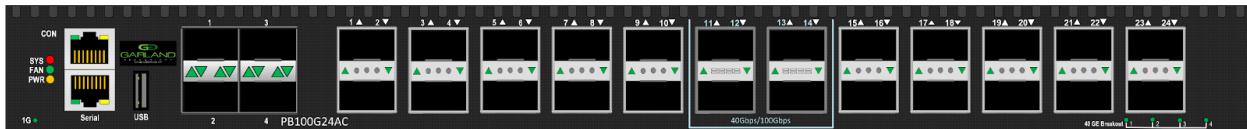
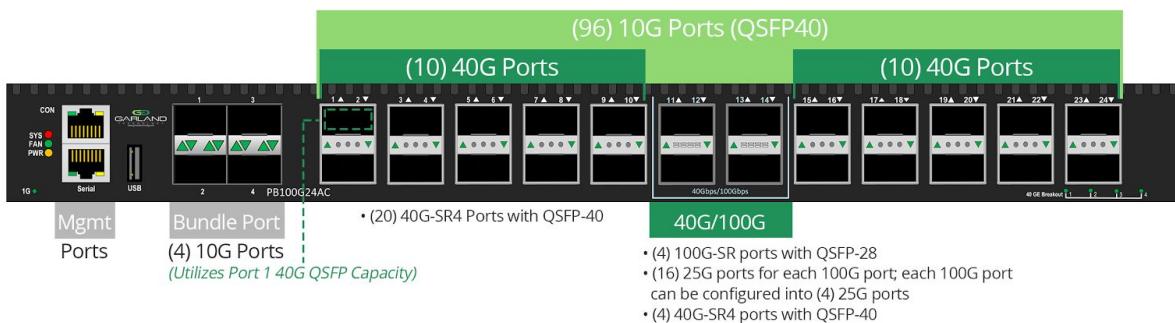


GUI Reference Guide: PB100G24AC v2.0.11

Rev 1.2 | May 24, 2017



Each port can be individually configured for optimum flexibility



For questions, please contact Garland Technical Support at:
8 AM – 9 PM (CST) Monday – Friday (except for observed US Holidays)
+1.716.242.8500 support@garlandtechnology.com

Table of Contents

1 GUI Access	5
1.1 Overview	5
1.2 Accessing the Web GUI	5
1.3 Login Screen	5
2 Device Summary	5
2.1 Overview	5
2.2 Device Summary Window	6
3 System Management	6
3.1 Overview	6
3.2 File Management	6
3.3 Update Management	7
3.4 System Configuration	7
3.5 Log Management	8
3.6 SNMP Management	8
3.7 SNMP Management Community	8
3.8 Time Management	9
4 Interface Management	9
4.1 Overview	9
4.2 Interface Status	9
4.3 Interface Statistics	10
4.4 Link Aggregation	11
4.5 Transceiver Status	12



5 Authentication Management	12
5.1 Overview	12
5.2 AAA	13
5.3 TACACS	13
6 TAP Management	13
6.1 Overview	13
6.2 TAP	14
6.3 Flow	16
7 Tools	19
7.1 Ping	19
7.2 Traceroute	19
7.3 Reboot and Save	19
8 Cable for PB100G24AC Serial Mgt. Port	20



Revision History

Date	Revision	Description
2017-05-11	Rev 1.0	Initial Release.
2017-05-23	Rev 1.2	Cosmetic Changes

1. GUI Access

1.1 Overview

Users can configure and manage the network packet broker through a web interface.

1.2 Accessing the Web GUI

Configuration

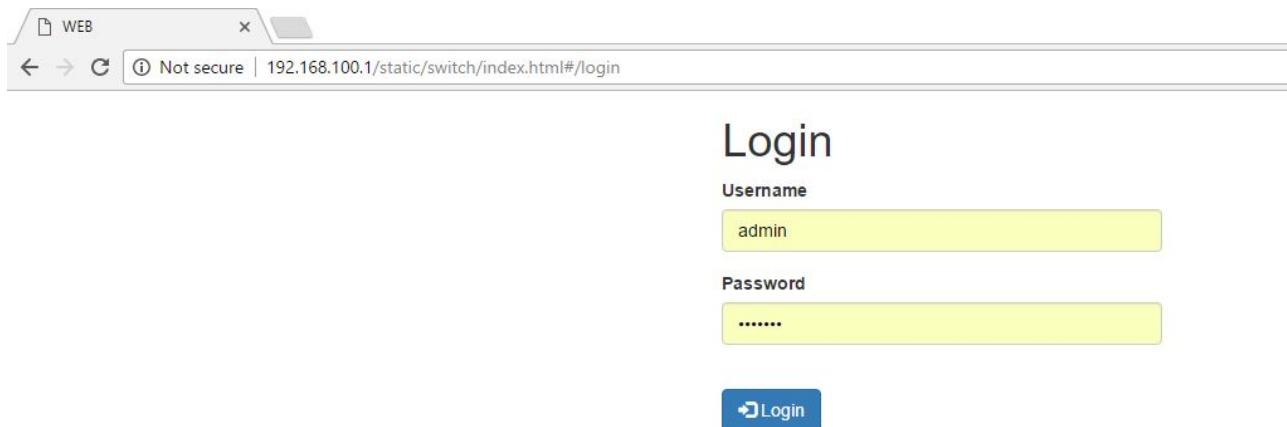
To login to through the web, users can enter the device IP address into the address bar of any browser

