See every bit, byte, and packet®

EdgeLens

InLine Security Packet Broker

INT10G8XX56 | 1.18.5

User Manual

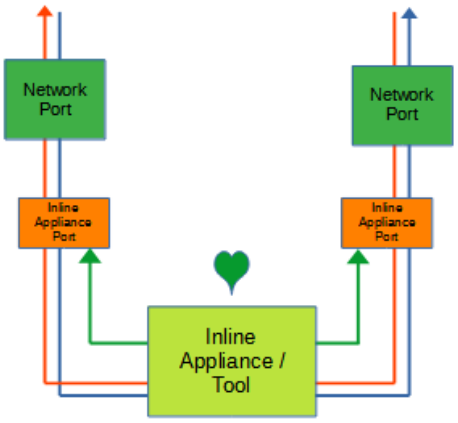
Introduction

Garland's innovative EdgeLens® is a bypass TAP, network packet broker hybrid, purpose-built to give you the power of a bypass TAP to manage the availability of inline tools, instrument high availability (HA) deployments, and tool chaining. The following mode options are available under the Bypass Taps panel.

Default Tap Mode

In this mode, the network and inline appliance ports are defined by the system for each tap. Ports 17 through 44 may be configured as packet broker ports or tap monitor ports. All four taps, tap 1 through tap 4 may be configured independently in this mode. The network ports are typically connected to network devices such as a server or router. The inline appliance ports are typically connected to an inline appliance or tool to monitor the network traffic. Heartbeat packets are transmitted bi-directionally from the inline appliance ports on the tap through the inline appliance or tool to monitor the health of the device.

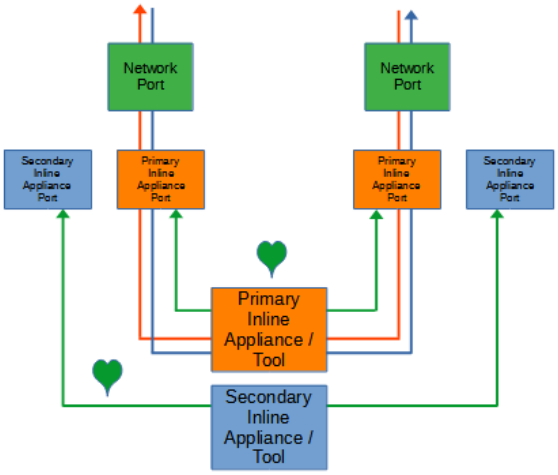
Figure 1 Default Tap Mode



Primary-Secondary Tap Mode

In this mode, the network and primary inline appliance ports are defined by the system for each tap. The secondary inline appliance ports will be automatically configured by the system in the order assigned to each tap. The ports availability are considered in vertical pairs, 17/18, 19/20, etc. Any port that is not assigned as a secondary inline appliance port may be configured as a packet broker port or tap monitor port. All four taps, Tap 1 through Tap 4 may be configured independently in this mode. The network ports are typically connected to network devices such as a server or router. The primary inline appliance ports are typically connected to a primary inline appliance or tool to monitor the network traffic. The secondary inline appliance ports are typically connected to a secondary inline appliance or tool to monitor the network traffic. The network traffic is sent to the primary inline appliance or the secondary inline appliance. Heartbeat packets are transmitted bi-directionally from the primary inline appliance ports on the tap through the primary inline appliance or tool to monitor the health of the device. Likewise, heartbeat packets are transmitted bi-directionally from the secondary inline appliance ports on the tap through the secondary inline appliance or tool to monitor the health of the device.

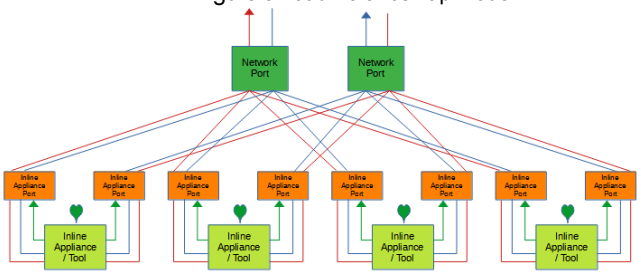
Figure 2 Primary-Secondary Tap Mode



Load Balance Tap Mode

In this mode, the network and initial inline appliance ports are defined by the system for each tap. Each tap may have up to three additional inline appliance ports applied, a total of 4. The ports will be automatically configured by the system in the order assigned to each tap. The ports availability are considered in vertical pairs, 17/18, 19/20, etc. Any port that is not assigned as an inline appliance port may be configured as a packet broker port. The network ports are typically connected to network devices such as a server or router. The inline appliance ports are typically connected to IPSs or tools to monitor the network traffic. The network traffic is load-balanced to the inline appliance ports. However, heartbeat packets are transmitted bidirectionally from inline appliance ports on the tap through the IPSs or tools to monitor the health of the devices.

Figure 3 Load Balance Tap Mode



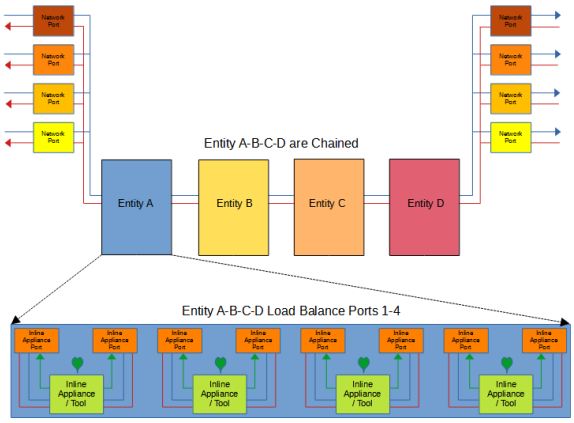
ATLB2 Chained Tap Mode

When the taps are placed in this mode the system automatically defines:

- Ports 1-2, 3-4, 5-6 and 7-8 as network ports
- Ports 9 through 16 as entity A inline appliance ports
- Ports 17 through 24 as entity B inline appliance ports
- Ports 25 through 33 as entity C inline appliance ports
- Ports 33 through 40 as entity D inline appliance ports

Any previously configured database associated with ports 1 through 40 will be deleted when this mode is applied. Entity inline appliance ports or entities may be removed as desired. Any entity inline appliance ports that are removed may be used as packet broker ports. The network ports are paired, 1-2, 3-4, 5-6, and 7-8 and are typically connected to network devices such as a server or router. The network traffic is chained through entities A, B, C, and D and load-balanced to each entity inline appliance ports. Heartbeat packets are transmitted bi-directionally from the entity inline appliance ports on the tap through the IPSs or tools to monitor the health of the devices.

Figure 4 ATLB2 Chained Tap Mode



1U Chassis Specifications

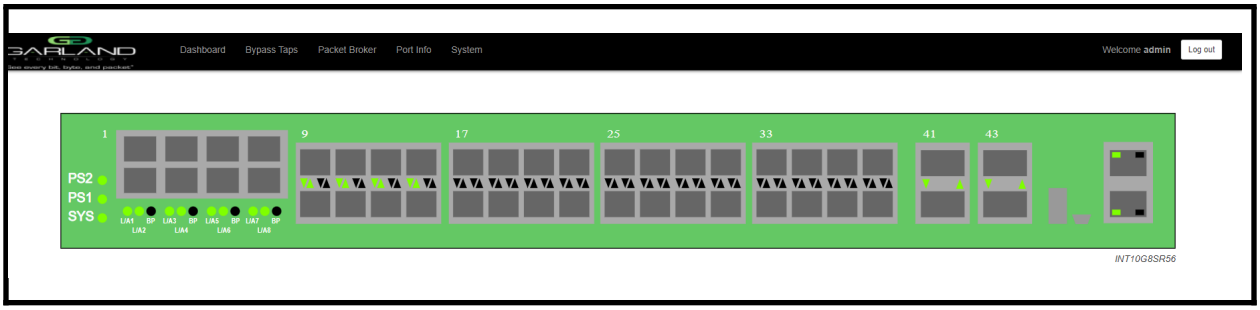
Max. system throughput:
Support for: SFP(SX, LX and TX) and SFP+ (SR, LR, ER)
Operating Temp: 0 to 40° C or 32 to 104° F
Operating Humidity: 5 to 95%
Dimensions: 21.09” L x 1.719” H x 17.32” W (535.686mm L x 43.6626 mm H x 439.928mm W)
Airflow: 100 IF/m
(2) AC Power Supplies Included

Package Contents

(1) INT10G8XX56 Chassis
(1) Rack Mounting kit
(2) Power Cable
(1) Console Cable

Configuration Basics

1. Log in to the Graphic User Interface (GUI)

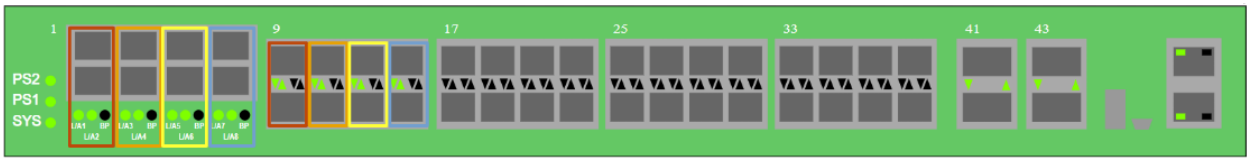


2. Select Bypass Taps on the Dashboard Menu bar.

The Bypass Taps panel will be displayed.

