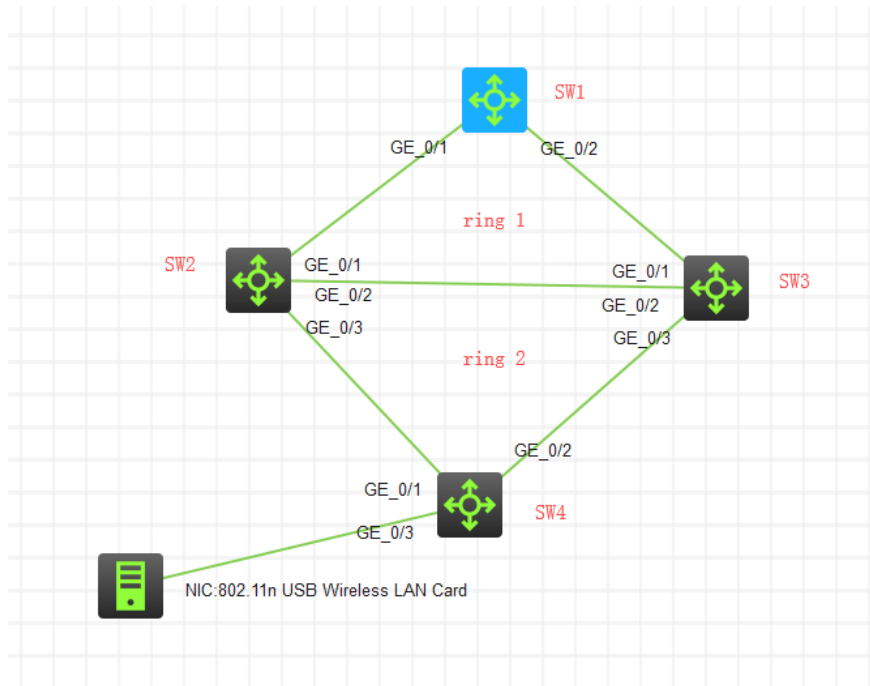


组网及说明



问题描述

解决二层环网组网中的环路，单点故障的问题，并实现链路冗余、设备冗余。

过程分析

1. 做相交环时，一定要区分好主环和子环，主环的level设置为0，子环的level设置为除0以外的等级，否则子环不能做成环网。
2. 做相交环时，有相交的设备在主环为传输节点，在子环为边缘节点或辅助边缘节点。
3. 当子环成环后，有相交的设备在主环的接口都将成为公共端口。
4. 当子环分裂时，业务切换不丢包。
5. 当主环分裂时，业务切换不丢包。

解决方法

SW1、SW2、SW3为RING 1，其中SW1为RING 1的主节点设备（G 1/0/1为主端口、G 1/0/2为副端口），SW2、SW3为RING 1的传输节点（G 1/0/1为主端口、G 1/0/2为副端口）。

SW2、SW3、SW4为RING 2，其中SW4为RING 2的主节点设备（G 1/0/1为主端口、G 1/0/2为副端口），SW2为边缘节点，G1/0/3为边缘端口；SW3为辅助边缘节点，G1/0/3为边缘端口。

设备配置：

SW1：

1、基础配置脚本如下：

```
<SW1>dis cu
vlan 10
quit
interface LoopBack0
ip address 1.1.1.1 255.255.255.255
quit

interface Vlan-interface10
ip address 192.168.10.254 255.255.255.0
quit
```

```
interface GigabitEthernet1/0/1
port link-mode bridge
port link-type trunk
port trunk permit vlan all
combo enable fiber
undo stp enable
```

```
quit
interface GigabitEthernet1/0/2
port link-mode bridge
port link-type trunk
port trunk permit vlan all
combo enable fiber
undo stp enable
quit
```

2、关键配置脚本:

```
rrpp domain 1
control-vlan 4092
protected-vlan reference-instance 0 to 32
ring 1 node-mode master primary-port GigabitEthernet1/0/1 secondary-port GigabitEthernet1/0/2 level 0
ring 1 enable
quit
rrpp enable
```

