

No.	Time	Source	Destination	Protocol	Length	Info
	20 18:35:00.754432	192.168.43.195	128.119.245.12	HTTP	512	GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1

Frame 20: 512 bytes on wire (4096 bits), 512 bytes captured (4096 bits) on interface 0  
Interface id: 0 (\Device\NPF\_{96E9BC2A-8628-4C36-83CF-6F1B909EFC6})  
Interface name: \Device\NPF\_{96E9BC2A-8628-4C36-83CF-6F1B909EFC6}  
Interface description: WLAN  
Encapsulation type: Ethernet (1)  
Arrival Time: Sep 24, 2019 18:35:00.754432000 中国标准时间  
[Time shift for this packet: 0.000000000 seconds]  
Epoch Time: 1569321300.754432000 seconds  
[Time delta from previous captured frame: 0.000448000 seconds]  
[Time delta from previous displayed frame: 0.000000000 seconds]  
[Time since reference or first frame: 3.851698000 seconds]  
Frame Number: 20  
Frame Length: 512 bytes (4096 bits)  
Capture Length: 512 bytes (4096 bits)  
[Frame is marked: False]  
[Frame is ignored: False]  
[Protocols in frame: eth:ethertype:ip:tcp:http]  
[Coloring Rule Name: HTTP]  
[Coloring Rule String: http || tcp.port == 80 || http2]  
Ethernet II, Src: Cybertan\_a3:2d:0f (c8:3d:d4:a3:2d:0f), Dst: HuaweiTe\_71:75:74 (30:74:96:71:75:74)  
Destination: HuaweiTe\_71:75:74 (30:74:96:71:75:74)  
Address: HuaweiTe\_71:75:74 (30:74:96:71:75:74)  
.... 0. .... = LG bit: Globally unique address (factory default)  
.... 0 .... = IG bit: Individual address (unicast)  
Source: Cybertan\_a3:2d:0f (c8:3d:d4:a3:2d:0f)  
Address: Cybertan\_a3:2d:0f (c8:3d:d4:a3:2d:0f)  
.... 0. .... = LG bit: Globally unique address (factory default)  
.... 0 .... = IG bit: Individual address (unicast)  
Type: IPv4 (0x0800)  
Internet Protocol Version 4, Src: 192.168.43.195, Dst: 128.119.245.12  
0100 .... = Version: 4  
.... 0101 = Header Length: 20 bytes (5)  
Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)  
0000 00.. = Differentiated Services Codepoint: Default (0)  
.... 00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)  
Total Length: 498  
Identification: 0x8f2f (36655)  
Flags: 0x4000, Don't fragment  
0... .... = Reserved bit: Not set  
.1... .... = Don't fragment: Set  
..0. .... = More fragments: Not set  
...0 0000 0000 0000 = Fragment offset: 0  
Time to live: 128  
Protocol: TCP (6)  
Header checksum: 0x07e7 [validation disabled]  
[Header checksum status: Unverified]  
Source: 192.168.43.195  
Destination: 128.119.245.12  
Transmission Control Protocol, Src Port: 54260 (54260), Dst Port: http (80), Seq: 1, Ack: 1, Len: 458  
Source Port: 54260 (54260)  
Destination Port: http (80)  
[Stream index: 0]  
[TCP Segment Len: 458]  
Sequence number: 1 (relative sequence number)  
[Next sequence number: 459 (relative sequence number)]  
Acknowledgment number: 1 (relative ack number)  
0101 .... = Header Length: 20 bytes (5)  
Flags: 0x018 (PSH, ACK)  
000. .... = Reserved: Not set  
...0 .... = Nonce: Not set  
.... 0... .... = Congestion Window Reduced (CWR): Not set  
.... 0... .... = ECN-Echo: Not set  
.... 0... .... = Urgent: Not set  
.... 0... .... = Acknowledgment: Set  
.... 1... .... = Push: Set  
.... 0... .... = Reset: Not set  
.... 0... .... = Syn: Not set  
.... 0... .... = Fin: Not set  
[TCP Flags: .....AP...]  
