

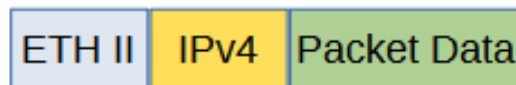
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ERSPAN Type 2 Encapsulate

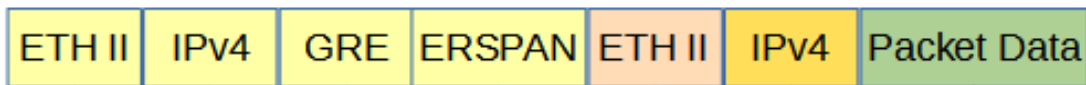
Overview:

When a packet is encapsulated with an ERSPAN Type 2 header the new ERSPAN header segments are added to the original packet. The ERSPAN header segments consists of Ethernet II, IPv4, GRE and ERSPAN as shown below.

Original Packet



ERSPAN Type 2 Encapsulated Packet



Encapsulating a packet with a ERSPAN Type 2 header involves two configuration processes.

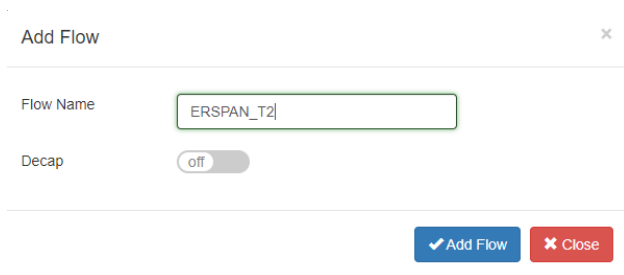
1. Create a Flow
2. Create a Tap Group

1. Create a Flow

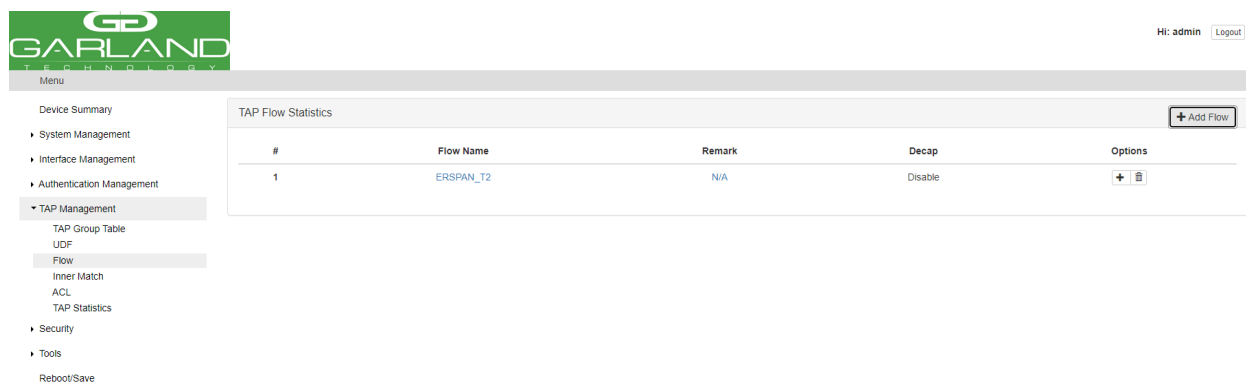
The flow defines which packets will be encapsulated with an ERSPAN header. Packets that do not meet the flow attributes will not be encapsulated. In some cases it may be required to create more than 1 flow.

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

The Add Flow panel will appear.



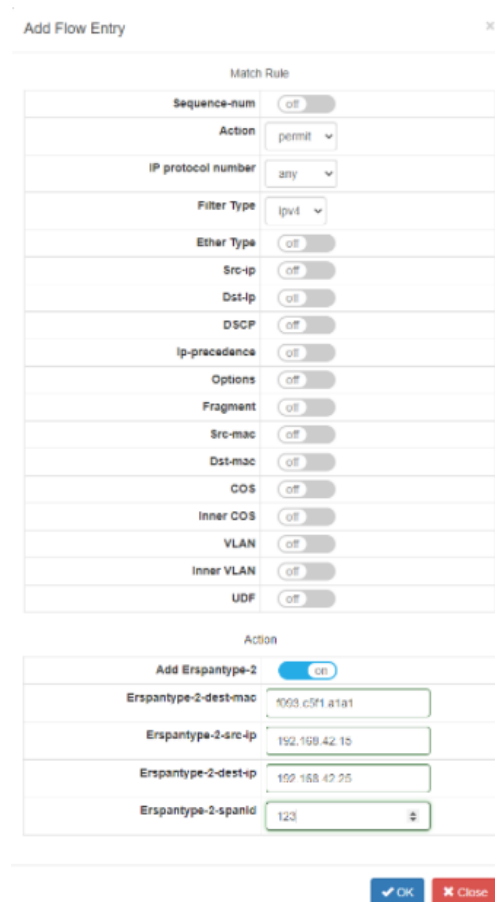
4. Enter the Flow Name.
5. Select Add Flow.
6. The flow will be displayed.



