

某局点 MSR3640-X1-HI BFD震荡导致BGP不稳定

BGP BFD 付军 2024-05-30 发表

组网及说明

版本：Version 7.1.064, Release 6749P2102

问题描述

现场反馈MSR路由器 BFD检测超时，导致BGP状态变化，影响MSR和友商设备的邻居建立，需要分析BFD检测超时的原因

过程分析

查看接口无错包，故障时间点左右没有异常日志，从本端的日志看到Diag为1，说明是本端超时导致故障，需要重点排查本端设备运行情况。

BFD/5/BFD_CHANGE_FSM: Sess[XXXX, Interface:XGE0/XXX, SessType:Ctrl, LinkType:INET], Ver: 1, Sta: UP->DOWN, Diag: 1 (Control Detection Time Expired)

BGP/5/BGP_STATE_CHANGED:

BGP.: 10.xxx.xxx.xxx state has changed from ESTABLISHED to IDLE for session down event received from BFD.

BFD/5/BFD_CHANGE_SESS: Sess[XXXX, Interface:XGE0/XXX, SessType:Ctrl, LinkType:INET], Ver: 1, Sta: Deleted, Diag: 1 (Control Detection Time Expired)

BFD/5/BFD_CHANGE_FSM: Sess[XXXX, Interface:XGE0/XXXX, SessType:Ctrl, LinkType:INET], Ver: 1, Sta: UP->DOWN, Diag: 1 (Control Detection Time Expired)

BGP/5/BGP_STATE_CHANGED:

BGP.: 10.xxx.xxx.xxx state has changed from ESTABLISHED to IDLE for session down event received from BFD.

BFD/5/BFD_CHANGE_SESS: Sess[XXXX, Interface:XGE0/XXXX, SessType:Ctrl, LinkType:INET], Ver: 1, Sta: Deleted, Diag: 1 (Control Detection Time Expired)

BGP/5/BGP_STATE_CHANGED:

BGP.: 10.xxx.xxx.xxx state has changed from OPENCONFIRM to ESTABLISHED.

BGP/5/BGP_STATE_CHANGED:

BGP.: 10.xxx.xxx.xxx state has changed from OPENCONFIRM to ESTABLISHED.

BFD/5/BFD_CHANGE_FSM: Sess[XXXX, Interface:XGE0/XXX, SessType:Ctrl, LinkType:INET], Ver: 1, Sta: DOWN->INIT, Diag: 0 (No Diagnostic)

BFD/5/BFD_CHANGE_FSM: Sess[XXXX, Interface:XGE0/XXX, SessType:Ctrl, LinkType:INET], Ver: 1, Sta: INIT->UP, Diag: 0 (No Diagnostic)

BFD/5/BFD_CHANGE_FSM: Sess[XXXX, Interface:XGE0/XXXX, SessType:Ctrl, LinkType:INET], Ver: 1, Sta: DOWN->UP, Diag: 0 (No Diagnostic)

BFD/5/BFD_CHANGE_FSM: Sess[XXXX, Interface:XGE0/XXXX, SessType:Ctrl, LinkType:INET], Ver: 1, Sta: UP->DOWN, Diag: 1 (Control Detection Time Expired)

从诊断信息里看到，两个设备都有后端接收丢包，并且在BFD震荡的时间段也是流量高峰，BFD诊断可能是丢包导致的

MSR1:

=====inner-port 5 statistics=====

PKI_STAT4_STAT0 = 0x000000d1d4476736

PKI_STAT4_STAT1 = 0x00000223c69bd284

PKI_STAT4_STAT2 = 0x0000000000000000

PKI_STAT4_STAT3 = 0x0000000009a9ffb

PKI_STAT4_STAT4 = 0x000000007f2bbc13

Ten-GigabitEthernet0/XX

Peak input rate: 72567759 bytes/sec, at 2024-05-27 23:31:36

Peak output rate: 397379844 bytes/sec, at 2024-04-25 20:06:11

Top 10 peak input bit rates: 580542072 bits/sec at 2024-05-27 23:31:36

580540152 bits/sec at 2024-05-27 23:31:36

580538224 bits/sec at 2024-05-27 23:31:26

580536304 bits/sec at 2024-05-27 23:31:26

580534376 bits/sec at 2024-05-27 23:31:16

MSR2

```
=====inner-port 5 statistics===== ~
PKI_STAT4_STAT0 = 0x000000c8fd1b90cd
PKI_STAT4_STAT1 = 0x0000cc48e4bdd6b4
PKI_STAT4_STAT2 = 0x0000000000000000
PKI_STAT4_STAT3 = 0x0000000028b12f3
PKI_STAT4_STAT4 = 0x00000021d521de4
```

Ten-GigabitEthernet0/XX

Peak input rate: 490599 bytes/sec, at 2024-05-27 23:30:26

Peak output rate: 630080262 bytes/sec, at 2024-04-17 10:03:48

Top 10 peak input bit rates: 3924792 bits/sec at 2024-05-27 23:30:26

3924776 bits/sec at 2024-05-27 23:30:16

3924768 bits/sec at 2024-05-27 23:29:56

3924760 bits/sec at 2024-05-27 23:29:46

3924752 bits/sec at 2024-05-27 23:29:31

3806152 bits/sec at 2024-05-27 23:29:31

3806144 bits/sec at 2024-05-27 23:29:16

设备的接口都是一个CPU后端，所有接口的报文都通过这个通道上送，加起来可能超过单核的接收性能，导致其他接口上送CPU报文丢掉，包括BFD

解决方法

BFD震荡的时间段也是流量高峰，BFD震荡是丢包导致的。

前方如果频繁出现或者不能接受震荡的话，可以配上forwarding policy per-flow enhance看有没有改善

。

命令手册链接：1.1.1 [forwarding_policy](#)

1.1.1 forwarding policy

forwarding policy命令用来配置报文负载分担策略。

undo forwarding policy命令用来恢复缺省情况。

【命令】

forwarding policy { per-flow [enhance] | per-packet }

undo forwarding policy

【缺省情况】

采用基于流处理的报文负载分担策略。

【视图】

系统视图

【缺省用户角色】

network-admin

【参数】

per-flow：基于流处理，处理过程保证先进先出。

enhance：增强模式的流处理。配置本参数后，同一条流的入方向、转发和出方向分担到不同的CPU进行处理，从而提升单条流的处理性能。

本参数的支持情况与设备型号有关，请以实际情况为准。