# LAB 05 WIRESHARK2

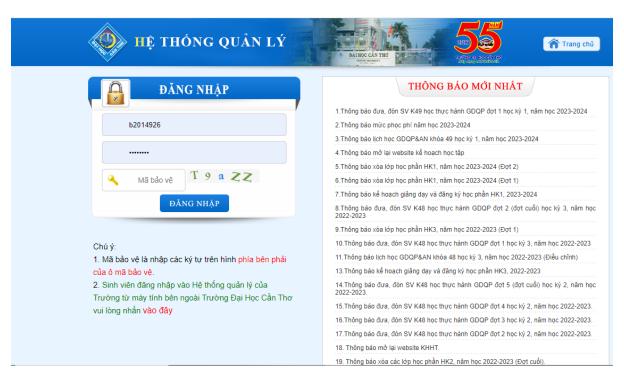
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Class	MO2
Browser	Safari, Chrome, IE, Firefox

## Design Wireshark analyzing scenario under Windows

	scanner	target	
OS	Windows Ubuntu	Windows, Linux	
IP address	Test - bed host IP  CTU IP  CICT IP  Neighboring PC IP		
scanning program			
scanning types	filter HTTP	VM IP(Ubuntu, Centos)	

# HTTP executing scenario

1 (browser) Visit one website



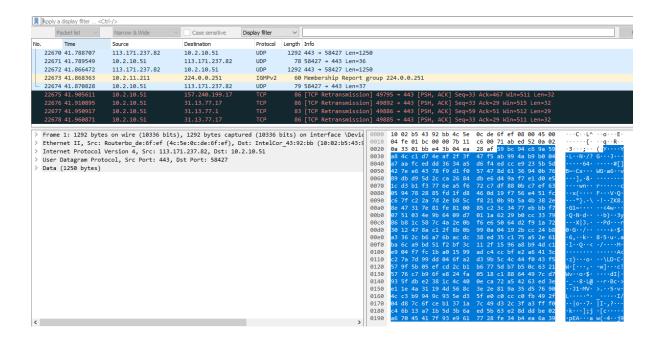
2 (website) Log in to home page

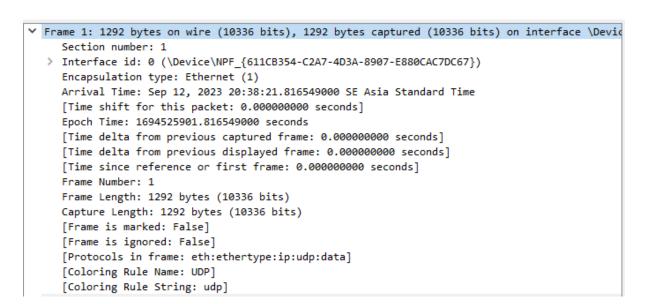


3 (browser) find input string on URL box

dkmh.ctu.edu.vn/htql/sinhvien/hindex.php

4 (wireshark) choose one packet





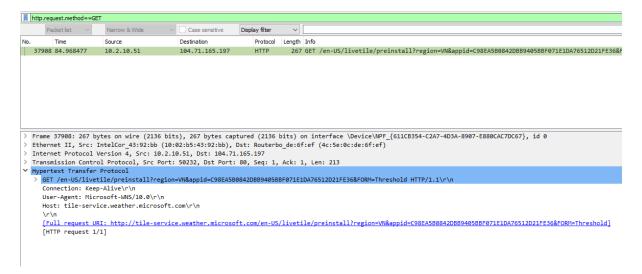
```
Internet Protocol Version 4, Src: 113.171.237.82, Dst: 10.2.10.51
     0100 .... = Version: 4
     .... 0101 = Header Length: 20 bytes (5)
   > Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
     Total Length: 1278
     Identification: 0x01bc (444)

✓ 000. .... = Flags: 0x0
        0... .... = Reserved bit: Not set
        .0.. .... = Don't fragment: Not set
        ..0. .... = More fragments: Not set
     ...0 0000 0000 0000 = Fragment Offset: 0
     Time to Live: 123
     Protocol: UDP (17)
     Header Checksum: 0xc600 [validation disabled]
     [Header checksum status: Unverified]
     Source Address: 113.171.237.82
     Destination Address: 10.2.10.51
> User Datagram Protocol. Src Port: 443. Dst Port: 58427

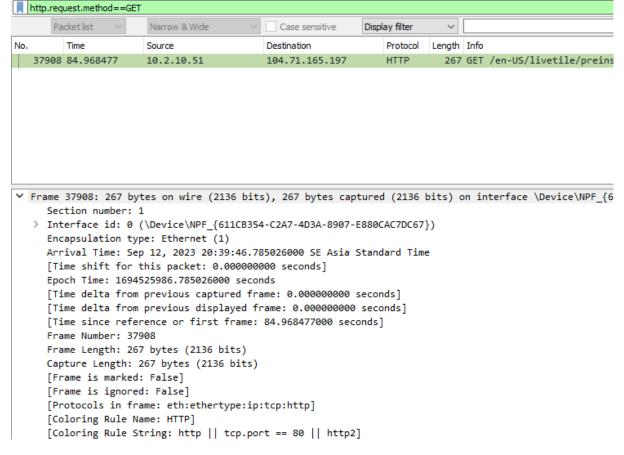
✓ User Datagram Protocol, Src Port: 443, Dst Port: 58427

     Source Port: 443
     Destination Port: 58427
     Length: 1258
     Checksum: 0x28af [unverified]
     [Checksum Status: Unverified]
     [Stream index: 0]
   > [Timestamps]
     UDP payload (1250 bytes)
Data (1250 bytes)
     Data: 59bc94c69a59a84cc1d74eaf2f3f47f5ab994ab9b004a7aafceddd3634a5d6f4edcce923...
     [Length: 1250]
```