1.3 Login Screen

Default Login:

Username: **admin**

Password: **gtadmin1**

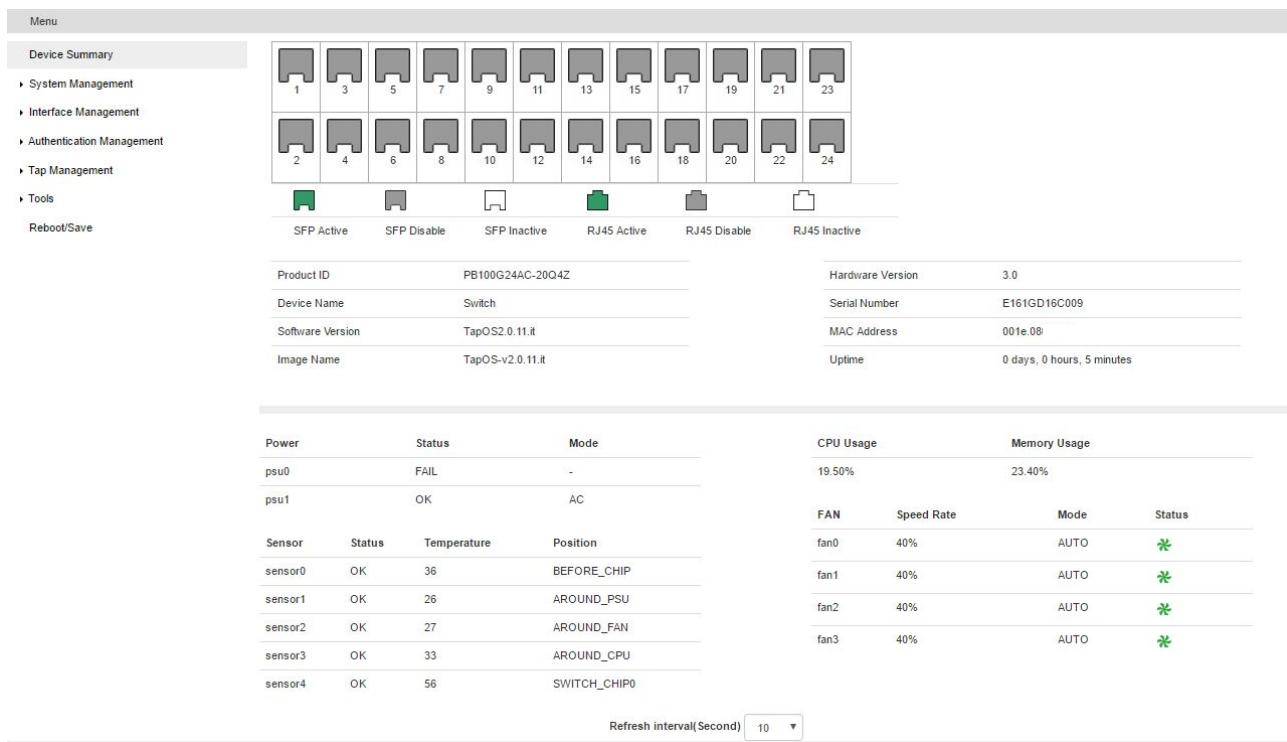


2. Device Summary

2.1 Overview

After logging into the device, the device summary is displayed. The device summary menu shows port status, hardware status, and current run status information. The user can set the refresh interval of this window, by default the interval is set to 10s.

2.2 Device Summary Window



The screenshot shows the Device Summary window with the following details:

- Menu:**
 - Device Summary
 - System Management
 - Interface Management
 - Authentication Management
 - Tap Management
 - Tools
 - Reboot/Save
- Port Status:** A grid of 24 ports. Ports 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, and 23 are SFP Active. Ports 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, and 24 are SFP Disable. Ports 14 and 21 are RJ45 Active. Ports 12 and 22 are RJ45 Disable. Port 15 is RJ45 Inactive.
- Hardware Information:**

Product ID	PB100G24AC-2004Z	Hardware Version	3.0
Device Name	Switch	Serial Number	E161GD16C009
Software Version	TapOS2.0.11.it	MAC Address	001e.08
Image Name	TapOS-v2.0.11.it	Uptime	0 days, 0 hours, 5 minutes
- System Monitoring:**

Power	Status	Mode	CPU Usage	Memory Usage			
psu0	FAIL	-	19.50%	23.40%			
psu1	OK	AC					
Sensor	Status	Temperature	Position	FAN	Speed Rate	Mode	Status
sensor0	OK	36	BEFORE_CHIP	fan0	40%	AUTO	��色
sensor1	OK	26	AROUND_PSU	fan1	40%	AUTO	绿色
sensor2	OK	27	AROUND_FAN	fan2	40%	AUTO	绿色
sensor3	OK	33	AROUND_CPU	fan3	40%	AUTO	绿色
sensor4	OK	56	SWITCH_CHIP0				
- Refresh Interval:** Refresh interval(Second) set to 10.

