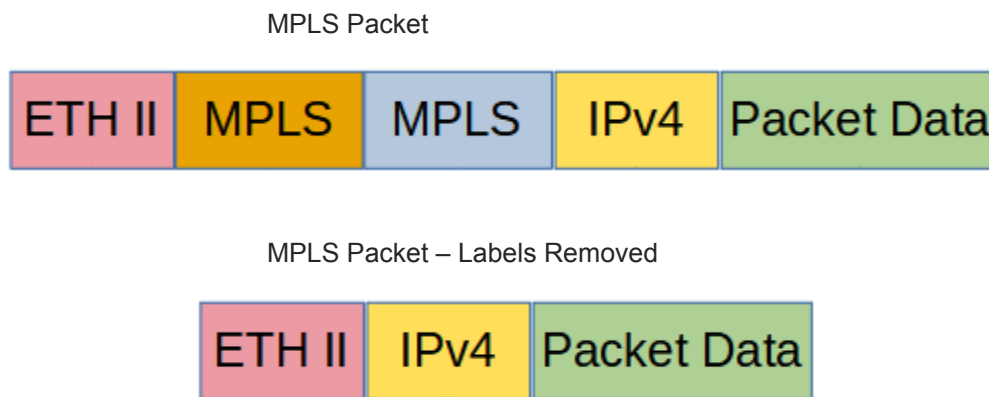


## AF1G40AC

### Stripping/Filtering MPLS Labels

Overview:

When the MPLS label(s) are removed from a packet, the packet maintains the original ETH II, IPv4 and packet data as shown below.



The Advanced Features MPLS abilities:

- Strip from 1 up to 9 MPLS labels from packets.
- Strip MPLS labels from packets based on IP Protocol number.
- Strip MPLS labels based on filtering up to 3 MPLS Labels, 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup>.
- Filter MPLS packets based on filtering up to 3 MPLS Labels, 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup>.
- Filter MPLS packets based on IP Protocol.
- Filter MPLS packets based on Ether Type.

Stripping MPLS labels from a packet or filtering MPLS packets involves two configuration processes.

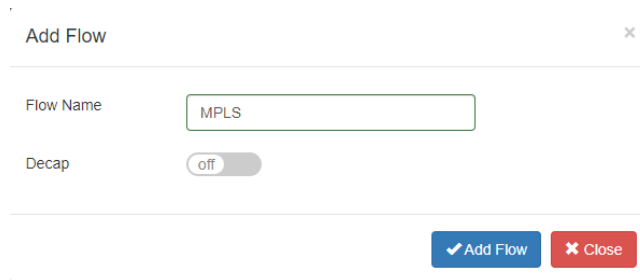
1. Create a Flow
2. Create a Tap Group

## 1. Create a Flow

The flow defines which MPLS packets will have the MPLS labels stripped and/or filtered. Packets that do not meet the flow attributes will not be stripped and/or filtered. In some cases it may be required to create more than 1 flow.

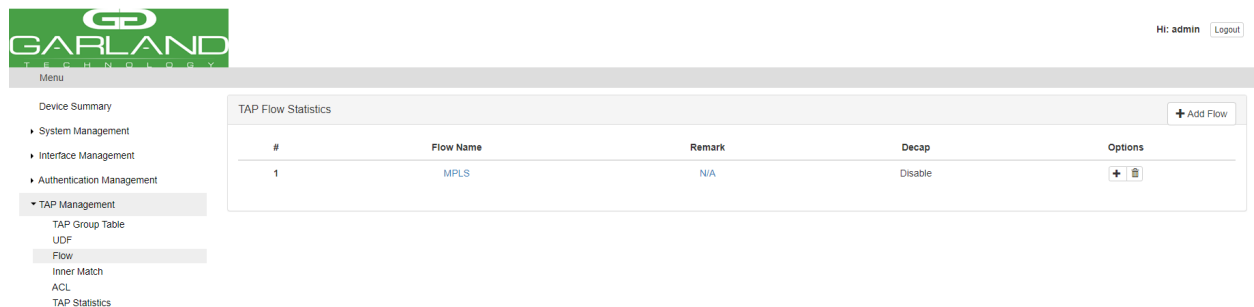
1. Select Tap Management.
2. Select Flow.
3. Select + Add Flow.

