### How to run

#### **Test URL results**

#### http://neverssl.com/

Successful Download: Yes

Response content matches curl output: Yes

### Wireshark request screenshot

```
× +
  6...174.54... 192.168.1.2 13.33.146.21 HTTP 91 GET / HTTP/1.1
 6...174.55... 13.33.146.21 192.168.1.2 HTTP 11...HTTP/1.1 200 OK (text/html)
  2...411.80... 192.168.1.2 93.184.216.... HTTP 104 GET /index.html HTTP/1.1
  2...412.01... 93.184.216... 192.168.1.2 HTTP 209 HTTP/1.1 200 OK (text/html)
Frame 637: 91 bytes on wire (728 bits), 91 bytes captured (728 bits) on interface \Device\NPF_{E496CAAD-A3CB-4462-9A0D-A544...
Ethernet II, Src: Chongqin_c4:42:bf (5c:fb:3a:c4:42:bf), Dst: zte_ce:ff:dc (c0:94:ad:ce:ff:dc)
 Internet Protocol Version 4, Src: 192.168.1.2, Dst: 13.33.146.21
 Transmission Control Protocol, Src Port: 11809, Dst Port: 80, Seq: 1, Ack: 1, Len: 37
 Hypertext Transfer Protocol
 GET / HTTP/1.1\r\n
   > [Expert Info (Chat/Sequence): GET / HTTP/1.1\r\n]
    Request Method: GET
    Request URI: /
    Request Version: HTTP/1.1
  Host:neverssl.com\r\n
0000 c0 94 ad ce ff dc 5c fb 3a c4 42 bf 08 00 45 00
                                                        · · · · · · · · · · · · E
0010 00 4d 0b de 40 00 80 06 8d ec c0 a8 01 02 0d 21
                                                        ·м. · @ · · · · · · · !
0020 92 15 2e 21 00 50 2d 25 e8 96 57 b4 63 b5 50 18
                                                       ...! P-% ..W.c.P.
0030 02 04 f6 2e 00 00 47 45 54 20 2f 20 48 54 54 50
                                                        · · · . · · GE T / HTTP
0040 2f 31 2e 31 0d 0a 48 6f 73 74 3a 6e 65 76 65 72
                                                       /1.1. Ho st:never
0050 73 73 6c 2e 63 6f 6d 0d 0a 0d 0a
                                                        ssl.com· ··
```

#### Wireshark response screenshot

```
■ ¶ ⊗ | □ □ ⊠ ⊗ | d ← → ≅ ♣ ₹ □ □ □ d d d Ⅲ
  6... 174.54... 192.168.1.2 13.33.146.21 HTTP 91 GET / HTTP/1.1
  6...174.55... 13.33.146.21 192.168.1.2 HTTP 11...HTTP/1.1 200 OK (text/html)
  2...411.80... 192.168.1.2 93.184.216.... HTTP 104 GET /index.html HTTP/1.1 2...412.01... 93.184.216.... 192.168.1.2 HTTP 209 HTTP/1.1 200 OK (text/html)
Hypertext Transfer Protocol
 HTTP/1.1 200 OK\r\n
     [Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
     Response Version: HTTP/1.1
     Status Code: 200
     [Status Code Description: OK]
     Response Phrase: OK
   Content-Type: text/html\r\n
  Content-Length: 3961\r\n
   Connection: keep-alive\r\n
   Last-Modified: Thu, 04 Nov 2021 18:27:33 GMT\r\n \,
                                                                        \·:·B··· ···E
·I··@·<· ··!··
       5c fb 3a c4 42 bf c0 94 ad ce ff dc 08 00 45 00
0010 04 49 f6 e4 40 00 3c 06 e2 e9 0d 21 92 15 c0 a8 0020 01 02 00 50 2e 21 57 b4 71 19 2d 25 e8 bb 50 18
                                                                       ...P.!W q --% -- P -- : -- it y">HSTS<
      00 3a d6 ca 00 00 69 74
                                      79 22 3e 48 53 54 53 3c
0040
      2f 61 3e 2c 0a 09 09 6e
                                      6f 20 48 54 54 50 2f 32
                                                                       /a>, · · · n o HTTP/2
0050 2e 30 2c 20 6a 75 73 74 20 70 6c 61 69 6e 20 6f 0060 6c 64 20 75 6e 65 6e 63 72 79 70 74 65 64 20 48
                                                                       .0, just plain o
ld unenc rypted H
      54 54 50 20 61 6e 64 20 66 6f 72 65 76 65 72 20
                                                                       TTP and forever
```