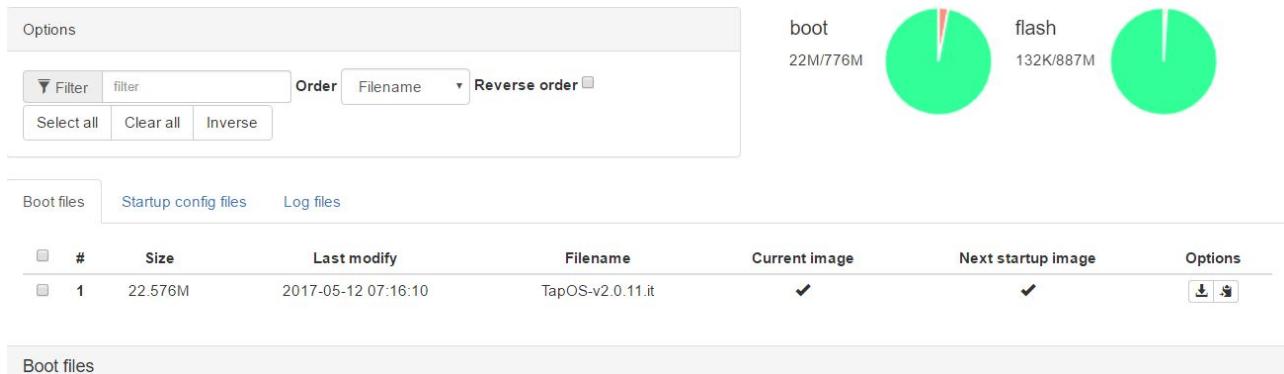
3. System Management

3.1 Overview

The System Management menu gives the user the ability to add/remove boot images, change the management port IP Address, configure syslog, configure SNMP and synchronize the system time through NTP.

3.2 File Management

The File Management Menu allows users to see all the available boot images, select the boot image and remove previous images. It also shows the boot partition utilization and system flash utilization.



#	Size	Last modify	Filename	Current image	Next startup image	Options
1	22.576M	2017-05-12 07:16:10	TapOS-v2.0.11.it	✓	✓	

3.3 Update Management

The Update Management menu allows users to upload software updates by choosing the file. The user can then choose the “Upload only” or “Upload and apply”. If “Upload and apply” is selected the system will reboot after the new image has been uploaded.

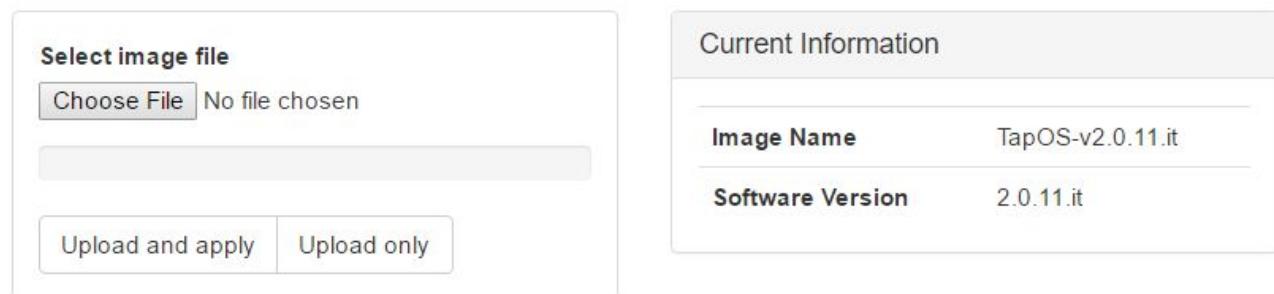
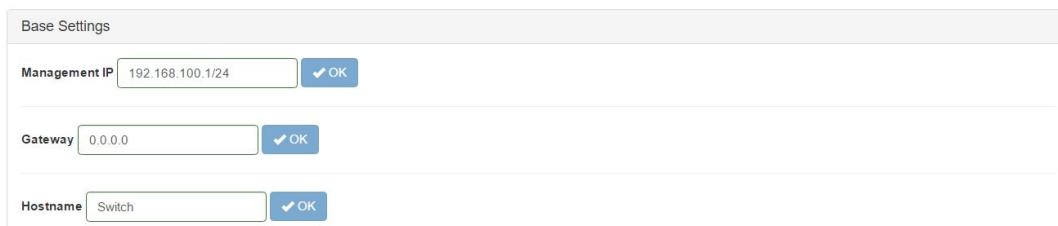


Image Name	TapOS-v2.0.11.it
Software Version	2.0.11.it

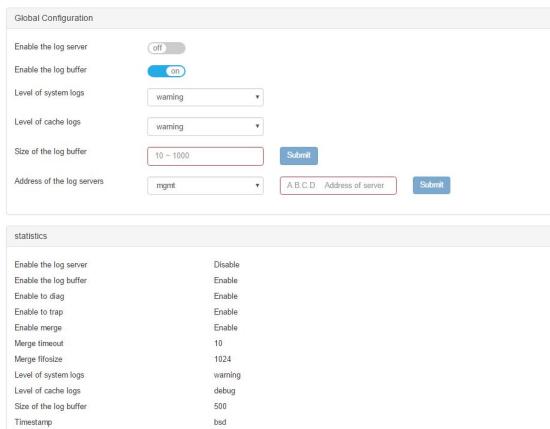
3.4 System Configuration

The System Configuration menu allows the user to change the management IP, Gateway and the hostname of the system. “OK” should be selected to save the configuration.



