

Task 1: Mở đầu về Mạng máy tính



1.  
router



2.  
switch



- a.  
Network Interface Card

- Những vấn đề gì có thể xảy ra nếu không có kết nối Internet trong 5 phút?

Lỗi hệ thống mạng của các tập đoàn công nghiệp

Mất hàng tỉ thông tin trong 5 phút

Các thiết bị , vệ tinh bị lỗi và có thể va vào nhau  
lỗi hồng tẩn công mạng

- Mục tiêu về kiến thức sau khi hoàn thành môn học Nhập môn Mạng máy tính của bạn là gì?

hiểu rõ mạng máy tính , cách tổ chức tấn công mạng để hiểu cách phòng thủ mạng máy tính

Capturing on Wi-Fi

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

Apply a display filter ... <Ctrl-F>

No.	Time	Source	Destination	Protocol	Length	Info
848	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
849	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
850	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
851	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
852	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
853	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
854	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
855	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
856	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
857	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
858	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
859	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
860	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
861	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
862	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
863	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
864	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
865	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
866	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
867	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
868	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
869	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
870	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
871	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
872	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
873	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
874	5.402130	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181
875	5.402441	52.114.82.131	192.168.1.12	UDP	1223	3481 → 50046 Len=1181

▶ Frame 1: 66 bytes on wire (528 bits), 66 bytes captured (528 bits) on interface \Device\NPF\_{9C5777FA-3B8C-4397-BB4C-3647F2E08993}, 1

▶ Ethernet II, Src: ViettelGroup\_66:idd:f8 (24:0b:2a:66:idd:f8), Dst: Intel\_33:d1:91 (7c:70:db:33:d1:91)

▶ Internet Protocol Version 4, Src: 27.77.82.145, Dst: 192.168.1.12

▶ User Datagram Protocol, Src Port: 443, Dst Port: 61249

▶ Data (24 bytes)

0000 7c 70 db 33 d1 91 24 0b 2a 66 dd f8 08 00 45 20 [p 3 \$ f f f f E

0010 00 34 99 52 48 00 38 11 79 b4 1b 4d 52 91 c8 a8 4 8 8 8 y R R

0020 81 ac 81 ba ef 41 00 20 72 36 58 05 91 51 15 49 A r k Q S

0030 b9 07 5c fd 16 a2 78 37 7f 12 e9 94 98 3a 8c 7d \ \ x 7 \ \ \ \ \ \ ]

0040 1b 2a \*

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Apply a display filter ... <Ctrl-F>

No.	Time	Source	Destination	Protocol	Length	Info
321	2.174282	52.114.82.131	192.168.1.12	RTCP	1262	Receiver Report (PSE:Unknown )
322	2.174282	52.114.82.131	192.168.1.12	RTCP	1262	Receiver Report (PSE:Unknown )
323	2.184369	52.114.82.131	192.168.1.12	UDP	278	3480 → 50022 Len=236
324	2.184775	52.114.82.131	192.168.1.12	UDP	294	3480 → 50022 Len=252
325	2.260242	52.114.82.131	192.168.1.12	UDP	310	3480 → 50022 Len=268
326	2.260242	52.114.82.131	192.168.1.12	UDP	326	3480 → 50022 Len=284
327	2.260242	52.114.82.131	192.168.1.12	UDP	119	3480 → 50022 Len=77
328	2.260242	52.114.82.131	192.168.1.12	UDP	1007	3480 → 50022 Len=965
329	2.260242	52.114.82.131	192.168.1.12	UDP	1023	3480 → 50022 Len=981
330	2.269490	52.114.82.131	192.168.1.12	UDP	980	3480 → 50022 Len=938
331	2.288783	52.114.82.131	192.168.1.12	UDP	119	3480 → 50022 Len=77
332	2.288783	52.114.82.131	192.168.1.12	UDP	501	3480 → 50022 Len=459
333	2.288783	52.114.82.131	192.168.1.12	UDP	501	3480 → 50022 Len=459
334	2.289657	52.114.82.131	192.168.1.12	UDP	500	3480 → 50022 Len=458
335	2.289657	52.114.82.131	192.168.1.12	UDP	517	3480 → 50022 Len=475
336	2.289657	52.114.82.131	192.168.1.12	UDP	517	3480 → 50022 Len=475
337	2.353133	52.114.82.131	192.168.1.12	UDP	848	3480 → 50022 Len=806
338	2.426024	52.114.82.131	192.168.1.12	RTCP	6	1600 Receiver Report (PSE:Unknown )
339	2.426498	52.114.82.131	192.168.1.12	UDP	119	3480 → 50022 Len=77
340	2.426498	52.114.82.131	192.168.1.12	UDP	573	3480 → 50022 Len=531
341	2.426498	52.114.82.131	192.168.1.12	UDP	573	3480 → 50022 Len=531
342	2.426764	52.114.82.131	192.168.1.12	UDP	572	3480 → 50022 Len=530
343	2.427345	52.114.82.131	192.168.1.12	UDP	589	3480 → 50022 Len=547
344	2.427345	52.114.82.131	192.168.1.12	UDP	589	3480 → 50022 Len=547
345	2.446714	192.168.1.12	52.114.82.131	STUN	150	ChannelData TURN Message
346	2.479495	52.114.82.131	192.168.1.12	STUN	114	Binding Success Response XOR-MAPPED-ADDRESS: 125.235.239.72:58909
347	2.492542	52.114.82.131	192.168.1.12	UDP	988	3480 → 50022 Len=946
348	2.514577	192.168.1.12	52.114.82.131	RTCP	182	Receiver Report (PSE:Unknown )