The Add Flow panel will appear.



4. Enter the Flow Name.
5. Select Add Flow.

The flow will be displayed.



#	Flow Name	Remark	Decap	Options
1	MPLS	N/A	Disable	+ [icon]

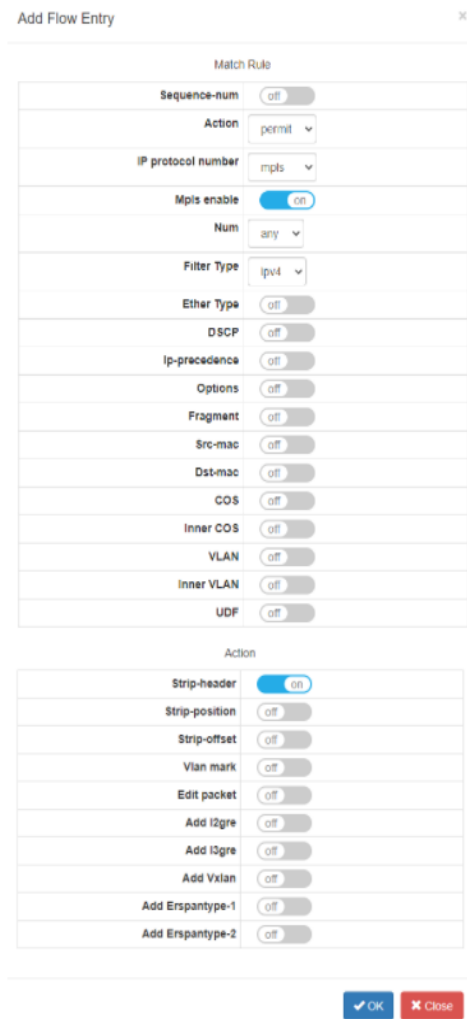
6. Select the + in the Options column for the desired flow to define the flow attributes.

The Add Flow Entry panel will be displayed.

The flow defines which packets will have the MPLS labels stripped or passed per the filter. Packets that do not meet the flow attributes will not be affected or dropped. In some cases, it may be required to create more than 1 flow.

## Flow Option 1 – Strip MPLS Labels (IP Protocol)

This flow may be used to strip all of the MPLS labels from packets without specifying the number of MPLS labels or using filtering to determine which MPLS packets are affected.



The screenshot shows the 'Add Flow Entry' configuration window. It is divided into two main sections: 'Match Rule' and 'Action'.

**Match Rule:**

- Sequence-num: off
- Action: permit
- IP protocol number: mpls
- Mpls enable: on
- Num: any
- Filter Type: ipv4
- Ether Type: off
- DSCP: off
- Ip-precedence: off
- Options: off
- Fragment: off
- Src-mac: off
- Dst-mac: off
- COS: off
- Inner COS: off
- VLAN: off
- Inner VLAN: off
- UDF: off

**Action:**

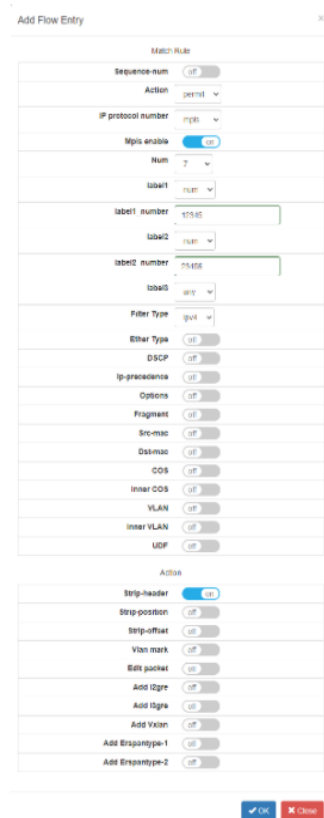
- Strip-header: on
- Strip-position: off
- Strip-offset: off
- Vlan mark: off
- Edit packet: off
- Add I2gre: off
- Add I3gre: off
- Add Vxlan: off
- Add Erspantype-1: off
- Add Erspantype-2: off

At the bottom right, there are 'OK' and 'Close' buttons.

