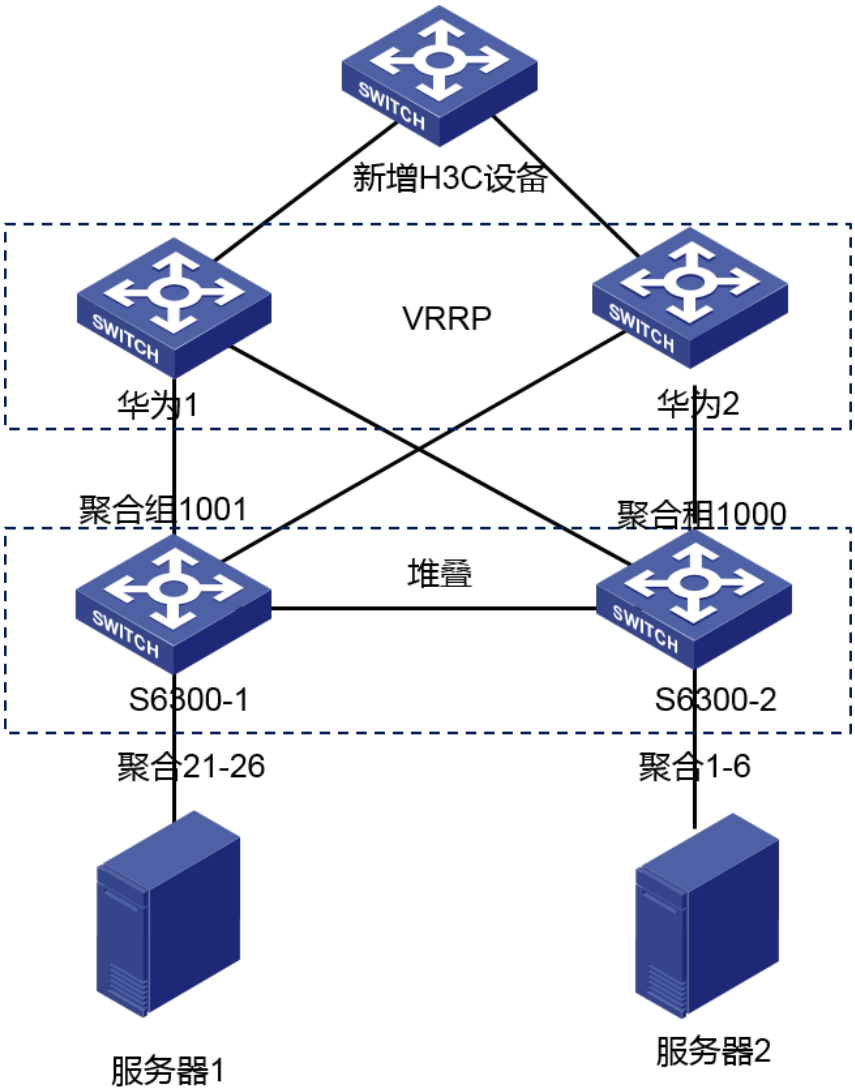
某局点S6300交换机stp震荡下挂存储中断案例

STP 二层链路聚合 于欣欣 2019-10-09 发表

组网及说明

新加交换机===两台华为交换机（vrrp）==（bagg1000，bagg1001）6300===服务器、存储



问题描述

现场新接入一台交换机，抢根了，存储侧怀疑由此导致的6300下挂存储设备间心跳超时但是存储设备未同一网段，6300二层转发，流量不过上行口，下行口又都配置了边缘端口，所以理论上抢根也不会影响边缘端口的转发时间是乱的，核对了下，当时故障时间是2012年8月16日凌晨3:10分左右。