#### 5 (wireshark) filter: get method



6 (wireshark) analyze get method in detail



I choose frame 37908. There are 267 bytes on wire and being captured.

- The interface id is 0 (\Device\NPF\_{611CB354-C2A7-4D3A-8907-E880CAC7DC67})
- Epouch time: 1694525986.785026000 second
- Frame number is 37908
- Frame Length: 267 bytes (2136 bits)

```
Ethernet II, Src: IntelCor_43:92:bb (10:02:b5:43:92:bb), Dst: Routerbo_de:6f:ef (4c:5e:0c:de:6f:ef)
  > Destination: Routerbo de:6f:ef (4c:5e:0c:de:6f:ef)
  > Source: IntelCor_43:92:bb (10:02:b5:43:92:bb)
     Type: IPv4 (0x0800)
Internet Protocol Version 4, Src: 10.2.10.51, Dst: 104.71.165.197
     0100 .... = Version: 4
     .... 0101 = Header Length: 20 bytes (5)
  > Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
     Total Length: 253
     Identification: 0xcd91 (52625)
  > 010. .... = Flags: 0x2, Don't fragment
     ...0 0000 0000 0000 = Fragment Offset: 0
     Time to Live: 128
     Protocol: TCP (6)
     Header Checksum: 0x0a28 [validation disabled]
     [Header checksum status: Unverified]
     Source Address: 10.2.10.51
     Destination Address: 104.71.165.197
```

Ethernet II, Src: IntelCor\_43:92:bb (10:02:b5:43:92:bb), Dst: Routerbo\_de:6f:ef (4c:5e:0c:de:6f:ef)

Destination: Routerbo\_de:6f:ef (4c:5e:0c:de:6f:ef) Source: InterCol\_43:92:bb (10:02:b5:43:92:bb) Type: Ipv4 (0x0800)

Internet Protocol Version 4Source address: 10.2.10.51

o Destination address: 104:71:165:197

o Total Length: 253

o Identification: 0xcd91 (52625)

Time to Live: 128Protocol: TCP (6)

o Header Checksum: 0x0a28 [validation disabled]

Header checksum status: Unverified

```
Transmission Control Protocol, Src Port: 50232, Dst Port: 80, Seq: 1, Ack: 1, Len: 213
      Source Port: 50232
      Destination Port: 80
      [Stream index: 51]
      [Conversation completeness: Complete, WITH_DATA (31)]
      [TCP Segment Len: 213]
      Sequence Number: 1
                                (relative sequence number)
      Sequence Number (raw): 860993368
      [Next Sequence Number: 214 (relative sequence number)]
      Acknowledgment Number: 1 (relative ack number)
      Acknowledgment number (raw): 3626548897
      0101 .... = Header Length: 20 bytes (5)
   > Flags: 0x018 (PSH, ACK)
      Window: 517
      [Calculated window size: 132352]
      [Window size scaling factor: 256]
      Checksum: 0x3b6a [unverified]
      [Checksum Status: Unverified]
      Urgent Pointer: 0
   > [Timestamps]
   > [SEO/ACK analysis]
Hypertext Transfer Protocol

SET /en-US/livetile/preinstall?region=VN&appid=C98EA5B0842DBB9405BBF071E1DA76512D21FE36&FORM=Threshold HTTP/1.1\r\n
Connection: Keep-Alive\r\n
User-Agent: Microsoft-WMS/10.0\r\n
   \r\n
[full request URI: http://tile-service.weather.microsoft.com/en-US/livetile/preinstall?region=VN&appid=C98EA580842DBB9405BBF071E1DA76512D21FE36&FORM=Threshold]
```

