1 0.0000000000 192.168.1.5 224.0.0.251 MDNS 105 Standard query 0x01a5 PTR _CA5E8412._sub._googlecast._tcp.local, "QM" question PTR _googlecast._tcp.local, "QM" question Frame 1: 105 bytes on wire (840 bits), 105 bytes captured (840 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 4, Src: 192.168.1.5, Dst: 224.0.0.251 User Datagram Protocol, Src Port: 5353, Dst Port: 5353 Multicast Domain Name System (query)

2 6.853310180 127.0.0.1 127.0.1.1 TCP 76 46844 → 5003 [SYN] Seq=0 Win=65495 Len=0

MSS=65495 SACK_PERM=1 TSval=4290917890 TSecr=0 WS=128

Frame 2: 76 bytes on wire (608 bits), 76 bytes captured (608 bits) on interface any, id 0 $\,$

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.1.1

Transmission Control Protocol, Src Port: 46844, Dst Port: 5003, Seq: 0, Len: 0

No. Time Source Destination Protocol Length Info $3 \ 6.853317115 \ 127.0.1.1 \ 127.0.0.1 \ TCP \ 76 \ 5003 \rightarrow 46844 [SYN, ACK] Seq=0 Ack=1$

Win=65483 Len=0 MSS=65495 SACK_PERM=1 TSval=3335881060 TSecr=4290917890 WS=128

Frame 3: 76 bytes on wire (608 bits), 76 bytes captured (608 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.1.1, Dst: 127.0.0.1

Transmission Control Protocol, Src Port: 5003, Dst Port: 46844, Seq: 0, Ack: 1, Len: 0

4 6.853322848 127.0.0.1 127.0.1.1 TCP 68 46844 → 5003 [ACK] Seq=1 Ack=1 Win=65536

Len=0 TSval=4290917890 TSecr=3335881060

Frame 4: 68 bytes on wire (544 bits), 68 bytes captured (544 bits) on interface any, id 0 $\,$

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.1.1

Transmission Control Protocol, Src Port: 46844, Dst Port: 5003, Seq: 1, Ack: 1, Len: 0

```
Source
                                             Destination
                                                                   Protocol Length Info
      5 6.853463584
                     127.0.0.1
                                             127.0.1.1
                                                                  TLSv1.3 585 Client Hello
Frame 5: 585 bytes on wire (4680 bits), 585 bytes captured (4680 bits) on interface any, id 0
Linux cooked capture
Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.1.1
Transmission Control Protocol, Src Port: 46844, Dst Port: 5003, Seq: 1, Ack: 1, Len: 517
Transport Layer Security
    TLSv1.3 Record Layer: Handshake Protocol: Client Hello
        Content Type: Handshake (22)
        Version: TLS 1.0 (0x0301)
        Length: 512
        Handshake Protocol: Client Hello
            Handshake Type: Client Hello (1)
            Lenath: 508
            Version: TLS 1.2 (0x0303)
            Random: e1362b9b8a6fcc11307fed8c161db8f4cc1a46739e86998e...
            Session ID Length: 32
            Session ID: 18ba640f15b855fd0a98b412835fb258eb61ce94b9e76a67...
           Cipher Suites Length: 62
            Cipher Suites (31 suites)
            Compression Methods Length: 1
            Compression Methods (1 method)
            Extensions Length: 373
           Extension: server_name (len=22)
            Extension: ec_point_formats (len=4)
            Extension: supported_groups (len=12)
            Extension: session_ticket (len=0)
            Extension: encrypt_then_mac (len=0)
            Extension: extended_master_secret (len=0)
            Extension: signature_algorithms (len=42)
            Extension: supported_versions (len=5)
            Extension: psk_key_exchange_modes (len=2)
            Extension: key_share (len=38)
            Extension: padding (len=204)
```

6 6.853467172 127.0.1.1 127.0.0.1 TCP 68 5003 → 46844 [ACK] Seq=1 Ack=518 Win=65024

Len=0 TSval=3335881060 TSecr=4290917890

Frame 6: 68 bytes on wire (544 bits), 68 bytes captured (544 bits) on interface any, id θ