Window size value: 260  
[Calculated window size: 66560]  
[Window size scaling factor: 256]  
Checksum: 0xec8b [unverified]  
[Checksum Status: Unverified]  
Urgent pointer: 0  
[SEQ/ACK analysis]

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[iRTT: 0.276494000 seconds]
[Bytes in flight: 458]
[Bytes sent since last PSH flag: 458]
[Timestamps]
[Time since first frame in this TCP stream: 0.277300000 seconds]
[Time since previous frame in this TCP stream: 0.000806000 seconds]
TCP payload (458 bytes)
Hypertext Transfer Protocol
GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n
[Expert Info (Chat/Sequence): GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n]
[GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n]
[Severity level: Chat]
[Group: Sequence]
Request Method: GET
Request URI: /wireshark-labs/HTTP-wireshark-file2.html
Request Version: HTTP/1.1
Host: gaia.cs.umass.edu\r\n
Connection: keep-alive\r\n
Upgrade-Insecure-Requests: 1\r\n
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/
77.0.3865.90 Safari/537.36\r\n
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,application/
signed-exchange;v=b3\r\n
Accept-Encoding: gzip, deflate\r\n
Accept-Language: zh-CN,zh;q=0.9\r\n
\r\n
[Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html]
[HTTP request 1/2]
[Response in frame: 24]
[Next request in frame: 28]
No.      Time            Source            Destination      Protocol Length Info
24 18:35:01.038773 128.119.245.12    192.168.43.195  HTTP           784    HTTP/1.1 200 OK (text/
html)
Frame 24: 784 bytes on wire (6272 bits), 784 bytes captured (6272 bits) on interface 0
  Interface id: 0 (\Device\NPF_{96E9BC2A-8628-4C36-83CF-6F1B909EFC6})
    Interface name: \Device\NPF_{96E9BC2A-8628-4C36-83CF-6F1B909EFC6}
    Interface description: WLAN
  Encapsulation type: Ethernet (1)
  Arrival Time: Sep 24, 2019 18:35:01.038773000 中国标准时间
  [Time shift for this packet: 0.000000000 seconds]
  Epoch Time: 1569321301.038773000 seconds
  [Time delta from previous captured frame: 0.000000000 seconds]
  [Time delta from previous displayed frame: 0.284341000 seconds]
  [Time since reference or first frame: 4.136039000 seconds]
  Frame Number: 24
  Frame Length: 784 bytes (6272 bits)
  Capture Length: 784 bytes (6272 bits)
  [Frame is marked: False]
  [Frame is ignored: False]
  [Protocols in frame: eth:ethertype:ip:tcp:http:data-text-lines]
  [Coloring Rule Name: HTTP]
  [Coloring Rule String: http || tcp.port == 80 || http2]
Ethernet II, Src: HuaweiTe_71:75:74 (30:74:96:71:75:74), Dst: Cybertan_a3:2d:0f (c8:3d:d4:a3:2d:0f)
  Destination: Cybertan_a3:2d:0f (c8:3d:d4:a3:2d:0f)
    Address: Cybertan_a3:2d:0f (c8:3d:d4:a3:2d:0f)
      ....0. .... = LG bit: Globally unique address (factory default)
      ....0. .... = IG bit: Individual address (unicast)
  Source: HuaweiTe_71:75:74 (30:74:96:71:75:74)
    Address: HuaweiTe_71:75:74 (30:74:96:71:75:74)
      ....0. .... = LG bit: Globally unique address (factory default)
      ....0. .... = IG bit: Individual address (unicast)
  Type: IPv4 (0x0800)
Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.43.195
  0100 .... = Version: 4
  ....0101 = Header Length: 20 bytes (5)
  Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
    0000 00.. = Differentiated Services Codepoint: Default (0)
    ....00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)
  Total Length: 770
  Identification: 0x9375 (37749)
  Flags: 0x4000, Don't fragment
    0... .... = Reserved bit: Not set
    .1.. .... = Don't fragment: Set
    ..0. .... = More fragments: Not set
    ...0 0000 0000 0000 = Fragment offset: 0
  Time to live: 47
  Protocol: TCP (6)
  Header checksum: 0x5391 [validation disabled]
  [Header checksum status: Unverified]
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Source: 128.119.245.12
Destination: 192.168.43.195
Transmission Control Protocol, Src Port: http (80), Dst Port: 54260 (54260), Seq: 1, Ack: 459, Len: 730
Source Port: http (80)
Destination Port: 54260 (54260)
[Stream index: 0]
[TCP Segment Len: 730]
Sequence number: 1 (relative sequence number)
[Next sequence number: 731 (relative sequence number)]
Acknowledgment number: 459 (relative ack number)
0101 .... = Header Length: 20 bytes (5)
Flags: 0x018 (PSH, ACK)
    000. .... = Reserved: Not set
    ...0 .... = Nonce: Not set
    .... 0... = Congestion Window Reduced (CWR): Not set
    .... .0.. = ECN-Echo: Not set
    .... ..0. = Urgent: Not set
    .... ...1 = Acknowledgment: Set
    .... .... 1... = Push: Set
    .... .... .0.. = Reset: Not set
    .... .... ..0. = Syn: Not set
    .... .... ...0 = Fin: Not set
[TCP Flags: .....AP...]
