

ENT-AN1078-4.3 Application Note

Ethernet Ring Protection Switching Configuration Guide

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a  MICROCHIP company

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1 Revision History

The revision history describes the changes that were implemented in the document. The changes are listed by revision, starting with the most current publication.

Revision 1.1

Revision 1.1 was published in January 2018. There were no changes to the technical content in revision 1.1 of this document.

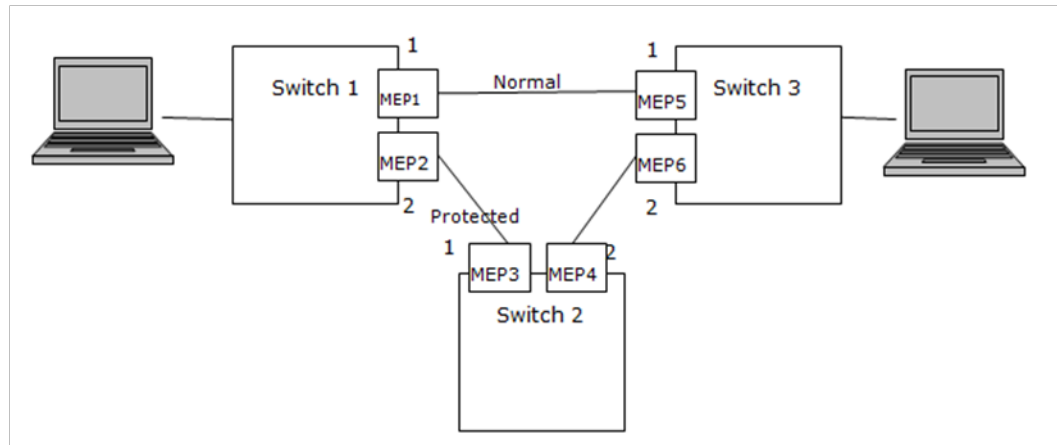
Revision 1.0

Revision 1.0 was published in May 2017. It was the first publication of this document.

2 Ethernet Ring Protection Switching Configuration

This document shows how to configure the Ethernet Ring Protection Switching (ERPS) for Microsemi switches using the Web GUI and the ICLI commands. The following figure shows the simple three switch network constructed to demonstrate these features.

Figure 1 • Ethernet Ring Protection Switching (ERPS) Model



3 Configuring ERPS from the ICLI

The following sections describe how to configure from the ICLI.

3.1 Initial Switch Configuration

The following commands disable Spanning Tree Protocol (STP) and LLDP and enable C-Port on Port 1 and 2 of all switches.

```
#Configure port 1-2
interface GigabitEthernet 1/1-2
#set C-Port
switchport hybrid port-type c-port
switchport mode hybrid
#disable LLDP
no lldp receive
no lldp transmit
#disable Spanning Tree Protocol
no spanning-tree
```

3.2 Configuring Maintenance Entity Point (MEP) and ERPS on Switch 1 (RPL Owner)

The following commands configure MEP and ERPS on switch 1 (RPL owner).

```
#create mep 1 on port 1
mep 1 down domain port flow 1 level 0 interface GigabitEthernet 1/1
#set vlan for MEP traffic
mep 1 vid 3001
#set id of peer mep
mep 1 peer-mep-id 5
#enable ccm, default is 1FPS
mep 1 cc 0
#enable RAPS
mep 1 aps 0 raps
mep 2 down domain port flow 2 level 0 interface GigabitEthernet 1/2
mep 2 mep-id 2
mep 2 vid 3001
mep 2 peer-mep-id 3
mep 2 cc 0
mep 2 aps 0 raps
#create erps on port 1 and port 2
erps 1 major port0 interface GigabitEthernet 1/1 port1 interface GigabitEthernet 1/2
#set MEP ID for the corresponding port
erps 1 mep port0 sf 1 aps 1 port1 sf 2 aps 2
#set to RPL owner
erps 1 rpl owner port1\
#set protected VLAN
erps 1 vlan 1
```

3.3 Configuring MEP and ERPS on Switch 2 (RPL Neighbor)

The following commands configure MEP and ERPS on switch 2 (RPL neighbor).

```
mep 1 down domain port flow 1 level 0 interface GigabitEthernet 1/1
mep 1 mep-id 3
mep 1 vid 3001
mep 1 peer-mep-id 2
mep 1 cc 0
mep 1 aps 0 raps
mep 2 down domain port flow 2 level 0 interface GigabitEthernet 1/2
mep 2 mep-id 4
mep 2 vid 3001
mep 2 peer-mep-id 6
mep 2 cc 0
mep 2 aps 0 raps
erps 1 major port0 interface GigabitEthernet 1/1 port1 interface GigabitEthernet 1/2
erps 1 mep port0 sf 1 aps 1 port1 sf 2 aps 2
#set to RPL neighbour
erps 1 rpl neighbor port0
erps 1 vlan 1
```

3.4 Configuring MEP and ERPS on Switch 3

The following commands configure MEP and ERPS on switch 3.

```
mep 1 down domain port flow 1 level 0 interface GigabitEthernet 1/1
mep 1 mep-id 5
mep 1 vid 3001
mep 1 peer-mep-id 1
mep 1 cc 0
mep 1 aps 0 raps
mep 2 down domain port flow 2 level 0 interface GigabitEthernet 1/2
mep 2 mep-id 6
mep 2 vid 3001
mep 2 peer-mep-id 4
mep 2 cc 0
mep 2 aps 0 raps
erps 1 major port0 interface GigabitEthernet 1/1 port1 interface GigabitEthernet 1/2
erps 1 mep port0 sf 1 aps 1 port1 sf 2 aps 2
erps 1 vlan 1
```

Note:

To set the CCM rate to 100 FPS or 300 FPS on Caracal (VSC7428/VSC7429), the peer MAC address must be known, or first set it to the lower rate, until the peer MAC address is learned and then change it to a higher rate.

```
mep 1 peer-mep-id <peer mep id> mac <peer mac address>
mep 1 cc 0 fr300s
```

The ERPS status can be checked with the `show erps` command.

4 Configuring ERPS Examples

The following sections provide examples for the various configurations of ERPS.

4.1 Initial Switch Configuration

Use the following steps to configure the ERPS features.

Note:

Connect switch 1 to switch 2 and switch 1 to switch 3. Do not connect switch 2 to switch 3 to avoid creating a loop. The web client is connected to switch 1.

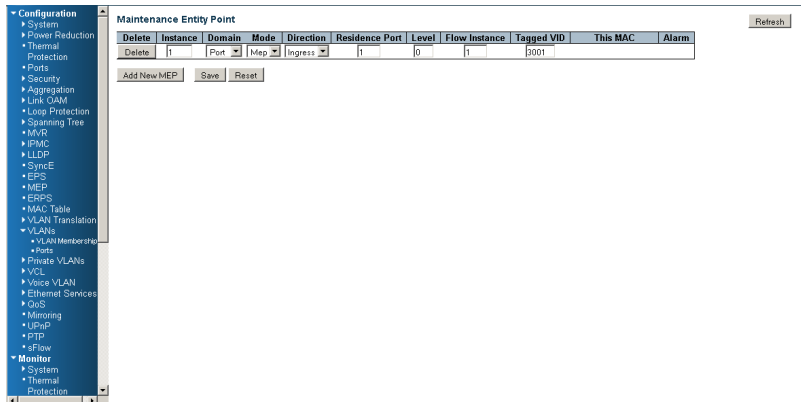
1. Restore the default settings for all three switches.
2. Disable the DHCP client and set the proper static IP for each switch. In this example, switch 1 is 192.0.2.1, switch 2 is 192.0.2.2, and switch 3 is 192.0.2.3.
3. Disable spanning tree on all the switches to avoid conflict with ERPS (spanning tree is enabled by default).
4. Enable VLAN tag aware on all three switches. In the VLAN configuration page, set the port mode to Hybrid port and the port type to C-Port on port 1 and port 2 for each of the three switches.

