

peplink		Dashboard	Setup Wizard	Network	AP	System	Status
WAN							
LAN							
- Network Settings - Port Settings							
VPN							
- SpeedFusion - IPsec VPN							
Outbound Policy							
Inbound Access							

Outbound Policy

Custom

Add a New Custom Rule

Service Name		
Enable	☒	Always on ▼
Source	Grouped Networ ▼	Accounting ▼

10.14.7 Remote SIM Management

Remote SIM management is accessible via **Network > Misc Settings > Remote SIM Management**. By default, this feature is disabled.

Please note that a limited number of Pepwave routers support the SIM Injector, may refer to the link: <https://www.peplink.com/products/sim-injector/> or Appendix C for more details on FusionSIM Manual.

Remote SIM Host	
Remote SIM is disabled	

Remote SIM Host Settings

Remote SIM Host Settings	
Auto LAN Discovery	☐
Remote SIM Host	

Save

Remote SIM Host Settings	
Active LAN Discovery	Check this box to enable Auto LAN discovery of the remote SIM server.

Remote SIM Host

Enter the public IP address of the SIM Injector. If you enter IP addresses here, it is not necessary to tick the “**Auto LAN Discovery**” box above.

Remote SIM Host

192.168.1.10

Remote SIM Management

Server

Slot

No Remote SIM Defined.

Add Remote SIM

You may define the Remote SIM information by clicking the “**Add Remote SIM**”. Here, you can enable **Data Roaming** and **custom APN** for your SIM cards.

Add Remote SIM

Remote SIM

SIM Server

New SIM Server... ▼

SIM Server - Serial Number

SIM Server - Name

Optional

SIM Slot

1 ▼

SIM Slot - Name

Optional

Data Roaming

☐

Operator Settings (for LTE/HSPA/EDGE/GPRS only)

☒ Auto
 ☐ Custom Mobile Operator Settings

SIM PIN (Optional)

(Confirm)

Save

Add Remote SIM Settings	
SIM Server	Add a new SIM Server
SIM Server - Serial Number	Enter the serial number of SIM Server
SIM Server - Name	This optional field allows you define a name for the SIM Server
SIM Slot	Click the drop-down menu and choose which SIM slot you want to connect.
SIM Slot - Name	This optional field allows you define a name for the SIM slot.

Data Roaming	Enables data roaming on this particular SIM card.
Operator Settings (for LTE//HSPA/EDGE/GPRS Only)	This setting allows you to configure the APN settings of your connection. If Auto is selected, the mobile operator should be detected automatically. The connected device will be configured and connection will be made automatically. If there is any difficulty in making a connection, you may select Custom to enter your carrier's APN, Username and Password settings manually. The correct values can be obtained from your carrier. The default and recommended setting is Auto.

10.14.8 SIM Toolkit

The SIM Toolkit can be found via **Networks > Misc Settings > SIM Toolkit**. This supports two functionalities, USSD and SMS.

USSD

Unstructured Supplementary Service Data (USSD) is a protocol used by mobile phones to communicate with their service provider's computers. One of the most common uses is to query the available balance.

SIM Status	
WAN Connection	Cellular
SIM Card	1
IMSI	856195002108538
Tool	USSD

USSD	
USSD Code	Submit

Enter your USSD code under the **USSD Code** text field and click **Submit**.

SIM Status	
WAN Connection	Cellular
SIM Card	1
IMSI	856195002108538
USSD Code	*138# Submit
Receive SMS	Get

You will receive a confirmation. To check the SMS response, click **Get**.

SIM Status	
WAN Connection	Cellular
SIM Card	1
IMSI	856195002108538
USSD Code	*138# Submit
USSD Status	Request is sent successfully
Receive SMS	Get

After a few minutes you will receive a response to your USSD code

Received SMS		
May 27 20:02	PCX As of May 27th Account Balance: \$ 0.00 Amount Unbilled Voice Calls: 0 minutes Video Calls: 0 minutes SMS (Roaming): 0 SMS (Within Network): 0 MMS (Roaming): 0 MMS (Within Network): 0 Data Usage: 7384KB (For reference only, please refer to bill)	
	PCX iPhone & Android users need to make sure "PCX" is entered as the APN under "Settings" > "Mobile network setting" for web browsing and mobile data service. Other handset models will receive handset settings via SMS shortly (PIN: 1234) (Consumer Service Hotline: 1000 / Business Customer Hotline 10088)	

SMS

The SMS option allows you to read SMS (text) messages that have been sent to the SIM in your Peplink router.

SIM Status	
WAN Connection	Cellular
SIM Card	1
IMSI	45401 123456789
Tool	SMS

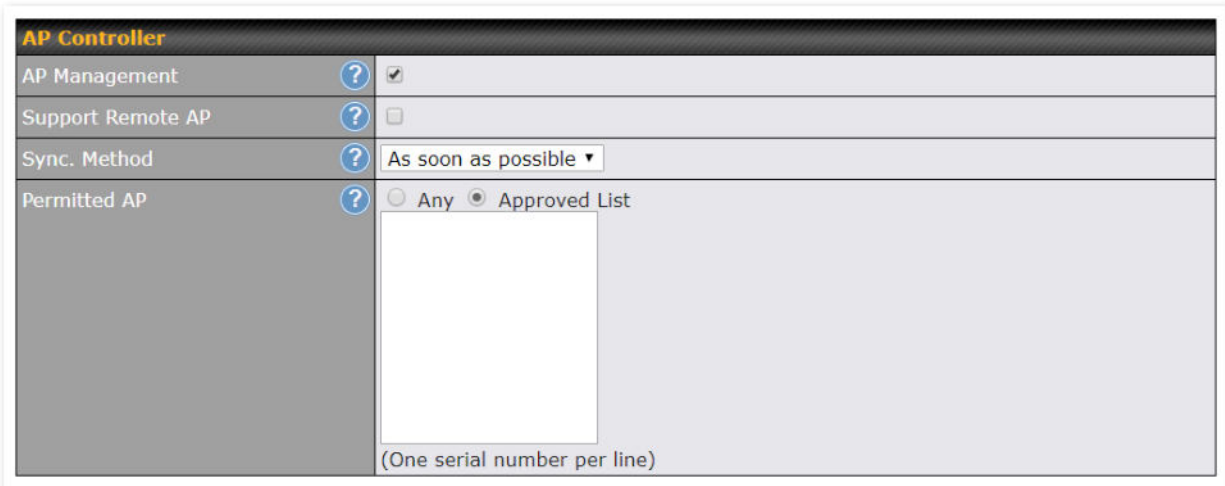
SMS		Refresh
Jun 21, 2017 18:00	Hi, Thank you, your anti-phishing/virus/malware - you can change this when you first login at ibm.com.cn	
May 06, 2017 12:23	Hi, Your new email is ready to receive. Go to your IMAP account on your desktop or on a mobile phone click here: http://mail.163.com/imap/	
Mar 15, 2017 10:03	From: IBM Hi, There is planned maintenance at the Internet site IBM.com.cn this week. If your services affected, you can get updates from: http://ibm.com.cn	
Mar 06, 2017 14:50	Hi, Your new email is ready to receive. Go to your IMAP account on your desktop or on a mobile phone click here: http://mail.163.com/imap/	
Dec 28, 2016 09:53	Hi, we hope your business is successful. To make half-price offer that we cannot you, this offer applied to your first 10 orders. Your monthly billings change will report to following information: 10, 1000	
Dec 06, 2016 13:09	Hi, Your new email is ready to receive. Go to your IMAP account on your desktop or on a mobile phone click here: http://mail.163.com/imap/	
Nov 08, 2016 11:29	From: IBM Hi, There is planned maintenance at the Internet site IBM.com.cn this week. If your services affected, you can get updates from: http://ibm.com.cn	
Sep 07, 2016 17:05	Hi, Thank you, your anti-phishing/virus/malware - you can change this when you first login at ibm.com.cn	

11 AP Tab

11.1 AP

11.1.1 AP Controller

Clicking on the **AP** tab will default to this menu, where you can view basic AP management options:



AP Controller	
AP Management	☒
Support Remote AP	☐
Sync. Method	As soon as possible ▼
Permitted AP	☐ Any ☒ Approved List (One serial number per line)

AP Controller	
AP Management	The AP controller for managing Pepwave APs can be enabled by checking this box. When this option is enabled, the AP controller will wait for management connections originating from APs over the LAN on TCP and UDP port 11753. It will also wait for captive portal connections on TCP port 443. An extended DHCP option, CAPWAP Access Controller addresses (field 138), will be added to the DHCP server. A local DNS record, AP Controller, will be added to the local DNS proxy.
Support Remote AP	The AP controller supports remote management of Pepwave APs. When this option is enabled, the AP controller will wait for management connections originating from remote APs over the WAN on TCP and UDP port 11753. It will also wait for captive portal connections on TCP port 443. The DHCP server and/or local DNS server of the remote AP's network should be configured in the DNS Proxy Settings menu under Network>LAN. The procedure is as follows: 1. Define an extended DHCP option, CAPWAP Access Controller addresses (field 138), in the DHCP server, where the values are the AP controller's public IP addresses; and/or 2. Create a local DNS record for the AP controller with a value corresponding to the AP controller's public IP address.