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.1.1, Dst: 127.0.0.1

Transmission Control Protocol, Src Port: 5003, Dst Port: 46844, Seq: 1, Ack: 518, Len: 0

```
Source
                                             Destination
                                                                    Protocol Length Info
     7 6.857659420
                       127.0.1.1
                                              127.0.0.1
                                                                    TLSv1.3 2540
                                                                                   Server Hello, Change Cipher Spec,
Application Data, Application Data, Application Data, Application Data, Application Data
Frame 7: 2540 bytes on wire (20320 bits), 2540 bytes captured (20320 bits) on interface any, id 0
Linux cooked capture
Internet Protocol Version 4, Src: 127.0.1.1, Dst: 127.0.0.1
Transmission Control Protocol, Src Port: 5003, Dst Port: 46844, Seq: 1, Ack: 518, Len: 2472
Transport Layer Security
    TLSv1.3 Record Layer: Handshake Protocol: Server Hello
        Content Type: Handshake (22)
Version: TLS 1.2 (0x0303)
        Length: 122
        Handshake Protocol: Server Hello
            Handshake Type: Server Hello (2)
            Length: 118
            Version: TLS 1.2 (0x0303)
            Random: fdceaa7e5d5425ff65dabc72c093253d677ccbdf4bc034d0...
            Session ID Length: 32
            Session ID: 18ba640f15b855fd0a98b412835fb258eb61ce94b9e76a67...
            Cipher Suite: TLS_AES_256_GCM_SHA384 (0x1302)
            Compression Method: null (0)
            Extensions Length: 46
            Extension: supported_versions (len=2)
            Extension: key_share (len=36)
    TLSv1.3 Record Layer: Change Cipher Spec Protocol: Change Cipher Spec
        Content Type: Change Cipher Spec (20)
        Version: TLS 1.2 (0x0303)
        Lenath: 1
        Change Cipher Spec Message
    TLSv1.3 Record Layer: Application Data Protocol: http-over-tls
        Opaque Type: Application Data (23)
        Version: TLS 1.2 (0x0303)
        Length: 23
        Encrypted Application Data: 96640dfad6ff1324728cba0b2191e0f7d14068e20e780b
    TLSv1.3 Record Layer: Application Data Protocol: http-over-tls
        Opaque Type: Application Data (23)
        Version: TLS 1.2 (0x0303)
        Length: 62
        Encrypted Application Data: dd4b7038b11c9f97d76d1a09a88fe9d96c6800459009fa9c...
    TLSv1.3 Record Layer: Application Data Protocol: http-over-tls
        Opaque Type: Application Data (23)
        Version: TLS 1.2 (0x0303)
        Length: 1623
        Encrypted Application Data: 051a69e32abcdef42b1b867171c3dd92a64d1d2cf62b1e6f...
    TLSv1.3 Record Layer: Application Data Protocol: http-over-tls
        Opaque Type: Application Data (23)
        Version: TLS 1.2 (0x0303)
        Length: 537
        Encrypted Application Data: 65cd0d994eeb337c751f8cb0e0bcf9bbb0a02e1d998ace2d...
    TLSv1.3 Record Layer: Application Data Protocol: http-over-tls
        Opaque Type: Application Data (23)
        Version: TLS 1.2 (0x0303)
        Length: 69
        Encrypted Application Data: be6bbfe59a7f5771acde6603ef2567a88e916166a4f82913...
```

8 6.857664147 127.0.0.1 127.0.1.1 TCP 68 46844 → 5003 [ACK] Seq=518 Ack=2473

Win=63744 Len=0 TSval=4290917894 TSecr=3335881064

Frame 8: 68 bytes on wire (544 bits), 68 bytes captured (544 bits) on interface any, id 0 $\,$

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.1.1

Transmission Control Protocol, Src Port: 46844, Dst Port: 5003, Seq: 518, Ack: 2473, Len: 0

