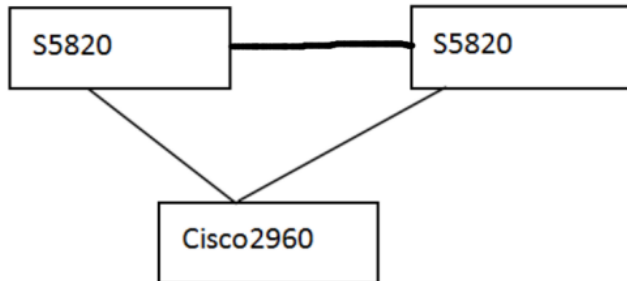


组网及说明

本案例使用S5820与思科2960对接PVST的典型组网配置案例，其中S5820为主根，同时也部署了IRF、与思科2960部署了链路聚合，为了进一步防止物理环路，因此在S5820与思科2960部署PVST。



S5820版本信息如下：

H3C Comware Software, Version 7.1.045, Release 2418P06  
Copyright (c) 2004-2015 Hangzhou H3C Tech. Co., Ltd. All rights reserved.  
H3C S5820V2-48S uptime is 235 weeks, 0 days, 21 hours, 30 minutes  
Last reboot reason : USER reboot

Boot image: flash:/s5820v2\_5830v2-cmw710-boot-r2418p06.bin  
Boot image version: 7.1.045, Release 2418P06  
Compiled Aug 07 2015 15:40:53  
System image: flash:/s5820v2\_5830v2-cmw710-system-r2418p06.bin  
System image version: 7.1.045, Release 2418P06  
Compiled Aug 07 2015 15:40:53

Slot 1:  
Uptime is 24 weeks,3 days,7 hours,29 minutes  
S5820V2-48S with 2 Processors  
BOARD TYPE: S5820V2-48S  
DRAM: 2048M bytes  
FLASH: 512M bytes  
PCB 1 Version: VER.B  
Bootrom Version: 142  
CPLD 1 Version: 002  
CPLD 2 Version: 002  
Release Version: H3C S5820V2-48S-2418P06  
Patch Version : None  
Reboot Cause : UserReboot  
[SubSlot 0] 48SFP Plus

Slot 2:  
Uptime is 24 weeks,3 days,7 hours,11 minutes  
S5820V2-48S with 2 Processors  
BOARD TYPE: S5820V2-48S  
DRAM: 2048M bytes  
FLASH: 512M bytes  
PCB 1 Version: VER.B  
Bootrom Version: 142  
CPLD 1 Version: 002  
CPLD 2 Version: 002  
Release Version: H3C S5820V2-48S-2418P06  
Patch Version : None  
Reboot Cause : UserReboot

[SubSlot 0] 48SFP Plus

思科2960版本信息如下:

```
sh version
Cisco IOS Software, C2960S Software (C2960S-UNIVERSALK9-M), Version 12.2(55)SE2, RELEAS
E SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2011 by Cisco Systems, Inc.
Compiled Tue 11-Jan-11 02:23 by prod_rel_team
Image text-base: 0x00003000, data-base: 0x01B00000
```

```
ROM: Bootstrap program is Alpha board boot loader
BOOTLDR: C2960S Boot Loader (C2960S-HBOOT-M) Version 12.2(53r)SE, RELEASE SOFTWARE
(fc3)
```

```
SCW-T-1 uptime is 1 year, 25 weeks, 2 days, 13 hours, 25 minutes
System returned to ROM by power-on
System restarted at 18:17:13 UTC Mon Oct 22 2018
System image file is "flash:/c2960s-universalk9-mz.122-55.SE2/c2960s-universalk9-mz.122-55.SE2.
bin"
```

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:  
<http://www.cisco.com/wwl/export/crypto/tool/stqrg.html>

If you require further assistance please contact us by sending email to [export@cisco.com](mailto:export@cisco.com).

```
cisco WS-C2960S-48TS-S (PowerPC) processor (revision D0) with 131072K bytes of memory.
Processor board ID FOC1517Y1E2
Last reset from power-on
3 Virtual Ethernet interfaces
1 FastEthernet interface
50 Gigabit Ethernet interfaces
The password-recovery mechanism is enabled.
```