▶ Frame 1: 278 bytes on wire (2224 bits), 278 bytes captured (2224 bits) on interface \Device\NPF\_{9C5777FA-3B8C-4397-BB4C-3647F2E08993}

▶ Ethernet II, Src: ViettelGroup\_66:idd:f8 (24:0b:2a:66:idd:f8), Dst: Intel\_33:d1:91 (7c:70:db:33:d1:91)

▶ Destination: Intel\_33:d1:91 (7c:70:db:33:d1:91)

▶ Source: ViettelGroup\_66:idd:f8 (24:0b:2a:66:idd:f8)

▶ Type: IPv4 (0x0000)

[Stream index: 0]

▶ Internet Protocol Version 4, Src: 52.114.82.131, Dst: 192.168.1.12

▶ User Datagram Protocol, Src Port: 3480, Dst Port: 50022

▶ Data [..]: 917a5e31366a4c7d0000a05e00000cabde001121444b6e4598bf7a91605f0f13130a6c3738d684392be979ea6b801a42ff3b29177b468399c888

[Length: 236]

0000 7c 70 db 33 d1 91 24 0b 2a 66 dd f8 08 00 45 04 [p 3 \$ f f f f E

0010 01 08 af ed 00 00 71 11 50 4a 34 72 52 83 c0 a8 .....g P04R j

0020 01 0c 0d 98 c3 66 00 14 1c 12 91 7a 6e 31 36 0a .....f .....m16 j

0030 4c 7d 00 00 a8 5e 00 00 00 ca be de 00 01 12 14 L).....K.....u

0040 44 b6 e4 59 8b f7 a9 16 65 ff 01 53 13 0a 6c 37 D).....e .S .17

0050 38 d6 84 39 2b e9 79 ea 60 80 1a 42 ff 3b 29 17 8 9+ y k ( B j )

