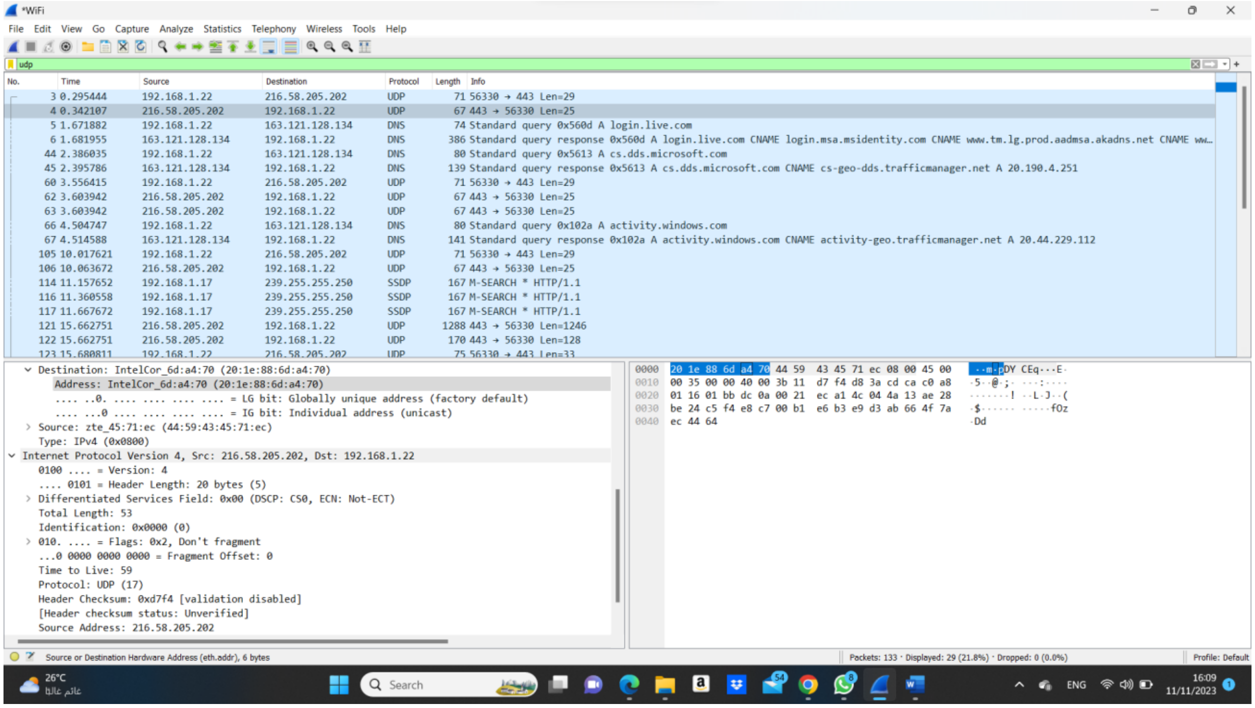
UDP Protocol

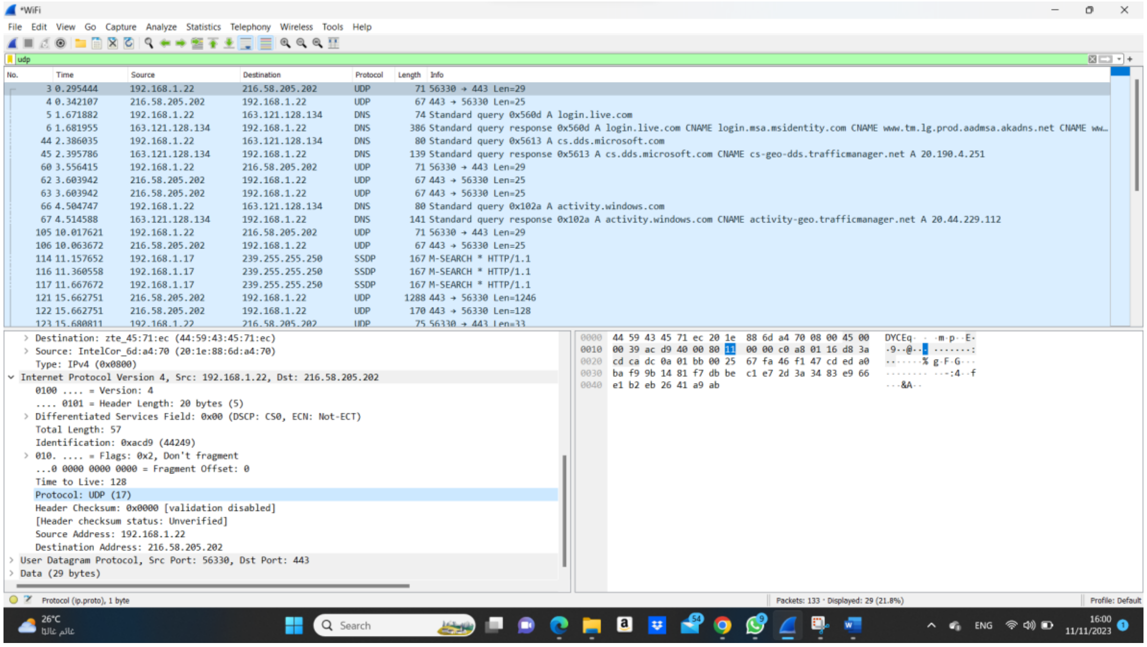

*WiFi
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
Search
ENG
26°C
غائم غالبا
16:09
11/11/2023

```
udp
No.   Time       Source           Destination      Protocol Length Info
  3 0.295444    192.168.1.22     216.58.205.202   UDP        71 56330 → 443 Len=29
  4 0.342107    216.58.205.202   192.168.1.22     UDP        67 443 → 56330 Len=25
  5 1.671882    192.168.1.22     163.121.128.134  DNS        74 Standard query 0x560d A login.live.com
  6 1.681955    163.121.128.134  192.168.1.22     DNS       386 Standard query response 0x560d A login.live.com CNAME login.msa.msidentity.com CNAME www.tm.lg.prod.aadmsa.akadns.net CNAME ww…
 44 2.386035    192.168.1.22     163.121.128.134  DNS        80 Standard query 0x5613 A cs.dds.microsoft.com
 45 2.395786    163.121.128.134  192.168.1.22     DNS       139 Standard query response 0x5613 A cs.dds.microsoft.com CNAME cs-geo-dds.trafficmanager.net A 20.190.4.251
 60 3.556415    192.168.1.22     216.58.205.202   UDP        71 56330 → 443 Len=29
 62 3.603942    216.58.205.202   192.168.1.22     UDP        67 443 → 56330 Len=25
 63 3.603942    216.58.205.202   192.168.1.22     UDP        67 443 → 56330 Len=25
 66 4.504747    192.168.1.22     163.121.128.134  DNS        80 Standard query 0x102a A activity.windows.com
 67 4.514588    163.121.128.134  192.168.1.22     DNS       141 Standard query response 0x102a A activity.windows.com CNAME activity-geo.trafficmanager.net A 20.44.229.112
105 10.017621   192.168.1.22     216.58.205.202   UDP        71 56330 → 443 Len=29
106 10.063672   216.58.205.202   192.168.1.22     UDP        67 443 → 56330 Len=25