7. Under Match Rule, select mpls for the IP Protocol number.
8. Enable Mpls enable.
9. Under Action, enable Strip-header.
10. Select OK.

## Flow Option 2 – Strip MPLS Labels (Strip 1-9 Labels and Filter on 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup>)

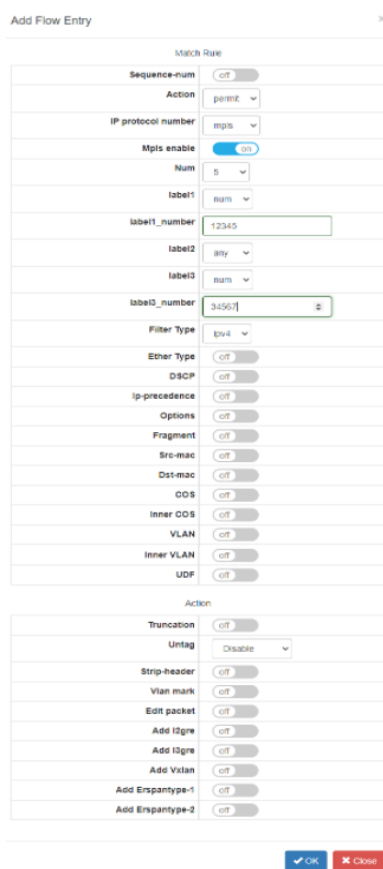
This flow may be used to strip all of the MPLS labels from packets by specifying the packets that meet the MPLS label number and using filtering to determine which MPLS packets are affected.



7. Under Match Rule, select mpls for the IP Protocol number.
8. Enable Mpls enable.
9. Select the MPLS label number, 1-9. The MPLS labels will only be stripped from the packets that match the number selected. If 7 is selected, packets with 1-6, 8-9 MPLS labels will not be affected.
10. Select the label1 option, any or number. If any is selected this flow will not use the 1<sup>st</sup> MPLS label as a filter option. If the number is selected an option will appear to enter the matching MPLS 1<sup>st</sup> label. Any packet that does not meet the number entered will not be affected.
11. Select the label2 option, any or number. If any is selected this flow will not use the 2<sup>nd</sup> MPLS label as a filter option. If number is selected an option will appear to enter the matching MPLS 2<sup>nd</sup> label. Any packet that does not meet the number entered will not be affected.
12. Select the label3 option, any or number. If any is selected this flow will not use the 3<sup>rd</sup> MPLS label as a filter option. If number is selected an option will appear to enter the matching MPLS 3<sup>rd</sup> label. Any packet that does not meet the number entered will not be affected.
13. Under Action, enable Strip-header.
14. Select OK.

## Flow Option 3 – Filter MPLS Packets (Filter on 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup>)

This flow may be used to filter MPLS packets based on the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> MPLS label number.



The screenshot shows the 'Add Flow Entry' configuration window. The 'Match Rule' section is expanded, showing the following settings:

- Sequence-num: off
- Action: permit
- IP protocol number: mpls
- Mpls enable: on
- Num: 5
- label1: any
- label1\_number: 12345
- label2: any
- label3: any
- label3\_number: 34567
- Filter Type: ipv4
- Ether Type: off
- DSCP: off
- ip-precedence: off
- Options: off
- Fragment: off
- Src-mac: off
- Dst-mac: off
- QoS: off
- Inner QoS: off
- VLAN: off
- Inner VLAN: off
- UDP: off

