

chan_ss7工具-wireshark

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chan_ss7工具-wireshark

Chan_ss7 supports 7 号信令的ISUP部分. wireshark 可以用来分析chan_ss7的MTP2/MPT3 部分.请参考一下链接学习如何获取cap 文件:<http://www.voip-info.org/wiki/view/Asterisk+ss7+commands>, more details , 获取数据包命令 :

- **ss7 dump start <file> [in|out|both] [fisu] [lssu] [msu]** This starts the chan_ss7 module producing a PCAP dump of the data sent and/or received on the SS7 link. Format is suitable for display in wireshark [Wireshark](#), which understands the SS7 protocols natively. The dump contains each MTP2 packet excluding the flags, so the first byte is the BSN and the last two bytes are the CRC checksum (though the CRC is currently missing for packets sent). Flags and bits that do not validate as correct signalling units are not dumped. Parameters are the name of the file to dump to; which directions to dump (incoming, outgoing, or both, default both); and which type of signalling units to dump (default all).
- **ss7 dump stop [in|out|both]** Stop dumping to file.

User can refer this example cap file from <http://wiki.wireshark.org/MTP3> Example traffic with chan_ss7.conf (结合 chan_ss7.conf) :

```
1 0.000000 10.28.6.42 -> 10.28.6.44 ISUP (ITU) IAM (CIC 213) // CIC in chan_ss7, 确认局端CIC和运营商的匹配, 检查firstCIC
5 17.068921 10.28.6.42 -> 10.28.6.44 ISUP (ITU) REL (CIC 213)
6 17.089918 10.28.6.44 -> 10.28.6.42 ISUP (ITU) RLC (CIC 213)
```

Message Transfer Part Level 2(负责校验, 传输)

.100 0010 = Backward sequence number: 66

1... = Backward indicator bit: 1

.110 1110 = Forward sequence number: 110

1... = Forward indicator bit: 1

..11 1111 = Length Indicator: 63

00.. = Spare: 0

Message Transfer Part Level 3

Service information octet

11.. = Network indicator: Reserved for **national** use (0x03) // **subservice** 参数 **chan_ss7.conf**

..00 = Spare: 0x00

.... **0101 = Service indicator: ISUP (0x05)** // 目前chan_ss7 只支持ISUP, 不支持 SCCP 0011 = Service indicator: SCCP (0x03)

Routing label

....10 1111 1000 0011 = **DPC: 12163** //chan_ss7.conf

.... **1011 0100 0000 10..** = **OPC: 11522** // **chan_ss7.conf**

0101 = Signalling Link Selector: 5 //SLS

ISDN User Part

CIC: 213 // **CIC in chan_ss7**

Message type: Initial address (1)

Nature of Connection Indicators: 0x0

Mandatory Parameter: 6 (Nature of connection indicators)

.... ..00 = Satellite Indicator: No Satellite circuit in connection (0x00)

.... 00.. = Continuity Check Indicator: Continuity check not required (0x00)

...0 = Echo Control Device Indicator: Echo control device not included

Forward Call Indicators: 0xa001

Mandatory Parameter: 7 (Forward call indicators)

.... ..0 = National/international call indicator: Call to be treated as national call

.... .00. = End-to-end method indicator: No End-to-end method available (only link-by-link method available) (0x0000)

.... 0... = Interworking indicator: no interworking encountered (No.7 signalling all the way)

...0 = End-to-end information indicator: no end-to-end information available

..1. = ISDN user part indicator: ISDN user part used all the way

10.. = ISDN user part preference indicator: ISDN user part required all the way (0x0002)

....1 = ISDN access indicator: originating access ISDN

....00. = SCCP method indicator: No indication (0x0000)

Calling Party's category: 0xa (ordinary calling subscriber)

Mandatory Parameter: 9 (Calling party's category)

Calling Party's category: ordinary calling subscriber (0x0a)

Transmission medium requirement: 2 (64 kbit/s unrestricted)

Mandatory Parameter: 2 (Transmission medium requirement)

Transmission medium requirement: 64 kbit/s unrestricted (2)

Called Party Number: 4891F

Mandatory Parameter: 4 (Called party number)

Pointer to Parameter: 2

Parameter length: 5

1... = Odd/even indicator: odd number of address signals

.000 0001 = Nature of address indicator: subscriber number (national use) (1)

1... = INN indicator: routing to internal network number not allowed

.001 = Numbering plan indicator: ISDN (Telephony) numbering plan (1)

Called Party Number: 4891F

.... 0100 = Address signal digit: 4 (4)

1000 = Address signal digit: 8 (8)

.... 1001 = Address signal digit: 9 (9)

0001 = Address signal digit: 1 (1)

.... 1111 = Address signal digit: Stop sending (15)