114 11.157652   192.168.1.17     239.255.255.250  SSDP      167 M-SEARCH * HTTP/1.1
116 11.360558   192.168.1.17     239.255.255.250  SSDP      167 M-SEARCH * HTTP/1.1
117 11.667672   192.168.1.17     239.255.255.250  SSDP      167 M-SEARCH * HTTP/1.1
121 15.662751   216.58.205.202   192.168.1.22     UDP      1288 443 → 56330 Len=1246
122 15.662751   216.58.205.202   192.168.1.22     UDP       170 443 → 56330 Len=128
123 15.680811   192.168.1.22     216.58.205.202   UDP        75 56330 → 443 Len=33
```

```
  ˅ Destination: IntelCor_6d:a4:70 (20:1e:88:6d:a4:70)
      Address: IntelCor_6d:a4:70 (20:1e:88:6d:a4:70)
      .... ..0. .... .... .... .... = LG bit: Globally unique address (factory default)
      .... ...0 .... .... .... .... = IG bit: Individual address (unicast)
  > Source: zte_45:71:ec (44:59:43:45:71:ec)
    Type: IPv4 (0x0800)
˅ Internet Protocol Version 4, Src: 216.58.205.202, Dst: 192.168.1.22
    0100 .... = Version: 4
    .... 0101 = Header Length: 20 bytes (5)
  > Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
    Total Length: 53
    Identification: 0x0000 (0)
  > 010. .... = Flags: 0x2, Don't fragment
    ...0 0000 0000 0000 = Fragment Offset: 0
    Time to Live: 59
    Protocol: UDP (17)
    Header Checksum: 0xd7f4 [validation disabled]
    [Header checksum status: Unverified]
    Source Address: 216.58.205.202
```

```
0000  20 1e 88 6d a4 70 44 59  43 45 71 ec 08 00 45 00   ··m·pDY CEq···E·
0010  00 35 00 00 40 00 3b 11  d7 f4 d8 3a cd ca c0 a8   ·5··@·;· ···:····
0020  01 16 01 bb dc 0a 00 21  ec a1 4c 04 4a 13 ae 28   ·······! ··L·J··(
0030  be 24 c5 f4 e8 c7 00 b1  e6 b3 e9 d3 ab 66 4f 7a   ·$······ ·····fOz
0040  ec 44 64                                           ·Dd
```