#	Flow Name	Remark	Decap	Options
1	ERSPAN_T2	N/A	Disable	+ [icon]

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

The Add Flow Entry panel will be displayed.



The screenshot shows the 'Add Flow Entry' configuration window. It is titled 'Add Flow Entry' and has a close button (X) in the top right corner. The window is divided into two main sections: 'Match Rule' and 'Action'.

Match Rule Section:

- Sequence-num: off (toggle)
- Action: permit (dropdown)
- IP protocol number: any (dropdown)
- Filter Type: ipv4 (dropdown)
- Ether Type: off (toggle)
- Src-ip: off (toggle)
- Dst-ip: off (toggle)
- DSCP: off (toggle)
- Ip-precedence: off (toggle)
- Options: off (toggle)
- Fragment: off (toggle)
- Src-mac: off (toggle)
- Dst-mac: off (toggle)
- COS: off (toggle)
- Inner COS: off (toggle)
- VLAN: off (toggle)
- Inner VLAN: off (toggle)
- UDF: off (toggle)

Action Section:

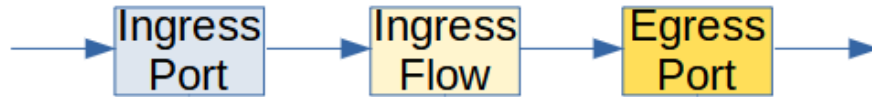
- Add Erspan-type-2: on (toggle)
- Erspan-type-2-dest-mac: 000.c5f1.a1a1 (text input)
- Erspan-type-2-src-ip: 192.168.42.15 (text input)
- Erspan-type-2-dest-ip: 192.168.42.25 (text input)
- Erspan-type-2-spanid: 123 (text input with dropdown arrow)

At the bottom right of the window, there are two buttons: 'OK' (blue) and 'Close' (red).

8. Under Match Rule select the desired options and enter the desired values to define which packets are encapsulated with an ERSPAN Type 2 header. If desired the default options may be used to encapsulate all packets.
9. Under Action, select Add Erspan-type-2.
10. Enter the desired Erspan-type-2-dest-mac. This defines the Destination MAC in the Ethernet II segment of the ERSPAN header.
11. Enter the desired Erspan-type-2-src-ip. This defines the Source IP in the IPv4 segment of the ERSPAN header.
12. Enter the desired Erspan-type-2-dest-ip. This defines the Destination IP in the IPv4 segment of the ERSPAN header.
13. Enter the desired Erspan-type-2-spanid. This defines the ERSPAN ID in the ERSPAN segment of the ERSPAN header.
14. Select OK.

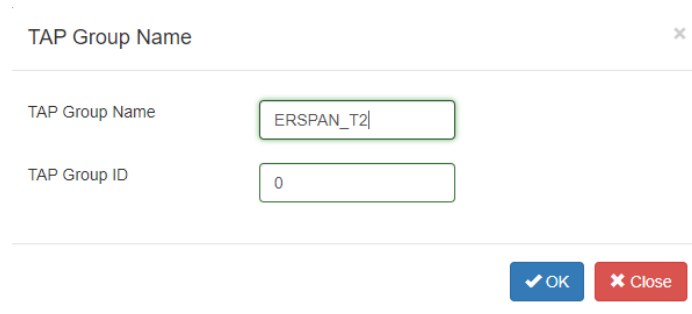
2. Create a Tap Group

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.

