

VMM3a/SRS

Network package structure

Wireshark

- Use lua-plugin to make network data human-readable
- LINK

The screenshot shows the Wireshark interface with a list of network packages. The top pane displays a table of packages with columns for No., Time, Source, Destination, Protocol, Length, and Info. The bottom pane shows the details of a selected package, including Ethernet II, Internet Protocol Version 4, and User Datagram Protocol. The bottom-most pane shows the raw binary data of the package.

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 589, Markers: 903
2	0.083845	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
3	0.085405	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 680, Markers: 812
4	0.160775	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 778, Markers: 714
5	0.249339	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 640, Markers: 852
6	0.268166	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
7	0.330430	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 728, Markers: 764
8	0.414127	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 700, Markers: 792
9	0.451013	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
10	0.497040	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 706, Markers: 786
11	0.584970	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 654, Markers: 838
12	0.633869	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
13	0.663644	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 750, Markers: 742
14	0.756545	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 611, Markers: 881
15	0.818191	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
16	0.830402	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 777, Markers: 715
17	0.906921	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 778, Markers: 714
18	0.997253	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 625, Markers: 867
19	1.001044	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
20	1.060884	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 889, Markers: 603
21	1.123674	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 900, Markers: 592
22	1.183903	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
23	1.191735	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 838, Markers: 654
24	1.258205	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 862, Markers: 630
25	1.316808	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 943, Markers: 549
26	1.368217	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
27	1.386119	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 836, Markers: 656
28	1.450256	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 877, Markers: 615
29	1.520276	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 829, Markers: 663

Space for human readable package information

Binary package information

Wireshark

- See how the different components are highlighted in Wireshark
- Here the full package component is highlighted

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

Apply a display filter ... <Ctrl-/> Expression...

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 589, Markers: 903
2	0.003845	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
3	0.005405	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 680, Markers: 812
4	0.160775	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 778, Markers: 714
5	0.249339	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 640, Markers: 852
6	0.268166	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
7	0.330430	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 728, Markers: 764
8	0.414127	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 700, Markers: 792
9	0.451013	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
10	0.497040	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 706, Markers: 786
11	0.584970	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 654, Markers: 838
12	0.633869	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
13	0.663644	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 750, Markers: 742
14	0.756545	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 611, Markers: 881
15	0.818191	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
16	0.830402	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 777, Markers: 715
17	0.906921	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 778, Markers: 714
18	0.997253	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 625, Markers: 867
19	1.001044	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
20	1.060884	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 889, Markers: 603
21	1.123674	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 900, Markers: 592
22	1.183903	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
23	1.191735	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 838, Markers: 654
24	1.258205	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 862, Markers: 630
25	1.316808	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 943, Markers: 549
26	1.368217	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
27	1.386119	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 836, Markers: 656
28	1.450256	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 877, Markers: 615
29	1.520276	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 829, Markers: 663

Frame 1: 9010 bytes on wire (72080 bits), 9010 bytes captured (72080 bits)

Ethernet II, Src: SamwavE1:02:38 (90:50:c2:f2:52:38), Dst: IntelCor_c1:8a:cf (68:05:ca:c1:8a:cf)

Internet Protocol Version 4, Src: 10.0.0.1, Dst: 10.0.0.3

User Datagram Protocol, Src Port: 6006, Dst Port: 6006

Source Port: 6006

Destination Port: 6006

Length: 8976

[Checksum: [missing]]

[Checksum Status: Not present]

[Stream index: 0]

SRS Header

```
0020 00 03 17 76 17 76 23 10 00 00 00 00 06 9b 56 4d  ..v.v#..  ...VM
0030 33 30 3c fb f1 66 00 00 ff cf 07 4f 2e c4 24 00 3< .f...0.$
0040 07 4f 2e c4 28 00 07 4f 2e c4 2c 00 07 4f 2e c4 0.(.0...0.
0050 30 00 07 4f 2e c4 34 00 07 4f 2e c4 38 00 07 4f 0.0.4..0.8..0
0060 2e c4 3c 00 21 c4 06 4b d4 89 22 43 db 39 c2 4b .<!.K...C9.K
0070 3a 43 e9 02 c0 82 4a 4a c2 c9 d4 56 49 84 15 11 :C...JD...VI...
0080 d7 61 49 c3 d5 13 ce 55 49 c4 b5 13 cf 6b 49 c4 aI...U I...kI...
0090 65 13 d3 54 49 c4 05 13 d4 57 49 c4 85 11 d5 95 e..TI...WI...
00a0 49 c4 05 13 d6 4e 49 c4 a5 11 d7 86 49 c4 a5 11 I...NI...I...
00b0 dd 91 49 c4 a5 13 df 5d 49 c4 15 13 e4 54 49 c4 ]I...TI...
00c0 65 13 e5 54 07 4f 2f 04 00 00 07 4f 2f 04 04 00 e..T.O/...O/...
00d0 07 4f 2f 04 08 00 07 4f 2f 04 0c 00 07 4f 2f 04 /...0 /...O/...
00e0 18 00 07 4f 2f 04 1c 00 07 4f 2f 04 20 00 07 4f ...O/...O/...O/...
00f0 2f 04 24 00 07 4f 2f 04 28 00 07 4f 2f 04 2c 00 /.$..O/...O/...
0100 07 4f 2f 04 30 00 07 4f 2f 04 34 00 07 4f 2f 04 /O/..O /..O/...
0110 38 00 07 4f 2f 04 3c 00 07 4f 2f 44 00 00 07 4f 8..O/<..O/D...O
0120 2f 44 04 00 07 4f 2f 44 08 00 07 4f 2f 44 0c 00 /D...O/D...O/D...
0130 07 4f 2f 44 18 00 07 4f 2f 44 1c 00 07 4f 2f 44 /O/D...O /D...O/D...
0140 20 00 07 4f 2f 44 24 00 07 4f 2f 44 28 00 07 4f ..O/D$. ..O/D(...O
0150 2f 44 2c 00 07 4f 2f 44 30 00 07 4f 2f 44 34 00 /D, ..O/D O...O/D4...
0160 07 4f 2f 44 38 00 07 4f 2f 44 3c 00 07 4f 2f 84 /O/D8..O /D<...O/...
0170 00 00 07 4f 2f 84 04 00 07 4f 2f 84 08 00 07 4f ..O/... ..O/...O/...
```