## 2. http://www.example.com/index.html

Successful Download: Yes

Response content matches curl output: Yes

### Wireshark request screenshot

```
Source
                          Destination
                                        Protocol Length Info
  6... 174.54... 192.168.1.2 13.33.146.21 HTTP 91 GET / HTTP/1.1
  6...174.55... 13.33.146.21 192.168.1.2 HTTP 11...HTTP/1.1 200 OK (text/html)
2...411.80... 192.168.1.2 93.184.216.... HTTP 104 GET /index.html HTTP/1.1
- 2...412.01... 93.184.216... 192.168.1.2 HTTP 209 HTTP/1.1 200 OK (text/html)
             100 100 1 0 000 00 100 HTTD 170 CET /---: +--+ HTTD/1 1
Hypertext Transfer Protocol
 GET /index.html HTTP/1.1\r\n
  > [Expert Info (Chat/Sequence): GET /index.html HTTP/1.1\r\n]
    Request Method: GET
    Request URI: /index.html
    Request Version: HTTP/1.1
  Host:www.example.com\r\n
  [Full request URI: http://www.example.com/index.html]
  [HTTP request 1/1]
  [Response in frame: 2349]
0000 c0 94 ad ce ff dc 5c fb 3a c4 42 bf 08 00 45 00
                                                           · · · · · \ · : · B · · · E ·
0010 00 5a f2 2a 40 00 80 06 10 ee c0 a8 01 02 5d b8 ·Z·*@······]
0020 d8 22 29 0f 00 50 15 fd 4e 1f e6 81 2d d3 50 18 "")..P. N.....P.
0030 02 04 b9 3a 00 00 47 45 54 20 2f 69 6e 64 65 78 .....GE T /index
0040 2e 68 74 6d 6c 20 48 54 54 50 2f 31 2e 31 0d 0a .html HT TP/1.1..
0050 48 6f 73 74 3a 77 77 77 2e 65 78 61 6d 70 6c 65
                                                           Host:www .example
0060 2e 63 6f 6d 0d 0a 0d 0a
                                                           .com - - -
```

### Wireshark response screenshot

Frame (209 bytes) Reassembled TCP (1607 bytes)

Wireshark Wi-FiVCGEM1.pcapng

```
<u>/ ■ / ⊗ | = | | ⊗ | ⊘ | Q ← ⇒ 20 ∓ ± ] | | @ @ @ @ ∏</u>
  6... 174.54... 192.168.1.2 13.33.146.21 HTTP 91 GET / HTTP/1.1
  6...174.55... 13.33.146.21 192.168.1.2 HTTP 11...HTTP/1.1 200 OK (text/html)
→ 2...411.80... 192.168.1.2 93.184.216....HTTP 104 GET /index.html HTTP/1.1
_ 2...412.01... 93.184.216... 192.168.1.2 HTTP 209 HTTP/1.1 200 OK (text/html)
Hypertext Transfer Protocol
 HTTP/1.1 200 OK\r\n
  > [Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
    Response Version: HTTP/1.1
    Status Code: 200
    [Status Code Description: OK]
    Response Phrase: OK
  Accept-Ranges: bytes\r\n
  Age: 401781\r\n
  Cache-Control: max-age=604800\r\n
  Content-Type: text/html; charset=UTF-8\r\n
                                                         \·:·B·····E·
0000 5c fb 3a c4 42 bf c0 94 ad ce ff dc 08 00 45 00
0010 00 c3 df d2 40 00 3c 06 66 dd 5d b8 d8 22 c0 a8
                                                         ····@·<· f·]··"··
0020 01 02 00 50 29 0f e6 81 33 7f 15 fd 4e 51 50 18
                                                         · · · P) · · · 3 · · · NOP ·
0030 00 3a 2d 42 00 00 20 70 72 69 6f 72 20 63 6f 6f
                                                         ·:-B·· p rior coo
0040 72 64 69 6e 61 74 69 6f 6e 20 6f 72 20 61 73 6b
                                                         rdinatio n or ask
0050 69 6e 67 20 66 6f 72 20 70 65 72 6d 69 73 73 69
                                                         ing for permissi
0060 6f 6e 2e 3c 2f 70 3e 0a 20 20 20 20 3c 70 3e 3c
                                                         on.
                                                         a href=" https://
0070 61 20 68 72 65 66 3d 22 68 74 74 70 73 3a 2f 2f
```