3.5 Log Management

The Log Management menu allows the user to configure and control system log information. The user can enable the log server, select the severity of the logs to be recorded, select the size of the log buffer. The user can also lookup past logs by module name or keyword. After selecting the log size and log server “submit” must be pressed to save the configuration.



Global Configuration

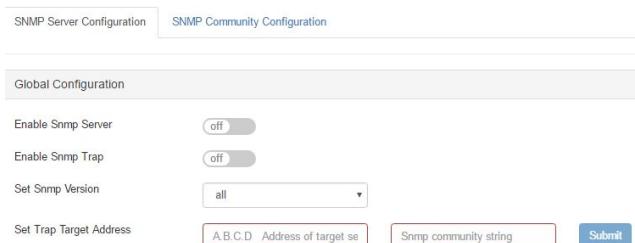
Enable the log server	<input type="button" value="off"/>
Enable the log buffer	<input checked="" type="button" value="on"/>
Level of system logs	warning
Level of cache logs	warning
Size of the log buffer	10 - 1000
<input type="button" value="Submit"/>	
Address of the log servers	mgmt
	A.B.C.D Address of server

statistics

Enable the log server	Disable
Enable the log buffer	Enable
Enable to diag	Enable
Enable to trap	Enable
Enable merge	Enable
Merge timeout	10
Merge filosize	1024
Level of system logs	warning
Level of cache logs	debug
Size of the log buffer	500
Timestamp	bsd

3.6 SNMP Management

The SNMP Management Server Configuration menu allows the user to enable an SNMP Server and/or trap server and set the version of SNMP.



SNMP Server Configuration SNMP Community Configuration

Global Configuration

Enable Snmp Server	<input type="button" value="off"/>
Enable Snmp Trap	<input type="button" value="off"/>
Set Snmp Version	all
Set Trap Target Address	A.B.C.D Address of target se
	Snmp community string
<input type="button" value="Submit"/>	

3.7 SNMP Management Community

The SNMP Management Community Configuration menu allows the user to set the community name and grant access as “read only” or “write only”.



SNMP Server Configuration | SNMP Community Configuration

Community Configuration

Set Community

Community Information

#	Community-Name	Community Access	Security-name	Options
---	----------------	------------------	---------------	---------

3.8 Time Management

The Time Management menu allow the user to configure the system with a local clock or synchronize the system to an NTP server and select whether or not to synchronize the timestamp.

Global Configuration

System Time 08:13:55 UTC Fri May 12 2017

Set Time

Set Ntp Server

Timestamp sync

4. Interface Management

4.1 Overview

The Interface Management menu shows interface status, interface statistics, and transceiver status. It is also used to configure global hashing configurations for Link Aggregation Groups.

4.2 Interface Status

The Interface Status menu shows the current status of each interface. It also allows the user to configure duplex (press on “full” text) to full, half, or auto. Change port speed i.e. 100G→40G, add a port description, enable or disable the port. Additionally, ports can be split to support breakout cables. i.e. 40G→4x10G. Port 1 can also be split, and then using the switch port type menu, it can be rerouted to the 4x10G SFP+ cages on the front Panel.



Global Configuration

Switch Port Type	none
------------------	------

Port

Port	Status	Duplex	Speed	Type	Description	Split	Enable/Disable
eth-0-1	down	full	40G	UNKNOWN	N/A	No	<input checked="" type="button"/> on
eth-0-2	down	full	40G	UNKNOWN	N/A	No	<input checked="" type="button"/> on
eth-0-3	down	full	40G	UNKNOWN	N/A	No	<input checked="" type="button"/> on
eth-0-4	down	full	40G	UNKNOWN	N/A	No	<input checked="" type="button"/> on

Global Configuration

Switch Port Type	sfp
------------------	-----

Port

Port	Status	Duplex	Speed	Type	Description	Split	Enable/Disable
eth-0-1/1	down	auto	10G	UNKNOWN	SFPPort1	Yes	<input checked="" type="button"/> on
eth-0-1/2	down	auto	10G	UNKNOWN	SFPPort2	Yes	<input checked="" type="button"/> on
eth-0-1/3	down	auto	10G	UNKNOWN	SFPPort3	Yes	<input checked="" type="button"/> on
eth-0-1/4	down	auto	10G	UNKNOWN	SFPPort4	Yes	<input checked="" type="button"/> on
eth-0-2	down	full	40G	UNKNOWN	N/A	No	<input checked="" type="button"/> on

4.3 Interface Statistics

Interface Statistics shows information in input and output for each port. The update statistics button can be used to refresh the page while looking at the port counters.