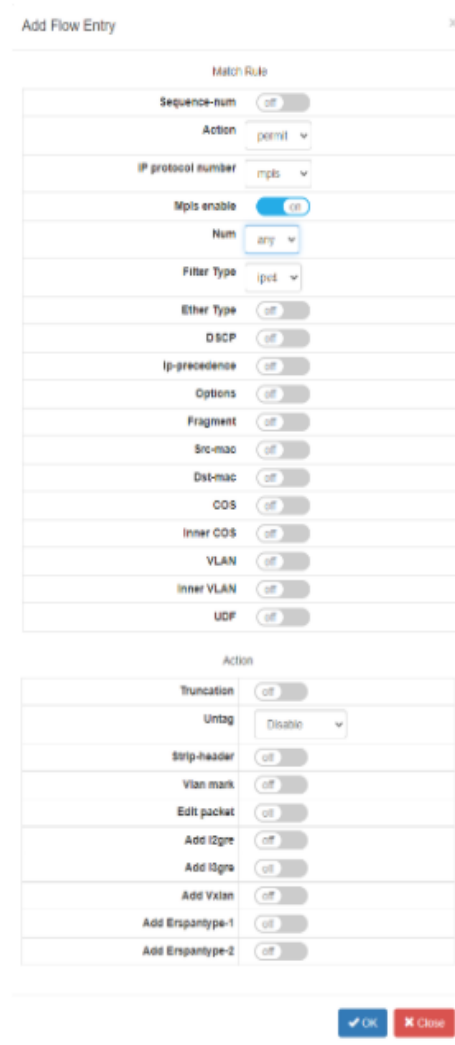
The 'Action' section is collapsed, showing the following options:

- Truncation: off
- Untag: Disable
- Strip-header: off
- Vlan mark: off
- Edit packet: off
- Add tgre: off
- Add tgre: off
- Add Vlan: off
- Add Erspantype-1: off
- Add Erspantype-2: off

7. Under Match Rule, select mpls for the IP Protocol number.
8. Enable Mpls enable.
9. Select the MPLS label number, 1-9. The MPLS packets that match the number selected will be passed. If 5 is selected, packets with 1-4, 6-9 MPLS labels will be dropped.
10. Select the label1 option, any or number. If any is selected this flow will not use the 1<sup>st</sup> MPLS label as a filter option. If number is selected an option will appear to enter the matching MPLS 1<sup>st</sup> label. Any packet that does not meet the number entered will not be dropped.
11. Select the label2 option, any or number. If any is selected this flow will not use the 2<sup>nd</sup> MPLS label as a filter option. If number is selected an option will appear to enter the matching MPLS 2<sup>nd</sup> label. Any packet that does not meet the number entered will not be dropped.
12. Select the label3 option, any or number. If any is selected this flow will not use the 3<sup>rd</sup> MPLS label as a filter option. If number is selected an option will appear to enter the matching MPLS 3<sup>rd</sup> label. Any packet that does not meet the number entered will not be dropped.
14. Select OK.

## Flow Option 4 – Filter MPLS Packets (Filter on IP Protocol)

This flow may be used to filter MPLS packets based on IP Protocol only.



The screenshot shows the 'Add Flow Entry' configuration window. It is divided into two main sections: 'Match Rule' and 'Action'.

**Match Rule Section:**

- Sequence-num: off
- Action: permit
- IP protocol number: mpls
- Mpls enable: on
- Num: any
- Filter Type: ipv4
- Ether Type: off
- DSCP: off
- Ip-precedence: off
- Options: off
- Fragment: off
- Src-mac: off
- Dst-mac: off
- COS: off
- Inner COS: off
- VLAN: off
- Inner VLAN: off
- UDF: off

**Action Section:**

- Truncation: off
- Untag: Disable
- Strip-header: off
- Vlan mark: off
- Edit packet: off
- Add I2gre: off
- Add I3gre: off
- Add Vxlan: off
- Add Erspantype-1: off
- Add Erspantype-2: off

At the bottom right, there are 'OK' and 'Close' buttons.