Source or Destination Hardware Address (eth.addr), 6 bytes | Packets: 133 · Displayed: 29 (21.8%) · Dropped: 0 (0.0%) | Profile: Default


*WiFi
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
Search
ENG
26°C
غائم غالبا
16:00
11/11/2023

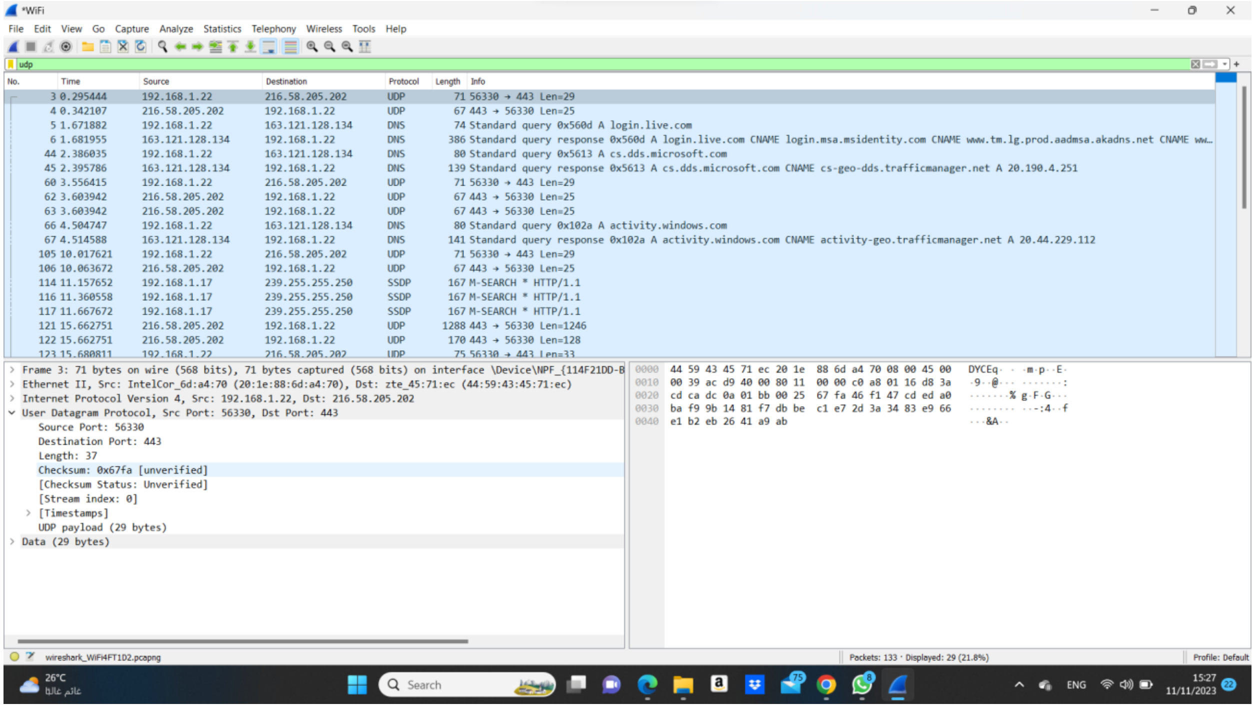
```
udp
No.   Time       Source           Destination      Protocol Length Info
  3 0.295444    192.168.1.22     216.58.205.202   UDP        71 56330 → 443 Len=29
  4 0.342107    216.58.205.202   192.168.1.22     UDP        67 443 → 56330 Len=25
  5 1.671882    192.168.1.22     163.121.128.134  DNS        74 Standard query 0x560d A login.live.com
  6 1.681955    163.121.128.134  192.168.1.22     DNS       386 Standard query response 0x560d A login.live.com CNAME login.msa.msidentity.com CNAME www.tm.lg.prod.aadmsa.akadns.net CNAME ww…
 44 2.386035    192.168.1.22     163.121.128.134  DNS        80 Standard query 0x5613 A cs.dds.microsoft.com
 45 2.395786    163.121.128.134  192.168.1.22     DNS       139 Standard query response 0x5613 A cs.dds.microsoft.com CNAME cs-geo-dds.trafficmanager.net A 20.190.4.251
 60 3.556415    192.168.1.22     216.58.205.202   UDP        71 56330 → 443 Len=29
 62 3.603942    216.58.205.202   192.168.1.22     UDP        67 443 → 56330 Len=25
 63 3.603942    216.58.205.202   192.168.1.22     UDP        67 443 → 56330 Len=25
 66 4.504747    192.168.1.22     163.121.128.134  DNS        80 Standard query 0x102a A activity.windows.com
 67 4.514588    163.121.128.134  192.168.1.22     DNS       141 Standard query response 0x102a A activity.windows.com CNAME activity-geo.trafficmanager.net A 20.44.229.112
105 10.017621   192.168.1.22     216.58.205.202   UDP        71 56330 → 443 Len=29