512K bytes of flash-simulated non-volatile configuration memory.

```
Base ethernet MAC Address      : 88:F0:77:74:C3:80
Motherboard assembly number    : 73-12424-06
Power supply part number       : 341-0327-03
Motherboard serial number      : FOC15151KUK
Power supply serial number      : LIT144432FT
Model revision number          : D0
Motherboard revision number     : A0
Model number                   : WS-C2960S-48TS-S
Daughterboard assembly number  : 73-11933-04
Daughterboard serial number    : FOC1516245W
System serial number           : FOC1517Y1E2
Top Assembly Part Number       : 800-32452-03
Top Assembly Revision Number   : A0
Version ID                     : V03
CLEI Code Number               : COMGK00ARC
Daughterboard revision number  : A0
Hardware Board Revision Number : 0x01
```

Switch Ports Model	SW Version	SW Image
* 1 50 WS-C2960S-48TS-S	12.2(55)SE2	C2960S-UNIVERSALK9-M

Configuration register is 0xF

### 配置步骤

S5820 MAC如下:

Global LLDP local-information:

Chassis ID : 741f-4a25-ae4b  
 System name : s5800  
 System description : H3C Comware Platform Software, Software Version 7.1.045,  
 Release 2418P06  
 H3C S5820V2-48S  
 Copyright (c) 2004-2015 Hangzhou H3C Tech. Co., Ltd. All  
 rights reserved.  
 System capabilities supported : Bridge, Router, Customer Bridge, Service Bridge  
 System capabilities enabled : Bridge, Router, Customer Bridge

S5820 PVST配置:

```
stp instance 0 root primary
stp vlan 2 to 3 12 37 400 root primary
stp mode pvst
stp global enable
```

思科2960 PVST配置如下:

```
spanning-tree mode pvst
spanning-tree uplinkfast
```

查看S5820 STP根桥信息:

```
dis stp root
```

VLAN ID	Root Bridge ID	ExtPathCost	IntPathCost	Root Port
1	32768.741f-4a25-ae4b	0	0	
2	0.741f-4a25-ae4b	0	0	
3	0.741f-4a25-ae4b	0	0	
12	0.741f-4a25-ae4b	0	0	
37	0.741f-4a25-ae4b	0	0	
193	32768.741f-4a25-ae4b	0	0	
200	32768.741f-4a25-ae4b	0	0	
400	0.741f-4a25-ae4b	0	0	
555	32768.741f-4a25-ae4b	0	0	

查看思科2960STP根桥信息:

```
show spanning-tree root
```

Vlan	Root ID	Cost	Time	Age	Dly	Root Port
VLAN0002	2 741f.4a25.ae4b	3003	2	20	15	Po1
VLAN0003	3 741f.4a25.ae4b	3003	2	20	15	Po1
VLAN0012	12 741f.4a25.ae4b	3003	2	20	15	Po1
VLAN0400	400 741f.4a25.ae4b	3003	2	20	15	Po1

查看S5820 STP端口的状态:

```
dis stp brief
```

VLAN ID	Port	Role	STP State	Protection
2	Bridge-Aggregation24	DESIGNATED	FORWARDING	NONE
2	Bridge-Aggregation25	DESIGNATED	FORWARDING	NONE
2	Bridge-Aggregation26	DESIGNATED	FORWARDING	NONE