1 Default Tap Mode

In this mode, the network and inline appliance ports are defined by the system for each tap. Ports 17 through 44 may be configured as packet broker ports or tap monitor ports. All four taps, tap 1 through tap 4 may be configured independently in this mode. The network ports are typically connected to network devices such as a server or router. The inline appliance ports are typically connected to an inline appliance or tool to monitor the network traffic. Heartbeat packets are transmitted bi-directionally from the inline appliance ports on the tap through the inline appliance or tool to monitor the health of the device.



Tap 1	Tap 2	Tap 3	Tap 4
Port 1 (Network)	Port 3 (Network)	Port 5 (Network)	Port 7 (Network)
Port 2 (Network)	Port 4 (Network)	Port 6 (Network)	Port 8 (Network)
Port 9 (Inline Appliance)	Port 11 (Inline Appliance)	Port 13 (Inline Appliance)	Port 15 (Inline Appliance)
Port 10 (Inline Appliance)	Port 12 (Inline Appliance)	Port 14 (Inline Appliance)	Port 16 (Inline Appliance)

1.1 Bypass Tap Name

1. Select the Pencil icon for the desired tap.

   The Tap Name panel will be displayed.

2. Enter the name.

3. Remove the name by placing the cursor in the name panel, backspace, or delete the current name.

4. Select the Check to save updates.

5. Select Cancel to return the Bypass Taps panel.

1.2 Heartbeat Settings

The following configuration options may be displayed or modified.

No. Of Lost HB Packets
Heartbeats per Second

1. Select Settings on the Bypass Taps panel.

   The Configure Heartbeat Settings panel will be displayed with the current configuration.

2. Enter the No. Of Lost HB Packets. Default is 10.

   This is the number of heartbeats that must be lost on the inline appliance ports before any tap will switch to bypass.

3. Enter the Heartbeats per Second. Default is 10.

    This is the number of heartbeats per second applied to the inline appliance ports for all taps.

4. Select Save to save updates.

5. Select Cancel to return the Bypass Taps panel.

1.3 Taps Settings

The following configuration options may be displayed, modified, enabled, or disabled.

Tap Modes
Fail Mode
LFP
Reverse Bypass

1. Edit the Tap Settings, by placing the cursor on any tap and double-press the left mouse button.

    The Tap panel will be displayed.

2. Select Edit Tap Settings.

    The Configure Inline Appliance panel will be displayed.

3. Select the Tap Mode.

Active	Allows the tap to automatically switch from inline to bypass if an issue occurs with the inline appliance port(s), loss of link, or heartbeats. When the issue with the inline appliance port(s) is resolved, link and heartbeats restored, the tap will automatically switch back to inline.

Figure 2 Default Tap Mode (Inline)

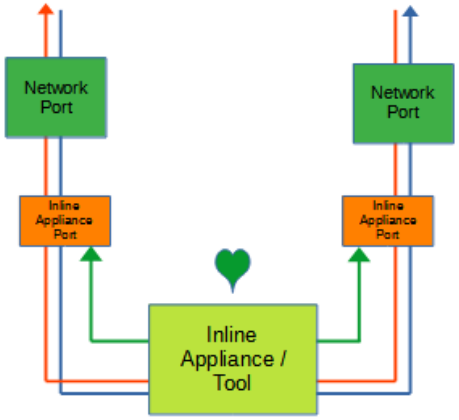
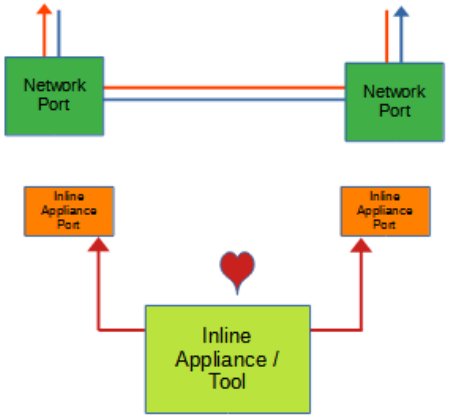


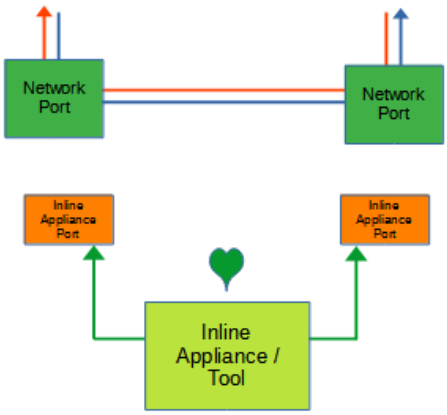
Figure 3 Default Tap Mode (Bypass)



Force Bypass

If selected, the tap will switch the traffic between the network ports with no regard for the inline appliance port(s), link, or heartbeats. Typically used during maintenance activities.

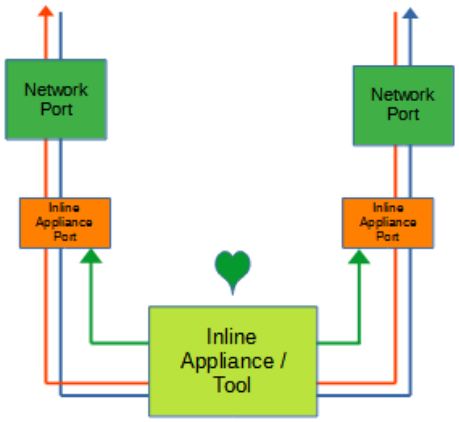
Figure 4 Default Tap Mode (Force Bypass)



Force Inline

If selected, the tap bypass option is disabled. If an issue occurs with the inline appliance port(s), loss of link, or heartbeats, the traffic will go down.

Figure 5 Default Tap Mode (Force Inline)

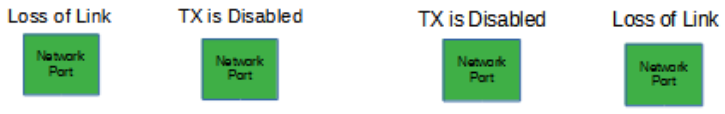


4. Select the Fail Mode.

Open	If selected and power is lost to the unit. The traffic will switch between the network ports.
Closed	If selected and power is lost to the unit. The traffic will go down.

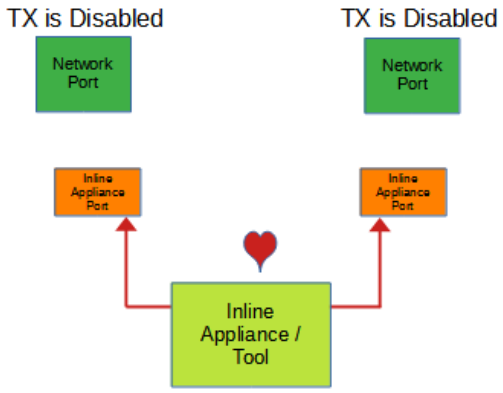
5. LFP on — If enabled and a link is lost on one of the network ports. The TX will be disabled the other network port. The RX for both network ports remains on.

Figure 6 Default Tap Mode (LFP)



6. Reverse Bypass — If enabled and the inline appliance port(s) fail, loss of link or heartbeats. The TX will be disabled on both of the network ports. The RX for both network ports remains on.

Figure 7 Default Tap Mode (Reverse Bypass)



7. Select Accept to save updates. Save must additionally be selected on the Bypass Taps panel.

8. Select Cancel to return the Bypass Taps panel.

1.4 Monitor Ports

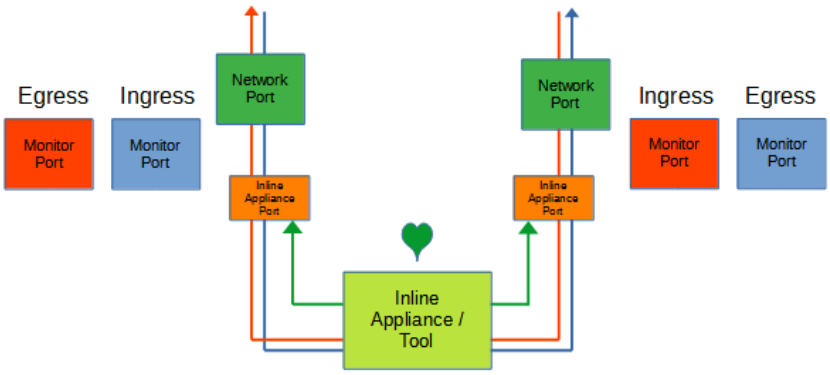
Monitor ports may be added to any tap. Each tap may have up to two monitor ports per network port, total of four monitor ports per tap. The monitor ports may be added to monitor the ingress traffic or egress traffic.