Options

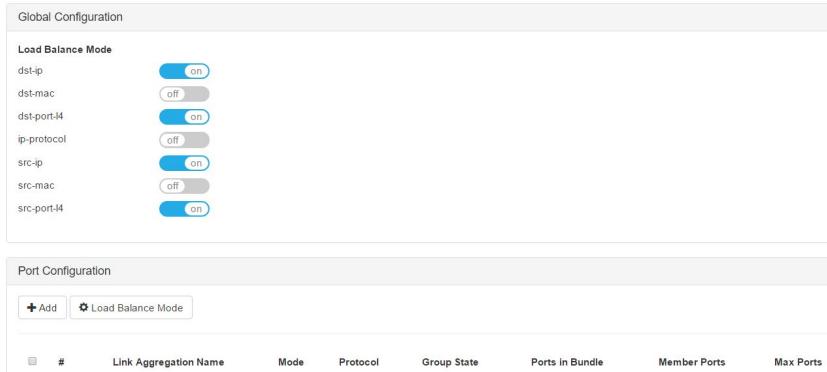
Select all	Clear all	Inverse	<input type="button"/> Update Statistics
------------	-----------	---------	--

Port Statistics

Port	Packets Input	Bytes Input	Packets Output	Bytes Output
eth-0-1/1	0	0	0	0
eth-0-1/2	0	0	0	0
eth-0-1/3	0	0	0	0
eth-0-1/4	0	0	0	0
eth-0-2	0	0	0	0
eth-0-3	0	0	0	0
eth-0-4	0	0	0	0

4.4 Link Aggregation

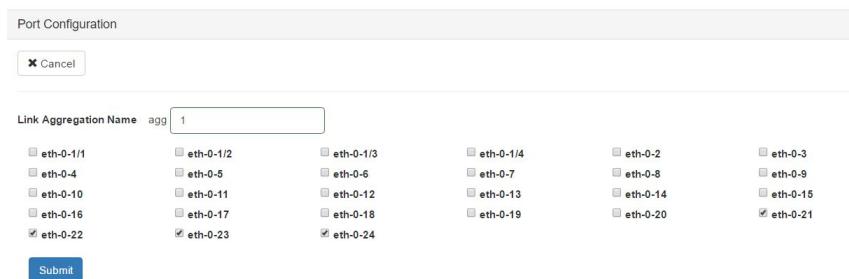
The Link Aggregation Menu is used to select global load balancing configurations and add link aggregation groups. To Add a link aggregation group, press the “+Add” button under the port configuration tab.



The screenshot shows two tabs: "Global Configuration" and "Port Configuration".

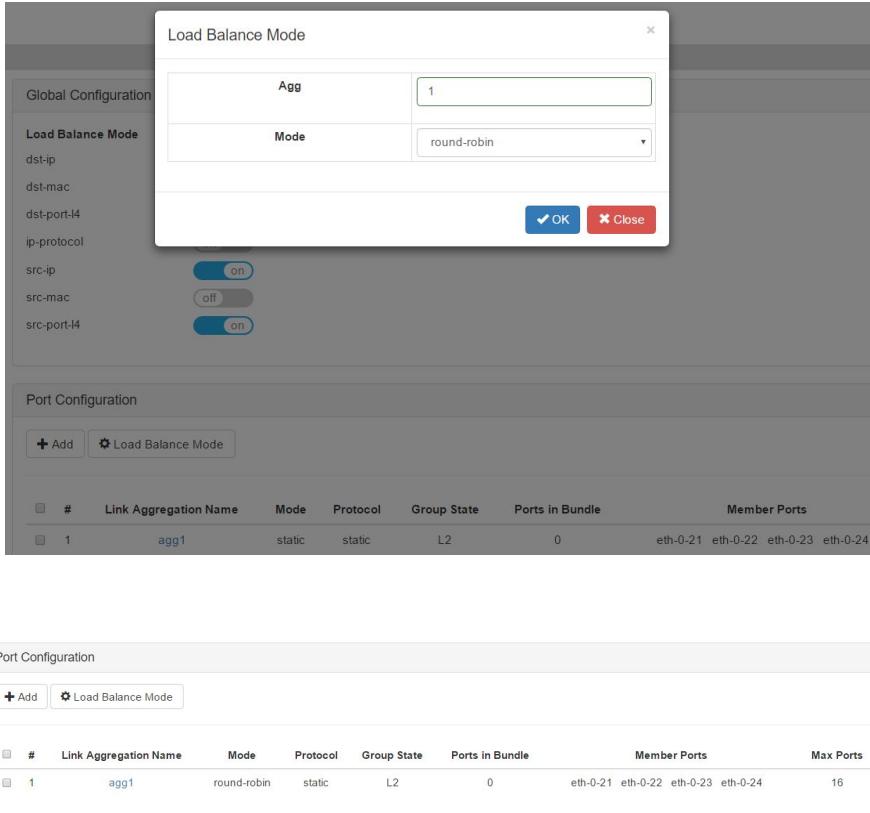
- Global Configuration:** Contains a "Load Balance Mode" section with seven items: dst-ip (on), dst-mac (off), dst-port-44 (on), ip-protocol (off), src-ip (on), src-mac (off), and src-port-44 (on).
- Port Configuration:** Contains a header row with columns: #, Link Aggregation Name, Mode, Protocol, Group State, Ports in Bundle, Member Ports, and Max Ports. Below this is a table with a "Load Balance Mode" button and a "Submit" button.