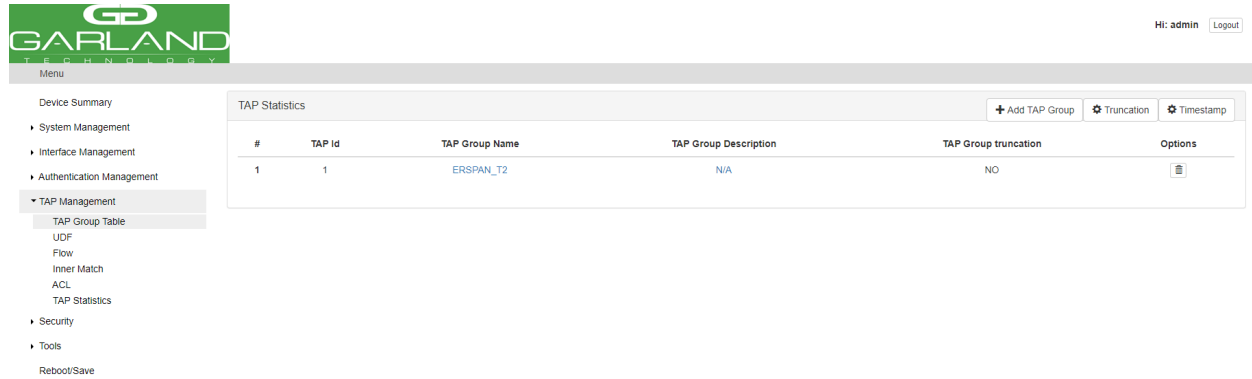
The TAP Group Name panel will appear.



TAP Group Name	
TAP Group Name	<input type="text" value="ERSPAN_T2"/>
TAP Group ID	<input type="text" value="0"/>
<input type="button" value="OK"/> <input type="button" value="Close"/>	

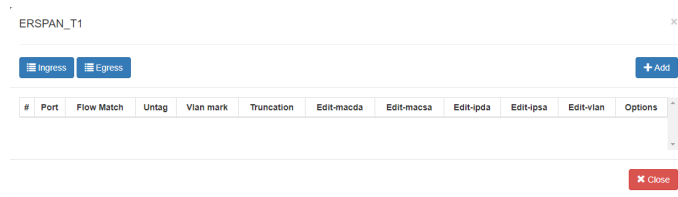
4. Enter the TAP Group Name.
5. Select OK.

6. The Tap Group will be displayed.



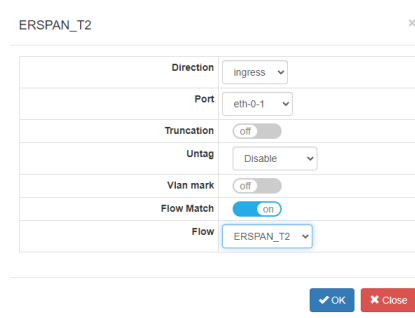
7. Place the cursor on the tap group name under the TAP Group Name column and press the left mouse button.

The TAP group panel will appear.



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

The add panel will appear.



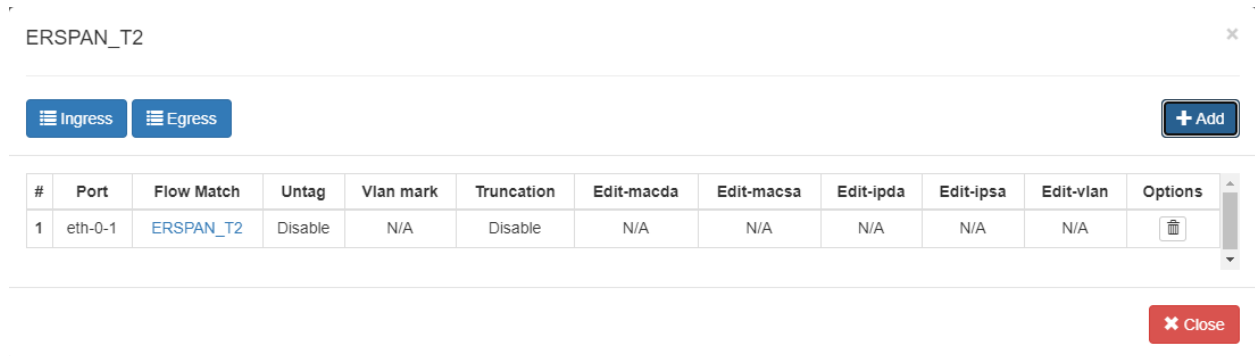
9. Select the Direction, ingress.

