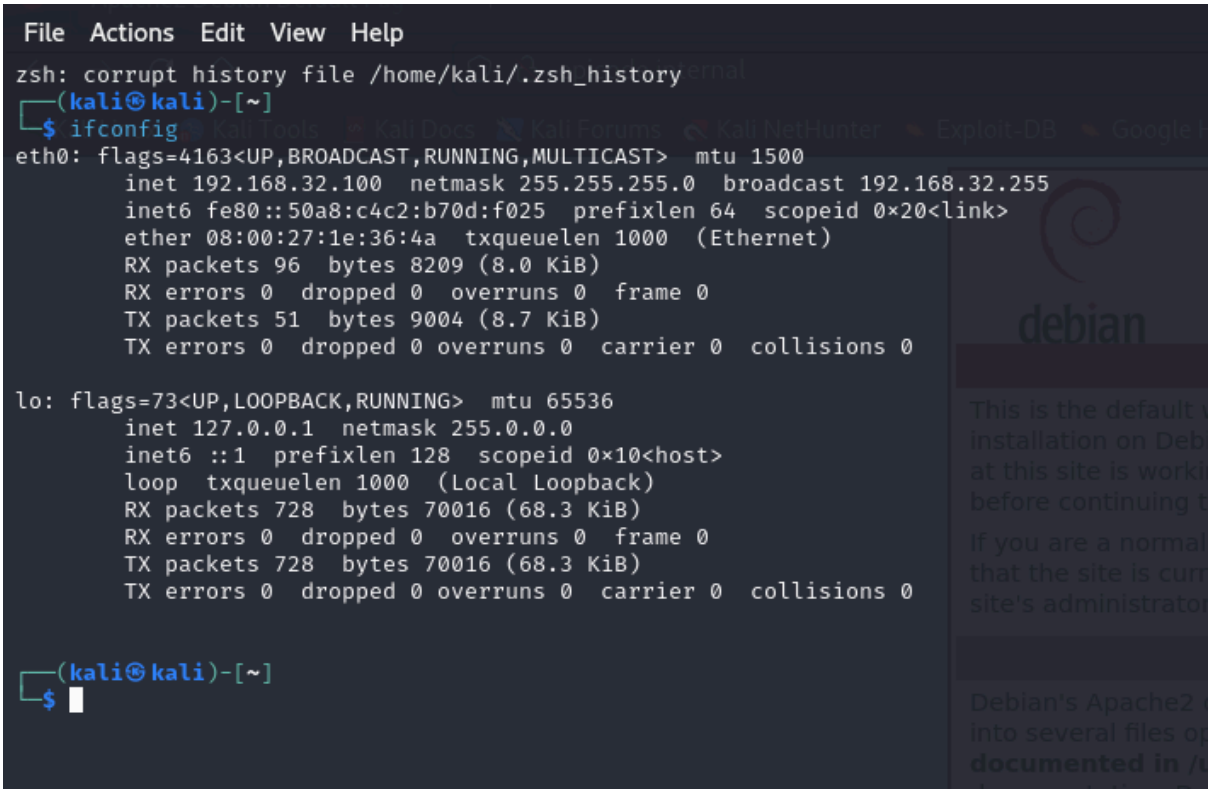
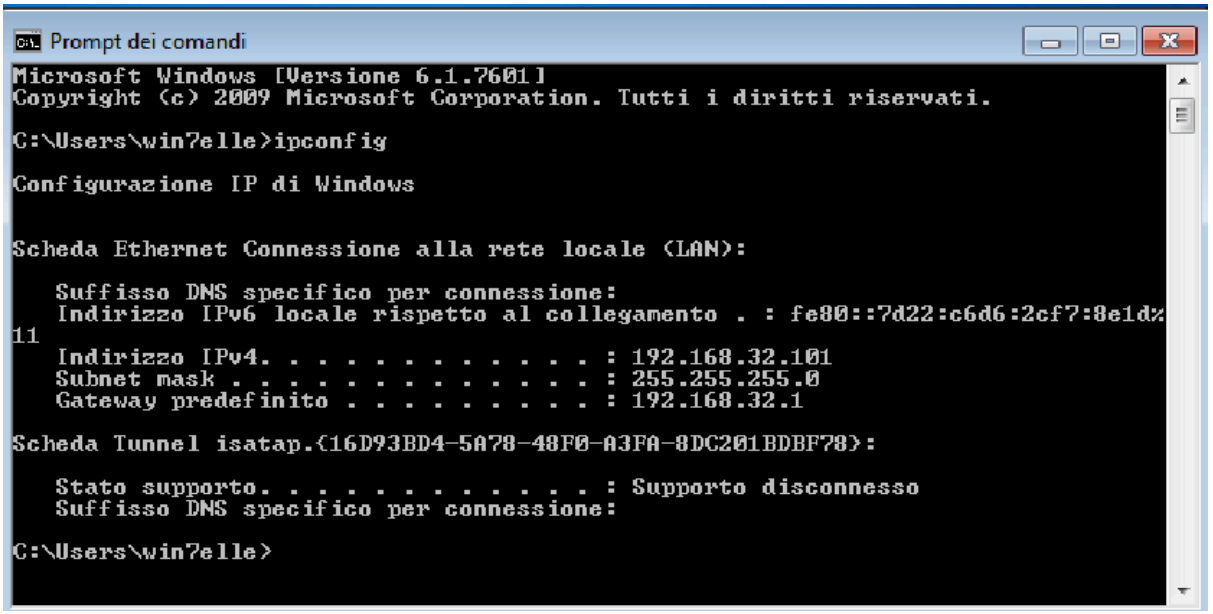