3. http://www.debuggerstepthrough.com/feeds/posts/default

Successful Download: No

Reason: Chunked Transfer Encoding (can be verified in wireshark response screenshot)

## Wireshark request screenshot

```
Inc Zon yew 20 2spane Blanke 2sassis releptiony wheres 100s
4... 804.19... 192.168.1.2 142.250.67... HTTP 164 GET /feeds/posts/default HTTP/1.1
 4... 805.49... 142.250.67.... 192.168.1.2 HTT... 10... HTTP/1.1 200 OK
  4...845.26... 192.168.1.2 104.116.57... HTTP 267 GET /en-GB/livetile/preinstall?region=IN&appid=C98EA5B0842DBB9405BBF071E1DA76...
  4... 845.26... 104.116.57.... 192.168.1.2 HTT... 266 HTTP/1.1 200 OK
  GET /feeds/posts/default HTTP/1.1\r\n
   > [Expert Info (Chat/Sequence): GET /feeds/posts/default HTTP/1.1\r\n]
     Request Method: GET
    Request URI: /feeds/posts/default
    Request Version: HTTP/1.1
  Host: www.debuggerstepthrough.com\r\n
  User-Agent: curl/7.79.1\r\n
   Accept: */*\r\n
   [Full request URI: http://www.debuggerstepthrough.com/feeds/posts/default]
  [HTTP request 1/1]
0000 c0 94 ad ce ff dc 5c fb 3a c4 42 bf 08 00 45 00 0010 00 96 b6 49 40 00 80 06 b0 40 c0 a8 01 02 8e fa
                                                                      ·\· : ·B· · · E
                                                                 · · · I@ · · · · @ · ·
                                                                C3) PJ g:Q·]P···GE T /feeds
0020 43 33 29 e7 00 50 4a ff 67 3a 51 dc da 5d 50 18
0030 02 04 60 cc 00 00 47 45 54 20 2f 66 65 65 64 73
0040 2f 70 6f 73 74 73 2f 64 65 66 61 75 6c 74 20 48
                                                                /posts/d efault H
TTP/1.1 · Host: w
0050 54 54 50 2f 31 2e 31 0d 0a 48 6f 73 74 3a 20 77
0060 77 77 2e 64 65 62 75 67 67 65 72 73 74 65 70 74
                                                                ww.debug gerstept
0070 68 72 6f 75 67 68 2e 63 6f 6d 0d 0a 55 73 65 72
                                                                hrough.c om User
                                                                                             Packets: 202590 · Displayed: 53 (0.0%)
```

