Demo1： Shut 端口导致所有子接口down

Jun 16 22:15:56 80.0.0.13 Jun 16 22:15:31 2020 16X-B %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Ten-GigabitEthernet11/2/1.1 changed to down.

Jun 16 22:15:56 80.0.0.13 Jun 16 22:15:31 2020 16X-B %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Ten-GigabitEthernet11/2/1.2 changed to down.

Jun 16 22:16:07 80.0.0.13 Jun 16 22:15:34 2020 16X-B %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Ten-GigabitEthernet11/2/1.3950 changed to down.

Jun 16 22:16:07 80.0.0.13 Jun 16 22:15:34 2020 16X-B %%10IFNET/4/LINK\_UPDOWN: Line protocol state on the interface Ten-GigabitEthernet11/2/1.69 changed to down.

Jun 16 22:16:07 80.0.0.13 Jun 16 22:15:34 2020 16X-B %%10IFNET/4/LINK\_UPDOWN: Line protocol state on the interface Ten-GigabitEthernet11/2/1.164 changed to down.

Jun 16 22:16:16 80.0.0.13 Jun 16 22:15:36 2020 16X-B %%10IFNET/4/LINK\_UPDOWN: Line protocol state on the interface Ten-GigabitEthernet11/2/1.3928 changed to down.

Jun 16 22:16:17 80.0.0.13 Jun 16 22:15:36 2020 16X-B %%10IFNET/4/LINK\_UPDOWN: Line protocol state on the interface Ten-GigabitEthernet11/2/1 changed to down.

Jun 16 22:17:14 80.0.0.13 Jun 16 22:17:20 2020 16X-B %%10SHELL/6/SHELL\_CMD: -Line=vty0-IPAddr=80.0.0.1-User=\*\*; Command is sy

Jun 16 22:17:14 80.0.0.13 Jun 16 22:17:20 2020 16X-B %%10SHELL/6/SHELL\_CMD: -Line=vty0-IPAddr=80.0.0.1-User=\*\*; Command is int ten 5/2/2

Jun 16 22:17:14 80.0.0.13 Jun 16 22:17:20 2020 16X-B %%10SHELL/6/SHELL\_CMD: -Line=vty0-IPAddr=80.0.0.1-User=\*\*; Command is shutdown

Jun 16 22:17:15 80.0.0.13 Jun 16 22:17:21 2020 16X-B %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Ten-GigabitEthernet5/2/2.1 changed to down.

Jun 16 22:17:15 80.0.0.13 Jun 16 22:17:21 2020 16X-B %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Ten-GigabitEthernet5/2/2.2 changed to down.

Jun 16 22:17:15 80.0.0.13 Jun 16 22:17:21 2020 16X-B %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Ten-GigabitEthernet5/2/2.3 changed to down.

……..

Jun 16 22:16:17 80.0.0.13 Jun 16 22:15:36 2020 16X-B %%10IFNET/4/LINK\_UPDOWN: Line protocol state on the interface Ten-GigabitEthernet11/2/1 changed to down.

====> warn\_type = LINK\_UPDOWN, NE = tuple (device= 80.0.0.13, chassis=0, slot=11, port= Ten-GigabitEthernet11/2/1 ),

Parameters=tuple(status=down), level = length(NE) = 4，abstract = “Ten-GigabitEthernet11/2/1 down”, Influence =NULL

Jun 16 22:15:56 80.0.0.13 Jun 16 22:15:31 2020 16X-B %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Ten-GigabitEthernet11/2/1.1 changed to down.

====> warn\_type = PHY \_UPDOWN, NE = tuple (device= 80.0.0.13, chassis=0, slot=11, port= Ten-GigabitEthernet11/2/1, SubInf = 1 )

Parameters=tuple(status=down), level = length(NE) = 5, abstract = “Ten-GigabitEthernet11/2/1.1 down”, Influence =NULL

则：

rule 1: PHY\_UPDOWN (Warn1)----> LINK\_UPDOWN(Warn2), satisfy: Warn1.NE==Warn2.NE && Warn1.Para.status==Warn2. Para.status

rule 2: LINK\_UPDOWN (Warn1) ----> { LINK\_UPDOWN(Warn2)}\_list, {PHY\_UPDOWN(Warn3)}\_list,

satisfy: Warn1.level==4 && Warn2.level== 5 && Warn3.level ==5 && Warn2.NE < Warn1.NE&& Warn3.NE < Warn1.NE && Warn1.Para.status==Warn2. Para.status==Warn3. Para.status

======>得到的聚合告警：

告警组1： Interface Ten-GigabitEthernet11/2/1 link down.

告警组2： Interface Ten-GigabitEthernet5/2/2 link own.

Demo2： （预处理）应用震荡规则，消除重复告警

Jun 11 08:39:25 212.1.1.210 Jan 9 13:14:54 2011 75exs\_leaf %%10DEV/3/FAN\_ABSENT: -Slot=1; Fan 1 is absent.

Jun 11 08:39:46 212.1.1.209 Jan 9 12:35:13 2011 75exs\_125g\_10510x\_40\_ec %%10DEV/3/FAN\_ABSENT: Fan 2 is absent.

Jun 11 08:40:45 212.1.1.210 Jan 9 13:16:14 2011 75exs\_leaf %%10DEV/3/FAN\_ABSENT: -Slot=1; Fan 1 is absent.

Jun 11 08:41:06 212.1.1.209 Jan 9 12:36:33 2011 75exs\_125g\_10510x\_40\_ec %%10DEV/3/FAN\_ABSENT: Fan 2 is absent.

Jun 11 08:42:05 212.1.1.210 Jan 9 13:17:34 2011 75exs\_leaf %%10DEV/3/FAN\_ABSENT: -Slot=1; Fan 1 is absent.

Jun 11 08:42:26 212.1.1.209 Jan 9 12:37:53 2011 75exs\_125g\_10510x\_40\_ec %%10DEV/3/FAN\_ABSENT: Fan 2 is absent.

Jun 11 08:43:25 212.1.1.210 Jan 9 13:18:54 2011 75exs\_leaf %%10DEV/3/FAN\_ABSENT: -Slot=1; Fan 1 is absent.

Jun 11 08:43:46 212.1.1.209 Jan 9 12:39:13 2011 75exs\_125g\_10510x\_40\_ec %%10DEV/3/FAN\_ABSENT: Fan 2 is absent.

假设当前时间窗为3分钟，包含如上告警，根据网元（设备）不同可以划分为2个告警组。

告警组1：

Jun 11 08:39:46 212.1.1.209 Jan 9 12:35:13 2011 75exs\_125g\_10510x\_40\_ec %%10DEV/3/FAN\_ABSENT: Fan 2 is absent.

Jun 11 08:41:06 212.1.1.209 Jan 9 12:36:33 2011 75exs\_125g\_10510x\_40\_ec %%10DEV/3/FAN\_ABSENT: Fan 2 is absent.

Jun 11 08:42:26 212.1.1.209 Jan 9 12:37:53 2011 75exs\_125g\_10510x\_40\_ec %%10DEV/3/FAN\_ABSENT: Fan 2 is absent.

Jun 11 08:43:46 212.1.1.209 Jan 9 12:39:13 2011 75exs\_125g\_10510x\_40\_ec %%10DEV/3/FAN\_ABSENT: Fan 2 is absent.

应用震荡规则，消除重复告警，得到：（这里震荡规则要求同一个网元的重复告警信息完全一致，这点与updown\_flapping要区分开）

Jun 11 08:39:46 212.1.1.209 Jan 9 12:35:13 2011 75exs\_125g\_10510x\_40\_ec %%10DEV/3/FAN\_ABSENT: Fan 2 is absent.

( warn\_type = FAN\_ABSENT, NE = tuple (device= 212.1.1.209, chassis=0, Fan=2 )

Parameters=NULL, level = length(NE) = 3, abstract = “Fan 2 is absent”, Influence =NULL )

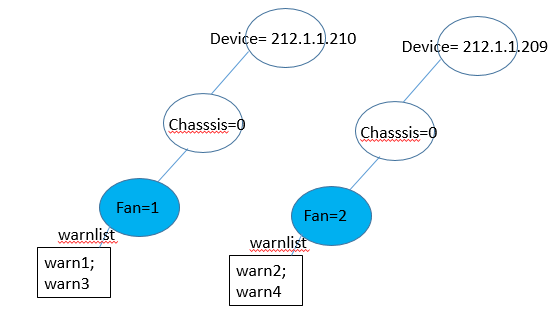
对告警组2同样处理。

Jun 11 08:39:25 212.1.1.210 Jan 9 13:14:54 2011 75exs\_leaf %%10DEV/3/FAN\_ABSENT: -Slot=1; Fan 1 is absent.

( =====>warn\_type = FAN\_ABSENT, NE = tuple (device= 212.1.1.210, chassis=0, Fan=1 )

Parameters=NULL, level = length(NE) = 3, abstract = “Fan 1 is absent”, Influence =NULL )

告警树：



====> 合并为如下两个告警

Jun 11 08:39:25 212.1.1.210 Jan 9 13:14:54 2011 75exs\_leaf %%10DEV/3/FAN\_ABSENT: -Slot=1; Fan 1 is absent.

Jun 11 08:39:46 212.1.1.209 Jan 9 12:35:13 2011 75exs\_125g\_10510x\_40\_ec %%10DEV/3/FAN\_ABSENT: Fan 2 is absent.

Demo3： 光模块不匹配，导致tunnel口反复up/down

Jun 13 18:05:26 77.1.1.4 Jun 13 17:57:08 2020 S7503E %%10OPTMOD/4/PHONY\_MODULE: -Chassis=1-Slot=2; Ten-GigabitEthernet1/2/0/23: This transceiver is NOT sold by H3C. H3C therefore shall NOT guarantee the normal function of the device or assume the maintenance responsibility thereof!

( =====>warn\_type = PHONY\_MODULE, NE = tuple ( device= 77.1.1.4, chassis =1, slot=2, port= Ten-GigabitEthernet1/2/0/23 )

Parameters=NULL, level = length(NE) = 4, Abstract=” transceiver on Ten-GigabitEthernet1/2/0/23 is NOT sold by H3C”,Influence =“Flow stability on Ten-GigabitEthernet1/2/0/23” )

Jun 13 18:08:25 77.1.1.4 Jun 13 17:59:34 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to up.

( =====>warn\_type = PHY\_UPDOWN, NE = tuple ( device= 77.1.1.4, IntTnl =4 )

Parameters= tuple(status=up), level = length(NE) = 2 , abstract = “interface Tunnel4 changed to up”, Influence =NULL)

Jun 13 18:08:28 77.1.1.4 Jun 13 17:59:34 2020 S7503E %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Tunnel4 changed to up.

( =====>warn\_type = LINK\_UPDOWN, NE = tuple ( device= 77.1.1.4, IntTnl =4 )

Parameters= tuple(status=up), level = length(NE) = 2, abstract = “interface Tunnel4 changed to up”, Influence =NULL )

Jun 13 18:10:11 77.1.1.4 Jun 13 18:00:01 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to down.

Jun 13 18:10:14 77.1.1.4 Jun 13 18:00:01 2020 S7503E %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Tunnel4 changed to down.

Jun 13 18:10:49 77.1.1.4 Jun 13 18:01:20 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to up.

Jun 13 18:10:51 77.1.1.4 Jun 13 18:01:20 2020 S7503E %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Tunnel4 changed to up.

Jun 13 18:12:32 77.1.1.4 Jun 13 18:01:34 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to down.

Jun 13 18:13:05 77.1.1.4 Jun 13 18:02:22 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to up.

Jun 13 18:13:07 77.1.1.4 Jun 13 18:02:22 2020 S7503E %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Tunnel4 changed to up.

Jun 13 18:13:55 77.1.1.4 Jun 13 18:03:25 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to up.

Jun 13 18:13:58 77.1.1.4 Jun 13 18:03:25 2020 S7503E %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Tunnel4 changed to up.

Jun 13 18:16:09 77.1.1.4 Jun 13 18:05:29 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to up.

Jun 13 18:16:11 77.1.1.4 Jun 13 18:05:29 2020 S7503E %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Tunnel4 changed to up.

Jun 13 18:17:04 77.1.1.4 Jun 13 18:06:31 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to up.

Jun 13 18:17:06 77.1.1.4 Jun 13 18:06:31 2020 S7503E %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Tunnel4 changed to up.

Jun 13 18:18:20 77.1.1.4 Jun 13 18:07:34 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to up.

Jun 13 18:18:22 77.1.1.4 Jun 13 18:07:34 2020 S7503E %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Tunnel4 changed to up.

Jun 13 18:19:24 77.1.1.4 Jun 13 18:08:37 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to up.

Jun 13 18:19:26 77.1.1.4 Jun 13 18:08:37 2020 S7503E %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Tunnel4 changed to up.

Jun 13 18:20:18 77.1.1.4 Jun 13 18:09:39 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to up.

Jun 13 18:20:21 77.1.1.4 Jun 13 18:09:39 2020 S7503E %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Tunnel4 changed to up.

Jun 13 18:21:22 77.1.1.4 Jun 13 18:10:41 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to up.

Jun 13 18:21:27 77.1.1.4 Jun 13 18:10:41 2020 S7503E %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Tunnel4 changed to up.

Jun 13 18:22:22 77.1.1.4 Jun 13 18:11:43 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to up.

Jun 13 18:22:24 77.1.1.4 Jun 13 18:11:43 2020 S7503E %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Tunnel4 changed to up.

Jun 13 18:23:29 77.1.1.4 Jun 13 18:12:46 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to up.

Jun 13 18:23:31 77.1.1.4 Jun 13 18:12:46 2020 S7503E %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Tunnel4 changed to up.

Jun 13 18:24:30 77.1.1.4 Jun 13 18:13:48 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to up.

Jun 13 18:24:32 77.1.1.4 Jun 13 18:13:48 2020 S7503E %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Tunnel4 changed to up.

Jun 13 18:25:13 77.1.1.4 Jun 13 18:14:16 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to down.

Jun 13 18:25:36 77.1.1.4 Jun 13 18:14:50 2020 S7503E %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Tunnel4 changed to up.