106 10.063672   216.58.205.202   192.168.1.22     UDP        67 443 → 56330 Len=25
114 11.157652   192.168.1.17     239.255.255.250  SSDP      167 M-SEARCH * HTTP/1.1
116 11.360558   192.168.1.17     239.255.255.250  SSDP      167 M-SEARCH * HTTP/1.1
117 11.667672   192.168.1.17     239.255.255.250  SSDP      167 M-SEARCH * HTTP/1.1
121 15.662751   216.58.205.202   192.168.1.22     UDP      1288 443 → 56330 Len=1246
122 15.662751   216.58.205.202   192.168.1.22     UDP       170 443 → 56330 Len=128
123 15.680811   192.168.1.22     216.58.205.202   UDP        75 56330 → 443 Len=33
```

```
  > Destination: zte_45:71:ec (44:59:43:45:71:ec)
  > Source: IntelCor_6d:a4:70 (20:1e:88:6d:a4:70)
    Type: IPv4 (0x0800)
˅ Internet Protocol Version 4, Src: 192.168.1.22, Dst: 216.58.205.202
    0100 .... = Version: 4
    .... 0101 = Header Length: 20 bytes (5)
  > Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
    Total Length: 57
    Identification: 0xacd9 (44249)
  > 010. .... = Flags: 0x2, Don't fragment
    ...0 0000 0000 0000 = Fragment Offset: 0
    Time to Live: 128
    Protocol: UDP (17)
    Header Checksum: 0x0000 [validation disabled]
    [Header checksum status: Unverified]
    Source Address: 192.168.1.22
    Destination Address: 216.58.205.202
> User Datagram Protocol, Src Port: 56330, Dst Port: 443
> Data (29 bytes)
```

```
0000  44 59 43 45 71 ec 20 1e  88 6d a4 70 08 00 45 00   DYCEq· · ·m·p··E·
0010  00 39 ac d9 40 00 80 11  00 00 c0 a8 01 16 d8 3a   ·9··@··· ·······:
0020  cd ca dc 0a 01 bb 00 25  67 fa 46 f1 47 cd ed a0   ·······% g·F·G···
0030  ba f9 9b 14 81 f7 db be  c1 e7 2d 3a 34 83 e9 66   ········ ··-:4··f
0040  e1 b2 eb 26 41 a9 ab                               ···&A··
```

