

S5900-24S4T2Q Switch ERPS Configuration Guide

Model: S5900-24S4T2Q

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Chapter 1 Introduces Fast Ethernet Ring Protection

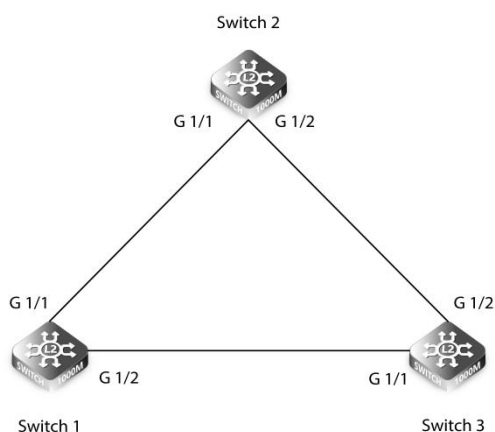
1.1 Overview

The Fast Ethernet Ring Protection Protocol is a special type of link layer protocol designed specifically for building ring-shaped Ethernet topologies. The Ethernet ring protection protocol blocks a link when the ring network topology is complete, preventing data loops from forming broadcast storms. In the event of a link interruption, the protocol quickly restores the previously blocked link, enabling communication between nodes on the ring network.

The fast Ethernet ring protection protocol controls the aging of the switch MAC address table to ensure that data packets can be sent to the correct link when the topology changes. Generally, the aging time of MAC addresses in the address table is 300 seconds. The ring network protection protocol can control the MAC address table of the switch to age in a very short time.

Both the ring network protection protocol and the spanning tree protocol are used for link layer topology control. Spanning tree protocol is applicable to various complex networks, and it uses hop-by-hop method to propagate the change of network topology. The ring network protection protocol is dedicated to the ring topology, and uses the diffusion method to propagate topology change information. Therefore, in the ring network, the convergence performance of the ring network protection protocol is better than the spanning tree protocol. In the case of good network conditions, the time for the ring network protection protocol to resume network communication can be less than 50 milliseconds.

1.2 Topology



1.3 Related Configuration

Configure Switch 1 :

```

ethernet cfm ENABLE
ethernet cfm md mdnf STRING a level 4
ma manf STRING a meps 1-2 vlan 2
!
ethernet cfm md mdnf STRING d level 4
ma manf STRING d meps 1,4 vlan 2
!
spanning-tree mode rstp
!
erps 1
control-vlan 2
version 1
exit
!
interface GigaEthernet1/1

```

```

ethernet cfm ENABLE
ethernet cfm mep add mdnf STRING a manf STRING a mepid 1 rmepid 2
erps 1 ring-port
erps 1 cfm-disable
erps 1 mep down md a ma a level 4 local 1 remote 2
!
interface GigaEthernet1/2
switchport mode trunk
ethernet cfm ENABLE
ethernet cfm mep add mdnf STRING d manf STRING d mepid 1 rmepid 4
erps 1 rpl
erps 1 cfm-disable
erps 1 mep down md d ma d level 4 local 1 remote 4
!
vlan 1-2
!

```

Configure Switch 2:

```

ethernet cfm ENABLE
ethernet cfm md mdnf STRING a level 4
ma manf STRING a meps 1-2 vlan 2
!
ethernet cfm md mdnf STRING e level 4
ma manf STRING e meps 5-6 vlan 2
!
spanning-tree mode rstp
!
erps 1
control-vlan 2
version 1
exit
!
interface GigaEthernet1/1
switchport mode trunk
ethernet cfm ENABLE
ethernet cfm mep add mdnf STRING a manf STRING a mepid 2 rmepid 1
erps 1 ring-port
erps 1 cfm-disable
erps 1 mep down md a ma a level 4 local 2 remote 1
!
interface GigaEthernet1/2
switchport mode trunk
ethernet cfm ENABLE
ethernet cfm mep add mdnf STRING e manf STRING e mepid 5 rmepid 6
erps 1 ring-port
erps 1 cfm-disable
erps 1 mep down md e ma e level 4 local 5 remote 6
!
vlan 1-2
!

```

Configure Switch 3:

```

ethernet cfm ENABLE
ethernet cfm md mdnf STRING d level 4
ma manf STRING d meps 1,4 vlan 2
!
ethernet cfm md mdnf STRING e level 4
ma manf STRING e meps 5-6 vlan 2
!
spanning-tree mode rstp
!
erps 1
control-vlan 2
version 1
exit
!
interface GigaEthernet1/1
switchport mode trunk

```

```
ethernet cfm ENABLE
ethernet cfm mep add mdnf STRING d manf STRING d mepid 4 rmepid 1
erps 1 neighbour
erps 1 cfm-disable
erps 1 mep down md d ma d level 4 local 4 remote 1
!
interface GigaEthernet1/2
switchport mode trunk
ethernet cfm ENABLE
ethernet cfm mep add mdnf STRING e manf STRING e mepid 6 rmepid 5
erps 1 ring-port
erps 1 cfm-disable
erps 1 mep down md e ma e level 4 local 6 remote 5
!
!
vlan 1-2
!
```



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