Select the ports for the aggregation group and give a numerical name to the group i.e. agg1, then click “submit”. Prior to configuring an aggregation group, the user can click on the “Load Balance Mode” icon to select static (Hash Based) or Round Robin load balancing, and click “OK” to save.



The screenshot shows a "Port Configuration" dialog with the following fields:

- Link Aggregation Name:** agg 1
- Ports:** A grid of checkboxes representing various network ports (e.g., eth-0-1/1, eth-0-4, eth-0-10, eth-0-16, eth-0-22, eth-0-1/2, eth-0-5, eth-0-11, eth-0-17, eth-0-23, eth-0-6, eth-0-12, eth-0-18, eth-0-24, eth-0-14, eth-0-7, eth-0-13, eth-0-19, eth-0-20, eth-0-2, eth-0-8, eth-0-14, eth-0-20, eth-0-3, eth-0-9, eth-0-15, eth-0-21).
- Buttons:** "Cancel" and "Submit".



The screenshot shows the 'Link Aggregation' configuration section. A modal dialog titled 'Load Balance Mode' is open, displaying settings for 'Agg' (set to 1) and 'Mode' (set to 'round-robin'). Below the modal, the main configuration table lists one entry:

	#	Link Aggregation Name	Mode	Protocol	Group State	Ports in Bundle	Member Ports
	1	agg1	static	static	L2	0	eth-0-21 eth-0-22 eth-0-23 eth-0-24

Below this, another table titled 'Port Configuration' shows the port aggregation status:

	#	Link Aggregation Name	Mode	Protocol	Group State	Ports in Bundle	Member Ports	Max Ports
	1	agg1	round-robin	static	L2	0	eth-0-21 eth-0-22 eth-0-23 eth-0-24	16

4.5 Transceiver Status

This menu shows Vendor information for each Transceiver installed.

Transceiver				
Port	Type	Vendor	PN	S/N

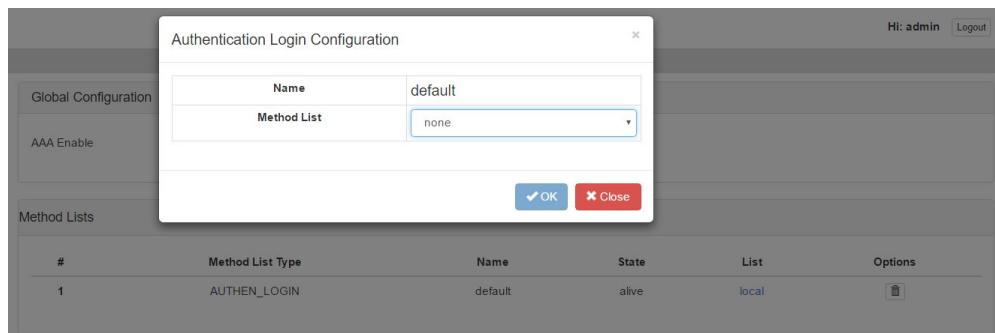
5. Authentication Management

5.1 Overview

Authentication Management allows the user to configure AAA or TACAS configurations.

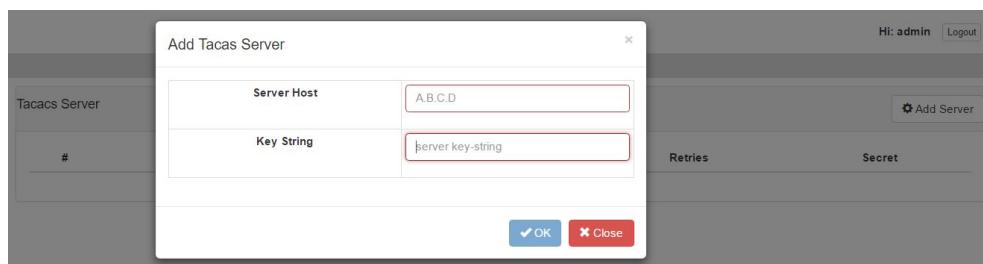
5.2 AAA

AAA can be enabled and allows the user to configure local, Tacplus by selecting the highlighted “local” text after AAA is enabled.



5.3 TACACS

By selecting the “Add Server” icon the user can configure the Server Host and Key String.



6. TAP Management

6.1 Overview

The TAP Management menu is used to define port mapping (Tap Groups) and filtering rules (Flows).

6.2 TAP

Tap Group Statistics				
#	Tap Group Name	Tap Group Description	Tap Group truncation	Options

The Tap Menu allows the user to configure the systems port mapping rules. To create a Tap Group, press the “Add Tap Group” icon.