4.2 Creating an MEP on Switch 1

Use the following steps to create an MEP on switch 1.

1. On switch 1, add a new MEP on port 1 by clicking **MEP**. Configure the MEP as shown in the following illustration, and click **Add New MEP**.

Figure 2 • Switch 1 Port 1 MEP Configuration

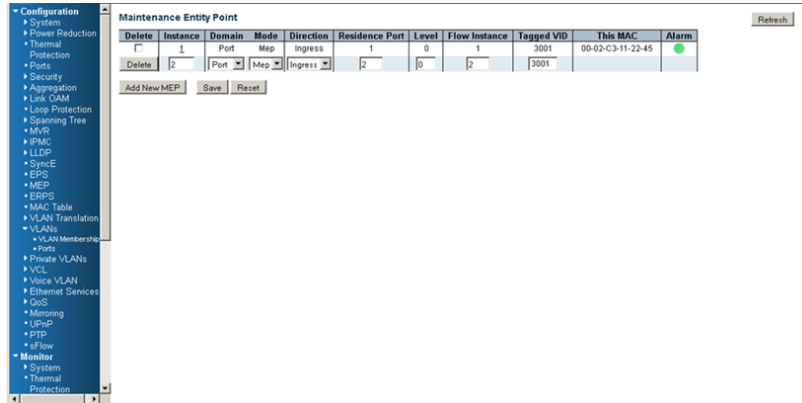


Delete	Instance	Domain	Mode	Direction	Residence Port	Level	Flow Instance	Tagged VID	This MAC	Alarm
Delete	1	Port	Map	Ingress	1	0	1	3001		

Buttons: Add New MEP, Save, Reset

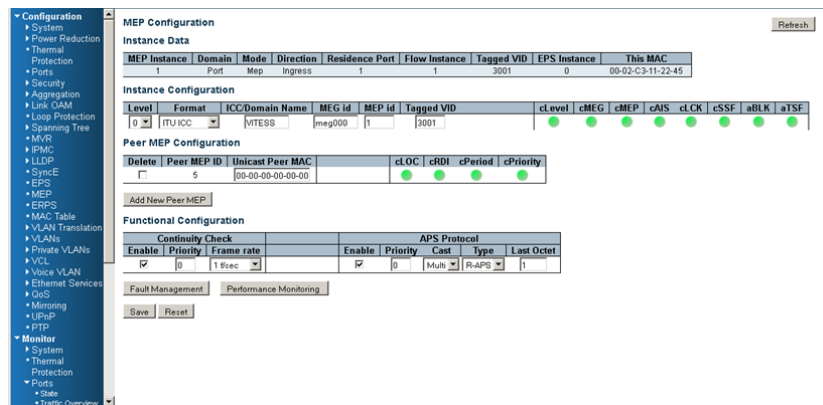
2. Add a new MEP on port 2 of switch 1 configured as shown in the following illustration, and click **Add New MEP**.

Figure 3 • Switch 1 Port 2 MEP Configuration



3. To edit MEP 1, under **MEP Instance** in the **Instance Data** table, click **1**, configure the page as shown in the following illustration, and click **Save**.

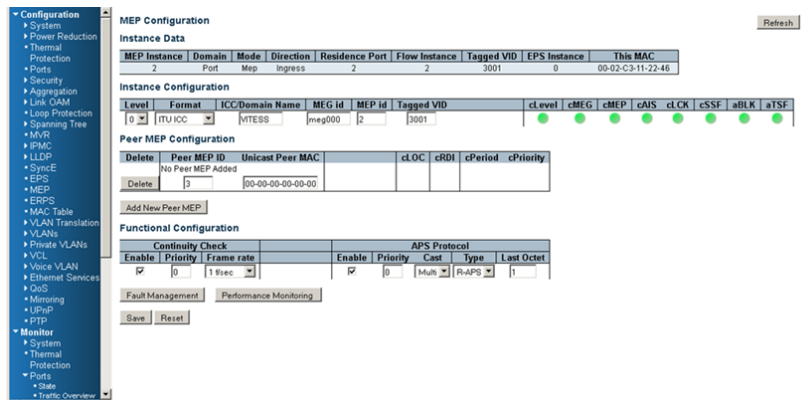
Figure 4 • Switch 1 MEP 1 Configuration



The Unicast Peer MAC can remain empty because it will be learned by receiving the CCM from the peer side. Before it is learned on Caracal (VSC7428/VSC7429), the CCM frame rate cannot be changed to above 100 ps. If known, enter the peer MAC address manually.

4. To edit MEP 2, under **MEP Instance** in the **Instance Data** table, click **2**, configure the MEP as shown in the following illustration, and click **Save**.

Figure 5 • Switch 1 MEP 2 Configuration

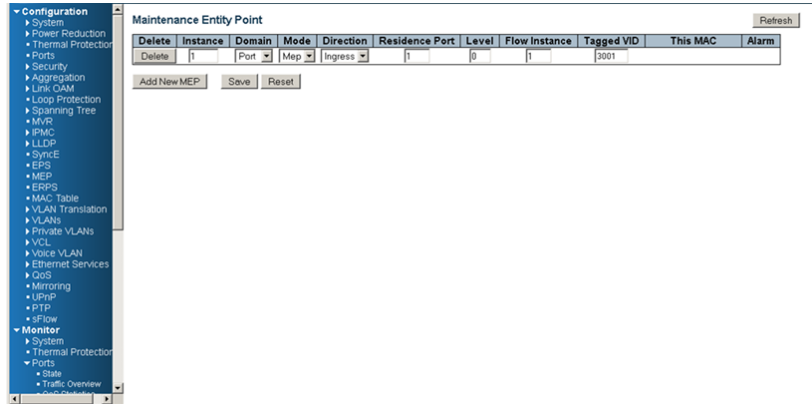


4.3 Configuring Switch 2

Use the following steps to configure switch 2.