0060 7b 46 83 99 c8 08 f5 2d c7 12 25 35 1d 03 1d 75 {.....K.....K.....u

0070 6a 9c 13 08 24 bd b1 a9 9e ae 96 f4 2d f8 38 8b j.....\$.....8

0080 85 50 ec 22 9b ab 71 5d 52 73 e4 af 90 03 b0 3e P.....g] Rs.....>

0090 d3 07 ef cb 96 7d da 8e e1 75 a4 9b d3 e5 05 15 .....j.....u.....>

00a0 57 fe 00 ab f9 47 7d 73 a7 a3 9b 3e e7 ef ce .....K G]s.....>

00b0 a6 8b 3e 68 17 66 0a 65 29 63 05 12 00 1d d0 af .....h f e j c.....>

00c0 3e 2c 5f d4 2a 40 11 ee ec 22 12 46 17 26 e6 00 >.....@.....F &.....>

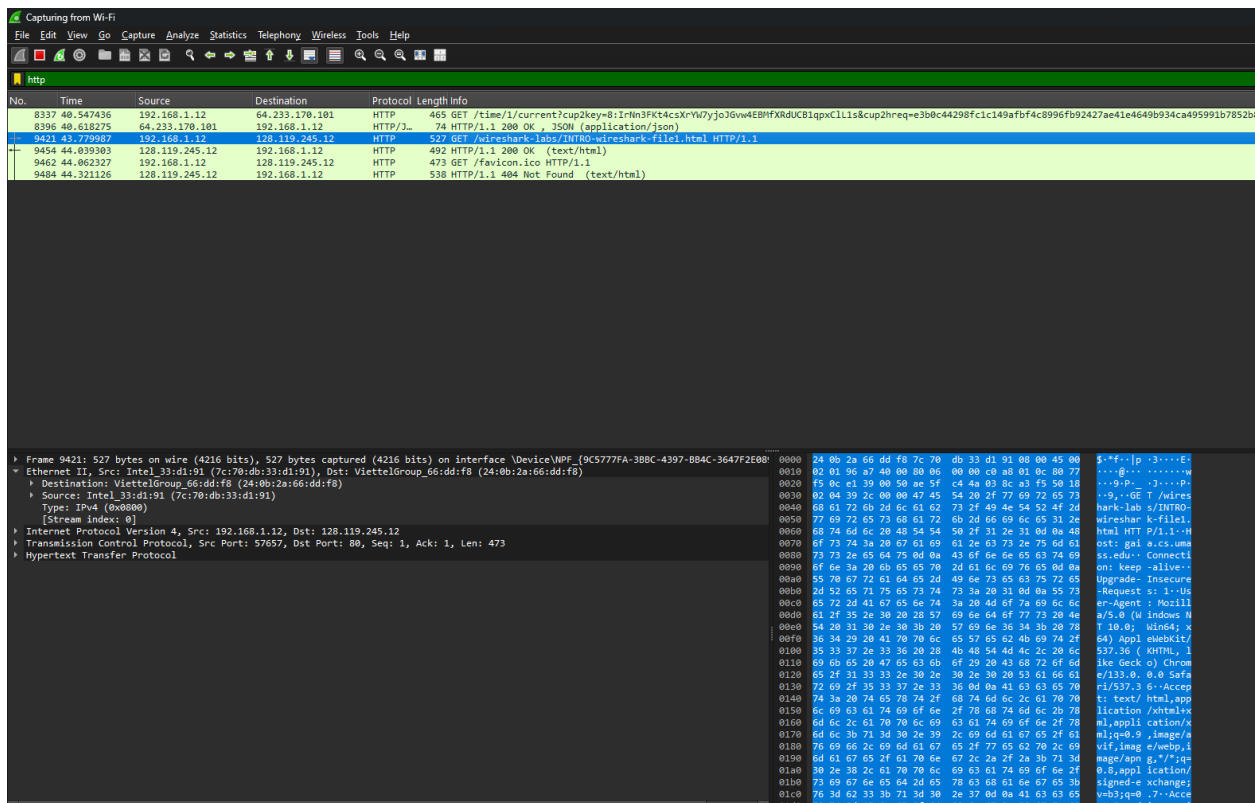
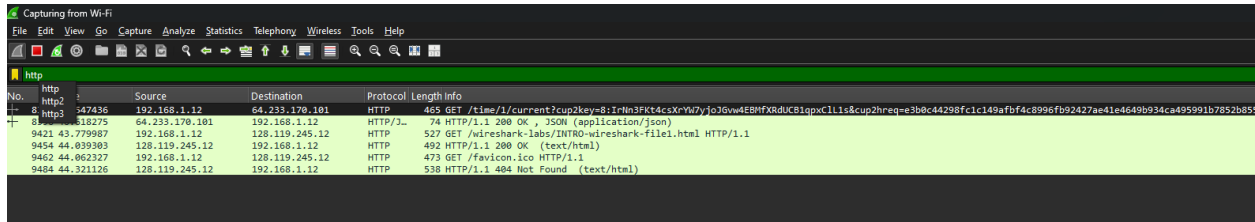
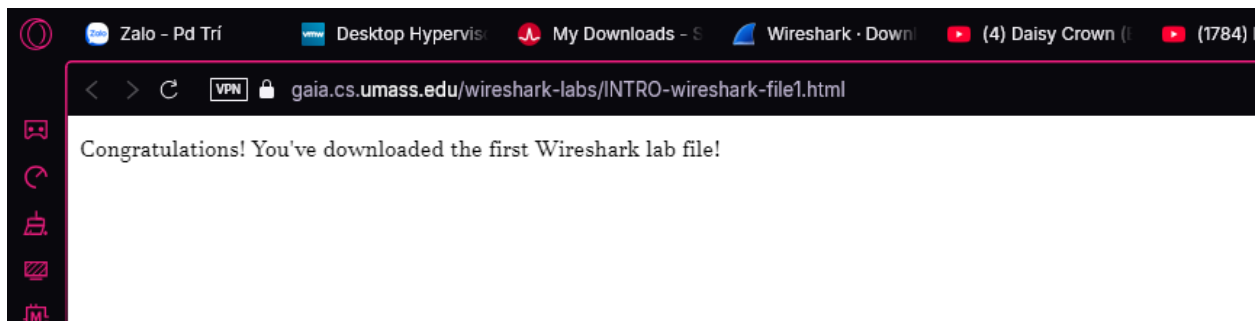
00d0 dc 52 8a ec 9a 04 f3 13 3e 5f 76 01 bd dc f1 e2 R.....>.....V.....>