193	Bridge-Aggregation31	DESI FORWARDING NONE
193	Bridge-Aggregation32	DESI FORWARDING NONE
193	Bridge-Aggregation41	DESI FORWARDING NONE
193	Bridge-Aggregation42	DESI FORWARDING NONE
193	Bridge-Aggregation43	DESI FORWARDING NONE
193	Bridge-Aggregation44	DESI FORWARDING NONE
193	Bridge-Aggregation45	DESI FORWARDING NONE
193	Bridge-Aggregation46	DESI FORWARDING NONE
200	Bridge-Aggregation24	DESI FORWARDING NONE
200	Bridge-Aggregation25	DESI FORWARDING NONE
200	Bridge-Aggregation26	DESI FORWARDING NONE
200	Bridge-Aggregation27	DESI FORWARDING NONE
200	Bridge-Aggregation28	DESI FORWARDING NONE
200	Bridge-Aggregation29	DESI FORWARDING NONE
200	Bridge-Aggregation30	DESI FORWARDING NONE
200	Bridge-Aggregation31	DESI FORWARDING NONE
200	Bridge-Aggregation32	DESI FORWARDING NONE
200	Bridge-Aggregation41	DESI FORWARDING NONE
200	Bridge-Aggregation42	DESI FORWARDING NONE
200	Bridge-Aggregation43	DESI FORWARDING NONE
200	Bridge-Aggregation44	DESI FORWARDING NONE
200	Bridge-Aggregation45	DESI FORWARDING NONE
200	Bridge-Aggregation46	DESI FORWARDING NONE
400	Bridge-Aggregation24	DESI FORWARDING NONE
400	Bridge-Aggregation25	DESI FORWARDING NONE
400	Bridge-Aggregation26	DESI FORWARDING NONE
400	Bridge-Aggregation27	DESI FORWARDING NONE
400	Bridge-Aggregation28	DESI FORWARDING NONE
400	Bridge-Aggregation29	DESI FORWARDING NONE
400	Bridge-Aggregation30	DESI FORWARDING NONE
400	Bridge-Aggregation31	DESI FORWARDING NONE
400	Bridge-Aggregation32	DESI FORWARDING NONE
400	Bridge-Aggregation41	DESI FORWARDING NONE
400	Bridge-Aggregation42	DESI FORWARDING NONE
400	Bridge-Aggregation43	DESI FORWARDING NONE
400	Bridge-Aggregation44	DESI FORWARDING NONE
400	Bridge-Aggregation45	DESI FORWARDING NONE
400	Bridge-Aggregation46	DESI FORWARDING NONE
555	Bridge-Aggregation24	DESI FORWARDING NONE
555	Bridge-Aggregation25	DESI FORWARDING NONE
555	Bridge-Aggregation26	DESI FORWARDING NONE
555	Bridge-Aggregation27	DESI FORWARDING NONE
555	Bridge-Aggregation28	DESI FORWARDING NONE
555	Bridge-Aggregation29	DESI FORWARDING NONE
555	Bridge-Aggregation30	DESI FORWARDING NONE
555	Bridge-Aggregation31	DESI FORWARDING NONE
555	Bridge-Aggregation32	DESI FORWARDING NONE
555	Bridge-Aggregation41	DESI FORWARDING NONE
555	Bridge-Aggregation42	DESI FORWARDING NONE
555	Bridge-Aggregation43	DESI FORWARDING NONE
555	Bridge-Aggregation44	DESI FORWARDING NONE
555	Bridge-Aggregation45	DESI FORWARDING NONE
555	Bridge-Aggregation46	DESI FORWARDING NONE
555	Ten-GigabitEthernet1/0/17	DESI FORWARDING NONE
555	Ten-GigabitEthernet1/0/18	DESI FORWARDING NONE
555	Ten-GigabitEthernet2/0/17	DESI FORWARDING NONE
555	Ten-GigabitEthernet2/0/18	DESI FORWARDING NONE

查看思科2960 STP端口状态：  
show spanning-tree detail active

VLAN0002 is executing the ieee compatible Spanning Tree protocol  
Bridge Identifier has priority 49152, sysid 2, address 88f0.7774.c380  
Configured hello time 2, max age 20, forward delay 15

Current root has priority 2, address 741f.4a25.ae4b  
Root port is 224 (Port-channel1), cost of root path is 3003  
Topology change flag not set, detected flag not set  
Number of topology changes 117 last change occurred 4w6d ago  
    from GigabitEthernet0/37  
Times: hold 1, topology change 35, notification 2  
    hello 2, max age 20, forward delay 15  
Timers: hello 0, topology change 0, notification 0, aging 300  
Uplinkfast enabled

Port 37 (GigabitEthernet0/37) of VLAN0002 is designated forwarding  
Port path cost 3004, Port priority 128, Port Identifier 128.37.  
Designated root has priority 2, address 741f.4a25.ae4b  
Designated bridge has priority 49154, address 88f0.7774.c380  
Designated port id is 128.37, designated path cost 3003  
Timers: message age 0, forward delay 0, hold 0  
Number of transitions to forwarding state: 1  
Link type is point-to-point by default  
BPDU: sent 22961456, received 52