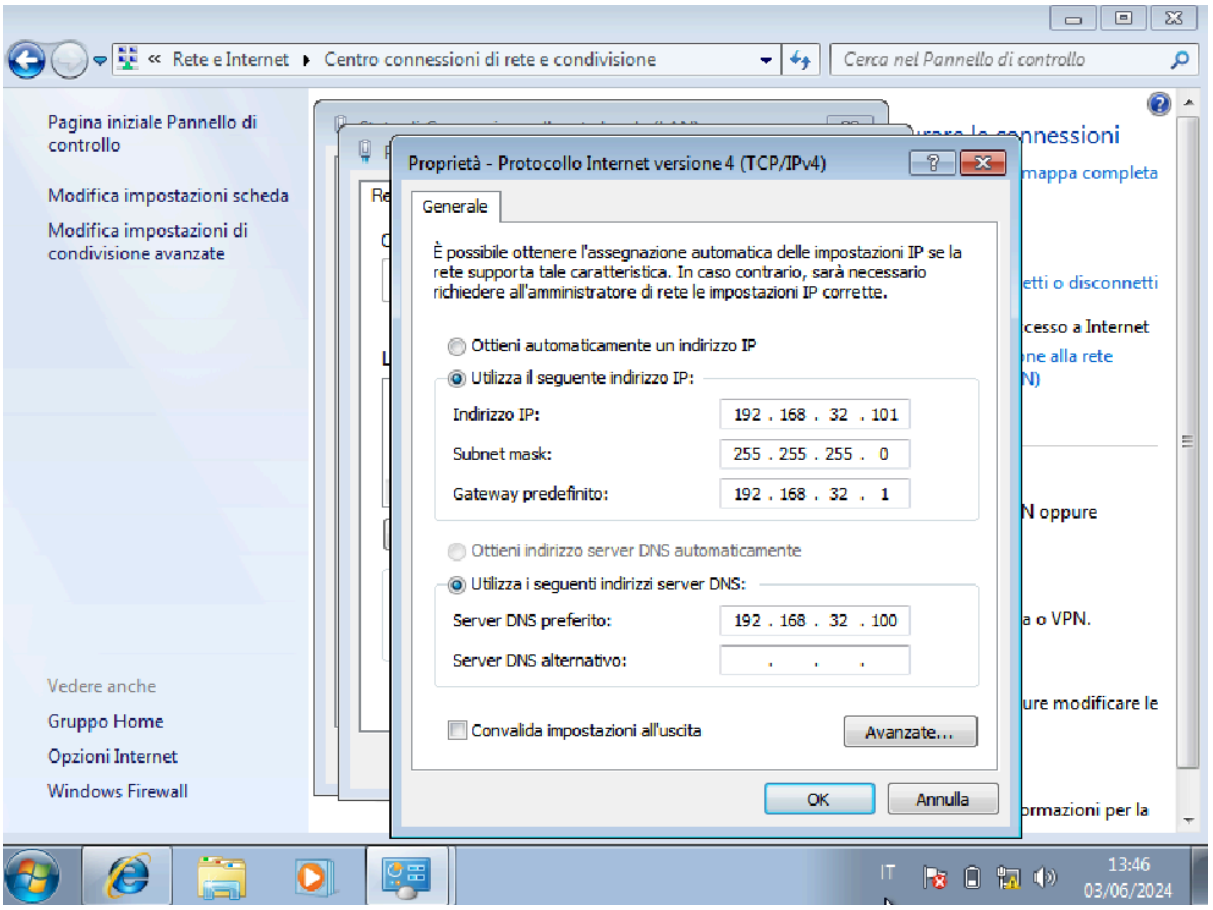
Rapporto Server-Client in rete interna in HTTP