DNS Proxy Settings						
Enable	☒					
DNS Caching	☐					
Include Google Public DNS Servers	☐					
Local DNS Records	<table border="1"> <thead> <tr> <th>Host Name</th> <th>IP Address</th> </tr> </thead> <tbody> <tr> <td>wlancontroller</td> <td>10.10.10.1</td> </tr> </tbody> </table>	Host Name	IP Address	wlancontroller	10.10.10.1	
Host Name	IP Address					
wlancontroller	10.10.10.1					

Sync. Method	Select the required option to synchronize the managed AP's. Options are:	
	- As soon as possible (default) - Progressively (synchronize AP's in groups) - One at a time (synchronize one AP at a time)	
Permitted AP	Access points to manage can be specified here. If Any is selected, the AP controller will manage any AP that reports to it. If Approved List is selected, only APs with serial numbers listed in the provided text box will be managed.	

11.1.2 Wireless SSID

SSID	Security Policy
No SSID Defined	
Add	

Current SSID information appears in the **SSID** section. To edit an existing SSID, click its name in the list. To add a new SSID, click **Add**. Note that the following settings vary by model. The below settings show a new SSID window with Advanced Settings enabled (these are available by selecting the question mark in the top right corner).

Help	
To set SSID advanced settings, please click here .	
Close	

SSID

SSID Settings

SSID	PEPLINK_63E6
Enable	Always on
VLAN	0 (0: Untagged) ☐ Use VLAN Pool
Broadcast SSID	☒
Data Rate	☒ Auto ☐ Fixed
Multicast Filter	☐
Multicast Rate	MCS0/6M
IGMP Snooping	☐
DHCP Relay	☐
DHCP Option 82	☐
Network Priority (QoS)	Gold
Layer 2 Isolation	☐
Maximum number of clients	2.4 GHz: 0 5 GHz: 0 (0: Unlimited)
Band Steering	? Disable

SSID Settings	
SSID	This setting specifies the SSID of the virtual AP to be scanned by Wi-Fi clients.
Enable	Click the drop-down menu to apply a time schedule to this interface
VLAN	This setting specifies the VLAN ID to be tagged on all outgoing packets generated from this wireless network (i.e., packets that travel from the Wi-Fi segment through the Pepwave AP One unit to the Ethernet segment via the LAN port). The default value of this setting is 0, which means VLAN tagging is disabled (instead of tagged with zero). Use of a VLAN pool is enabled by selecting the checkbox.
Broadcast SSID	This setting specifies whether or not Wi-Fi clients can scan the SSID of this wireless network. Broadcast SSID is enabled by default.
Data Rate ^A	Select Auto to allow the Pepwave router to set the data rate automatically, or select Fixed and choose a rate from the displayed drop-down menu.
Multicast Filter ^A	This setting enables the filtering of multicast network traffic to the wireless SSID.
Multicast Rate ^A	This setting specifies the transmit rate to be used for sending multicast network traffic. The selected Protocol and Channel Bonding settings will affect the rate options and values available here.
IGMP Snooping ^A	To allow the Pepwave router to listen to internet group management protocol (IGMP) network traffic, select this option.

DHCP Relay	Put the address of the DHCP server in this field.. DHCP requests will be relayed to this DHCP server
DHCP Option 82 ^A	If you use a distributed DHCP server/relay environment, you can enable this option to provide additional information on the manner in which clients are physically connected to the network.
Layer 2 Isolation ^A	Layer 2 refers to the second layer in the ISO Open System Interconnect model. When this option is enabled, clients on the same VLAN, SSID, or subnet are isolated to that VLAN, SSID, or subnet, which can enhance security. Traffic is passed to upper communication layer(s). By default, the setting is disabled.
Maximum Number of Clients	Indicate the maximum number of clients that should be able to connect to each frequency.
Band Steering	To reduce 2.4 GHz band overcrowding, AP with band steering steers clients capable of 5 GHz operation to 5 GHz frequency. Choose between: Force - Clients capable of 5 GHz operation are only offered with 5 GHz frequency. Prefer - Clients capable of 5 GHz operation are encouraged to associate with 5 GHz frequency. If the clients insist to attempt on 2.4 GHz frequency, 2.4 GHz frequency will be offered. Disable - Default

^A - Advanced feature. Click the  button on the top right-hand corner to activate.

Security Settings	
Security Policy	WPA/WPA2 - Personal ▼
Encryption	TKIP/AES:CCMP
Shared Key	  ☒ Hide Characters

Security Settings	
Security Policy	This setting configures the wireless authentication and encryption methods. Available options: • Open (No Encryption) • Enhanced Open (OWE) • WPA3 -Personal (AES:CCMP) • WPA2/WPA3 -Personal (AES:CCMP) • WPA2 -Personal (AES:CCMP) • WPA2 – Enterprise • WPA/WPA2 - Personal (TKIP/AES: CCMP) • WPA/WPA2 – Enterprise When WPA/WPA2 - Enterprise is configured, RADIUS-based 802.1 x authentication is enabled. Under this configuration, the Shared Key option should be disabled. When using this method, select the appropriate version using the V1/V2 controls. The security level of this method is known to be very high. When WPA/WPA2- Personal is configured, a shared key is used for data encryption and

authentication. When using this configuration, the **Shared Key** option should be enabled. Key length must be between eight and 63 characters (inclusive). The security level of this method is known to be high.

NOTE:

When **WPA2/WPA3- Personal** is configured, if a managed AP which is NOT WPA3 PSK capable, the AP Controller will not push those WPA3 and WPA2/WPA3 SSID to that AP.

Access Control Settings	
Restricted Mode	Deny all except listed ▼
MAC Address List	?

Access Control Settings	
Restricted Mode	The settings allow the administrator to control access using MAC address filtering. Available options are None , Deny all except listed , Accept all except listed and Radius MAC Authentication .
MAC Address List	Connections coming from the MAC addresses in this list will be either denied or accepted based on the option selected in the previous field. If more than one MAC address needs to be entered, you can use a carriage return to separate them.

RADIUS Server Settings	Primary Server	Secondary Server
Host		
Secret	☒ Hide Characters	☒ Hide Characters
Authentication Port	1812 Default	1812 Default
Accounting Port	1813 Default	1813 Default
NAS-Identifier	Device Name ▼	

RADIUS Server Settings	
Host	Enter the IP address of the primary RADIUS server and, if applicable, the secondary RADIUS server.
Secret	Enter the RADIUS shared secret for the primary server and, if applicable, the secondary RADIUS server.
Authentication Port	In the field, enter the UDP authentication port(s) used by your RADIUS server(s) or click the Default button to enter 1812 .
Accounting	In the field, enter the UDP accounting port(s) used by your RADIUS server(s) or click the

Port	Default button to enter 1813 .
NAS-Identifier	Choose between Device Name , LAN MAC address , Device Serial Number and Custom Value

Guest Protect			
Block All Private IP	☐		
Custom Subnet	Network	Subnet Mask	
		255.255.255.0 (/24) ▼	+
Block Exception	Network	Subnet Mask	
		255.255.255.0 (/24) ▼	+

Guest Protect	
Block All Private IP	Check this box to deny all connection attempts by private IP addresses.
Custom Subnet	To create a custom subnet for guest access, enter the IP address and choose a subnet mask from the drop-down menu.
Block Exception	To block access from a particular subnet, enter the IP address and choose a subnet mask from the drop-down menu.

Firewall Settings	
Firewall Mode	Disable ▼ Disable Flexible - Allow all except... Lockdown - Block all except...

Firewall Settings	
Firewall Mode	The settings allow administrators to control access to the SSID based on Firewall Rules. Available options are Disable, Lockdown - Block all except... and Flexible -Allow all except...
Firewall Exceptions	Create Firewall Rules based on Port , IP Network , MAC address or Domain Name

11.1.3 Wireless Mesh

Wireless Mesh	Frequency Band
No Wireless Mesh Defined	
Add	

Wireless Mesh Support is available on devices running 802.11ac (Wi-Fi 5) and above. Along with the AP Controller, mesh network extensions can be established, which can expand network coverage. Note that the Wireless Mesh settings need to match the Mesh ID and Shared Key of the other devices on the same selected frequency band.

To create a new Wireless Mesh profile, go to **AP > Wireless Mesh**, and click **Add**.

Wireless Mesh Settings

Mesh ID

Frequency

☒ 2.4 GHz
 ☐ 5 GHz

Shared Key

☒ Hide Characters

Wireless Mesh Settings	
Mesh ID	Enter a name to represent the Mesh profile.
Frequency	Select the 2.4GHz or 5GHz frequency to be used.
Shared Key	Enter the shared key in the text field. Please note that it needs to match the shared keys of the other APs in the Wireless Mesh settings. Click Hide / Show Characters to toggle visibility.