10. Select the desired ingress port.

11. Enable Flow Match.

12. Select the ERSPAN Type 2 flow.

13. Select OK.



ERSPAN_T2

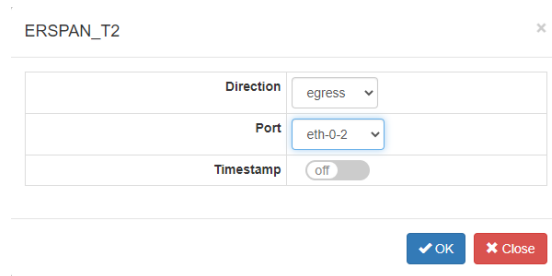
Ingress Egress + Add

#	Port	Flow Match	Untag	Vlan mark	Truncation	Edit-macda	Edit-macsa	Edit-ipda	Edit-ipsa	Edit-vlan	Options
1	eth-0-1	ERSPAN_T2	Disable	N/A	Disable	N/A	N/A	N/A	N/A	N/A	

Close

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

The add panel will appear.



ERSPAN_T2

Direction: egress

Port: eth-0-2

Timestamp: off

OK Close

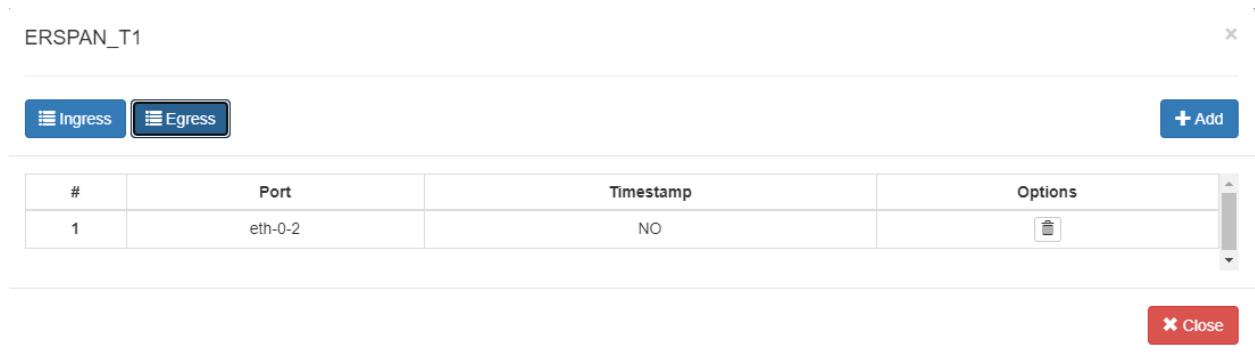
15. Select the Direction, egress.

16. Select the desired egress port.

17. Select OK.

18. 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.

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



ERSPAN_T1

Ingress Egress + Add

#	Port	Timestamp	Options
1	eth-0-2	NO	

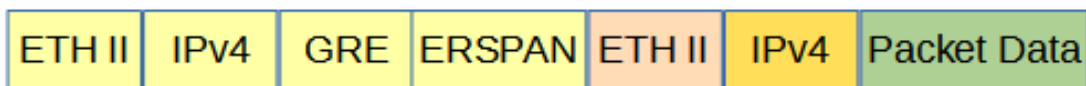
Close

ERSPAN Type 2 Decapsulate (IP Protocol-GRE)

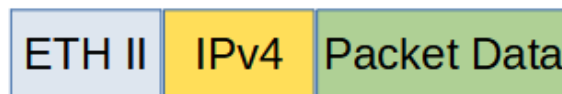
Overview:

When an ERSPAN Type 2 packet is decapsulated the ERSPAN header segments are removed from the packet along with the original Ethernet II segment. A new Ethernet II segment is added as shown below.

ERSPAN Type 2 Encapsulated Packet



ERSPAN Type 2 Decapsulated Packet



Decapsulating the ERSPAN Type 2 header from a packet involves two configuration processes.