ASSEGNO GLI INDIRIZZI IP
Kali: ….32.100

Windows7: …..32.101







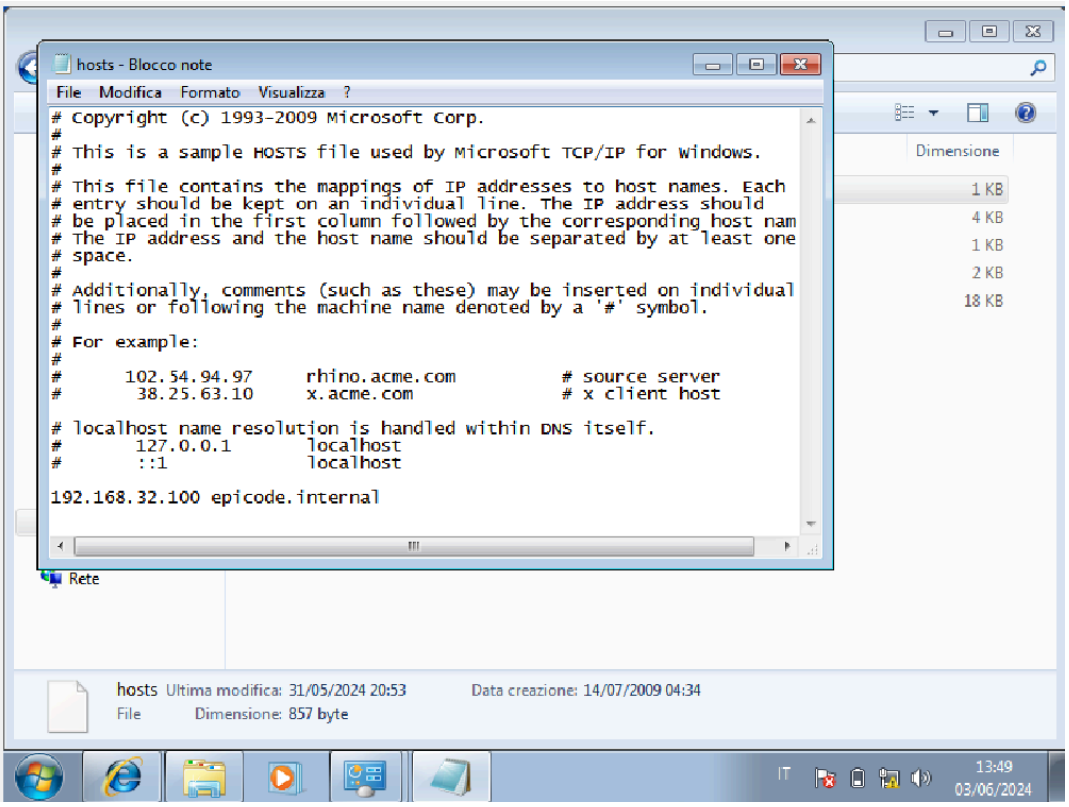
MODIFICO I FILE HOSTS

In Kali:

IL FILE /etc/hosts
contiene una riga che affianca a 192.168.32.100 l'indirizzo epicode.internal

In Windows7:

IL FILE si trova in System32/drivers e host.



Simuliamo la pagina del Server

Ho semplicemente installato Apache2
Ho modificato il file interno ad Apache2:

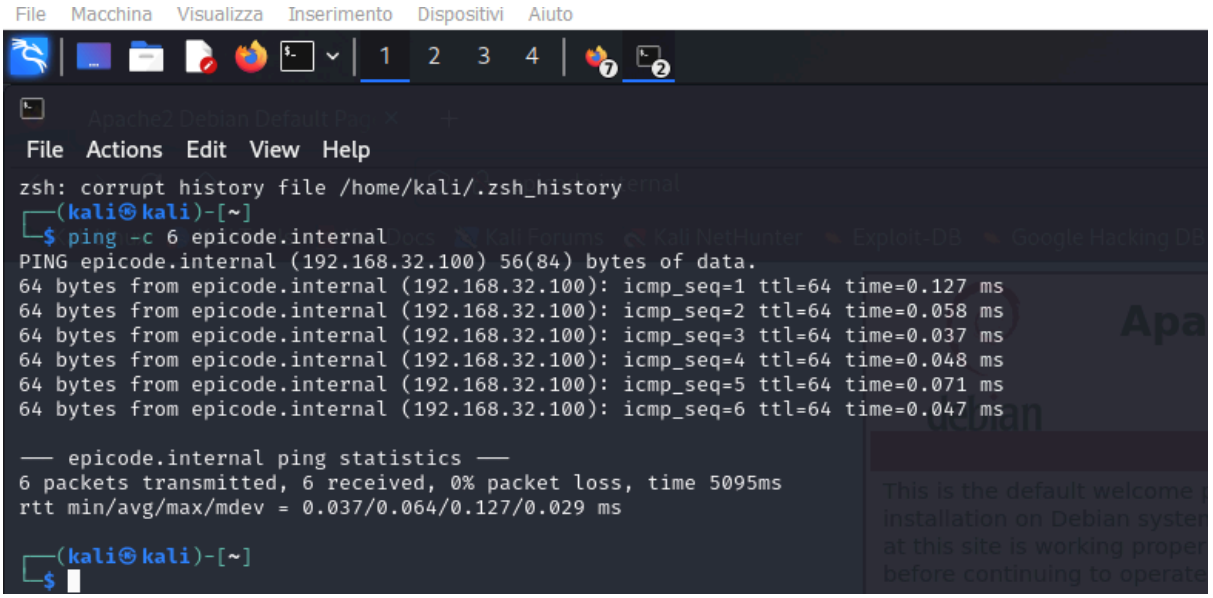
/etc/apache2/sites-available/000-default.conf