Transmission Control Protocol, Src Port: 50232, Dst Port: 80, Seq: 1, Ack: 1: Len:

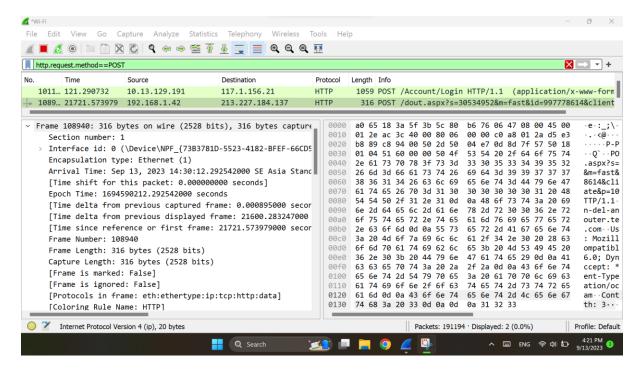
123

Flags: 0x018 (PSH, ACK)

The HTTP field shows the host and 'full request URI)

### 7 (wireshark) choose one packet

Apply	Apply a display filter <ctrl-></ctrl->						
No.	Time	Source	Destination	Protocol	Length Info		
3	46 10.609767	10.2.10.51	157.240.211.22	TLSv1.2	824 Application Data		
3	47 10.612575	157.240.211.22	10.2.10.51	TCP	60 443 → 50377 [ACK] Seq=26 Ack=4623 Win=980 Len=0		
3	48 10.658768	157.240.211.22	10.2.10.51	TCP	60 443 → 50377 [ACK] Seq=26 Ack=6015 Win=990 Len=0		
3	49 10.699095	10.2.10.51	31.13.75.1	TLSv1.2	115 Application Data		
3	50 10.701716	Routerbo_de:6f:ef	Broadcast	ARP	60 Who has 10.2.10.235? Tell 10.2.10.1		
		157.240.211.22	10.2.10.51		96 [TCP Previous segment not captured] , Application Data		
		10.2.10.51	157.240.211.22		66 [TCP Dup ACK 137#1] 50377 → 443 [ACK] Seq=6785 Ack=26 Win=515 Len=0 SLE=53 SRE=95		
3	53 10.704758	10.2.10.51	31.13.75.1	TLSv1.2	111 Application Data		
3	54 10.771884	31.13.75.1	10.2.10.51	TCP	60 443 → 50267 [ACK] Seq=399 Ack=128 Win=424 Len=0		
> Frame 1: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface \Device\NPF {611CB354-C2A7-4D3A-8907-E880CAC7DC67}, id 0							
> Ethernet II, Src: Routerbo_de:6f:ef (4c:5e:0c:de:6f:ef), Dst: Broadcast (ff:ff:ff:ff:ff)							
> Address Resolution Protocol (request)							



9 (wireshark) analyze post method in detail

```
> Frame 108940: 316 bytes on wire (2528 bits), 316 bytes capture

> Ethernet II, Src: IntelCor_76:06:47 (5c:80:b6:76:06:47), Dst:

> Destination: VnptTech_3a:5f:3b (a0:65:18:3a:5f:3b)

Address: VnptTech_3a:5f:3b (a0:65:18:3a:5f:3b)

.....0..... = LG bit: Globally unique

....0 .... = IG bit: Individual addre

> Source: IntelCor_76:06:47 (5c:80:b6:76:06:47)

Address: IntelCor_76:06:47 (5c:80:b6:76:06:47)

....0 .... = LG bit: Globally unique

....0 .... = LG bit: Individual addre

Type: IPv4 (0x0800)
```