我们的

存储直接的心跳报文在63交换机上的转发出入端口（两两对

应）：1/0/1==1/0/6,2/0/1==2/0/6,1/0/21==1/0/26,2/0/21==2/0/26

过程分析

（1）分析了下stp的震荡，在故障的时候这个几个端口是没有震荡的：

但是这些聚合组有发送TC的记录：

==========display stp tc==========

---------- STP slot 1 TC or TCN count ----------

MST ID	Port	Receive	Send
0	**Bridge-Aggregation1**	**0**	**154**
0	**Bridge-Aggregation2**	**0**	**116**
0	**Bridge-Aggregation3**	**0**	**114**
0	**Bridge-Aggregation4**	**0**	**118**
0	**Bridge-Aggregation5**	**0**	**126**
0	**Bridge-Aggregation6**	**0**	**124**
0	**Bridge-Aggregation21**	**0**	**154**

0 Bridge-Aggregation22 0 128
0 Bridge-Aggregation23 0 138
0 Bridge-Aggregation24 0 118
0 Bridge-Aggregation25 0 126
0 Bridge-Aggregation26 0 124
0 Bridge-Aggregation1000 349 341
0 Bridge-Aggregation1001 1146 113
1 Bridge-Aggregation1 0 142
1 Bridge-Aggregation2 0 116
1 Bridge-Aggregation3 0 114
1 Bridge-Aggregation4 0 118
1 Bridge-Aggregation5 0 126
1 Bridge-Aggregation6 0 124
1 Bridge-Aggregation1000 13 308
1 Bridge-Aggregation1001 429 111

这些聚合端口接的都是服务器，并且配置了边缘端口

（2）查看，在故障时刻，其他端口存在震荡，但是是聚合口1000和聚合口1001。是连接华为侧的端口。

%Aug 16 03:07:36:707 2012 YSS-YPT-SW STP/6/STP_NOTIFIED_TC: Instance 0's port Bridge-Aggregation1001 was notified a topology change.
%Aug 16 03:07:36:843 2012 YSS-YPT-SW STP/6/STP_NOTIFIED_TC: Instance 0's port Bridge-Aggregation1000 was notified a topology change.
%Aug 16 03:07:37:412 2012 YSS-YPT-SW STP/6/STP_NOTIFIED_TC: Instance 0's port Bridge-Aggregation1000 was notified a topology change.
%Aug 16 03:07:37:858 2012 YSS-YPT-SW STP/6/STP_NOTIFIED_TC: Instance 0's port Bridge-Aggregation1000 was notified a topology change.
%Aug 16 03:07:39:412 2012 YSS-YPT-SW STP/6/STP_NOTIFIED_TC: Instance 0's port Bridge-Aggregation1000 was notified a topology change.
%Aug 16 03:07:41:411 2012 YSS-YPT-SW STP/6/STP_NOTIFIED_TC: Instance 0's port Bridge-Aggregation1000 was notified a topology change.
%Aug 16 03:08:05:208 2012 YSS-YPT-SW STP/6/STP_NOTIFIED_TC: Instance 0's port Bridge-Aggregation1000 was notified a topology change.
%Aug 16 03:08:05:480 2012 YSS-YPT-SW STP/6/STP_NOTIFIED_TC: Instance 0's port Bridge-Aggregation1000 was notified a topology change.
%Aug 16 03:17:43:571 2012 YSS-YPT-SW STP/6/STP_DETECTED_TC: Instance 0's port Bridge-Aggregation1001 detected a topology change.
%Aug 16 03:17:43:969 2012 YSS-YPT-SW STP/6/STP_NOTIFIED_TC: Instance 0's port Bridge-Aggregation1000 was notified a topology change.
%Aug 16 03:17:45:077 2012 YSS-YPT-SW STP/6/STP_NOTIFIED_TC: Instance 0's port Bridge-Aggregation1000 was notified a topology change.
%Aug 16 03:17:45:916 2012 YSS-YPT-SW STP/6/STP_NOTIFIED_TC: Instance 0's port Bridge-Aggregation1000 was notified a topology change.
%Aug 16 03:18:12:162 2012 YSS-YPT-SW STP/6/STP_NOTIFIED_TC: Instance 0's port Bridge-Aggregation1000 was notified a topology change.
%Aug 16 03:18:22:972 2012 YSS-YPT-SW STP/6/STP_DETECTED_TC: Instance 0's port Bridge-Aggregation1001 detected a topology change.
%Aug 16 03:18:23:258 2012 YSS-YPT-SW STP/6/STP_NOTIFIED_TC: Instance 0's port Bridge-Aggregation1000 was notified a topology change.