Time Source Destination Protocol Length Info 9 6.862767434 127.0.0.1 127.0.1.1 TLSv1.3 2320 Change Cipher Spec, Application Data, Application Data, Application Data Frame 9: 2320 bytes on wire (18560 bits), 2320 bytes captured (18560 bits) on interface any, id 0 Linux cooked capture Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.1.1 Transmission Control Protocol, Src Port: 46844, Dst Port: 5003, Seq: 518, Ack: 2473, Len: 2252 Transport Layer Security TLSv1.3 Record Layer: Change Cipher Spec Protocol: Change Cipher Spec Content Type: Change Cipher Spec (20) Version: TLS 1.2 (0x0303) Length: 1 Change Cipher Spec Message TLSv1.3 Record Layer: Application Data Protocol: http-over-tls Opaque Type: Application Data (23) Version: TLS 1.2 (0x0303) Length: 1625 Encrypted Application Data: 6652bca0f1e55d5aee55e4b20efcdc93c006648a0415aed5... TLSv1.3 Record Layer: Application Data Protocol: http-over-tls Opaque Type: Application Data (23) Version: TLS 1.2 (0x0303) Length: 537 Encrypted Application Data: 535c8c20349f749fc909e9402439b19961b654eb0f3c9354...

Opaque Type: Application Data (23) Version: TLS 1.2 (0x0303)

Length: 69

Encrypted Application Data: f9b1b5d9f9d827310994d082b0b220a468c5cf47278398db...

TLSv1.3 Record Layer: Application Data Protocol: http-over-tls

10 6.862773155 127.0.1.1 127.0.0.1 TCP 68 5003 → 46844 [ACK] Seq=2473 Ack=2770

Win=63872 Len=0 TSval=3335881069 TSecr=4290917899

Frame 10: 68 bytes on wire (544 bits), 68 bytes captured (544 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.1.1, Dst: 127.0.0.1

Transmission Control Protocol, Src Port: 5003, Dst Port: 46844, Seq: 2473, Ack: 2770, Len: 0

11 6.862950411 127.0.0.1 127.0.1.1 TLSv1.3 103 Application Data

Frame 11: 103 bytes on wire (824 bits), 103 bytes captured (824 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.1.1 Transmission Control Protocol, Src Port: 46844, Dst Port: 5003, Seq: 2770, Ack: 2473, Len: 35

Transport Layer Security

TLSv1.3 Record Layer: Application Data Protocol: http-over-tls

Opaque Type: Application Data (23) Version: TLS 1.2 (0x0303)

Length: 30

Encrypted Application Data: dd77d29963f4b3683f71250a86de854faedd62cbab5a74f2...

12 6.862953990 127.0.1.1 127.0.0.1 TCP 68 5003 → 46844 [ACK] Seq=2473 Ack=2805

Win=63872 Len=0 TSval=3335881069 TSecr=4290917899

Frame 12: 68 bytes on wire (544 bits), 68 bytes captured (544 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.1.1, Dst: 127.0.0.1

Transmission Control Protocol, Src Port: 5003, Dst Port: 46844, Seq: 2473, Ack: 2805, Len: 0

Time Source Destination Protocol Length Info 13 6.863100146 127.0.1.1 127.0.0.1 TLSv1.3 1923 Application Data Frame 13: 1923 bytes on wire (15384 bits), 1923 bytes captured (15384 bits) on interface any, id 0 Linux cooked capture

Internet Protocol Version 4, Src: 127.0.1.1, Dst: 127.0.0.1 Transmission Control Protocol, Src Port: 5003, Dst Port: 46844, Seq: 2473, Ack: 2805, Len: 1855 Transport Layer Security

TLSv1.3 Record Layer: Application Data Protocol: http-over-tls

Opaque Type: Application Data (23) Version: TLS 1.2 (0x0303)

Length: 1850

Encrypted Application Data: 1a59bbf70820abfd510c1da7af4695b17dafae874d257d16...

No. Time Source Destination Protocol Length Info 14 6.863102342 127.0.0.1 127.0.1.1 TCP 68 46844 \rightarrow 5003 [ACK] Seq=2805 Ack=4328

Win=64000 Len=0 TSval=4290917899 TSecr=3335881069

Frame 14: 68 bytes on wire (544 bits), 68 bytes captured (544 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.1.1

Transmission Control Protocol, Src Port: 46844, Dst Port: 5003, Seq: 2805, Ack: 4328, Len: 0

Time Source Destination Protocol Length Info 15 6.863164150 127.0.1.1 127.0.0.1 TLSv1.3 1923 Application Data Frame 15: 1923 bytes on wire (15384 bits), 1923 bytes captured (15384 bits) on interface any, id 0 Linux cooked capture

Internet Protocol Version 4, Src: 127.0.1.1, Dst: 127.0.0.1 Transmission Control Protocol, Src Port: 5003, Dst Port: 46844, Seq: 4328, Ack: 2805, Len: 1855 Transport Layer Security

TLSv1.3 Record Layer: Application Data Protocol: http-over-tls

Opaque Type: Application Data (23)

Version: TLS 1.2 (0x0303) Length: 1850

Encrypted Application Data: 7969cdeefa530606a9d57399f6b3e623d37cc932c86fd679...