Window size value: 237
[Calculated window size: 30336]
[Window size scaling factor: 128]
Checksum: 0x2380 [unverified]
[Checksum Status: Unverified]
Urgent pointer: 0
[SEQ/ACK analysis]
    [iRTT: 0.276494000 seconds]
    [Bytes in flight: 730]
    [Bytes sent since last PSH flag: 730]
[Timestamps]
    [Time since first frame in this TCP stream: 0.561641000 seconds]
    [Time since previous frame in this TCP stream: 0.000000000 seconds]
TCP payload (730 bytes)

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# Hypertext Transfer Protocol

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HTTP/1.1 200 OK\r\n
    [Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
    [HTTP/1.1 200 OK\r\n]
    [Severity level: Chat]
    [Group: Sequence]
Response Version: HTTP/1.1
Status Code: 200
[Status Code Description: OK]
Response Phrase: OK
Date: Tue, 24 Sep 2019 10:35:00 GMT\r\n
Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/5.4.16 mod_perl/2.0.10 Perl/v5.16.3\r\n
Last-Modified: Tue, 24 Sep 2019 05:59:01 GMT\r\n
ETag: "173-593463baf7494"\r\n
Accept-Ranges: bytes\r\n
Content-Length: 371\r\n
    [Content length: 371]
Keep-Alive: timeout=5, max=100\r\n
Connection: Keep-Alive\r\n
Content-Type: text/html; charset=UTF-8\r\n
\r\n
[HTTP response 1/2]
[Time since request: 0.284341000 seconds]
[Request in frame: 20]
[Next request in frame: 28]
[Next response in frame: 29]
[Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html]
File Data: 371 bytes

```

Line-based text data: text/html (10 lines)

```

\r\n
<html>\r\n
\r\n
Congratulations again! Now you've downloaded the file lab2-2.html. <br>\r\n
This file's last modification date will not change. <p>\r\n
Thus if you download this multiple times on your browser, a complete copy <br>\r\n
will only be sent once by the server due to the inclusion of the IN-MODIFIED-SINCE<br>\r\n
field in your browser's HTTP GET request to the server.\r\n
\r\n
</html>\r\n

```

No.	Time	Source	Destination	Protocol	Length	Info
28	18:35:04.687202	192.168.43.195	128.119.245.12	HTTP	624	GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1

Frame 28: 624 bytes on wire (4992 bits), 624 bytes captured (4992 bits) on interface 0  
Interface id: 0 (\Device\NPF\_{96E9BC2A-8628-4C36-83CF-6F1B909EFC6})  
Interface name: \Device\NPF\_{96E9BC2A-8628-4C36-83CF-6F1B909EFC6}  
Interface description: WLAN  
Encapsulation type: Ethernet (1)  
Arrival Time: Sep 24, 2019 18:35:04.687202000 中国标准时间  
[Time shift for this packet: 0.000000000 seconds]  
Epoch Time: 1569321304.687202000 seconds  
[Time delta from previous captured frame: 1.498481000 seconds]  
[Time delta from previous displayed frame: 3.648429000 seconds]  
[Time since reference or first frame: 7.784468000 seconds]  
Frame Number: 28  
Frame Length: 624 bytes (4992 bits)  
Capture Length: 624 bytes (4992 bits)  
[Frame is marked: False]  
[Frame is ignored: False]  
[Protocols in frame: eth:ethertype:ip:tcp:http]  
[Coloring Rule Name: HTTP]  
[Coloring Rule String: http || tcp.port == 80 || http2]  
Ethernet II, Src: Cybertan\_a3:2d:0f (c8:3d:d4:a3:2d:0f), Dst: HuaweiTe\_71:75:74 (30:74:96:71:75:74)  
Destination: HuaweiTe\_71:75:74 (30:74:96:71:75:74)  
Address: HuaweiTe\_71:75:74 (30:74:96:71:75:74)  
.... 0. .... = LG bit: Globally unique address (factory default)  
.... 0. .... = IG bit: Individual address (unicast)  
Source: Cybertan\_a3:2d:0f (c8:3d:d4:a3:2d:0f)  
Address: Cybertan\_a3:2d:0f (c8:3d:d4:a3:2d:0f)  
.... 0. .... = LG bit: Globally unique address (factory default)  
.... 0. .... = IG bit: Individual address (unicast)  
Type: IPv4 (0x0800)  
Internet Protocol Version 4, Src: 192.168.43.195, Dst: 128.119.245.12  
0100 .... = Version: 4  
.... 0101 = Header Length: 20 bytes (5)  
Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)  
0000 00.. = Differentiated Services Codepoint: Default (0)  
.... 00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)  
Total Length: 610  
Identification: 0x8f32 (36658)  
Flags: 0x4000, Don't fragment  
0... .... = Reserved bit: Not set  
.1... .... = Don't fragment: Set  
..0. .... = More fragments: Not set  
...0 0000 0000 0000 = Fragment offset: 0  
Time to live: 128  
Protocol: TCP (6)  
Header checksum: 0x0774 [validation disabled]  
[Header checksum status: Unverified]  
Source: 192.168.43.195  
Destination: 128.119.245.12  
Transmission Control Protocol, Src Port: 54260 (54260), Dst Port: http (80), Seq: 459, Ack: 731, Len: 570  
Source Port: 54260 (54260)  
Destination Port: http (80)  
[Stream index: 0]  
[TCP Segment Len: 570]  
Sequence number: 459 (relative sequence number)  
[Next sequence number: 1029 (relative sequence number)]  
Acknowledgment number: 731 (relative ack number)  
0101 .... = Header Length: 20 bytes (5)  
Flags: 0x018 (PSH, ACK)  
000. .... = Reserved: Not set  
...0 .... = Nonce: Not set  
.... 0... .... = Congestion Window Reduced (CWR): Not set  
.... .0.. .... = ECN-Echo: Not set  
.... ..0. .... = Urgent: Not set  
.... ...1 .... = Acknowledgment: Set  
.... .... 1... = Push: Set  
.... .... .0.. = Reset: Not set  
.... .... ..0. = Syn: Not set  
.... .... ...0 = Fin: Not set  
[TCP Flags: .....AP...]  
Window size value: 257  
[Calculated window size: 65792]  
[Window size scaling factor: 256]  
Checksum: 0x1020 [unverified]  
[Checksum Status: Unverified]  
Urgent pointer: 0  
[SEQ/ACK analysis]  
[iRTT: 0.276494000 seconds]  
[Bytes in flight: 570]  
[Bytes sent since last PSH flag: 570]

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[Timestamps]
[Time since first frame in this TCP stream: 4.210070000 seconds]
[Time since previous frame in this TCP stream: 3.606816000 seconds]
TCP payload (570 bytes)
Hypertext Transfer Protocol
GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n
[Expert Info (Chat/Sequence): GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n]
[GET /wireshark-labs/HTTP-wireshark-file2.html HTTP/1.1\r\n]
[Severity level: Chat]
[Group: Sequence]
Request Method: GET
Request URI: /wireshark-labs/HTTP-wireshark-file2.html
Request Version: HTTP/1.1
Host: gaia.cs.umass.edu\r\n
Connection: keep-alive\r\n
Cache-Control: max-age=0\r\n
Upgrade-Insecure-Requests: 1\r\n
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/
77.0.3865.90 Safari/537.36\r\n
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,application/
signed-exchange;v=b3\r\n
Accept-Encoding: gzip, deflate\r\n
Accept-Language: zh-CN,zh;q=0.9\r\n
If-None-Match: "173-593463baf7494"\r\n
If-Modified-Since: Tue, 24 Sep 2019 05:59:01 GMT\r\n
\r\n
[Full request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html]
[HTTP request 2/2]
[Prev request in frame: 20]
[Response in frame: 29]
No.      Time                Source                Destination            Protocol Length Info
  29 18:35:04.969897    128.119.245.12        192.168.43.195        HTTP      293      HTTP/1.1 304 Not Modified
Frame 29: 293 bytes on wire (2344 bits), 293 bytes captured (2344 bits) on interface 0
Interface id: 0 (\Device\NPF_{96E9BC2A-8628-4C36-83CF-6F1B909EFC6})
Interface name: \Device\NPF_{96E9BC2A-8628-4C36-83CF-6F1B909EFC6}
Interface description: WLAN
Encapsulation type: Ethernet (1)
Arrival Time: Sep 24, 2019 18:35:04.969897000 中国标准时间
[Time shift for this packet: 0.000000000 seconds]
Epoch Time: 1569321304.969897000 seconds
[Time delta from previous captured frame: 0.282695000 seconds]
[Time delta from previous displayed frame: 0.282695000 seconds]
[Time since reference or first frame: 8.067163000 seconds]