User Datagram Protocol (udp), 8 bytes

Packets: 137 · Displayed: 137 (100.0%)

Profile: Default

Wireshark

- See how the different components are highlighted in Wireshark
- Here only a specific component
 - Framecounter
- Example here:
 - DEC: 67227
 - HEX: 1 06 9b
 - Both as highlighted

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

Apply a display filter ... <Ctrl-/> Expression...

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 589, Markers: 903
2	0.008345	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
3	0.0085405	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 680, Markers: 812
4	0.160775	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 778, Markers: 714
5	0.249339	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 640, Markers: 852
6	0.268166	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
7	0.330430	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 728, Markers: 764
8	0.414127	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 700, Markers: 792
9	0.451013	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
10	0.497040	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 706, Markers: 786
11	0.584970	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 654, Markers: 838
12	0.633869	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
13	0.663644	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 750, Markers: 742
14	0.756545	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 611, Markers: 881
15	0.818191	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
16	0.830402	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 777, Markers: 715
17	0.906921	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 778, Markers: 714
18	0.997253	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 625, Markers: 867
19	1.001044	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
20	1.060884	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 889, Markers: 603
21	1.123674	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 900, Markers: 592
22	1.183903	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
23	1.191735	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 838, Markers: 654
24	1.258205	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 862, Markers: 630
25	1.316808	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 943, Markers: 549
26	1.368217	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
27	1.386119	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 836, Markers: 656
28	1.450256	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 877, Markers: 615
29	1.520276	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 829, Markers: 663

Frame 1: 9010 bytes on wire (72080 bits), 9010 bytes captured (72080 bits)
Ethernet II, Src: SamwayE1_02:38 (00:50:c2:f2:52:38), Dst: IntelCor_c1:8a:cf (68:05:ca:c1:8a:cf)
Internet Protocol Version 4, Src: 10.0.0.1, Dst: 10.0.0.3
User Datagram Protocol, Src Port: 6006, Dst Port: 6006
Source Port: 6006
Destination Port: 6006
Length: 8976
[Checksum: [missing]]
[Checksum Status: Not present]
[Stream index: 0]
SRS Header
Frame Counter: 67227 (0)
Data Id: VMM3a Data
FEC ID: 1
UDP Timestamp: 1023144294 (0)
Offset overflow last frame: 65487
Marker: 1, SRS timestamp: 125572943872, vmnid: 9
Marker: 2, SRS timestamp: 125572943872, vmnid: 10
Marker: 3, SRS timestamp: 125572943872, vmnid: 11
Marker: 4, SRS timestamp: 125572943872, vmnid: 12
Marker: 5, SRS timestamp: 125572943872, vmnid: 13
Marker: 6, SRS timestamp: 125572943872, vmnid: 14
Marker: 7, SRS timestamp: 125572943872, vmnid: 15
Hit: 1, offset: 4, vmnid: 7, ch: 20, bcid: 1138, tdc: 137, adc: 64, over thr: 1
Hit: 2, offset: 4, vmnid: 9, ch: 2, bcid: 3537, tdc: 75, adc: 61, over thr: 1
Hit: 3, offset: 7, vmnid: 9, ch: 0, bcid: 3587, tdc: 130, adc: 62, over thr: 1
Hit: 4, offset: 9, vmnid: 9, ch: 20, bcid: 881, tdc: 86, adc: 76, over thr: 1
Hit: 5, offset: 9, vmnid: 6, ch: 23, bcid: 1566, tdc: 97, adc: 65, over thr: 1
Hit: 6, offset: 9, vmnid: 7, ch: 24, bcid: 1565, tdc: 85, adc: 61, over thr: 1

```
0020 00 03 17 76 17 76 23 10 00 00 00 01 06 9b 56 id ...v#... ..VM
0030 33 10 3c fb f1 66 00 00 ff c0 07 4f 2e c4 21 00 3<->.f... ..O.$
0040 07 4f 2e c4 28 00 07 4f 2e c4 2c 00 07 4f 2e c4 .O.(.O .. ..O
0050 30 00 07 4f 2e c4 34 00 07 4f 2e c4 38 00 07 4f 0..O..4..O..8..O
0060 2e c4 3c 00 21 c4 06 4b d4 89 22 43 db 39 c2 4b .<.!..K .."C-9-K
0070 3a 43 e9 02 c0 82 4a 4a c2 c9 d4 56 49 84 15 11 :...JD ...VI...
0080 d7 61 49 c3 d5 13 ce 55 49 c4 b5 13 cf 6b 49 c4 .aI...U I...KI...
0090 65 13 d3 54 49 c4 05 13 d4 57 49 c4 85 11 d5 95 e..TI... ..WI.....
00a0 49 c4 05 13 d6 4e 49 c4 a5 11 d7 86 49 c4 a5 11 I...NI... ..I...
00b0 dd 91 49 c4 a5 13 df 5d 49 c4 15 13 e4 54 49 c4 .I...] I...TI...
00c0 65 13 e5 54 07 4f 2f 04 00 00 00 07 4f 2f 04 04 00 00 07 4f 2f 04 04 00 e..T.O/.. ..O/...
00d0 07 4f 2f 04 08 00 07 4f 2f 04 0c 00 07 4f 2f 04 0c 00 07 4f 2f 04 0c 00 /O/...O /...O/...
00e0 18 00 07 4f 2f 04 1c 00 07 4f 2f 04 20 00 07 4f ...O/... ..O/... ..O
00f0 2f 04 24 00 07 4f 2f 04 28 00 07 4f 2f 04 2c 00 /$.-O/.. (O/...
0100 07 4f 2f 04 30 00 07 4f 2f 04 34 00 07 4f 2f 04 .O/..O.. /4..O/...
0110 38 00 07 4f 2f 04 3c 00 07 4f 2f 44 00 00 07 4f 8..O/<.. ..O/D...O
0120 2f 44 04 00 07 4f 2f 44 08 00 07 4f 2f 44 0c 00 /D...O/D .. ..O/D...
0130 07 4f 2f 44 18 00 07 4f 2f 44 1c 00 07 4f 2f 44 .O/D...O /D...O/D
0140 20 00 07 4f 2f 44 24 00 07 4f 2f 44 28 00 07 4f ..O/DS.. ..O/D(..O
0150 2f 44 2c 00 07 4f 2f 44 30 00 07 4f 2f 44 34 00 /D.. ..O/D ..O/D4...
0160 07 4f 2f 44 38 00 07 4f 2f 44 3c 00 07 4f 2f 84 .O/D8..O /D<...O/..
0170 00 00 07 4f 2f 84 04 00 07 4f 2f 84 08 00 07 4f ..O/... ..O/.....
```