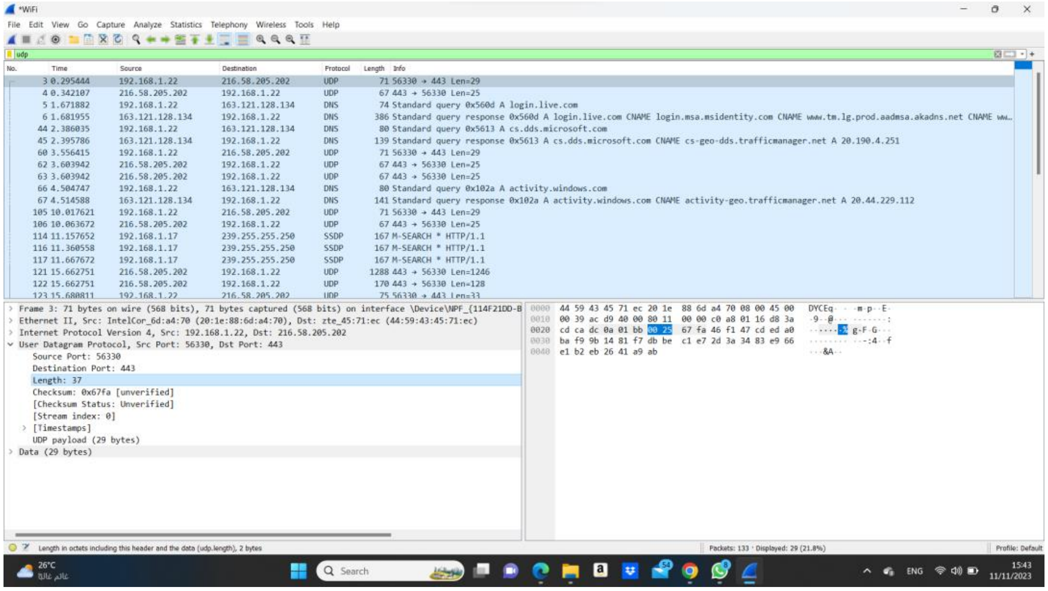
Protocol (ip.proto), 1 byte | Packets: 133 · Displayed: 29 (21.8%) | Profile: Default