1. Add a new MEP on port 1 of switch 2.

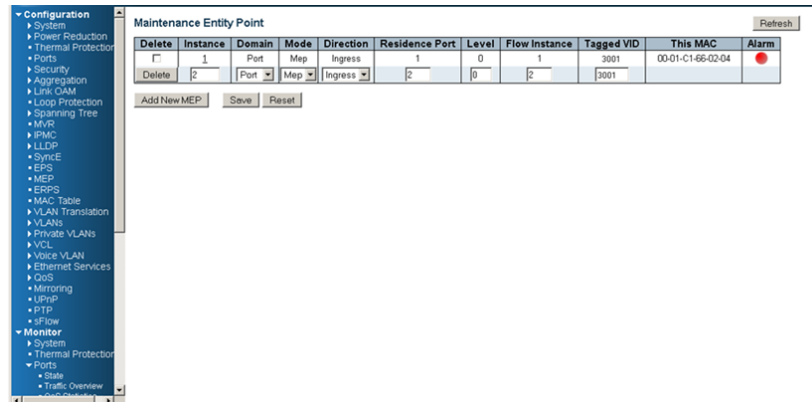
Figure 6 • Switch 2 Port 1 MEP Configuration



Delete	Instance	Domain	Mode	Direction	Residence Port	Level	Flow Instance	Tagged VID	This MAC	Alarm
Delete	1	Port	Map	Ingress	1	0	1	3001	00-01-C1-66-02-04	

2. Add a new MEP on port 2 of switch 2 configured as shown in the following illustration, and click **Add New MEP**.

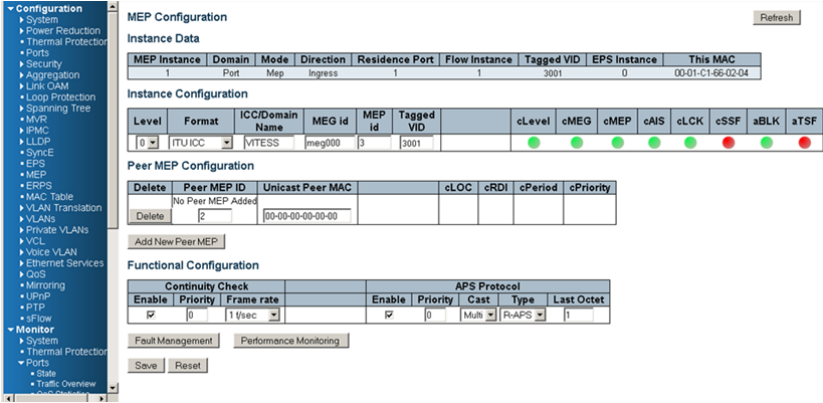
Figure 7 • Switch 2 Port 2 MEP Configuration



Delete	Instance	Domain	Mode	Direction	Residence Port	Level	Flow Instance	Tagged VID	This MAC	Alarm
Delete	1	Port	Map	Ingress	1	0	1	3001	00-01-C1-66-02-04	
Delete	2	Port	Map	Ingress	2	0	2	3001	00-01-C1-66-02-04	

- Edit MEP1 of switch 2 by clicking **1** under Instance of the MEP table. Configure the MEP as shown in the following illustration, and click **Save**.

Figure 8 • Switch 2 MEP 1 Configuration



MEP Configuration

Instance Data

MEP Instance	Domain	Mode	Direction	Residence Port	Flow Instance	Tagged VID	EPS Instance	This MAC
1	Port	Map	Ingress	1	1	3001	0	00-01-C1-66-02-04

Instance Configuration

Level	Format	ICC/Domain Name	MEG id	MEP id	Tagged VID	cLevel	cMEG	cMEP	cAIS	cLCK	cSSF	aBLK	aTSF
0	ITU ICC	MTES	meg000	3	3001								

Peer MEP Configuration

Delete	Peer MEP ID	Unicast Peer MAC	cLOC	cRDI	cPeriod	cPriority
	No Peer MEP Added					

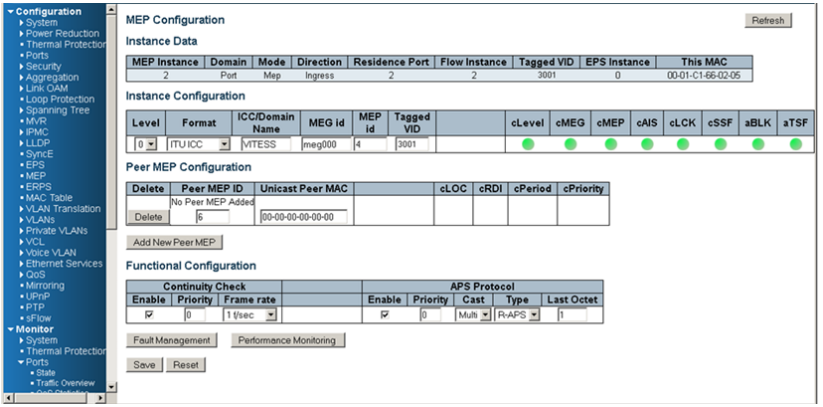
Functional Configuration

Continuity Check				APS Protocol			
Enable	Priority	Frame rate		Enable	Priority	Cast	Type
☒	0	1/sec		☒	0	Multi	R-APS

Save Reset

- Edit MEP 2 of switch 2 by clicking **2** under Instance of the MEP table. Configure the MEP as shown in the following illustration, and click **Save**.

Figure 9 • Switch 2 MEP 2 Configuration



MEP Configuration

Instance Data

MEP Instance	Domain	Mode	Direction	Residence Port	Flow Instance	Tagged VID	EPS Instance	This MAC
2	Port	Map	Ingress	2	2	3001	0	00-01-C1-66-02-05

Instance Configuration

Level	Format	ICC/Domain Name	MEG id	MEP id	Tagged VID	cLevel	cMEG	cMEP	cAIS	cLCK	cSSF	aBLK	aTSF
0	ITU ICC	MTES	meg000	4	3001								

Peer MEP Configuration

Delete	Peer MEP ID	Unicast Peer MAC	cLOC	cRDI	cPeriod	cPriority
	No Peer MEP Added					

Functional Configuration

Continuity Check				APS Protocol			
Enable	Priority	Frame rate		Enable	Priority	Cast	Type
☒	0	1/sec		☒	0	Multi	R-APS

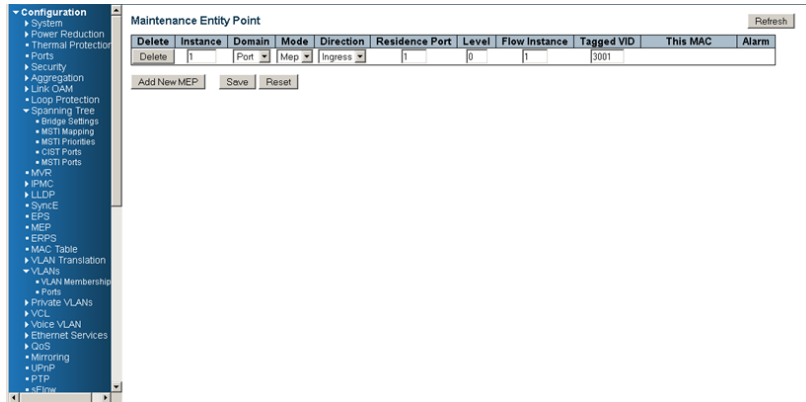
Save Reset

4.4 Configuring Switch 3

Use the following steps to configure switch 3.

1. Add a new MEP on port 1 of switch 3.

Figure 10 • Switch 3 Port 1 MEP Configuration



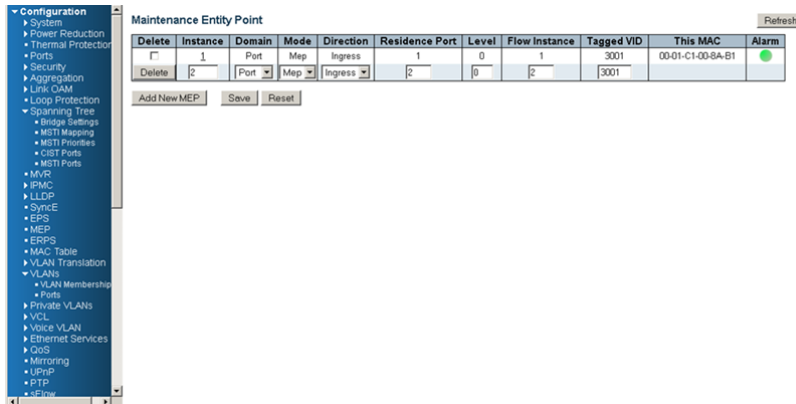
The screenshot shows the 'Maintenance Entity Point' configuration page. On the left is a navigation tree with 'MEP' selected under 'ERPS'. The main area contains a table with the following data:

Delete	Instance	Domain	Mode	Direction	Residence Port	Level	Flow Instance	Tagged VID	This MAC	Alarm
☐	1	Port	Map	Ingress	1	0	1	3001		

Buttons at the bottom: Add New MEP, Save, Reset, Refresh.