Imitando la riga commentata #ServerName www.example.com

Ho fatto una riga: ServerName http://epicode.internal

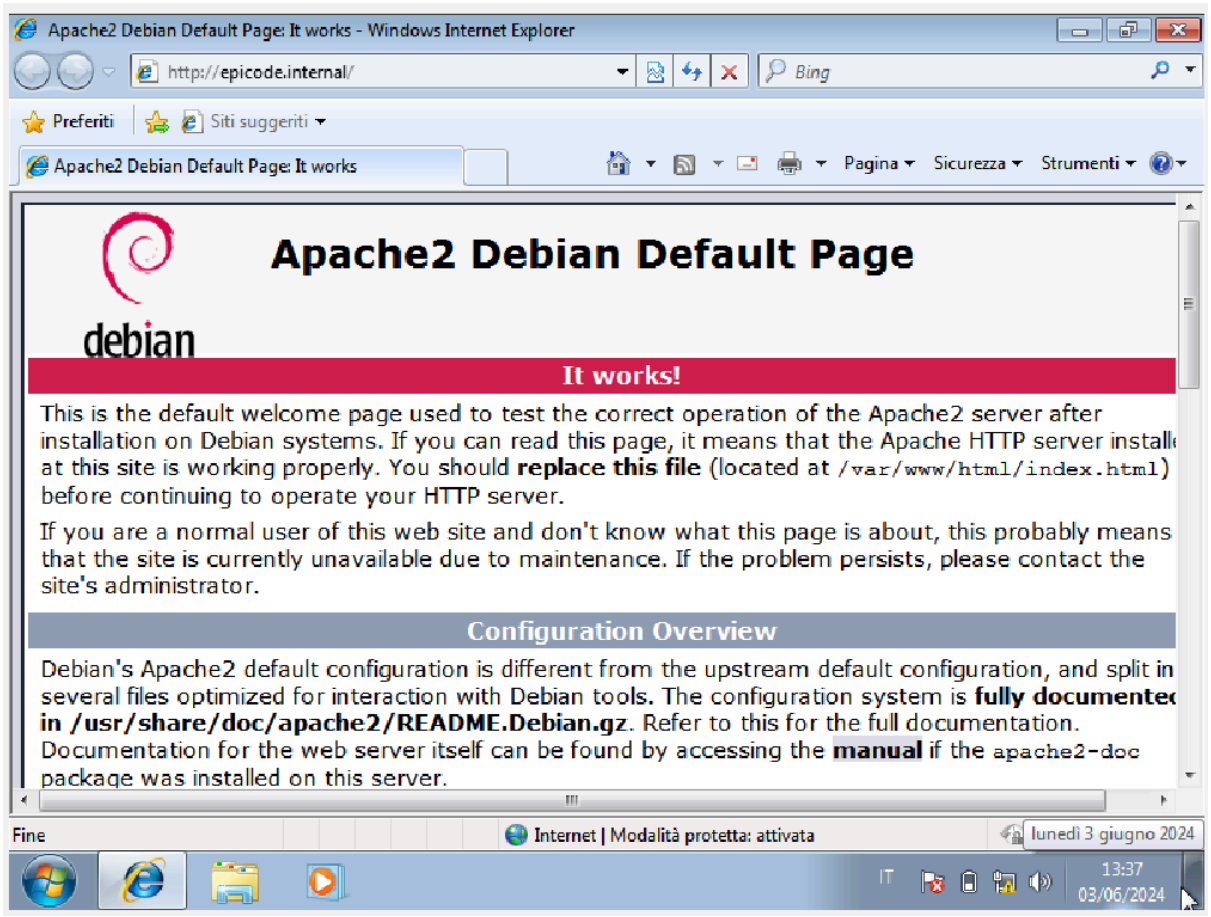
ORA PROVO UN PING, E PROVO A VISITARE LA PAGINA IN HTTP SULLE DUE MACCHINE.

SU KALI



FUNZIONA!

SU WINDOWS 7 FUNZIONA!