3、状态查看:

```
<SW1>dis rrpp verbose domain 1
Domain ID : 1
Control VLAN : Primary 4092, Secondary 4093
Protected VLAN: Reference instance 0 to 32
Hello timer : 1 seconds, Fail timer: 3 seconds
Fast detection status: Disabled
Fast-Hello timer: 20 ms, Fast-Fail timer: 60 ms
Fast-Edge-Hello timer: 10 ms, Fast-Edge-Fail timer: 30 ms
```

```
Ring ID : 1
Ring level : 0
Node mode : Master
Ring state : Complete
Enable status : Yes, Active status: Yes
Primary port : GE1/0/1 Port status: UP
Secondary port: GE1/0/2 Port status: BLOCKED
```

<SW1>

```
<SW1>dis rrpp statistics domain 1
Ring ID : 1
Ring level : 0
Node mode : Master
Active status : Yes
Primary port : GE1/0/1
Fast-Hello packets: 0 Sent, 0 Received
Fast-Edge-Hello packets: 0 Sent, 0 Received
Direct Hello Link Common Complete Edge Major Total
down flush FDB flush FDB hello fault
```

```
-----
Out 1843 0 1 2 0 0 1846
In 0 0 0 0 0 0 0
```

```
Secondary port: GE1/0/2
Fast-Hello packets: 0 Sent, 0 Received
Fast-Edge-Hello packets: 0 Sent, 0 Received
Direct Hello Link Common Complete Edge Major Total
down flush FDB flush FDB hello fault
```

```
-----
Out 0 0 2 0 0 0 2
In 1517 0 0 2 0 0 1519
```

<SW1>

```
<SW1>dis rrpp brief
Flags for node mode: M -- Master, T -- Transit, E -- Edge, A -- Assistant-edge
```

RRPP protocol status: Enabled

```

Domain ID : 1
Control VLAN : Primary 4092, Secondary 4093
Protected VLAN: Reference instance 0 to 32
Hello timer : 1 seconds, Fail timer: 3 seconds
Fast detection status: Disabled
Fast-Hello timer: 20 ms, Fast-Fail timer: 60 ms
Fast-Edge-Hello timer: 10 ms, Fast-Edge-Fail timer: 30 ms

```

Ring ID	Ring level	Node mode	Primary/Common port	Secondary/Edge port	status	Enable
1	0	M	GE1/0/1	GE1/0/2	Yes	

<SW1>

SW2:

1、基础配置脚本如下:

```

vlan 10
quit
interface GigabitEthernet1/0/1
port link-mode bridge
port link-type trunk
port trunk permit vlan all
combo enable fiber
undo stp enable
quit
interface GigabitEthernet1/0/2
port link-mode bridge
port link-type trunk
port trunk permit vlan all
combo enable fiber
undo stp enable
quit
interface GigabitEthernet1/0/3
port link-mode bridge
port link-type trunk
port trunk permit vlan all
combo enable fiber
undo stp enable
quit

```

2、关键配置脚本如下:

```

rrpp domain 1
control-vlan 4092
protected-vlan reference-instance 0 to 32
ring 1 node-mode transit primary-port GigabitEthernet1/0/1 secondary-port GigabitEthernet1/0/2
level 0
ring 1 enable
ring 2 node-mode edge edge-port GigabitEthernet1/0/3
quit
ring 2 enable

```

3、状态查看:

<SW2>

<SW2>dis rrpp verbose domain 1

```

Domain ID : 1
Control VLAN : Primary 4092, Secondary 4093
Protected VLAN: Reference instance 0 to 32
Hello timer : 1 seconds, Fail timer: 3 seconds
Fast detection status: Disabled
Fast-Hello timer: 20 ms, Fast-Fail timer: 60 ms
Fast-Edge-Hello timer: 10 ms, Fast-Edge-Fail timer: 30 ms

```

Ring ID : 1

Ring level : 0

Node mode : Transit

Ring state : -
Enable status : Yes, Active status: No
Primary port : GE1/0/1 Port status: -
Secondary port: GE1/0/2 Port status: -