Wireshark Lua text (ws.lua.text), 4 bytes

Packets: 137 · Displayed: 137 (100.0%) Profile: Default

HOW TO FIND EACH FRAME?

- Find unique components in frame that appear in all frames

- “VM3” string

- HEX: 56 4d 33

- Source and destination port

- DEC: 6006

- HEX: 17 76

- First source port, followed by destination port

The image shows a Wireshark interface displaying network traffic analysis. The top pane shows a list of packets with columns for No., Time, Source, Destination, Protocol, Length, and Info. Packet 29 is highlighted.

The middle pane shows packet details for the selected packet (Frame 1):

- Ethernet II, Src: SamwayE1_02:38 (00:50:c2:f2:52:38), Dst: IntelCor_c1:8a:cf (68:05:ca:c1:8a:cf)
- Internet Protocol Version 4, Src: 10.0.0.1, Dst: 10.0.0.3
- User Datagram Protocol, Src Port: 6006, Dst Port: 6006
- Source Port: 6006 (circled in green)
- Destination Port: 6006 (circled in green)
- Length: 8970
- [Checksum: [missing]]
- [Checksum Status: Not present]
- [Stream index: 0]
- SRS Header
- Frame Counter: 6727 (0)
- Data Id: VM3a Data (circled in red)
- FEC ID: 1
- UDP Timestamp: 1023144294 (0)
- Offset overflow last frame: 65487
- Marker: 1, SRS timestamp: 125572943872, vmnid: 9
- Marker: 2, SRS timestamp: 125572943872, vmnid: 10
- Marker: 3, SRS timestamp: 125572943872, vmnid: 11
- Marker: 4, SRS timestamp: 125572943872, vmnid: 12
- Marker: 5, SRS timestamp: 125572943872, vmnid: 13
- Marker: 6, SRS timestamp: 125572943872, vmnid: 14
- Marker: 7, SRS timestamp: 125572943872, vmnid: 15
- Hit: 1, offset: 4, vmnid: 7, ch: 20, bcid: 1138, tdc: 137, adc: 64, over thr: 1
- Hit: 2, offset: 4, vmnid: 9, ch: 2, bcid: 3537, tdc: 75, adc: 61, over thr: 1
- Hit: 3, offset: 7, vmnid: 9, ch: 0, bcid: 3587, tdc: 130, adc: 62, over thr: 1
- Hit: 4, offset: 9, vmnid: 9, ch: 20, bcid: 881, tdc: 86, adc: 76, over thr: 1
- Hit: 5, offset: 9, vmnid: 6, ch: 23, bcid: 1566, tdc: 97, adc: 65, over thr: 1
- Hit: 6, offset: 9, vmnid: 7, ch: 14, bcid: 1566, tdc: 85, adc: 61, over thr: 1

