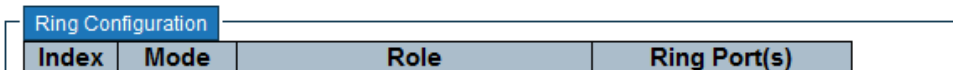
Ring Version 2 Application Guide

This document is introduction of the Industrial Ethernet Switch Software Spec for Ringv2.

In our current design, one device could support 3 ring index, they are include ring, coupling, dual-homing, chain, and balancing-chain.



Note 1 - It must enable group1 before configure group2 as coupling.

Note 2 - When group1 or group2 is enabled, the configuration of group3 is invisible.

Note 3 - When group3 is enabled, the configuration of group1 and group3 is invisible.

Group 1 - It support option of ring-master and ring-slave.

Ring - it could be master or slave.

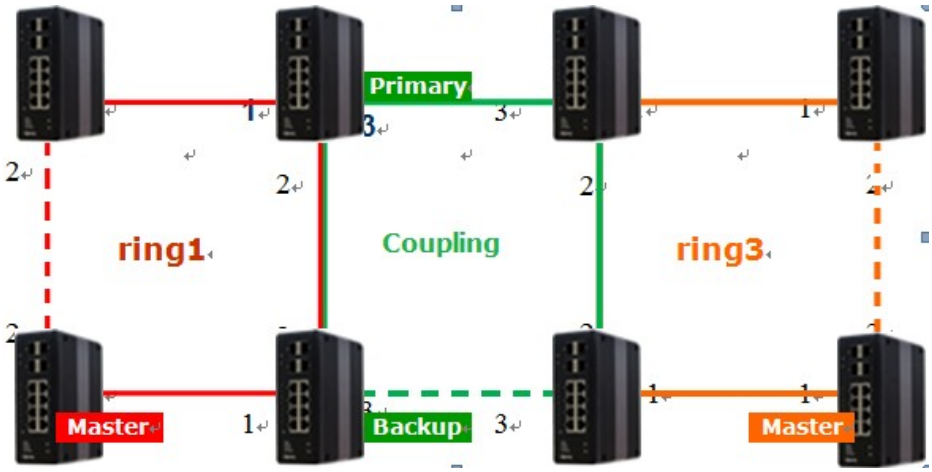
When role is ring/master, one ring port is forward port and another is block port. The block port is redundant port. It is blocked in normal state.

When role is ring/slave, both ring ports are forward port.

Group 2 - It support configuration of the ring, coupling and dual-homing.

Ring - it could be master or slave.

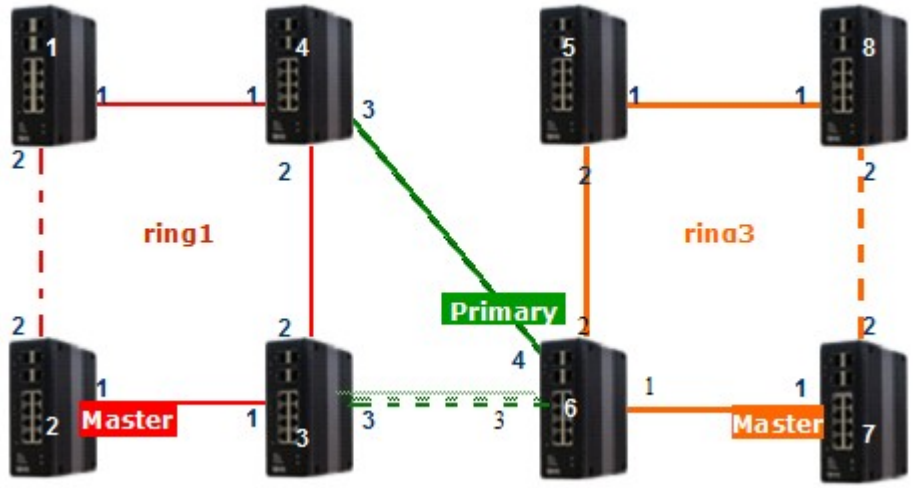
 # Coupling - it could be primary and backup.



When role is coupling/primary, only it need configure one ring port named primary port.

When role is coupling/backup, only it need configure one ring port named backup port. This backup port is redundant port. In normal state, it is blocked.