1. Create a monitor port by placing the cursor on the desired port, shaded gray above the tap. Press the left mouse button and hold to select the port. Drag the port to the desired network port. The default of any monitor port is ingress. Change the monitor port traffic by placing the cursor on the ingress panel and pressing the left mouse button. Additional monitor ports may be added using the same procedure.

2. Select Save to save updates.

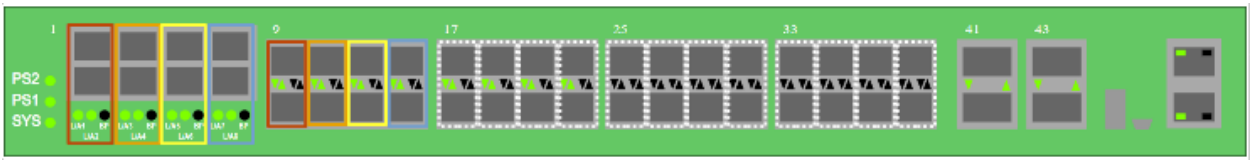
3. Select Cancel to return the Bypass Taps panel

Figure 8 Default Tap Mode (Monitor Port)



2 Primary-Secondary Tap Mode

In this mode, the network and primary inline appliance ports are defined by the system for each tap. The secondary inline appliance ports will be automatically configured by the system in the order assigned to each tap. The ports availability are considered in vertical pairs, 17/18, 19/20, etc. Any port that is not assigned as a secondary inline appliance port may be configured as a packet broker port or tap monitor port. All four taps, Tap 1 through Tap 4 may be configured independently in this mode. The network ports are typically connected to network devices such as a server or router. The primary inline appliance ports are typically connected to a primary inline appliance or tool to monitor the network traffic. The secondary inline appliance ports are typically connected to a secondary inline appliance or tool to monitor the network traffic. The network traffic is sent to the primary inline appliance or the secondary inline appliance. Heartbeat packets are transmitted bi-directionally from the primary inline appliance ports on the tap through the primary inline appliance or tool to monitor the health of the device. Likewise, heartbeat packets are transmitted bi-directionally from the secondary inline appliance ports on the tap through the secondary inline appliance or tool to monitor the health of the device.



Tap 1	Tap 2	Tap 3	Tap 4
Port 1 (Network)	Port 3 (Network)	Port 5 (Network)	Port 7 (Network)
Port 2 (Network)	Port 4 (Network)	Port 6 (Network)	Port 8 (Network)
Port 9 (Primary)	Port 11 (Primary)	Port 13 (Primary)	Port 15 (Primary)
Port 10 (Primary)	Port 12 (Primary)	Port 14 (Primary)	Port 16 (Primary)
Port XX (Secondary)	Port XX (Secondary)	Port XX (Secondary)	Port XX (Secondary)
Port XX (Secondary)	Port XX (Secondary)	Port XX (Secondary)	Port XX (Secondary)

2.1 Bypass Tap Name

1. Select the Pencil icon for the desired tap.

   The Tap Name panel will be displayed.

2. Enter the name.

3. Remove the name by placing the cursor in the name panel, backspace, or delete the current name.

4. Select the Check to save updates.

5. Select Cancel to return the Bypass Taps panel.

2.2 Heartbeat Settings

The following configuration options may be displayed or modified.

No. Of Lost HB Packets
Heartbeats per Second

1. Select Settings on the Bypass Taps panel.

   The Configure Heartbeat Settings panel will be displayed with the current configuration.

2. Enter the No. Of Lost HB Packets. Default is 10.

   This is the number of heartbeats that must be lost on any inline appliance port before any tap will switch from the primary inline appliance to the secondary inline appliance to bypass.

3. Enter the Heartbeats per Second. Default is 10.

   This is the number of heartbeats per second applied to the primary inline appliance and secondary inline appliance ports for all taps.

4. Select Save to save updates.

5. Select Cancel to return the Bypass Taps panel.

2.3 Configure Primary-Secondary Tap Mode

1. Edit the tap mode by placing the cursor on any tap and double-press the left mouse button.

   The Tap panel will be displayed.

2. Place the cursor on the Primary-Secondary Mode Select option. Select with the left mouse button. Drag the Primary-Secondary option to the blue box and release.

3. Select the red X to remove.

4. Place the cursor on the Inline Appliance option. Select with the left mouse button. Drag the Inline Appliance option to the blue box and release.

5. Select the red X to remove.

6. Select Save to save updates.

   The Bypass Taps panel will be displayed. Inline (Primary) will be displayed.

7. Place the cursor on the tap and double-press the left mouse button.

   The Tap panel will be displayed. Green indicates Active, Yellow indicates Standby.

8. Select Cancel to return the Bypass Taps panel.

2.4 Taps Settings

The following configuration options may be displayed, modified, enabled, or disabled.

Tap Modes
Fail Mode
LFP
Reverse Bypass

1. Edit the Tap Settings, by placing the cursor on any tap and double-press the left mouse button.

   The Tap panel will be displayed.

2. Select Edit Tap Settings.

   The Configure Inline Appliance panel will be displayed.

3. Select the Tap Mode.

Active	Allows the tap to automatically switch from inline to bypass if an issue occurs with the primary inline appliance port(s) and secondary inline appliance port(s), loss of link, or heartbeats. The default switching action from inline to bypass is defined by the system as, from the primary inline appliance, to the secondary inline appliance, to bypass. The default switching action from bypass to inline is defined by the system as, from bypass, to the secondary inline appliance. Switching from the secondary inline appliance to the primary inline appliance may be accomplished via two methods. Select the Switch to Primary option or enable Revertive. If revertive is enabled, then the system will switch from bypass to the primary inline appliance if it is recovered first.

Figure 11 Primary-Secondary Tap Mode (Secondary Inline)

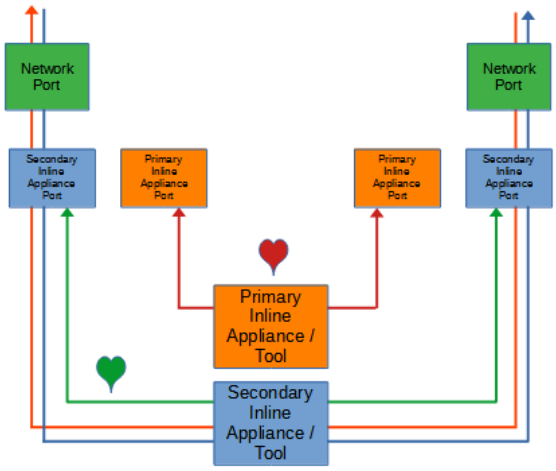


Figure 10 Primary-Secondary Tap Mode (Primary Inline)

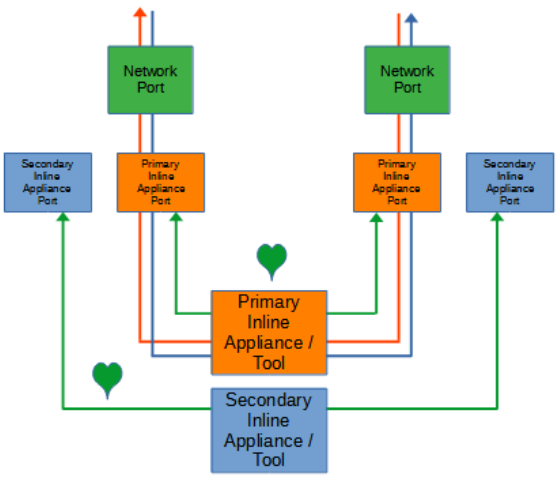


Figure 12 Primary-Secondary Tap Mode (Bypass)