The bottom pane shows the hex dump of the packet data:

```

0020 00 00 17 76 17 76 23 10 00 00 00 01 00 9b 56 4d
0030 53 10 1b fh f1 66 00 00 ff cf 07 4f 2e c4 24 00
0040 07 7f 2e c4 28 00 07 4f 2e c4 2c 00 07 4f 2e c4
0050 30 00 07 4f 2e c4 34 00 07 4f 2e c4 38 00 07 4f
0060 2e c4 3c 00 21 c4 06 4b d4 89 22 43 db 39 c2 4b
0070 3a 43 e9 02 c0 82 4a 4a c2 c9 d4 56 49 84 15 11
0080 d7 61 49 c3 d5 13 ce 55 49 c4 b5 13 cf 6b 49 c4
0090 65 13 d3 54 49 c4 05 13 d4 57 49 c4 85 11 d5 95
00a0 49 c4 05 13 d6 4e 49 c4 a5 11 d7 86 49 c4 a5 11
00b0 dd 91 49 c4 a5 13 df 5d 49 c4 15 13 e4 54 49 c4
00c0 65 13 e5 54 07 4f 2f 00 00 00 07 4f 2f 04 04 00
00d0 07 4f 2f 04 08 00 07 4f 2f 04 0c 00 07 4f 2f 04
00e0 18 00 07 4f 2f 04 1c 00 07 4f 2f 04 20 00 07 4f
00f0 2f 04 24 00 07 4f 2f 04 28 00 07 4f 2f 04 2c 00
0100 07 4f 2f 04 30 00 07 4f 2f 04 34 00 07 4f 2f 04
0110 38 00 07 4f 2f 04 3c 00 07 4f 2f 44 00 00 07 4f
0120 2f 44 04 00 07 4f 2f 44 08 00 07 4f 2f 44 0c 00
0130 07 4f 2f 44 18 00 07 4f 2f 44 1c 00 07 4f 2f 44
0140 20 00 07 4f 2f 44 24 00 07 4f 2f 44 28 00 07 4f
0150 2f 44 2c 00 07 4f 2f 44 30 00 07 4f 2f 44 34 00
0160 07 4f 2f 44 38 00 07 4f 2f 44 3c 00 07 4f 2f 84
0170 00 00 07 4f 2f 84 04 00 07 4f 2f 84 08 00 07 4f

```

The hex dump shows the VM3 data starting at offset 0030 with the string "VM3" (hex 53 10 1b) and the source and destination ports (hex 17 76 17 76 23 10) circled in red.

At the bottom of the window, it says "Wireshark Lua text (.ws.lua.text), 3 bytes" and "Packets: 137 · Displayed: 137 (100.0%) Profile: Default".

HOW TO FIND EACH FRAME?

- Directly after the “VM3” string follows the FEC’s IP address

The image displays a Wireshark network traffic capture. The top pane shows a list of packets with columns for No., Time, Source, Destination, Protocol, Length, and Info. The middle pane shows the details of a selected packet, including Ethernet II, Internet Protocol Version 4, User Datagram Protocol, and SRS Header. The bottom pane shows the raw packet data in hexadecimal and ASCII.

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 589, Markers: 903
2	0.003845	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
3	0.005405	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 680, Markers: 812
4	0.160775	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 778, Markers: 714
5	0.249339	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 640, Markers: 852
6	0.268166	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
7	0.330430	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 728, Markers: 764
8	0.414127	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 700, Markers: 792
9	0.451013	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
10	0.497040	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 706, Markers: 786
11	0.584970	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 654, Markers: 838
12	0.633869	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
13	0.663644	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 750, Markers: 742
14	0.756545	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 611, Markers: 881
15	0.818191	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
16	0.830402	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 777, Markers: 715
17	0.906921	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 778, Markers: 714
18	0.997253	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 625, Markers: 867
19	1.001044	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
20	1.060884	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 889, Markers: 603
21	1.123674	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 900, Markers: 592
22	1.183903	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
23	1.191735	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 838, Markers: 654
24	1.258205	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 862, Markers: 630
25	1.316808	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 943, Markers: 549
26	1.368217	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
27	1.386119	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 836, Markers: 656
28	1.450256	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 877, Markers: 615
29	1.520276	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 829, Markers: 663