11.1.4 AP > Profiles

AP Settings

AP Profile Name

SSID

☒ 2.4 GHz
 ☐ 5 GHz
 ☐ PEPLINK_63E6

Operating Country

United States

Preferred Frequency

☒ 2.4 GHz
 ☐ 5 GHz

AP Settings	
AP Profile Name	Ap Profile name

SSID	You can select the wireless networks for 2.4 GHz or 5 GHz separately for each SSID.
Operating Country	This drop-down menu specifies the national/regional regulations which the Wi-Fi radio should follow. - If a North American region is selected, RF channels 1 to 11 will be available and the maximum transmission power will be 26 dBm (400 mW). - If European region is selected, RF channels 1 to 13 will be available. The maximum transmission power will be 20 dBm (100 mW). NOTE: Users are required to choose an option suitable to local laws and regulations.
Preferred Frequency	Indicate the preferred frequency to use for clients to connect.

Important Note

Per FCC regulation, the country selection is not available on all models marketed in the US. All US models are fixed to US channels only.

	2.4 GHz	5 GHz
Protocol	802.11ng	802.11n/ac
Channel Width	Auto	Auto
Channel	Auto Edit Channels: 1 2 3 4 5 6 7 8 9 10 11	Auto Edit Channels: 36 40 44 48 149 153 157 161 165
Auto Channel Update	Daily at 03:00 ☒ Wait until no active client associated	Daily at 03:00 ☒ Wait until no active client associated
Output Power	Fixed: Max ☐ Boost	Fixed: Max ☐ Boost
Client Signal Strength Threshold	0 -95 dBm (0: Unlimited)	0 -95 dBm (0: Unlimited)
Maximum number of clients	0 (0: Unlimited)	0 (0: Unlimited)

AP Settings (part 2)

Protocol	This option allows you to specify whether 802.11b and/or 802.11g client association requests will be accepted. Available options are 802.11ng and 802.11na . By default, 802.11ng is selected.
Channel Width	Available options are 20 MHz , 40 MHz , and Auto (20/40 MHz) . Default is Auto (20/40 MHz) , which allows both widths to be used simultaneously.
Channel	This option allows you to select which 802.11 RF channel will be utilized. Channel 1 (2.412 GHz) is selected by default.
Auto Channel Update	Indicate the time of day at which update automatic channel selection.
Output Power	This option is for specifying the transmission output power for the Wi-Fi AP. There are 4 relative power levels available – Max , High , Mid , and Low . The actual output power will be bound by the regulatory limits of the selected country.
Client Signal Strength Threshold	Clients with signal strength lower than this value will not be allowed to connect.

Maximum number of clients	This setting determines the maximum number of clients that can connect to this Wi-Fi frequency.
----------------------------------	---

Advanced Wi-Fi AP settings can be displayed by clicking the  on the top right-hand corner of the **Wi-Fi AP Settings** section, which can be found at **AP>Settings**. Other models will display a separate section called **Wi-Fi AP Advanced Settings**, which can be found at **Advanced>Wi-Fi Settings**.

Management VLAN ID	 0 (0: Untagged)
Operating Schedule	Always on ▼
Beacon Rate	 1 Mbps ▼
Beacon Interval	 100 ms ▼
DTIM	 1 Default
RTS Threshold	0 Default
Fragmentation Threshold	0 (0: Disable) Default
Distance / Time Converter	4050 m Note: Input distance for recommended values
Slot Time	 ☐ Auto ☒ Custom 9 μ s Default
ACK Timeout	 48 μ s Default
Frame Aggregation	☒
Aggregation Length	50000 Default

Advanced AP Settings	
Management VLAN ID	This field specifies the VLAN ID to tag to management traffic, such as communication traffic between the AP and the AP Controller. The value is zero by default, which means that no VLAN tagging will be applied. NOTE: Change this value with caution as alterations may result in loss of connection to the AP Controller.
Operating Schedule	Choose from the schedules that you have defined in System>Schedule. Select the schedule for the integrated AP to follow from the drop-down menu.
Beacon Rate ^A	This option is for setting the transmit bit rate for sending a beacon. By default, 1Mbps is selected.
Beacon Interval ^A	This option is for setting the time interval between each beacon. By default, 100ms is selected.
DTIM ^A	This field allows you to set the frequency for the beacon to include delivery traffic indication messages. The interval is measured in milliseconds. The default value is set to 1 ms .
RTS Threshold ^A	The RTS (Request to Clear) threshold determines the level of connection required before the AP starts sending data. The recommended standard of the RTS threshold is around 500.

Fragmentation Threshold ^A	This setting determines the maximum size of a packet before it gets fragmented into multiple pieces.
Distance / Time Convertor	Select the range you wish to cover with your Wi-Fi, and the router will make recommendations for the Slot Time and ACK Timeout.
Slot Time ^A	This field is for specifying the unit wait time before transmitting a packet. By default, this field is set to 9 μs .
ACK Timeout ^A	This field is for setting the wait time to receive an acknowledgement packet before performing a retransmission. By default, this field is set to 48 μs .
Frame Aggregation ^A	This option allows you to enable frame aggregation to increase transmission throughput.

^A - Advanced feature, please click the  button on the top right-hand corner to activate.

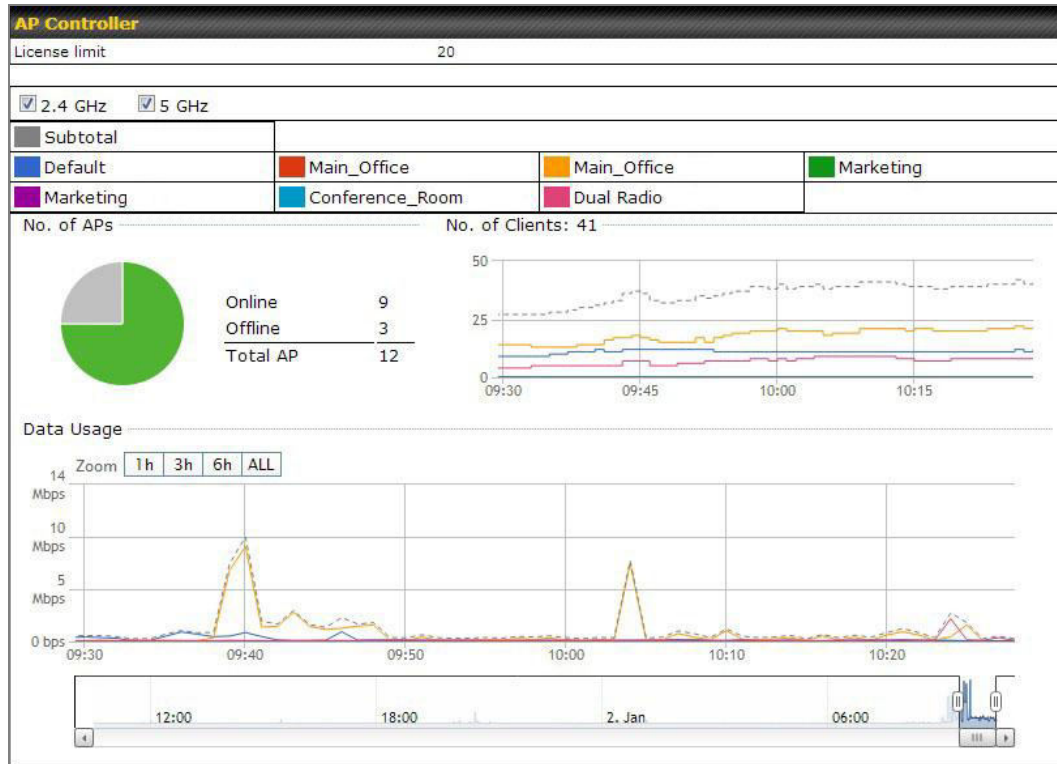
Web Administration Settings	
Enable	☒
Web Access Protocol	☐ HTTP ☒ HTTPS
Management Port	443
HTTP to HTTPS Redirection	☒
Admin Username	admin
Admin Password	 Generate
	☒ Hide Characters

Web Administration Settings	
Enable	Ticking this box enables web admin access for APs located on the WAN.
Web Access Protocol	Determines whether the web admin portal can be accessed through HTTP or HTTPS
Management Port	Determines the port at which the management UI can be accessed.
HTTP to HTTPS redirection	Redirects HTTP request to HTTPS
Admin Username	Determines the username to be used for logging into the web admin portal
Admin Password	Determines the password for the web admin portal on external AP.

11.2 AP Controller Status

11.2.1 Info

A comprehensive overview of your AP can be accessed by navigating to **AP > Info**.



AP Controller	
License Limit	This field displays the maximum number of AP your Balance router can control. You can purchase licenses to increase the number of AP you can manage.
Frequency	Underneath, there are two check boxes labeled 2.4 Ghz and 5 Ghz . Clicking either box will toggle the display of information for that frequency. By default, the graphs display the number of clients and data usage for both 2.4GHz and 5 GHz frequencies.
SSID	The colored boxes indicate the SSID to display information for. Clicking any colored box will toggle the display of information for that SSID. By default, all the graphs show information for all SSIDs.
No. of APs	This pie chart and table indicates how many APs are online and how many are offline.
No. of Clients	This graph displays the number of clients connected to each network at any given time. Mouse over any line on the graph to see how many clients connected to a specific SSID for that point in time.

Data Usage

This graph enables you to see the data usage of any SSID for any given time period. Mouse over any line on the graph to see the data usage by each SSID for that point in time. Use the buttons next to **Zoom** to select the time scale you wish to view. In addition, you could use the sliders at the bottom to further refine your timescale.