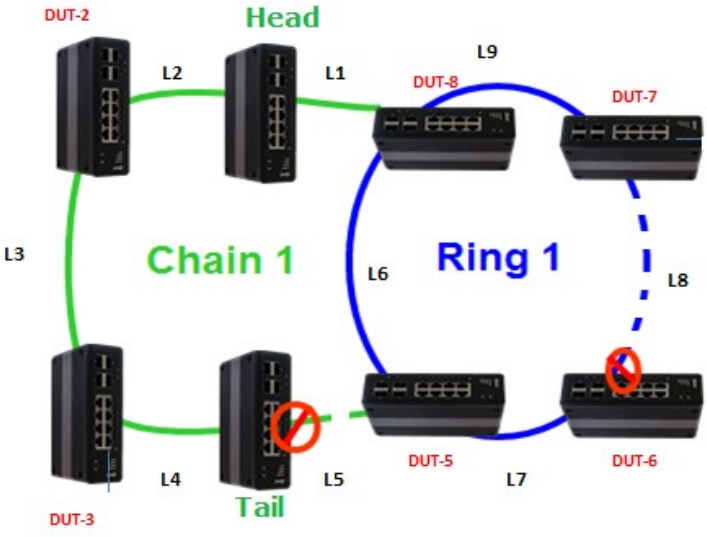
 # Dual-Homing



When role is dual-homing, one ring port is primary port and another is backup port. This backup port is redundant port. In normal state, it is blocked.

Group 3 - It support configuration of the chain and balancing-chain.

 # Chain - it could be head, tail or member.

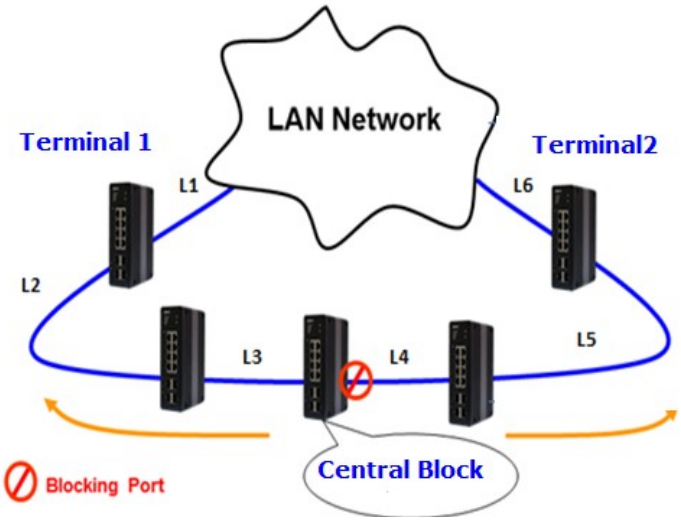


When role is chain/head, one ring port is head port and another is member port. Both ring ports are forwarded in normal state.

When role is chain/tail, one ring port is tail port and another is member port. The tail port is redundant port. It is blocked in normal state.

When role is chain/member, both ring ports are member port. Both ring ports are forwarded in normal state.

 # Balancing Chain - it could be central-block, terminal-1/2 or member.



When role is balancing-chain/central-block, one ring port is member port and another is block port. The block port is redundant port. It is blocked in normal state.

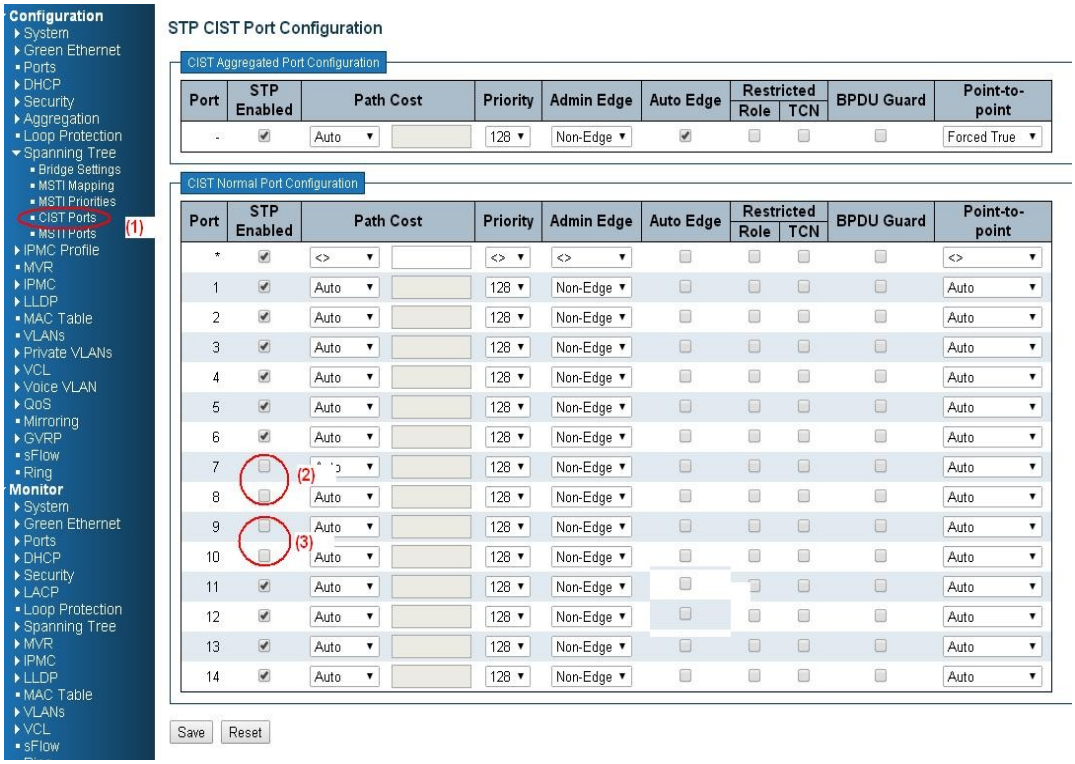
When role is balancing-chain/terminal-1/2, one ring port is terminal port and another is member port. Both ring ports are forwarded in normal state.

