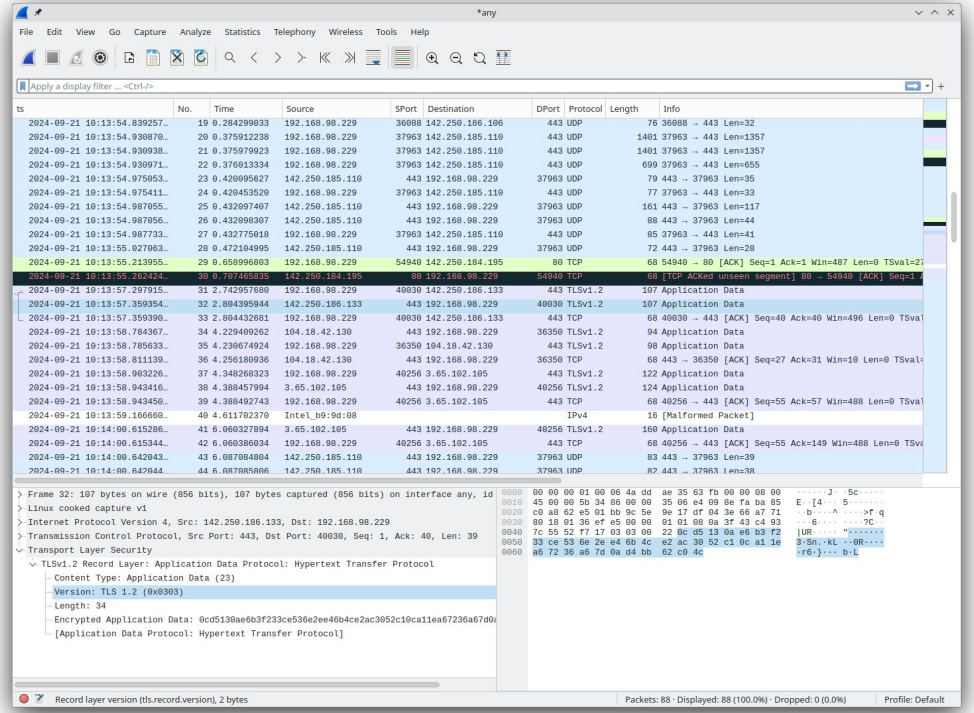
Staffbase

Wireshark um eigene Protokolle erweitern

Jiří Kraml
Backend Engineer

Wireshark


*any
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TLSv1.2 Record Layer: Application Data Protocol: Hypertext Transfer Protocol
Content Type: Application Data (23)
Version: TLS 1.2 (0x0303)
Length: 34
Encrypted Application Data: 0cd5130ae6b3f233ce536e2ee46b4ce2ac3052c10ca11ea67236a67d0a
[Application Data Protocol: Hypertext Transfer Protocol]
0000 00 00 00 01 00 06 4a dd ae 35 63 fb 00 00 08 00 ·····J· ·5c·····
0010 45 00 00 5b 34 86 00 00 35 06 e4 09 8e fa ba 85 E··[4··· 5·····
0020 c0 a8 62 e5 01 bb 9c 5e 9e 17 df 04 3e 66 a7 71 ··b····^ ····>f·q
0030 80 18 01 36 ef e5 00 00 01 01 08 0a 3f 43 c4 93 ···6···· ····?C··
0040 7c 55 52 f7 17 03 03 00 22 0c d5 13 0a e6 b3 f2 |UR····· "·v·····
0050 33 ce 53 6e 2e e4 6b 4c e2 ac 30 52 c1 0c a1 1e 3·Sn·kL ··0R····
0060 a6 72 36 a6 7d 0a d4 bb 62 c0 4c ·r6·}··· b·L
Record layer version (tls.record.version), 2 bytes
Packets: 88 · Displayed: 88 (100.0%) · Dropped: 0 (0.0%)
Profile: Default