Frame 1: 9010 bytes on wire (72080 bits), 9010 bytes captured (72080 bits)
Ethernet II, Src: SamwayE1_02:38 (00:50:c2:f2:52:38), Dst: IntelCor_c1:8a:cf (68:05:ca:c1:8a:cf)
Internet Protocol Version 4, Src: 10.0.0.1, Dst: 10.0.0.3
User Datagram Protocol, Src Port: 6006, Dst Port: 6006
Source Port: 6006
Destination Port: 6006
Length: 8976
[Checksum: [missing]]
[Checksum Status: Not present]
[Stream index: 0]
SRS Header
Frame Counter: 67227 (0)
Data Id: VMM3a Data
FEC ID: 1
UDP Timestamp: 1023144294 (0)
Offset overflow last frame: 65487
Marker: 1, SRS timestamp: 125572943872, vmnid: 9
Marker: 2, SRS timestamp: 125572943872, vmnid: 10
Marker: 3, SRS timestamp: 125572943872, vmnid: 11
Marker: 4, SRS timestamp: 125572943872, vmnid: 12
Marker: 5, SRS timestamp: 125572943872, vmnid: 13
Marker: 6, SRS timestamp: 125572943872, vmnid: 14
Marker: 7, SRS timestamp: 125572943872, vmnid: 15
Hit: 1, offset: 4, vmnid: 7, ch: 20, bcid: 1138, tdc: 137, adc: 64, over thr: 1
Hit: 2, offset: 4, vmnid: 9, ch: 2, bcid: 3537, tdc: 75, adc: 61, over thr: 1
Hit: 3, offset: 7, vmnid: 9, ch: 0, bcid: 3587, tdc: 130, adc: 62, over thr: 1
Hit: 4, offset: 9, vmnid: 9, ch: 20, bcid: 881, tdc: 86, adc: 76, over thr: 1
Hit: 5, offset: 9, vmnid: 6, ch: 23, bcid: 1566, tdc: 97, adc: 65, over thr: 1
Hit: 6, offset: 9, vmnid: 7, ch: 14, bcid: 1565, tdc: 85, adc: 61, over thr: 1

```
0030 43 10 33 fb f1 66 00 09 ff cf 07 4f 2e c4 24 00 33 <-f...D.$
0040 07 4f 2e c4 28 00 07 4f 2e c4 2c 00 07 4f 2e c4 .0.(.0 ., .0.
0050 30 00 07 4f 2e c4 34 00 07 4f 2e c4 38 00 07 4f 0-.0-.4-.0-8.0
0060 2e c4 3c 00 21 c4 06 4b d4 89 22 43 db 39 c2 4b .<-!-K-"C-9-K
0070 3a 43 e9 02 c0 82 4a 44 c2 c9 d4 56 49 84 15 11 :C...JD...VI...
0080 d7 61 49 c3 d5 13 ce 55 49 c4 b5 13 cf 6b 49 c4 .aI...U I...kI.
0090 65 13 d3 54 49 c4 05 13 d4 57 49 c4 85 11 d5 95 e..TI...WI.....
00a0 49 c4 05 13 d6 4e 49 c4 a5 11 d7 86 49 c4 a5 11 I...NI...I...
00b0 dd 91 49 c4 a5 13 df 5d 49 c4 15 13 e4 54 49 c4 ..I...] I...TI.
00c0 65 13 e5 54 07 4f 2f 04 00 00 07 4f 2f 04 04 00 e-T-0/-...0/...
00d0 07 4f 2f 04 00 07 4f 2f 04 0c 00 07 4f 2f 04 .0/-...0 /...0/...
00e0 18 00 2f 4f 2f 04 1c 00 07 4f 2f 04 20 00 07 4f ...0/...-0/-...0
00f0 2f 04 24 00 07 4f 2f 04 28 00 07 4f 2f 04 2c 00 /-$/-0/-(...0/...
0100 07 4f 2f 04 30 00 07 4f 2f 04 34 00 07 4f 2f 04 .0/0-0 /-4-.0/...
0110 38 00 07 4f 2f 04 3c 00 07 4f 2f 04 40 00 07 4f 8-.0/<- .0/D...0
0120 2f 44 04 00 07 4f 2f 44 08 00 07 4f 2f 44 0c 00 /D...0/D...0/D...
0130 07 4f 2f 44 18 00 07 4f 2f 44 1c 00 07 4f 2f 44 .0/D...0 /D...0/D
0140 20 00 07 4f 2f 44 24 00 07 4f 2f 44 28 00 07 4f ..0/DS-.0/D(...
0150 2f 44 2c 00 07 4f 2f 44 30 00 07 4f 2f 44 34 00 /D...0/D 0...0/D4.
0160 07 4f 2f 44 38 00 07 4f 2f 44 3c 00 07 4f 2f 84 .0/DB-.0 /D<-0/...
0170 00 00 07 4f 2f 84 04 00 07 4f 2f 84 08 00 07 4f ...0/... 0/...0
0180 2f 84 0c 00 07 4f 2f 84 18 00 07 4f 2f 84 1c 00 /...0/... 0/...0
```

HOW TO FIND EACH FRAME?

- As mentioned “VM3” string appears in all frames
 - HEX: 56 4d 33
- Here frame 17 instead of 1

The image shows a Wireshark capture of network traffic. The top pane, 'Packet List', displays a list of frames. Frame 17 is selected and highlighted in blue. The second pane, 'Packet Details', shows the structure of the selected frame, including the SRS Header and VM3 Data. The third pane, 'Packet Bytes', shows the raw data in hexadecimal and ASCII, with the string 'VM3' highlighted in blue.

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 589, Markers: 903
2	0.003845	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
3	0.005405	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 680, Markers: 812
4	0.160775	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 778, Markers: 714
5	0.249339	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 640, Markers: 852
6	0.268166	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
7	0.330430	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 728, Markers: 764
8	0.414127	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 700, Markers: 792
9	0.451013	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
10	0.497040	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 706, Markers: 786
11	0.584970	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 654, Markers: 838
12	0.633869	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
13	0.663644	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 750, Markers: 742
14	0.756545	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 611, Markers: 881
15	0.818191	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
16	0.830402	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 777, Markers: 715
17	0.906921	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 778, Markers: 714
18	0.997253	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 625, Markers: 867
19	1.001044	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
20	1.060884	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 889, Markers: 603
21	1.123674	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 900, Markers: 592
22	1.183903	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
23	1.191735	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 838, Markers: 654
24	1.258205	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 862, Markers: 630
25	1.316808	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 943, Markers: 549
26	1.368217	10.0.0.4	10.0.0.3	SRSVM...	9010	FEC: 4, Hits: 0, Markers: 1492
27	1.386119	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 836, Markers: 656
28	1.450256	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 877, Markers: 615
29	1.520276	10.0.0.1	10.0.0.3	SRSVM...	9010	FEC: 1, Hits: 829, Markers: 663