11.2.2 Access Points (Usage)

A detailed breakdown of data usage for each AP is available at **AP> Access Point**.

Search Filter

AP Name / Serial Number / SSID

All

☐ Include Offline APs

Search Result

Managed APs

Expand

Collapse

☐	Name	IP Address	MAC	Location	Firmware	Pack ID	Configuration
☐	Default (8/9 online)						
☐	10.8.82.11	10.8.82.11	00:1A:DD:BD:73:E0	-	3.5.2	None	☒ -

Usage

AP Name/Serial Number

This field enables you to quickly find your device if you know its name or serial number. Fill in the field to begin searching. Partial names and serial numbers are supported.

Online Status

This button toggles whether your search will include offline devices.

This table shows the detailed information on each AP, including channel, number of clients, upload traffic, and download traffic. Click the blue arrows at the left of the table to expand and collapse information on each device group. You could also expand and collapse all groups by using the **Expand** **Collapse** buttons.

On the right of the table, you will see the following icons:

Click the icon to see a usage table for each client:

Managed Wireless Devices

Client List							
MAC Address	IP Address	Type	Signal	SSID	Upload	Download	
80:56:f2:98:75:ff	10.9.2.7	802.11ng	Excellent (37)	Balance	66.26 MB	36.26 MB	
c4:6a:b7:bf:d7:15	10.9.2.123	802.11ng	Excellent (42)	Balance	6.65 MB	2.26 MB	
70:56:81:1d:87:f3	10.9.2.102	802.11ng	Good (23)	Balance	1.86 MB	606.63 KB	
e0:63:e5:83:45:c8	10.9.2.101	802.11ng	Excellent (39)	Balance	3.42 MB	474.52 KB	
18:00:2d:3d:4e:7f	10.9.2.66	802.11ng	Excellent (25)	Balance	640.29 KB	443.57 KB	
14:5a:05:80:4f:40	10.9.2.76	802.11ng	Excellent (29)	Balance	2.24 KB	3.67 KB	
00:1a:dd:c5:4e:24	10.8.9.84	802.11ng	Excellent (29)	Wireless	9.86 MB	9.76 MB	
00:1a:dd:bb:29:ec	10.8.9.73	802.11ng	Excellent (25)	Wireless	9.36 MB	11.14 MB	
40:b0:fa:c3:26:2c	10.8.9.18	802.11ng	Good (23)	Wireless	118.05 MB	7.92 MB	
e4:25:e7:8a:d3:12	10.10.11.23	802.11ng	Excellent (35)	Marketing	74.78 MB	4.58 MB	
04:f7:e4:ef:68:05	10.10.11.71	802.11ng	Poor (12)	Marketing	84.84 KB	119.32 KB	

Click the icon to configure each client

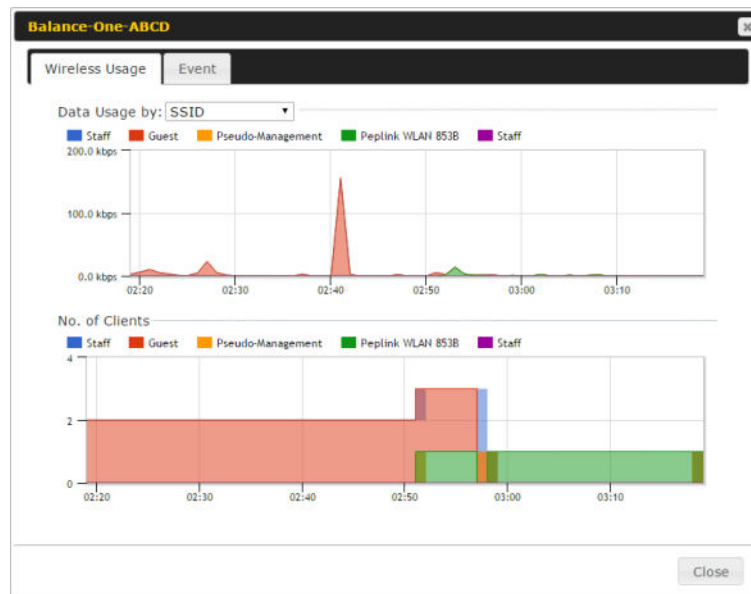
AP Details

Serial Number	1111-2222-3333
MAC Address	00:1A:DD:BD:73:E0
Product Name	Pepwave AP Pro Duo
Name	
Location	
Firmware Version	3.5.2
Firmware Pack	Default (None) ▼
AP Client Limit	☒ Follow AP Profile ☐ Custom
2.4 GHz SSID List	T4Open
5 GHz SSID List	T4Open
Last config applied by controller	Mon Nov 23 11:25:03 HKT 2015
Uptime	Wed Nov 11 15:00:27 HKT 2015
Current Channel	1 (2.4 GHz) 153 (5 GHz)
Channel	2.4 GHz: Follow AP Profile ▼ 5 GHz: Follow AP Profile ▼
Output Power	2.4 GHz: Follow AP Profile ▼ 5 GHz: Follow AP Profile ▼

Close

For easier network management, you can give each client a name and designate its location. You can also designate which firmware pack (if any) this client will follow, as well as the channels on which the client will broadcast.

Click the  icon to see a graph displaying usage:



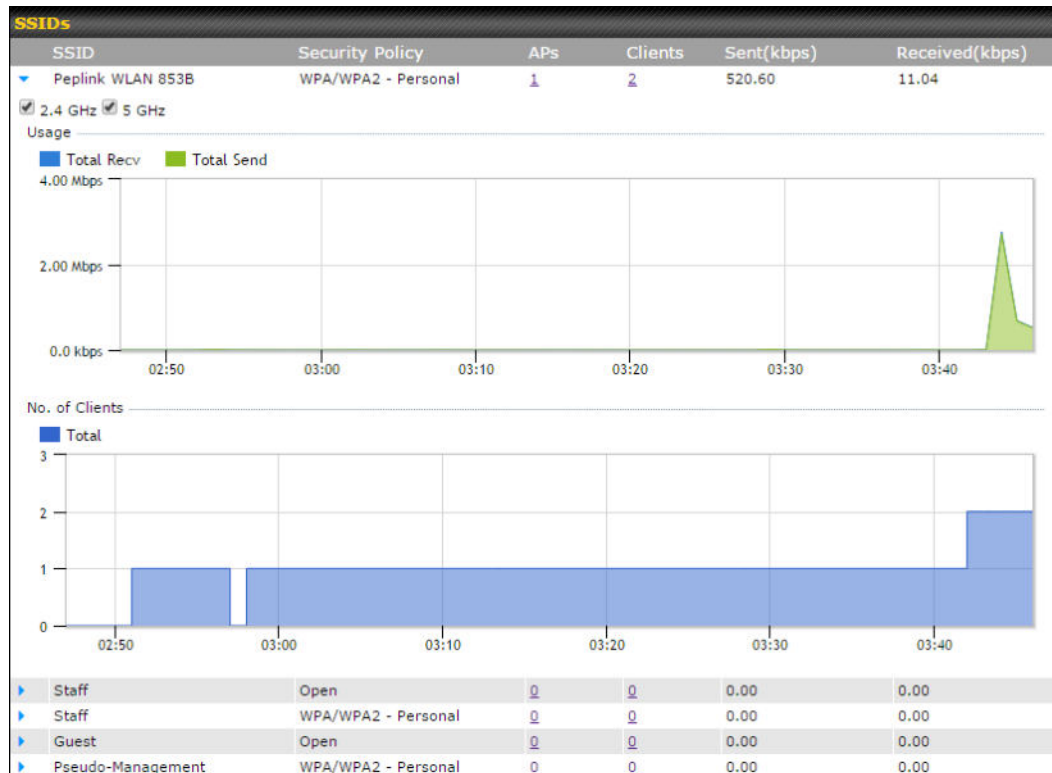
Click any point in the graphs to display detailed usage and client information for that device, using that SSID, at that point in time. On the **Data Usage by** menu, you can display the information by SSID or by AP send/receive rate.

Click the **Event** tab next to **Wireless Usage** to view a detailed event log for that particular device:

Event Information	
Events	
Jan 2 11:53:39	Client 00:26:BB:08:AC:FD associated with Wireless_11a
Jan 2 11:39:31	Client 60:67:20:24:B6:4C disassociated from Marketing_11a
Jan 2 11:16:55	Client A8:BB:CF:E1:0F:1E disassociated from Balance_11a
Jan 2 11:11:54	Client A8:BB:CF:E1:0F:1E associated with Balance_11a
Jan 2 11:10:45	Client 60:67:20:24:B6:4C associated with Marketing_11a
Jan 2 11:00:36	Client 00:21:6A:35:59:A4 associated with Balance_11a
Jan 2 11:00:20	Client 60:67:20:24:B6:4C disassociated from Marketing_11a
Jan 2 10:59:09	Client 00:21:6A:35:59:A4 disassociated from Balance_11a
Jan 2 10:42:28	Client F4:B7:E2:16:35:E9 associated with Balance_11a
Jan 2 10:29:12	Client 84:7A:88:78:1E:4B associated with Balance_11a
Jan 2 10:24:27	Client 90:B9:31:0D:11:EC disassociated from Marketing_11a
Jan 2 10:24:27	Client 90:B9:31:0D:11:EC roamed to Marketing_11a at 2830-BFC8-D230
Jan 2 10:13:22	Client E8:8D:28:A8:43:93 associated with Balance_11a
Jan 2 10:13:22	Client E8:8D:28:A8:43:93 roamed to Balance_11a from 2830-BF7F-694C
Jan 2 10:07:52	Client CC:3A:61:89:07:F3 associated with Wireless_11a
Jan 2 10:04:35	Client 60:67:20:24:B6:4C associated with Marketing_11a
Jan 2 10:03:38	Client 60:67:20:24:B6:4C disassociated from Marketing_11a
Jan 2 09:58:27	Client 00:26:BB:08:AC:FD disassociated from Wireless_11a
Jan 2 09:52:46	Client 00:26:BB:08:AC:FD associated with Wireless_11a
Jan 2 09:20:26	Client 8C:3A:E3:3F:17:62 associated with Balance_11a
More...	
Close	

11.2.3 Wireless SSID

In-depth wireless SSID reports are available under **AP > Wireless SSID**.