2. Add a new MEP on port 2 of switch 3.

Figure 11 • Switch 3 Port 2 MEP Configuration



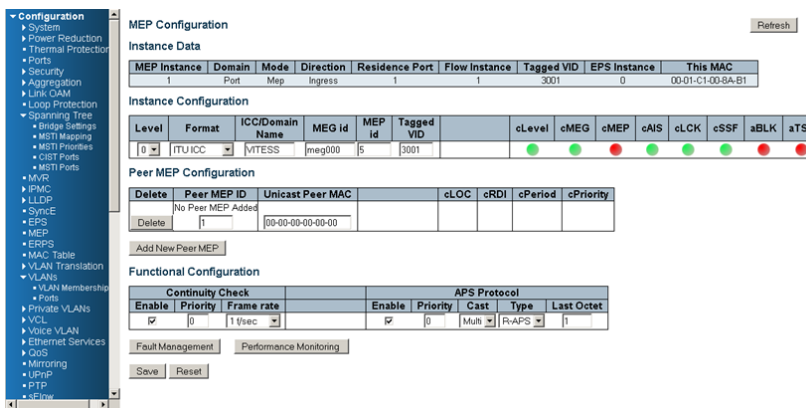
The screenshot shows the 'Maintenance Entity Point' configuration page with two entries in the table:

Delete	Instance	Domain	Mode	Direction	Residence Port	Level	Flow Instance	Tagged VID	This MAC	Alarm
☐	1	Port	Map	Ingress	1	0	1	3001	00-01-C1-00-8A-B1	☐
☐	2	Port	Map	Ingress	2	0	2	3001		☐

Buttons at the bottom: Add New MEP, Save, Reset, Refresh.

3. Edit MEP1 of switch 3 by clicking **1** under Instance of the MEP table. Configure the MEP as shown in the following illustration, and click **Save**.

Figure 12 • Switch 3 MEP 1 Configuration



The screenshot shows the 'MEP Configuration' page for Instance 1. It includes several sub-sections:

Instance Data

MEP Instance	Domain	Mode	Direction	Residence Port	Flow Instance	Tagged VID	EPS Instance	This MAC
1	Port	Map	Ingress	1	1	3001	0	00-01-C1-00-8A-B1

Instance Configuration

Level	Format	ICCDomain	MEG id	MEP id	Tagged VID	cLevel	cMEG	cMEP	cAIS	cLCK	cSSF	aBLK	aTSF
0	ITU ICC	WTESS	meg000	5	3001	☒	☒	☒	☒	☒	☒	☒	☒

Peer MEP Configuration

Delete	Peer MEP ID	Unicast Peer MAC	cLOC	cRDI	cPeriod	cPriority
☐	1	00-00-00-00-00-00				

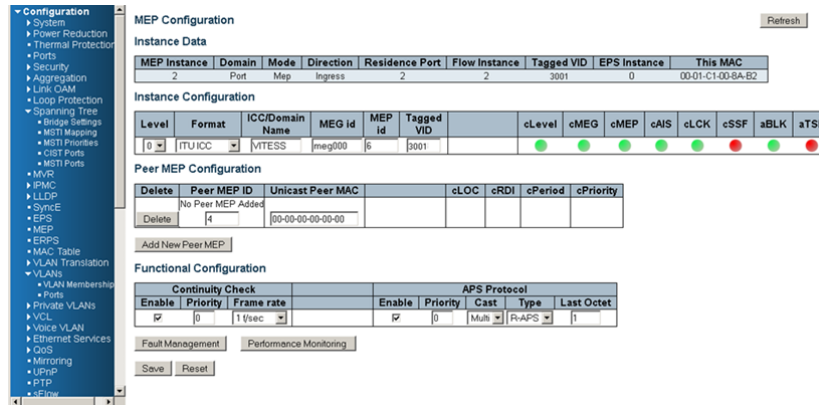
Functional Configuration

Continuity Check				APS Protocol			
Enable	Priority	Frame rate		Enable	Priority	Cast	Type
☒	0	1/sec		☒	0	Multi	R-APS

Buttons at the bottom: Save, Reset, Refresh.

- Edit MEP 2 of switch 3 by clicking **2** under Instance of the MEP table. Configure the MEP as shown in the following illustration, and click **Save**.

Figure 13 • Switch 3 MEP 2 Configuration



MEP Configuration

Refresh

Instance Data

MEP Instance	Domain	Mode	Direction	Residence Port	Flow Instance	Tagged VID	EPS Instance	This MAC
2	Port	Map	Ingress	2	2	3001	0	00-01-C1-00-8A-B2

Instance Configuration

Level	Format	ICC/Domain	MEG ID	MEP ID	Tagged VID	cLevel	cMEG	cMEP	cAIS	cLCK	cSSF	aBLK	aTSF
0	ITU/JCC	MTESS	meg000	0	3001								

Peer MEP Configuration

Delete	Peer MEP ID	Unicast Peer MAC	cLOC	cRDI	cPeriod	cPriority
	No Peer MEP Added					
Delete	4	00-00-00-00-00-00				

Add New Peer MEP

Functional Configuration

Continuity Check				APS Protocol				
Enable	Priority	Frame rate		Enable	Priority	Cast	Type	Last Octet
☒	0	1/sec		☒	0	Multi	R-APS	1

Fault Management Performance Monitoring

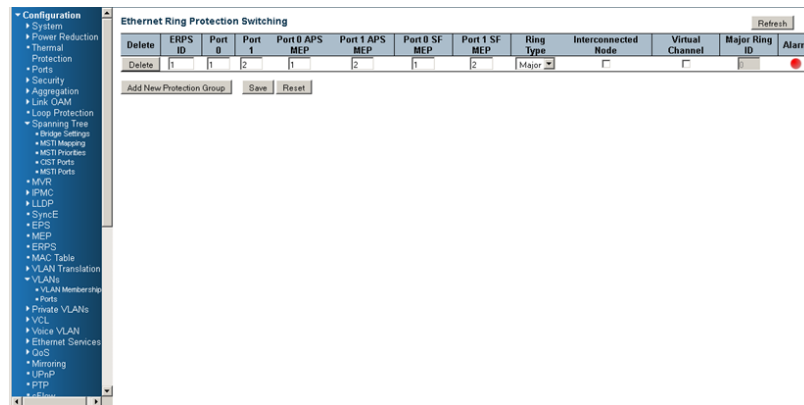
Save Reset

4.5 Configuring ERPS on Switch 1

Use the following steps to configure ERPS on switch 1.

- On switch 1, click **ERPS**, the **Ethernet Ring Protection Switching** page opens. Add the Ring Protection Link (RPL) owner as shown, and click **Add New Protection Group**.

