.102	TCP	58	57279 → 443 [SYN] Seq=0 Win=1024 Len=0 MSS=1460
192.168.1.100	TCP	60	443 → 57279 [RST, ACK] Seq=1 Ack=1 Win=0 Len=0
192.168.1.102	TCP	58	57279 → 445 [SYN] Seq=0 Win=1024 Len=0 MSS=1460
192.168.1.102	TCP	58	57279 → 442 [SYN] Seq=0 Win=1024 Len=0 MSS=1460
192.168.1.100	TCP	60	445 → 57279 [SYN, ACK] Seq=0 Ack=1 Win=8192 Len=0 MSS=1460
192.168.1.102	TCP	54	57279 → 445 [RST] Seq=1 Win=0 Len=0
192.168.1.102	TCP	58	57279 → 441 [SYN] Seq=0 Win=1024 Len=0 MSS=1460

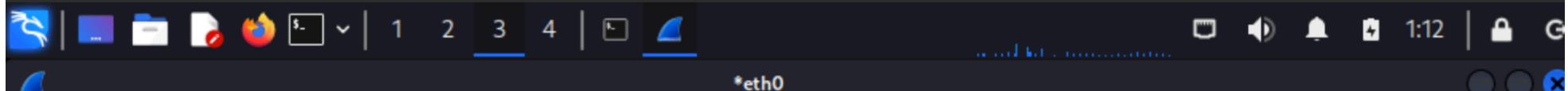
Acknowledgment number (raw): 1152869005
0110 = Header Length: 24 bytes (6)

Flags: 0x012 (SYN, ACK)
Window: 8192
[Calculated window size: 8192]
Checksum: 0x58f8 [unverified]
[Checksum Status: Unverified]
Urgent Pointer: 0

Options: (4 bytes), Maximum segment size

Timestamp





*eth0

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No.	Time	Source	Destination	Protocol	Length	Info
1	0.0000000000	PCSSystemtec_d9:... Broadcast	ARP	42	Who has 192.168.1.102? Tell 192.168.1.102	
2	0.000872582	PCSSystemtec_24:... PCSSystemtec_d9:...	ARP	60	192.168.1.102 is at 08:00:27:24:53:cb	
3	0.119169990	fe80::a00:27ff:... fe80::3624:3ef...	DNS	106	Standard query 0xf22d PTR 102.1.16	
4	0.121679825	fe80::3624:3eff:... fe80::a00:27ff...	DNS	133	Standard query response 0xf22d PTR	
5	0.121891704	192.168.1.100	192.168.1.102	TCP	74	33808 → 443 [SYN] Seq=0 Win=64240
6	0.122575045	192.168.1.100	192.168.1.102	TCP	74	54992 → 445 [SYN] Seq=0 Win=64240
7	0.122891696	192.168.1.102	192.168.1.100	TCP	60	443 → 33808 [RST, ACK] Seq=1 Ack=1
8	0.123217142	192.168.1.100	192.168.1.102	TCP	74	42744 → 414 [SYN] Seq=0 Win=64240
9	0.123571558	192.168.1.102	192.168.1.100	TCP	74	445 → 54992 [SYN, ACK] Seq=0 Ack=1
10	0.123644839	192.168.1.100	192.168.1.102	TCP	66	54992 → 445 [ACK] Seq=1 Ack=1 Win=
11	0.124072741	192.168.1.102	192.168.1.100	TCP	60	414 → 42744 [RST, ACK] Seq=1 Ack=1
12	0.124252544	192.168.1.100	192.168.1.102	TCP	74	56126 → 412 [SYN] Seq=0 Win=64240
13	0.124915035	192.168.1.102	192.168.1.100	TCP	60	412 → 56126 [RST, ACK] Seq=1 Ack=1
14	0.124989610	192.168.1.100	192.168.1.102	TCP	74	45342 → 436 [SYN] Seq=0 Win=64240
15	0.125328953	192.168.1.100	192.168.1.102	TCP	74	49170 → 423 [SYN] Seq=0 Win=64240
16	0.125564303	192.168.1.102	192.168.1.100	TCP	60	436 → 45342 [RST, ACK] Seq=1 Ack=1

Frame 7: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface eth0,
 ▾ Ethernet II, Src: PCSSystemtec_24:53:cb (08:00:27:24:53:cb), Dst: PCSSystemtec_d9:2c:
 ▾ Internet Protocol Version 4, Src: 192.168.1.102, Dst: 192.168.1.100
 ▾ Transmission Control Protocol, Src Port: 443, Dst Port: 33808, Seq: 1, Ack: 1, Len: 0

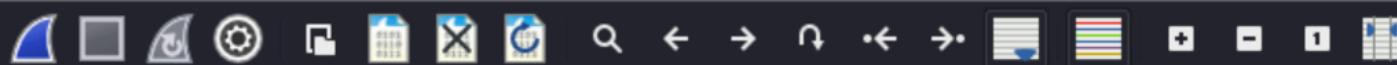
Source Port: 443	0000 08 00 27 d9 2c
Destination Port: 33808	0010 00 28 00 8a 4
[Stream index: 0]	0020 01 64 01 bb 8
Conversation completeness: Incomplete (37)	0030 00 00 81 da 0
[TCP Segment Len: 0]	
Sequence Number: 1 (relative sequence number)	
Sequence Number (raw): 0	
[Next Sequence Number: 1 (relative sequence number)]	
Acknowledgment Number: 1 (relative ack number)	
Acknowledgment number (raw): 3895606237	
0101 = Header Length: 20 bytes (5)	