Derived Warn:

Jun 13 18:24:30 77.1.1.4 Jun 13 18:13:48 2020 S7503E %%10IFNET/3/ PHY\_UPDOWN\_Derive: Physical state on the interface Tunnel4 changed from down to up in a short time.

( =====>warn\_type = PHY\_UPDOWN\_Derive, NE = tuple ( device= 77.1.1.4, IntTnl =4 )

Parameters=NULL, level = length(NE) = 2, Abstract = “interface Tunnel4 occurs Down and UP”, Influence =NULL )

Jun 13 18:24:30 77.1.1.4 Jun 13 18:13:48 2020 S7503E %%10IFNET/3/ PHY\_FLAPPING\_Derive: Physical state on the interface Tunnel4 Flapping.

( =====>warn\_type = PHY\_FLAPPING\_Derive, NE = tuple ( device= 77.1.1.4, IntTnl =4 )

Parameters=NULL, level = length(NE) = 2, Abstract = “Physical state on the interface Tunnel4 Flapping”, Influence =“Interval interrupt on interface Tunnel4”)

父子规则 rule1: PHY\_UPDOWN(warn1) ----> LINK\_UPDOWN（warn2）,satisfy: warn1.NE== warn2.NE && Warn1.Para.status==Warn2. Para.status

衍生规则rule2: PHY\_UPDOWN(warn1)+ PHY\_UPDOWN(warn2) ----> PHY\_UPDOWN\_Derive(warn3),

satisfy: warn1.NE== warn2.NE==warn3.NE&& Warn1.Para.status==down && Warn2.Para.status==up, timerang=3S( warn2.time-warn1.time < 3S),

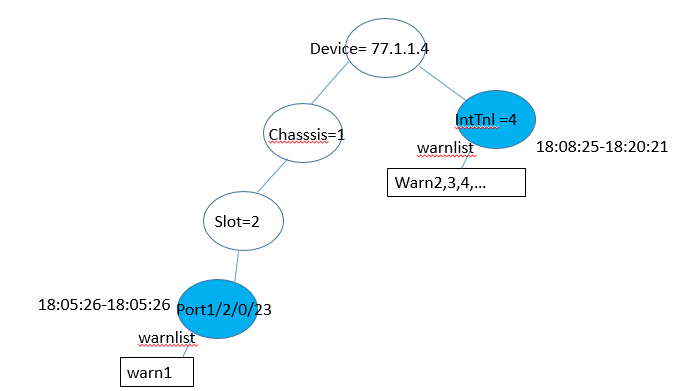
Derived: warn3.NE= warn1.NE, warn3.time=warn2.time

频次规则rule3: Seq(PHY\_UPDOWN\_Derive (warn1) ) -----> PHY\_FLAPPING\_Derive(warn2)

satisfy: length(Seq) >=3 && timerange(Seq) = (Seq.last.time -Seq.first.time) < 60S

Derived: warn2.NE= warn1.NE, warn2.time= time(Seq.first）

告警树：



得到关联结果为：

Jun 13 18:05:26 77.1.1.4 Jun 13 17:57:08 2020 S7503E %%10OPTMOD/4/PHONY\_MODULE: -Chassis=1-Slot=2; Ten-GigabitEthernet1/2/0/23: This transceiver is NOT sold by H3C. H3C therefore shall NOT guarantee the normal function of the device or assume the maintenance responsibility thereof!

Jun 13 18:08:25 77.1.1.4 Jun 13 17:59:34 2020 S7503E %%10IFNET/3/PHY\_FLAPPING: Physical state on the interface Tunnel4 Flapping.

聚合告警：

Device 77.1.1.4, From 18:05:26 to  18:25:36,  Event: transceiver on Ten-GigabitEthernet1/2/0/23 is NOT sold by H3C; Physical state on the interface Tunnel4 Flapping. Influence：Flow stability on Ten-GigabitEthernet1/2/0/23; Interval interrupt on interface Tunnel4.

故障处理： （如果Flapping触发故障处理）

故障根因： Ten-GigabitEthernet1/2/0/23: This transceiver is NOT sold by H3C （根据根因特征规则：承载关系：越是底层靠近硬件层的告警越有可能是根因告警）

影响结果： Flow stability on Ten-GigabitEthernet1/2/0/23; Interval interrupt on interface Tunnel4.

Demo4：Port down影响Vlan虚接口和ospf路由

Jun 11 20:18:22 177.17.17.7 Jun 11 20:17:54 2020 S125G2 %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface HundredGigE1/4/0/1 changed to down.

Jun 11 20:18:22 177.17.17.7 Jun 11 20:17:54 2020 S125G2 %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface11 changed to down.

Jun 11 20:18:22 177.17.17.7 Jun 11 20:17:54 2020 S125G2 %%10OSPF/6/OSPF\_LAST\_NBR\_DOWN: OSPF 1 Last neighbor down event: Router ID: 1.2.3.4 Local address: 11.1.1.3 Remote address: 11.1.1.1 Reason: Ospf\_ifachange.

( =====>warn\_type = OSPF\_LAST\_NBR\_DOWN, NE = tuple ( device= 177.17.17.7, route = ospf, ospf id =1 )

Parameters= tuple (Router ID=1.2.3.4, Local address= 11.1.1.3 Remote address=11.1.1.1, Reason=Ospf\_ifachange),

level = length(NE) = 3, abstract = “OSPF 1 Last neighbor down”, Influence =”OSPF neighbor down” )

Jun 11 20:18:22 177.17.17.7 Jun 11 20:17:54 2020 S125G2 %%10OSPF/5/OSPF\_NBR\_CHG\_REASON: OSPF 1 Area 0.0.0.0 Router 3.3.3.3(Vlan11) CPU usage: 4%, IfMTU: 1500, Neighbor address: 11.1.1.1, NbrID:1.2.3.4 changed from Full to DOWN because the interface went down or MTU changed at 2020-06-11 20:17:54:974. Last 4 hello packets received at: 2020-06-11 20:17:20:120 2020-06-11 20:17:30:120 2020-06-11 20:17:40:120 2020-06-11 20:17:50:120 Last 4 hello packets sent at: 2020-06-11 20:17:24:215 2020-06-11 20:17:34:215 2020-06-11 20:17:44:215 2020-06-11 20:17:54:215

( =====>warn\_type = OSPF\_NBR\_CHG\_REASON, NE = tuple ( device= 177.17.17.7, route = ospf, ospf id =1, Area=0.0.0.0 )

Parameters= tuple (Router =3.3.3.3, Neighbor address=11.1.1.1, NbrID=1.2.3.4, status=DOWN),

level = length(NE) =4, abstract = NULL, Influence =NULL )

Jun 11 20:18:22 177.17.17.7 Jun 11 20:17:54 2020 S125G2 %%10OSPF/5/OSPF\_NBR\_CHG: OSPF 1 Neighbor 11.1.1.1(Vlan-interface11) changed from FULL to DOWN.

( =====>warn\_type = OSPF\_NBR\_CHG, NE = tuple ( device= 177.17.17.7, route = ospf, ospf id =1 )

Parameters= tuple (Neighbor = 11.1.1.1, intVlan =11, status = DOWN),

level = length(NE) = 3, abstract = “OSPF 1 Neighbor 11.1.1.1(Vlan-interface11) down”, Influence =”OSPF neighbor down” )

Jun 11 20:18:22 177.17.17.7 Jun 11 20:17:54 2020 S125G2 %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface11 changed to down.

（===> warn\_type = LINK\_UPDOWN, NE = tuple (device= 177.17.17.7, int vlan =11) ）

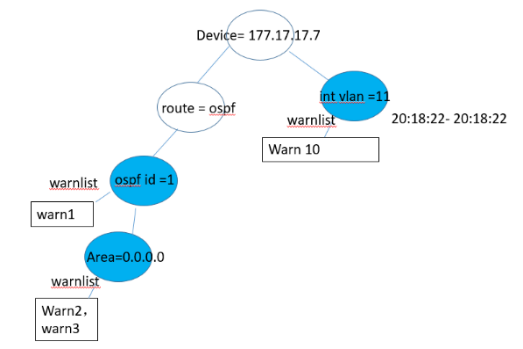
Parameters= tuple (status = DOWN), level = length(NE) = 2, abstract = “Vlan-interface11 down”, Influence =NULL )

父子规则 rule1: PHY\_UPDOWN(warn1) ----> LINK\_UPDOWN(warn2), satisfy: warn1.NE==warn2.NE

父子规则 rule2: LINK\_UPDOWN(warn1）----> OSPF\_NBR\_CHG(warn2) satisfy: warn1.NE.intvlan = =warn2. Parameters.intvlan

LINK\_UPDOWN(warn1）----> OSPF\_NBR\_CHG\_REASON (warn2)   satisfy: warn1.NE.intvlan = =warn2. Parameters.L3inf (add)

父子规则 rule3:  OSPF\_NBR\_CHG\_REASON (warn1) ----> OSPF\_NBR\_CHG (warn2),  satisfy: warn1. Parameters.neighbor == warn2. Parameters. Neighbor address (change direction)



根据设备IP = 177.17.17.7,将上述告警划为同一个告警组，应用上述规则，得到关联结果为：

Jun 11 20:18:22 177.17.17.7 Jun 11 20:17:54 2020 S125G2 %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface HundredGigE1/4/0/1 changed to down.

聚合告警：

Interface HundredGigE1/4/0/1 down, ospf 1 neighbor down.

Demo5：单板重启导致路由故障 & 风扇故障

%May 12 23:11:43:561 2020 12508 W DEV/2/BOARD\_STATE\_FAULT: -MDC=1; Board state changed to Fault on slot 2, type is LSXM1CGQ36TD1.

（===> warn\_type = BOARD\_STATE\_FAULT, NE = tuple (device=12508 W, chassis = 0, board =2) , Parameters= NULL, level = length(NE) = 3, abstract = “Slot 2 Fault”, Influence =NULL )

%May 12 23:11:43:567 2020 12508 W IFNET/3/PHY\_UPDOWN: -MDC=1; Physical state on the interface Vlan-interface4094 changed to down.

（===> warn\_type = PHY\_UPDOWN, NE = tuple (device=12508 W, int vlan =4094) , Parameters= tuple(status=down), level = length(NE) = 2, abstract = “Vlan-interface4094 down”, Influence =NULL )

%May 12 23:11:43:569 2020 12508 W OSPF/5/OSPF\_NBR\_CHG: -MDC=1; OSPF 1 Neighbor 222.1.1.2(Vlan-interface4094) changed from FULL to DOWN.

( =====>warn\_type = OSPF\_NBR\_CHG, NE = tuple ( device= 12508 W,, route = ospf, ospf id =1 )

Parameters= tuple (Neighbor = 11.1.1.1, intVlan =4094, status = DOWN),

level = length(NE) = 3, abstract = “OSPF 1 Neighbor down”, Influence =” OSPF Neighbor down” )

%May 12 23:11:43:571 2020 12508 W IFNET/5/LINK\_UPDOWN: -MDC=1; Line protocol state on the interface Vlan-interface4094 changed to down.

%May 12 23:11:43:572 2020 12508 W OSPFV3/5/OSPFv3\_NBR\_CHG: -MDC=1; OSPFv3 1 Neighbor 2.2.2.2(Vlan-interface4094) received KillNbr and its state from FULL to DOWN.

( =====>warn\_type = OSPFv3\_NBR\_CHG, NE = tuple ( device= 12508 W,, route = ospfv3, ospfv3 id =1 )

Parameters= tuple (Neighbor = 2.2.2.2, intVlan =4094, status = DOWN),

level = length(NE) = 3, abstract = “OSPFv3 1 Neighbor down”, Influence =” OSPFv3 Neighbor down” )

%May 12 23:11:43:572 2020 12508 W ISIS/5/ISIS\_NBR\_CHG: -MDC=1; IS-IS 1, Level-1 adjacency 0000.0000.0001 (Vlan-interface4094), state changed to DOWN, Reason: circuit data clean.

( =====>warn\_type = ISIS \_NBR\_CHG, NE = tuple ( device= 12508 W, route = isi, isis id =1 )

Parameters= tuple (Level-1 adjacency= 0000.0000.0001, intVlan =4094, status = DOWN, Reason=circuit data clean ),

level = length(NE) = 3, abstract = “ISIS 1 Neighbor down”, Influence =” ISIS Neighbor down” )

%May 12 23:11:43:572 2020 12508 W ISIS/5/ISIS\_NBR\_CHG: -MDC=1; IS-IS 1, Level-2 adjacency 0000.0000.0001 (Vlan-interface4094), state changed to DOWN, Reason: circuit data clean.

%May 12 23:11:52:004 2020 12508 W DEV/2/FAN\_FAILED: -MDC=1; Fan 1 failed.

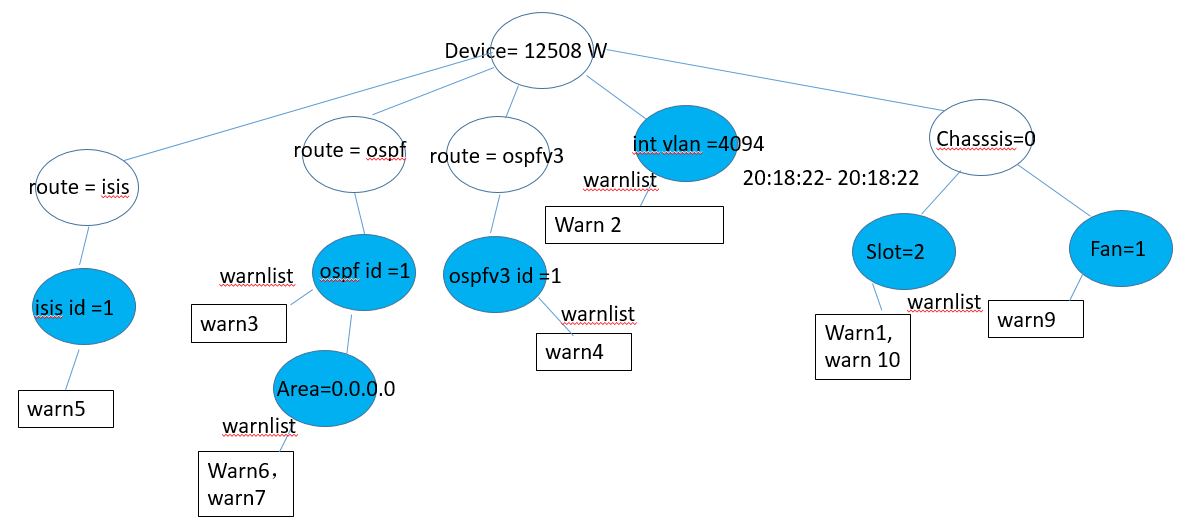
( warn\_type = FAN\_ABSENT, NE = tuple (device= 12508 W, chassis=0, Fan=1 )

Parameters=NULL, level = length(NE) = 3, abstract = “Fan 1 failed”, Influence =NULL )

%May 12 23:11:58:574 2020 12508 W DEV/5/BOARD\_REBOOT: -MDC=1; Board is rebooting on slot 2.