No. Time Source Destination Protocol Length Info 16 6.863166332 127.0.0.1 127.0.1.1 TCP 68 46844 → 5003 [ACK] Seq=2805 Ack=6183

Win=63104 Len=0 TSval=4290917899 TSecr=3335881069

Frame 16: 68 bytes on wire (544 bits), 68 bytes captured (544 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.1.1

Transmission Control Protocol, Src Port: 46844, Dst Port: 5003, Seq: 2805, Ack: 6183, Len: 0

Time Source Destination Protocol Length Info 17 18.465269338 127.0.0.1 127.0.1.1 TLSv1.3 107 Application Data Frame 17: 107 bytes on wire (856 bits), 107 bytes captured (856 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.1.1 Transmission Control Protocol, Src Port: 46844, Dst Port: 5003, Seq: 2805, Ack: 6183, Len: 39

Transport Layer Security

TLSv1.3 Record Layer: Application Data Protocol: http-over-tls

Opaque Type: Application Data (23) Version: TLS 1.2 (0x0303)

Length: 34

Encrypted Application Data: 7be5cc57423ceb2b9d1a0d0f51f3bf0e18bf586097ed2780...

18 18.465278600 127.0.1.1 127.0.0.1 TCP 68 5003 → 46844 [ACK] Seq=6183 Ack=2844

Win=64896 Len=0 TSval=3335892672 TSecr=4290929502

Frame 18: 68 bytes on wire (544 bits), 68 bytes captured (544 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.1.1, Dst: 127.0.0.1

Transmission Control Protocol, Src Port: 5003, Dst Port: 46844, Seq: 6183, Ack: 2844, Len: 0

Time Source Destination Protocol Length Info 19 20.002645850 192.168.1.5 224.0.0.251 MDNS 105 Standard query 0x01a6 PTR _CA5E8412._sub._googlecast._tcp.local, "QM" question PTR _googlecast._tcp.local, "QM" question Frame 19: 105 bytes on wire (840 bits), 105 bytes captured (840 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 4, Src: 192.168.1.5, Dst: 224.0.0.251 User Datagram Protocol, Src Port: 5353, Dst Port: 5353 Multicast Domain Name System (query)

Time Source Destination Protocol Length Info 20 21.655172277 127.0.0.1 127.0.1.1 TLSv1.3 104 Application Data

Frame 20: 104 bytes on wire (832 bits), 104 bytes captured (832 bits) on interface any, id 0 Linux cooked capture

Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.1.1 Transmission Control Protocol, Src Port: 46844, Dst Port: 5003, Seq: 2844, Ack: 6183, Len: 36

Transport Layer Security

TLSv1.3 Record Layer: Application Data Protocol: http-over-tls

Opaque Type: Application Data (23) Version: TLS 1.2 (0x0303)

Length: 31

Encrypted Application Data: c6b9859c52eeebc3cf7154b00b36f46cd10da7525ba48676...

21 21.655187846 127.0.1.1 127.0.0.1 TCP 68 5003 → 46844 [ACK] Seq=6183 Ack=2880

Win=64896 Len=0 TSval=3335895861 TSecr=4290932691

Frame 21: 68 bytes on wire (544 bits), 68 bytes captured (544 bits) on interface any, id 0 $\,$

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.1.1, Dst: 127.0.0.1

Transmission Control Protocol, Src Port: 5003, Dst Port: 46844, Seq: 6183, Ack: 2880, Len: 0

22 21.655436695 127.0.1.1 127.0.0.1 TLSv1.3 112 Application Data

Frame 22: 112 bytes on wire (896 bits), 112 bytes captured (896 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.1.1, Dst: 127.0.0.1 Transmission Control Protocol, Src Port: 5003, Dst Port: 46844, Seq: 6183, Ack: 2880, Len: 44

Transport Layer Security

TLSv1.3 Record Layer: Application Data Protocol: http-over-tls

Opaque Type: Application Data (23) Version: TLS 1.2 (0x0303)

Length: 39

Encrypted Application Data: 51696882d6955e9569eddcdfc5747f8275e4056f17a2f3ed...