UDP Protocol


*WiFi
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
Search
ENG

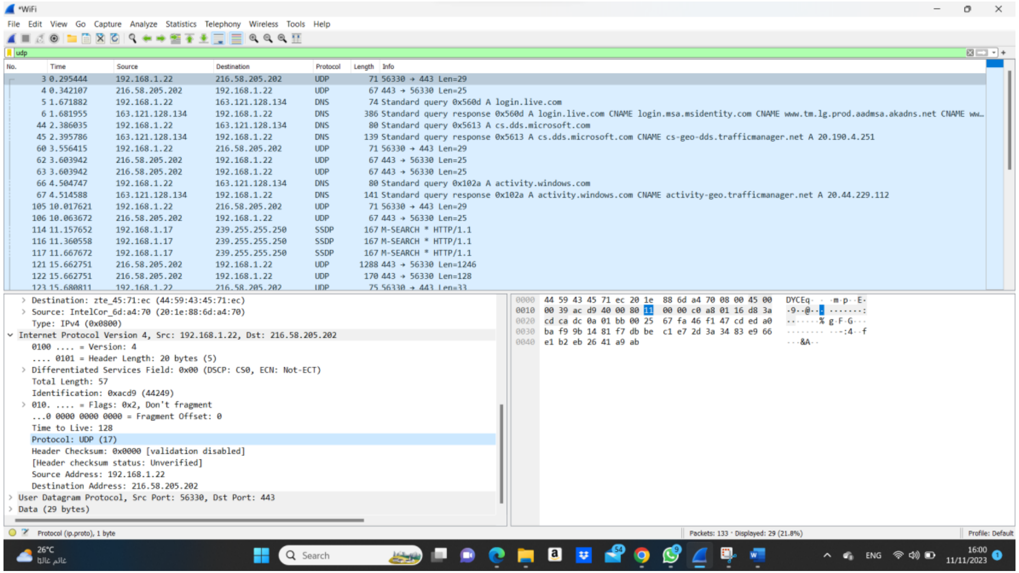
```
udp

No.   Time          Source            Destination       Protocol  Length  Info
  3   0.295444      192.168.1.22      216.58.205.202    UDP         71 56330 → 443 Len=29
  4   0.342107      216.58.205.202    192.168.1.22      UDP         67 443 → 56330 Len=25
  5   1.671882      192.168.1.22      163.121.128.134   DNS         74 Standard query 0x560d A login.live.com
  6   1.681955      163.121.128.134   192.168.1.22      DNS        386 Standard query response 0x560d A login.live.com CNAME login.msa.msidentity.com CNAME www.tm.lg.prod.aadmsa.akadns.net CNAME ww…
 44   2.386035      192.168.1.22      163.121.128.134   DNS         80 Standard query 0x5613 A cs.dds.microsoft.com
 45   2.395786      163.121.128.134   192.168.1.22      DNS        139 Standard query response 0x5613 A cs.dds.microsoft.com CNAME cs-geo-dds.trafficmanager.net A 20.190.4.251
 60   3.556415      192.168.1.22      216.58.205.202    UDP         71 56330 → 443 Len=29
 62   3.603942      216.58.205.202    192.168.1.22      UDP         67 443 → 56330 Len=25
 63   3.603942      216.58.205.202    192.168.1.22      UDP         67 443 → 56330 Len=25
 66   4.504747      192.168.1.22      163.121.128.134   DNS         80 Standard query 0x102a A activity.windows.com
 67   4.514588      163.121.128.134   192.168.1.22      DNS        141 Standard query response 0x102a A activity.windows.com CNAME activity-geo.trafficmanager.net A 20.44.229.112
105  10.017621      192.168.1.22      216.58.205.202    UDP         71 56330 → 443 Len=29
106  10.063672      216.58.205.202    192.168.1.22      UDP         67 443 → 56330 Len=25
114  11.157652      192.168.1.17      239.255.255.250   SSDP       167 M-SEARCH * HTTP/1.1
116  11.360558      192.168.1.17      239.255.255.250   SSDP       167 M-SEARCH * HTTP/1.1
117  11.667672      192.168.1.17      239.255.255.250   SSDP       167 M-SEARCH * HTTP/1.1
121  15.662751      216.58.205.202    192.168.1.22      UDP       1288 443 → 56330 Len=1246
122  15.662751      216.58.205.202    192.168.1.22      UDP        170 443 → 56330 Len=128
123  15.680811      192.168.1.22      216.58.205.202    UDP         75 56330 → 443 Len=33

> Frame 3: 71 bytes on wire (568 bits), 71 bytes captured (568 bits) on interface \Device\NPF_{114F21DD-B
> Ethernet II, Src: IntelCor_6d:a4:70 (20:1e:88:6d:a4:70), Dst: zte_45:71:ec (44:59:43:45:71:ec)
> Internet Protocol Version 4, Src: 192.168.1.22, Dst: 216.58.205.202
v User Datagram Protocol, Src Port: 56330, Dst Port: 443
    Source Port: 56330
    Destination Port: 443
    Length: 37
    Checksum: 0x67fa [unverified]
    [Checksum Status: Unverified]
    [Stream index: 0]
  > [Timestamps]
    UDP payload (29 bytes)
> Data (29 bytes)

0000  44 59 43 45 71 ec 20 1e  88 6d a4 70 08 00 45 00   DYCEq· · ·m·p··E·
0010  00 39 ac d9 40 00 80 11  00 00 c0 a8 01 16 d8 3a   ·9··@··· ·······:
0020  cd ca dc 0a 01 bb 00 25  67 fa 46 f1 47 cd ed a0   ·······% g·F·G···
0030  ba f9 9b 14 81 f7 db be  c1 e7 2d 3a 34 83 e9 66   ········ ··-:4··f
0040  e1 b2 eb 26 41 a9 ab                               ···&A··

wireshark_WiFi4FT1D2.pcapng    Packets: 133 · Displayed: 29 (21.8%)    Profile: Default
```