Click the blue arrow on any SSID to obtain more detailed usage information on each SSID.

11.2.4 Wireless Client

You can search for specific Wi-Fi users by navigating to **AP > Wireless Client**.

Search Filter

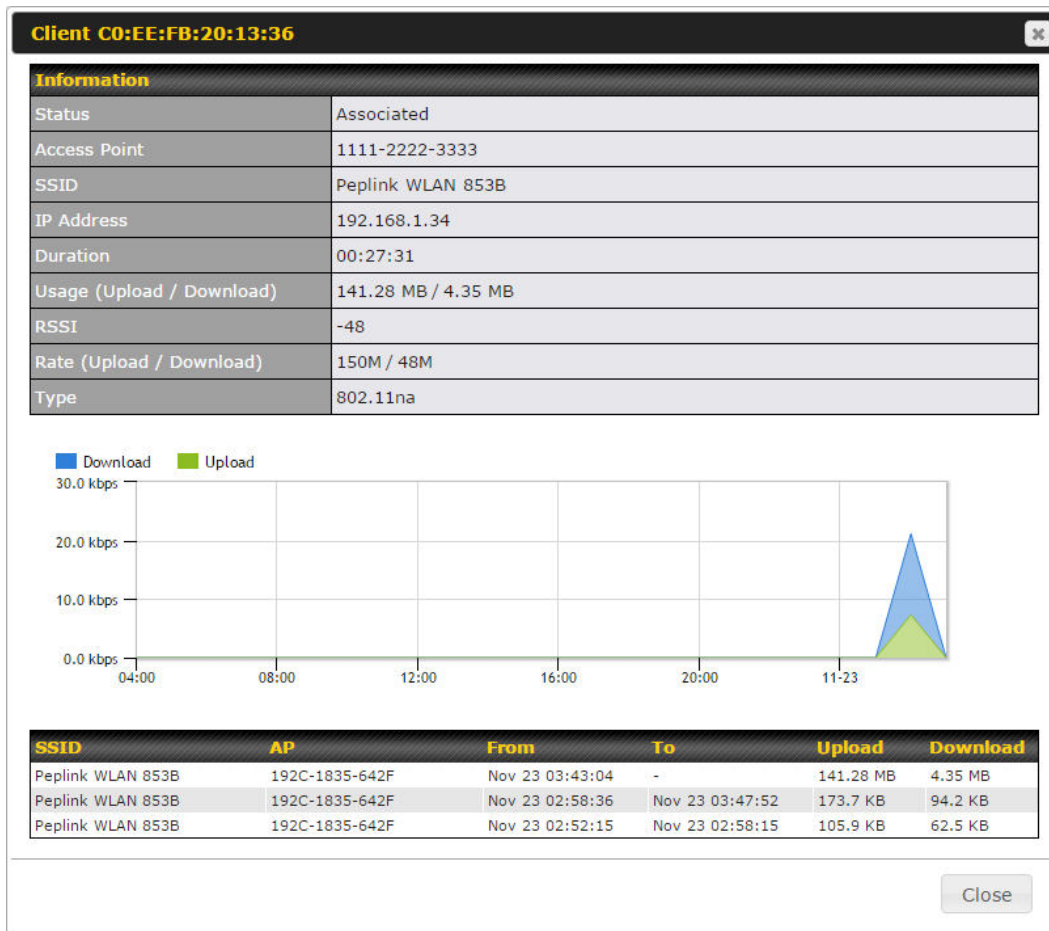
Client MAC / SSID / AP Serial Number:

Maximum Result (1-256):

Search Result:

Top 10 Clients of last hour (Updated at 03:00)		
Client MAC Address	Upload	Download
C0:EE:FB:20:13:36	53.5 KB	101.4 KB

Here, you will be able to see your network's heaviest users as well as search for specific users. Click the ☆ icon to bookmark specific users, and click the 📊 icon for additional details about each user:

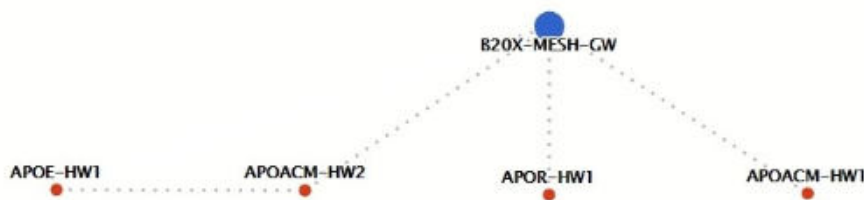


11.2.5 Mesh / WDS

Mesh / WDS allows you to monitor the status of your wireless distribution system (WDS) or Mesh, and track activity by MAC address by navigating to **AP > Controller Status > Mesh / WDS**. This table shows the detailed information of each AP, including protocol, transmit rate (sent / received), signal strength, and duration.

Mesh / WDS						
Type ^	Peer MAC	Protocol	Rate (Send)	Rate (Receive)	Signal (dBm)	Duration
▼ APOACM-HW1/						
Mesh ()		802.11ac	325M	650M	-56	19:13:35
▼ APOACM-HW2/						
Mesh ()		802.11ac	650M	351M	-63	00:49:20
Mesh ()		802.11ac	390M	325M	-67	01:35:09
▼ APOE-HW1/						
Mesh ()		802.11ac	58.5M	130M	-69	00:45:22
▼ APOR-HW1/						
Mesh ()		802.11ac	325M	866.7M	-53	19:14:44
▼ B20X-MESH-GW/						
Mesh ()		802.11ac	433M	650M	-69	19:14:44
Mesh ()		802.11ac	325M	390M	-66	01:35:42
Mesh ()		802.11ac	351M	650M	-70	19:13:45
Mesh ()		802.11ac	130M	117M	-88	00:45:52

Network Graph



11.2.6 Nearby Device

A listing of near devices can be accessed by navigating to **AP > Controller Status > Nearby Device**.

Suspected Rogue APs					
BSSID	SSID	Channel	Encryption	Last Seen	Mark as
00:1A:DD:EC:25:22	Wireless	11	WPA2	10 hours ago	 
00:1A:DD:EC:25:23	Accounting	11	WPA2	10 hours ago	 
00:1A:DD:EC:25:24	Marketing	11	WPA2	11 hours ago	 
00:03:7F:00:00:00	MYB1PUSH	1	WPA & WPA2	11 minutes ago	 
00:03:7F:00:00:01	MYB1	1	WPA2	15 minutes ago	 
00:1A:DD:B9:60:88	PEPWAVE_CB7E	1	WPA & WPA2	5 minutes ago	 
00:1A:DD:BB:09:C1	Micro_S1_1	6	WPA & WPA2	1 hour ago	 
00:1A:DD:BB:52:A8	MAX HD2 Gobi	11	WPA & WPA2	2 minutes ago	 
00:1A:DD:BF:75:81	PEPLINK_05B5	4	WPA & WPA2	1 minute ago	 
00:1A:DD:BF:75:82	LK_05B5	4	WPA2	1 minute ago	 
00:1A:DD:BF:75:83	LK_05B5_VLAN22	4	WPA2	1 minute ago	 
00:1A:DD:C1:ED:E4	dev_captive_portal_test	1	WPA & WPA2	3 minutes ago	 
00:1A:DD:C2:E4:C5	PEPWAVE_7052	11	WPA & WPA2	2 hours ago	 
00:1A:DD:C3:F1:64	dev_captive_portal_test	6	WPA & WPA2	6 minutes ago	 
00:1A:DD:C4:DC:24	ssid_test	8	WPA & WPA2	2 minutes ago	 
00:1A:DD:C4:DC:25	SSID New	8	WPA & WPA2	2 minutes ago	 
00:1A:DD:C5:46:04	Guest SSID	9	WPA2	2 minutes ago	 
00:1A:DD:C5:47:04	PEPWAVE_67B8	1	WPA & WPA2	5 minutes ago	 
00:1A:DD:C5:4E:24	G BR1 Portal	2	WPA2	2 minutes ago	 
00:1A:DD:C6:9A:48	ssid_test	8	WPA & WPA2	2 hours ago	 

Nearby Devices

Hovering over the device MAC address will result in a popup with information on how this device was detected. Click the   icons and the device will be moved to the bottom table of identified devices.