==========display stp history==========
---------- STP slot 1 history trace ----------
---------- Instance 0 ----------

Port Bridge-Aggregation1001
  Role change : ALTE->DESI
  Time : 2012/08/16 03:21:26
  Port priority : 4096.1047-801d-c920 0 32768.600b-03ad-0487 0
                  4096.1047-801d-c920 128.159 128.2041
  Designated priority : 0.1047-8020-4d20 4001 32768.600b-03ad-0487 0
                  32768.600b-03ad-0487 128.2041 128.2041
Port Bridge-Aggregation1001
  Role change : ROOT->ALTE
  Time : 2012/08/16 03:18:23

Port priority : 0.1047-8020-4d20 4001 32768.600b-03ad-0487 0
4096.1047-801d-c920 128.159 128.2041
Designated priority : 0.1047-8020-4d20 4001 32768.600b-03ad-0487 0
32768.600b-03ad-0487 128.2041 128.2041
Port Bridge-Aggregation1000
Role change : DESI->ROOT
Time : 2012/08/16 03:18:23
Port priority : 0.1047-8020-4d20 4000 32768.600b-03ad-0487 0
0.1047-8024-3410 128.161 128.2040
Designated priority : 0.1047-8020-4d20 4001 32768.600b-03ad-0487 0
32768.600b-03ad-0487 128.2040 128.2040
Port Bridge-Aggregation1001
Role change : ALTE->ROOT
Time : 2012/08/16 03:18:22
Port priority : 0.1047-8020-4d20 4001 32768.600b-03ad-0487 0
4096.1047-801d-c920 128.159 128.2041
Designated priority : 0.1047-8020-4d20 4002 32768.600b-03ad-0487 0
32768.600b-03ad-0487 128.2041 128.2041

Port Bridge-Aggregation1000
Role change : ROOT->DESI
Time : 2012/08/16 03:18:22
Port priority : 0.1047-8024-3410 0 32768.600b-03ad-0487 0
0.1047-8024-3410 128.161 128.2040
Designated priority : 0.1047-8020-4d20 4002 32768.600b-03ad-0487 0
32768.600b-03ad-0487 128.2040 128.2040

Port Bridge-Aggregation1001
Role change : ROOT->ALTE
Time : 2012/08/16 03:17:43
Port priority : 0.1047-8020-4d20 4001 32768.600b-03ad-0487 0
4096.1047-801d-c920 128.159 128.2041
Designated priority : 0.1047-8020-4d20 4001 32768.600b-03ad-0487 0
32768.600b-03ad-0487 128.2041 128.2041

跟客户沟通，客户反馈当天故障时，现场正在上新设备，且华为设备未配置根桥保护，当时现场有抢根的情况。

研发确认：

因为边缘端口配置在成员口下，而没有再聚合口下配置，所以边缘端口没生效。从环境中可以看到，设备的根桥是有在不停变化的，对于生成树的计算，我们的机制是这样的，当设备的根桥不断变化，所有参与stp计算的端口的转发状态都会重新刷新，尽管其他端口的角色没有发生改变，但是因为stp需要重新算，所以所有端口都会重新block 然后至该有的状态，这个时间要看具体的stp的网络有多大，网络越大，时间越长。通常比较小的网络，基本无感知，但实际会影响端口的转发功能。但是类似环境中有不停的stp 根桥变化时，业务可能就会感知到。

解决方法

（1） 请梳理客户组网

（2） 在华为设备上配置根保护；

（3） 所有接入设备配置边缘端口和bpdu报文；

（4） 可以适当在部分设备上配置TC抑制功能。