

# 知 防火墙二层部署冗余组切换无法实现回切问题分析

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组网及说明

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## 问题描述

防火墙组网二层部署，堆叠+冗余组配置，利用二层聚合配置最大选中数实现业务主备处理。

关键配置如下：

```
#
track 1 interface Ten-GigabitEthernet1/1/0 physical
#
track 2 interface Ten-GigabitEthernet2/1/0 physical
#
track 3 interface Ten-GigabitEthernet1/1/1 physical
#
track 4 interface Ten-GigabitEthernet2/1/1 physical
#
#
interface Bridge-Aggregation6
port access vlan 10
link-aggregation mode dynamic
link-aggregation selected-port maximum 1
#
interface Bridge-Aggregation16
port access vlan 10
link-aggregation mode dynamic
link-aggregation selected-port maximum 1
#
interface Ten-GigabitEthernet1/1/0
port link-mode bridge
port access vlan 10
link-aggregation port-priority 50
port link-aggregation group 6
#
interface Ten-GigabitEthernet1/1/1
port link-mode bridge
port access vlan 10
link-aggregation port-priority 50
port link-aggregation group 16
#
interface Ten-GigabitEthernet2/1/0
port link-mode bridge
port access vlan 10
link-aggregation port-priority 100
port link-aggregation group 6
#
interface Ten-GigabitEthernet2/1/1
port link-mode bridge
port access vlan 10
link-aggregation port-priority 100
port link-aggregation group 16
#
#
redundancy group aaa
node 1
bind slot 1
priority 100
track 1 interface Ten-GigabitEthernet1/1/0
track 3 interface Ten-GigabitEthernet1/1/1
node-member interface Ten-GigabitEthernet1/1/0
node-member interface Ten-GigabitEthernet1/1/1
node 2
bind slot 2
priority 50
```

```
track 2 interface Ten-GigabitEthernet2/1/0
track 4 interface Ten-GigabitEthernet2/1/1
node-member interface Ten-GigabitEthernet2/1/0
node-member interface Ten-GigabitEthernet2/1/1
```

```
#
```

### 过程分析

初始切换均没有问题；当1框的接口恢复UP后，冗余组1 min缺省实现回切，但是查看聚合口的成员接口3发现还是2框的接口被选中

```
[H3C]display redundancy group aaa
[H3C-Ten-GigabitEthernet1/1/0]undo shutdown
[H3C-Ten-GigabitEthernet1/1/0]status 15:49:07:023/2022 H3C IFNET/3/PHY_UPDOWN: -Context=1; Physical state on the interface Ten-GigabitEthernet1/1/0 changed to up.
```

```
%Jul 15 15:49:08:149/2022 H3C IFNET/3/PHY_UPDOWN: -Context=1; Physical state on the interface Ten-GigabitEthernet1/1/1 changed to up.
```

```
Preempt delay time remained : 0 sec
Preempt delay timer setting group 60 a sec
Reducing hold-down time (ID 1): : 0 sec
Hold-down timer setting Priority 1 Status Track weight
Manual switchover request Primary 255
|| 2 Slot2 50 Secondary 255
Member interfaces:
```

```
Preempt delay time remained : 0 sec
Node 1:
Preempt delay timer setting : 60 sec
Remaining hold-down time : 0 sec
Node member Physical status
XGE1/1/0 UP
Hold-down timer setting : 1 sec
XGE1/1/1 UP
Manual switchover request : No
Track info:
```

```
Track Status Reduced weight Interface
Member interfaces:
1 Positive 255 XGE1/1/0
Node 1: Positive 255 XGE1/1/1
```

```
Node 2:
Node member Physical status
XGE2/1/0 UP
XGE2/1/1 UP
Track info: UP
```

```
Track info:
Track Status Reduced weight Interface
1 Positive 255 XGE1/1/0
3 Positive 255 XGE2/1/0
4 Positive 255 XGE2/1/1
Node 2: Positive 255 XGE2/1/1
```

Node member Physical status  
当把1框的某一个接口down掉后，冗余组主切换到2框：

```
[H3C]display redundancy group aaa
XGE2/1/0 UP
Redundancy group aaa (ID 1):
Track info:
Node ID Slot Priority Status Reduced weight Interface
1 2 Slot1 100 Secondary 255 XGE2/1/0
2 4 Slot2 50 Primary 255 XGE2/1/1
```

```
Preempt delay time remained : 0 sec
[H3C-Ten-GigabitEthernet1/1/0]display link-aggregation verbose
Preempt delay timer setting Loadsharing: NonS -- Non-Loadsharing
Loadsharing type: Shared
Remaining hold-down time : 0 sec
Port status: S -- Selected, U -- Unselected, I -- Individual
Hold-down timer setting : 1 sec
Port: Auto port
Manual switchover request : No
Flags: A -- LACP_Activity, B -- LACP_Timeout, C -- Aggregation,
D -- Synchronization, E -- Collecting, F -- Distributing,
Member interfaces:
G -- Defaulted, H -- Expired
```

```
Node 1:
Node member Physical status
Aggregate Interface: Bridge-Aggregation6
XGE1/1/0 DOWN
Creation Mode: Manual
XGE1/1/1 DOWN(redundancy down)
Aggregation Mode: Dynamic
Track info:
Loadsharing Type: Shar
Track Status Reduced weight Interface
System ID: 0x8000, 782c-2904-9800
1 Negative(Faulty) 255 XGE1/1/0
Local:
3 Port Negative 255 XGE1/1/1
Status Priority Oper-Key Flag
Node 2:
Node member Physical status
XGE1/1/0 UP
XGE2/1/0 UP
XGE2/1/1 UP 100 5 {ACDEF}
```

```

Remote:
XGE1/1/1  UP
Actor info: Partner Priority Oper-Key SystemID      Flag
-----Track-----Status-----Reduced weight-----Interface-----
XGE1/1/0  Positive1  205  321  0x8000, 9c52-f882-7f51 {AC}
XGE2/1/0  Positive2  100  321  0x8000, 9c52-f882-7f51 {ACDEF}

```

解决方法

链路聚合没有抢占机制，1框的接口U后6不会参与抢占，所以聚合选中接口还在2框。  
需要人工干预，使聚合组选中接口回到1框。

```

Aggregation Mode: Dynamic
Loadsharing Type: Shar
System ID: 0x8000, 782c-29c4-0800

```

Local:

Port	Status	Priority	Oper-Key	Flag
XGE1/1/1	U	50	4	{ACD}
XGE2/1/1	S	100	4	{ACDEF}

Remote:

Actor	Partner	Priority	Oper-Key	SystemID	Flag
XGE1/1/1	3	10	577	0x8000, 9c52-f882-7f51	{AC}
XGE2/1/1	4	100	577	0x8000, 9c52-f882-7f51	{ACDEF}