11.2.7 Event Log

You can access the AP Controller Event log by navigating to **AP > Controller Status > Event Log**.

Filter	
Search key	Client MAC Address / Wireless SSID / AP Serial Number / AP Profile Name
Time	From hh:mm to hh:mm
Alerts only	☐
Search	

Events		View Alerts
Jan 2 11:01:11	AP One 300M: Client 54:EA:A0:2D:A0:D5 disassociated from Marketing_11a	
Jan 2 11:00:42	AP One 300M: Client 54:EA:A0:2D:A0:D5 associated with Marketing_11a	
Jan 2 11:00:38	AP One 300M: Client 54:EA:A0:2D:A0:D5 disassociated from Marketing_11a	
Jan 2 11:00:36	AP One 300M: Client 00:11:AA:38:99:AA associated with Balance_11a	
Jan 2 11:00:20	AP One 300M: Client 60:67:20:24:B6:4C disassociated from Marketing_11a	
Jan 2 11:00:09	AP One 300M: Client 54:EA:A0:2D:A0:D5 associated with Marketing_11a	
Jan 2 10:59:09	AP One 300M: Client 00:11:AA:38:99:AA disassociated from Balance_11a	
Jan 2 10:59:08	Office Fiber AP: Client 10:00:2D:3D:4E:7F associated with Balance	
Jan 2 10:58:53	Michael's Desk: Client 10:00:2D:3D:4E:7F disassociated from Wireless	
Jan 2 10:58:18	AP One 300M: Client 54:EA:A0:2D:A0:D5 disassociated from Marketing_11a	
Jan 2 10:58:03	Office InWall: Client 54:EA:A0:2D:A0:D5 associated with Wireless	
Jan 2 10:57:47	AP One 300M: Client 54:EA:A0:2D:A0:D5 associated with Marketing_11a	
Jan 2 10:57:19	AP One 300M: Client 54:EA:A0:2D:A0:D5 disassociated from Marketing_11a	
Jan 2 10:57:09	AP One 300M: Client 54:EA:A0:2D:A0:D5 associated with Marketing_11a	
Jan 2 10:56:48	AP One 300M: Client 54:EA:A0:2D:A0:D5 disassociated from Marketing_11a	
Jan 2 10:56:39	AP One 300M: Client 54:EA:A0:2D:A0:D5 associated with Marketing_11a	
Jan 2 10:56:19	AP One 300M: Client 00:28:8B:05:84:A4 associated with Marketing_11a	
Jan 2 10:56:09	AP One 300M: Client 9C:04:2B:10:39:4C associated with Marketing_11a	
Jan 2 10:55:42	AP One 300M: Client 54:EA:A0:2D:A0:D5 disassociated from Marketing_11a	
Jan 2 10:55:29	AP One 300M: Client 54:EA:A0:2D:A0:D5 associated with Marketing_11a	
		More...

Events

This event log displays all activity on your AP network, down to the client level. Use to filter box to search by MAC address, SSID, AP Serial Number, or AP Profile name. Click **View Alerts** to see only alerts, and click the **More...** link for additional records.

11.3 Toolbox

Additional tools for managing firmware packs, power adjustment, and channel assignment can be found at **AP>Toolbox**.

Firmware Packs				
Firmware Packs		Auto Power Adj.	Dynamic Channel Assignment	
Pack ID	Release Date	Details	Action	
1126	2013-08-26			
Check for Updates		Manual Upload	Default...	No default defined.

Firmware Packs

This is the first menu that will appear. Here, you can manage the firmware of your AP. Clicking on  will display information regarding each firmware pack. To receive new firmware packs, you can either press **Check for Updates** to download new packs or you can press **Manual Upload** to manually upload a firmware pack. Press **Default...** to define which firmware pack is default.

12 System Tab

12.1 System

12.1.1 Admin Security

There are two types of user accounts available for accessing the web admin: *admin* and *user*. They represent two user levels: the admin level has full administrative access, while the user level is read-only. The user level can access only the device's status information; users cannot make any changes on the device.

A web login session will be logged out automatically when it has been idle longer than the **Web Session Timeout**. Before the session expires, you may click the **Logout** button in the web admin to exit the session.

0 hours 0 minutes signifies an unlimited session time. This setting should be used only in special situations, as it will lower the system security level if users do not log out before closing the browser. The **default** is 4 hours, 0 minutes.

For security reasons, after logging in to the web admin Interface for the first time, it is recommended to change the administrator password. Configuring the administration interface to be accessible only from the LAN can further improve system security. Administrative settings configuration is located at **System>Admin Security**.

Admin Settings	
Router Name	hostname: This configuration is being managed by InControl .
Admin User Name	admin
Admin Password	
Confirm Admin Password	
Read-only User Name	user
User Password	
Confirm User Password	
Front Panel Passcode	☐
Web Session Timeout	4 Hours 0 Minutes
Authentication by RADIUS	☐ Enable
CLI SSH & Console	☐ Enable
Security	HTTP / HTTPS ▾ ☒ Redirect HTTP to HTTPS
Web Admin Access	HTTP: LAN Only HTTPS: LAN Only ▾
Web Admin Port	HTTP: 80 HTTPS: 443

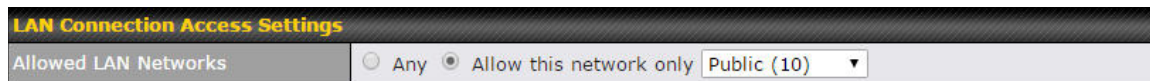
LAN Connection Access Settings	
Allowed LAN Networks	☒ Any ☐ Allow this network only

Save

Admin Settings	
Router Name	This field allows you to define a name for this Pepwave router. By default, Router Name is set as MAX_XXXX , where XXXX refers to the last 4 digits of the unit's serial number.
Admin User Name	Admin User Name is set as <i>admin</i> by default, but can be changed, if desired.
Admin Password	This field allows you to specify a new administrator password.
Confirm Admin Password	This field allows you to verify and confirm the new administrator password.
Read-only User Name	Read-only User Name is set as <i>user</i> by default, but can be changed, if desired.
User Password	This field allows you to specify a new user password. Once the user password is set, the read-only user feature will be enabled.

Confirm User Password	This field allows you to verify and confirm the new user password.
Web Session Timeout	This field specifies the number of hours and minutes that a web session can remain idle before the Pepwave router terminates its access to the web admin interface. By default, it is set to 4 hours .
Authentication by RADIUS	With this box is checked, the web admin will authenticate using an external RADIUS server. Authenticated users are treated as either "admin" with full read-write permission or "user" with read-only access. Local admin and user accounts will be disabled. When the device is not able to communicate with the external RADIUS server, local accounts will be enabled again for emergency access. Additional authentication options will be available once this box is checked.
Auth Protocol	This specifies the authentication protocol used. Available options are MS-CHAP v2 and PAP .
Auth Server	This specifies the access address and port of the external RADIUS server.
Auth Server Secret	This field is for entering the secret key for accessing the RADIUS server.
Auth Timeout	This option specifies the time value for authentication timeout.
Accounting Server	This specifies the access address and port of the external accounting server.
Accounting Server Secret	This field is for entering the secret key for accessing the accounting server.
Network Connection	This option is for specifying the network connection to be used for authentication. Users can choose from LAN, WAN, and VPN connections.
CLI SSH	The CLI (command line interface) can be accessed via SSH. This field enables CLI support. For additional information regarding CLI, please refer to Section 15.3 .
CLI SSH Access	This menu allows you to choose between granting access to LAN and WAN clients, or to LAN clients only.
CLI SSH Port	This field determines the port on which clients can access CLI SSH.
CLI SSH Login Grace Time	This option specifies the time for CLI SSH login. The default value is 120.
CLI SSH Access Public Key	This field is for entering the Public Key for Admin Users and Read-only Users to access CLI SSH.
Security	This option is for specifying the protocol(s) through which the web admin interface can be accessed: • HTTP

	• HTTPS • HTTP/HTTPS HTTP to HTTPS redirection is enabled by default to force HTTPS access to the web admin interface.
Web Admin Port	This field is for specifying the port number on which the web admin interface can be accessed.
Web Admin Access	This option is for specifying the network interfaces through which the web admin interface can be accessed: • LAN only • LAN/WAN If LAN/WAN is chosen, the WAN Connection Access Settings form will be displayed.



LAN Connection Access Settings

Allowed LAN Networks ☐ Any ☒ Allow this network only Public (10) ▼

LAN Connection Access Settings	
Allowed LAN Networks	This field allows you to permit only specific networks or VLANs to access the Web UI.