（===> warn\_type = BOARD\_REBOOT, NE = tuple (device=12508 W, chassis = 0, board =2), Parameters=NULL, level = length(NE) = 3, abstract = “Slot 2 Rebooting”, Influence =NULL ）

告警树为：



按网元硬划分：

告警组1： %May 12 23:11:52:004 2020 12508 W DEV/2/FAN\_FAILED: -MDC=1; Fan 1 failed.

告警组2：其他告警

父子规则 rule1: BOARD\_REBOOT (warn1)----> BOARD\_STATE\_FAULT（warn2） satisfy: warn1.NE== warn2.NE

父子规则 rule2: BOARD\_STATE\_FAULT(warn1) ----> PHY\_UPDOWN（warn2） satisfy: warn2.NE. intvlan = \*, 时间跨度小于1S( |PHY\_UPDOWN.ts - BOARD\_STATE\_FAULT.ts| < 1S )

父子规则 rule3: PHY\_UPDOWN（warn1） ----> LINK\_UPDOWN（warn2） satisfy: warn1.NE== warn2.NE

父子规则 rule3: LINK\_UPDOWN（warn1） ----> OSPF\_NBR\_CHG(warn2)，OSPFv3\_NBR\_CHG(warn3)，ISIS\_NBR\_CHG（warn4） satisfy: warn1.intvlan == warn2. Parameters .intvlan= warn3. Parameters .intvlan == warn4. Parameters .intvlan

得到关联结果为：

告警组1：

%May 12 23:11:52:004 2020 12508 W DEV/2/FAN\_FAILED: -MDC=1; Fan 1 failed.

告警组2：

%May 12 23:11:58:574 2020 12508 W DEV/5/BOARD\_REBOOT: -MDC=1; Board is rebooting on slot 2.

聚合告警：

告警组1：

%May 12 23:11:52:004 2020 12508 W DEV/2/FAN\_FAILED: -MDC=1; Fan 1 failed.

告警组2：

Slot 2 Rebooting，OSPF Neighbor DOWN, OSPFv3 Neighbor DOWN, IS-IS DOWN.

故障处理： （如果FAN\_FAILED触发风扇故障处理， OSPF\_NBR\_CHG/OSPFv3\_NBR\_CHG/ISIS\_NBR\_CHG触发路由故障处理 ）

风扇故障：

故障根因： %May 12 23:11:52:004 2020 12508 W DEV/2/FAN\_FAILED: -MDC=1; Fan 1 failed.

影响结果： 可能因散热不好，引起设备温度升高

路由故障：

故障根因： %May 12 23:11:58:574 2020 12508 W DEV/5/BOARD\_REBOOT: -MDC=1; Board is rebooting on slot 2.

影响结果： 对ospf ospv3, isis协议产生影响

Demo6：Mac地址漂移故障

如下信息， 分别属于两个时间窗：

时间窗1：

%May 13 17:08:45:691 2020 12508 W MAC/4/MAC\_NOTIFICATION: -MDC=1; MAC address 0000-0022-2234 in VLAN 2048 has moved from port XGE4/0/5:1 to port XGE4/0/5:2 for 1 times.

（===> warn\_type = MAC\_NOTIFICATION, NE = tuple (device=12508 W, vlan=2048) ，

Parameters= tuple (MAC address=0000-0022-2234, port1 = XGE4/0/5:1, port2 = XGE4/0/5:2),

level = length(NE) = 2, abstract = “MAC address 0000-0022-2234 move”, Influence =NULL )

%May 13 17:08:45:692 2020 12508 W MAC/4/MAC\_NOTIFICATION: -MDC=1; MAC address 0000-0022-224f in VLAN 2048 has moved from port XGE4/0/5:1 to port XGE4/0/5:2 for 1 times.

%May 13 17:08:45:692 2020 12508 W MAC/4/MAC\_NOTIFICATION: -MDC=1; MAC address 0000-0022-222b in VLAN 2048 has moved from port XGE4/0/5:1 to port XGE4/0/5:2 for 1 times.

%May 13 17:08:45:692 2020 12508 W MAC/4/MAC\_NOTIFICATION: -MDC=1; MAC address 0000-0022-222f in VLAN 2048 has moved from port XGE4/0/5:1 to port XGE4/0/5:2 for 1 times.

%May 13 17:08:45:692 2020 12508 W MAC/4/MAC\_NOTIFICATION: -MDC=1; MAC address 0000-0022-2231 in VLAN 2048 has moved from port XGE4/0/5:1 to port XGE4/0/5:2 for 1 times.

时间窗2：

%May 13 17:09:45:692 2020 12508 W MAC/4/MAC\_NOTIFICATION: -MDC=1; MAC address 0000-0022-2234 in VLAN 2048 has moved from port XGE4/0/5:1 to port XGE4/0/5:2 for 8 times.

%May 13 17:09:45:692 2020 12508 W MAC/4/MAC\_NOTIFICATION: -MDC=1; MAC address 0000-0022-222a in VLAN 2048 has moved from port XGE4/0/5:2 to port XGE4/0/5:1 for 7 times.

%May 13 17:09:45:692 2020 12508 W MAC/4/MAC\_NOTIFICATION: -MDC=1; MAC address 0000-0022-223f in VLAN 2048 has moved from port XGE4/0/5:1 to port XGE4/0/5:2 for 8 times.

%May 13 17:09:45:693 2020 12508 W MAC/4/MAC\_NOTIFICATION: -MDC=1; MAC address 0000-0022-2249 in VLAN 2048 has moved from port XGE4/0/5:1 to port XGE4/0/5:2 for 7 times.

%May 13 17:09:45:694 2020 12508 W MAC/4/MAC\_NOTIFICATION: -MDC=1; MAC address 0000-0022-224a in VLAN 2048 has moved from port XGE4/0/5:1 to port XGE4/0/5:2 for 7 times.

%May 13 17:09:45:694 2020 12508 W MAC/4/MAC\_NOTIFICATION: -MDC=1; MAC address 0000-0022-2250 in VLAN 2048 has moved from port XGE4/0/5:1 to port XGE4/0/5:2 for 7 times.

频次告警： 多次MAC\_NOTIFICATION(warn1) -----> MAC\_MOVE\_BATCH(warn2) satisfy: warn1.NE == warn2.NE && warn1.parameters.port1== warn2.parameters.port1 && warn1.parameters.port2== warn2.parameters.port2

时间窗1： %May 13 17:08:45:691 2020 12508 W MAC/4/ MAC\_MOVE\_BATCH: -MDC=1; Many MAC addresses has moved from port XGE4/0/5:1 to port XGE4/0/5:2.

abstract = “Many MAC addresses has moved from port XGE4/0/5:1 to port XGE4/0/5:2”, Influence =NULL

时间窗2：%May 13 17:09:45:692 2020 12508 W MAC/4/ MAC\_MOVE\_BATCH: -MDC=1; Many MAC addresses has moved from port XGE4/0/5:1 to port XGE4/0/5:2.

聚合告警： 同上

故障处理： （如果MAC\_MOVE\_BATCH触发“疑似报文攻击”故障处理）

疑似报文攻击故障：

故障根因： Many MAC addresses has moved from port XGE4/0/5:1 to port XGE4/0/5:2.

影响结果：

Demo7：Port Down，导致Mlagg本地聚合接口Down

Jun 16 10:39:45 100.11.1.35 Jun 16 10:42:17 2020 S7503X %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Ten-GigabitEthernet3/0/26 changed to down.

Jun 16 10:39:47 100.11.1.35 Jun 16 10:42:17 2020 S7503X %%10LAGG/6/LAGG\_INACTIVE\_OTHER: Member port XGE3/0/26 of aggregation group BAGG40 changed to the inactive state, because other reason.

( =====>warn\_type = LAGG\_INACTIVE\_OTHER,  NE = tuple ( device= 100.11.1.35, aggregation group = Bridge-Aggregation40 )

  Parameters={ MemberPort = XGE3/0/26, Status = inactive }, level = length(NE) = 2, Abstract=NULL, Affectation=NULL)

Jun 16 10:39:48 100.11.1.35 Jun 16 10:42:17 2020 S7503X %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Ten-GigabitEthernet3/0/26 changed to down.

Jun 16 10:39:50 100.11.1.35 Jun 16 10:42:17 2020 S7503X %%10DRNI/6/DRNI\_IFEVENT\_DR\_NOSELECTED: Local DR interface Bridge-Aggregation40 in DR group 40 does not have Selected member ports because the aggregate interface went down. Please check the aggregate link status.

( =====>warn\_type = DRNI\_IFEVENT\_BAGG\_DR\_NOSELECTED,  NE = tuple ( device= 100.11.1.35, Local DR interface = Bridge-Aggregation40 )

  Parameters={ DR group =40, Status = inactive }, level = length(NE) = 2, Abstract=”Local DR interface Bridge-Aggregation40 in DR group 40 does not have Selected member ports”, Affectation=” interface Bridge-Aggregation40 changed to inactive”)

父子规则 rule1:    LINK\_UPDOWN (warn1) ----> LAGG\_INACTIVE\_OTHER（warn2）,satisfy: warn1.NE.device == warn2.NE.device && Warn1.NE.port ==Warn2. Para. MemberPort（这里，一个是XGE3/0/26，一个是Ten-GigabitEthernet3/0/26） && Warn1. Para.status == Warn2. Para.status  （这里经过解析warn1的status值为inactive，warn2的status值为down）

rule2:    LAGG\_INACTIVE\_OTHER (warn1) ----> DRNI\_IFEVENT\_BAGG\_DR\_NOSELECTED (warn2),  satisfy: warn1.NE.device == warn2.NE.device && warn1.NE. aggregation group == warn2.NE. Local DR interface && Warn1.Para.status== Warn2.Para.status== down && timerang=4S( warn2.time-warn1.time < 4S),

父子规则 rule1:    LINK\_UPDOWN (warn1) ----> LAGG\_INACTIVE\_OTHER（warn2）,satisfy: warn1.NE.device == warn2.NE.device && Warn1.NE.port ==Warn2. Para. MemberPort（这里，一个是XGE3/0/26，一个是Ten-GigabitEthernet3/0/26） && Warn1. Para.status == Warn2. Para.status  （这里经过解析warn1的status值为inactive，warn2的status值为down）

MemberPort = XGE3/0/26 ----- 能否把这个修改为  Ten-GigabitEthernet3/0/26？   即再加一个处理，将XGE 替换Ten-GigabitEthernet

Warn1. Para.status == Warn2. Para.status  ====》  （ Warn1. Para.status == inactive &&    Warn2. Para.status == down  ）

rule2:    LAGG\_INACTIVE\_OTHER (warn1) ----> DRNI\_IFEVENT\_BAGG\_DR\_NOSELECTED (warn2),  satisfy: warn1.NE.device == warn2.NE.device && warn1.NE. aggregation group == warn2.NE. Local DR interface && Warn1.Para.status== Warn2.Para.status== down && timerang=4S( warn2.time-warn1.time < 3S),

=====》 warn2.time-warn1.time < 4S

Demo8：HA\_STANDBY\_TO\_MASTER

{"timestamp":"2020-08-14T00:20:48+08:00","message":"<173>Aug 14 00:20:48 2020 7506X-G %%10DEV/5/BOARD\_REBOOT: Board is rebooting on slot 3.","host":"77.1.1.41"}

{"timestamp":"2020-08-14T00:20:53+08:00","message":"<173>Aug 14 00:20:53 2020 7506X-G %%10HA/5/HA\_STANDBY\_TO\_MASTER: Standby board in slot 4 changed to master.","host":"77.1.1.41"}

( =====>warn\_type = HA\_STANDBY\_TO\_MASTER,  NE = tuple ( device= 77.1.1.41, chassis = 0, slot =4 )

  Parameters= NULL, level = length(NE) = 2, Abstract=” Standby board in slot 4 changed to master”, Affectation=”Master change”)

{"timestamp":"2020-08-14T00:21:00+08:00","message":"<170>Aug 14 00:21:00 2020 7506X-G %%10DEV/2/BOARD\_STATE\_FAULT: Board state changed to Fault on slot 3, type is LSCM1MPUS06A0.","host":"77.1.1.41"}

父子规则 rule1:    BOARD\_STATE\_FAULT (warn1)----> HA\_STANDBY\_TO\_MASTER（warn2）  satisfy:  warn1.NE.device == warn2.NE.device， isMaster(warn1.NE.slot) == TURE

isMaster ~ 函数，判断slot是否设备的Master单板，这里你们先假设此函数是ready的即可。

Demo9：BFD 状态闪断

{"timestamp":"2020-08-14T00:41:30+08:00","message":"<173>Aug 14 00:41:30 2020 7506X-G %%10BFD/5/BFD\_CHANGE\_FSM: Sess[21.2.1.1/21.2.1.2, LD/RD:4128/4119, Interface:Vlan202, SessType:Ctrl, LinkType:INET], Ver:1, Sta: UP->DOWN, Diag: 3 (No Diagnostic)","host":"77.1.1.41"}

( =====>warn\_type = BFD\_CHANGE\_FSM,  NE = tuple ( device= 77.1.1.41, session = 21.2.1.1/21.2.1.2 )

  Parameters= { LD/RD=4128/4119, Interface:Vlan202, SessType=Ctrl, LinkType=INET, status = DOWN }, level = length(NE) = 2, Abstract=”BFD Session[21.2.1.1/21.2.1.2] change from up to down ”, Affectation=NULL)