Figure 14 • Add New Protection Group (Switch 1) Configuration



Ethernet Ring Protection Switching

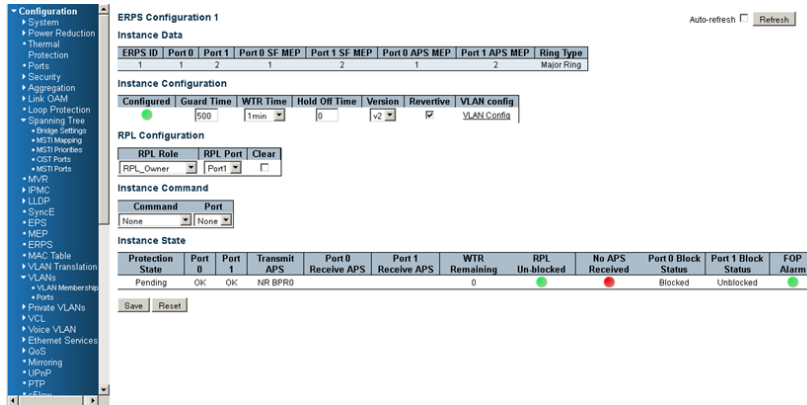
Refresh

Delete	ERPS ID	Port 0	Port 1	Port 0 APS MEP	Port 1 APS MEP	Port 0 SF MEP	Port 1 SF MEP	Ring Type	Interconnected Node	Virtual Channel	Major Ring ID	Alarm
Delete	1	1	2	1	2	1	2	Major			1	

Add New Protection Group Save Reset

2. Edit ERPS1 by clicking 1. Set up the configuration as shown in the following illustration, and click **Save**.

Figure 15 • ERPS 1 (Switch 1) Configuration



ERPS Configuration 1

Auto-refresh ☐ Refresh

Instance Data

ERPS ID	Port 0	Port 1	Port 0 SF MEP	Port 1 SF MEP	Port 0 APS MEP	Port 1 APS MEP	Ring Type
1	1	2	1	2	1	2	Major Ring

Instance Configuration

Configured ☒ Guard Time: 500 WTR Time: 1min Hold Off Time: 0 Version: v2 Revertive: ☒ VLAN Config: ☒

RPL Configuration

RPL Role: RPL Port: Clear

RPL_Owner: Port1 ☐

Instance Command

Command: Port: None

Instance State

Protection State	Port 0	Port 1	Transmit APS	Port 0 Receive APS	Port 1 Receive APS	WTR Remaining	RPL Unblocked	No APS Received	Port 0 Block Status	Port 1 Block Status	FOP Alarm
Pending	OK	OK	NR BPRD			0	☒	☒	Blocked	Unblocked	☒

Save Reset

3. Click **VLAN Config** to edit the protected VLAN.

Figure 16 • Protected VLAN (Switch 1) Configuration



ERPS VLAN Configuration 1

Refresh

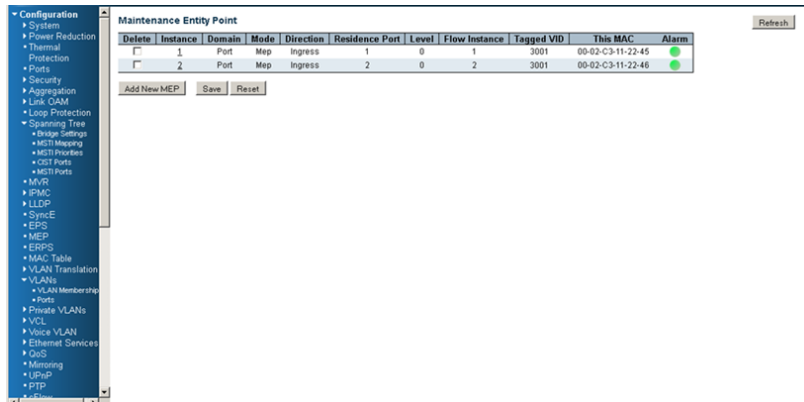
Delete: VLAN ID: 1

Add New Entry Back

Save Reset

4. After clicking **Save**, remember to connect switch 2 and switch 3. The user can not access switch 2 from switch 1 because the RPL is disconnected.
5. Check the MEP table on switch 1, switch 2, and switch 3. Alarms should show green.

Figure 17 • MEP Status



Maintenance Entity Point

Refresh

Delete	Instance	Domain	Mode	Direction	Residence Port	Level	Flow Instance	Tagged VID	This MAC	Alarm
☐	1	Port	Map	Ingress	1	0	1	3001	00-02-C3-11-22-45	☒
☐	2	Port	Map	Ingress	2	0	2	3001	00-02-C3-11-22-46	☒

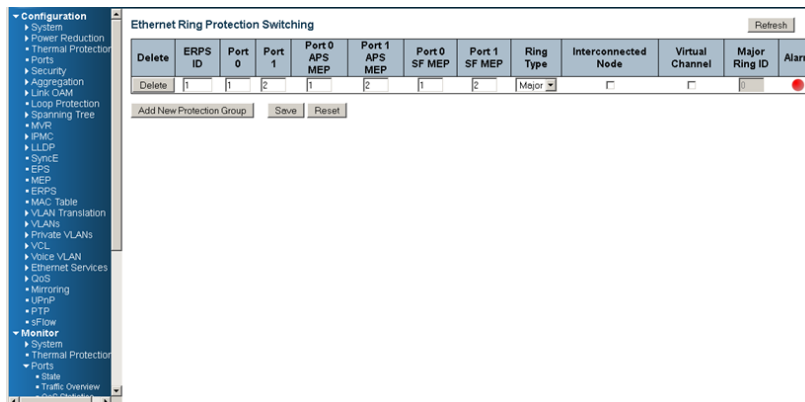
Add New MEP Save Reset

4.6 Configuring ERPS on Switch 2, the RPL Neighbor

Use the following steps to configure ERPS on switch 2.

1. On switch 2, click **ERPS** and then click **Add New Protection Group**.

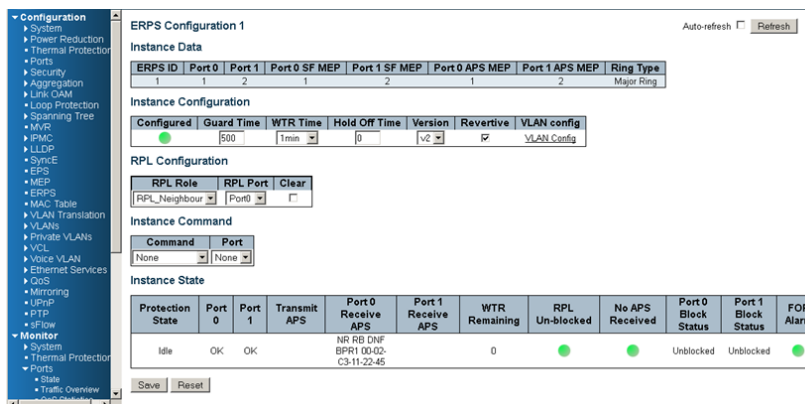
Figure 18 • Add New Protection Group (Switch 2) Configuration



Delete	ERPS ID	Port 0	Port 1	Port 0 APS MEP	Port 1 APS MEP	Port 0 SF MEP	Port 1 SF MEP	Ring Type	Interconnected Node	Virtual Channel	Major Ring ID	Alarm
Delete	1	1	2	1	2	1	2	Major	☐	☐	☐	☐