When role is balancing-chain/member, both ring ports are member port. Both ring ports are forwarded in normal state.

Note 1 - It must enable group1 before configure group2 as coupling.
Note 2 - When group1 or group2 is enabled, the configuration of group3 is invisible.
Note 3 - When group3 is enabled, the configuration of group1 and group3 is invisible.

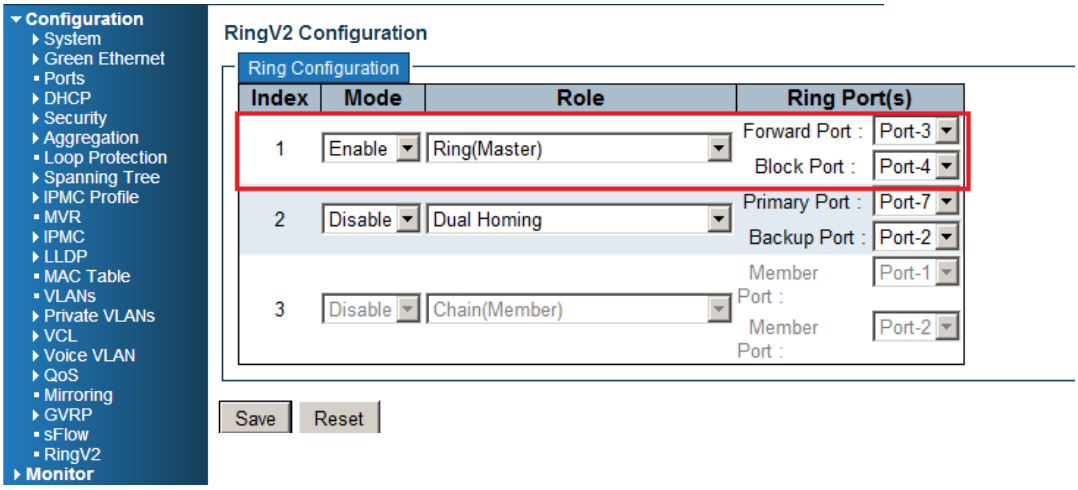
How to Configure Ringv2

First Step: Disable RSTP on All Ring Port



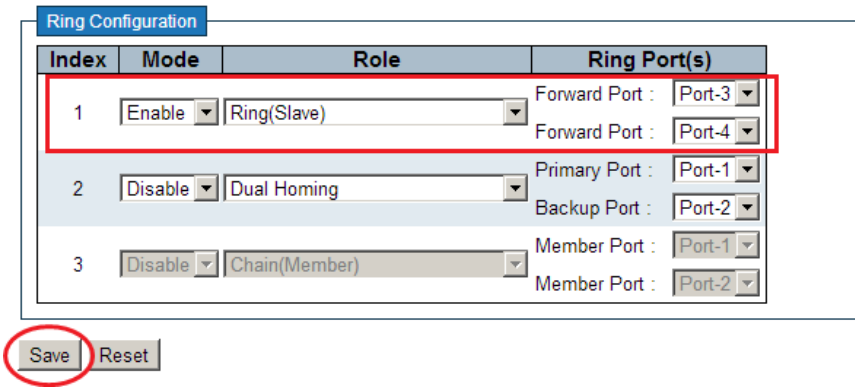
1. Go to “ConfigurationSpanning Tree→ CIST ports” Web page
2. Do not enable STP global.
3. Click “Save” bottom

Ring Master



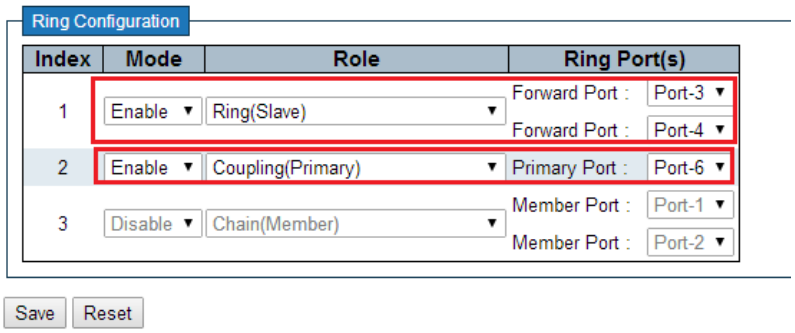
1. Go to “Configuration→Ringv2” Web page
2. Enable Group1, and Select Role be “Ring(Master)
3. Select one port link to neighbor devices be “Forward Port”, another is “Block Port”