Ring ID : 2
Ring level : 1
Node mode : Edge
Ring state : -
Enable status : Yes, Active status: No
Common port : GE1/0/1 Port status: -
 GE1/0/2 Port status: -
Edge port : GE1/0/3 Port status: -

<SW2>

SW3:

1、基础配置脚本如下:

```
vlan 10
quit
interface GigabitEthernet1/0/1
port link-mode bridge
port link-type trunk
port trunk permit vlan all
combo enable fiber
undo stp enable
quit
interface GigabitEthernet1/0/2
port link-mode bridge
port link-type trunk
port trunk permit vlan all
combo enable fiber
undo stp enable
quit
interface GigabitEthernet1/0/3
port link-mode bridge
port link-type trunk
port trunk permit vlan all
combo enable fiber
undo stp enable
quit
```

2、关键配置脚本如下:

```
rrpp domain 1
control-vlan 4092
protected-vlan reference-instance 0 to 32
ring 1 node-mode transit primary-port GigabitEthernet1/0/2 secondary-port GigabitEthernet1/0/1
level 0
ring 1 enable
ring 2 node-mode assistant-edge edge-port GigabitEthernet1/0/3
ring 2 enable
quit
```

rrpp enable
3、状态查看:

<SW3>

<SW3>dis rrpp verbose domain 1

Domain ID : 1
Control VLAN : Primary 4092, Secondary 4093
Protected VLAN: Reference instance 0 to 32
Hello timer : 1 seconds, Fail timer: 3 seconds
Fast detection status: Disabled
Fast-Hello timer: 20 ms, Fast-Fail timer: 60 ms
Fast-Edge-Hello timer: 10 ms, Fast-Edge-Fail timer: 30 ms

Ring ID : 1

Ring level : 0
Node mode : Transit
Ring state :-
Enable status : Yes, Active status: Yes
Primary port : GE1/0/2 Port status: UP
Secondary port: GE1/0/1 Port status: UP

Ring ID : 2
Ring level : 1
Node mode : Assistant-edge
Ring state :-
Enable status : Yes, Active status: Yes
Common port : GE1/0/2 Port status: UP
GE1/0/1 Port status: UP
Edge port : GE1/0/3 Port status: UP

<SW3>

SW4:

1、基本配置脚本如下:

```
vlan 10  
quit
```

```
interface GigabitEthernet1/0/1  
port link-mode bridge  
port link-type trunk  
port trunk permit vlan all  
combo enable fiber  
undo stp enable  
quit
```

```
interface GigabitEthernet1/0/2  
port link-mode bridge  
port link-type trunk  
port trunk permit vlan all  
combo enable fiber  
undo stp enable  
quit
```

```
interface GigabitEthernet1/0/3  
port link-mode bridge  
port access vlan 10  
combo enable fiber  
quit
```

2、关键配置脚本如下:

```
rrpp domain 1  
control-vlan 4092  
protected-vlan reference-instance 0 to 32  
ring 2 node-mode master primary-port GigabitEthernet1/0/1 secondary-port GigabitEthernet1/0/2 lev  
el 1  
ring 2 enable  
quit  
rrpp enable
```

3、状态查看

<SW4>

<SW4>dis rrpp verbose domain 1

Domain ID : 1
Control VLAN : Primary 4092, Secondary 4093
Protected VLAN: Reference instance 0 to 32
Hello timer : 1 seconds, Fail timer: 3 seconds
Fast detection status: Disabled
Fast-Hello timer: 20 ms, Fast-Fail timer: 60 ms
Fast-Edge-Hello timer: 10 ms, Fast-Edge-Fail timer: 30 ms

Ring ID : 2
Ring level : 1

Node mode : Master
Ring state : Complete
Enable status : Yes, Active status: Yes
Primary port : GE1/0/1 Port status: UP
Secondary port: GE1/0/2 Port status: BLOCKED

<SW4>

详细配置文件请见附件。

附件下载: RRPP相交环.doc