CATTURA WIRESHARK

No.	Time	Source	Destination	Protocol	Length	Info
5	3.328379932	PCSSystemtec_1e:36:4a	PCSSystemtec_d9:8a:…	ARP	42	192.168.32.100 is at 08:00:27:1e:36:4a
6	3.329087108	192.168.32.101	192.168.32.100	DNS	76	Standard query 0x3829 A go.microsoft.com
7	3.329116423	192.168.32.100	192.168.32.101	ICMP	104	Destination unreachable (Port unreachable)
8	3.407390880	192.168.32.101	192.168.32.100	DNS	72	Standard query 0x2fe1 A www.bing.com
9	3.407425819	192.168.32.100	192.168.32.101	ICMP	100	Destination unreachable (Port unreachable)
10	4.312182312	192.168.32.101	192.168.32.100	DNS	76	Standard query 0x3829 A go.microsoft.com
11	4.312237525	192.168.32.100	192.168.32.101	ICMP	104	Destination unreachable (Port unreachable)
12	4.378600268	192.168.32.101	192.168.32.100	DNS	72	Standard query 0x2fe1 A www.bing.com
13	4.378637832	192.168.32.100	192.168.32.101	ICMP	100	Destination unreachable (Port unreachable)
14	5.311228085	192.168.32.101	192.168.32.100	DNS	76	Standard query 0x3829 A go.microsoft.com
15	5.311267835	192.168.32.100	192.168.32.101	ICMP	104	Destination unreachable (Port unreachable)
16	5.375091421	192.168.32.101	192.168.32.100	DNS	72	Standard query 0x2fe1 A www.bing.com
17	5.375142984	192.168.32.100	192.168.32.101	ICMP	100	Destination unreachable (Port unreachable)
18	7.310506765	192.168.32.101	192.168.32.100	DNS	76	Standard query 0x3829 A go.microsoft.com
19	7.310550860	192.168.32.100	192.168.32.101	ICMP	104	Destination unreachable (Port unreachable)
20	7.375480401	192.168.32.101	192.168.32.100	DNS	72	Standard query 0x2fe1 A www.bing.com
21	7.375519797	192.168.32.100	192.168.32.101	ICMP	100	Destination unreachable (Port unreachable)
22	8.003346096	192.168.32.101	192.168.32.100	TCP	66	49160 → 80 [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=4 SACK_PERM
23	8.003382030	192.168.32.100	192.168.32.101	TCP	66	80 → 49160 [SYN, ACK] Seq=0 Ack=1 Win=32120 Len=0 MSS=1460 SACK_PERM WS=1
24	8.003955224	192.168.32.101	192.168.32.100	TCP	60	49160 → 80 [ACK] Seq=1 Ack=1 Win=65700 Len=0
25	8.004154215	192.168.32.101	192.168.32.100	HTTP	561	GET / HTTP/1.1
26	8.004179702	192.168.32.100	192.168.32.101	TCP	54	80 → 49160 [ACK] Seq=1 Ack=508 Win=31872 Len=0
27	8.042451664	192.168.32.100	192.168.32.101	HTTP	3434	HTTP/1.1 200 OK (text/html)
28	8.043936255	192.168.32.101	192.168.32.100	TCP	60	49160 → 80 [ACK] Seq=508 Ack=3381 Win=65700 Len=0
29	8.075776689	192.168.32.101	192.168.32.100	HTTP	504	GET /icons/openlogo-75.png HTTP/1.1
30	8.076013325	192.168.32.100	192.168.32.101	HTTP	303	HTTP/1.1 304 Not Modified
31	8.278755460	192.168.32.101	192.168.32.100	TCP	60	49160 → 80 [ACK] Seq=958 Ack=3630 Win=65448 Len=0
32	11.308375527	192.168.32.101	192.168.32.100	DNS	76	Standard query 0x3829 A go.microsoft.com
33	11.308421845	192.168.32.100	192.168.32.101	ICMP	104	Destination unreachable (Port unreachable)
34	11.373438681	192.168.32.101	192.168.32.100	DNS	72	Standard query 0x2fe1 A www.bing.com
35	11.373475724	192.168.32.100	192.168.32.101	ICMP	100	Destination unreachable (Port unreachable)
36	13.079211836	192.168.32.100	192.168.32.101	TCP	54	80 → 49160 [FIN, ACK] Seq=3630 Ack=958 Win=31872 Len=0
37	13.080518572	192.168.32.101	192.168.32.100	TCP	60	49160 → 80 [ACK] Seq=958 Ack=3631 Win=65448 Len=0
38	15.374331681	192.168.32.101	192.168.32.255	NBNS	92	Name query NB WWW.BING.COM<00>
39	16.117557617	192.168.32.101	192.168.32.255	NBNS	92	Name query NB WWW.BING.COM<00>
40	16.870319785	192.168.32.101	192.168.32.255	NBNS	92	Name query NB WWW.BING.COM<00>
41	18.070891075	192.168.32.101	192.168.32.100	TCP	60	49160 → 80 [RST, ACK] Seq=958 Ack=3631 Win=0 Len=0

```
Frame 25: 561 bytes on wire (4488 bits), 561 bytes captured (4488 bits) on interface eth0, id 0
Ethernet II, Src: PCSSystemtec_d9:8a:ed (08:00:27:d9:8a:ed), Dst: PCSSystemtec_1e:36:4a (08:00:27:1e:36:4a)
  Destination: PCSSystemtec_1e:36:4a (08:00:27:1e:36:4a)
  Source: PCSSystemtec_d9:8a:ed (08:00:27:d9:8a:ed)
  Type: IPv4 (0x0800)
Internet Protocol Version 4, Src: 192.168.32.101, Dst: 192.168.32.100
  0100 .... = Version: 4
  .... 0101 = Header Length: 20 bytes (5)
  Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
  Total Length: 547
  Identification: 0x008a (138)
  010. .... = Flags: 0x2, Don't fragment
  ...0 0000 0000 0000 = Fragment Offset: 0
  Time to Live: 128
  Protocol: TCP (6)
  Header Checksum: 0x3631 [validation disabled]
```