{"timestamp":"2020-08-14T00:41:39+08:00","message":"<173>Aug 14 00:41:39 2020 7506X-G %%10BFD/5/BFD\_CHANGE\_FSM: Sess[21.2.1.1/21.2.1.2, LD/RD:4128/4119, Interface:Vlan202, SessType:Ctrl, LinkType:INET], Ver:1, Sta: DOWN->INIT, Diag: 0 (No Diagnostic)","host":"77.1.1.41"}

{"timestamp":"2020-08-14T00:41:39+08:00","message":"<173>Aug 14 00:41:39 2020 7506X-G %%10BFD/5/BFD\_CHANGE\_FSM: Sess[21.2.1.1/21.2.1.2, LD/RD:4128/4119, Interface:Vlan202, SessType:Ctrl, LinkType:INET], Ver:1, Sta: INIT->UP, Diag: 0 (No Diagnostic)","host":"77.1.1.41"}

Derived Warn:

Aug 14 00:41:39 2020 7506X-G %%10BFD/5/BFD\_CHANGE\_FSM\_DOWNUP\_Derive: Sess[21.2.1.1/21.2.1.2, LD/RD:4128/4119, Interface:Vlan202, SessType:Ctrl, LinkType:INET], occurs Down and UP

( =====>warn\_type = BFD\_CHANGE\_FSM\_DOWNUP\_Derive,  NE = tuple ( device= 77.1.1.41, session = 21.2.1.1/21.2.1.2 )

  Parameters= { LD/RD=4128/4119, Interface:Vlan202, SessType=Ctrl, LinkType=INET }, level = length(NE) = 2, Abstract=”BFD Session[21.2.1.1/21.2.1.2]  occurs Down and UP ”, Affectation=NULL)

Aug 14 00:41:39 2020 7506X-G %%10BFD/5/BFD\_CHANGE\_FSM\_UP\_Derive: Sess[21.2.1.1/21.2.1.2, LD/RD:4128/4119, Interface:Vlan202, SessType:Ctrl, LinkType:INET], change from Down to UP

( =====>warn\_type = BFD\_CHANGE\_FSM\_UP\_Derive,  NE = tuple ( device= 77.1.1.41, session = 21.2.1.1/21.2.1.2 )

  Parameters= { LD/RD=4128/4119, Interface:Vlan202, SessType=Ctrl, LinkType=INET }, level = length(NE) = 2, Abstract=”BFD Session[21.2.1.1/21.2.1.2]  change from Down to UP ”, Affectation=NULL)

Derived rule:

BFD\_CHANGE\_FSM (warn1), BFD\_CHANGE\_FSM(warn2) ----> BFD\_CHANGE\_FSM\_UP\_Derive（warn3）  satisfy:  warn1.NE == warn2.NE==warn3.NE && warn1.Para.status == INIT && warn2.Para.status == UP

BFD\_CHANGE\_FSM (warn1), BFD\_CHANGE\_FSM\_UP\_Derive（warn2） ----> BFD\_CHANGE\_FSM\_DOWNUP\_Derive（warn3）  satisfy:  warn1.NE == warn2.NE==warn3.NE && warn1.Para.status == DOWN

Demo10：shutdown接口导致路由邻居down

{"timestamp":"2020-08-15T23:59:23+08:00","message":"<174>Aug 15 23:59:23 2020 7506X-G %%10SHELL/6/SHELL\_CMD: -Line=vty0-IPAddr=77.1.1.253-User=\*\*; Command is inter ra g1/0/17 te2/0/13 te2/0/36 te6/0/13 te6/0/35","host":"77.1.1.41"}

{"timestamp":"2020-08-15T23:59:24+08:00","message":"<174>Aug 15 23:59:24 2020 7506X-G %%10SHELL/6/SHELL\_CMD: -Line=vty0-IPAddr=77.1.1.253-User=\*\*; Command is shutdown","host":"77.1.1.41"}

{"timestamp":"2020-08-15T23:59:25+08:00","message":"<171>Aug 15 23:59:25 2020 7506X-G %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface GigabitEthernet1/0/17 changed to down.","host":"77.1.1.41"}

{"timestamp":"2020-08-15T23:59:25+08:00","message":"<173>Aug 15 23:59:25 2020 7506X-G %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface GigabitEthernet1/0/17 changed to down.","host":"77.1.1.41"}

{"timestamp":"2020-08-15T23:59:25+08:00","message":"<171>Aug 15 23:59:25 2020 7506X-G %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface200 changed to down.","host":"77.1.1.41"}

{"timestamp":"2020-08-15T23:59:25+08:00","message":"<173>Aug 15 23:59:25 2020 7506X-G %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface200 changed to down.","host":"77.1.1.41"}

{"timestamp":"2020-08-15T23:59:25+08:00","message":"<173>Aug 15 23:59:25 2020 7506X-G %%10PIM/5/PIM\_NBR\_DOWN: Neighbor 21.0.1.2(Vlan-interface200) is down.","host":"77.1.1.41"}

( =====>warn\_type = PIM\_NBR\_DOWN,  NE = tuple ( device= 77.1.1.41, route=PIM)

  Parameters= { Neighbor = 21.0.1.2, L3Inf = Vlan-interface200 , status=down},  level = length(NE) = 3, Abstract=”PIM Neighbor 21.0.1.2(Vlan-interface200) is down ”, Affectation=NULL)

{"timestamp":"2020-08-15T23:59:25+08:00","message":"<173>Aug 15 23:59:25 2020 7506X-G %%10ISIS/5/ISIS\_NBR\_CHG: IS-IS 1, Level-2 adjacency 0000.0000.0003 (Vlan-interface200), state changed to DOWN, Reason: circuit data clean.","host":"77.1.1.41"}

{"timestamp":"2020-08-15T23:59:25+08:00","message":"<173>Aug 15 23:59:25 2020 7506X-G %%10ISIS/5/ISIS\_NBR\_CHG: IS-IS 5, Level-2 adjacency 0000.0000.0003 (Vlan-interface200), state changed to DOWN, Reason: circuit data clean.","host":"77.1.1.41"}

{"timestamp":"2020-08-15T23:59:25+08:00","message":"<173>Aug 15 23:59:25 2020 7506X-G %%10ISIS/5/ISIS\_NBR\_CHG: IS-IS 6, Level-2 adjacency 0000.0000.0003 (Vlan-interface200), state changed to DOWN, Reason: circuit data clean.","host":"77.1.1.41"}

{"timestamp":"2020-08-15T23:59:25+08:00","message":"<173>Aug 15 23:59:25 2020 7506X-G %%10ISIS/5/ISIS\_NBR\_CHG: IS-IS 7, Level-2 adjacency 0000.0000.0003 (Vlan-interface200), state changed to DOWN, Reason: circuit data clean.","host":"77.1.1.41"}

{"timestamp":"2020-08-15T23:59:25+08:00","message":"<173>Aug 15 23:59:25 2020 7506X-G %%10ISIS/5/ISIS\_NBR\_CHG: IS-IS 10, Level-2 adjacency 0000.0000.0003 (Vlan-interface200), state changed to DOWN, Reason: circuit data clean.","host":"77.1.1.41"}

{"timestamp":"2020-08-15T23:59:25+08:00","message":"<174>Aug 15 23:59:25 2020 7506X-G %%10OSPFV3/6/OSPFv3\_LAST\_NBR\_DOWN: OSPFv3 1 Last neighbor down event: Router ID: 3.1.1.1  Local interface ID: 3492  Remote interface ID: 658  Reason: Ospfv3 ifachange.","host":"77.1.1.41"}

( =====>warn\_type = OSPFv3\_LAST\_NBR\_DOWN,  NE = tuple ( device= 77.1.1.41, route = ospfv3,  ospfv3 id =1 )

  Parameters= tuple (Neighbor = 3.1.1.1, Local interface ID = 3492  Remote interface ID= 658),

level = length(NE) = 3, abstract = NULL, Influence =NULL )

{"timestamp":"2020-08-15T23:59:25+08:00","message":"<173>Aug 15 23:59:25 2020 7506X-G %%10OSPFV3/5/OSPFv3\_NBR\_CHG: OSPFv3 1 Neighbor 3.1.1.1(Vlan-interface200) received KillNbr and its state from INIT to DOWN.","host":"77.1.1.41"}

父子告警:

OSPFv3\_NBR\_CHG (warn1) ----> OSPFv3\_LAST\_NBR\_DOWN（warn2）  satisfy:  warn1.NE == warn2.NE  && warn1.Para. Neighbor == warn2.Para. Neighbor

 IFNET\_INTVLAN\_LINK\_UPDOWN (warn1)  ----> PIM\_NBR\_DOWN (warn2)  satisfy:  warn1.intvlan == warn2. Parameters . L3Inf

Demo11：端口down导致LAGG聚合及STP拓扑变化

{"timestamp":"2020-08-16T00:02:01+08:00","message":"<174>Aug 16 00:02:01 2020 5560X\_2 %%10LLDP/6/LLDP\_DELETE\_NEIGHBOR: -Slot=1; Nearest bridge agent neighbor deleted on port Ten-GigabitEthernet1/1/1 (IfIndex 53), neighbor's chassis ID is 0000-fc00-eab1, port ID is Ten-GigabitEthernet6/0/13.","host":"77.1.1.43"}

( =====>warn\_type = LLDP\_DELETE\_NEIGHBOR,  NE = tuple ( device= 77.1.1.43, chassis=0，slot =1,  port = Ten-GigabitEthernet1/1/1 ),

  Parameters= tuple (IfIndex = 53,Neighbor chassis ID = 0000-fc00-eab1, Neighbor port ID = Ten-GigabitEthernet6/0/13),

level = length(NE) = 4, abstract = “LLDP Neighbor deleted on Ten-GigabitEthernet1/1/1 ”, Influence =NULL )

{"timestamp":"2020-08-16T00:02:02+08:00","message":"<174>Aug 16 00:02:02 2020 5560X\_2 %%10STP/6/STP\_NOTIFIED\_TC: Instance 0's port Bridge-Aggregation3 was notified a topology change.","host":"77.1.1.43"}

( =====>warn\_type = STP\_NOTIFIED\_TC,  NE = tuple ( device= 77.1.1.43, Instance =0，port = Bridge-Aggregation3 ),

  Parameters= NULL,  level = length(NE) = 3, abstract = “STP topology change on Instance 0’s Bridge-Aggregation3”, Influence =NULL )

{"timestamp":"2020-08-16T00:02:02+08:00","message":"<171>Aug 16 00:02:02 2020 5560X\_2 %%10IFNET/3/PHY\_UPDOWN: Physical state on the interface Ten-GigabitEthernet1/1/1 changed to down.","host":"77.1.1.43"}

{"timestamp":"2020-08-16T00:02:02+08:00","message":"<174>Aug 16 00:02:02 2020 5560X\_2 %%10LAGG/6/LAGG\_INACTIVE\_PHYSTATE: Member port XGE1/1/1 of aggregation group BAGG3 changed to the inactive state, because the physical or line protocol state of the port was down.","host":"77.1.1.43"}

( =====>warn\_type = LAGG\_INACTIVE\_PHYSTATE,  NE = tuple ( device= 77.1.1.43, port = Bridge-Aggregation3 ),

  Parameters= (Member port = XGE1/1/1),  level = length(NE) = 2, abstract = “Member port XGE1/1/1 of aggregation group BAGG3 changed to the inactive state”, Influence =NULL )

{"timestamp":"2020-08-16T00:02:02+08:00","message":"<173>Aug 16 00:02:02 2020 5560X\_2 %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Ten-GigabitEthernet1/1/1 changed to down.","host":"77.1.1.43"}

规则：

LINK\_UPDOWN (warn1) ----> LAGG\_INACTIVE\_PHYSTATE（warn2）  satisfy:  warn1.NE.device == warn2.NE.device  && warn1.NE.port == warn2.Para. Member port

LAGG\_INACTIVE\_PHYSTATE (warn1) ----> STP\_NOTIFIED\_TC（warn2） satisfy:  warn1.NE.device == warn2.NE.device  && warn1.NE.port == warn2.Para. port

LINK\_UPDOWN (warn1) ----> LLDP\_DELETE\_NEIGHBOR（warn2）  satisfy:  warn1.NE == warn2.NE  && warn1.Para.stauts == Down

Demo 12  STP Topo change Flapping

[2020/10/12 15:32:44] %Jan  1 05:42:22:218 2011 stp21 STP/6/STP\_DISCARDING: Instance 0's port Ten-GigabitEthernet3/0/49 has been set to discarding state.

( =====>warn\_type = STP\_DISCARDING,  NE = tuple ( device= stp21, Instance =0，port = Ten-GigabitEthernet3/0/49 ),

  Parameters= NULL,  level = length(NE) = 3, abstract = “STP topology change on Instance 0’s Ten-GigabitEthernet3/0/49 to discarding state”, Influence =NULL )

[2020/10/12 15:33:06] %Jan  1 05:42:22:219 2011 stp21 STP/6/STP\_FORWARDING: Instance 0's port GigabitEthernet3/0/1 has been set to forwarding state.

( =====>warn\_type = STP\_ FORWARDING,  NE = tuple ( device= stp21, Instance =0，port = Ten-GigabitEthernet3/0/49 ),

  Parameters= NULL,  level = length(NE) = 3, abstract = “STP topology change on Instance 0’s Ten-GigabitEthernet3/0/49 to forwarding state”, Influence =NULL )

[2020/10/12 15:33:06] %Jan  1 05:42:22:219 2011 stp21 STP/6/STP\_DETECTED\_TC: Instance 0's port GigabitEthernet3/0/1 detected a topology change.

[2020/10/12 15:33:06] %Jan  1 05:42:22:220 2011 stp21 STP/6/STP\_FORWARDING: Instance 0's port GigabitEthernet3/0/25 has been set to forwarding state.

[2020/10/12 15:33:06] %Jan  1 05:42:22:220 2011 stp21 STP/6/STP\_DETECTED\_TC: Instance 0's port GigabitEthernet3/0/25 detected a topology change.