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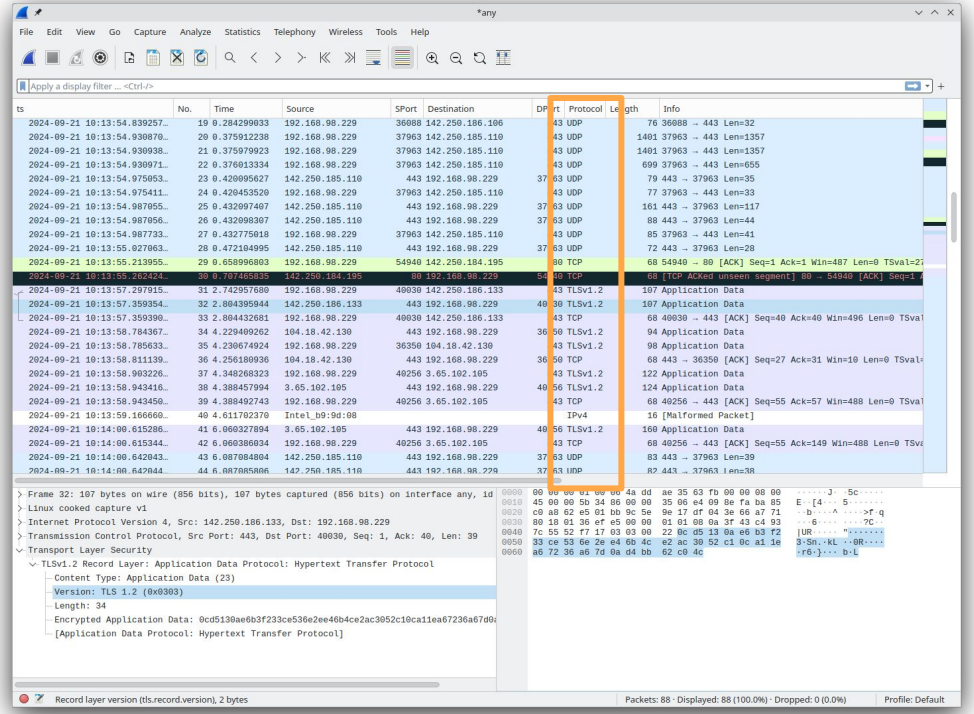
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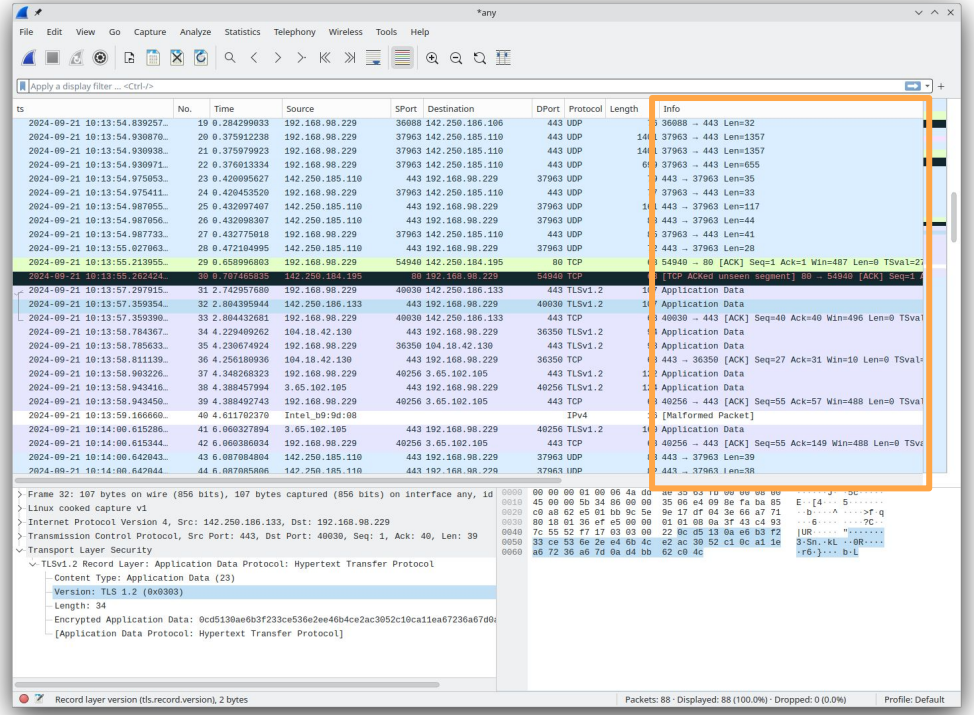
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[Application Data Protocol: Hypertext Transfer Protocol]
0000 00 00 00 01 00 06 4a dd
0010 45 00 00 5b 34 86 00 00 35 06 e4 09 8e fa ba 85
0020 c0 a8 62 e5 01 bb 9c 5e 9e 17 df 04 3e 66 a7 71
0030 80 18 01 36 ef e5 00 00 01 01 08 0a 3f 43 c4 93
0040 7c 55 52 f7 17 03 03 00 22 0c d5 13 0a e6 b3 f2
0050 33 ce 53 6e 2e e4 6b 4c e2 ac 30 52 c1 0c a1 1e
0060 a6 72 36 a6 7d 0a d4 bb 62 c0 4c
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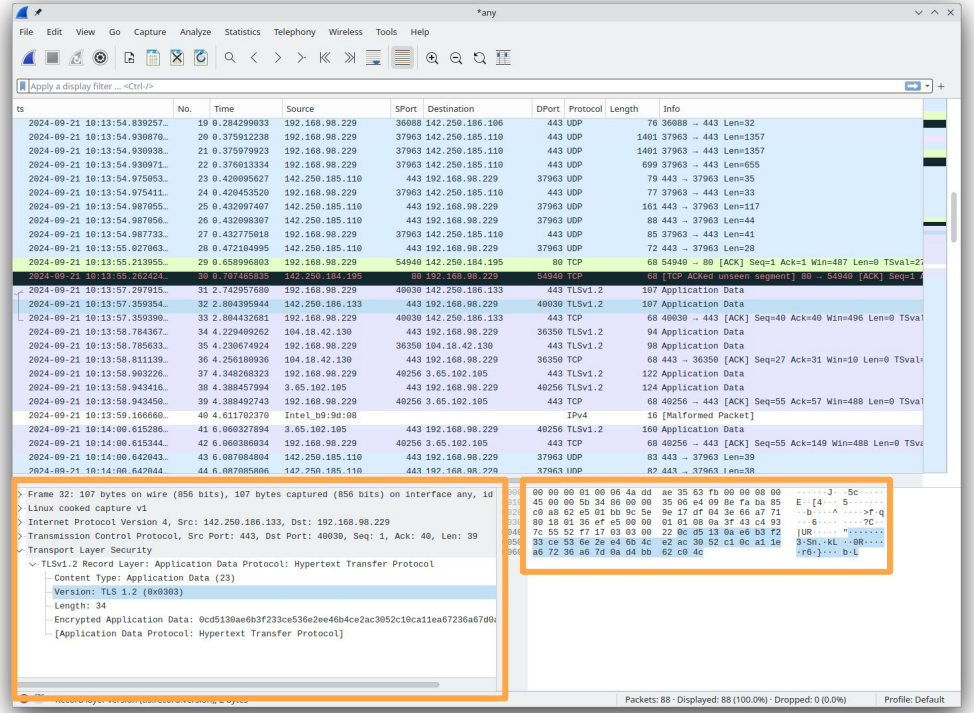