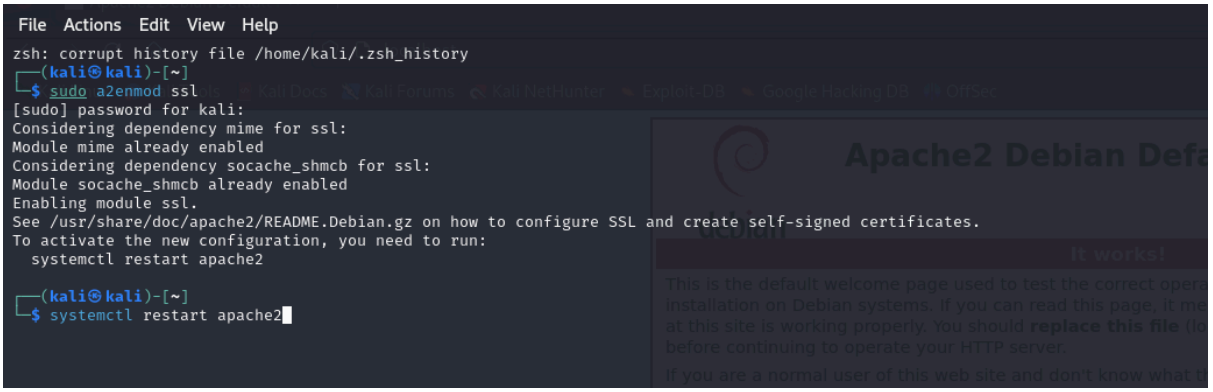
```
0000  08 00 27 1e 36 4a 08 00  27 d9 8a ed 08 00 45 00   ··'·6J·· '·····E·
0010  02 23 00 8a 40 00 80 06  36 31 c0 a8 20 65 c0 a8   ·#··@··· 61·· e··
0020  20 64 c0 08 00 50 4d 2a  4e a5 24 ec da 04 50 18    d···PM* N·$···P·
0030  40 29 a3 fa 00 00 47 45  54 20 2f 20 48 54 54 50  @)····GE T / HTTP
0040  2f 31 2e 31 0d 0a 41 63  63 65 70 74 3a 20 61 70  /1.1··Ac cept: ap
0050  70 6c 69 63 61 74 69 6f  6e 2f 78 2d 6d 73 2d 61  plicatio n/x-ms-a
0060  70 70 6c 69 63 61 74 69  6f 6e 2c 20 69 6d 61 67  pplicati on, imag
0070  65 2f 6a 70 65 67 2c 20  61 70 70 6c 69 63 61 74  e/jpeg,  applicat
0080  69 6f 6e 2f 78 61 6d 6c  2b 78 6d 6c 2c 20 69 6d  ion/xaml +xml, im
0090  61 67 65 2f 67 69 66 2c  20 69 6d 61 67 65 2f 70  age/gif,  image/p
00a0  6a 70 65 67 2c 20 61 70  70 6c 69 63 61 74 69 6f  jpeg, ap plicatio
00b0  6e 2f 78 2d 6d 73 2d 78  62 61 70 2c 20 2a 2f 2a  n/x-ms-x bap, */*
00c0  0d 0a 41 63 63 65 70 74  2d 4c 61 6e 67 75 61 67  ··Accept -Languag
00d0  65 3a 20 69 74 0d 0a 55  73 65 72 2d 41 67 65 6e  e: it··U ser-Agen
00e0  74 3a 20 4d 6f 7a 69 6c  6c 61 2f 34 2e 30 20 28  t: Mozil la/4.0 (
00f0  63 6f 6d 70 61 74 69 62  6c 65 3b 20 4d 53 49 45  compatib le; MSIE
0100  20 38 2e 30 3b 20 57 69  6e 64 6f 77 73 20 4e 54   8.0; Wi ndows NT

No.: 25 · Time: 8.004154215 · Source: 192.168.32.101 · Destination: 192.168.32.100 · Protocol: HTTP · Length: 561 · Info: GET / HTTP/1.1
✓ Show packet bytes
```

IN QUESTO PACCHETTO CHE VA DA Windows7 a Kali,

- il Mac sorgente è: 08:00:27:d9:8a:ed
- il MAC destinazione è: 08:00:27:1e:36:4a

Esercizio svolto con HTTPS

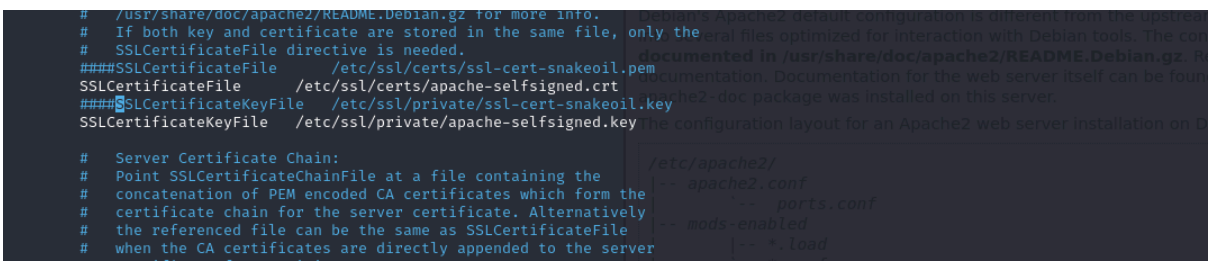
Abilitiamo la crittografia SSL su Apache2