No. Time Source Destination Protocol Length Info 23 21.655461090 127.0.0.1 127.0.1.1 TCP 68 46844 → 5003 [ACK] Seq=2880 Ack=6227

Win=64896 Len=0 TSval=4290932692 TSecr=3335895862

Frame 23: 68 bytes on wire (544 bits), 68 bytes captured (544 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.1.1

Transmission Control Protocol, Src Port: 46844, Dst Port: 5003, Seq: 2880, Ack: 6227, Len: 0

Time Source Destination Protocol Length Info 24 26.691131615 127.0.0.1 127.0.1.1 TLSv1.3 104 Application Data

Frame 24: 104 bytes on wire (832 bits), 104 bytes captured (832 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.1.1 Transmission Control Protocol, Src Port: 46844, Dst Port: 5003, Seq: 2880, Ack: 6227, Len: 36

Transport Layer Security

TLSv1.3 Record Layer: Application Data Protocol: http-over-tls

Opaque Type: Application Data (23) Version: TLS 1.2 (0x0303)

Length: 31

Encrypted Application Data: 3fcbc2f782a5e969f91febe48e0af29e86cef6c91d0b694c...

25 26.691162982 127.0.1.1 127.0.0.1 TCP 68 5003 → 46844 [ACK] Seq=6227 Ack=2916

Win=65536 Len=0 TSval=3335900897 TSecr=4290937727

Frame 25: 68 bytes on wire (544 bits), 68 bytes captured (544 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.1.1, Dst: 127.0.0.1

Transmission Control Protocol, Src Port: 5003, Dst Port: 46844, Seq: 6227, Ack: 2916, Len: 0

Time Source Destination Protocol Length Info 26 26.691373821 127.0.1.1 127.0.0.1 TLSv1.3 113 Application Data

Frame 26: 113 bytes on wire (904 bits), 113 bytes captured (904 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.1.1, Dst: 127.0.0.1 Transmission Control Protocol, Src Port: 5003, Dst Port: 46844, Seq: 6227, Ack: 2916, Len: 45

Transport Layer Security

TLSv1.3 Record Layer: Application Data Protocol: http-over-tls

Opaque Type: Application Data (23) Version: TLS 1.2 (0x0303)

Length: 40

Encrypted Application Data: 12fac0da1830a269cbe1c1d017129c3129b93050d487bbd7...

No. Time Source Destination Protocol Length Info 27 26.691387077 127.0.0.1 127.0.1.1 TCP 68 46844 → 5003 [ACK] Seq=2916 Ack=6272

Win=65536 Len=0 TSval=4290937728 TSecr=3335900898

Frame 27: 68 bytes on wire (544 bits), 68 bytes captured (544 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.1.1

Transmission Control Protocol, Src Port: 46844, Dst Port: 5003, Seq: 2916, Ack: 6272, Len: 0

Destination Protocol Length Info No. Time Source

28 32.310939232 fe80::3649:5bff:fed0:671a ff02::1 Router Advertisement from ICMPv6 176

34:49:5b:d0:67:1a

Frame 28: 176 bytes on wire (1408 bits), 176 bytes captured (1408 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 6, Src: fe80::3649:5bff:fed0:671a, Dst: ff02::1 Internet Control Message Protocol v6

29 32.321850997 fe80::9c2e:9b6:e12e:db98 ff02::16 ICMPv6 172 Multicast Listener Report Message v2

Frame 29: 172 bytes on wire (1376 bits), 172 bytes captured (1376 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 6, Src: fe80::9c2e:9b6:e12e:db98, Dst: ff02::16

Internet Control Message Protocol v6

30 32.825860186 fe80::9c2e:9b6:e12e:db98 ff02::16 ICMPv6 172 Multicast Listener Report Message v2

Frame 30: 172 bytes on wire (1376 bits), 172 bytes captured (1376 bits) on interface any, id 0

Linux cooked capture

Internet Protocol Version 6, Src: fe80::9c2e:9b6:e12e:db98, Dst: ff02::16

Internet Control Message Protocol v6