[2020/10/12 15:33:06] %Jan  1 05:42:22:220 2011 stp21 STP/4/STP\_DISPUTE: Instance  0's port Ten-GigabitEthernet3/0/49 received an inferior BPDU from a designated port which is in forwarding or learning state.

( =====>warn\_type = STP\_DISPUTE,  NE = tuple ( device= stp21, Instance =0，port = Ten-GigabitEthernet3/0/49 ),

  Parameters= NULL,  level = length(NE) = 3, abstract = “STP topology change on Instance 0’s Ten-GigabitEthernet3/0/49 received an inferior BPDU”, Influence =NULL )

[2020/10/12 15:33:06] %Jan  1 05:42:22:225 2011 stp21 STP/6/STP\_FORWARDING: Instance 0's port Ten-GigabitEthernet3/0/49 has been set to forwarding state.

[2020/10/12 15:33:06] %Jan  1 05:42:27:267 2011 stp21 STP/6/STP\_DISCARDING: Instance 0's port GigabitEthernet3/0/25 has been set to discarding state.

[2020/10/12 15:33:11] %Jan  1 05:42:27:269 2011 stp21 STP/6/STP\_DISCARDING: Instance 0's port Ten-GigabitEthernet3/0/49 has been set to discarding state.

[2020/10/12 15:33:11] %Jan  1 05:42:27:273 2011 stp21 STP/6/STP\_DISCARDING: Instance 0's port GigabitEthernet3/0/1 has been set to discarding state.

[2020/10/12 15:33:11] %Jan  1 05:42:27:274 2011 stp21 STP/6/STP\_FORWARDING: Instance 0's port Ten-GigabitEthernet3/0/49 has been set to forwarding state.

[2020/10/12 15:33:11] %Jan  1 05:42:27:282 2011 stp21 STP/6/STP\_NOTIFIED\_TC: Instance 0's port Ten-GigabitEthernet3/0/49 was notified a topology change.

( =====>warn\_type = STP\_NOTIFIED\_TC,  NE = tuple ( device= stp21, Instance =0，port = Ten-GigabitEthernet3/0/49 ),

  Parameters= NULL,  level = length(NE) = 3, abstract = “STP topology change on Instance 0’s Ten-GigabitEthernet3/0/49”, Influence =NULL )

[2020/10/12 15:33:11] %Jan  1 05:42:29:825 2011 stp21 STP/6/STP\_NOTIFIED\_TC: Instance 0's port Ten-GigabitEthernet3/0/49 was notified a topology change.

[2020/10/12 15:33:14] %Jan  1 05:43:35:296 2011 stp21 STP/6/STP\_DISCARDING: Instance 0's port Ten-GigabitEthernet3/0/49 has been set to discarding state.

[2020/10/12 15:34:19] %Jan  1 05:43:35:297 2011 stp21 STP/6/STP\_FORWARDING: Instance 0's port GigabitEthernet3/0/1 has been set to forwarding state.

[2020/10/12 15:34:19] %Jan  1 05:43:35:297 2011 stp21 STP/6/STP\_DETECTED\_TC: Instance 0's port GigabitEthernet3/0/1 detected a topology change.

[2020/10/12 15:34:19] %Jan  1 05:43:35:298 2011 stp21 STP/6/STP\_FORWARDING: Instance 0's port GigabitEthernet3/0/25 has been set to forwarding state.

[2020/10/12 15:34:19] %Jan  1 05:43:35:298 2011 stp21 STP/6/STP\_DETECTED\_TC: Instance 0's port GigabitEthernet3/0/25 detected a topology change.

[2020/10/12 15:34:19] %Jan  1 05:43:35:298 2011 stp21 STP/4/STP\_DISPUTE: Instance  0's port Ten-GigabitEthernet3/0/49 received an inferior BPDU from a designated port which is in forwarding or learning state.

[2020/10/12 15:34:19] %Jan  1 05:43:35:302 2011 stp21 STP/6/STP\_FORWARDING: Instance 0's port Ten-GigabitEthernet3/0/49 has been set to forwarding state.

[2020/10/12 15:34:19] %Jan  1 05:43:40:266 2011 stp21 STP/6/STP\_DISCARDING: Instance 0's port GigabitEthernet3/0/25 has been set to discarding state.

[2020/10/12 15:34:24] %Jan  1 05:43:40:268 2011 stp21 STP/6/STP\_DISCARDING: Instance 0's port Ten-GigabitEthernet3/0/49 has been set to discarding state.

[2020/10/12 15:34:24] %Jan  1 05:43:40:269 2011 stp21 STP/6/STP\_DISCARDING: Instance 0's port GigabitEthernet3/0/1 has been set to discarding state.

[2020/10/12 15:34:24] %Jan  1 05:43:40:270 2011 stp21 STP/6/STP\_FORWARDING: Instance 0's port Ten-GigabitEthernet3/0/49 has been set to forwarding state.

[2020/10/12 15:34:24] %Jan  1 05:43:40:274 2011 stp21 STP/6/STP\_NOTIFIED\_TC: Instance 0's port Ten-GigabitEthernet3/0/49 was notified a topology change.

[2020/10/12 15:34:24] %Jan  1 05:43:42:829 2011 stp21 STP/6/STP\_NOTIFIED\_TC: Instance 0's port Ten-GigabitEthernet3/0/49 was notified a topology change.

Derived warn：

[2020/10/12 15:33:11] %Jan  1 05:42:27:282 2011 stp21 STP/6/STP\_NOTIFIED\_TC\_FLAPPING: Instance 0's port Ten-GigabitEthernet3/0/49 topology change Frequently.

( =====>warn\_type = STP\_NOTIFIED\_TC\_ FLAPPING,  NE = tuple ( device= stp21, Instance =0，port = Ten-GigabitEthernet3/0/49 ),

  Parameters= NULL,  level = length(NE) = 3, abstract = “STP state on Instance 0’s Ten-GigabitEthernet3/0/49 Flapping”, Influence =NULL )

[2020/10/12 15:33:11] %Jan  1 05:42:27:282 2011 stp21 STP/6/STP\_NOTIFIED\_TC\_STATESHAKE: Instance 0's port Ten-GigabitEthernet3/0/49 topology change Frequently.

( =====>warn\_type = STP\_NOTIFIED\_TC\_ STATESHAKE,  NE = tuple ( device= stp21, Instance =0，port = Ten-GigabitEthernet3/0/49 ),

  Parameters= NULL,  level = length(NE) = 3, abstract = “STP state shake on Instance 0’s Ten-GigabitEthernet3/0/49 ”, Influence =NULL )

规则：

父子： STP\_DISPUTE (warn1) ----> STP\_NOTIFIED\_TC（warn2）  satisfy:  warn1.NE == warn2.NE

衍生： STP\_DISCARDING(warn1) + STP\_FORWARDING(warn2) ----> STP\_NOTIFIED\_TC\_ STATESHAKE(warn3) satisfy: warn1.NE == warn2.NE == warn3.NE

频次:   Seq(STP\_NOTIFIED\_TC\_ STATESHAKE (warn1) ) -----> STP\_NOTIFIED\_TC\_ FLAPPING (warn2)

satisfy: length(Seq) >=3 &&  timerange(Seq) = (Seq.last.time -Seq.first.time) < 90S

Derived:  warn2.NE= warn1.NE

Demo 13  DLDP导致端口Link状态变化

%Aug  7 11:13:33:621 2020 s58-2-1 DLDP/3/DLDP\_LINK\_UNIDIRECTIONAL: DLDP detected a unidirectional link on interface Ten-GigabitEthernet1/0/51. DLDP automatically blocked the interface.

( =====>warn\_type = DLDP\_LINK\_UNIDIRECTIONAL,  NE = tuple ( device= s58-2-1, chassis=0, slot=1, port= Ten-GigabitEthernet1/0/51 ),

  Parameters= NULL,  level = length(NE) =4, abstract = “DLDP detected a unidirectional link on interface Ten-GigabitEthernet1/0/51 ”, Influence =NULL )

%Aug  7 11:13:33:624 2020 s58-2-1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Ten-GigabitEthernet1/0/51 changed to down.

%Aug  7 11:13:33:627 2020 s58-2-1 DLDP/6/DLDP\_NEIGHBOR\_CONFIRMED: A neighbor was confirmed on interface Ten-GigabitEthernet1/0/51. The neighbor's system MAC is fc60-9b59-2fe8, and the port index is 1.

( =====>warn\_type = DLDP\_NEIGHBOR\_CONFIRMED,  NE = tuple ( device= s58-2-1, chassis=0, slot=1, port= Ten-GigabitEthernet1/0/51 ),

  Parameters= tuple (neighbor's system MAC= fc60-9b59-2fe8, port index = 1),  level = length(NE) =4, abstract = “A neighbor was confirmed on interface Ten-GigabitEthernet1/0/51 ”, Influence =NULL )

%Aug  7 11:13:33:628 2020 s58-2-1 DLDP/6/DLDP\_LINK\_BIDIRECTIONAL: DLDP detected a bidirectional link on interface Ten-GigabitEthernet1/0/51.

( =====>warn\_type = DLDP\_LINK\_BIDIRECTIONAL,  NE = tuple ( device= s58-2-1, chassis=0, slot=1, port= Ten-GigabitEthernet1/0/51 ),

  Parameters= NULL,  level = length(NE) =4, abstract = “DLDP detected a directional link on interface Ten-GigabitEthernet1/0/51 ”, Influence =NULL )

%Aug  7 11:13:33:633 2020 s58-2-1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Ten-GigabitEthernet1/0/51 changed to up.

规则：

父子： DLDP\_LINK\_UNIDIRECTIONAL (warn1) ----> LINK\_UPDOWN（warn2）  satisfy:  warn1.NE == warn2.NE，warn2.para.status=down,  timerange =2S

       DLDP\_NEIGHBOR\_CONFIRMED (warn1) ----> DLDP\_LINK\_BIDIRECTIONAL（warn2）  satisfy:  warn1.NE == warn2.NE ， timerange =2S

       DLDP\_LINK\_BIDIRECTIONAL (warn1) ----> LINK\_UPDOWN（warn2）  satisfy:  warn1.NE == warn2.NE ，warn2.para.status=up, timerange =2S

Demo 14  DLDP导致端口Link状态变化

Jun 17 11:32:45 77.1.1.41 Jun 17 11:32:45 2020 7506X-G %%10DLDP/3/DLDP\_LINK\_UNIDIRECTIONAL: DLDP detected a unidirectional link on interface Ten-GigabitEthernet1/0/51. DLDP automatically blocked the interface.  
Jun 17 11:32:45 77.1.1.41 Jun 17 11:32:45 2020 7506X-G %%10IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Ten-GigabitEthernet1/0/51 changed to down.

%Aug  7 11:16:04:462 2020 s58-2-1 OSPF/5/OSPF\_NBR\_CHG\_REASON: OSPF 1 Area 0.0.0.0 Router 11.11.11.1(XGE1/0/51) CPU usage: 25.46%, IfMTU: 1500, Neighbor address: 1.1.1.1, NbrID:5.5.5.1 changed from Full to INIT because a 1-way hello packet was received at 2020-08-07 11:16:04:462.

%Aug  7 11:16:04:463 2020 s58-2-1 OSPF/5/OSPF\_NBR\_CHG: OSPF 1 Neighbor 1.1.1.1(Ten-GigabitEthernet1/0/51) changed from FULL to INIT.

%Aug  7 11:16:44:689 2020 s58-2-1 OSPF/5/OSPF\_NBR\_CHG\_REASON: OSPF 1 Area 0.0.0.0 Router 11.11.11.1(XGE1/0/51) CPU usage: 25.9%, IfMTU: 1500, Neighbor address: 1.1.1.1, NbrID:5.5.5.1 changed from Init to DOWN because the dead timer expired at 2020-08-07 11:16:44:689.

%Aug  7 11:16:44:689 2020 s58-2-1 OSPF/5/OSPF\_NBR\_CHG: OSPF 1 Neighbor 1.1.1.1(Ten-GigabitEthernet1/0/51) changed from INIT to DOWN.

DLDP\_LINK\_UNIDIRECTIONAL -> OSPF\_NBR\_CHG\_REASON(init)

PORT\_LINK\_UPDOWN(down) -> OSPF\_NBR\_CHG\_REASON(init)

OSPF\_NBR\_CHG\_REASON(init) -> OSPF\_NBR\_CHG\_REASON(down)

Demo 15 端口闪断

//[H3C]interface GigabitEthernet 0/3

//[H3C-GigabitEthernet0/3]shutdown

%Jul 24 09:39:04:760 2020 H3C LAGG/6/LAGG\_INACTIVE\_PHYSTATE: Member port GE0/3 of aggregation group BAGG2 changed to the inactive state, because the physical state of the port is down.

%Jul 24 09:39:04:762 2020 H3C IFNET/3/PHY\_UPDOWN: Physical state on the interface GigabitEthernet0/3 changed to down.

%Jul 24 09:39:04:762 2020 H3C IFNET/5/LINK\_UPDOWN: Line protocol state on the interface GigabitEthernet0/3 changed to down.

%Jul 24 09:39:04:777 2020 H3C IFNET/3/PHY\_UPDOWN: Physical state on the interface Bridge-Aggregation2 changed to down.

%Jul 24 09:39:04:780 2020 H3C IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Bridge-Aggregation2 changed to down.

%Jul 24 09:39:04:782 2020 H3C IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface2 changed to down.

%Jul 24 09:39:04:783 2020 H3C IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface2 changed to down.

//undo shutdown

%Jul 24 09:39:08:454 2020 H3C IFNET/3/PHY\_UPDOWN: Physical state on the interface GigabitEthernet0/3 changed to up.

%Jul 24 09:39:08:457 2020 H3C LAGG/6/LAGG\_ACTIVE: Member port GE0/3 of aggregation group BAGG2 changed to the active state.

( =====>warn\_type = LAGG\_ACTIVE,  NE = tuple ( device= H3C, port = Bridge-Aggregation2 ),

  Parameters= (Member port = GE0/3),  level = length(NE) = 2, abstract = “Member port GE0/3 of aggregation group BAGG2 changed to the active state”, Influence =NULL )

%Jul 24 09:39:08:481 2020 H3C IFNET/5/LINK\_UPDOWN: Line protocol state on the interface GigabitEthernet0/3 changed to up.