2. Edit ERPS1 by clicking **1**. Configure the device as shown in the following illustration, and click **Save**.

Figure 19 • ERPS 1 (Switch 2) Configuration



ERPS ID	Port 0	Port 1	Port 0 APS MEP	Port 1 APS MEP	Port 0 SF MEP	Port 1 SF MEP	Ring Type
1	1	2	1	2	1	2	Major Ring

3. Click **VLAN Config** to edit the protected VLAN.

Figure 20 • Protected VLAN (Switch 2) Configuration



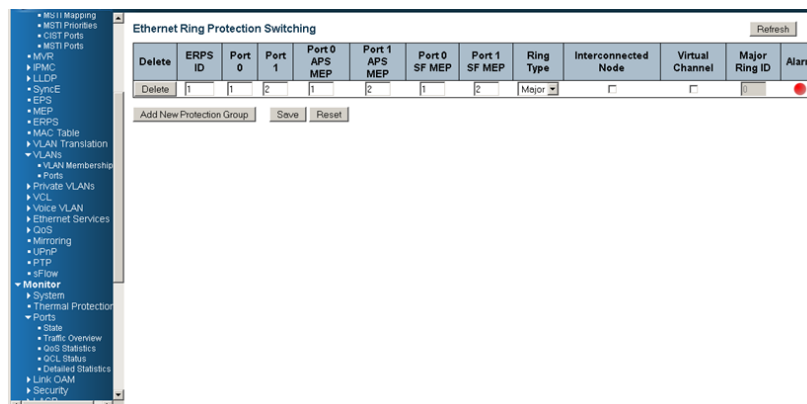
Delete	VLAN ID
Delete	1

4.7 Configuring ERPS on Switch 3

Use the following steps to configure ERPS on switch 3.

1. On switch 3, click **ERPS** and then click **Add New Protection Group**.

Figure 21 • Add New Protection Group (Switch 3) Configuration



Delete	ERPS ID	Port 0	Port 1	Port 0 APS MEP	Port 1 APS MEP	Port 0 SF MEP	Port 1 SF MEP	Ring Type	Interconnected Node	Virtual Channel	Major Ring ID	Alarm
Delete	1	1	2	1	2	1	2	Major				

2. Edit ERPS1 by clicking **1**. No action is required on switch 3. Keep the RPL owner at none.
3. Click **VLAN Config** to edit the protected VLAN.

Figure 22 • Protected VLAN (Switch 3) Configuration



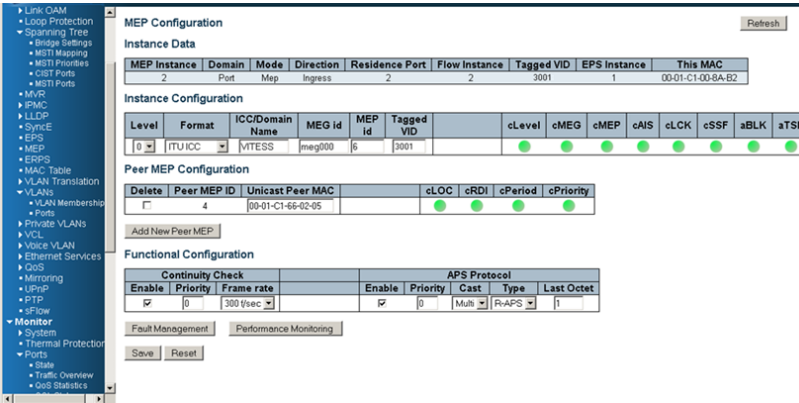
Delete	VLAN ID
Delete	1

4.8 Verifying ERPS

Use the following steps to verify the configuration of the ERPS.

1. Change the CCM rate starting from switch 3. Click on **MEP > 2** and then use the frame rate pull down to select 300 f/sec.

Figure 23 • Edit MEP 2 CCM Rate (Switch 3)



MEP Configuration

Instance Data

MEP Instance	Domain	Mode	Direction	Residence Port	Flow Instance	Tagged VID	EPS Instance	This MAC
2	Port	Map	Ingress	2	2	3001	1	00-01-C1-00-8A-B2

Instance Configuration

Level	Format	ICC/Domain Name	MEG id	MEP id	Tagged VID	cLevel	cMEG	cMEP	cAIS	cLCK	cSSF	aBLK	aTSF
0	ITU/ICC	VITESS	meg000	5	3001								

Peer MEP Configuration

Delete	Peer MEP ID	Unicast Peer MAC	cLOC	cRDI	cPeriod	cPriority
☐	4	00-01-C1-66-02-05				

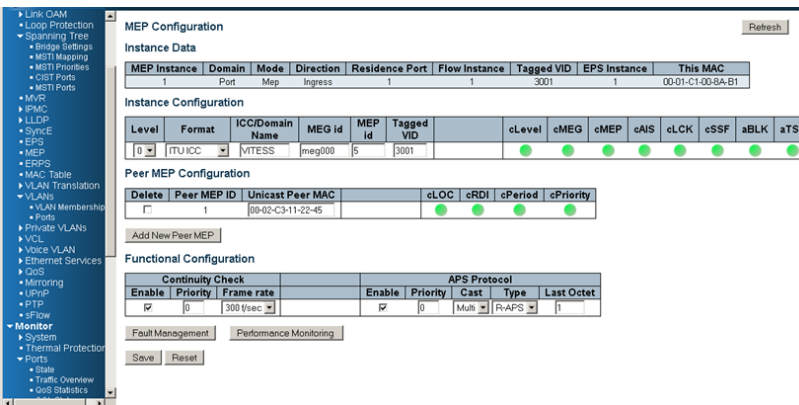
Functional Configuration

Continuity Check				APS Protocol			
Enable	Priority	Frame rate		Enable	Priority	Cast	Type
☒	0	300 f/sec		☒	0	Multi	R-APS

Save Reset

2. Change the CCM rate for MEP 1.

Figure 24 • Edit MEP 1 CCM Rate (Switch 3)



MEP Configuration

Instance Data

MEP Instance	Domain	Mode	Direction	Residence Port	Flow Instance	Tagged VID	EPS Instance	This MAC
1	Port	Map	Ingress	1	1	3001	1	00-01-C1-00-8A-B1

Instance Configuration

Level	Format	ICC/Domain Name	MEG id	MEP id	Tagged VID	cLevel	cMEG	cMEP	cAIS	cLCK	cSSF	aBLK	aTSF
0	ITU/ICC	VITESS	meg000	5	3001								

Peer MEP Configuration

Delete	Peer MEP ID	Unicast Peer MAC	cLOC	cRDI	cPeriod	cPriority
☐	1	00-02-C3-11-22-45				

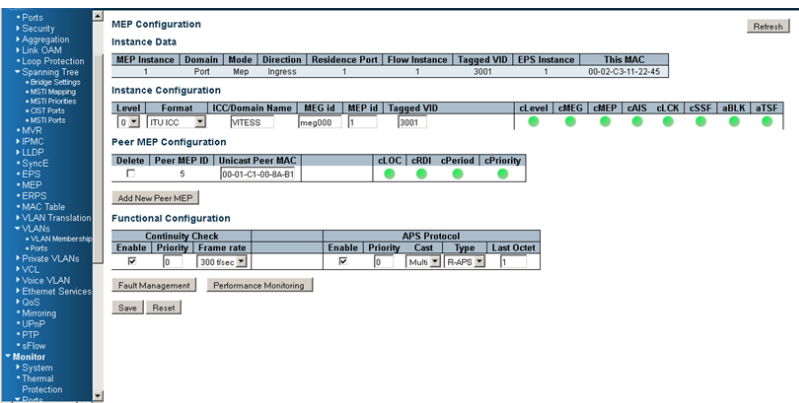
Functional Configuration

Continuity Check				APS Protocol			
Enable	Priority	Frame rate		Enable	Priority	Cast	Type
☒	0	300 f/sec		☒	0	Multi	R-APS