Ring Slave



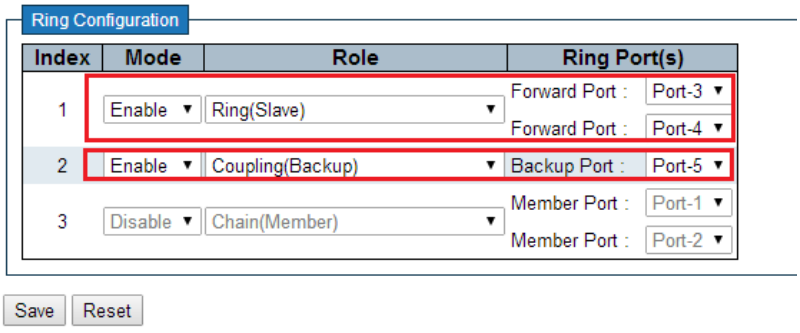
1. Go to “Configuration→Ringv2” Web page
2. Enable Group1, and Select Role be “Ring(Slave)
3. Select two port link to neighbor devices be “Forward Port”.

Coupling Primary



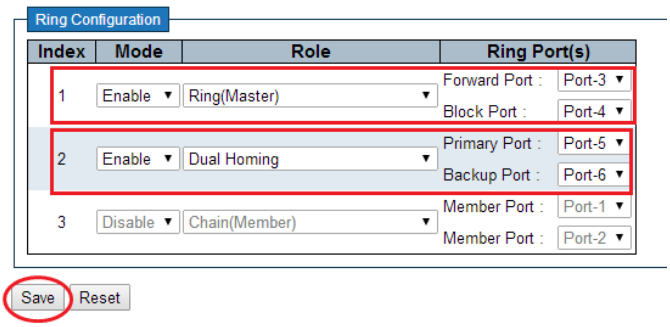
1. Go to “Configuration→Ringv2” Web page
2. Enable Group1, and Select Role be “Ring(Slave)
3. Select two port link to neighbor devices be “Forward Port”.
4. Enable Group2, and Select Role be “Coupling(Primary)”
5. Select one port link to above ring be “Primary Port”.

Coupling Backup



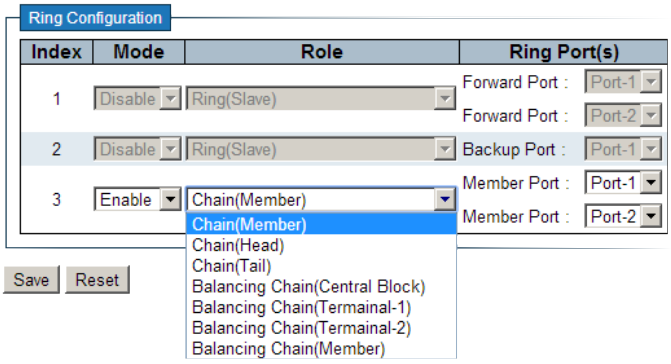
1. Go to “Configuration→Ringv2” Web page
2. Enable Group1, and Select Role be “Ring(Slave)
3. Select two port link to neighbor devices be “Forward Port”.
4. Enable Group2, and Select Role be “Coupling(Backup)”
5. Select one port link to above ring be “Backup Port”.

Dual-Homing

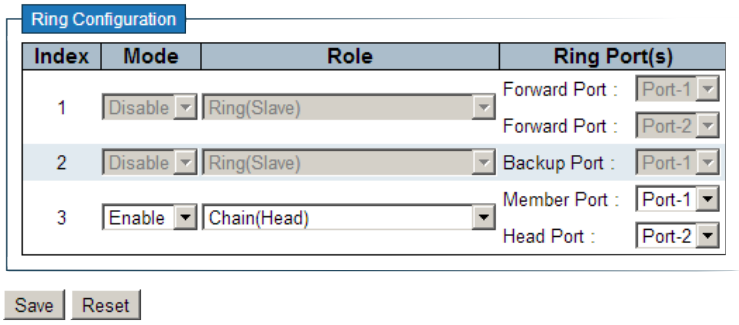


1. Go to “Configuration→Ringv2” Web page
2. Enable Group2, and Select Role be “Dual Homing”
3. Select one port link to other ring be “Backup Port”,

Chain(Member)