%Jul 24 09:39:08:497 2020 H3C IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface2 changed to up.

%Jul 24 09:39:08:501 2020 H3C IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface2 changed to up.

%Jul 24 09:39:08:504 2020 H3C IFNET/3/PHY\_UPDOWN: Physical state on the interface Bridge-Aggregation2 changed to up.

%Jul 24 09:39:08:505 2020 H3C IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Bridge-Aggregation2 changed to up.

规则：

LINK\_UPDOWN (warn1) ----> LAGG\_ACTIVE（warn2）  satisfy:  warn1.NE.device == warn2.NE.device  && warn1.NE.port == warn2.Para. Member port &&

Warn1.Para.status = up && timerange =2S

Demo 16  IP Address冲突（震荡规则）

%Aug  5 20:26:05:067 2020 VXLANk1-2-13 ARP/6/DUPIFIP: Duplicate address 3.4.4.3 on interface GigabitEthernet2/0/1, sourced from 38ad-bea0-8a2f

( =====>warn\_type = DUPIFIP,  NE = tuple ( device= VXLANk1-2-13, IPAddress =3.4.4.3 ),

  Parameters= (port = GigabitEthernet2/0/1, Mac=38ad-bea0-8a2f),  level = length(NE) = 2, abstract = “Duplicate address 3.4.4.3 on interface GigabitEthernet2/0/1, sourced from 38ad-bea0-8a2f”, Influence =”IP Address conflict” )

%Aug  5 20:26:10:096 2020 VXLANk1-2-13 ARP/6/DUPIFIP: Duplicate address 3.4.4.3 on interface GigabitEthernet2/0/1, sourced from 38ad-bea0-8a2f

%Aug  5 20:26:15:110 2020 VXLANk1-2-13 ARP/6/DUPIFIP: Duplicate address 3.4.4.3 on interface GigabitEthernet2/0/1, sourced from 38ad-bea0-8a2f

%Aug  5 20:26:20:175 2020 VXLANk1-2-13 ARP/6/DUPIFIP: Duplicate address 3.4.4.3 on interface GigabitEthernet2/0/1, sourced from 38ad-bea0-8a2f

%Aug  5 20:26:25:253 2020 VXLANk1-2-13 ARP/6/DUPIFIP: Duplicate address 3.4.4.3 on interface GigabitEthernet2/0/1, sourced from 38ad-bea0-8a2f

%Aug  5 20:26:31:224 2020 VXLANk1-2-13 ARP/6/DUPIFIP: Duplicate address 3.4.4.3 on interface GigabitEthernet2/0/1, sourced from 38ad-bea0-8a2f

%Aug  5 20:26:36:256 2020 VXLANk1-2-13 ARP/6/DUPIFIP: Duplicate address 3.4.4.3 on interface GigabitEthernet2/0/1, sourced from 38ad-bea0-8a2f

%Aug  5 20:26:41:303 2020 VXLANk1-2-13 ARP/6/DUPIFIP: Duplicate address 3.4.4.3 on interface GigabitEthernet2/0/1, sourced from 38ad-bea0-8a2f

%Aug  5 20:26:46:318 2020 VXLANk1-2-13 ARP/6/DUPIFIP: Duplicate address 3.4.4.3 on interface GigabitEthernet2/0/1, sourced from 38ad-bea0-8a2f

Demo 17  Vrrp IP Address冲突（震荡规则）

%Aug  6 11:42:25:164 2020 vrrp-1 ARP/6/DUPVRRPIP: IP address 4.3.2.1 conflicted with VRRP virtual IP address on interface Vlan-interface88, sourced from 346b-5b57-6769.

( =====>warn\_type = DUPVRRPIP,  NE = tuple ( device= vrrp-1, IPAddress =4.3.2.1 ),

  Parameters= (L3inf=Vlan-interface88, Mac=346b-5b57-6769),  level = length(NE) = 2, abstract = “IP address 4.3.2.1 conflicted with VRRP virtual IP address on interface Vlan-interface88, sourced from 346b-5b57-6769”, Influence =”Vrrp IP Address conflict” )

%Aug  6 11:42:30:195 2020 vrrp-1 ARP/6/DUPVRRPIP: IP address 4.3.2.1 conflicted with VRRP virtual IP address on interface Vlan-interface88, sourced from 346b-5b57-6769.

%Aug  6 11:42:35:226 2020 vrrp-1 ARP/6/DUPVRRPIP: IP address 4.3.2.1 conflicted with VRRP virtual IP address on interface Vlan-interface88, sourced from 346b-5b57-6769.

%Aug  6 11:42:40:255 2020 vrrp-1 ARP/6/DUPVRRPIP: IP address 4.3.2.1 conflicted with VRRP virtual IP address on interface Vlan-interface88, sourced from 346b-5b57-6769.

%Aug  6 11:42:45:270 2020 vrrp-1 ARP/6/DUPVRRPIP: IP address 4.3.2.1 conflicted with VRRP virtual IP address on interface Vlan-interface88, sourced from 346b-5b57-6769.

%Aug  6 11:42:50:302 2020 vrrp-1 ARP/6/DUPVRRPIP: IP address 4.3.2.1 conflicted with VRRP virtual IP address on interface Vlan-interface88, sourced from 346b-5b57-6769.

%Aug  6 11:42:55:332 2020 vrrp-1 ARP/6/DUPVRRPIP: IP address 4.3.2.1 conflicted with VRRP virtual IP address on interface Vlan-interface88, sourced from 346b-5b57-6769.

%Aug  6 11:43:00:349 2020 vrrp-1 ARP/6/DUPVRRPIP: IP address 4.3.2.1 conflicted with VRRP virtual IP address on interface Vlan-interface88, sourced from 346b-5b57-6769.

%Aug  6 11:43:05:380 2020 vrrp-1 ARP/6/DUPVRRPIP: IP address 4.3.2.1 conflicted with VRRP virtual IP address on interface Vlan-interface88, sourced from 346b-5b57-6769.

%Aug  6 11:43:10:411 2020 vrrp-1 ARP/6/DUPVRRPIP: IP address 4.3.2.1 conflicted with VRRP virtual IP address on interface Vlan-interface88, sourced from 346b-5b57-6769.

%Aug  6 11:43:15:426 2020 vrrp-1 ARP/6/DUPVRRPIP: IP address 4.3.2.1 conflicted with VRRP virtual IP address on interface Vlan-interface88, sourced from 346b-5b57-6769.

%Aug  6 11:43:20:456 2020 vrrp-1 ARP/6/DUPVRRPIP: IP address 4.3.2.1 conflicted with VRRP virtual IP address on interface Vlan-interface88, sourced from 346b-5b57-6769.

%Aug  6 11:43:25:473 2020 vrrp-1 ARP/6/DUPVRRPIP: IP address 4.3.2.1 conflicted with VRRP virtual IP address on interface Vlan-interface88, sourced from 346b-5b57-6769.

Demo 18  盒式堆叠分裂

[IRF-BFDMAD+1-Ten-GigabitEthernet1/0/50]

%Jul 29 16:40:42:395 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Ten-GigabitEthernet1/0/50 changed to down.

%Jul 29 16:40:42:397 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Ten-GigabitEthernet1/0/50 changed to down.

%Jul 29 16:40:42:675 2020 IRF-BFDMAD+1 STM/3/STM\_LINK\_DOWN: IRF port 1 went down.

( =====>warn\_type = STM\_LINK\_DOWN,  NE = tuple ( device= IRF-BFDMAD+1, IRF port =1 ),

  Parameters= NULL,  level = length(NE) = 2, abstract = “IRF port 1 went down”, Influence =” IRF port down” )

%Jul 29 16:40:42:934 2020 IRF-BFDMAD+1 SHELL/5/SHELL\_LOGOUT: TTY logged out from aux1.

%Jul 29 16:40:42:966 2020 IRF-BFDMAD+1 DEV/2/BOARD\_STATE\_FAULT: Board state changed to Fault on slot 2, type is MAIN\_BOARD\_TYPE\_S5560X\_54C\_EI.

%Jul 29 16:40:43:142 2020 IRF-BFDMAD+1 OSPF/5/OSPF\_NBR\_CHG: OSPF 1 Neighbor 20.20.20.21(Vlan-interface20) changed from FULL to DOWN.

%Jul 29 16:40:43:213 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface2 changed to down.

%Jul 29 16:40:43:213 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface20 changed to down.

%Jul 29 16:40:43:213 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface21 changed to down.

%Jul 29 16:40:43:234 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface22 changed to down.

%Jul 29 16:40:43:234 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface23 changed to down.

%Jul 29 16:40:43:234 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface24 changed to down.

%Jul 29 16:40:43:234 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface25 changed to down.

%Jul 29 16:40:43:234 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface26 changed to down.

%Jul 29 16:40:43:234 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface27 changed to down.

%Jul 29 16:40:43:234 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface28 changed to down.

%Jul 29 16:40:43:263 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface29 changed to down.

%Jul 29 16:40:43:263 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface200 changed to down.

%Jul 29 16:40:43:263 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface210 changed to down.

%Jul 29 16:40:43:263 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface211 changed to down.

%Jul 29 16:40:43:263 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface212 changed to down.

%Jul 29 16:40:43:263 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface213 changed to down.

%Jul 29 16:40:43:263 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface214 changed to down.

%Jul 29 16:40:43:283 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface215 changed to down.

%Jul 29 16:40:43:283 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface216 changed to down.

%Jul 29 16:40:43:283 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface217 changed to down.

%Jul 29 16:40:43:283 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface218 changed to down.

%Jul 29 16:40:43:283 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface219 changed to down.

%Jul 29 16:40:43:283 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface220 changed to down.

%Jul 29 16:40:43:284 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface221 changed to down.

%Jul 29 16:40:43:856 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface222 changed to down.

%Jul 29 16:40:43:856 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface223 changed to down.

%Jul 29 16:40:43:856 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface224 changed to down.

%Jul 29 16:40:43:856 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface225 changed to down.

%Jul 29 16:40:43:856 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface226 changed to down.

%Jul 29 16:40:43:936 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface227 changed to down.

%Jul 29 16:40:43:936 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface228 changed to down.

%Jul 29 16:40:43:936 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface229 changed to down.

%Jul 29 16:40:43:936 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface230 changed to down.

%Jul 29 16:40:43:936 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface231 changed to down.

%Jul 29 16:40:43:936 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface232 changed to down.

%Jul 29 16:40:43:976 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface233 changed to down.

%Jul 29 16:40:43:976 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface234 changed to down.

%Jul 29 16:40:43:976 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface235 changed to down.

%Jul 29 16:40:43:976 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface236 changed to down.

%Jul 29 16:40:43:976 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface237 changed to down.

%Jul 29 16:40:43:976 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface238 changed to down.

%Jul 29 16:40:44:073 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface239 changed to down.

%Jul 29 16:40:44:073 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface240 changed to down.

%Jul 29 16:40:44:073 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface1000 changed to down.

%Jul 29 16:40:44:302 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface2 changed to down.

%Jul 29 16:40:44:303 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface20 changed to down.

%Jul 29 16:40:44:400 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface21 changed to down.

%Jul 29 16:40:44:400 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface22 changed to down.

%Jul 29 16:40:44:400 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface23 changed to down.

%Jul 29 16:40:44:400 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface24 changed to down.

%Jul 29 16:40:44:439 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface25 changed to down.

%Jul 29 16:40:44:439 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface26 changed to down.

%Jul 29 16:40:44:439 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface27 changed to down.

%Jul 29 16:40:44:439 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface28 changed to down.

%Jul 29 16:40:44:439 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface29 changed to down.

%Jul 29 16:40:44:439 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface200 changed to down.

%Jul 29 16:40:44:521 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface210 changed to down.

%Jul 29 16:40:44:521 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface211 changed to down.

%Jul 29 16:40:44:521 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface212 changed to down.

%Jul 29 16:40:44:521 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface213 changed to down.

%Jul 29 16:40:44:521 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface214 changed to down.

%Jul 29 16:40:44:521 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface215 changed to down.

%Jul 29 16:40:44:522 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface216 changed to down.

%Jul 29 16:40:44:563 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface217 changed to down.

%Jul 29 16:40:44:563 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface218 changed to down.

%Jul 29 16:40:44:563 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface219 changed to down.

%Jul 29 16:40:44:563 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface220 changed to down.

%Jul 29 16:40:44:563 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface221 changed to down.

%Jul 29 16:40:44:563 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface222 changed to down.

%Jul 29 16:40:44:625 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface223 changed to down.

%Jul 29 16:40:44:625 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface224 changed to down.

%Jul 29 16:40:44:625 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface225 changed to down.

%Jul 29 16:40:44:672 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface226 changed to down.

%Jul 29 16:40:44:672 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface227 changed to down.

%Jul 29 16:40:44:672 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface228 changed to down.

%Jul 29 16:40:44:672 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface229 changed to down.

%Jul 29 16:40:44:672 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface230 changed to down.

%Jul 29 16:40:44:672 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface231 changed to down.

%Jul 29 16:40:44:673 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface232 changed to down.

%Jul 29 16:40:44:673 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface233 changed to down.

%Jul 29 16:40:44:673 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface234 changed to down.

%Jul 29 16:40:44:673 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface235 changed to down.

%Jul 29 16:40:44:673 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface236 changed to down.

%Jul 29 16:40:44:673 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface237 changed to down.

%Jul 29 16:40:44:673 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface238 changed to down.

%Jul 29 16:40:44:673 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface239 changed to down.

%Jul 29 16:40:44:740 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface240 changed to down.

%Jul 29 16:40:44:745 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface1000 changed to down.

%Jul 29 16:40:48:343 2020 IRF-BFDMAD+1 DEV/3/BOARD\_REMOVED: Board was removed from slot 2, type is unknown.

（===> warn\_type = BOARD\_REMOVED, NE = tuple (device= IRF-BFDMAD+1, chassis = 0, board =2) , Parameters= NULL, level = length(NE) = 3, abstract = “Slot 2 removed”, Influence =NULL )

规则：

父子： BOARD\_STATE\_FAULT (warn1) ----> BOARD\_REMOVED（warn2）  satisfy:  warn1.NE == warn2.NE

       STM\_LINK\_DOWN (warn1) ----> BOARD\_STATE\_FAULT (warn2)     satisfy:  warn1.NE.device == warn2.NE.device && timerange = 1S

Probability = 80%(关联规则也需要添加Prob?)