Frame Number: 29
Frame Length: 293 bytes (2344 bits)
Capture Length: 293 bytes (2344 bits)
[Frame is marked: False]
[Frame is ignored: False]
[Protocols in frame: eth:ethertype:ip:tcp:http]
[Coloring Rule Name: HTTP]
[Coloring Rule String: http || tcp.port == 80 || http2]
Ethernet II, Src: HuaweiTe_71:75:74 (30:74:96:71:75:74), Dst: Cybertan_a3:2d:0f (c8:3d:d4:a3:2d:0f)
Destination: Cybertan_a3:2d:0f (c8:3d:d4:a3:2d:0f)
Address: Cybertan_a3:2d:0f (c8:3d:d4:a3:2d:0f)
.... 00. .... = LG bit: Globally unique address (factory default)
.... 00 .... = IG bit: Individual address (unicast)
Source: HuaweiTe_71:75:74 (30:74:96:71:75:74)
Address: HuaweiTe_71:75:74 (30:74:96:71:75:74)
.... 00. .... = LG bit: Globally unique address (factory default)
.... 00 .... = IG bit: Individual address (unicast)
Type: IPv4 (0x0800)
Internet Protocol Version 4, Src: 128.119.245.12, Dst: 192.168.43.195
0100 .... = Version: 4
.... 0101 = Header Length: 20 bytes (5)
Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
0000 00.. = Differentiated Services Codepoint: Default (0)
.... 0000 = Explicit Congestion Notification: Not ECN-Capable Transport (0)
Total Length: 279
Identification: 0x9376 (37750)
Flags: 0x4000, Don't fragment
0... .... = Reserved bit: Not set
.1.. .... = Don't fragment: Set
..0. .... = More fragments: Not set
...0 0000 0000 0000 = Fragment offset: 0
Time to live: 47
Protocol: TCP (6)
Header checksum: 0x557b [validation disabled]
[Header checksum status: Unverified]
Source: 128.119.245.12
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```
Destination: 192.168.43.195
Transmission Control Protocol, Src Port: http (80), Dst Port: 54260 (54260), Seq: 731, Ack: 1029, Len: 239
Source Port: http (80)
Destination Port: 54260 (54260)
[Stream index: 0]
[TCP Segment Len: 239]
Sequence number: 731      (relative sequence number)
[Next sequence number: 970      (relative sequence number)]
Acknowledgment number: 1029      (relative ack number)
0101 .... = Header Length: 20 bytes (5)
Flags: 0x018 (PSH, ACK)
  000. .... = Reserved: Not set
  ...0 .... = Nonce: Not set
  .... 0... = Congestion Window Reduced (CWR): Not set
  .... .0.. = ECN-Echo: Not set
  .... ..0. = Urgent: Not set
  .... ...1 = Acknowledgment: Set
  .... .... 1... = Push: Set
  .... .... .0.. = Reset: Not set
  .... .... ..0. = Syn: Not set
  .... .... ...0 = Fin: Not set
[TCP Flags: .....AP...]
Window size value: 246
[Calculated window size: 31488]
[Window size scaling factor: 128]
Checksum: 0xf98e [unverified]
[Checksum Status: Unverified]
Urgent pointer: 0
[SEQ/ACK analysis]
  [This is an ACK to the segment in frame: 28]
  [The RTT to ACK the segment was: 0.282695000 seconds]
  [iRTT: 0.276494000 seconds]
  [Bytes in flight: 239]
  [Bytes sent since last PSH flag: 239]
[Timestamps]
  [Time since first frame in this TCP stream: 4.492765000 seconds]
  [Time since previous frame in this TCP stream: 0.282695000 seconds]
TCP payload (239 bytes)
Hypertext Transfer Protocol
HTTP/1.1 304 Not Modified\r\n
  [Expert Info (Chat/Sequence): HTTP/1.1 304 Not Modified\r\n]
  [HTTP/1.1 304 Not Modified\r\n]
  [Severity level: Chat]
  [Group: Sequence]
Response Version: HTTP/1.1
Status Code: 304
[Status Code Description: Not Modified]
Response Phrase: Not Modified
Date: Tue, 24 Sep 2019 10:35:04 GMT\r\n
Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/5.4.16 mod_perl/2.0.10 Perl/v5.16.3\r\n
Connection: Keep-Alive\r\n
Keep-Alive: timeout=5, max=99\r\n
ETag: "173-593463baf7494"\r\n
\r\n
[HTTP response 2/2]
[Time since request: 0.282695000 seconds]
[Prev request in frame: 20]
[Prev response in frame: 24]
[Request in frame: 28]
[Request URI: http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html]
```