00e0 92 31 18 e0 4a 6b 98 63 90 15 2e c5 56 3c 2a .....LDK.....>.....VC\*.....>

00f0 b6 f7 c5 31 b9 11 5c 79 b9 4d 57 c6 f1 d7 81 cc .....1 y PM.....>

0100 e0 63 f1 e8 a8 74 db 2c 3f f7 99 6c 68 20 06 da .....t.....>.....P.....>

0110 89 0a cb 05 54 52 .....TR.....>



Thời gian từ file get đến 200ok trong 40.454736 đến 40.618275

Capturing from Wi-Fi

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

http

No.	Time	Source	Destination	Protocol	Length	Info
421	3.264936	192.168.1.12	284.79.197.239	HTTP	707	GET /browsernetworktime/time/1/current?cup2key=2:tyC_nEOcayAP2FY1_fxAVXWw3sgLVt1NpkT6gEW6i3gkcup2hreqe3b8c44298fc1c149afb4c8996fb92427ae41e4
529	3.579042	284.79.197.239	192.168.1.12	HTTP/1.1	200	OK, JSON (application/json)

Frame 421: 707 bytes on wire (5656 bits), 707 bytes captured (5656 bits) on interface \Device\NPF\_{9C5777FA-3B8C-4397-B84C-3647F2E089} Ethernet II, Src: Intel\_33:d1:91 (7c:70:db:33:d1:91), Dst: ViettelGroup\_66:dd:f8 (24:0b:2a:66:dd:f8)

Destination: ViettelGroup\_66:dd:f8 (24:0b:2a:66:dd:f8)

Source: Intel\_33:d1:91 (7c:70:db:33:d1:91)

Type: IPv4 (0x0800)

[Stream index: 0]

Internet Protocol Version 4, Src: 192.168.1.12, Dst: 284.79.197.239

Transmission Control Protocol, Src Port: 58333, Dst Port: 80, Seq: 1, Ack: 1, Len: 653