Source Port: 443
 Destination Port: 33808
 [Stream index: 0]
 Conversation completeness: Incomplete (37)
 [TCP Segment Len: 0]
 Sequence Number: 1 (relative sequence number)
 Sequence Number (raw): 0
 [Next Sequence Number: 1 (relative sequence number)]
 Acknowledgment Number: 1 (relative ack number)
 Acknowledgment number (raw): 3895606237
 0101 = Header Length: 20 bytes (5)



*eth0

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No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000000	zte_1d:42:c3	IEEE-1905.1-Co...	ieee19...	211	Topology discovery
2	17.829748302	PCSSystemtec_d9...	Broadcast	ARP	42	Who has 192.168.1.102? Tell 192.16...
3	17.830649385	PCSSystemtec_24...	PCSSystemtec_d...	ARP	60	192.168.1.102 is at 08:00:27:24:53...
4	17.968970892	fe80::a00:27ff:...	fe80::3624:3ef...	DNS	106	Standard query 0xdf6f PTR 102.1.16...
5	17.971755017	fe80::3624:3eff:...	fe80::a00:27ff:...	DNS	133	Standard query response 0xdf6f PTR...
6	17.972019638	PCSSystemtec_d9...	Broadcast	ARP	42	Who has 192.168.1.102? Tell 192.16...
7	17.972985630	PCSSystemtec_24...	PCSSystemtec_d...	ARP	60	192.168.1.102 is at 08:00:27:24:53...
8	17.972993283	192.168.1.100	192.168.1.102	TCP	74	34984 → 445 [SYN] Seq=0 Win=64240
9	17.973035666	192.168.1.100	192.168.1.102	TCP	74	41450 → 443 [SYN] Seq=0 Win=64240
10	17.973094573	192.168.1.100	192.168.1.102	TCP	74	46934 → 432 [SYN] Seq=0 Win=64240
11	17.973236305	192.168.1.100	192.168.1.102	TCP	74	58952 → 429 [SYN] Seq=0 Win=64240
12	17.973695053	192.168.1.102	192.168.1.100	TCP	74	445 → 34984 [SYN, ACK] Seq=0 Ack=1
13	17.973695225	192.168.1.102	192.168.1.100	TCP	60	443 → 41450 [RST, ACK] Seq=1 Ack=1
14	17.973695279	192.168.1.102	192.168.1.100	TCP	60	432 → 46934 [RST, ACK] Seq=1 Ack=1
15	17.973811080	192.168.1.100	192.168.1.102	TCP	66	34984 → 445 [ACK] Seq=1 Ack=1 Win=
16	17.974034468	192.168.1.100	192.168.1.102	TCP	74	52812 → 437 [SYN] Seq=0 Win=64240

```

Frame 15: 66 bytes on wire (528 bits), 66 bytes captured (528 bits) on interface eth0
Ethernet II, Src: PCSSystemtec_d9:2c:85 (08:00:27:d9:2c:85), Dst: PCSSystemtec_24:53:00 (08:00:27:24:53:00)
Internet Protocol Version 4, Src: 192.168.1.100, Dst: 192.168.1.102
Transmission Control Protocol, Src Port: 34984, Dst Port: 445, Seq: 1, Ack: 1, Len: 66
  Source Port: 34984
  Destination Port: 445
  [Stream index: 0]
  [Conversation completeness: Complete, NO_DATA (39)]
  [TCP Segment Len: 0]
  Sequence Number: 1 (relative sequence number)
  Sequence Number (raw): 1840675426
  [Next Sequence Number: 1 (relative sequence number)]
  Acknowledgment Number: 1 (relative ack number)
  Acknowledgment number (raw): 3521675648
  1000 .... = Header Length: 32 bytes (8)

  0000 08 00 27 24 5
  0010 00 34 ac 77 4
  0020 01 66 88 a8 0
  0030 01 f6 84 41 0
  0040 25 9a

```

Sequence Number (raw): 0
[Next Sequence Number: 1 (relative sequence number)]
Acknowledgment Number: 1 (relative ack number)
Acknowledgment number (raw): 3895606237
0101 = Header Length: 20 bytes (5)
↳ Flags: 0x014 (RST, ACK)
Window: 0
[Calculated window size: 0]
[Window size scaling factor: -1 (unknown)]
Checksum: 0x81da [unverified]
[Checksum Status: Unverified]
Urgent Pointer: 0
↳ [Timestamps]
↳ [SEQ/ACK analysis]

● Internet Protocol Version 4 (ip), 20 byte(s)

Packets: 80 · Displayed: 80 (100.0%) · Dropped: 0