Port 224 (Port-channel1) of VLAN0002 is root forwarding  
Port path cost 3003, Port priority 128, Port Identifier 128.224.  
Designated root has priority 2, address 741f.4a25.ae4b  
Designated bridge has priority 2, address 741f.4a25.ae4b  
Designated port id is 128.525, designated path cost 0  
Timers: message age 1, forward delay 0, hold 0  
Number of transitions to forwarding state: 1  
Link type is point-to-point by default  
BPDU: sent 10342988, received 23360705

VLAN0003 is executing the ieee compatible Spanning Tree protocol  
Bridge Identifier has priority 49152, sysid 3, address 88f0.7774.c380  
Configured hello time 2, max age 20, forward delay 15  
Current root has priority 3, address 741f.4a25.ae4b  
Root port is 224 (Port-channel1), cost of root path is 3003  
Topology change flag not set, detected flag not set  
Number of topology changes 26 last change occurred 32w6d ago  
Times: hold 1, topology change 35, notification 2  
    hello 2, max age 20, forward delay 15  
Timers: hello 0, topology change 0, notification 0, aging 300  
Uplinkfast enabled

Port 224 (Port-channel1) of VLAN0003 is root forwarding  
Port path cost 3003, Port priority 128, Port Identifier 128.224.  
Designated root has priority 3, address 741f.4a25.ae4b  
Designated bridge has priority 3, address 741f.4a25.ae4b  
Designated port id is 128.525, designated path cost 0  
Timers: message age 2, forward delay 0, hold 0  
Number of transitions to forwarding state: 1  
Link type is point-to-point by default  
BPDU: sent 10342907, received 23360373

VLAN0012 is executing the ieee compatible Spanning Tree protocol  
Bridge Identifier has priority 49152, sysid 12, address 88f0.7774.c380  
Configured hello time 2, max age 20, forward delay 15  
Current root has priority 12, address 741f.4a25.ae4b  
Root port is 224 (Port-channel1), cost of root path is 3003  
Topology change flag not set, detected flag not set  
Number of topology changes 0 last change occurred 06:23:54 ago  
Times: hold 1, topology change 35, notification 2  
    hello 2, max age 20, forward delay 15  
Timers: hello 0, topology change 0, notification 0, aging 300

Uplinkfast enabled

Port 224 (Port-channel1) of VLAN0012 is root forwarding  
Port path cost 3003, Port priority 128, Port Identifier 128.224.  
Designated root has priority 12, address 741f.4a25.ae4b  
Designated bridge has priority 12, address 741f.4a25.ae4b  
Designated port id is 128.525, designated path cost 0  
Timers: message age 1, forward delay 0, hold 0  
Number of transitions to forwarding state: 1  
Link type is point-to-point by default  
BPDU: sent 1, received 11520

VLAN0400 is executing the ieee compatible Spanning Tree protocol  
Bridge Identifier has priority 49152, sysid 400, address 88f0.7774.c380  
Configured hello time 2, max age 20, forward delay 15  
Current root has priority 400, address 741f.4a25.ae4b  
Root port is 224 (Port-channel1), cost of root path is 3003  
Topology change flag not set, detected flag not set  
Number of topology changes 26 last change occurred 32w6d ago  
Times: hold 1, topology change 35, notification 2  
hello 2, max age 20, forward delay 15  
Timers: hello 0, topology change 0, notification 0, aging 300  
Uplinkfast enabled

Port 224 (Port-channel1) of VLAN0400 is root forwarding  
Port path cost 3003, Port priority 128, Port Identifier 128.224.  
Designated root has priority 400, address 741f.4a25.ae4b  
Designated bridge has priority 400, address 741f.4a25.ae4b  
Designated port id is 128.525, designated path cost 0  
Timers: message age 1, forward delay 0, hold 0  
Number of transitions to forwarding state: 1  
Link type is point-to-point by default  
BPDU: sent 10342917, received 13625912

至此，S5820与思科2960对接PVST典型组网配置案例已完成！

配置关键点