### Wireshark response screenshot

```
× +
                                 Destination Protocol Length Info

142.250.67.51 HTTP 164 GET /feeds/posts/default HTTP/1.1
  41... 804.1904... 192.168.1.2
  42... 805.4900... 142.250.67.51 192.168.1.2 HTTP... 10... HTTP/1.1 200 OK
                                104.116.57.32 HTTP 267 GET /en-GB/livetile/preinstall?region=IN&appid=C98EA5B0842DBB9405BBF071E1DA76512D21FE36&F...
  43... 845.2621... 192.168.1.2
                                192.168.1.2 HTTP... 266 HTTP/1.1 200 OK
202.88.160.49 HTTP 178 GET /ncsi.txt HTTP/1.1
  43... 845.2671... 104.116.57.32 192.168.1.2
  87... 1038.549... 192.168.1.2

→ HTTP/1.1 200 OK\r\n

     [Expert Info (Chat/Sequence): HTTP/1.1 200 OK\r\n]
     Response Version: HTTP/1.1
     Status Code: 200
      [Status Code Description: OK]
     Response Phrase: OK
   {\tt Cross-Origin-Resource-Policy: cross-origin \nline} \\
   Date: Tue, 24 May 2022 14:19:06 GMT\r\n
   Content-Type: application/atom+xml; \ charset=UTF-8\r\n
   Server: blogger-renderd\r\n
   Expires: Tue, 24 May 2022 14:19:07 GMT\r\n
Cache-Control: public, must-revalidate, proxy-revalidate, max-age=1\r\n
   X-Content-Type-Options: nosniff\r\n
X-XSS-Protection: 0\r\n
   Last-Modified: Tue, 24 May 2022 01:00:46 GMT\r\n X-Frame-Options: SAMEORIGIN\r\n
   Accept-Ranges: none\r\n
   Vary: Accept-Encoding\r\n
   Transfer-Encoding: chunked\r\n
000001c0 63 6f 64 69 6e 67 0d 0a 54 72 61 6e 73 66 65 72
                                                                     coding..
000001d0 2d 45 6e 63 6f 64 69 6e 67 3a 20 63 68 75 6e 6b
                                                                     -Encodin g: chunk
```

# 4. http://google.com:443

Successful Download: No

Reason: Empty reply from server

Response content matches curl output: Yes (empty response content)

### Wireshark request screenshot

```
∡ ■ ₫ ⊚ = 🖺 🛭 🖸 द 💠 ⇒ 🖀 🛊 📜 📄 电 电 电 🏗
                                                                                                                                                 × +
  87... 1038.552... 202.88.160.49 192.168.1.2
                                             HTTP 233 HTTP/1.1 200 OK (text/plain)
  91... 1091.122... 192.168.1.2 142.250.193.1... HTTP 132 GET / HTTP/1.1
  10... 1189.325... 192.168.1.2
                             142.250.193.1... HTTP
                                                    99 GET /index.html HTTP/1.1
  10... 1189.417... 142.250.193.1... 192.168.1.2 HTTP 602 HTTP/1.1 301 Moved Permanently (text/html)
  12... 1638.553... 192.168.1.2 202.88.160.48 HTTP 178 GET /ncsi.txt HTTP/1.1
 Frame 9108: 132 bytes on wire (1056 bits), 132 bytes captured (1056 bits) on interface \Device\NPF_{E496CAAD-A3CB-4462-9A0D-A544F13F1AF8}, id 0
 Ethernet II, Src: Chongqin_c4:42:bf (5c:fb:3a:c4:42:bf), Dst: zte_ce:ff:dc (c0:94:ad:ce:ff:dc)
 Internet Protocol Version 4, Src: 192.168.1.2, Dst: 142.250.193.142
 Transmission Control Protocol, Src Port: 10897, Dst Port: 443, Seq: 1, Ack: 1, Len: 78
  [Expert Info (Warning/Security): Unencrypted HTTP protocol detected over encrypted port, could indicate a dangerous misconfiguration.]
  GET / HTTP/1.1\r\n
   > [Expert Info (Chat/Sequence): GET / HTTP/1.1\r\n]
    Request Method: GET
    Request URI: /
    Request Version: HTTP/1.1
  Host: google.com:443\r\n
  User-Agent: curl/7.79.1\r\n
  Accept: */*\r\n
   [Full request URI: http://google.com:443/]
   [HTTP request 1/1]
0000 c0 94 ad ce ff dc 5c fb 3a c4 42 bf 08 00 45 00
                                                                ··\· : ·B···E
0010 00 76 24 8c 40 00 80 06 c3 c2 c0 a8 01 02 8e fa
0020 c1 8e 2a 91 01 bb a2 e9 d1 08 d5 2e fe 6a 50 18
                                                           ·····GE T / HTTP
0030 02 01 bc f4 00 00 47 45 54 20 2f 20 48 54 54 50 0040 2f 31 2e 31 0d 0a 48 6f 73 74 3a 20 67 6f 6f 67
                                                           /1.1 Ho st: goog
0050 6c 65 2e 63 6f 6d 3a 34 34 33 0d 0a 55 73 65 72
                                                          le.com:4 43 · User
                                                                                                      Packets: 211372 · Displayed: 55 (0.0%)
```

# Wireshark response screenshot

There are no packets captured by wireshark since it was an empty reply from the server.