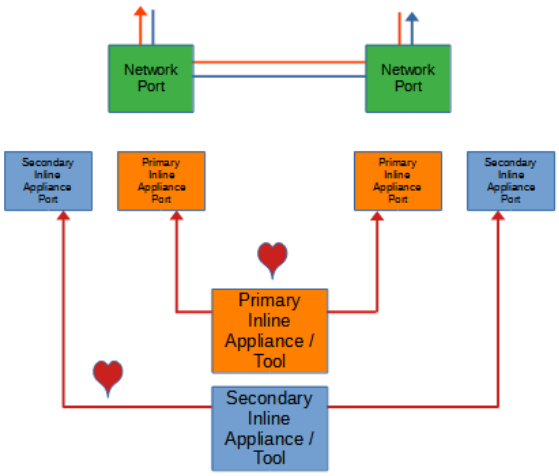
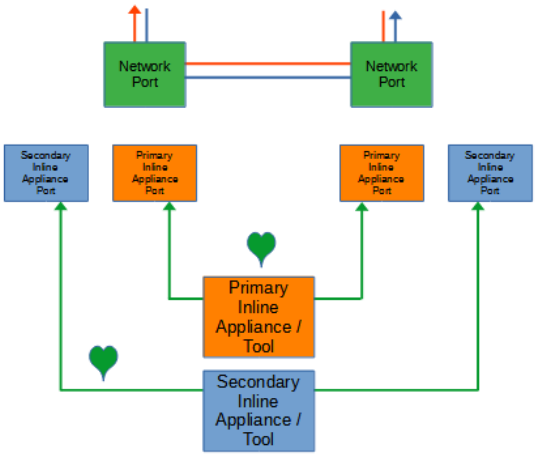


Figure 13 Primary-Secondary Tap Mode (Force Bypass)



Force Bypass — If selected, the tap will switch the traffic between the network ports with no regard for the primary inline appliance or the secondary inline appliance port(s), link or heartbeats. Typically used during maintenance activities.

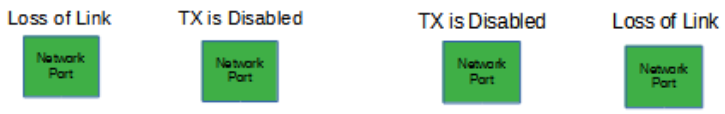
4. Select the Fail Mode.

Open — If selected and power is lost to the unit. The traffic will switch between the network ports.

Closed — If selected and power is lost to the unit. The traffic will go down.

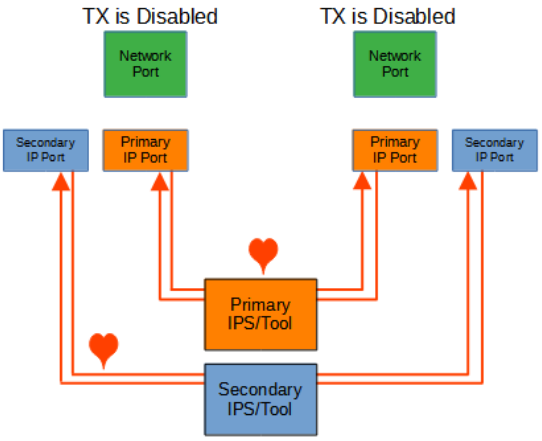
5. LFP on — If enabled and a link is lost on one of the network ports. The TX will be disabled the other network port. The RX for both network ports remains on.

Figure 14 Primary-Secondary Tap Mode (LFP)



6. Reverse Bypass — If enabled and the primary inline appliance and the secondary inline appliance port(s) fail, loss of link or heartbeats. The TX will be disabled on both of the network ports. The RX for both network ports remains on.

Figure 15 Primary-Secondary Tap Mode (Reverse Bypass)



7. Revertive — If enabled and the primary inline appliance port(s) fail, loss of link or heartbeats, the system will switch to the secondary inline appliance. When the issue with the primary inline appliance is resolved, has links and heartbeats. The traffic will automatically revert to the primary inline appliance. This option also affects the switching from bypass to inline. If disabled, the system is designed to switch from bypass to the secondary inline appliance. If the primary inline appliance restores first, has a link, and heartbeats, a manual switch to the primary inline appliance is required. If enabled and the primary inline appliance restores first, the system will switch from bypass to the primary inline appliance.

8. Select Accept to save updates. Save must additionally be selected on the Bypass Taps panel.

9. Select Cancel to return the Bypass Taps panel.

2.5 Switch To Primary

1. Select to manually switch the traffic from the secondary inline appliance to the primary inline appliance.

2.6 Monitor Ports

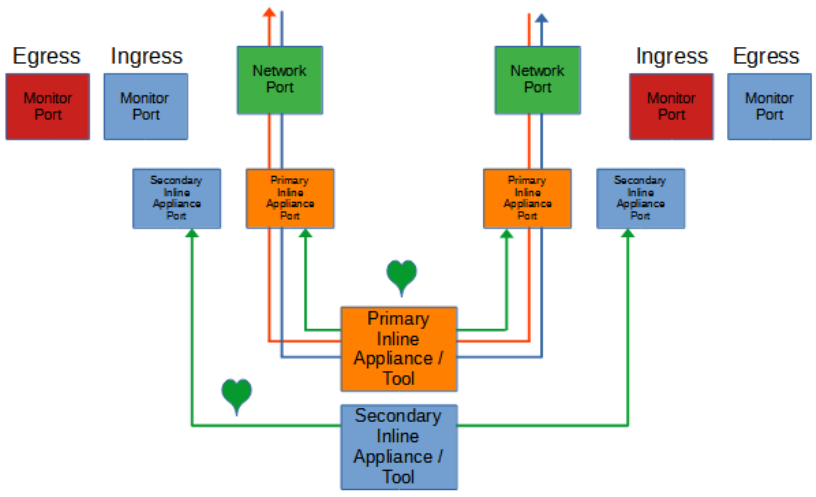
Monitor ports may be added to any tap. Each tap may have up to two monitor ports per network port, a total of four monitor ports per tap. The monitor ports may be added to monitor the ingress traffic or egress traffic.

1. Create a monitor port by placing the cursor on the desired port, shaded gray above the tap. Press the left mouse button and hold to select the port. Drag the port to the desired network port. The default of any monitor port is ingress. Change the monitor port traffic by placing the cursor on the ingress panel and pressing the left mouse button. Additional monitor ports may be added using the same procedure.

2. Select Save to save updates.

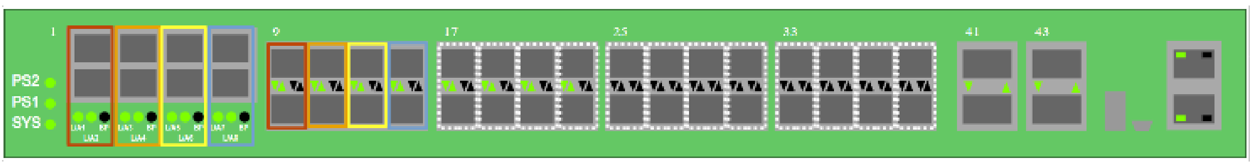
3. Select Cancel to return the Bypass Taps panel.

Figure 16 Primary-Secondary Tap Mode (Monitor Port)



3 Load Balance Tap Mode

In this mode, the network and initial inline appliance ports are defined by the system for each tap. Each tap may have up to three additional inline appliance ports applied, a total of 4. The ports will be automatically configured by the system in the order assigned to each tap. The ports availability are considered in vertical pairs, 17/18, 19/20, etc. Any port that is not assigned as an inline appliance port may be configured as a packet broker port. The network ports are typically connected to network devices such as a server or router. The inline appliance ports are typically connected to IPSs or tools to monitor the network traffic. The network traffic is load-balanced to the inline appliance ports. However, heartbeat packets are transmitted bidirectionally from inline appliance ports on the tap through the IPSs or tools to monitor the health of the devices.



Tap 1	Tap 2	Tap 3	Tap 4
Port 1 (Network)	Port 3 (Network)	Port 5 (Network)	Port 7 (Network)
Port 2 (Network)	Port 4 (Network)	Port 6 (Network)	Port 8 (Network)
Port 9 (Inline Appliance)	Port 11 (Inline Appliance)	Port 13 (Inline Appliance)	Port 15 (Inline Appliance)
Port 10 (Inline Appliance)	Port 12 (Inline Appliance)	Port 14 (Inline Appliance)	Port 16 (Inline Appliance)
Port XX (Inline Appliance)	Port XX (Inline Appliance)	Port XX (Inline Appliance)	Port XX (Inline Appliance)
Port XX (Inline Appliance)	Port XX (Inline Appliance)	Port XX (Inline Appliance)	Port XX (Inline Appliance)
Port XX (Inline Appliance)	Port XX (Inline Appliance)	Port XX (Inline Appliance)	Port XX (Inline Appliance)
Port XX (Inline Appliance)	Port XX (Inline Appliance)	Port XX (Inline Appliance)	Port XX (Inline Appliance)
Port XX (Inline Appliance)	Port XX (Inline Appliance)	Port XX (Inline Appliance)	Port XX (Inline Appliance)
Port XX (Inline Appliance)	Port XX (Inline Appliance)	Port XX (Inline Appliance)	Port XX (Inline Appliance)

3.1 Bypass Tap Name

1. Select the Pencil icon for the desired tap.

    The Tap Name panel will be displayed.

