

Symmetric Hash for LAG Configuration Example

Symmetric Hash support for LAG. Symmetric hash need the hashing field must be symmetric. For example, packet 1 and packet 2 are symmetric in table 1 and table 2 as below, and then packet 1 and packet2 will go out from the same physical port. Now Our symmetric Hash use IP layer and L4 field to hash when packets are transmitted on LAG port. Only matching symmetric condition, two packets can be transmitted on the same member port of LAG interface.

IP Packet	Source IP Address	Destination IP Address
Packet1	10.1.1.1	20.1.1.1
Packet2	20.1.1.1	10.1.1.1

Table 1.

Layer 4 Packet	Source IP Address	Destination IP Address	Source Port Number	Destination Port Number
Packet1	10.1.1.1	20.1.1.1	100	200
Packet2	20.1.1.1	10.1.1.1	200	100

Table 2.

Symmetric Hash field as below:

1. ip-source
2. ip-destination
3. port-source
4. port-destination

By default, Enable hash field on LAG interface:

1. ingress-interface
2. ethernet-source-address
3. ethernet-destination-address
4. ethernet-type
5. vlan
6. ip-protocol
7. ip-source
8. ip-destination
9. port-source
10. port-destination

LAG interface enables 10 fields to hash more than symmetric hashing 4 fields in the default case. So if to need symmetric hash work on lag interface please it is best to disable the following field

1. ingress-interface
2. ethernet-source-address
3. ethernet-destination-address
4. ethernet-type
5. vlan
6. ip protocol

Symmetric hashing is supported on Helix4 , Trident2, Trident2+, Trident3 and Tomahawk platform switches.

LAG Hashing Configuration

```
set interface aggregate-ethernet ae1 hash-mapping mode advanced
set interface aggregate-balancing hash-mapping symmetric true
```

LAG Hashing Examples:

configure one lag with three ports:

```
set interface gigabit-ethernet te-1/1/1 family ethernet-switching native-vlan-id 199
set interface aggregate-ethernet ae1 family ethernet-switching native-vlan-id 299
set interface gigabit-ethernet te-1/1/2 ether-options 802.3ad ae1
set interface gigabit-ethernet te-1/1/3 ether-options 802.3ad ae1
set interface gigabit-ethernet te-1/1/4 ether-options 802.3ad ae1
set protocols static route 100.100.100.0/24 next-hop 182.168.1.100
set protocols static route 172.168.1.0/24 next-hop 182.168.1.100
set l3-interface vlan-interface vlan199 address 172.168.1.1 prefix-length 24
set l3-interface vlan-interface vlan299 address 182.168.1.1 prefix-length 24
set l3-interface vlan-interface vlan399 address 100.100.100.1 prefix-length 24
set vlans vlan-id 199 l3-interface vlan199
set vlans vlan-id 299 l3-interface vlan299
set vlans vlan-id 399 l3-interface vlan399
```

Configure the symmetric hash true

```
set interface aggregate-ethernet ae1 hash-mapping mode advanced
set interface aggregate-balancing hash-mapping symmetric true
set interface aggregate-balancing hash-mapping field ingress-interface disable true
set interface aggregate-balancing hash-mapping field ethernet-source-address disable true
set interface aggregate-balancing hash-mapping field ethernet-destination-address disable true
set interface aggregate-balancing hash-mapping field ethernet-type disable true
set interface aggregate-balancing hash-mapping field vlan disable true
set interface aggregate-balancing hash-mapping field ip-protocol disable true
```