Frame 17: 9010 bytes on wire (72080 bits), 9010 bytes captured (72080 bits)
Ethernet II, Src: SamwayE1_02:38 (00:50:c2:f2:52:38), Dst: IntelCor_c1:8a:cf (68:05:ca:c1:8a:cf)
Internet Protocol Version 4, Src: 10.0.0.1, Dst: 10.0.0.3
User Datagram Protocol, Src Port: 6006, Dst Port: 6006
Source Port: 6006
Destination Port: 6006
Length: 8976
[Checksum: [missing]]
[Checksum Status: Not present]
[Stream index: 0]
SRS Header
Frame Counter: 67238 (11)
Data Id: VM3a Data
FEC ID: 1
UDP Timestamp: 1063456780 (40312486)
Offset overflow last frame: 65487
Hit: 1, offset: 1, vmID: 7, ch: 21, bcid: 2760, tdc: 151, adc: 72, over thr: 1
Hit: 2, offset: 1, vmID: 7, ch: 22, bcid: 2760, tdc: 147, adc: 64, over thr: 1
Hit: 3, offset: 1, vmID: 7, ch: 23, bcid: 2760, tdc: 135, adc: 74, over thr: 1
Hit: 4, offset: 1, vmID: 7, ch: 27, bcid: 2760, tdc: 129, adc: 69, over thr: 1
Hit: 5, offset: 1, vmID: 7, ch: 29, bcid: 2760, tdc: 106, adc: 73, over thr: 1
Hit: 6, offset: 1, vmID: 7, ch: 31, bcid: 2760, tdc: 157, adc: 71, over thr: 1
Hit: 7, offset: 1, vmID: 7, ch: 36, bcid: 2760, tdc: 146, adc: 62, over thr: 1
Hit: 8, offset: 1, vmID: 7, ch: 37, bcid: 2760, tdc: 124, adc: 64, over thr: 1
Hit: 9, offset: 1, vmID: 7, ch: 50, bcid: 2760, tdc: 83, adc: 64, over thr: 1
Hit: 10, offset: 3, vmID: 7, ch: 20, bcid: 53, tdc: 88, adc: 55, over thr: 1
Hit: 11, offset: 6, vmID: 7, ch: 14, bcid: 3188, tdc: 137, adc: 61, over thr: 1
Hit: 12, offset: 6, vmID: 7, ch: 15, bcid: 3188, tdc: 146, adc: 74, over thr: 1
Hit: 13, offset: 6, vmID: 7, ch: 19, bcid: 3188, tdc: 86, adc: 67, over thr: 1

```
0020 00 03 17 76 17 76 23 10 00 00 00 01 06 a6 56 4d ...VM#...VM
0030 33 10 3f 63 10 0c 00 00 ff cf 09 c4 8f ac d5 97 ...?C...
0040 09 c4 0f ac d6 93 09 c4 af ac d7 87 09 c4 5f ac ...
0050 db 81 09 c4 9f ac dd 6a 09 c4 7f ac df 9d 09 c3 ...j...
0060 ef ac e4 92 09 c4 0f ac e5 7c 09 c4 0f ac f2 53 ...|...S
0070 19 c3 70 2f d4 58 31 c3 da 4e ce 89 31 c4 aa 4e .../X1-N-1-N
0080 cf 92 31 c4 3a 4e d3 56 31 c4 5a 4e d4 89 31 c4 ...1-N-V 1-ZN-1
0090 8a 4e d5 8a 31 c4 0a 4e d6 83 31 c4 8a 4e d7 51 ...N-1-N -1-N-Q
00a0 31 c4 5a 4e df 84 31 c3 ba 4e e4 57 31 c4 6a 4e ...1-ZN-1-N-W1-jN
00b0 e5 85 69 c4 39 63 cf a1 09 c3 e9 63 d4 97 09 c3 ...1-9c-1-1-1-1
00c0 f9 01 d6 5a 7c 04 59 9b eb 57 07 4f cc 04 00 00 ...a-ZP-P-W-0-0-0
00d0 07 4f cc 04 00 07 4f cc 04 00 07 4f cc 04 00 00 ...0-0-0-0-0-0-0
00e0 0c 00 07 4f cc 04 18 00 07 4f cc 04 18 00 07 4f ...-0-0-0-0-0-0-0
00f0 cc 04 20 00 07 4f cc 04 24 00 07 4f cc 04 28 00 ...-0-0-0-0-0-0-0
0100 07 4f cc 04 2c 00 07 4f cc 04 30 00 07 4f cc 04 ...-0-0-0-0-0-0-0
0110 34 00 07 4f cc 04 38 00 07 4f cc 04 3c 00 07 4f ...4-0-0-8-0-0-0-0
0120 cc 44 00 00 07 4f cc 44 04 00 07 4f cc 44 08 00 ...D-0-D -0-0-D-0
0130 07 4f cc 44 0c 00 07 4f cc 44 10 00 07 4f cc 44 ...D-0-0-D-0-0-D
0140 1c 00 07 4f cc 44 20 00 07 4f cc 44 24 00 07 4f ...D-D -0-DS-0-0
0150 cc 44 28 00 07 4f cc 44 2c 00 07 4f cc 44 30 00 ...D(-0-D ,0-0D0-
0160 07 4f cc 44 34 00 07 4f cc 44 38 00 07 4f cc 44 ...0-D4-0 -D8-0-D
0170 3c 00 07 4f cc 84 00 00 07 4f cc 84 04 00 07 4f ...<-0-0-0-0-0-0-0
```


What is the last bit of a frame?