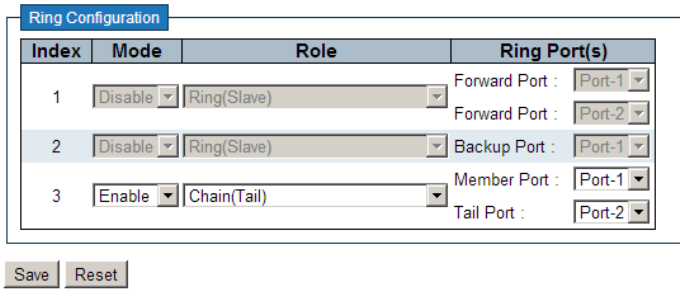


Chain(Haed)



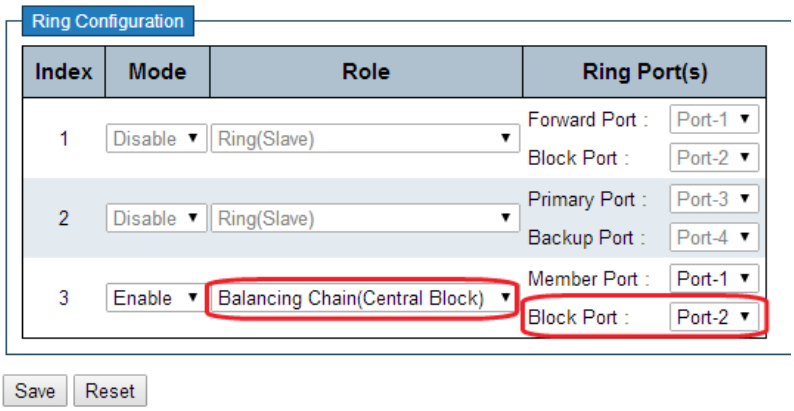
1. Go to “Configuration→Ringv2” Web page
2. Enable Group3, and Select Role be “Chain(Head)”
3. Select one port link to other ring or networks be “Head Port”.

Chain(Tail)



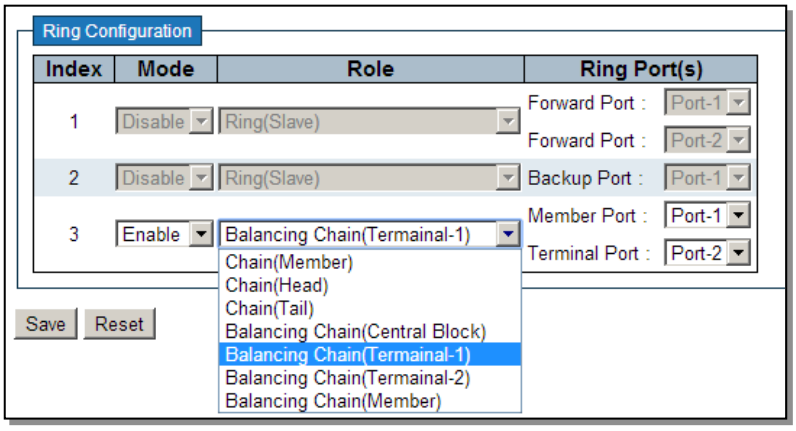
1. Go to “Configuration→Ringv2” Web page
2. Enable Group3, and Select Role be “Chain(Head)”
3. Select one port link to other ring or networks be “Head Port”.

Balance Chain(Central Block)