Enter the name and press “OK”

Tap Group Statistics				
#	Tap Group Name	Tap Group Description	Tap Group truncation	Options
1	Tap1	N/A	NO	

Press the highlighted tap group name (Tap1)

#	Port	Untag	Mark	Trunction	Flow	Options
1						

Press “Add” to Add ports to the Tap Group

Add Tap1 New Entry

Direction	ingress
Port	eth-0-3
Truncation	off
Remove vlan tag	off
Add vlan to mark source port	off
Flow list name	Flow1

OK Close

From this menu, multiple options can be configured including direction (ingress/egress), the port/agg is selected, Truncation or VLAN stripping or Port Stamping can be enabled and a flow can be added (See Flow section for details on adding flows).

Tap

Tap Group Statistics

#	Port	Untag	Mark	Trunction	Flow	Options
1	eth-0-3	Disable	N/A	Disable	Flow1	
2	eth-0-2	Disable	N/A	Enable	N/A	

Ingress Egress Add

Add Tap Group truncation Timestamp

Tap Group truncation Options
YES

Close

The “Ingress” button can be selected to show the current Ingress ports for the Tap Group.

Tap

Tap Group Statistics

Add Tap1 New Entry

Direction	egress
Port	agg1
Timestamp	off

OK Close

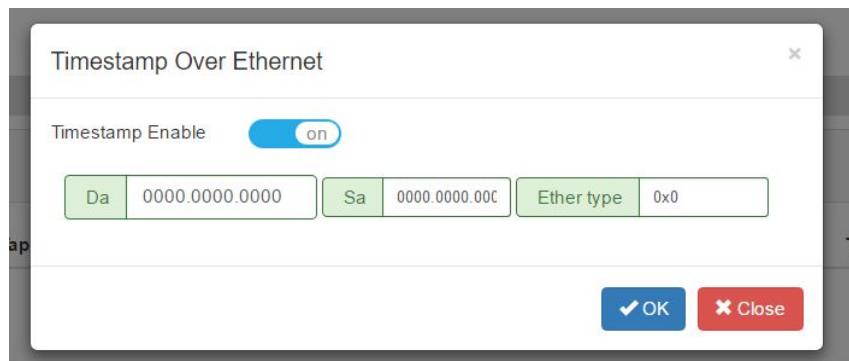
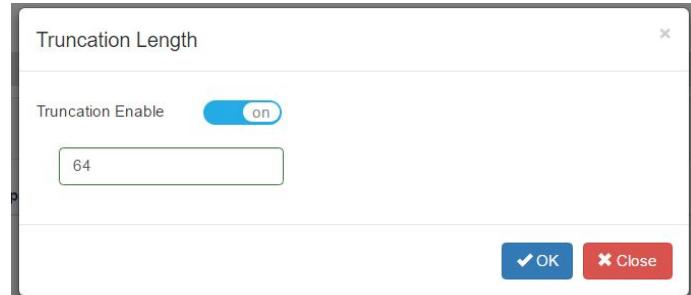
Add Tap Group truncation Timestamp

Tap Group truncation Options
YES

The same can be done to add egress ports.

**This example has mapped port 2 and port 3 as ingress ports. Port 2 is not filtered, Port 3 is filtered by flow 1. Traffic will be load balanced (Round Robin) to agg1 (Port 21, 22, 23, 24).

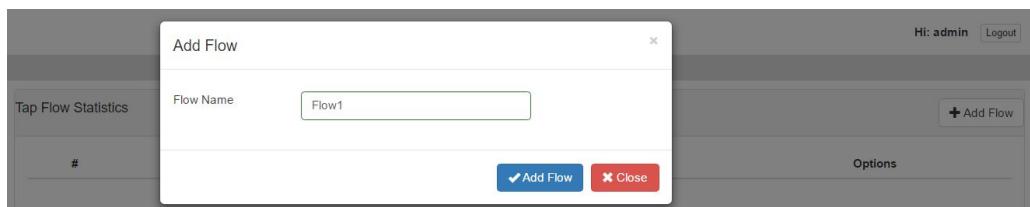
Additionally, "Time Stamp" and "Truncation" parameters can be set in the TAP menu by selecting the corresponding icons.



6.3 Flow

Tap Flow Statistics			
#	Flow Name	remark	Options
			+ Add Flow

Flows allow the user to create all filtering rules that can be applied in the TAP section. To start a flow press "Add Flow" icon.





Enter the flow name and press “Add Flow”

Tap Flow Statistics				+ Add Flow
#	Flow Name	remark	Options	
1	Flow1	N/A		

Press the “+” symbol under the options header.

