

S8500交换机实现链路聚合技术介绍

一、简单原理介绍

端口汇聚是将多个端口聚合在一起形成1个汇聚组，以实现出/入负荷在各成员端口中的分担，同时也提供了更高的连接可靠性。端口汇聚可以分为手工汇聚、动态LACP汇聚和静态LACP汇聚。同一个汇聚组中端口的配置应该保持一致，即如果某端口为Trunk端口，则其他端口也配置为Trunk端口；如该端口的链路类型改为Access端口，则其他端口的链路类型也改为Access端口。

LACP协议简介：

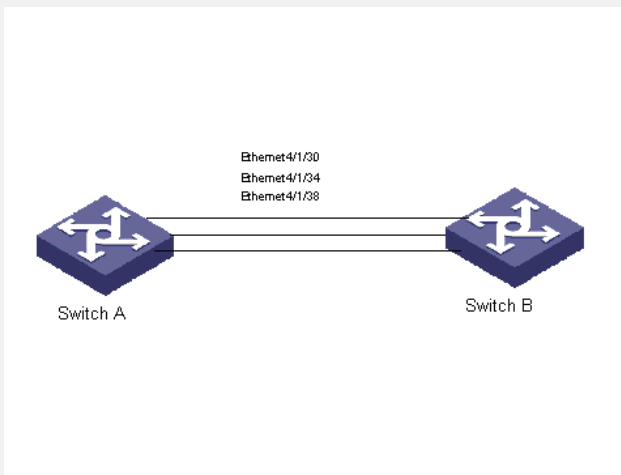
基于IEEE802.3ad标准的LACP（Link Aggregation Control Protocol，链路聚合控制协议）是一种实现链路动态聚合与解聚合的协议。LACP协议通过LACPDU（Link Aggregation Control Protocol Data Unit，链路聚合控制协议数据单元）与对端交互信息。使能某端口的LACP协议后，该端口将通过发送LACPDU向对端通告自己的系统优先级、系统MAC、端口优先级、端口号和操作Key。对端接收到这些信息后，将这条信息与其它端口所保存的信息比较以选择能够聚合的端口，从而双方可以对端口加入或退出某个动态聚合组达成一致。

二、S8500典型配置实例

2.1 组网需求

交换机Switch A用3个端口聚合接入交换机Switch B，从而实现出/入负荷在各成员端口中的进行分担。

2.2 组网图



2.3 配置命令

手动聚合的配置：

```
[switch B]link-aggregation group 1 mode manual
[switch B-Ethernet4/1/30]port link-aggregation group 1
[switch B-Ethernet4/1/34]port link-aggregation group 1
[switch B-Ethernet4/1/38]port link-aggregation group 1
#Switch A的配置和Switch B的配置完全一致。上面显示的是链路聚合后的详细信息，信息表明个端口聚合处于Up状态。
```

```
[switch B]dis link-aggregation ver
Loadsharing Type: Shar -- Loadsharing, NonS -- Non-Loadsharing
Aggregation ID: 1, AggregationType: Manual, Loadsharing Type: Shar
Aggregation Description:
```

```
System ID: 0x8000, 00e0-fc36-45b1
Port Status: S -- Selected, T -- sTandby, U -- Unselected
Local:
```

Port	Status	Priority	Flag	Oper-Key	Link-Status
Ethernet4/1/30	S	32768	0x00 1	Up	
Ethernet4/1/34	S	32768	0x00 1	Up	
Ethernet4/1/38	S	32768	0x00 1	Up	

Remote:

Actor	Partner	Priority	Flag	Oper-Key	SystemID
Ethernet4/1/30	0	0	0x00 0	0x0,0000-0000-0000	
Ethernet4/1/34	0	0	0x00 0	0x0,0000-0000-0000	

```

Ethernet4/1/38    0    0    0x00 0    0x0,0000-0000-0000
静态聚合的配置:
[switch B]link-aggregation group 1 mode static
[switch B-Ethernet4/1/30]port link-aggregation group 1
[switch B-Ethernet4/1/34]port link-aggregation group 1
[switch B-Ethernet4/1/38]port link-aggregation group 1
#显示聚合的信息。同样说明了各端口聚合正常。
[Switch A]dis link-aggregation ver
Loadsharing Type: Shar -- Loadsharing, NonS -- Non-Loadsharing
Aggregation ID: 1, AggregationType: Static, Loadsharing Type: Shar
Aggregation Description:
System ID: 0x8000, 00e0-fc00-0001
Port Status: S -- Selected, T -- sTandby, U -- Unselected
Local:
  Port          Status Priority Flag Oper-Key Link-Status
  Ethernet3/1/30    S    32768  0x3d 1    Up
  Ethernet3/1/34    S    32768  0x3d 1    Up
  Ethernet3/1/38    S    32768  0x3d 1    Up
Remote:
  Actor          Partner Priority Flag Oper-Key SystemID
  Ethernet3/1/30    237   32768  0x3d 1    0x8000,00e0-fc36-45b1
  Ethernet3/1/34    241   32768  0x3d 1    0x8000,00e0-fc36-45b1
  Ethernet3/1/38    245   32768  0x3d 1    0x8000,00e0-fc36-45b1
#改动端口Ethernet4/1/34的属性。
[switch B-Ethernet4/1/34]duplex half
#显示聚合信息, 改动之后, 显示信息说明Ethernet4/1/34处于Standby状态, 因此
端口的属性信息和对端不匹配。
[switch B]dis link-aggregation ver
Loadsharing Type: Shar -- Loadsharing, NonS -- Non-Loadsharing
Aggregation ID: 1, AggregationType: Static, Loadsharing Type: Shar
Aggregation Description:
System ID: 0x8000, 00e0-fc36-45b1
Port Status: S -- Selected, T -- sTandby, U -- Unselected
Local:
  Port          Status Priority Flag Oper-Key Link-Status
  Ethernet4/1/30    S    32768  0x3d 1    Up
  Ethernet4/1/34    T    0      0x41 2    Up
  Ethernet4/1/38    S    32768  0x3d 1    Up
Remote:
  Actor          Partner Priority Flag Oper-Key SystemID
  Ethernet4/1/30    185   32768  0x3d 1    0x8000,00e0-fc00-0001
  Ethernet4/1/34    0     32768  0x38 0    0x8000,0000-0000-0000
  Ethernet4/1/38    193   32768  0x3d 1    0x8000,00e0-fc00-0001
动态聚合的配置:
[switch B-Ethernet4/1/30] lacp enable
[switch B-Ethernet4/1/34] lacp enable
[switch B-Ethernet4/1/34]duplex half
[switch B-Ethernet4/1/38] lacp enable
#显示聚合的信息, 显示发现有Aggregation ID: 193、Aggregation ID: 194两个聚合组
。LACP协议根据端口属性的不同, 分成了不同的聚合组。
[switch B]dis link-aggregation ver
Loadsharing Type: Shar -- Loadsharing, NonS -- Non-Loadsharing
Aggregation ID: 193, AggregationType: Dynamic, Loadsharing Type: Shar
Aggregation Description:
System ID: 0x8000, 00e0-fc36-45b1
Port Status: S -- Selected, T -- sTandby, U -- Unselected
Local:
  Port          Status Priority Flag Oper-Key Link-Status
  Ethernet4/1/30    S    32768  0x3d 3    Up
  Ethernet4/1/38    S    32768  0x3d 3    Up
Remote:
  Actor          Partner Priority Flag Oper-Key SystemID
  Ethernet4/1/30    185   32768  0x3d 3    0x8000,00e0-fc00-0001
  Ethernet4/1/38    193   32768  0x3d 3    0x8000,00e0-fc00-0001

```

Loadsharing Type: Shar -- Loadsharing, NonS -- Non-Loadsharing
Aggregation ID: 194, AggregationType: Dynamic, Loadsharing Type: NonS
Aggregation Description:
System ID: 0x8000, 00e0-fc36-45b1
Port Status: S -- Selected, T -- sTandby, U -- Unselected
Local:
Port Status Priority Flag Oper-Key Link-Status
Ethernet4/1/34 S 0 0x79 2 Up
Remote:
Actor Partner Priority Flag Oper-Key SystemID
Ethernet4/1/34 0 32768 0x38 0 0x8000,0000-0000-0000