WAN Connection Access Settings

Allowed Source IP Subnets ? ☐ Any ☒ Allow access from the following IP subnets only

Allowed WAN IP Address(es)

Connection / IP Address(es)	All	Clear
☒ WAN 1	☒ 10.88.3.158 (Interface IP)	
☐ WAN 2		
☐ Wi-Fi WAN		
☐ Cellular 1		
☐ Cellular 2		
☐ USB		

WAN Connection Access Settings	
Allowed Source IP Subnets	This field allows you to restrict web admin access only from defined IP subnets. • Any - Allow web admin accesses to be from anywhere, without IP address restriction. • Allow access from the following IP subnets only - Restrict web admin access only from the defined IP subnets. When this is chosen, a text input area will be displayed beneath: The allowed IP subnet addresses should be entered into this text area. Each IP subnet must be in form of <i>w.x.y.z/m</i>, where <i>w.x.y.z</i> is an IP address (e.g., <i>192.168.0.0</i>), and <i>m</i> is

	the subnet mask in CIDR format, which is between 0 and 32 inclusively (For example, 192.168.0.0/24). To define multiple subnets, separate each IP subnet one in a line. For example: • 192.168.0.0/24 • 10.8.0.0/16
Allowed WAN IP Address(es)	This is to choose which WAN IP address(es) the web server should listen on.

12.1.2 Firmware

Upgrading firmware can be done in one of three ways.

Using the router's interface to automatically check for an update, using the router's interface to manually upgrade the firmware, or using InControl2 to push an upgrade to a router.

The automatic upgrade can be done from **System > Firmware**.

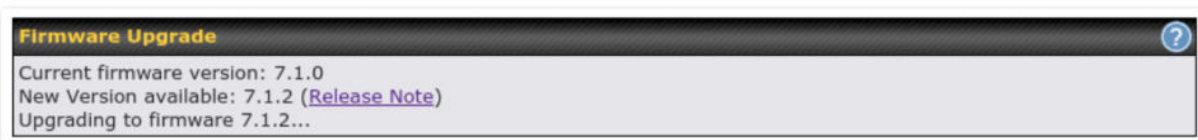


If an update is found the buttons will change to allow you to **Download and Update** the firmware.



Click on the **Download and Upgrade** button. A prompt will be displayed advising to download the Current Active Configuration. Please click on the underlined download text. After downloading the current config click the **Ok** button to start the upgrade process.

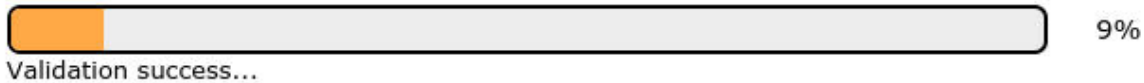
The router will download and then apply the firmware. The time that this process takes will depend on your internet connection's speed.



The firmware will now be applied to the router*. The amount of time it takes for the firmware to upgrade will also depend on the router that's being upgraded.

Firmware Upgrade

It may take up to 8 minutes.



***Upgrading the firmware will cause the router to reboot.**

Web admin interface: install updates manually

In some cases, a special build may be provided via a ticket or it may be found in the forum. Upgrading to the special build can be done using this method, or using IC2 if you are using that to manage your firmware upgrades. A manual upgrade using the GA firmware posted on the site may also be recommended or required for a couple of reasons.

All of the Peplink/Pepwave GA firmware can be found [here](#). Navigate to the relevant product line (ie. Balance, Max, FusionHub, SOHO, etc). Some product lines may have a dropdown that lists all of the products in that product line. Here is a screenshot from the Balance line.

Balance

Product ▼

Search:

Product	Hardware Revision	Firmware Version	Download Link	Release Notes	User Manual
Balance 1350	HW2	7.1.2	Download	PDF	PDF
Balance 1350	HW1	6.3.4	Download	PDF	PDF
Balance 20	HW1-6	7.1.2	Download	PDF	PDF
Balance 210	HW4	7.1.2	Download	PDF	PDF

If the device has more than one firmware version the current hardware revision will be required to know what firmware to download.

Navigate to System > Firmware and click the Choose File button under the Manual Firmware Upgrade section. Navigate to the location that the firmware was downloaded to select the “.img” file and click the Open button.

Click on the Manual Upgrade button to start the upgrade process.

Manual Firmware Upgrade ?

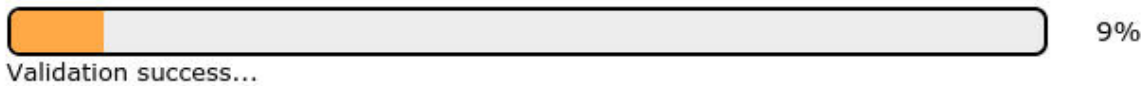
Firmware Image No file chosen

A prompt will be displayed advising to download the Current Active Configuration. Please click on the underlined download text. After downloading the current config click the Ok button to

start the upgrade process. The firmware will now be applied to the router*. The amount of time it takes for the firmware to upgrade will depend on the router that's being upgraded.

Firmware Upgrade

It may take up to 8 minutes.



***Upgrading the firmware will cause the router to reboot.**

The InControl method

[Described in this knowledgebase article on our forum.](#)

12.1.3 Time

The time server functionality enables the system clock of the Peplink Balance to be synchronized with a specified time server. The settings for time server configuration are located at **System>Time**.

Time Settings	
Time Zone	(GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, Lon ▼ ☐ Show all
Time Server	0.pepwave.pool.ntp.org Default
Save	

Time Settings	
Time Zone	This specifies the time zone (along with the corresponding Daylight Savings Time scheme) in which Peplink Balance operates. The Time Zone value affects the time stamps in the event log of the Peplink Balance and e-mail notifications. Check Show all to show all time zone options.
Time Server	This setting specifies the NTP network time server to be utilized by the Peplink Balance.

12.1.4 Schedule

Enable and disable different functions (such as WAN connections, outbound policy, and firewalls) at different times, based on a user-scheduled configuration profile. The settings for this are

located at **System > Schedule**

Schedule			
Enabled			
Name	Time	Used by	
Weekdays Only	Weekdays only	-	
New Schedule			

Enable scheduling, and then click on your schedule name or on the **New Schedule** button to begin.

Edit schedule profile							
Schedule Settings							
Enable	☒	The schedule function of those associated features will be lost if profile is disabled.					
Name	Weekdays Only						
Schedule	Weekdays only						
Used by	You may go to supported feature settings page and set this profile as scheduler.						
Schedule Map							
	Midnight	4am	8am	Noon	4pm	8pm	
Sunday	x	x	x	x	x	x	x
Monday	✓	✓	✓	✓	✓	✓	✓
Tuesday	✓	✓	✓	✓	✓	✓	✓
Wednesday	✓	✓	✓	✓	✓	✓	✓
Thursday	✓	✓	✓	✓	✓	✓	✓
Friday	✓	✓	✓	✓	✓	✓	✓
Saturday	x	x	x	x	x	x	x
		Save	Cancel				

Edit Schedule Profile	
Enabling	Click this checkbox to enable this schedule profile. Note that if this is disabled, then any associated features will also have their scheduling disabled.
Name	Enter your desired name for this particular schedule profile.
Schedule	Click the drop-down menu to choose pre-defined schedules as your starting point. Please note that upon selection, previous changes on the schedule map will be deleted.
Schedule Map	Click on the desired times to enable features at that time period. You can hold your mouse for faster entry.

12.1.5 Email Notification

The email notification functionality of the Peplink Balance provides a system administrator with up-to-date information on network status. The settings for configuring email notification are found at **System>Email Notification**.

Email Notification Setup	
Email Notification	☒ Enable
SMTP Server	smtp.mycompany.com ☒ Require authentication
Connection Security	SSL/TLS (Note: any server certificate will be accepted)
SMTP Port	465
SMTP User Name	smtpuser
SMTP Password	*****
Confirm SMTP Password	*****
Sender's Email Address	admin@mycompany.com
Recipient's Email Address	system@mycompany.com staff@mycompany.com

Test Email Notification Save

Email Notification Settings	
Email Notification	This setting specifies whether or not to enable email notification. If Enable is checked, the Peplink Balance will send email messages to system administrators when the WAN status changes or when new firmware is available. If Enable is not checked, email notification is disabled and the Peplink Balance will not send email messages.
SMTP Server	This setting specifies the SMTP server to be used for sending email. If the server requires authentication, check Require authentication .
Connection Security	This setting specifies via a drop-down menu one of the following valid Connection Security: - None - STARTTLS - SSL/TLS
SMTP Port	This field is for specifying the SMTP port number. By default, this is set to 25 . If Connection Security is selected " STARTTLS ", the default port number will be set to 587 . If Connection Security is selected " SSL/TLS ", the default port number will be set to 465 . You may customize the port number by editing this field.
SMTP User Name / Password	This setting specifies the SMTP username and password while sending email. These options are shown only if Require authentication is checked in the SMTP Server setting.

Confirm SMTP Password	This field allows you to verify and confirm the new administrator password.
Sender's Email Address	This setting specifies the email address which the Peplink Balance will use to send its reports.
Recipient's Email Address	This setting specifies the email address(es) to which the Peplink Balance will send email notifications. For multiple recipients, separate each email using the enter key.

After you have finished setting up email notifications, you can click the **Test Email Notification** button to test the settings before saving. After **Test Email Notification** is clicked, you will see this screen to confirm the settings:

Test Email Notification	
SMTP Server	smtp.mycompany.com
SMTP Port	465
SMTP UserName	smtpuser
Sender's Email Address	admin@mycompany.com
Recipient's Email Address	system@mycompany.com staff@mycompany.com

Click **Send Test Notification** to confirm. In a few seconds, you will see a message with detailed test results.