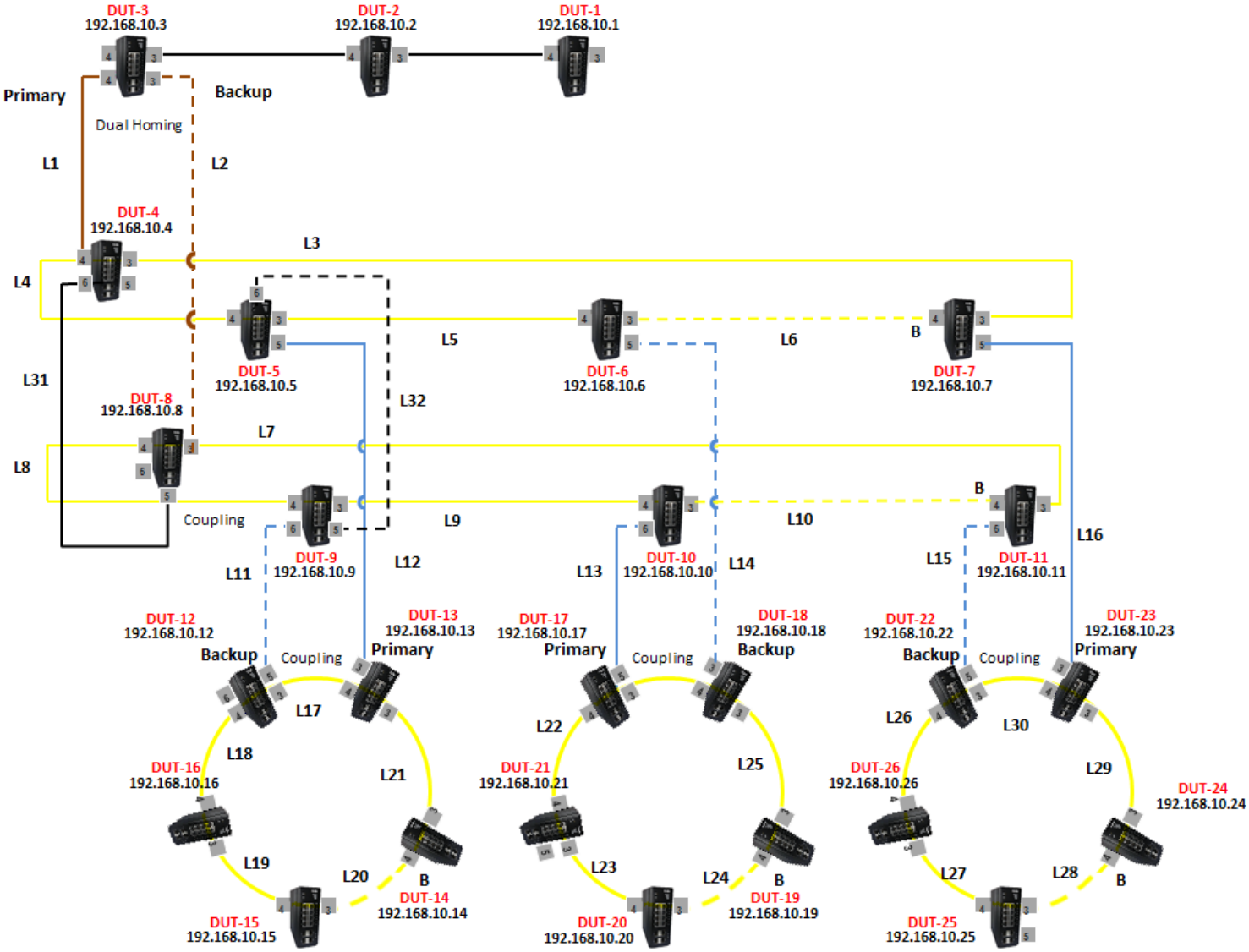
1. Go to “Configuration→Ringv2” Web page
2. Enable Group3, and Select Role be “Balance Chain(Central Block)”
3. Select one port be “Block Port” which could distribute traffic loading

Balance Chain(Terminal)



1. Go to “Configuration→Ringv2” Web page
2. Enable Group3, and Select Role be “Balance Chain(Terminal-1(or2))”
3. Select one port be “Terminal Port” which connect to other ring group.

Application Scenario



DUT 3 is Dual-Homing to Ring1 and Ring2

DUT 4~7 are belong to Ring 1, DUT7 is master of Ring 1

DUT 8~11 are belong to Ring 2, DUT11 is master of Ring 2. DUT8 is coupling primary to Ring1, and DUT9 is coupling backup to Ring1.

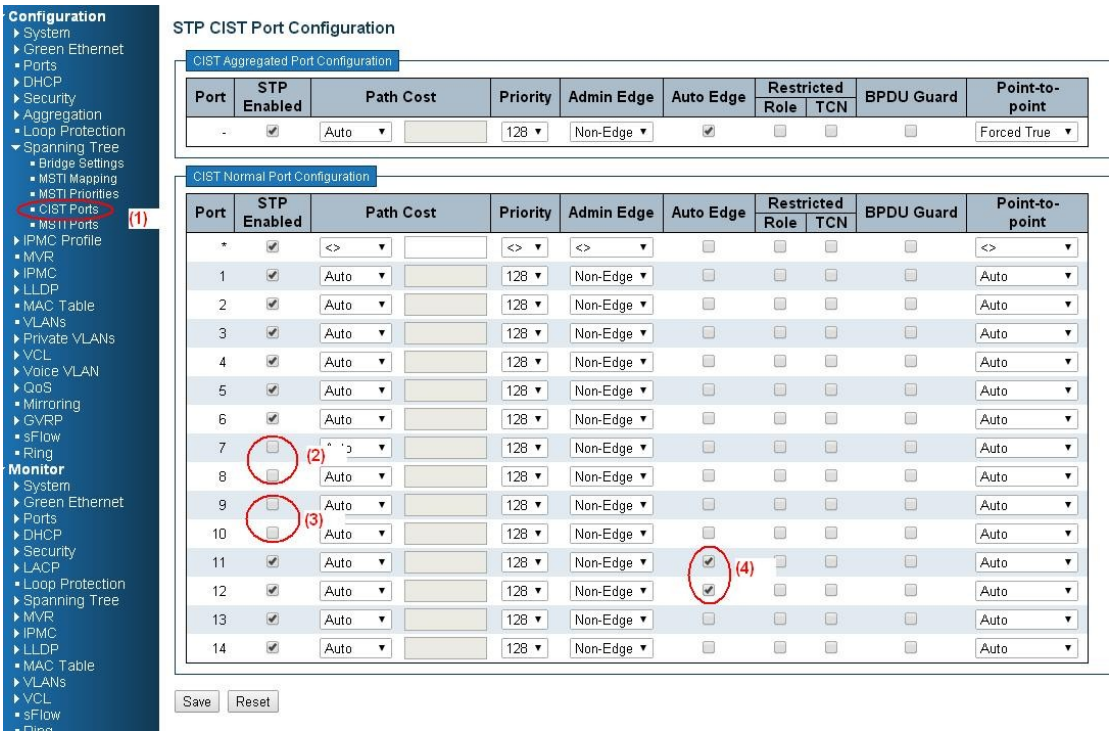
DUT 12-16 are belong to Ring 3, DUT14 is master of Ring 3. DUT13 is coupling primary to Ring1, and DUT12 is coupling backup to Ring2.