Save Reset

3. Change the CCM rate on switch 1. Click on **MEP > 1** and then use the frame rate pull down to select 300 f/sec.

Figure 25 • Edit MEP 1 CCM Rate (Switch 1)



MEP Configuration

Instance Data

MEP Instance	Domain	Mode	Direction	Residence Port	Flow Instance	Tagged VID	EPS Instance	This MAC
1	Port	Map	Ingress	1	1	3001	1	00-02-C3-11-22-45

Instance Configuration

Level	Format	ICC/Domain Name	MEG id	MEP id	Tagged VID	cLevel	cMEG	cMEP	cAIS	cLCK	cSSF	aBLK	aTSF
0	ITU/ICC	VITESS	meg000	1	3001								

Peer MEP Configuration

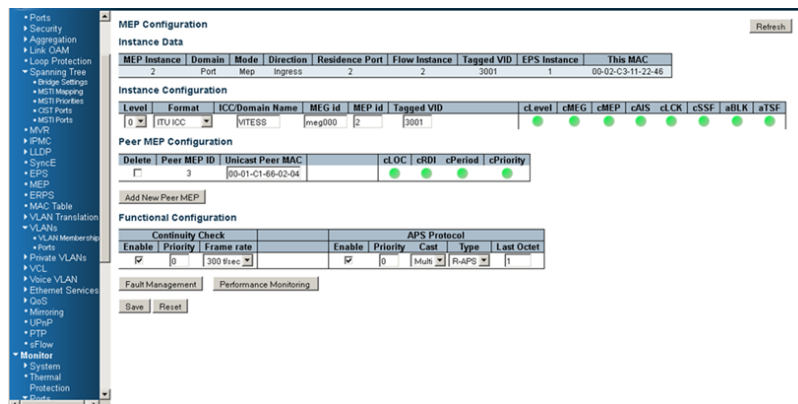
Delete	Peer MEP ID	Unicast Peer MAC	cLOC	cRDI	cPeriod	cPriority
☐	5	00-01-C1-00-8A-B1				

Functional Configuration

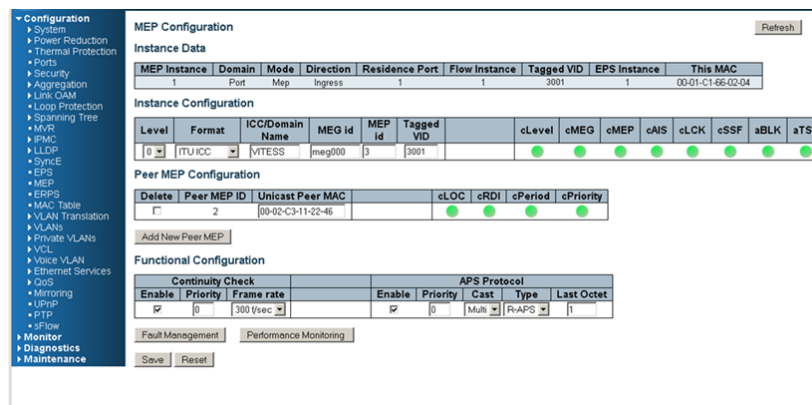
Continuity Check				APS Protocol			
Enable	Priority	Frame rate		Enable	Priority	Cast	Type
☒	0	300 f/sec		☒	0	Multi	R-APS

Save Reset

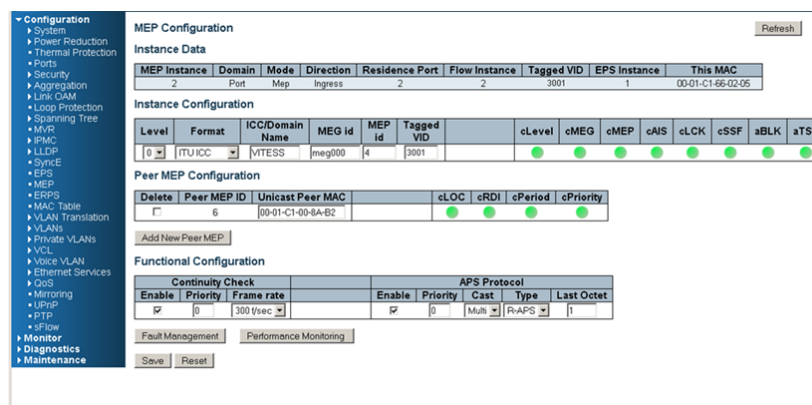
- Change the CCM rate for MEP 2.

Figure 26 • Edit MEP 2 CCM Rate (Switch 1)


- Change the CCM rate on switch 2. Click on **MEP > 1** and then use the frame rate pull down to select 300 f/sec.

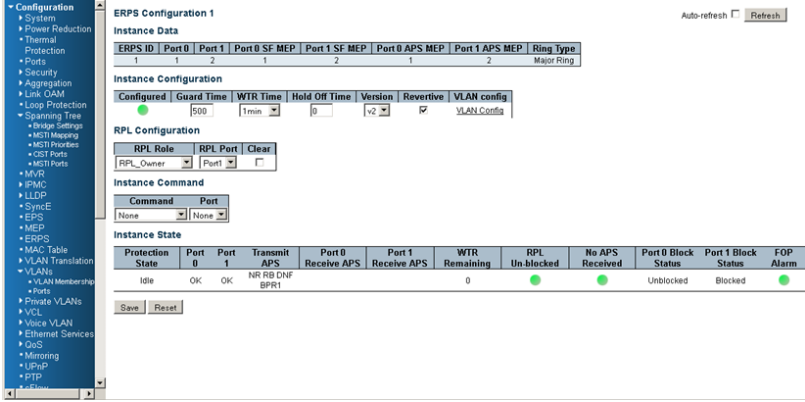
Figure 27 • Edit MEP 1 CCM Rate (Switch 2)


- Change the CCM rate for MEP 2.

Figure 28 • Edit MEP 2 CCM Rate (Switch 2)


7. On Switch 1, click **ERPS** to check ERPS status to ensure the normal link status.

Figure 29 • Switch 1 ERPS Status



ERPS Configuration 1

Auto-refresh ☐ Refresh

ERPS ID	Port 0	Port 1	Port 0 SF MEP	Port 1 SF MEP	Port 0 APS MEP	Port 1 APS MEP	Ring Type
1	1	2	1	2	1	2	Major Ring

Instance Configuration

Configured ☒ Guard Time 500 WTR Time 1min Hold Off Time 0 Version v2 Revertive ☒ VLAN Config ☒