26°C
غائم جزئياً
15:27
11/11/2023


*WiFi
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
Search
ENG

```
udp

No.   Time          Source            Destination       Protocol  Length  Info
  3   0.295444      192.168.1.22      216.58.205.202    UDP         71 56330 → 443 Len=29
  4   0.342107      216.58.205.202    192.168.1.22      UDP         67 443 → 56330 Len=25
  5   1.671882      192.168.1.22      163.121.128.134   DNS         74 Standard query 0x560d A login.live.com
  6   1.681955      163.121.128.134   192.168.1.22      DNS        386 Standard query response 0x560d A login.live.com CNAME login.msa.msidentity.com CNAME www.tm.lg.prod.aadmsa.akadns.net CNAME ww…
 44   2.386035      192.168.1.22      163.121.128.134   DNS         80 Standard query 0x5613 A cs.dds.microsoft.com
 45   2.395786      163.121.128.134   192.168.1.22      DNS        139 Standard query response 0x5613 A cs.dds.microsoft.com CNAME cs-geo-dds.trafficmanager.net A 20.190.4.251
 60   3.556415      192.168.1.22      216.58.205.202    UDP         71 56330 → 443 Len=29
 62   3.603942      216.58.205.202    192.168.1.22      UDP         67 443 → 56330 Len=25
 63   3.603942      216.58.205.202    192.168.1.22      UDP         67 443 → 56330 Len=25
 66   4.504747      192.168.1.22      163.121.128.134   DNS         80 Standard query 0x102a A activity.windows.com
 67   4.514588      163.121.128.134   192.168.1.22      DNS        141 Standard query response 0x102a A activity.windows.com CNAME activity-geo.trafficmanager.net A 20.44.229.112
105  10.017621      192.168.1.22      216.58.205.202    UDP         71 56330 → 443 Len=29
106  10.063672      216.58.205.202    192.168.1.22      UDP         67 443 → 56330 Len=25
114  11.157652      192.168.1.17      239.255.255.250   SSDP       167 M-SEARCH * HTTP/1.1
116  11.360558      192.168.1.17      239.255.255.250   SSDP       167 M-SEARCH * HTTP/1.1
117  11.667672      192.168.1.17      239.255.255.250   SSDP       167 M-SEARCH * HTTP/1.1
121  15.662751      216.58.205.202    192.168.1.22      UDP       1288 443 → 56330 Len=1246
122  15.662751      216.58.205.202    192.168.1.22      UDP        170 443 → 56330 Len=128
123  15.680811      192.168.1.22      216.58.205.202    UDP         75 56330 → 443 Len=33

> Frame 3: 71 bytes on wire (568 bits), 71 bytes captured (568 bits) on interface \Device\NPF_{114F21DD-B
> Ethernet II, Src: IntelCor_6d:a4:70 (20:1e:88:6d:a4:70), Dst: zte_45:71:ec (44:59:43:45:71:ec)
> Internet Protocol Version 4, Src: 192.168.1.22, Dst: 216.58.205.202
v User Datagram Protocol, Src Port: 56330, Dst Port: 443
    Source Port: 56330
    Destination Port: 443
    Length: 37
    Checksum: 0x67fa [unverified]
    [Checksum Status: Unverified]
    [Stream index: 0]
  > [Timestamps]
    UDP payload (29 bytes)
> Data (29 bytes)

0000  44 59 43 45 71 ec 20 1e  88 6d a4 70 08 00 45 00   DYCEq· · ·m·p··E·
0010  00 39 ac d9 40 00 80 11  00 00 c0 a8 01 16 d8 3a   ·9··@··· ·······:
0020  cd ca dc 0a 01 bb 00 25  67 fa 46 f1 47 cd ed a0   ·······% g·F·G···
0030  ba f9 9b 14 81 f7 db be  c1 e7 2d 3a 34 83 e9 66   ········ ··-:4··f
0040  e1 b2 eb 26 41 a9 ab                               ···&A··

Length in octets including this header and the data (udp.length), 2 bytes    Packets: 133 · Displayed: 29 (21.8%)    Profile: Default
```