DUT 17-21 are belong to Ring 4, DUT19 is master of Ring 4. DUT17 is coupling primary to Ring2, and DUT18 is coupling backup to Ring1

DUT 22-26 are belong to Ring 5, DUT24 is master of Ring 5. DUT23 is coupling primary to Ring1,

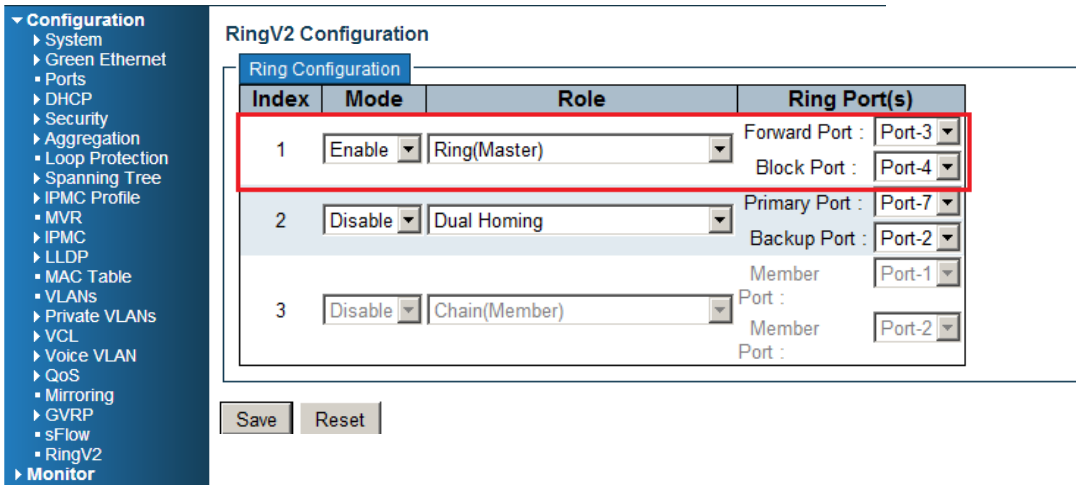
and DUT22 is coupling backup to Ring2.

Disable STP on all switch ring ports



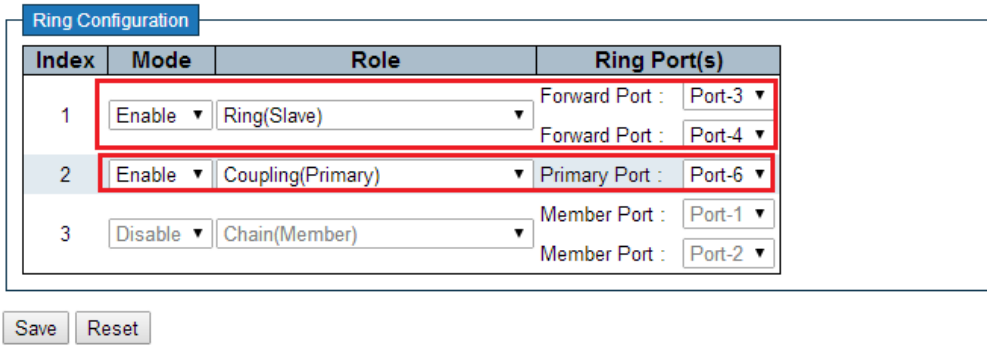
1. Go to “Configuration→Spanning Tree→ CIST ports” Web page
2. Do not enable on all Ring member ports
   Click “Save” bottom.