2. Enter the name.

3. Remove the name by placing the cursor in the name panel, backspace, or delete the current name.

4. Select the Check to save updates.

5. Select Cancel to return the Bypass Taps panel.

3.2 Heartbeat Settings

The following configuration options may be displayed or modified.

No. Of Lost HB Packets
Heartbeats per Second

1. Select Settings on the Bypass Taps panel.

   The Configure Heartbeat Settings panel will be displayed with the current configuration.

2. Enter the No. Of Lost HB Packets. Default is 10.

   This is the number of heartbeats that must be lost on an inline appliance port before any tap will remove the inline appliance from the load balance group.

3. Enter the Heartbeats per Second. Default is 10.

   This is the number of heartbeats per second applied to the inline appliance ports for all taps.

4. Select Save to save updates.

5. Select Cancel to return the Bypass Taps panel.

3.3 Configure Load Balance Tap Mode

1. Edit the tap mode by placing the cursor on any tap and double-press the left mouse button.

   The Tap panel will be displayed.

2. Place the cursor on the Load Balance Mode Select option. Select with the left mouse button. Drag the Load Balance option to the blue box and release.

3. Select the red X to remove.

4. Place the cursor on the Inline Appliance option. Select with the left mouse button. Drag the Inline Appliance option to the blue box and release. The next available vertical port pair will be added. Repeat this step to apply up to four inline appliance ports per tap.

5. Select the red X to remove.

6. Select Save to save updates.

   The Bypass Taps panel will be displayed. Inline will be displayed.

7. Place the cursor on the tap and double-press the left mouse button.

   The Tap panel will be displayed. Green indicates Active.

8. Select Cancel to return the Bypass Taps panel.

3.4 Taps Settings

The following configuration options may be displayed, modified, enabled, or disabled.

Tap Modes
Fail Mode
LFP
Reverse Bypass
Bypass Threshold

1. Edit the Tap Settings, by placing the cursor on any tap and double-press the left mouse button.

   The Tap panel will be displayed.

2. Select Edit Tap Settings.

   The Configure Inline Appliance panel will be displayed.

3. Select the Tap Mode.

Active	Allows the tap to automatically switch from inline to bypass if an issue occurs with the inline appliance port(s), loss of link, or heartbeats, defined by the bypass threshold value, 1-4. When the issue with the inline appliance port(s) is resolved, have link and heartbeats, the tap will automatically switch back to inline.

Figure 18 Load Balance Tap Mode (Inline)

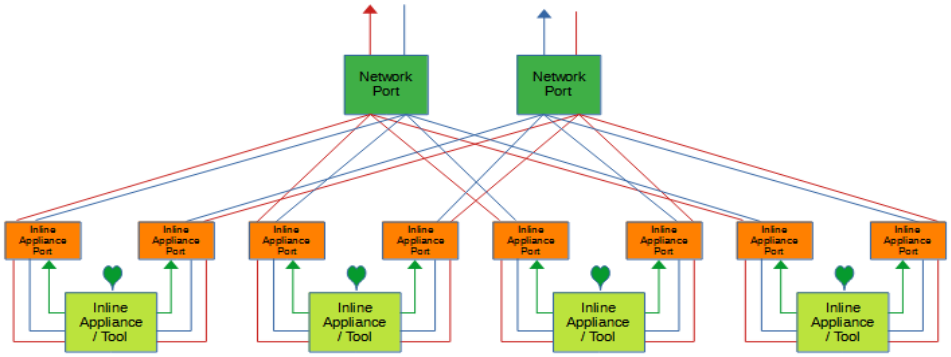
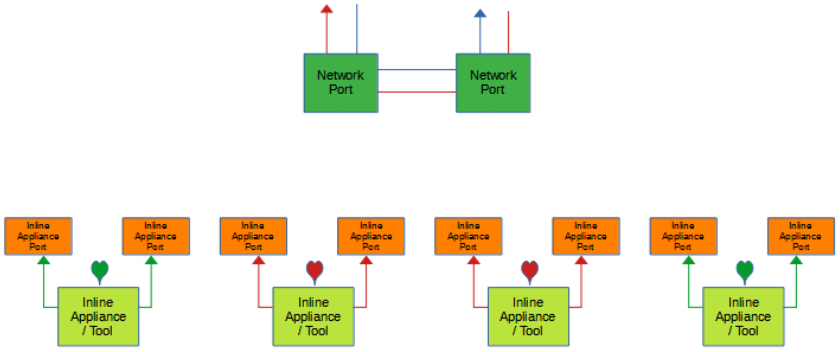
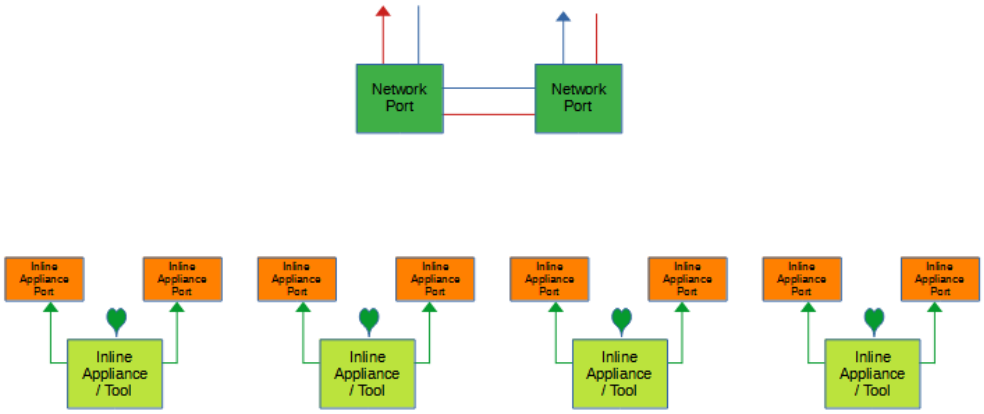


Figure 19 Load Balance Tap Mode (Bypass, Bypass Threshold=2)



Force Bypass — If selected, the tap will switch the traffic between the network ports with no regard for the inline appliance ports, links, or heartbeats. Typically used during maintenance activities.

Figure 20 Load Balance Tap Mode (Force Bypass)



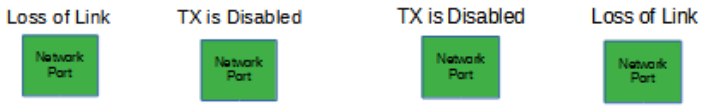
4. Select the Fail Mode.

Open — If selected and power is lost to the unit. The traffic will switch between the network ports.

Closed — If selected and power is lost to the unit. The traffic will go down.

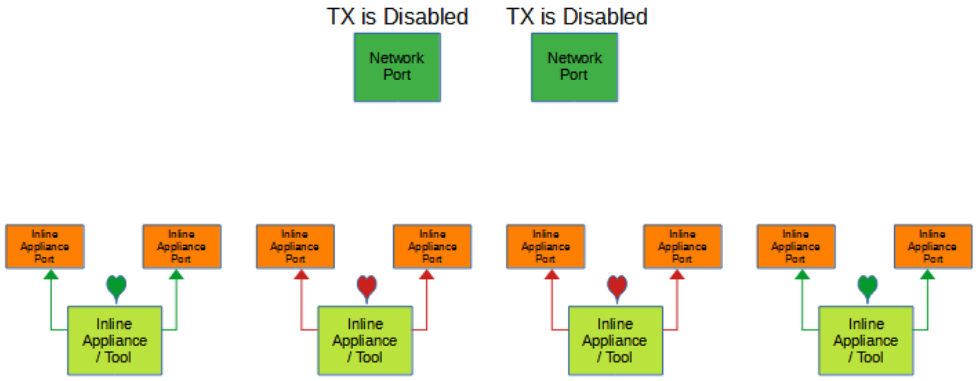
5. LFP — If enabled and a link is lost on one of the network ports. The TX will be disabled on the other network port. The RX for both network ports remain on.

Figure 21 Load Balance Tap Mode (LFP)



6. Reverse Bypass — If enabled and the inline appliance port(s) fail, loss of link or heartbeats, defined by the bypass threshold value, 1-4. The TX will be disabled on both of the network ports. The RX for both network ports remains on.

Figure 22 Load Balance Tap Mode (Reverse Bypass, Bypass Threshold=2)



7. Bypass Threshold — The bypass threshold determines how many inline appliance port(s) may fail, loss of link or heartbeats, before the tap switches to bypass.