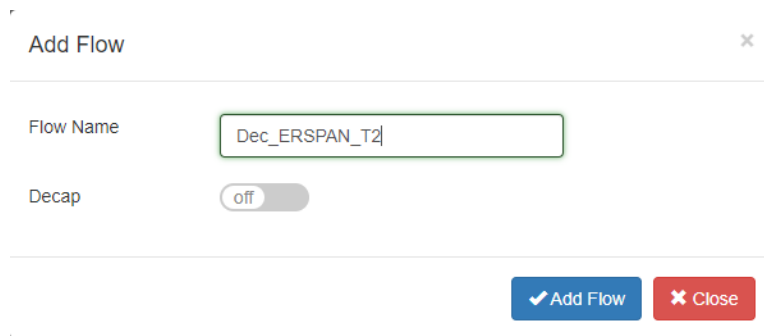
1. Create a Flow
2. Create a Tap Group

1. Create a Flow

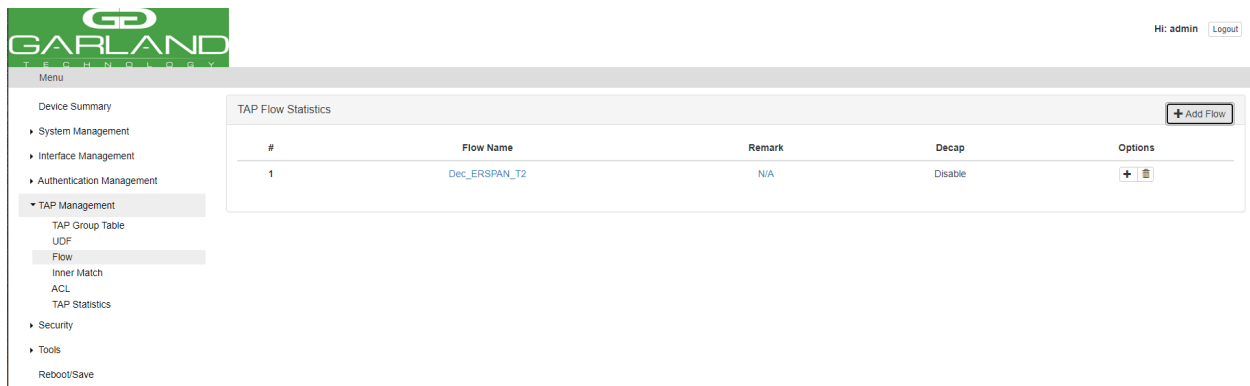
The flow defines which ERSPAN Type 2 packets will be decapsulated. Packets that do not meet the flow attributes will not be decapsulated. In some cases it may be required to create more than 1 flow.

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

The Add Flow panel will appear.



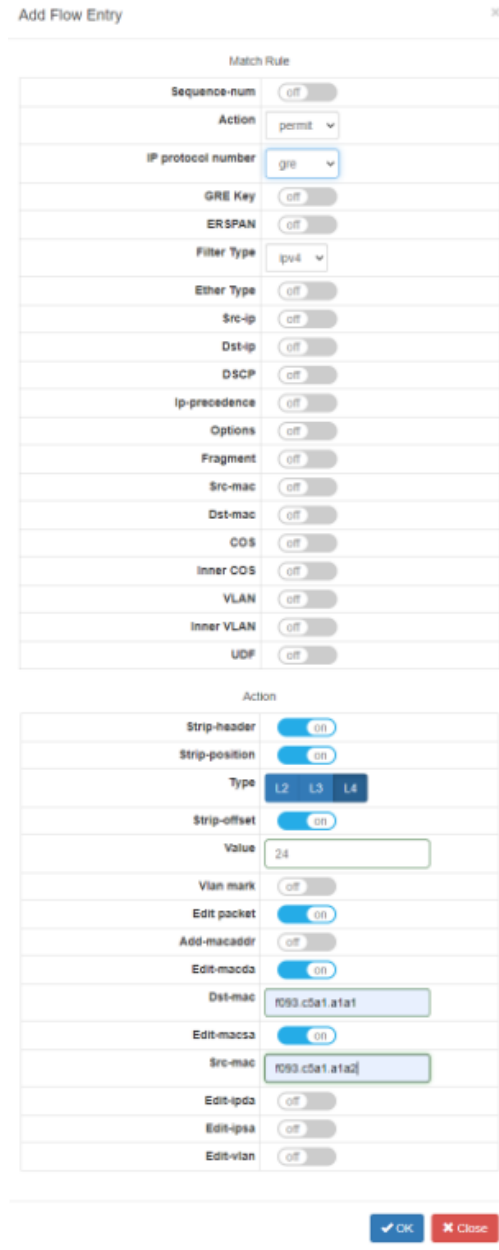
4. Enter the Flow Name.
5. Select Add Flow.
6. The flow will be displayed.