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45 00 00 5b 34 86 00 00 35 06 e4 09 8e fa ba 85 E··[4··· 5·····
c0 a8 62 e5 01 bb 9c 5e 9e 17 df 04 3e 66 a7 71 ··b····^ ····>f·q
80 18 01 36 ef e5 00 00 01 01 08 0a 3f 43 c4 93 ···6···· ····?C··
7c 55 52 f7 17 03 03 00 22 0c d5 13 0a e6 b3 f2 |UR····· "·v·····
33 ce 53 6e 2e e4 6b 4c e2 ac 30 52 c1 0c a1 1e 3·Sn.·kL ··0R····
a6 72 36 a6 7d 0a d4 bb 62 c0 4c ·r6·}··· b·L
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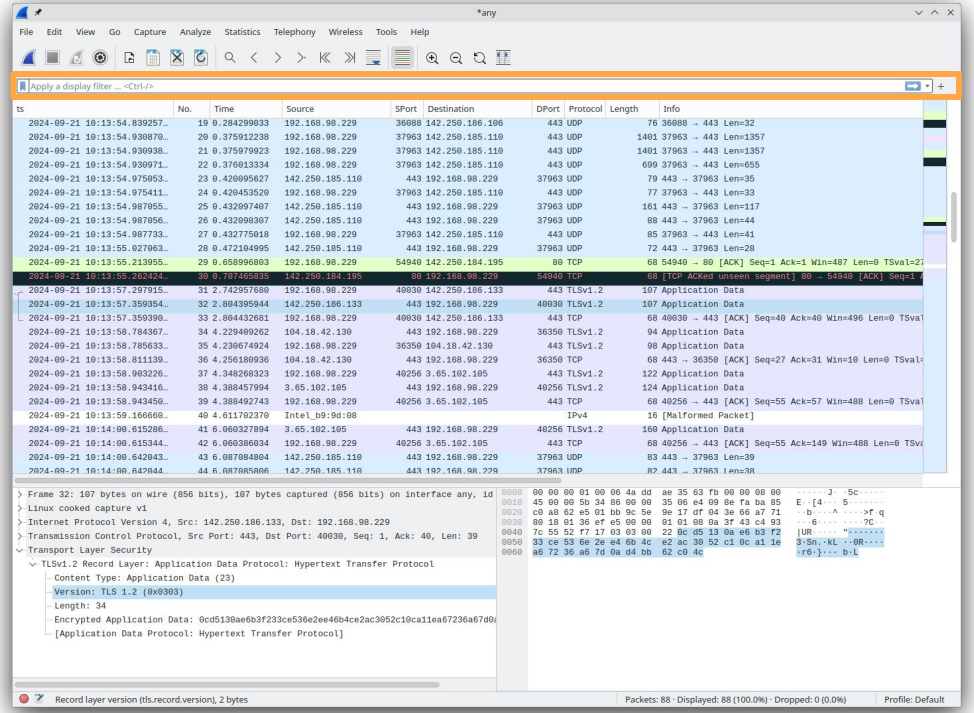
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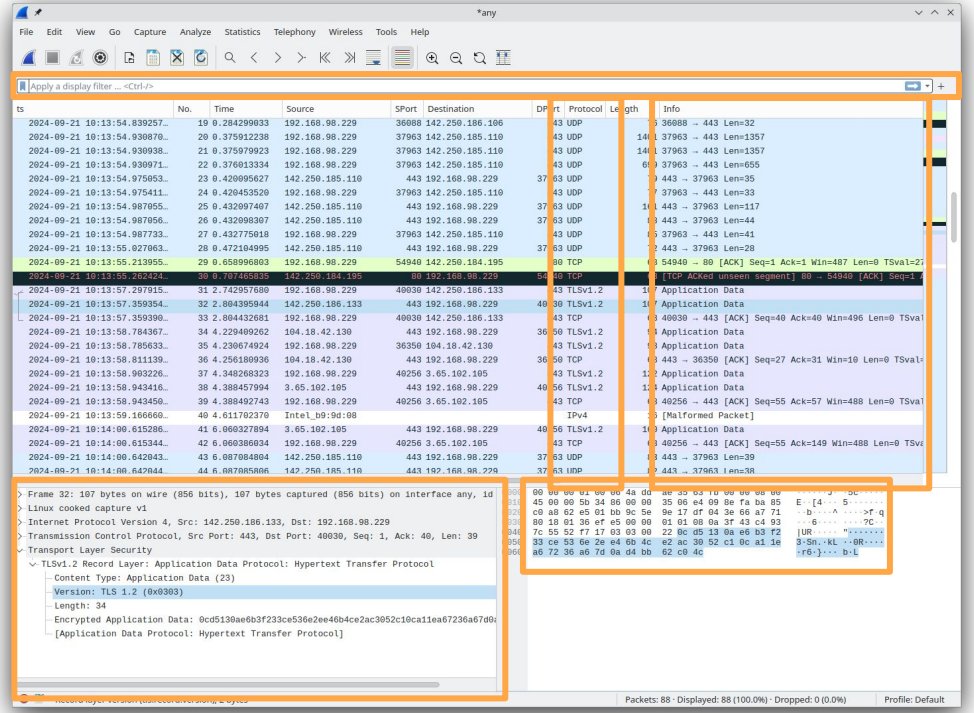
TLSv1.2 Record Layer: Application Data Protocol: Hypertext Transfer Protocol
Content Type: Application Data (23)
Version: TLS 1.2 (0x0303)
Length: 34
Encrypted Application Data: 0cd5130ae6b3f233ce536e2ee46b4ce2ac3052c10ca11ea67236a67d0a
[Application Data Protocol: Hypertext Transfer Protocol]
0000 00 00 00 01 00 06 4a dd ae 35 63 fb 00 00 08 00 ·····J· ·5c·····
0010 45 00 00 5b 34 86 00 00 35 06 e4 09 8e fa ba 85 E··[4··· 5·····
0020 c0 a8 62 e5 01 bb 9c 5e 9e 17 df 04 3e 66 a7 71 ··b····^ ····>f·q
0030 80 18 01 36 ef e5 00 00 01 01 08 0a 3f 43 c4 93 ···6···· ····?C··
0040 7c 55 52 f7 17 03 03 00 22 0c d5 13 0a e6 b3 f2 |UR····· "·v·····
0050 33 ce 53 6e 2e e4 6b 4c e2 ac 30 52 c1 0c a1 1e 3·Sn·kL ··0R····
0060 a6 72 36 a6 7d 0a d4 bb 62 c0 4c ·r6·}··· b·L
Record layer version (tls.record.version), 2 bytes
Packets: 88 · Displayed: 88 (100.0%) · Dropped: 0 (0.0%)
Profile: Default