26°C
غائم جزئياً
15:43
11/11/2023


*WiFi
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
Search
ENG

```
udp

No.   Time          Source            Destination       Protocol  Length  Info
  3   0.295444      192.168.1.22      216.58.205.202    UDP         71 56330 → 443 Len=29
  4   0.342107      216.58.205.202    192.168.1.22      UDP         67 443 → 56330 Len=25
  5   1.671882      192.168.1.22      163.121.128.134   DNS         74 Standard query 0x560d A login.live.com
  6   1.681955      163.121.128.134   192.168.1.22      DNS        386 Standard query response 0x560d A login.live.com CNAME login.msa.msidentity.com CNAME www.tm.lg.prod.aadmsa.akadns.net CNAME ww…
 44   2.386035      192.168.1.22      163.121.128.134   DNS         80 Standard query 0x5613 A cs.dds.microsoft.com
 45   2.395786      163.121.128.134   192.168.1.22      DNS        139 Standard query response 0x5613 A cs.dds.microsoft.com CNAME cs-geo-dds.trafficmanager.net A 20.190.4.251
 60   3.556415      192.168.1.22      216.58.205.202    UDP         71 56330 → 443 Len=29
 62   3.603942      216.58.205.202    192.168.1.22      UDP         67 443 → 56330 Len=25
 63   3.603942      216.58.205.202    192.168.1.22      UDP         67 443 → 56330 Len=25
 66   4.504747      192.168.1.22      163.121.128.134   DNS         80 Standard query 0x102a A activity.windows.com
 67   4.514588      163.121.128.134   192.168.1.22      DNS        141 Standard query response 0x102a A activity.windows.com CNAME activity-geo.trafficmanager.net A 20.44.229.112
105  10.017621      192.168.1.22      216.58.205.202    UDP         71 56330 → 443 Len=29
106  10.063672      216.58.205.202    192.168.1.22      UDP         67 443 → 56330 Len=25
114  11.157652      192.168.1.17      239.255.255.250   SSDP       167 M-SEARCH * HTTP/1.1
116  11.360558      192.168.1.17      239.255.255.250   SSDP       167 M-SEARCH * HTTP/1.1
117  11.667672      192.168.1.17      239.255.255.250   SSDP       167 M-SEARCH * HTTP/1.1
121  15.662751      216.58.205.202    192.168.1.22      UDP       1288 443 → 56330 Len=1246
122  15.662751      216.58.205.202    192.168.1.22      UDP        170 443 → 56330 Len=128
123  15.680811      192.168.1.22      216.58.205.202    UDP         75 56330 → 443 Len=33

  > Destination: zte_45:71:ec (44:59:43:45:71:ec)
  > Source: IntelCor_6d:a4:70 (20:1e:88:6d:a4:70)
    Type: IPv4 (0x0800)
v Internet Protocol Version 4, Src: 192.168.1.22, Dst: 216.58.205.202
    0100 .... = Version: 4
    .... 0101 = Header Length: 20 bytes (5)
  > Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
    Total Length: 57
    Identification: 0xacd9 (44249)
  > 010. .... = Flags: 0x2, Don't fragment
    ...0 0000 0000 0000 = Fragment Offset: 0
    Time to Live: 128
    Protocol: UDP (17)
    Header Checksum: 0x0000 [validation disabled]
    [Header checksum status: Unverified]
    Source Address: 192.168.1.22
    Destination Address: 216.58.205.202
> User Datagram Protocol, Src Port: 56330, Dst Port: 443
> Data (29 bytes)

0000  44 59 43 45 71 ec 20 1e  88 6d a4 70 08 00 45 00   DYCEq· · ·m·p··E·
0010  00 39 ac d9 40 00 80 11  00 00 c0 a8 01 16 d8 3a   ·9··@··· ·······:
0020  cd ca dc 0a 01 bb 00 25  67 fa 46 f1 47 cd ed a0   ·······% g·F·G···
0030  ba f9 9b 14 81 f7 db be  c1 e7 2d 3a 34 83 e9 66   ········ ··-:4··f
0040  e1 b2 eb 26 41 a9 ab                               ···&A··

Protocol (ip.proto), 1 byte    Packets: 133 · Displayed: 29 (21.8%)    Profile: Default
```

UDP Protocol

Q3) The value in the length field is the sum of the 8 header bytes:

the largest possible source port number is (2^ 16 -1) =65535

and the header bytes are 8 bytes.

Q4) The maximum number of bytes that can be included in a UDP payload is = (65535 – 8) = 65527 bytes

Q5) the largest possible source port number is the Last 3 numbers 535