

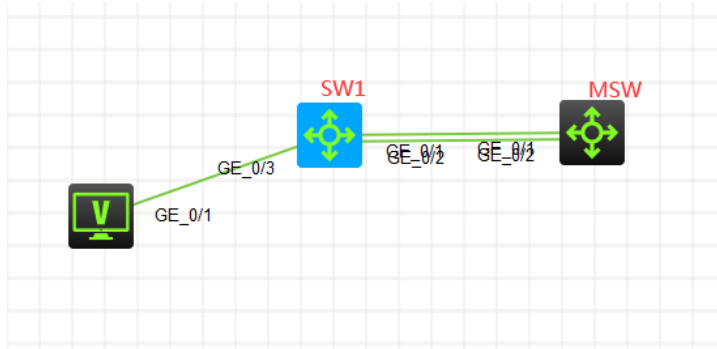
## 知 二层链路聚合典型组网案例

二层链路聚合 H3C模拟器 韦家宁 2019-12-21 发表

### 组网及说明

随着网络的高速发展，快速、稳定、冗余、安全的网络环境需求量越来越大，随着避免单点故障、单链路故障的趋势越来越明显，各类的冗余技术的重要性不言而喻，在链路冗余的技术中，链路聚合的技术发挥着重要的作用，不仅可以避免单链路故障，又可以增加链路的带宽，还能起到冗余的效果，以下是二层链路聚合的典型组网配置案例。

网络拓扑图：



网络拓扑图说明：SW1为接入交换机，MSW为汇聚交换机。SW1交换机与MSW交换机采用二层链路聚合互联实现增加带宽、链路冗余的作用。PC接入SW1，属于VLAN 10

### 配置步骤

- 1、SW1交换机创建VLAN 10，G1/0/3端口为PC的接入。G1/0/1和G1/0/2端口与MSW交换机互联，同时使用二层链路聚合的技术实现捆绑，采用trunk进行数据的传输。
- 2、MSW交换机创建VLAN 10，并设置VLAN 10的IP和子网掩码，提供终端网关的接入，G1/0/1和G1/0/2端口与SW1交换机互联，同时使用二层链路聚合技术实现捆绑，采用trunk进行数据传输。

### 配置关键点

```
<H3C>sys
[H3C]sysname SW1
[SW1]vlan 10
[SW1-vlan10]quit
[SW1]int gi 1/0/3
[SW1-GigabitEthernet1/0/3]port link-type access
[SW1-GigabitEthernet1/0/3]port access vlan 10
[SW1-GigabitEthernet1/0/3]description <connect to PC>
[SW1-GigabitEthernet1/0/3]quit
[SW1]int Bridge-Aggregation 1 //创建链路聚合组1
[SW1-Bridge-Aggregation1]quit
[SW1]int range gi 1/0/1 to gi 1/0/2
[SW1-if-range]port link-aggregation group 1 //将链路聚合组应用到接口
[SW1-if-range]quit
[SW1]int Bridge-Aggregation 1 //继续配置链路聚合组1
[SW1-Bridge-Aggregation1]port link-type trunk
Configuring GigabitEthernet1/0/1 done.
Configuring GigabitEthernet1/0/2 done.
[SW1-Bridge-Aggregation1]undo port trunk permit vlan 1
Configuring GigabitEthernet1/0/1 done.
Configuring GigabitEthernet1/0/2 done.
[SW1-Bridge-Aggregation1]port trunk permit vlan 10
Configuring GigabitEthernet1/0/1 done.
Configuring GigabitEthernet1/0/2 done.
[SW1-Bridge-Aggregation1]quit
```

MSW:

```

<H3C>sys
[H3C]sysname MSW
[MSW]vlan 10
[MSW-vlan10]quit
[MSW]int vlan 10
[MSW-Vlan-interface10]ip address 192.168.10.1 24
[MSW-Vlan-interface10]quit
[MSW]int Bridge-Aggregation 1
[MSW-Bridge-Aggregation1]quit
[MSW]int range gi 1/0/1 to gi 1/0/2
[MSW-if-range]port link-aggregation group 1
[MSW-if-range]quit
[MSW]int Bridge-Aggregation 1
[MSW-Bridge-Aggregation1]port link-type trunk
Configuring GigabitEthernet1/0/1 done.
Configuring GigabitEthernet1/0/2 done.
[MSW-Bridge-Aggregation1]undo port trunk permit vlan 1
Configuring GigabitEthernet1/0/1 done.
Configuring GigabitEthernet1/0/2 done.
[MSW-Bridge-Aggregation1]port trunk permit vlan 10
Configuring GigabitEthernet1/0/1 done.
Configuring GigabitEthernet1/0/2 done.
[MSW-Bridge-Aggregation1]quit

```

查看链路聚合的状态均为选中状态（S）：

```

[SW1]dis link-aggregation verbose
Loadsharing Type: Shar -- Loadsharing, NonS -- Non-Loadsharing
Port: A -- Auto
Port Status: S -- Selected, U -- Unselected, I -- Individual
Flags: A -- LACP_Activity, B -- LACP_Timeout, C -- Aggregation,
       D -- Synchronization, E -- Collecting, F -- Distributing,
       G -- Defaulted, H -- Expired