Adesso creiamo un certificato SSL autofirmato con OPENSSL

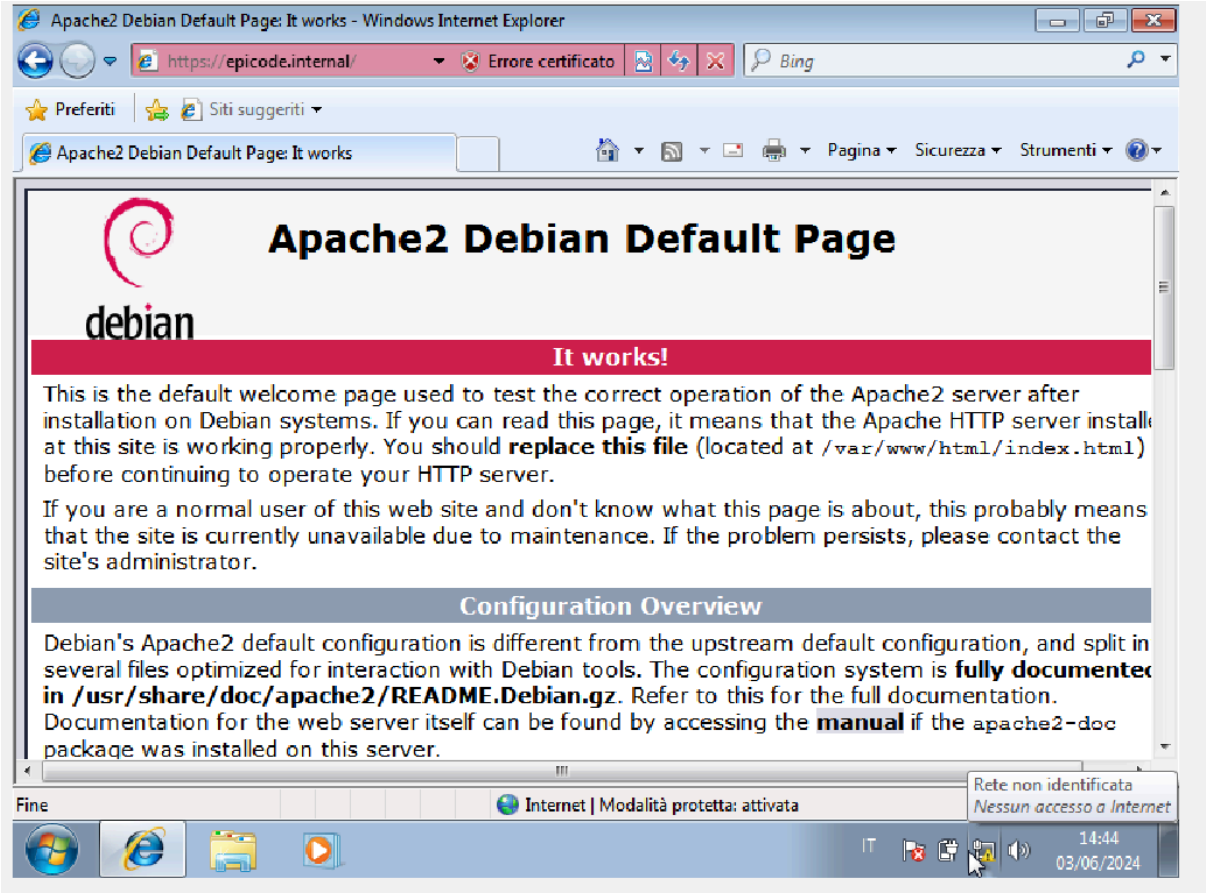
Il file che contiene il certificato si chiamerà apache-selfigned e si chiama uguale, cambia solo l'estensione, anche la chiave

AGGIORNIAMO IL FILE CERTIFICATI DI APACHE2 TRASFORMANDO IN COMMENTI LE COSE VECCHIE:



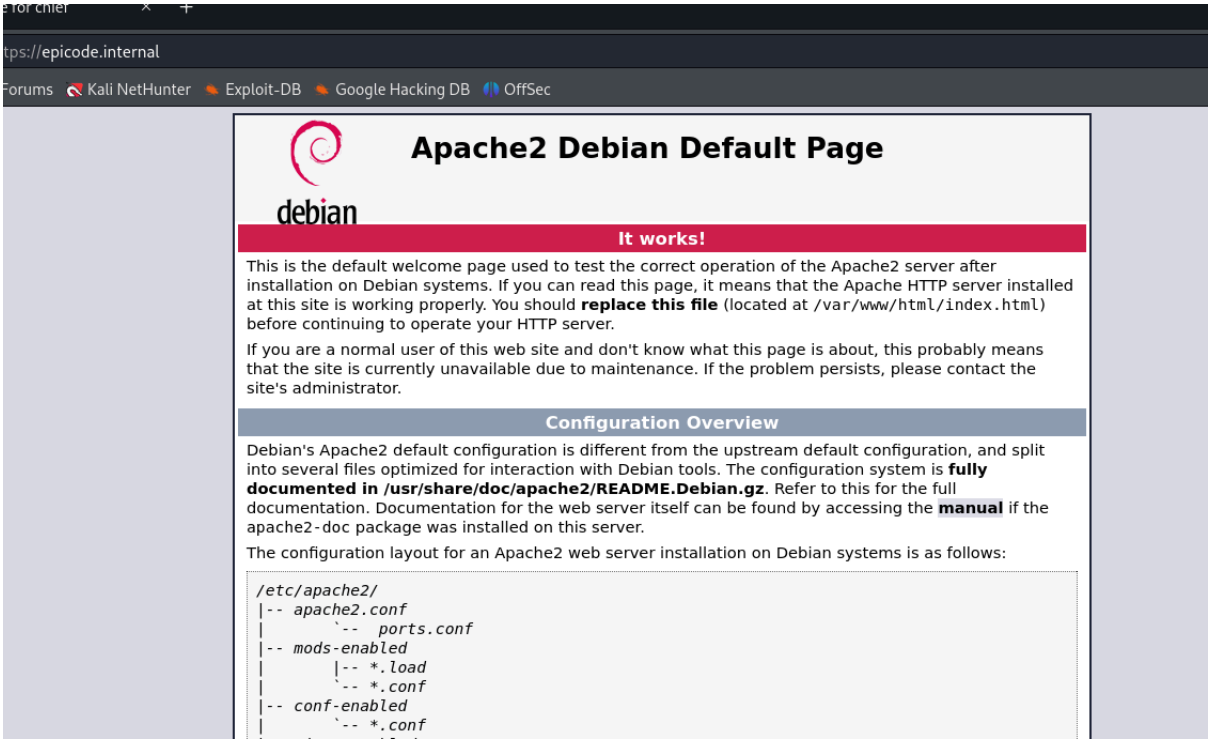
```
File  Actions  Edit  View  Help
zsh: corrupt history file /home/kali/.zsh_history
┌──(kali㉿kali)-[~]
└─$ sudo a2ensite default-ssl.conf
[sudo] password for kali:
Enabling site default-ssl.
To activate the new configuration, you need to run:
  systemctl reload apache2

┌──(kali㉿kali)-[~]
└─$ systemctl reload apache2
```

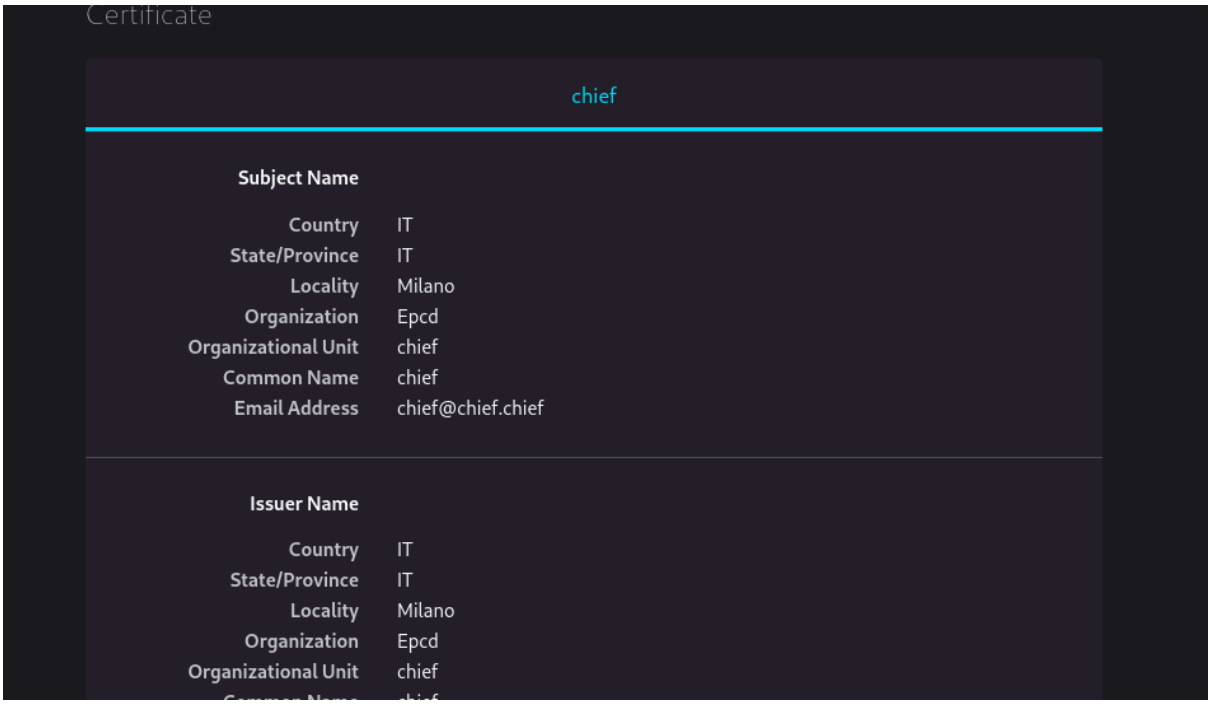
L’HTTP funziona, provo a visitare da Browser



SU KALI, MOZILLA MI FA ANCHE VEDERE IL CERTIFICATO CON DATI FARLOCCHI CHE AVEVO CREATO CON OPENSSL

(organizzazione = epcd 😁)





Faccio partire la CATTURA Wireshark

Noto che in HTTPS LA COMUNICAZIONE è criptata nonostante i MAC address siano i medesimi. infatti il protocollo che Wireshark mi visualizza è il TLS che serve per trasportare dati criptati in https.