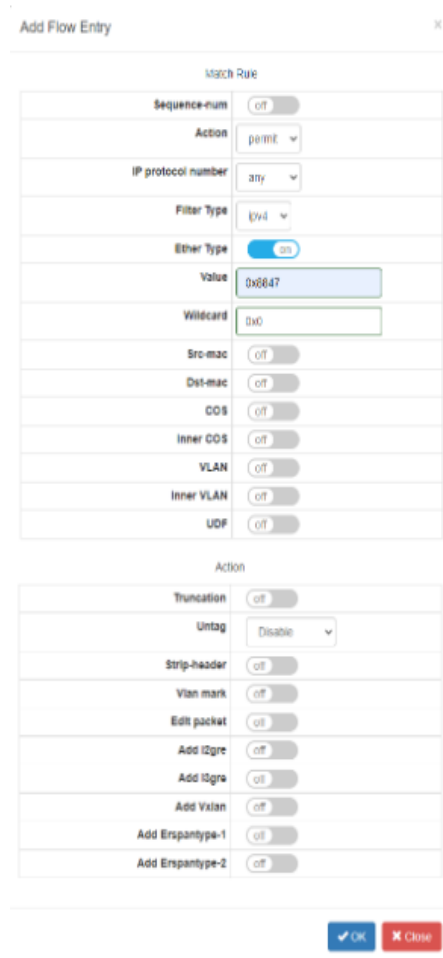
7. Under Match Rule, select mpls for the IP Protocol number.

8. Enable Mpls enable.

9. Select OK.

## Flow Option 5 – Filter MPLS Packets (Filter on Ether Type)

This flow may be used to filter MPLS packets based on Ether Type only.



Match Rule	
Sequence-num	off
Action	permit
IP protocol number	any
Filter Type	l3vl
Ether Type	on
Value	0x8847
Wildcard	0x0
Src-mac	off
Dest-mac	off
COS	off
Inner COS	off
VLAN	off
Inner VLAN	off
UDF	off

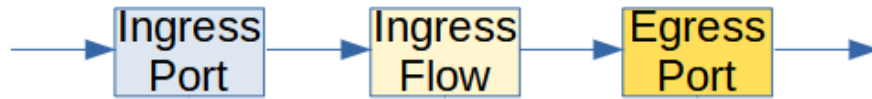
  

Action	
Truncation	off
Untag	Disable
Strip-header	off
Vlan mark	off
Edit packet	off
Add l2gre	off
Add l3gre	off
Add Vlan	off
Add Erspantype-1	off
Add Erspantype-2	off

7. Under Match Rule, select any for the IP Protocol number.
8. Enable Ether Type.
9. Enter the Ether Type value for MPLS, 0x8847.
10. Select OK.

## 2. Create a Tap Group

The Tap Group defines the ingress port, ingress flow, and egress port.



1. Select Tap Management.
2. Select TAP Group Table.
3. Select + Add TAP Group.

The TAP Group Name panel will appear.

TAP Group Name ✕

---

TAP Group Name

TAP Group ID

---

4. Enter the TAP Group Name.
5. Select OK.

The Tap Group will be displayed.

Hi: admin Logout

Menu

- Device Summary
- System Management
- Interface Management
- Authentication Management
- TAP Management**
  - TAP Group Table
  - UDF
  - Flow
  - Inner Match
  - ACL
  - TAP Statistics

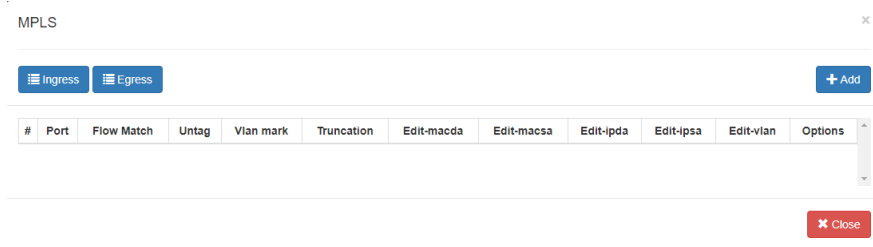
TAP Statistics + Add TAP Group Truncation Timestamp