- The last bit is the last hit or Marker that has been recorded
- Here last frame (137)

The image shows a Wireshark capture of network traffic. The top pane displays a list of packets, with packet 137 selected. The middle pane shows the expanded details of packet 137, including the Ethernet II header and the Data field. The bottom pane shows the raw data bytes of the selected packet, with the last byte (24 00) circled in red. The status bar at the bottom indicates that 137 packets are displayed (100.0%).

No.	Time	Source	Destination	Protocol	Length	Info
110	5.421559	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 713, Markers: 779
111	5.597582	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 670, Markers: 822
112	5.584970	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
113	5.593843	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 680, Markers: 812
114	5.682528	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 643, Markers: 849
115	5.768403	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
116	5.780591	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 563, Markers: 929
117	5.871260	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 637, Markers: 855
118	5.951251	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
119	5.968142	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 569, Markers: 923
120	6.065985	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 554, Markers: 938
121	6.134087	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
122	6.164661	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 560, Markers: 932
123	6.251655	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 674, Markers: 818
124	6.318414	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
125	6.335692	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 684, Markers: 808
126	6.430953	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 602, Markers: 890
127	6.561259	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
128	6.514089	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 691, Markers: 801
129	6.609946	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 588, Markers: 904
130	6.684110	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
131	6.714615	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 488, Markers: 1004
132	6.807504	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 617, Markers: 875
133	6.868434	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
134	6.994813	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 562, Markers: 930
135	6.994727	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 648, Markers: 844
136	7.051283	10.0.0.4	10.0.0.3	SRSVMM...	9010	FEC: 4, Hits: 0, Markers: 1492
137	7.096485	10.0.0.1	10.0.0.3	SRSVMM...	9010	FEC: 1, Hits: 518, Markers: 974

```
Hit: 502, offset: 3, vmmID: 9, ch: 38, bcid: 560, tdc: 72, adc: 69, over thr: 1
Hit: 503, offset: 3, vmmID: 9, ch: 39, bcid: 560, tdc: 85, adc: 76, over thr: 1
Hit: 504, offset: 3, vmmID: 9, ch: 59, bcid: 561, tdc: 128, adc: 55, over thr: 1
Hit: 505, offset: 10, vmmID: 7, ch: 15, bcid: 1361, tdc: 102, adc: 69, over thr: 1
Hit: 506, offset: 10, vmmID: 7, ch: 20, bcid: 1361, tdc: 103, adc: 63, over thr: 1
Hit: 507, offset: 10, vmmID: 7, ch: 22, bcid: 1361, tdc: 103, adc: 64, over thr: 1
Hit: 508, offset: 13, vmmID: 7, ch: 20, bcid: 41, tdc: 146, adc: 61, over thr: 1
Hit: 509, offset: 13, vmmID: 7, ch: 22, bcid: 41, tdc: 137, adc: 60, over thr: 1
Hit: 510, offset: 13, vmmID: 7, ch: 31, bcid: 40, tdc: 137, adc: 69, over thr: 1
Hit: 511, offset: 13, vmmID: 2, ch: 0, bcid: 2780, tdc: 76, adc: 64, over thr: 1
Hit: 512, offset: 13, vmmID: 3, ch: 19, bcid: 2781, tdc: 138, adc: 64, over thr: 1
Hit: 513, offset: 13, vmmID: 3, ch: 20, bcid: 2781, tdc: 147, adc: 67, over thr: 1
Hit: 514, offset: 13, vmmID: 3, ch: 23, bcid: 2780, tdc: 129, adc: 79, over thr: 1
Hit: 515, offset: 13, vmmID: 3, ch: 26, bcid: 2780, tdc: 107, adc: 80, over thr: 1
Hit: 516, offset: 13, vmmID: 3, ch: 37, bcid: 2780, tdc: 109, adc: 78, over thr: 1
Hit: 517, offset: 13, vmmID: 3, ch: 40, bcid: 2780, tdc: 126, adc: 80, over thr: 1
Hit: 518, offset: 13, vmmID: 3, ch: 43, bcid: 2780, tdc: 98, adc: 66, over thr: 1
Marker: 967, SRS timestamp: 125892628480, vmmid: 0
Marker: 968, SRS timestamp: 125892628480, vmmid: 1
Marker: 969, SRS timestamp: 125892628480, vmmid: 2
Marker: 970, SRS timestamp: 125892628480, vmmid: 3
Marker: 971, SRS timestamp: 125892628480, vmmid: 6
Marker: 972, SRS timestamp: 125892628480, vmmid: 7
Marker: 973, SRS timestamp: 125892628480, vmmid: 8
Marker: 974, SRS timestamp: 125892628480, vmmid: 9
Data1 0753f244
Data2 2400
  flag: 0
  vmmid: 9
21f0 f1 c4 2c 00 07 53 f1 c4 30 00 07 53 f1 c4 34 00 ..S..0..S..4.
2200 07 53 f1 c4 38 00 07 53 f1 c4 3c 00 02 43 c8 7d .S..8..S..<<.C.}
2210 c0 7e 02 44 f8 7c d4 49 02 44 38 7d e6 61 07 53 ..D.|.I.D8}.a.S
2220 f2 04 00 00 07 53 f2 04 04 00 07 53 f2 04 08 00 .....S.....S....
2230 07 53 f2 04 0c 00 07 53 f2 04 18 00 07 53 f2 04 .S.....S.....S....
2240 1c 00 07 53 f2 04 20 00 07 53 f2 04 24 00 07 53 ..S...-.S..$.S
2250 f2 04 28 00 07 53 f2 04 2c 00 07 53 f2 04 30 00 ..(.S...$.S..0.
2260 07 53 f2 04 34 00 07 53 f2 04 38 00 07 53 f2 04 .S..4..S..8..S..
2270 3c 00 1a 44 03 28 c0 8a 1a 44 03 38 c2 4b 1a 45 <..D.(...D-8-K-E
2280 03 28 d0 7d 1a 45 03 28 d4 7e 1a 44 03 29 da 7b (.).E.(...D.)-{
2290 1a 44 33 29 dc 76 1a 44 c3 28 de 68 1a 44 53 28 .D3}.v.D..(-h.DS(
22a0 e6 48 1a 44 c3 28 e7 55 1a 43 73 29 fb 80 51 c4 .H-D.(U..Cs)-Q.
22b0 57 f9 cf 66 51 c3 f7 f9 d4 67 51 c4 07 f9 d6 67 W..fQ...g0...g
22c0 69 c3 d0 3d d4 92 69 c3 c9 3d d6 89 69 c4 50 3c i...i...i..i.P<
22d0 df 89 68 84 0f b2 c0 c4 68 c4 0f b3 d3 8a 68 c4 .h...L h...h.
22e0 3f b3 d4 93 68 c4 ff b2 d7 81 68 c5 0f b2 da 6b ?..h...h...k
22f0 68 c4 ef b2 e5 6d 68 c5 0f b2 e8 7e 68 c4 2f b2 h...mh...-h../
2300 eb 62 07 53 f2 44 00 00 07 53 f2 44 04 00 07 53 .b.S-D...S-D...S
2310 f2 44 08 00 07 53 f2 44 0c 00 07 53 f2 44 18 00 .D...S-D...S-D..
2320 07 53 f2 44 1c 00 07 53 f2 44 20 00 07 53 f2 44 .S-D...S..D..S-D
2330 24 00
```