### 5. http://google.com/index.html

Successful Download: Yes (with status code 301)

Response content matches curl output: Yes

### Wireshark request screenshot

```
⊠ □ v +
   8...1038.5... 202.88.160....192.168.1.2 HTTP 233 HTTP/1.1 200 OK (text/plain)
   9... 1091.1... 192.168.1.2 142.250.193... HTTP 132 GET / HTTP/1.1
 1...1189.3... 192.168.1.2 142.250.193... HTTP 99 GET /index.html HTTP/1.1
 - 1...1189.4... 142.250.193...192.168.1.2 HTTP 602 HTTP/1.1 301 Moved Permanently (text/html)
  Ethernet II, Src: Chongqin_c4:42:bf (5c:fb:3a:c4:42:bf), Dst: zte_ce:ff:dc (c0:94:ad:ce:ff:dc)
  Internet Protocol Version 4, Src: 192.168.1.2, Dst: 142.250.193.142
  Transmission Control Protocol, Src Port: 10958, Dst Port: 80, Seq: 1, Ack: 1, Len: 45
  Hypertext Transfer Protocol
  GET /index.html HTTP/1.1\r\n
    > [Expert Info (Chat/Sequence): GET /index.html HTTP/1.1\r\n]
     Request Method: GET
     Request URI: /index.html
     Request Version: HTTP/1.1
   Host:google.com\r\n
    \r\n
   [Full request URI: http://google.com/index.html]
   [HTTP request 1/1]
   [Response in frame: 10006]
 0000 c0 94 ad ce ff dc 5c fb 3a c4 42 bf 08 00 45 00
                                                                ...\. : B ... F
 0010 00 55 24 8f 40 00 80 06 c3 e0 c0 a8 01 02 8e fa
                                                             - U$ - @ -
0020 c1 8e 2a ce 00 50 43 ed b6 80 ba 13 ed 9f 50 18
0030 02 04 02 97 00 00 47 45 54 20 2f 69 6e 64 65 78
                                                             · · * · · PC ·
                                                             ·····GE T /index
 0040 2e 68 74 6d 6c 20 48 54 54 50 2f 31 2e 31 0d 0a
                                                             .html HT TP/1.1
                                                                                          Packets: 224599 · Displayed: 59 (0.0%)
```

### Wireshark response screenshot

```
9...1091.1... 192.168.1.2 142.250.193... HTTP 132 GET / HTTP/1.1
  1...1189.3... 192.168.1.2 142.250.193... HTTP 99 GET /index.html HTTP/1.1
1...1189.4... 142.250.193...192.168.1.2 HTTP 602 HTTP/1.1 301 Moved Permanently (text/html)
 Hypertext Transfer Protocol
  HTTP/1.1 301 Moved Permanently\r\n
   Expert Info (Chat/Sequence): HTTP/1.1 301 Moved Permanently\r\n]
    Response Version: HTTP/1.1
    Status Code: 301
    [Status Code Description: Moved Permanently]
    Response Phrase: Moved Permanently
  Location: \ http://www.google.com/index.html\r\n
  Content-Type: text/html; charset=UTF-8\r
  Date: Tue, 24 May 2022 14:25:31 GMT\r\n
Expires: Thu, 23 Jun 2022 14:25:31 GMT\r\n
  Cache-Control: public, max-age=2592000\r\n
  Server: gws\r\n
  Content-Length: 229\r\n
      5c fb 3a c4 42 bf c0 94 ad ce ff dc 08 00 45 00
                                                          \ · : · B · · ·
                                                          ·L·%@·<· ^S······
···P*····C··P·
·:···HT TP/1.1 3
0010 02 4c cc 25 40 00 3c 06 5e 53 8e fa c1 8e c0 a8
0020 01 02 00 50 2a ce ba 13 ed 9f 43 ed b6 ad 50 18 0030 00 3a ad 1c 00 00 48 54 54 50 2f 31 2e 31 20 33
0040 30 31 20 4d 6f 76 65 64 20 50 65 72 6d 61 6e 65
                                                          01 Moved Permane
```