8. Select Accept to save updates. Save must additionally be selected on the Bypass Taps panel.

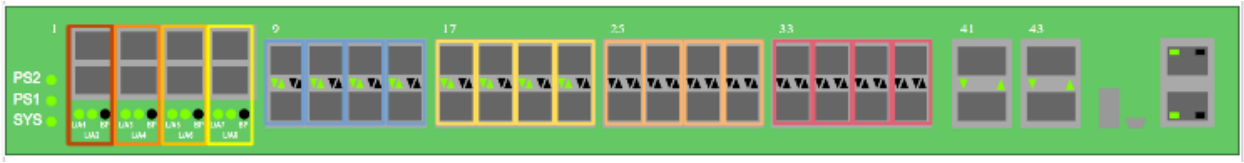
9. Select Cancel to return the Bypass Taps panel.

4 ATLB2 Chained Tap Mode

When the taps are placed in this mode the system automatically defines:

- Ports 1-2, 3-4, 5-6, and 7-8 as network ports
- Ports 9 through 16 as entity A inline appliance ports
- Ports 17 through 24 as entity B inline appliance ports
- Ports 25 through 33 as entity C inline appliance ports
- Ports 33 through 40 as entity D inline appliance ports

Any previously configured database associated with ports 1 through 40 will be deleted when this mode is applied. Entity inline appliance ports or entities may be removed as desired. Any entity inline appliance ports that are removed may be used as packet broker ports. The network ports are paired, 1-2, 3-4, 5-6, and 7-8 and are typically connected to network devices such as a server or router. The network traffic is chained through entities A, B, C, and D and load-balanced to each entity inline appliance ports. Heartbeat packets are transmitted bi-directionally from the entity inline appliance ports on the tap through the IPSs or tools to monitor the health of the devices.



4.1 Configure ATLB2 Chained Tap Mode

1. Select the Settings option on the Bypass Taps panel.

   The Configure Tap Settings panel will be displayed.

2. Select the ATLB2 Chained Mode option.

3. Select the Save option.

   A “Packetbroker data will be cleared. Go to ATLB2 Mode?” message will be displayed.

3.1. Select OK.

   The ATLB2 Chained tap mode will be displayed.

Figure 24 ATLB2 Chained Tap Mode (GUI Display)

4.2 Remove Entity Inline Appliance Member

Entity inline appliance port members are removed as member pairs. If an entity inline appliance port member is removed, the ports may be configured as packet broker ports.

1. Select the red X for the desired inline appliance port member(s).

2. Select the Save option.

4.3 Add Entity Inline Appliance Member

Entity inline appliance port members are added as member pairs. If the ports for an entity inline appliance port member are configured as packet broker ports they may not be added back to the entity until they are deleted as packet broker ports.

1. Place the cursor on the Member option. Select with the left mouse button. Drag the Member option to the entity box and release.

2. Select the Save option.

4.4 Remove Entity

An entity is removed from the chain by removing all of the inline appliance port members. Entity inline appliance port members are removed as member pairs. If the entity inline appliance port members are removed, the ports may be configured as packet broker ports.

1. Select the red X for all of the inline appliance port members.

2. Select the Save option.

4.5 Add Entity

An entity must have at least one inline appliance port member to be considered part of the chain. Entity inline appliance port members are added as member pairs. If the ports for an entity inline appliance member are configured as packet broker ports they may not be added back to the entity until they are deleted as packet broker ports.

1. Place the cursor on the Member option. Select with the left mouse button. Drag the Member option to the entity box and release.

2. Select the Save option.

4.6 Taps Settings

The following configuration options may be displayed, modified, enabled, or disabled.

No. Of Lost HB Packets	LFP
Heartbeats per Second	Reverse Bypass
Tap Modes	Bypass Threshold
Fail Mode	

1. Select Settings.

   The Configure Tap Settings panel will be displayed.

2. Enter the No. Of Lost HB Packets. Default is 10.

   This is the number of heartbeats that must be lost on any inline appliance port member before any entity will remove the inline appliance from the load balance group.

3. Enter the Heartbeats per Second. Default is 10.

   This is the number of heartbeats per second sent on the inline appliance ports for all entities.

4. Select the Tap Mode.

Active	Allows the tap to automatically switch from inline to bypass if an issue occurs with all entities A, B, C, and D inline appliance port(s), loss of link, or heartbeats based on the bypass threshold value for each entity. Each entity A, B, C, and D are in bypass. The network port pairs 1-2, 3-4, 5-6, and 7-8 will be connected. When the issue with any entity A, B, C, or D inline appliance port(s) is resolved, have link and heartbeats, the tap will automatically switch back to inline.

Figure 25 ATLB2 Chained Tap Mode (Inline)

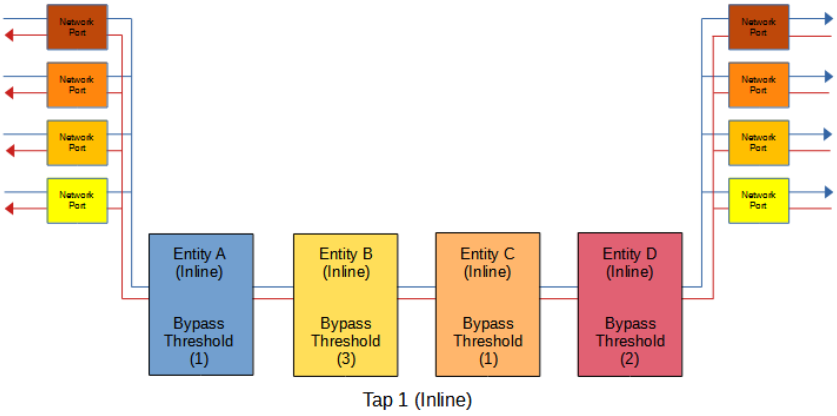
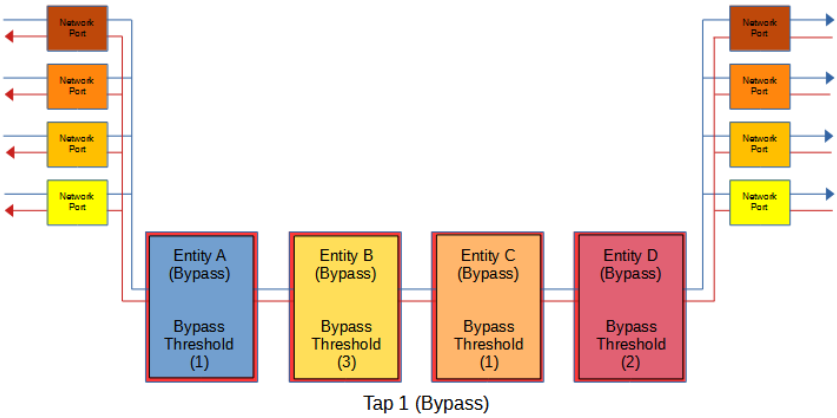
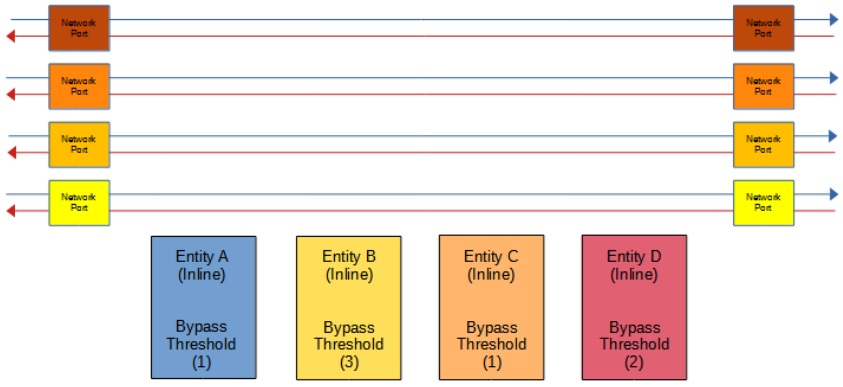


Figure 26 ATLB2 Chained Tap Mode (Bypass)



Force Bypass — If selected, the tap will switch the traffic between the network port pairs 1-2, 3-4, 5-6, and 7-8 with no regard for the entity inline appliance port(s), link or heartbeats. Typically used during maintenance activities.

Figure 27 ATLB2 Chained Tap Mode (Force Bypass)



Tap 1 (Force Bypass)

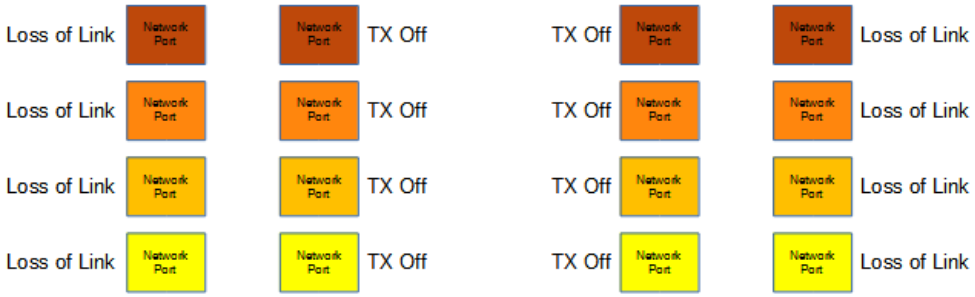
5. Select the Fail Mode.