On DUT3(Dual-Homing)



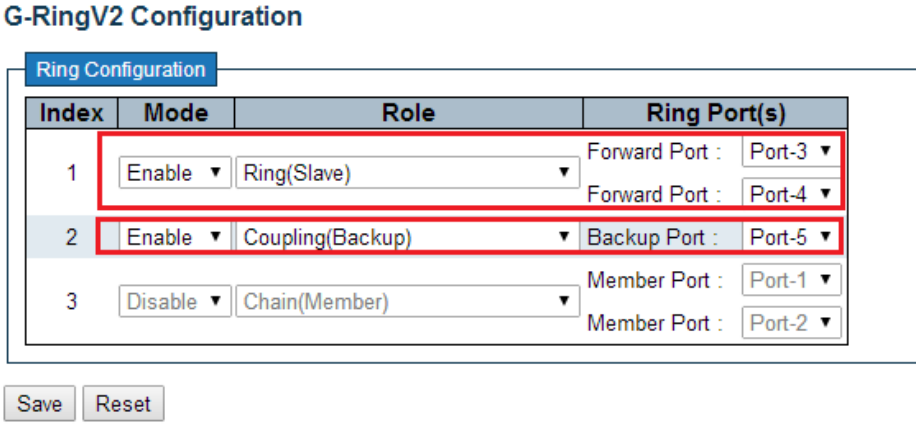
1. Go to “Configuration→RingV2” Web page
2. Enable Group2, and Select Role be “Dual Homing”
3. Select one port link to Ring2 or Ring3 be “Backup Port”, in this scenario backup port is on port 6 Click “Save” bottom

On DUT8, 13, 17, 23(Coupling Primary)



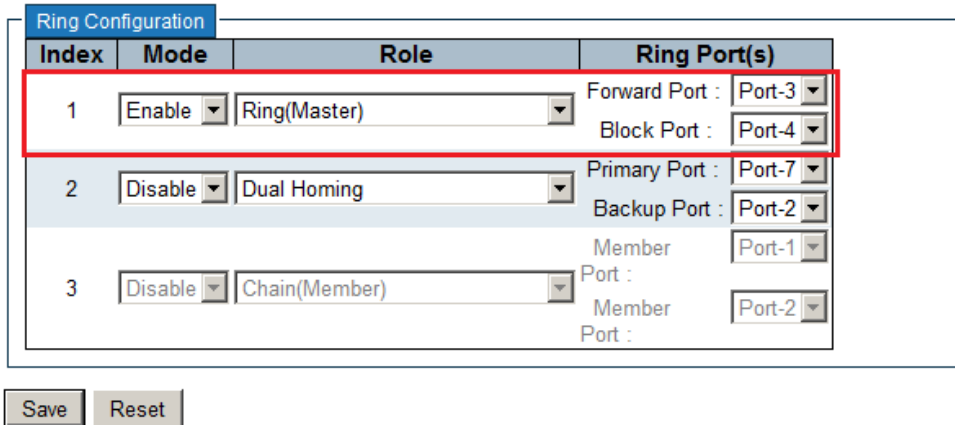
1. Enable Group1, and Select Role be “Ring(Slave)
2. Select two port link to neighbor devices be “Forward Port”.
3. Enable Group2, and Select Role be “Coupling(Primary)”
4. Select one port link to above ring be “Primary Port”.
5. Click “Save” bottom

On DUT9, 12, 18, 22(Coupling Backup)



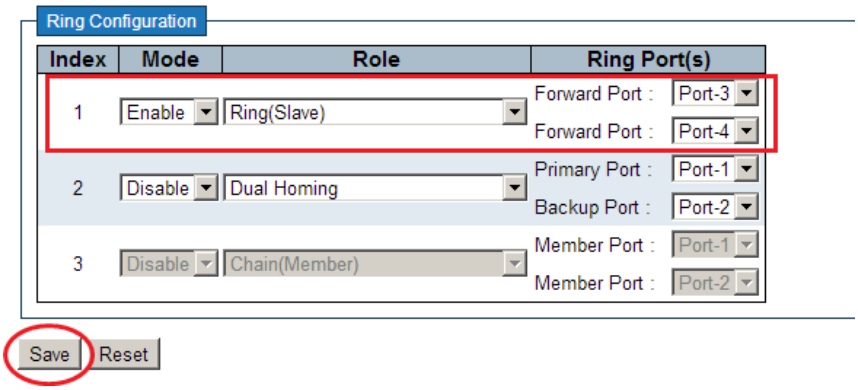
1. Enable Group1, and Select Role be “Ring(Slave)
2. Select two port link to neighbor devices be “Forward Port”.
3. Enable Group2, and Select Role be “Coupling(Backup)”
4. Select one port link to above ring be “Backup Port”.
5. Click “Save” bottom

On DUT11, 14, 19, 24(Coupling Backup)



1. Enable Group1, and Select Role be “Ring(Master)
2. Select one port link to neighbor devices be “Forward Port”, another is “Block Port”

Other devices are pure Ring Slave



1. Enable Group1, and Select Role be “Ring(Slave)
2. Select two port link to neighbor devices be “Forward Port”.