Hypertext Transfer Protocol

0000 24 0b 2a 66 dd f8 7c 70 db 33 d1 91 08 00 45 00 \$:FF--jp-3----E  
0010 02 b5 35 f8 40 00 80 06 00 00 c0 a8 01 0c cc 4f --S-g---.....O  
0020 c5 ef e3 dd 00 50 fb e7 08 c0 bf 83 8e 7d 50 15 ....P-----jp  
0030 02 05 56 90 00 00 47 45 54 20 2f 62 72 6f 77 73 --V---GE T /brow  
0040 65 72 6e 65 74 77 6f 72 6b 74 69 6d 65 2f 74 69 ernetwor ktime/ti  
0050 6d 65 2f 31 2f 63 75 72 72 65 6e 74 3f 63 75 70 me/1/cur rent?cup  
0060 32 60 65 79 3d 32 3a 74 79 43 5f 6e 45 4f 63 61 2key=2:tyC\_nEOc  
0070 79 41 50 7a 46 59 31 5f 66 70 41 56 58 4d 77 4a yAP2FY1\_fxAVXWw3  
0080 73 67 4c 56 74 69 4e 70 6b 54 36 67 45 57 36 69 sgLVt1Np kT6gEW6i  
0090 4a 67 26 63 75 70 32 68 72 65 71 3d 65 33 62 30 jkcup2h reqe3b8  
00a0 63 34 32 39 38 56 63 31 63 31 34 39 61 66 62 c44298fc1c149afb  
00b0 66 34 63 38 39 39 3a 66 62 39 32 34 32 37 61 65 f4c8996f b92427ae  
00c0 34 31 65 34 36 34 39 62 39 33 34 63 61 34 39 35 41e4649b 934ca495  
00d0 39 39 31 62 37 38 35 32 62 38 35 35 20 48 54 54 991b7852 b855 HT  
00e0 50 2f 31 2e 31 0d 0a 48 6f 73 74 3a 20 69 64 67 P/1.1-Host: edg  
00f0 65 2e 6d 69 63 72 6f 73 6f 66 74 2e 63 6f 6d 0d e.micros oft.com  
0100 0a 43 6f 6e 6e 65 63 74 69 6f 6e 3a 20 6b 65 65 -Connect ion: kee  
0110 70 2d 61 6c 69 76 65 0d 0a 50 72 61 67 6d 61 3a p-alive-Pragma:  
0120 20 6e 6f 2d 63 61 63 68 65 0d 0a 43 61 63 68 65 no-cach e-Cache  
0130 2d 43 6f 6e 74 72 6f 6c 3a 20 6e 6f 2d 63 61 63 Control: no-cac  
0140 68 65 0d 0a 53 65 63 2d 4d 65 73 68 2d 43 6c 69 he-Sec- Mesh-CLI  
0150 65 6e 74 2d 45 64 67 65 2d 56 65 72 73 69 6f 6e ent-Edge -Version  
0160 3a 20 31 33 33 26 30 26 33 30 36 35 2e 38 32 0d t: 133.0, 3065.82  
0170 0a 53 65 63 2d 4d 65 73 68 2d 43 6c 69 65 6e 74 -Sec-Mes h-client  
0180 2d 45 64 67 65 2d 43 68 61 6e 6e 65 6c 3a 20 73 -Edge-Ch annel: s  
0190 74 61 62 6c 65 0d 0a 53 65 63 2d 4d 65 73 68 2d table::S ec-Mesh-  
01a0 43 6c 69 65 6e 74 2d 4f 53 3a 20 57 69 6e 64 6f Client-O S: Windo  
01b0 77 73 0d 0a 53 65 63 2d 4d 65 73 68 2d 43 6c 69 es-+Sec- Mesh-CLI  
01c0 65 6e 74 2d 4f 53 2d 56 65 72 73 69 6f 6e 3a 20 ent-OS-V ersion:  
01d0 31 30 2e 38 2e 32 32 36 33 31 0d 0a 53 65 63 2d 10.0.726.31-5ec

[Checksum Status: Unverified]

Urgent Pointer: 0

▼ [Timestamps]

[Time since first frame in this TCP stream: 0.225086000 seconds]

[Time since previous frame in this TCP stream: 0.001551000 seconds]

▶ [SEQ/ACK analysis]

TCP payload (653 bytes)

▼ [SEQ/ACK analysis]

[iRTT: 0.223535000 seconds]

[Bytes in flight: 653]

[Bytes sent since last PSH flag: 653]

TCP payload (653 bytes)

▼ [Hypertext Transfer Protocol]

Frame 421: 707 bytes on wire (5656 bits), 707 bytes captured (5656 bits) on interface \Device\NPF\_{9C5777FA-3B8C-4397-B84C-3647F2E089} Ethernet II, Src: Intel\_33:d1:91 (7c:70:db:33:d1:91), Dst: ViettelGroup\_66:dd:f8 (24:0b:2a:66:dd:f8)

Destination: ViettelGroup\_66:dd:f8 (24:0b:2a:66:dd:f8)

.....0. .... = LG bit: Globally unique address (factory default)

.....0. .... = IG bit: Individual address (unicast)

Source: Intel\_33:d1:91 (7c:70:db:33:d1:91)

.....0. .... = LG bit: Globally unique address (factory default)

.....0. .... = IG bit: Individual address (unicast)

Type: IPv4 (0x0800)

[Stream index: 0]