#	Flow Name	Remark	Decap	Options
1	Dec_ERSPAN_T2	N/A	Disable	+

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

The Add Flow Entry panel will be displayed.



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:
- IP protocol number:
- GRE Key: off
- ERSPAN: off
- Filter Type:
- Ether Type: off
- Src-ip: off
- Dst-ip: 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:

- Strip-header: on
- Strip-position: on
- Type: L2 L3 L4
- Strip-offset: on
- Value:
- Vlan mark: off
- Edit packet: on
- Add-macaddr: off
- Edit-macda: on
- Dst-mac:
- Edit-macsa: on
- Src-mac:
- Edit-ipda: off
- Edit-ipsa: off
- Edit-vlan: off

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

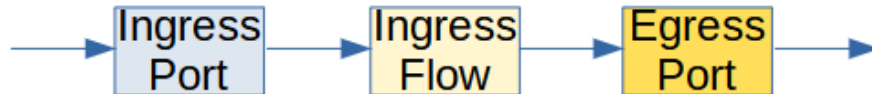
8. Under Match Rule select GRE for the IP Protocol Number.

9. Select the other desired options and enter the desired values to define which ERSPAN Type 2 packets are decapsulated. The defaults may be used to decapsulate all ERSPAN Type 2 packets.

10. Enable Strip-header.
11. Enable Strip-position.
12. Select Type, L4.
13. Enable Strip-offset.
14. Enter the Value, 24.
15. Enable Edit packet.
16. Enable Edit-macda.
17. Enter the desired Dst-mac. This will define the Destination MAC for the new Ethernet II segment added to the packet.
18. Enable Edit-macsa.
19. Enter the desired Src-mac. This will define the Source MAC for the new Ethernet II segment added to the packet.
20. 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.

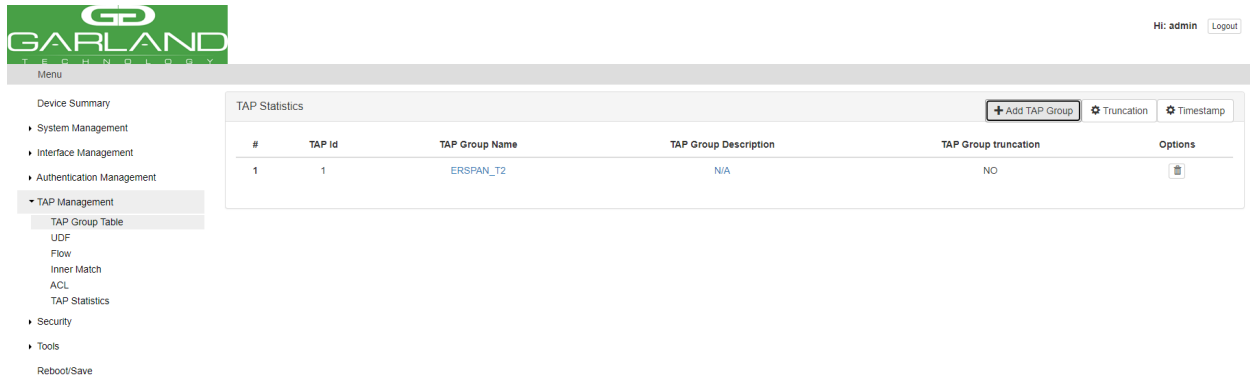
The TAP Group Name panel will appear.

TAP Group Name ×

TAP Group Name

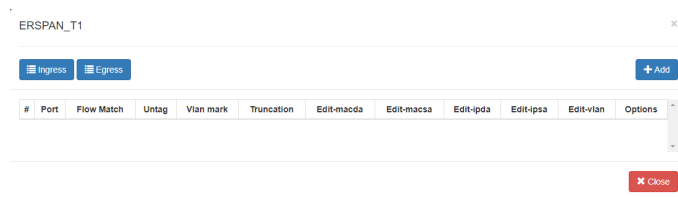
TAP Group ID

4. Enter the TAP Group Name.
5. Select OK.
6. The Tap Group will be displayed.



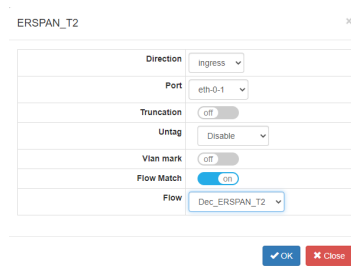
7. Place the cursor on the tap group name under the TAP Group Name column and press the left mouse button.