```

Aggregate Interface: Bridge-Aggregation1

Aggregation Mode: Static

Loadsharing Type: Shar

Port	Status	Priority	Oper-Key
GE1/0/1	S	32768	1
GE1/0/2	S	32768	1

---

[SW1]

```

[MSW]dis link-aggregation verbose

```

Loadsharing Type: Shar -- Loadsharing, NonS -- Non-Loadsharing

Port: A -- Auto

Port Status: S -- Selected, U -- Unselected, I -- Individual

Flags: A -- LACP\_Activity, B -- LACP\_Timeout, C -- Aggregation,

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Aggregate Interface: Bridge-Aggregation1

Aggregation Mode: Static

Loadsharing Type: Shar

Port	Status	Priority	Oper-Key
GE1/0/1	S	32768	1
GE1/0/2	S	32768	1

---

[MSW]

查看链路聚合后的速率为2G：

```

[MSW]dis int brief

```

Brief information on interfaces in route mode:

Link: ADM - administratively down; Stby - standby

Protocol: (s) - spoofing

Interface	Link	Protocol	Primary IP	Description
InLoop0	UP	UP(s)	--	
MGE0/0/0	DOWN	DOWN	--	
NULL0	UP	UP(s)	--	
REG0	UP	--	--	
Vlan10	UP	UP	192.168.10.1	

Brief information on interfaces in bridge mode:

Link: ADM - administratively down; Stby - standby

Speed: (a) - auto

Duplex: (a)/A - auto; H - half; F - full

Type: A - access; T - trunk; H - hybrid

Interface	Link	Speed	Duplex	Type	PVID	Description
BAGG1	UP	2G(a)	F(a)	T	1	
FGE1/0/53	DOWN	40G	A	A	1	
FGE1/0/54	DOWN	40G	A	A	1	
GE1/0/1	UP	1G(a)	F(a)	T	1	
GE1/0/2	UP	1G(a)	F(a)	T	1	
GE1/0/3	DOWN	auto	A	A	1	
GE1/0/4	DOWN	auto	A	A	1	

[MSW]

[SW1]dis int brief

Brief information on interfaces in route mode:

Link: ADM - administratively down; Stby - standby

Protocol: (s) - spoofing

Interface	Link	Protocol	Primary IP	Description
InLoop0	UP	UP(s)	--	
MGE0/0/0	DOWN	DOWN	--	
NULL0	UP	UP(s)	--	
REG0	UP	--	--	

Brief information on interfaces in bridge mode:

Link: ADM - administratively down; Stby - standby

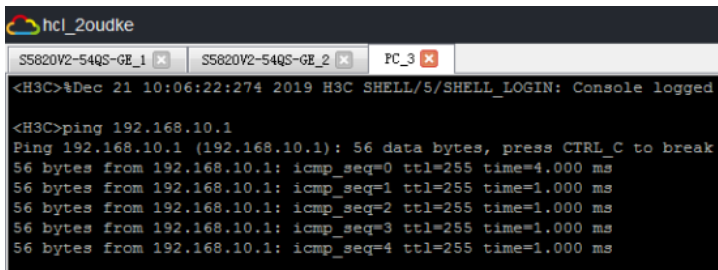
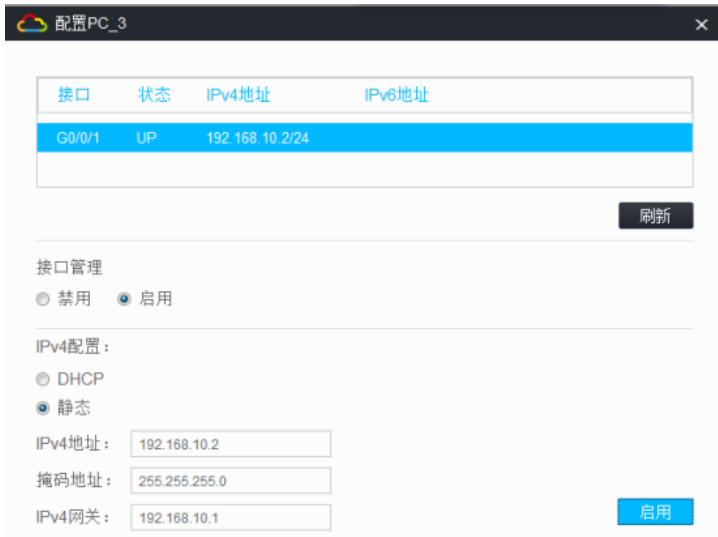
Speed: (a) - auto

Duplex: (a)/A - auto; H - half; F - full

Type: A - access; T - trunk; H - hybrid

Interface	Link	Speed	Duplex	Type	PVID	Description
BAGG1	UP	2G(a)	F(a)	T	1	
FGE1/0/53	DOWN	40G	A	A	1	
FGE1/0/54	DOWN	40G	A	A	1	
GE1/0/1	UP	1G(a)	F(a)	T	1	
GE1/0/2	UP	1G(a)	F(a)	T	1	
GE1/0/3	DOWN	auto	A	A	10	<connect to PC>
GE1/0/4	DOWN	auto	A	A	1	
GE1/0/5	DOWN	auto	A	A	1	

PC设置IP, 能PING通网关即可:



至此二层链路聚合典型组网配置已完成!