How to differentiate hits and Markers? ON FEC LEVEL!

- CHECK ORDER OF THE BITS
- Hit = 1-bit data flag + 1-bit over-threshold flag + 6-bit channel + 10-bit ADC + 8-bit TDC + 12-bit CKBC + 5-bit VMM-ID + 5-bit Offset
- Marker = 42-bit FEC timestamp + 5-bit VMM-ID + 1-bit hit/marker flag
- Hit/marker flag for marker always 0
- Hits contains data flag, which is always 1

Examples of Markers and hits

Decoding on binary requires still manual proof

- 07 4f 2e c4 24 00 == 125572943872 + ID 9 + ?
- 07 4f 2e c4 28 00 == 125572943872 + ID 10 + ?
- 07 4f 2e c4 2c 00 == 125572943872 + ID 11 + ?
- 07 4f 2e c4 30 00 == 125572943872 + ID 12 + ?
- 07 4f 2e c4 34 00 == 125572943872 + ID 13 + ?
- 07 4f 2e c4 38 00 == 125572943872 + ID 14 + ?
- 07 4f 2e c4 3c 00 == 125572943872 + ID 15 + ?
- 21 c4 06 4b d4 89 == Offset 4, ID 7, ch 20, bcid 1138, tdc 137, adc 64, thl 1

Distribution of hit information in bytes (VMM2)

byte0	byte1	byte2	byte3	
FC3	FC2	FC1	FC0	Frame Counter
"V"	"M"	"2"	CH#	Header
H3	H2	H1	H0	Header Info
D0	D1	D2	D3	Data
D4	0x00	0x00	0x00	
D0	D1	D2	D3	Data
D4	0x00	0x00	0x00	

D4	7	FLAG		
	6	THR		
	5	CH#	0	
	4		1	
	3		2	
	2		3	
	1		4	
	0		5	
D3	7	AMP	0	
	6		1	
	5		2	
	4		3	
	3		4	
	2		5	
	1		6	
	0		7	
D2	7	TAC	8	
	6		9	
	5		0	
	4		1	
	3		2	
	2		3	
	1		4	
	0		5	
D1	7	BCID	6	
	6		7	
	5		0	
	4		1	
	3		2	
	2		3	
	1		4	
	0		5	
D0	7	UNUSED	6	
	6		7	
	5		8	
	4		9	
	3		10	
	2		11	
	1		UNUSED	
	0		UNUSED	