The TAP group panel will appear.



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

The add panel will appear.



9. Select the Direction, ingress.
10. Select the desired ingress port.

11. Enable Flow Match.
12. Select the ERSPAN Type 2 flow.
13. Select OK.

The screenshot shows a window titled "ERSPAN_T2" with a close button (x) in the top right. Below the title bar are two buttons: "Ingress" and "Egress", and a "+ Add" button on the right. Below these is a table with the following data:

#	Port	Flow Match	Untag	Vlan mark	Truncation	Edit-macda	Edit-macsa	Edit-ipda	Edit-ipsa	Edit-vlan	Options
1	eth-0-1	Dec_ERSPAN_T2	Disable	N/A	Disable	N/A	N/A	N/A	N/A	N/A	

At the bottom right of the window is a red "Close" button with a white 'x' icon.

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

The add panel will appear.

The screenshot shows a smaller window titled "ERSPAN_T2" with a close button (x) in the top right. It contains three rows of configuration options:

- Direction: egress (dropdown menu)
- Port: eth-0-2 (dropdown menu)
- Timestamp: off (toggle switch)

At the bottom of the panel are two buttons: a blue "OK" button with a checkmark and a red "Close" button with a white 'x' icon.

15. Select the Direction, egress.
16. Select the desired egress port.
17. Select OK.
18. 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.
19. Select Close to return the the TAP Group Table display.

The screenshot shows the "ERSPAN_T2" window with the "Egress" button selected. The table now has two rows:

#	Port	Timestamp	Options
1	eth-0-2	NO	

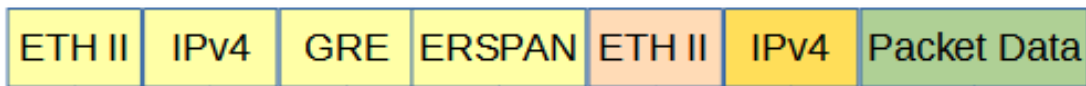
The "+ Add" button is still present in the top right, and the red "Close" button is at the bottom right.

ERSPAN Type 2 Decapsulate (IP Protocol-GRE ERSPAN)

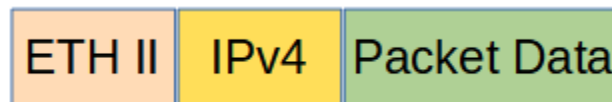
Overview:

When an ERSPAN Type 2 packet is decapsulated the ERSPAN header segments are removed from the packet. The original packet is not modified as shown below.

ERSPAN Type 2 Encapsulated Packet



ERSPAN Type 2 Decapsulated Packet



Decapsulating the ERSPAN Type 2 header from a packet involves two configuration processes.

1. Create a Flow (CLI)
2. Create a Tap Group (GUI)

1. Create a Flow

The GRE ERSPAN flow must be created using CLI commands. This flow type cannot be created using the GUI. The flow defines which ERSPAN Type 2 packets will be decapsulated. Packets that do not meet the flow attributes will not be decapsulated. In some cases it may be required to create more than 1 flow.

1. Establish a serial connection to the unit via the Console Interface or SSH via the Management Interface. Enter the Username and Password for SSH (admin/gtadmin1).
2. Enter enable.

```
Switch> enable
```
3. Enter configure terminal.

```
Switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
```

4. Enter flow followed by the flow name.

```
Switch(config)# flow GRE_ERSPAN
```

5. Enter permit gre erspan any src-ip any dst-ip any strip-header strip-position l4 strip-offset 24

```
Switch(config-flow-GRE_ERSPAN)# permit gre erspan any src-ip any dst-ip any
strip-header strip-position l4 strip-offset 24
```

6. Enter exit.

```
Switch(config-flow-GRE_ERSPAN)# exit
```

7. Enter exit.

```
Switch(config)# exit
```

```
Switch#
```

To display the flow in the GUI.

8. Select Tap Management.

9. Select Flow.

2. Create a Tap Group

Create the Tap Group by following the procedure starting on page 11, 2. Create a Tap Group.