

4G T4000 SCTP Link Instable

Equipment: T4000

Version: BBU_V100R009C00SP058

1. Issue Description

After add permanent route in script “/appfs/bbu/rootfs/bts/scripts/rootfs_start.sh” and reboot to valid the change. eNB shows S1 link interrupt alarm, and it keeps connect and disconnect, cell status also keeps changing between forbid and normal.

Soft reboot in webgui has same appearance.

2. Troubleshooting

Collect the tcpdump from eNB and see eNB shutdown the S1 link actively and sends “Abort”, check the cause and see “ Association exceeded its max_retrans_count”.

Time	Arrival Time	Source	Destination	Protocol	Length	Info
3360 75.701166	Feb 16, 2021 10:50:08.463982...	10.169.250.190	10.169.116.171	SCTP	64	SACK
3504 78.923384	Feb 16, 2021 10:50:11.686200...	10.169.116.171	10.169.250.190	SCTP	152	HEARTBEAT
3505 78.923393	Feb 16, 2021 10:50:11.686209...	10.169.116.171	10.169.250.190	SCTP	148	HEARTBEAT
3506 78.923481	Feb 16, 2021 10:50:11.686297...	10.169.250.190	10.169.116.171	SCTP	148	HEARTBEAT_ACK
3640 82.145967	Feb 16, 2021 10:50:14.908783...	10.169.116.171	10.169.250.190	SCTP	152	HEARTBEAT
3641 82.145977	Feb 16, 2021 10:50:14.908793...	10.169.116.171	10.169.250.190	SCTP	148	HEARTBEAT
3642 82.146070	Feb 16, 2021 10:50:14.908886...	10.169.250.190	10.169.116.171	SCTP	148	HEARTBEAT_ACK
3748 84.585408	Feb 16, 2021 10:50:17.348224...	10.169.250.190	10.169.116.171	SCTP	100	ABORT
3926 88.587022	Feb 16, 2021 10:50:21.349838...	10.169.250.190	10.169.116.171	SCTP	84	INIT
3927 88.598102	Feb 16, 2021 10:50:21.360918...	10.169.116.171	10.169.250.190	SCTP	900	INIT_ACK
3928 88.598111	Feb 16, 2021 10:50:21.360927...	10.169.116.171	10.169.250.190	SCTP	896	INIT_ACK
3929 88.598236	Feb 16, 2021 10:50:21.361052...	10.169.250.190	10.169.116.171	SCTP	860	COOKIE_ECHO

Protocol violation cause

Cause code: Protocol violation (0x000d)

04 00 01 00 06 68 1d 64 20 0a c5 00 00 08 00h. d
02 00 54 00 09 40 00 40 84 b5 5f 0a a9 fa be	E..T...@. @... ..
a9 74 ab a9 aa 8e 3c 0c 02 85 83 8c e7 c0 b4	..t...<
00 00 32 00 0d 00 2e 41 73 73 6f 63 69 61 74	...2... Association
6f 6e 20 65 78 63 65 65 64 65 64 20 69 74 73	ion exce eded its
6d 61 78 5f 72 65 74 61 6e 73 20 63 6f 75 6e	max_retrans coun
00 00 00	t..

Check the Sctp link parameter for timeout and retransmit times, it's small and need be adjusted.

Maximum Retransmission Timeout(millisecond)=500

Maximum Retransmission Times=3

Max Association Retransmits=2

Life cycle of Valid cookies=5000

3. Solution

Adjust the SCTP link parameter as below and S1 link is stable.

- SCTP Link

Modify SCTP Link Parameter

List SCTP Link Parameter

⚙️ Config

- Neigh Station

Add Neigh Station

Modify Neigh Station

- Transmission Management

- X2 Config

Modify X2SCTP Parameter

List X2SCTP Parameter

LST SCTP::

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O&M #1

%%LST SCTP::%%

RETCODE = 0 The command was executed successfully.

List SCTP Link Parameter

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Initial Value of Retransmission Timeout(millisecond) = 3000  
Minimum Retransmission Timeout(millisecond) = 1000  
Maximum Retransmission Timeout(millisecond) = 6000  
Maximum Number of Initial Retransmissions = 8  
Heartbeat Interval = 500  
Maximum Retransmission Times = 10  
Max Association Retransmits = 10  
Life Cycle of Valid Cookies = 60000
```

(Number of results = 1)

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