I chose frame 108940: 316 bytes on wire (2528 bits), 316 bytes capture

- Interface id: 0 (\Device\NPF\_{738371D-5523-4182-BFEF-77CD5)
- Epoch Time: 1694590212.292542000 seconds
- Frame Number: 108940
- Frame Length: 316 bytes (2528 bits)

```
> Frame 108940: 316 bytes on wire (2528 bits), 316 bytes capture
                                                                                   a0 65 18 3a 5f 3b 5c 80
01 2e ac 3c 40 00 80 06
                                                                                                                00 00 c0 a8 01 2a d5 e3
  Ethernet II, Src: IntelCor_76:06:47 (5c:80:b6:76:06:47), Dst:
                                                                                   b8 89 c8 94 00 50 2d 50
                                                                                                                                                 . . P-P
Internet Protocol Version 4, Src: 192.168.1.42, Dst: 213.227.1
                                                                                                                                              · · Q` · · PO
                                                                                   01 04 51 60 00 00 50 4f
                                                                                                                53
                                                                                                                   54 20 2f
                                                                                                                              64 6f 75 74
      0100 .... = Version: 4
                                                                                   2e 61 73 70 78 3f 73 3d
26 6d 3d 66 61 73 74 26
                                                                                                                33 30
      .... 0101 = Header Length: 20 bytes (5)
                                                                                                                69 64 3d 39
                                                                                                                              39 37 37 37
                                                                                                                                              &m=fast&
                                                                                                                                              8614&cli
   > Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-EC
                                                                                   61 74 65 26 70 3d 31 30
                                                                                                                30 30
                                                                                                                       30 30 30 31 20 48
                                                                                                                                              ate&p=10
     Total Length: 302
     Identification: 0xac3c (44092)
                                                                                   6e 2d 64 65 6c 2d 61 6e
6f 75 74 65 72 2e 74 65
                                                                                                                78 2d 72
                                                                                                                          30 30 36 2e 72
                                                                                                                                              n-del-an
   > 010. .... = Flags: 0x2, Don't fragment
      ...0 0000 0000 0000 = Fragment Offset: 0
                                                                                                                65 72 2d 41 67 65 6e 74
61 2f 34 2e 30 20 28 63
                                                                                   2e 63 6f 6d 0d 0a 55 73
                                                                                                                                               .com--Us
     Time to Live: 128
                                                                                                                                              ompatibl
6.0; Dyn
                                                                             aada
                                                                                   6f 6d 70 61 74 69 62 6c
                                                                                                                65 3b 20 4d 53 49 45 20
     Protocol: TCP (6)
                                                                                   36 2e 30 3b 20 44 79 6e
     Header Checksum: 0x0000 [validation disabled]
                                                                                                                                              ccept: *
ent-Type
                                                                             00f0 63 63 65 70 74 3a 20 2a
                                                                                                                2f 2a 0d 0a 43 6f 6e 74
     [Header checksum status: Unverified]
                                                                                                        70 65
                                                                                                                3a 20 61 70 70 6c 69 63
                                                                                   65 6e 74 2d 54
     Source Address: 192.168.1.42
                                                                                   61 74 69 6f 6e 2f 6f 63
61 6d 0d 0a 43 6f 6e 74
                                                                                                                74 65 74 2d 73 74 72 65
65 6e 74 2d 4c 65 6e 67
                                                                                                                                              ation/oc
     Destination Address: 213.227.184.137
                                                                                                                                              am · · Cont
                                                                                   74 68 3a 20 33 0d 0a 0d 0a 31 32 33
  Transmission Control Protocol, Src Port: 51348, Dst Port: 80.
Internet Protocol Version 4 (ip), 20 bytes
                                                                                                Packets: 200633 · Displayed: 2 (0.0%) Profile: Default
```

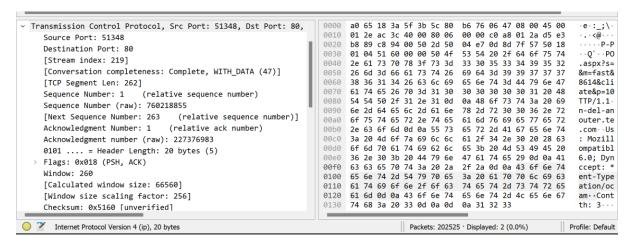
Internet Protocol Version 4, Src: 192.168.1.42, Dst: 213.227.2

Total Length: 302Time to Live: 128Protocol: TCP (6)

• Header Checksum: 0x000 [validation disabled]

• [Header checksum status: Unverified]

• Source Address: 192.168.1.42



### Transmission Control Protocol, Src Port: 51348, Dst Port: 80

Source Port: 51348Distination Port: 80[Stream index: 219]

• [TCP Segment Len: 262]

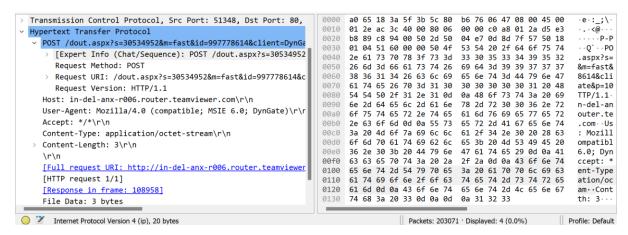
• Sequence Number: 1 (relative sequence number)

• Sequence Number (raw): 760218855

• [Next Sequence Number: 273 (relative sequence number)

• Acknowlegment Number: 1 (relative ack number)

• Flags: 0x018 (PSH, ACK)



The HTTP field shows some information about POST method like User-Agent, Enconding, Postman-Token, Connectopn. More information full request URI, HTTP request 1/1.