Demo 19  单板重启(未解析告警直接过滤)

%Jul 29 11:04:25:192 2020 slot6614 DEV/2/BOARD\_STATE\_FAULT: -MDC=1; Board state changed to Fault on slot 6, type is SFC-04B.

%Jul 29 11:04:30:490 2020 slot6614 DEV/2/FAN\_FAILED: -MDC=1; Fan 0 failed.

%Jul 29 11:04:43:188 2020 slot6614 DEV/4/BOARD\_LOADING: -MDC=1; Board in slot 6 is loading software images.

%Jul 29 11:04:46:608 2020 slot6614 DEV/5/LOAD\_FINISHED: -MDC=1; Board in slot 6 has finished loading software images.

%Jul 29 11:04:58:022 2020 slot6614 DEV/4/BOARD\_LOADING: -MDC=1; Board in slot 6 is loading software images.

%Jul 29 11:05:31:331 2020 slot6614 DEV/5/LOAD\_FINISHED: -MDC=1; Board in slot 6 has finished loading software images.

%Jul 29 11:05:50:490 2020 slot6614 DEV/2/FAN\_FAILED: -MDC=1; Fan 0 failed.

%Jul 29 11:06:46:111 2020 slot6614 DEV/5/BOARD\_STATE\_NORMAL: -MDC=1; Board state changed to Normal on slot 6, type is SFC-04B.

（===> warn\_type = BOARD\_STATE\_ NORMAL, NE = tuple (device= slot6614 W, chassis = 0, board =6) , Parameters= NULL, level = length(NE) = 3, abstract = “Slot 5 Normal”, Influence =NULL )

%Jul 29 11:07:10:490 2020 slot6614 DEV/2/FAN\_FAILED: -MDC=1; Fan 0 failed.

%Jul 29 11:08:30:490 2020 slot6614 DEV/2/FAN\_FAILED: -MDC=1; Fan 0 failed.

%Jul 29 11:09:50:490 2020 slot6614 DEV/2/FAN\_FAILED: -MDC=1; Fan 0 failed.

直接过滤：

%Jul 29 11:04:43:188 2020 slot6614 DEV/4/BOARD\_LOADING: -MDC=1; Board in slot 6 is loading software images.

%Jul 29 11:04:46:608 2020 slot6614 DEV/5/LOAD\_FINISHED: -MDC=1; Board in slot 6 has finished loading software images.

%Jul 29 11:04:58:022 2020 slot6614 DEV/4/BOARD\_LOADING: -MDC=1; Board in slot 6 is loading software images.

%Jul 29 11:05:31:331 2020 slot6614 DEV/5/LOAD\_FINISHED: -MDC=1; Board in slot 6 has finished loading software images.

Demo 20  一些故障告警信息处理(ARP\_MAXNUMBER/ RESMON\_USEDUP/ CPU\_SEVERE\_THRESHOLD)

%Sep 16 15:10:33:247 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

（===> warn\_type = ARP\_MAXNUMBER, NE = tuple (device= CPU30) , Parameters= NULL, level = length(NE) = 1, abstract = “Max ARP Number reached”, Influence =“Max ARP Number reached”)

%Sep 16 15:10:34:303 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:10:35:355 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:10:37:371 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:10:39:431 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:10:41:306 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:10:43:267 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:10:44:495 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:10:45:515 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:10:47:274 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:10:49:315 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:10:51:291 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:10:53:255 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:10:54:395 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:10:55:666 2020 CPU30 RESMON/2/RESMON\_USEDUP: -Resource=nexthoppool1-Total=24573-Used=24573-Free=0; Resources used up.

（===> warn\_type = RESMON\_USEDUP, NE = tuple (device= CPU30, resource= nexthoppool1 ) , Parameters= NULL, level = length(NE) = 2, abstract = “Resource nexthoppool1 used up”, Influence =“Resource nexthoppool1 used up”)

%Sep 16 15:10:56:283 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:02:562 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:04:378 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:06:358 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:07:398 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:08:606 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:10:315 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:11:369 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:14:390 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:16:318 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:17:330 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:18:350 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:20:354 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:22:621 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:24:414 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:26:366 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:27:378 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:30:482 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:32:370 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:32:677 2020 CPU30 DIAG/3/CPU\_SEVERE\_THRESHOLD: CPU usage is in severe alarm state.

（===> warn\_type = CPU\_SEVERE\_THRESHOLD, NE = tuple (device= CPU30 ) , Parameters= NULL, level = length(NE) = 1, abstract = “CPU usage is in severe alarm state”, Influence =“CPU usage is in severe alarm state”)

%Sep 16 15:11:33:666 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:35:510 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:37:382 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:38:598 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:40:377 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:41:417 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:43:394 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:45:461 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:48:353 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:50:421 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:51:421 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:53:458 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:55:621 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:56:665 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:11:58:565 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:00:654 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:02:571 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:04:437 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:07:645 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:09:964 2020 CPU30 IFNET/3/PHY\_UPDOWN: Physical state on the interface Ten-GigabitEthernet4/0/50 changed to down.

%Sep 16 15:12:09:964 2020 CPU30 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Ten-GigabitEthernet4/0/50 changed to down.

%Sep 16 15:12:09:975 2020 CPU30 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface100 changed to down.

%Sep 16 15:12:09:975 2020 CPU30 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface200 changed to down.

%Sep 16 15:12:09:975 2020 CPU30 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface300 changed to down.

%Sep 16 15:12:09:975 2020 CPU30 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface100 changed to down.

%Sep 16 15:12:09:975 2020 CPU30 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface200 changed to down.

%Sep 16 15:12:09:977 2020 CPU30 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface300 changed to down.

%Sep 16 15:12:10:569 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:12:397 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:13:737 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:15:481 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:17:457 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:18:481 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:20:417 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:21:489 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:22:530 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:26:476 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:27:564 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:30:708 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:32:454 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:32:737 2020 CPU30 DIAG/3/CPU\_SEVERE\_THRESHOLD: CPU usage is in severe alarm state.

%Sep 16 15:12:33:468 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:35:552 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:38:566 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:40:500 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:42:463 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:44:531 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:45:640 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:47:524 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:49:696 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:51:476 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:52:477 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:54:492 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:55:496 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:57:456 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:12:59:649 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:01:816 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:03:572 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:05:520 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:07:549 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:08:580 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:11:787 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:13:508 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:15:516 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:16:538 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:18:507 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:19:815 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:21:651 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:23:663 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:26:021 2020 CPU30 RESMON/5/RESMON\_USEDUP\_RECOVERY: -Resource=nexthoppool1-Total=24573-Used=24570-Free=3; The amount of free resources increased from zero to a non-zero value.

（===> warn\_type = RESMON\_USEDUP\_RECOVERY, NE = tuple (device= CPU30, resource= nexthoppool1 ) , Parameters= NULL, level = length(NE) = 2, abstract = “Resource nexthoppool1 recovery”, Influence =“Resource nexthoppool1 recovery”)

%Sep 16 15:13:27:795 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:29:851 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:30:855 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:32:534 2020 CPU30 ARP/6/ARP\_MAXNUMBER: Maximum number of ARP entries on the device is reached.

%Sep 16 15:13:32:729 2020 CPU30 DIAG/3/CPU\_SEVERE\_THRESHOLD: CPU usage is in severe alarm state.

Demo 21  预研部给中科大的故障告警集合

**Demo 21-1单板/设备重启:**

%Jul 23 14:15:22:517 slot33+20 2020 DEV/5/SYSTEM\_REBOOT: -MDC=1; System is rebooting now.

（===> warn\_type = SYSTEM\_REBOOT, NE = tuple (device= slot33+20 ) , Parameters= NULL, level = length(NE) = 1, abstract = “System Reboot”, Influence =“System Reboot”)

%Aug  4 14:34:31:568 2020 slot33+20 DEV/3/BOARD\_REMOVED: -MDC=1; Board was removed from slot 1, type is unknown.

%Aug  4 14:34:34:327 2020 slot33+20 DEV/2/BOARD\_STATE\_FAULT: -MDC=1; Board state changed to Fault on slot 1, type is unknown.

==》新增规则SYSTEM\_REBOOT->BOARD\_STATE\_FAULT? Satisfy: warn\_A.device == warn\_B.device

vlan虚接口Down:

[2020/07/24 16:15:36] %Jul 24 16:15:40:896 2020 test610 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface7 changed to down.

[2020/07/24 16:15:36] %Jul 24 16:15:40:898 2020 test610 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface7 changed to down.

端口频繁up/Down:

略

**Demo 21-2 路由口Down:**

%Jan  3 23:09:33:029 2011 ROUTE+1 OSPF/5/OSPF\_NBR\_CHG: OSPF 1 Neighbor 1.2.2.3(GigabitEthernet0/1) changed from FULL to DOWN.

%Jan  3 23:09:33:030 2011 ROUTE+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface GigabitEthernet0/1 changed to down.

%Jan  3 23:09:33:031 2011 ROUTE+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface GigabitEthernet0/1 changed to down.

%Jan  3 23:09:37:934 2011 ROUTE+1 BFD/5/BFD\_CHANGE\_FSM: Sess[1.2.2.2/1.2.2.3, LD/RD:97/32833, Interface:N/A, SessType:Ctrl, LinkType:INET], Ver:1, Sta: UP->DOWN, Diag: 1

%Jan  3 23:09:37:936 2011 ROUTE+1 BGP/5/BGP\_STATE\_CHANGED:  BGP.: 1.2.2.3 state has changed from ESTABLISHED to IDLE for session down event received from BFD.

==》新增规则BFD\_CHANGE\_FSM -> BGP\_STATE\_CHANGED? Satisfy: warn\_A.param.dip == warn\_B.param.dip, warn\_A.param.status == ‘DOWN’ and warn\_B.param.status == ‘IDLE’

**IFNET\_PORT\_LINK\_UPDOWN -> BFD\_BFD\_CHANGE\_FSM**

**Demo 21-3 OSPF Router-ID冲突:**

[2020/07/27 11:38:00] <mpls10>%Jul 27 11:38:07:641 2020 mpls10 OSPF/5/OSPF\_NBR\_CHG: OSPF 1 Neighbor 2.2.1.2(GigabitEthernet2/0/39) changed from INIT to DOWN.

[2020/07/27 11:38:01] %Jul 27 11:38:07:664 2020 mpls10 OSPF/5/OSPF\_NBR\_CHG: OSPF 1 Neighbor 2.2.1.2(GigabitEthernet2/0/39) changed from LOADING to FULL.

[2020/07/27 11:38:01] %Jul 27 11:38:09:319 2020 mpls10 OSPF/5/OSPF\_NBR\_CHG: OSPF 1 Neighbor 2.2.1.2(GigabitEthernet2/0/39) changed from FULL to INIT.

[2020/07/27 11:38:03] %Jul 27 11:38:09:329 2020 mpls10 OSPF/6/OSPF\_DUP\_RTRID\_NBR: OSPF 1 Duplicate router ID 10.10.10.10 on interface GigabitEthernet2/0/39, sourced from IP address 2.2.1.2.

（===> warn\_type = OSPF\_DUP\_RTRID\_NBR, NE = tuple (device= mpls10, route = ospf,  ospf id =1，L3Inf = GigabitEthernet2/0/39 ) , Parameters= { router id = 10.10.10.10, Sourced IP = 2.2.1.2 }, level = length(NE) = 4, abstract = “OSPF Duplicate router ID 10.10.10.10 on interface GigabitEthernet2/0/39”, Influence =“OSPF Duplicate router ID 10.10.10.10”)

**Demo 21-4 BGP协议震荡:**

%Aug  4 18:15:05:128 2020 msr1-1-3 IFNET/3/PHY\_UPDOWN: Physical state on the interface GigabitEthernet0/5 changed to down.

%Aug  4 18:15:05:130 2020 msr1-1-3 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface GigabitEthernet0/5 changed to down.

%Aug  4 18:15:09:819 2020 msr1-1-3 BFD/5/BFD\_CHANGE\_FSM: Sess[3.3.3.1/3.3.3.2, LD/RD:32833/97, Interface:N/A, SessType:Ctrl, LinkType:INET], Ver:1, Sta: UP->DOWN, Diag: 1 (Control Detection Time Expired)

%Aug  4 18:15:09:823 2020 msr1-1-3 BGP/5/BGP\_STATE\_CHANGED: BGP.: 3.3.3.2 state has changed from ESTABLISHED to IDLE for session down event received from BFD.

//undo shutdown

%Aug  4 18:15:23:561 2020 msr1-1-3 IFNET/3/PHY\_UPDOWN: Physical state on the interface GigabitEthernet0/5 changed to up.

%Aug  4 18:15:23:561 2020 msr1-1-3 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface GigabitEthernet0/5 changed to up.

%Aug  4 18:15:23:911 2020 msr1-1-3 LLDP/6/LLDP\_CREATE\_NEIGHBOR: Nearest bridge agent neighbor created on port GigabitEthernet0/5 (IfIndex 7), neighbor's chassis ID is 346b-5b57-5c89, port ID is GigabitEthernet0/5.

%Aug  4 18:15:40:793 2020 msr1-1-3 BGP/5/BGP\_STATE\_CHANGED:  BGP.: 3.3.3.2 state has changed from OPENCONFIRM to ESTABLISHED.

%Aug  4 18:15:40:797 2020 msr1-1-3 BFD/5/BFD\_CHANGE\_FSM: Sess[3.3.3.1/3.3.3.2, LD/RD:32833/97, Interface:N/A, SessType:Ctrl, LinkType:INET], Ver:1, Sta: DOWN->INIT, Diag: 0 (No Diagnostic)

%Aug  4 18:15:40:797 2020 msr1-1-3 BFD/5/BFD\_CHANGE\_FSM: Sess[3.3.3.1/3.3.3.2, LD/RD:32833/97, Interface:N/A, SessType:Ctrl, LinkType:INET], Ver:1, Sta: INIT->UP, Diag: 0 (No Diagnostic)

==》新增规则LINK\_UPDOWN -> LLDP\_CREATE\_NEIGHBOR, satisfy: warn\_A.NE = warn\_B.NE, warn\_A.param.status=up?