Open — If selected and power is lost to the unit. The traffic will switch between the network ports 1-2, 3-4, 5-6, and 7-8.

Closed — If selected and power is lost to the unit. The traffic will go down.

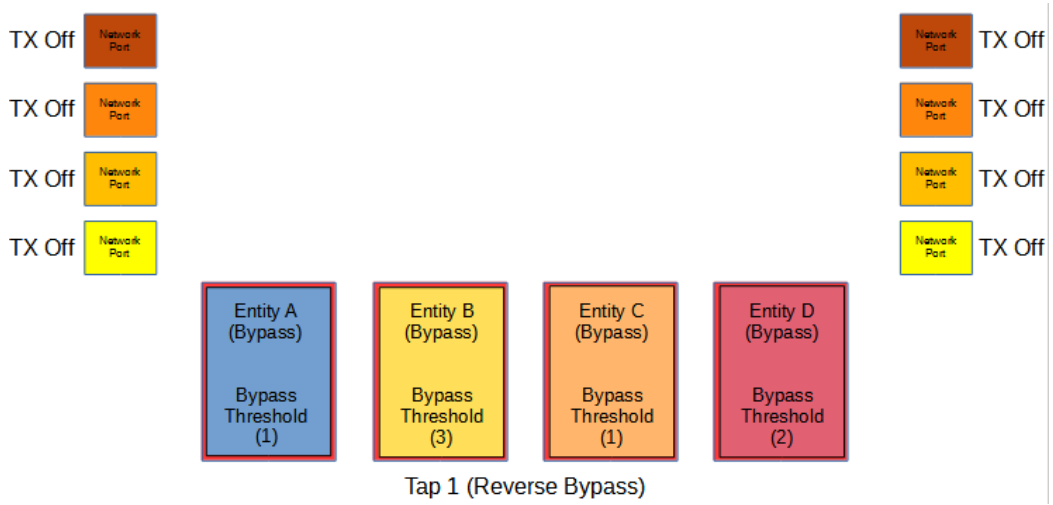
6. LFP — If enabled and a link is lost on one of the network ports 1-2, 3-4, 5-6, or 7-8. The TX will be disabled on the other network port. The RX for both network ports remain on.

Figure 28 ATLB2 Chained Tap Mode (LFP)



7. Reverse Bypass — If enabled and all entities A, B, C, and D are in bypass, inline appliance port(s) fail, loss of link or heartbeats based on the bypass threshold value for each entity. The TX will be disabled on all network ports 1-2, 3-4, 5-6, and 7-8. The RX on all network ports 1-2, 3-4, 5-6, and 7-8 remain on.

Figure 29 ATLB2 Chained Tap Mode (Reverse Bypass)



8. Bypass Threshold A — The bypass threshold determines how many inline appliance port members may fail, loss of link, or loss of heartbeats, before entity A switches to bypass.

9. Bypass Threshold B — The bypass threshold determines how many inline appliance port members may fail, loss of link, or loss of heartbeats, before entity B switches to bypass.

10. Bypass Threshold C — The bypass threshold determines how many inline appliance port members may fail, loss of link, or loss of heartbeats, before entity C switches to bypass.

11. Bypass Threshold D — The bypass threshold determines how many inline appliance port members may fail, loss of link, or loss of heartbeats, before entity D switches to bypass.

12. Select Accept to save updates. Save must additionally be selected on the Bypass Taps panel.

13. Select Cancel to return the Bypass Taps panel.

14. Select Add All to restore all entity inline appliance port members.

15. Select Remove Add to remove all entity inline appliance port members.

16. Select Default Mode to exit the ATLB2 Chained mode and restore the system to the Default mode.

A “Go back to default mode?” message will be displayed.

16.1. Select OK.

4.7 ATLB2 Chained Tap Mode GUI Indications

When the taps are placed in this mode the GUI will display various messages and colors to reflect the current conditions.

4.7.1 Normal

In this example the following may be determined:

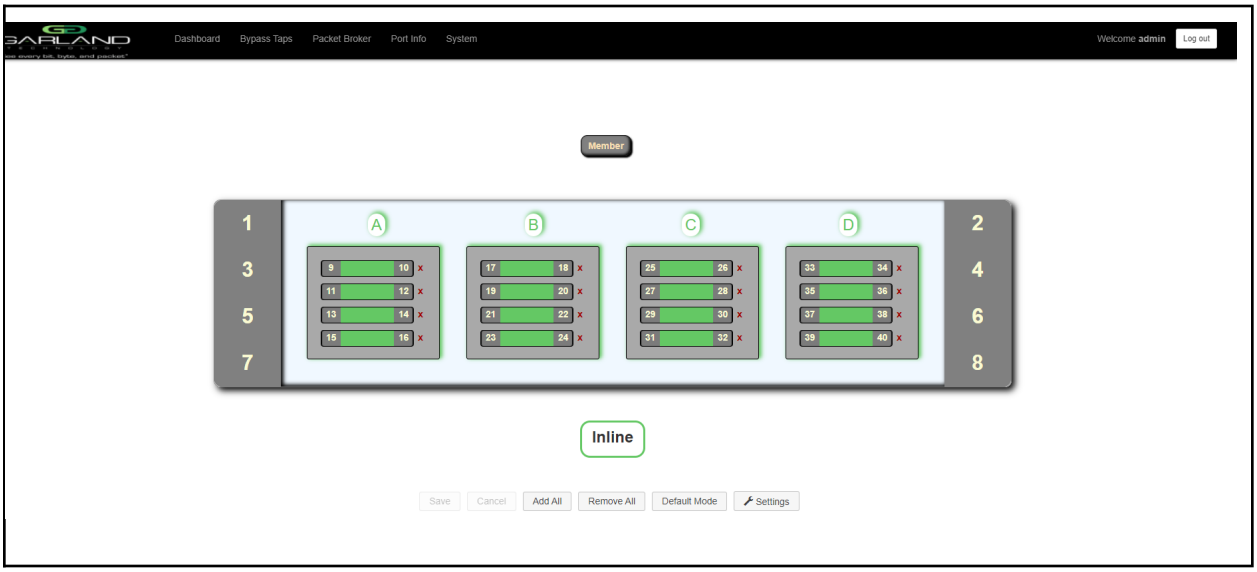
1. The ATLB2 chained tap is inline.
2. Entity A's inline appliance members are normal, have links and heartbeats. The traffic is load-balanced across all four members.
3. Entity B's inline appliance members are normal, have links and heartbeats. The traffic is load-balanced across all four members.
4. Entity C's inline appliance members are normal, have links and heartbeats. The traffic is load-balanced across all four members.
5. Entity D's inline appliance members are normal, have links and heartbeats. The traffic is load-balanced across all four members.
6. The traffic per this display indicates:

Port 1 – Entity A – Entity B – Entity C – Entity D – Port 2
Port 2 – Entity D – Entity C – Entity B – Entity A – Port 1

Port 3 – Entity A – Entity B – Entity C – Entity D – Port 4
Port 4 – Entity D – Entity C – Entity B – Entity A – Port 3

Port 5 – Entity A – Entity B – Entity C – Entity D – Port 6
Port 6 – Entity D – Entity C – Entity B – Entity A – Port 5

Port 7 – Entity A – Entity B – Entity C – Entity D – Port 8
Port 8 – Entity D – Entity C – Entity B – Entity A – Port 7



4.7.2 Entity Member Abnormal

In this example the following may be determined:

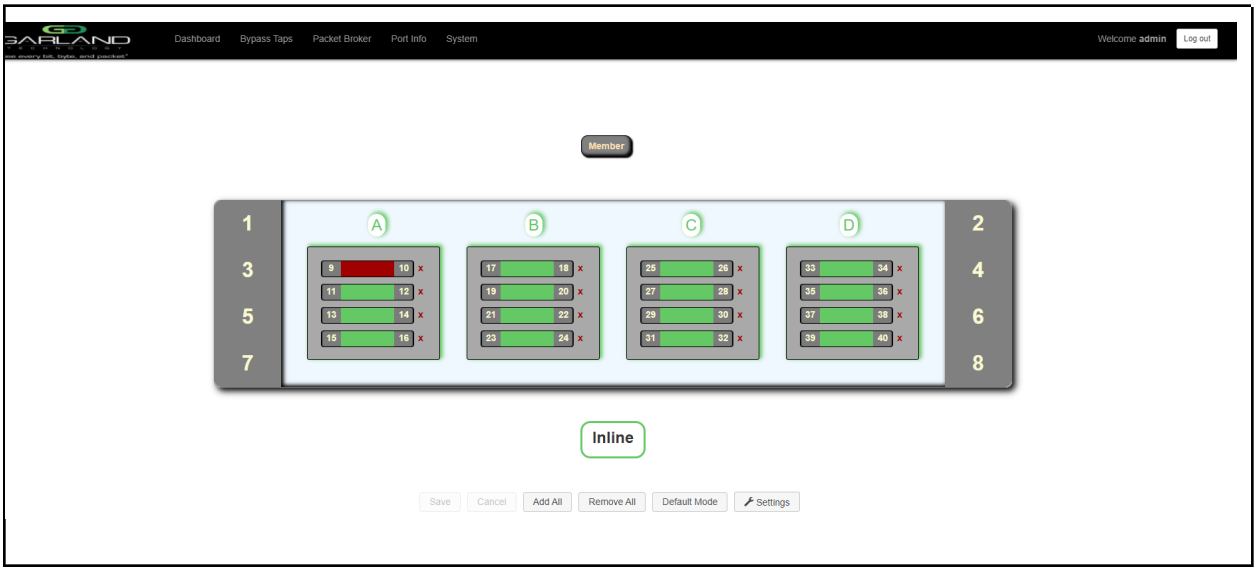
1. The ATLB2 chained tap is inline.
2. Entity A's inline appliance member 9-10 is abnormal, loss of link or loss of heartbeats. The remaining members are normal, have links and heartbeats. The traffic is load-balanced across the remaining members.
3. Entity B's inline appliance members are normal, have links and heartbeats. The traffic is load-balanced across all four members.
4. Entity C's inline appliance members are normal, have links and heartbeats. The traffic is load-balanced across all four members.
5. Entity D's inline appliance members are normal, have links and heartbeats. The traffic is load-balanced across all four members.
6. The traffic per this display indicates:

Port 1 – Entity A – Entity B – Entity C – Entity D – Port 2
Port 2 – Entity D – Entity C – Entity B – Entity A – Port 1

Port 3 – Entity A – Entity B – Entity C – Entity D – Port 4
Port 4 – Entity D – Entity C – Entity B – Entity A – Port 3

Port 5 – Entity A – Entity B – Entity C – Entity D – Port 6
Port 6 – Entity D – Entity C – Entity B – Entity A – Port 5

Port 7 – Entity A – Entity B – Entity C – Entity D – Port 8
Port 8 – Entity D – Entity C – Entity B – Entity A – Port 7



4.7.3 Entity Bypass

In this example the following may be determined:

1. The ATLB2 chained tap is inline.
2. Entity A's inline appliance members 9-10 and 11-12 are abnormal, loss of link or loss of heartbeats. Entity A is bypassed. Entity A's bypass threshold is 2.
3. Entity B's inline appliance members are normal, have links and heartbeats. The traffic is load-balanced across all four members.
4. Entity C's inline appliance members are normal, have links and heartbeats. The traffic is load-balanced across all four members.
5. Entity D's inline appliance members are normal, have links and heartbeats. The traffic is load-balanced across all four members.
6. The traffic per this display indicates:

Port 1 – Entity B – Entity C – Entity D – Port 2
Port 2 – Entity D – Entity C – Entity B – Port 1

Port 3 – Entity B – Entity C – Entity D – Port 4
Port 4 – Entity D – Entity C – Entity B – Port 3

Port 5 – Entity B – Entity C – Entity D – Port 6
Port 6 – Entity D – Entity C – Entity B – Port 5

Port 7 – Entity B – Entity C – Entity D – Port 8
Port 8 – Entity D – Entity C – Entity B – Port 7

4.7.4 Entity Removed From Chain

In this example, the following may be determined:

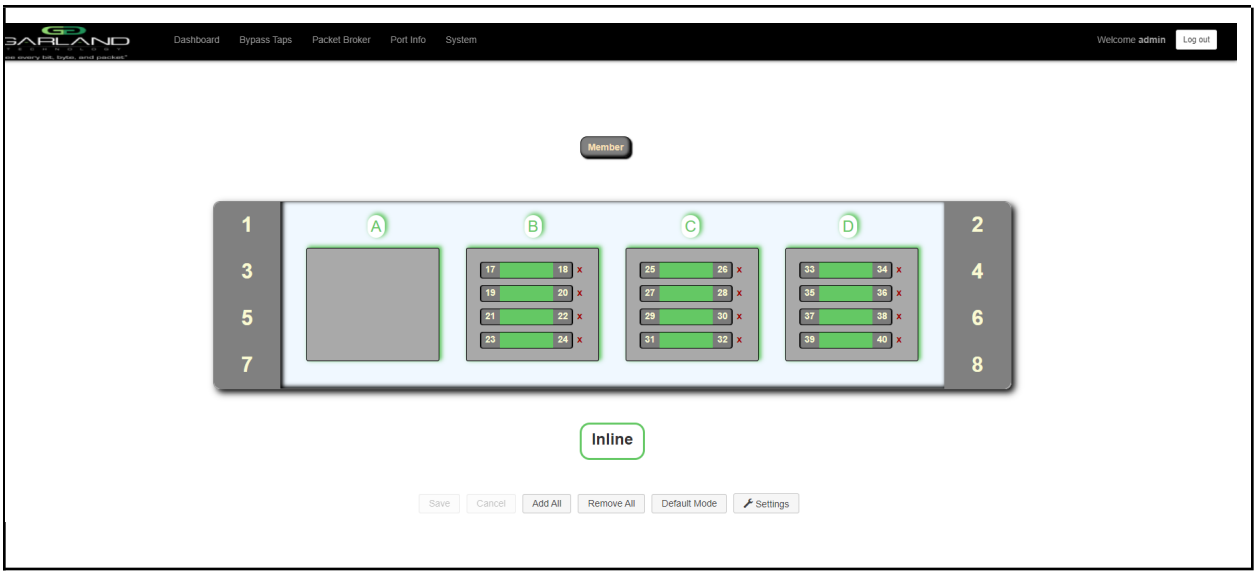
1. The ATLB2 chained tap is inline.
2. Entity A's inline appliance members have been removed. Entity A is not in the chain.
3. Entity B's inline appliance members are normal, have links and heartbeats. The traffic is load-balanced across all four members.
4. Entity C's inline appliance members are normal, have links and heartbeats. The traffic is load-balanced across all four members.
5. Entity D's inline appliance members are normal, have links and heartbeats. The traffic is load-balanced across all four members.
6. The traffic per this display indicates:

Port 1 – Entity B – Entity C – Entity D – Port 2
Port 2 – Entity D – Entity C – Entity B – Port 1

Port 3 – Entity B – Entity C – Entity D – Port 4
Port 4 – Entity D – Entity C – Entity B – Port 3

Port 5 – Entity B – Entity C – Entity D – Port 6
Port 6 – Entity D – Entity C – Entity B – Port 5

Port 7 – Entity B – Entity C – Entity D – Port 8
Port 8 – Entity D – Entity C – Entity B – Port 7



4.7.5 ATLB2 Chained Tap Forced Bypass

In this example the following may be determined:

1. The ATLB2 chained tap is Forced Bypass.
2. Entity A's inline appliance members are normal, have links and heartbeats.
3. Entity B's inline appliance members are normal, have links and heartbeats.
4. Entity C's inline appliance members are normal, have links and heartbeats.
5. Entity D's inline appliance members are normal, have links and heartbeats.
6. The traffic per this display indicates:

Port 1 – Port 2
Port 2 – Port 1

Port 3 – Port 4
Port 4 – Port 3

Port 5 – Port 6
Port 6 – Port 5

Port 7 – Port 8
Port 8 – Port 7

4.7.6 ATLB2 Chained Tap Bypass

In this example the following may be determined:

1. The ATLB2 chained tap is bypass.
2. Entity A's inline appliance members 9-10 are abnormal, loss of link or loss of heartbeats. Entity A is bypassed. Entity A's bypass threshold is 1.
3. Entity B's inline appliance members 17-18 and 19-20 are abnormal, loss of link or loss of heartbeats. Entity B is bypassed. Entity B's bypass threshold is 2.
4. Entity C's inline appliance members 25-26 and 27-28 are abnormal, loss of link, or loss of heartbeats. Entity C is bypassed. Entity C's bypass threshold is 2.
5. Entity D's inline appliance members 33-34, 35-36, and 37-38 are abnormal, loss of link or loss of heartbeats. Entity D is bypassed. Entity D's bypass threshold is 3.
6. The traffic per this display indicates:

Port 1 – Port 2
Port 2 – Port 1

Port 3 – Port 4
Port 4 – Port 3

Port 5 – Port 6
Port 6 – Port 5

Port 7 – Port 8
Port 8 – Port 7