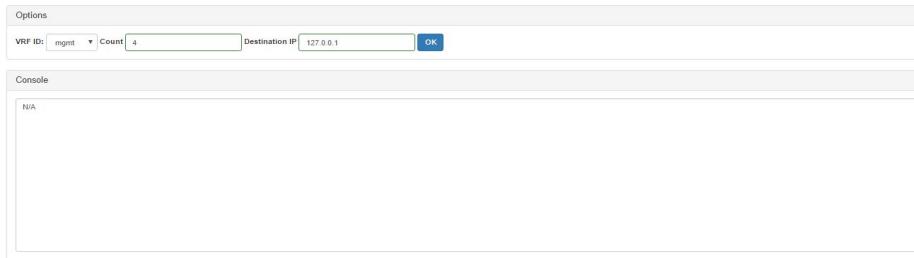
Add Flow Entry

Direction	permit ▾
IP protocol number	tcp ▾
src-ip	<input type="radio"/> Any <input checked="" type="radio"/> A.B.C.D
Source wildcard	255.0.0.0
dst-ip	<input type="radio"/> Any <input checked="" type="radio"/> A.B.C.D
Destination wildcard	255.0.0.0
src-port	on
src-port-type	any eq gt lt
dst-port	on
dst-port-type	any eq gt lt
src-mac	on
src-mac-type	any host MAC
dest-mac	on
dest-mac-type	any host MAC
VLAN	on
VlanID	1~4094
Truncation	on
<input checked="" type="button"/> OK <input type="button"/> Close	

From here all parameters and wildcards can be entered to create a single filtering rule. Multiple flows can be created using the same steps. Flows can be used for single ports or agg groups and can be reused in different tap groups.

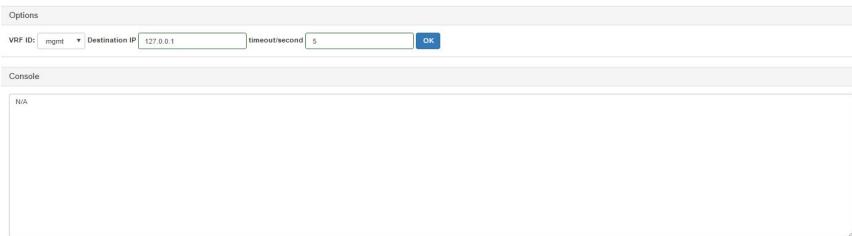
7. Tools

7.1 Ping



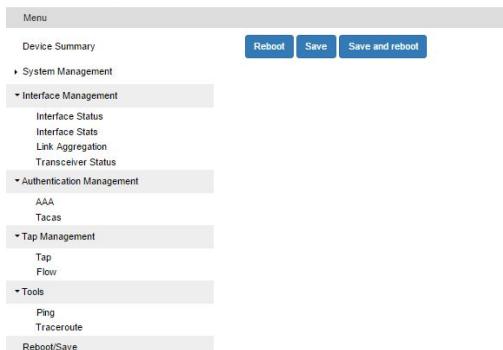
Ping allows the user to ping external devices through the management port.

7.2 Traceroute



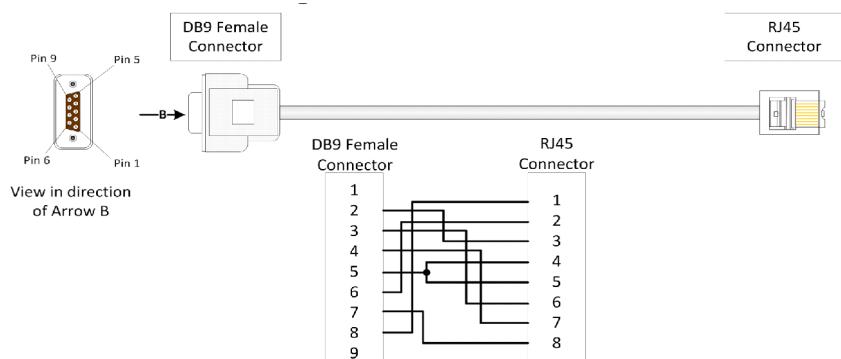
Traceroute allows the user to ping external devices through the console port.

7.3 Reboot and Save



Gives the user the option to reboot, save, or save and reboot.

8. Cable for PB100G24AC Serial Mgt. Port



Serial Cable Pinout

For questions, please contact Garland Technical Support at:

8 AM – 9 PM (CST) Monday – Friday (except for observed US Holidays)
+1.716.242.8500 support@garlandtechnology.com

Copyright © 2017 Garland Technology LLC. All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system or transmitted, in any form, or by any means, electronic or otherwise, including photocopying, reprinting, or recording, for any purpose, without the express written permission of Garland Technology.

TRADEMARKS GARLAND TECHNOLOGY and THE GARLAND TECHNOLOGY LOGO are trademarks of Garland Technology LLC in the U.S. and other countries. The use of any of these trademarks without Garland Technology prior written consent is strictly prohibited. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Garland Technology LLC disclaims any proprietary interest in the trademarks and trade names other than its own.

DISCLAIMER The information in this book is provided "as is", with no warranties whatsoever, including any warranty of merchantability, fitness for any particular purpose or any warranty otherwise arising out of any proposal, specification or sample. This document is provided for informational purposes only and should not be construed as a commitment on the part of Garland Technology. Information in this document is subject to change without notice.

DOCUMENT No.: PB100G24AC-GUI_V2.0.11 rev 1.2