Wireshark

- C?
- Lua Support!
- “Dissectoren” für das Verarbeiten von Paketen



Was Ihr heute lernt

- Ihr schreibt ein wenig Lua-Code
- Ihr implementiert Dissectoren für simple Demoprotokolle

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- Ihr schreibt ein wenig Lua-Code
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- Ihr seht es live und traut euch die Umsetzung zu!

Lokales Setup

Lokales Setup

Wireshark installieren

Idealerweise über den Paketmanager

Packet Dumps runterladen

Siehe `github.com/jkraml-staffbase`

Lokales Setup

Scriptordner

Meistens `$HOME/.local/lib/wireshark/plugins`

Editor

Eure Wahl

Lokales Setup

Scriptordner

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Editor

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`workshop.lua`

Lokales Setup

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Editor

Eure Wahl

workshop.lua

```
print("hello world")
```

Protokoll #1: Temperaturmessung

Protokoll #1: Temperaturmessung

- UDP
- Konstante Länge
- Nur eine Messung pro UDP Paket

Uint8 (1 Byte)	Float32 (4 Byte, bigendian)
Sensor ID	Messwert

Basics: UDP/TCP

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- PDU Protocol Data Unit

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- UDP → Packet

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Protokoll #2: Börsendaten

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- TCP
- Explizite Längenangabe

Uint8 (1 Byte)	Char[] (1-4 Bytes)	Float32 (4 Byte, bigendian)
Symbollänge	Tickersymbol	Preis

Protokoll #3:
Null-terminierter Text

Protokoll #3: Null-terminierter Text

- TCP
- Länge während Verarbeitung unbekannt

Char[] (n Bytes)	Endzeichen (1 Byte)
Text	Null-Byte

Protokoll #4:
Gebündelte Temperaturmessung

Protokoll #4: Gebündelte Temperaturmessung

- UDP
- Reserviertes Byte
- Halbwegs Rückwärtskompatibel

– (1 Byte)	Uint32 (4 B, be.)	n * PDU (n * 5 B)
0xFF	Anzahl	Einzelne Messungen

Weiterführende Links

- Wireshark: Dokumentation zu Lua [link]
- Wireshark: Wiki [link]
- Das Github Repository zu diesem Workshop [link]

Kommt ins Team!

Kommt einfach am Stand vorbei, wir sind da.

Oder meldet euch:

jiri.kraml@staffbase.com

LinkedIn

Danke!