==》新增规则 BFD\_CHANGE\_FSM\_UP\_DERIVE -> BGP\_STATE\_CHANGED, warn\_A.dip = warn\_B.dip, warn\_A.status = up, warn\_B.status=ESTABLISHED?

**Demo 21-5 堆叠分裂:**

%Jul 29 16:40:42:395 2020 IRF-BFDMAD+1 IFNET/3/PHY\_UPDOWN: Physical state on the interface Ten-GigabitEthernet1/0/50 changed to down.

%Jul 29 16:40:42:397 2020 IRF-BFDMAD+1 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Ten-GigabitEthernet1/0/50 changed to down.

%Jul 29 16:40:42:675 2020 IRF-BFDMAD+1 STM/3/STM\_LINK\_DOWN: IRF port 1 went down.

%Jul 29 16:40:42:966 2020 IRF-BFDMAD+1 DEV/2/BOARD\_STATE\_FAULT: Board state changed to Fault on slot 2, type is MAIN\_BOARD\_TYPE\_S5560X\_54C\_EI.

**Demo 21-6 DesignatedRouter IP地址冲突:**

%Aug  3 13:55:43:281 2020 ospf-hd11 OSPF/6/OSPF\_IP\_CONFLICT\_INTRA: OSPF 8 Received newer self-originated network-LSAs. Possible conflict of IP address 11.11.11.1 in area 0.0.0.0 on interface Vlan-interface11.

%Aug  3 13:57:43:339 2020 ospf-hd11 OSPF/6/OSPF\_IP\_CONFLICT\_INTRA: OSPF 8 Received newer self-originated network-LSAs. Possible conflict of IP address 11.11.11.1 in area 0.0.0.0 on interface Vlan-interface11.

**Demo 21-7 接口IP地址冲突/OSPF状态变化:**

%Jul 28 17:41:50:312 2020 jkipctk1-2+3 BFD/5/BFD\_CHANGE\_FSM: Sess[6.6.6.1/6.6.6.12, LD/RD:129/129, Interface:XGE2/0/51, SessType:Ctrl, LinkType:INET], Ver:1, Sta: UP->DOWN, Diag: 1 (Control Detection Time Expired)

%Jul 28 17:41:50:314 2020 jkipctk1-2+3 OSPF/5/OSPF\_NBR\_CHG: OSPF 600 Neighbor 6.6.6.12(Ten-GigabitEthernet2/0/51) changed from FULL to DOWN.

%Jul 28 17:41:58:080 2020 jkipctk1-2+3 ARP/6/DUPIFIP: Duplicate address 6.6.6.13 on interface Ten-GigabitEthernet2/0/51, sourced from 38ad-8e70-69f9

%Jul 28 17:42:00:538 2020 jkipctk1-2+3 OSPF/5/OSPF\_NBR\_CHG: OSPF 600 Neighbor 6.6.6.12(Ten-GigabitEthernet2/0/51) changed from INIT to DOWN.

端口协议状态down：

略

OSPF邻居断开连接：

略

**Demo 21-8 mac表项不足：**

[s88-1-6]%Aug  7 18:39:50:567 2020 s88-1-6 DEV/2/FAN\_FAILED: -MDC=1; Fan 0 failed.

%Aug  7 18:41:10:567 2020 s88-1-6 DEV/2/FAN\_FAILED: -MDC=1; Fan 0 failed.

%Aug  7 18:41:33:423 2020 s88-1-6 FDB/6/LRN: -MDC=1-Slot=2; The number of MAC address received in interface Ten-GigabitEthernet2/2/2 reaches the upper limit.

( =====>warn\_type = MAC\_MAXNUMBER\_IF,  NE = tuple ( device= s88-1-6, chassis = 0, slot =2, subslot=2, port = 2/2/2 ),

  Parameters= NULL,  level = length(NE) = 5, abstract = “MAC Maxnumber reached on Ten-GigabitEthernet2/2/2”, Influence =” MAC Maxnumber reached” )

%Aug  7 18:42:30:567 2020 s88-1-6 DEV/2/FAN\_FAILED: -MDC=1; Fan 0 failed.

**Demo 21-9 arp表项不足：**

%Aug 10 20:20:48:309 2020 arps58-1-43 IFNET/3/PHY\_UPDOWN: Physical state on the interface Vlan-interface43 changed to up.

%Aug 10 20:20:48:319 2020 arps58-1-43 IFNET/5/LINK\_UPDOWN: Line protocol state on the interface Vlan-interface43 changed to up.

%Aug 10 20:20:49:290 2020 arps58-1-43 ARP/6/ARP\_MAXNUMBER\_IF: The maximum number of dynamic ARP entries for interface Vlan-interface43 reached.

( =====>warn\_type = ARP\_MAXNUMBER\_IF,  NE = tuple ( device= arps58-1-43,  L3Inf = Vlan-interface43 ),

  Parameters= NULL,  level = length(NE) = 2, abstract = “ARP Maxnumber reached on Vlan-interface43”, Influence =” ARP Maxnumber reached” )

网络接入侧ip地址冲突：

略

**Demo 21-10 ARP表项上下层不一致故障：**

%Nov  4 11:15:35:435 2020 arp10 ARP/6/ARP\_ENTRY\_CONFLICT: -MDC=1-Slot=1; The software entry for 19.1.1.2 on the public network and the hardware entry did not have the same MAC address.

( =====>warn\_type = ARP\_ENTRY\_CONFLICT,  NE = tuple ( device= arp10, chassis = 0，slot =1, IP = 19.1.1.2 ),

  Parameters= NULL,  level = length(NE) = 4, abstract = “ARP entry 19.1.1.2 confict”, Influence =” ARP entry 19.1.1.2 confict” )

%Nov  4 11:18:33:654 2020 arp13 ARP/6/ARP\_ENTRY\_CONFLICT: -MDC=1-Slot=1; The software entry for 10.2.1.2 on the public network and the hardware entry did not have the same MAC address.

%Nov  4 11:21:31:123 2020 arp13 ARP/6/ARP\_ENTRY\_CONFLICT: -MDC=1-Slot=1; The software entry for 10.3.1.2 on the public network and the hardware entry did not have the same MAC address.

%Nov  4 11:24:51:523 2020 arp13 ARP/6/ARP\_ENTRY\_CONFLICT: -MDC=1-Slot=1; The software entry for 10.4.1.2 on the public network and the hardware entry did not have the same MAC address.

**Demo 21-11芯片软失效故障：**

%Oct 30 15:43:30:180 2020 chip10 DRVPLAT/4/DrvDebug: -MDC=1-Slot=6; Chip 0 occurs 10 parity/ecc errors in 1 seconds.

( =====>warn\_type = DRV\_PARITY\_ERR,  NE = tuple ( device= chip10, chassis = 0，slot = 6, chip = 0 ),

  Parameters= {error num = 10, time = 1},  level = length(NE) = 4, abstract = “parity/ecc errors occur on slot 6 chip 0”, Influence =” parity/ecc errors occur” )

%Oct 30 15:46:31:180 2020 chip11 DRVPLAT/4/DrvDebug: -MDC=1-Slot=6; Chip 0 occurs 11 parity/ecc errors in 2 seconds.

%Oct 30 15:49:32:180 2020 chip12 DRVPLAT/4/DrvDebug: -MDC=1-Slot=6; Chip 0 occurs 12 parity/ecc errors in 2 seconds.

%Oct 30 15:51:34:180 2020 chip13 DRVPLAT/4/DrvDebug: -MDC=1-Slot=6; Chip 0 occurs 13 parity/ecc errors in 2 seconds.

%Oct 30 15:53:35:180 2020 chip14 DRVPLAT/4/DrvDebug: -MDC=1-Slot=6; Chip 0 occurs 14 parity/ecc errors in 2 seconds.

%Oct 30 15:56:36:180 2020 chip15 DRVPLAT/4/DrvDebug: -MDC=1-Slot=6; Chip 0 occurs 15 parity/ecc errors in 2 seconds.

%Oct 30 15:58:37:180 2020 chip16 DRVPLAT/4/DrvDebug: -MDC=1-Slot=6; Chip 0 occurs 16 parity/ecc errors in 2 seconds.

%Oct 30 16:02:40:180 2020 chip17 DRVPLAT/4/DrvDebug: -MDC=1-Slot=6; Chip 0 occurs 17 parity/ecc errors in 2 seconds.

%Oct 30 16:04:39:180 2020 chip18 DRVPLAT/4/DrvDebug: -MDC=1-Slot=6; Chip 0 occurs 18 parity/ecc errors in 2 seconds.

**Demo 21-12 IRF心跳超时：**

%Oct 15 18:54:15:928 2020 irf1 DRVPLAT/4/DrvDebug:  The port Ten1/0/49 can't receive irf pkt, please check.

%Oct 15 18:54:25:025 2020 irf1 DRVPLAT/4/DrvDebug:  The port Ten1/0/49 can't receive irf pkt, please check.

%Oct 15 18:54:34:083 2020 irf1 DRVPLAT/4/DrvDebug:  The port Ten1/0/49 can't receive irf pkt, please check.

%Oct 15 18:54:41:087 2020 irf1 STM/2/STM\_LINK\_TIMEOUT: IRF port 1 went down because the heartbeat timed out.

( =====>warn\_type = STM\_LINK\_ TIMEOUT,  NE = tuple ( device= irf1, IRF port =1 ),

  Parameters= NULL,  level = length(NE) = 2, abstract = “IRF port 1 timeout”, Influence =” IRF port timeout” )

%Oct 15 18:54:41:087 2020 irf1 STM/3/STM\_LINK\_DOWN: IRF port 1 went down.

规则：

STM\_LINK\_ TIMEOUT (warn1) ----> STM\_LINK\_DOWN（warn2）  satisfy:  warn1.NE == warn2.NE

**Demo 21-13 内存高故障：**

%Jan 19 23:51:06:668 2011 BGP2 DIAG/1/MEM\_EXCEED\_THRESHOLD: Memory severe threshold has been exceeded.

( =====>warn\_type = MEM\_EXCEED\_THRESHOLD,  NE = tuple ( device= BGP2, level = severe ),

  Parameters= NULL,  level = length(NE) = 2, abstract = “Memory severe threshold exceeded”, Influence =” Memory severe threshold exceede” )

%Jan 19 23:51:07:772 2011 BGP2 DIAG/1/MEM\_EXCEED\_THRESHOLD: Memory critical threshold has been exceeded.

%Jan 19 23:51:09:854 2011 BGP2 DIAG/1/MEM\_BELOW\_THRESHOLD: Memory usage has dropped below critical threshold.

( =====>warn\_type = MEM\_BELOW\_THRESHOLD,  NE = tuple ( device= BGP2, level = critical),

  Parameters= NULL,  level = length(NE) = 2, abstract = “Memory below critical threshold”, Influence =” Memory below critical threshold” )

%Jan 19 23:51:12:468 2011 BGP2 DIAG/1/MEM\_BELOW\_THRESHOLD: Memory usage has dropped below severe threshold.

规则：

MEM\_EXCEED\_THRESHOLD (warn1) ----> MEM\_EXCEED\_THRESHOLD（warn2）  satisfy:  warn1.NE.device == warn2.NE.device && warn1.NE.level == critical && warn2.NE.level == severe

MEM\_BELOW\_THRESHOLD (warn1) ----> MEM\_BELOW\_THRESHOLD（warn2）  satisfy:  warn1.NE.device == warn2.NE.device && warn1.NE.level == severe && warn2.NE.level == critical

路由表项不足故障：

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**Demo 21-14 ACL表项不足故障：**

%Oct 16 14:52:02:302 2020 acl3 QOS/4/QOS\_POLICY\_APPLYIF\_CBFAIL: -Slot=2; Failed to apply classifier-behavior wey in policy qos3 to the inbound direction of interface GigabitEthernet2/0/3. Not enough resources to complete the operation.

( =====>warn\_type = QOS\_POLICY\_APPLYIF\_CBFAIL,  NE = tuple ( device= acl3, chassis=0, slot = 2 ),

  Parameters= { port = GigabitEthernet2/0/3, direction = inbound },  level = length(NE) = 3, abstract = “Not enough acl resources on GigabitEthernet2/0/3 inbound direction”, Influence =” Not enough acl resources” )

%Oct 16 14:52:22:036 2020 acl4 QOS/4/QOS\_POLICY\_APPLYIF\_CBFAIL: -Slot=2; Failed to apply classifier-behavior wey in policy qos4 to the inbound direction of interface GigabitEthernet2/0/4. Not enough resources to complete the operation.

%Oct 16 14:52:41:598 2020 acl5 QOS/4/QOS\_POLICY\_APPLYIF\_CBFAIL: -Slot=2; Failed to apply classifier-behavior wey in policy qos5 to the inbound direction of interface GigabitEthernet2/0/5. Not enough resources to complete the operation.

%Oct 16 14:53:01:262 2020 acl6 QOS/4/QOS\_POLICY\_APPLYIF\_CBFAIL: -Slot=2; Failed to apply classifier-behavior wey in policy qos6 to the inbound direction of interface GigabitEthernet2/0/6. Not enough resources to complete the operation.

%Oct 16 14:53:20:866 2020 acl7 QOS/4/QOS\_POLICY\_APPLYIF\_CBFAIL: -Slot=2; Failed to apply classifier-behavior wey in policy qos7 to the inbound direction of interface GigabitEthernet2/0/7. Not enough resources to complete the operation.

%Oct 16 14:53:32:281 2020 acl8 OSPF/6/OSPF\_DUP\_RTRID\_NBR: OSPF 7 Duplicate router ID 1.1.1.1 on interface M-GigabitEthernet0/0/0, sourced from IP address 8.8.8.7.

%Oct 16 14:53:40:429 2020 acl8 QOS/4/QOS\_POLICY\_APPLYIF\_CBFAIL: -Slot=2; Failed to apply classifier-behavior wey in policy qos8 to the inbound direction of interface GigabitEthernet2/0/8. Not enough resources to complete the operation.

添加频次告警-> QOS\_POLICY\_APPLYIF\_CBFAIL\_BATCH