#	TAP Id	TAP Group Name	TAP Group Description	TAP Group truncation	Options
1	1	MPLS	N/A	NO	🗑️



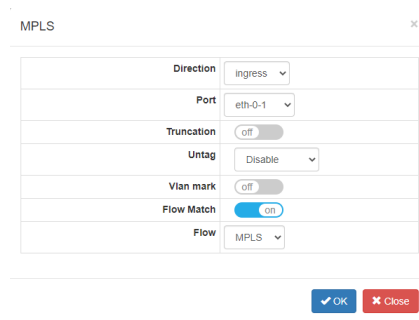
- Place the cursor on the tap group name under the TAP Group Name column and press the left mouse button.

The TAP group panel will appear.

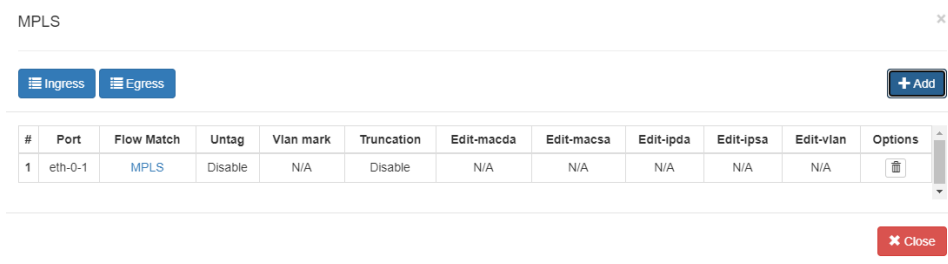


- Select the + Add to define the ingress port and ingress flow.

The add panel will appear.

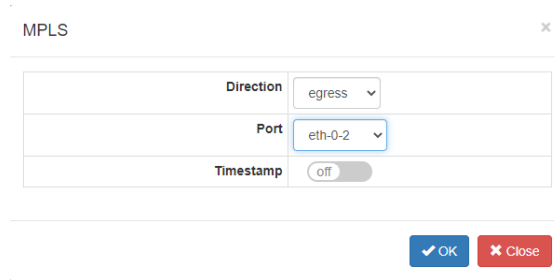


- Select the Direction, ingress.
- Select the desired ingress port.
- Enable Flow Match.
- Select the MPLS flow.
- Select OK.



13. Select the + Add to define the egress port.

The add panel will appear.



MPLS

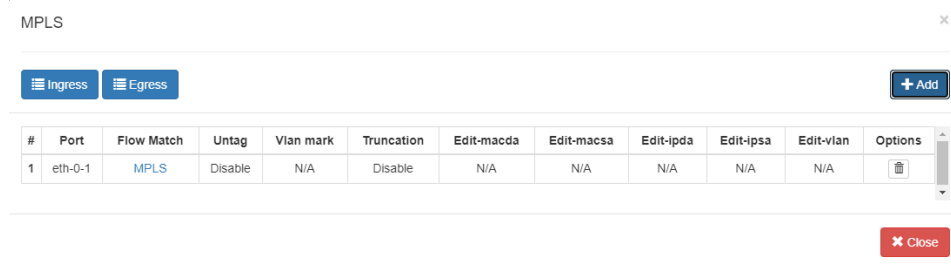
Direction	egress
Port	eth-0-2
Timestamp	off

OK Close

14. Select the Direction, egress.

15. Select the desired egress port.

16. Select OK.



MPLS

Ingress Egress + Add

#	Port	Flow Match	Untag	Vlan mark	Truncation	Edit-macda	Edit-macsa	Edit-ipda	Edit-ipsa	Edit-vlan	Options
1	eth-0-1	MPLS	Disable	N/A	Disable	N/A	N/A	N/A	N/A	N/A	🗑️

Close

17. The ingress port, ingress flow, and egress port may be displayed by selecting Ingress or Egress. Additional ingress ports, ingress flows, or egress ports may be added to the Tap Group using the same steps.

18. Select Close to return the TAP Group Table display.