E.164 Called party number digits: 4891F

Pointer to start of optional part: 7

Calling Party Number: 3933399708

Optional Parameter: 10 (Calling party number)

Parameter length: 7

0... = Odd/even indicator: even number of address signals

.000 0011 = Nature of address indicator: national (significant) number (3)

0... = NI indicator: complete

.001 = Numbering plan indicator: ISDN (Telephony) numbering plan (1)

.... 01.. = Address presentation restricted indicator: presentation restricted (1)

.... ..11 = Screening indicator: network provided (3)

Calling Party Number: 3933399708

.... 0011 = Address signal digit: 3 (3)

1001 = Address signal digit: 9 (9)

.... 0011 = Address signal digit: 3 (3)

0011 = Address signal digit: 3 (3)

.... 0011 = Address signal digit: 3 (3)

1001 = Address signal digit: 9 (9)

.... 1001 = Address signal digit: 9 (9)

0111 = Address signal digit: 7 (7)

.... 0000 = Address signal digit: 0 (0)

1000 = Address signal digit: 8 (8)

E.164 Calling party number digits: 3933399708

Optional forward call indicators: non-CUG call (128)

Optional Parameter: 8 (Optional forward call indicators)

Parameter length: 1

.... ..00 = Closed user group call indicator: non-CUG call (0)

.... .0.. = Simple segmentation indicator: no additional information will be sent

1... = Connected line identity request indicator: requested

Access transport (5 bytes length)

Optional Parameter: 3 (Access transport)

Parameter length: 5

Access transport parameter field (-> Q.931)

Low-layer compatibility

Information element: Low-layer compatibility

Length: 3

...0 1000 = Information transfer capability: Unrestricted digital information (0x08)

.00. = Coding standard: ITU-T standardized coding (0x00)

1... = Extension indicator: last octet

...1 0000 = Information transfer rate: 64 kbit/s (0x10)

.00. = Transfer mode: Circuit mode (0x00)

1... = Extension indicator: last octet

...0 0110 = User information layer 1 protocol: Recommendation H.223 and H.245 (0x06)

1... = Extension indicator: last octet

User service information, (3 bytes length)

Optional Parameter: 29 (User service information)

Parameter length: 3

User service information (-> Q.931 Bearer_capability)

...0 1000 = Information transfer capability: Unrestricted digital information (0x08)

.00. = Coding standard: ITU-T standardized coding (0x00)

1... = Extension indicator: last octet

...1 0000 = Information transfer rate: 64 kbit/s (0x10)

.00. = Transfer mode: Circuit mode (0x00)
1... = Extension indicator: last octet
...0 0110 = User information layer 1 protocol: Recommendation H.223 and H.245 (0x06)
1... = Extension indicator: last octet
Propagation delay counter = 100 ms
Optional Parameter: 49 (Propagation delay counter)
Parameter length: 2
Propagation delay counter = 100 ms
Location number: 00600001
Optional Parameter: 63 (Location number)
Parameter length: 6
0... = Odd/even indicator: even number of address signals
.000 0011 = Nature of address indicator: national (significant) number (3)
1... = INN indicator: routing to internal network number not allowed
.001 = Numbering plan indicator: ISDN (Telephony) numbering plan (1)
.... 00.. = Address presentation restricted indicator: presentation allowed (0)
.... ..11 = Screening indicator: network provided (3)
Location number: 00600001
.... 0000 = Address signal digit: 0 (0)
0000 = Address signal digit: 0 (0)
.... 0110 = Address signal digit: 6 (6)
0000 = Address signal digit: 0 (0)
.... 0000 = Address signal digit: 0 (0)
0000 = Address signal digit: 0 (0)
.... 0000 = Address signal digit: 0 (0)
0001 = Address signal digit: 1 (1)
Parameter Type unknown/reserved (5 Bytes)
Optional Parameter: 244 (unknown)
Parameter length: 5
Parameter compatibility information (2 bytes length)
Optional Parameter: 57 (Parameter compatibility information)
Parameter length: 2
Upgraded parameter no: 1 = unknown (244)

Instruction indicators: 0x90

.... ..0 = Transit at intermediate exchange indicator: Transit interpretation

.... ..0. = Release call indicator: do not release call

.... .0.. = Send notification indicator: do not send notification

.... 0... = Discard message indicator: Do not discard message (pass on)

...1 = Discard parameter indicator: Discard parameter

.00. = Pass on not possible indicator: Release call (0x00)

1... = Extension indicator: last octet

End of optional parameters (0)

注意：chan_ss7提供的信息可能不像以上例子那么完整，但是完全可以提供数据诊断。

具体信息和文档，请参考：

<http://wiki.wireshark.org/MTP3>

<http://www.voip-info.org/wiki/index.php?page=Asterisk+ss7+channels>

<http://www.itu.int/rec/T-REC-Q.701/en>

SIGNATURE :

Regards!

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