RPL Configuration

RPL Role RPL Port Clear

RPL_Owner Port1

Instance Command

Command Port

None None

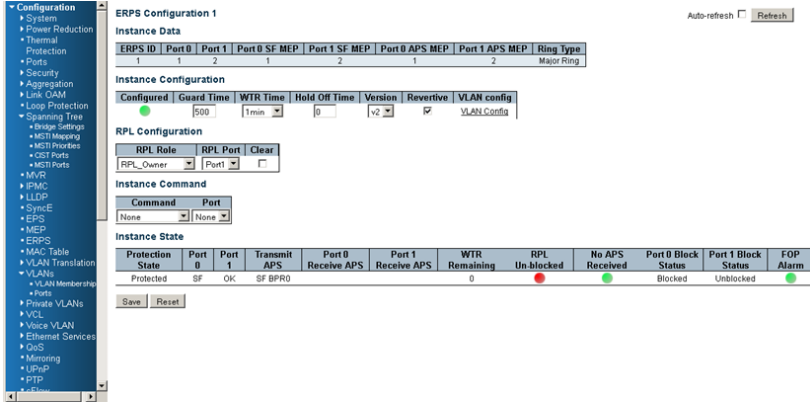
Instance State

Protection State	Port 0	Port 1	Transmit APS	Port 0 Receive APS	Port 1 Receive APS	WTR Remaining	RPL Un-blocked	No APS Received	Port 0 Block Status	Port 1 Block Status	FOP Alarm
Idle	OK	OK	NR RB DNF BPR1			0	☒	☒	Unlocked	Blocked	☒

Save Reset

8. Disconnect the normal link for switch 1 and switch 3.

Figure 30 • Disconnect Normal Link



ERPS Configuration 1

Auto-refresh ☐ Refresh

ERPS ID	Port 0	Port 1	Port 0 SF MEP	Port 1 SF MEP	Port 0 APS MEP	Port 1 APS MEP	Ring Type
1	1	2	1	2	1	2	Major Ring

Instance Configuration

Configured ☒ Guard Time 500 WTR Time 1min Hold Off Time 0 Version v2 Revertive ☒ VLAN Config ☒

RPL Configuration

RPL Role RPL Port Clear

RPL_Owner Port1

Instance Command

Command Port

None None

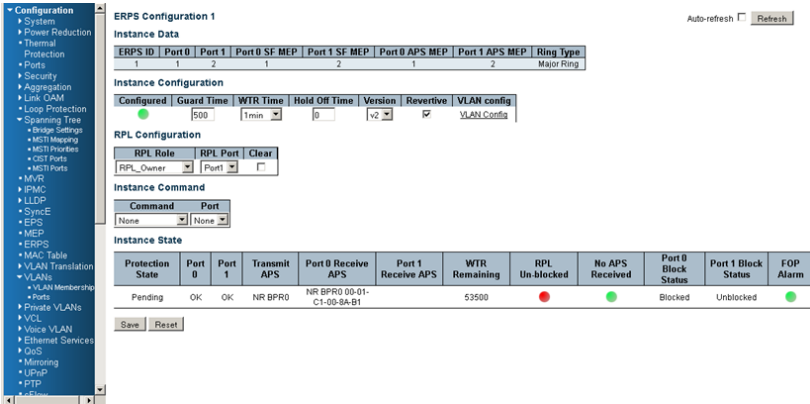
Instance State

Protection State	Port 0	Port 1	Transmit APS	Port 0 Receive APS	Port 1 Receive APS	WTR Remaining	RPL Un-blocked	No APS Received	Port 0 Block Status	Port 1 Block Status	FOP Alarm
Protected	SF	OK	SF BPR0			0	☒	☒	Blocked	Unlocked	☒

Save Reset

9. Restore the normal link for switch 1 and switch 3 to display the protection state as **Pending**.

Figure 31 • Restore Normal Link



ERPS Configuration 1

Auto-refresh ☐ Refresh

ERPS ID	Port 0	Port 1	Port 0 SF MEP	Port 1 SF MEP	Port 0 APS MEP	Port 1 APS MEP	Ring Type
1	1	2	1	2	1	2	Major Ring

Instance Configuration

Configured ☒ Guard Time 500 WTR Time 1min Hold Off Time 0 Version v2 Revertive ☒ VLAN Config ☒

RPL Configuration

RPL Role RPL Port Clear

RPL_Owner Port1

Instance Command

Command Port

None None

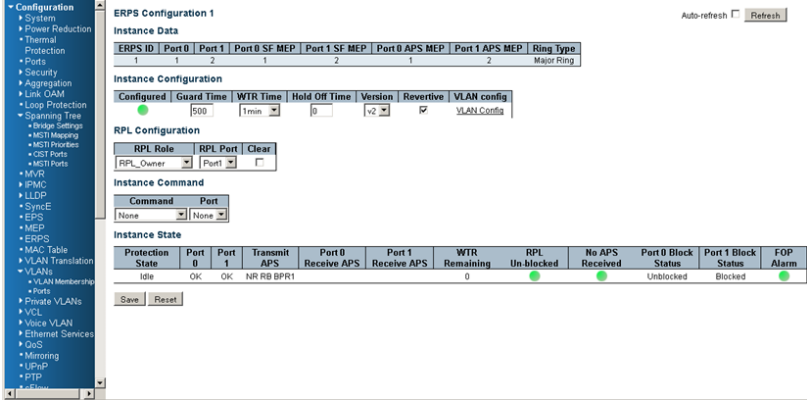
Instance State

Protection State	Port 0	Port 1	Transmit APS	Port 0 Receive APS	Port 1 Receive APS	WTR Remaining	RPL Un-blocked	No APS Received	Port 0 Block Status	Port 1 Block Status	FOP Alarm
Pending	OK	OK	NR BPR0	NR BPR0 00-01-C1-00-3A-B1		53500	☒	☒	Blocked	Unlocked	☒

Save Reset

10. After WTR timeout, Click **Refresh**. **Protection State** should be shown as **Idle**.

Figure 32 • Refresh ERPS Status



The screenshot shows the 'ERPS Configuration 1' web interface. On the left is a navigation tree with categories like Configuration, System, Power Reduction, Thermal Protection, Ports, Security, Aggregation, Link OAM, Loop Protection, Spanning Tree, Debug Settings, MSTP Mapping, MSTP Priorities, GRT Ports, MSTP Ports, MVR, PMO, LLDP, SyncE, ERPS, MEP, ERPS, Max Table, VLAN Translation, VLANs, VLAN Membership, Private VLANs, VCL, Voice VLAN, Ethernet Services, QoS, Mirroring, UPnP, and PTP. The main area is titled 'ERPS Configuration 1' and includes an 'Auto-refresh' checkbox and a 'Refresh' button. Below this is the 'Instance Data' table, followed by the 'Instance Configuration' section with tabs for 'Configured', 'Guard Time', 'WTR Time', 'Hold Off Time', 'Version', 'Revertive', and 'VLAN config'. The 'Configured' tab is active, showing a green status indicator and values for Guard Time (500), WTR Time (1min), Hold Off Time (0), Version (v2), and Revertive (checked). The 'RPL Configuration' section shows 'RPL Role' as 'RPL Owner' and 'RPL Port' as 'Port1'. The 'Instance Command' section shows 'Command' as 'None' and 'Port' as 'None'. The 'Instance State' section contains a table with the following data:

Protection State	Port 0	Port 1	Transmit APS	Port 0 Receive APS	Port 1 Receive APS	WTR Remaining	RPL Un-blocked	No APS Received	Port 0 Block Status	Port 1 Block Status	FOP Alarm
Idle	OK	OK	NR RB BPR1			0			Unblocked	Blocked	

At the bottom of the 'Instance State' section are 'Save' and 'Reset' buttons.

**Microsemi Headquarters**

One Enterprise, Aliso Viejo,
CA 92656 USA

Within the USA: +1 (800) 713-4113

Outside the USA: +1 (949) 380-6100

Sales: +1 (949) 380-6136

Fax: +1 (949) 215-4996

Email: sales.support@microsemi.com

www.microsemi.com

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