Test email sent.
(NOTE: Settings are not saved. To confirm the update, click 'Save' button.)

Email Notification Setup ?	
Email Notification	☒ Enable
SMTP Server	 ☒ Require authentication
Connection Security	SSL/TLS ▼ (Note: any server certificate will be accepted)
SMTP Port	465
SMTP User Name	
SMTP Password	
Confirm SMTP Password	
Sender's Email Address	
Recipient's Email Address	

Test Result

```
[INFO] Try email through auto detected connection
[INFO] SMTP through SSL connected
[<-] 220 smtp.gmail.com ESMTP h11sm3907691pjj.46 - gsmt
[>-] EHLO balance.peplink.com
[<-] 250-smtp.gmail.com at your service, [14.192.209.255]
[<-] 250-SIZE 35882577
[<-] 250-8BITMIME
[<-] 250-AUTH LOGIN PLAIN XOAUTH2 PLAIN-CLIENTTOKEN OAUTHBEARER XOAUTH
[<-] 250-ENHANCEDSTATUSCODES
[<-] 250-PIPELINING
[<-] 250-CHUNKING
[<-] 250 SMTPUTF8
[>-] AUTH PLAIN AGdwc2dhbjk0QGdtYWlsLmNvbQBwdnJ6bWF6cGhtYXJpanpp
```

12.1.6 Event Log

Event log functionality enables event logging at a specified remote syslog server. The settings for configuring the remote system log can be found at **System>Event Log**.

Send Events to Remote Syslog Server	
Remote Syslog	☐
Remote Syslog Host	
Port:	514

Push Events to Mobile Devices	
Push Events	☒

URL Logging	
Enable	☒
Log Server Host	
Port:	514

Session Logging	
Enable	☒
Log Server Host	
Port:	514

Remote Syslog Settings	
Remote Syslog	This setting specifies whether or not to log events at the specified remote syslog server.
Remote Syslog Host	This setting specifies the IP address or hostname of the remote syslog server.
Push Events	The Peplink Balance can also send push notifications to mobile devices that have our Mobile Router Utility installed. Check the box to activate this feature.
URL Logging	This setting is to enable event logging at the specified log server.
URL Logging Host	This setting specifies the IP address or hostname of the URL log server.
Session Logging	This setting is to enable event logging at the specified log server.
Session Logging Host	This setting specifies the IP address or hostname of the Session log server.
	For more information on the Router Utility, go to: www.peplink.com/products/router-utility

12.1.7 SNMP

SNMP or simple network management protocol is an open standard that can be used to collect information about the Peplink Balance unit. SNMP configuration is located at **System>SNMP**.

SNMP Settings	
SNMP Device Name	B30Pro-LTEA-IPsecNAT
Location	
SNMP Port	161 Default
SNMPv1	☐ Enable
SNMPv2c	☐ Enable
SNMPv3	☐ Enable
SNMP Trap	☒ Enable
SNMP Trap Community	
SNMP Trap Server	
SNMP Trap Port	162
SNMP Trap Server Heartbeat	☐
Save	

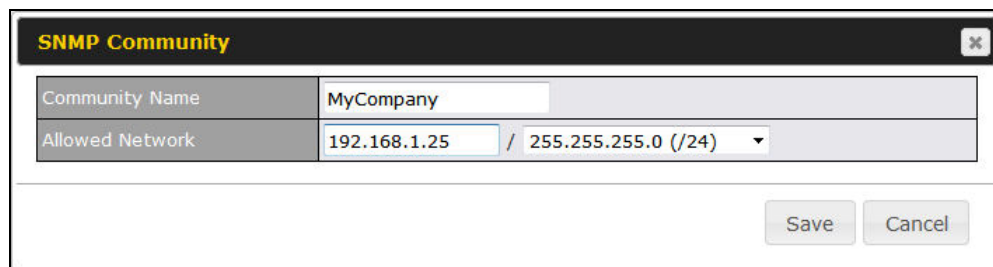
Community Name	Allowed Source Network	Access Mode
No SNMPv1 / SNMPv2c Communities Defined		
Add SNMP Community		

SNMPv3 User Name	Authentication / Privacy	Access Mode
No SNMPv3 Users Defined		
Add SNMP User		

SNMP Settings	
SNMP Device Name	This field shows the router name defined at System>Admin Security .
SNMP Port	This option specifies the port which SNMP will use. The default port is 161 .
SNMPv1	This option allows you to enable SNMP version 1.
SNMPv2	This option allows you to enable SNMP version 2.
SNMPv3	This option allows you to enable SNMP version 3.
SNMP Trap	This option allows you to enable SNMP Trap. If enabled, the following entry fields will

	appear.
SNMP Trap Community	This setting specifies the SNMP Trap community name.
SNMP Trap Server	Enter the IP address of the SNMP Trap server
SNMP Trap Port	This option specifies the port which the SNMP Trap server will use. The default port is 162 .
SNMP Trap Server Heartbeat	This option allows you to enable and configure the heartbeat interval for the SNMP Trap server.

To add a community for either SNMPv1 or SNMPv2, click the **Add SNMP Community** button in the **Community Name** table, upon which the following screen is displayed:



The dialog box titled "SNMP Community" contains two input fields: "Community Name" with the value "MyCompany" and "Allowed Network" with the value "192.168.1.25 / 255.255.255.0 (/24)". At the bottom right are "Save" and "Cancel" buttons.

SNMP Community Settings	
Community Name	This setting specifies the SNMP community name.
Allowed Source Subnet Address	This setting specifies a subnet from which access to the SNMP server is allowed. Enter subnet address here (e.g., <i>192.168.1.0</i>) and select the appropriate subnet mask.

To define a user name for SNMPv3, click **Add SNMP User** in the **SNMPv3 User Name** table, upon which the following screen is displayed:

SNMPv3 User

User Name	SNMPUser	
Authentication	SHA	password
Privacy	DES	privacypassword

Save
Cancel

SNMPv3 User Settings	
User Name	This setting specifies a user name to be used in SNMPv3.
Authentication Protocol	This setting specifies via a drop-down menu one of the following valid authentication protocols: - NONE - MD5 - SHA When MD5 or SHA is selected, an entry field will appear for the password.
Privacy Protocol	This setting specifies via a drop-down menu one of the following valid privacy protocols: - NONE - DES When DES is selected, an entry field will appear for the password.

12.1.8 SMS Control

SMS Control allows the user to control the device using SMS even if the modem does not have a data connection. The settings for configuring the SMS Control can be found at **System>SMS Control**.

Note: Supported Models

- Balance/MAX:** *-LTE-E, *-LTEA-W, *-LTEA-P, *-LTE-MX
- EPX:** *-LW*, *-LP*

SMS Control

Enable
☐

When this box is checked, the device will be allowed to take actions according to received commands via SMS.

Make sure your mobile plan supports SMS, and note that some plans may incur additional charges for this.

SMS Control can reboot devices and configure cellular settings over signalling channels, even if the modem does not have an active data connection.

For details of supported SMS command sets, please refer to our [knowledge base](#).

SMS Control					
Enable	☒				
Password	 ☒ Hide Characters				
White List	<table border="1"> <thead> <tr> <th>Phone Number</th> <th></th> </tr> </thead> <tbody> <tr> <td></td> <td> + </td> </tr> </tbody> </table>	Phone Number			+
Phone Number					
	+				

Save

SMS Control Settings	
Enable	Click the checkbox to enable the SMS Control.
Password	This setting sets the password for authentication - maximum of 32 characters, which cannot include semicolon (;).
White List	Optionally, you can add phone number(s) to the whitelist. Only matching phone numbers are allowed to issue SMS commands. Phone numbers must be in the E.164 International Phone Numbers format.

12.1.9 InControl

Controller Management Settings	
Controller	? InControl ☐ Restricted to Status Reporting Only
Privately Host InControl	☒
InControl Host	Primary: Backup: ☐ Fail over to InControl in the cloud.

InControl is a cloud-based service which allows you to manage all of your Peplink and Pepwave devices with one unified system. With it, you can generate reports, gather statistics, and configure your devices automatically. All of this is now possible with InControl.

When this checkbox is checked, the device's status information will be sent to the Peplink InControl system. This device's usage data and configuration will be sent to the system if you enable the features in the system.

When the box **Restricted to Status Reporting Only** is ticked, the router will only report its status, but can't be managed or configured by InControl.

Alternatively, you can also privately host InControl. Simply check the "Privately Host InControl" box and enter the IP Address of your InControl Host. If you have multiple hosts, you may enter the primary and backup IP addresses for the InControl Host and tick the "Fail over to InControl in the cloud" box. The device will connect to either the primary InControl Host or the secondary/backup ICA/IC2.

You can sign up for an InControl account at <https://incontrol2.peplink.com/>. You can register your devices under the account, monitor their status, see their usage reports, and receive offline notifications.

12.1.10 Configuration

Backing up Peplink Balance settings immediately after successful completion of initial setup is strongly recommended. The functionality to download and upload Peplink Balance settings is found at **System>Configuration**.

The screenshot shows the 'Configuration' page with the following sections:

- Restore Configuration to Factory Settings**: A button labeled 'Restore Factory Settings'.
- Download Active Configurations**: A button labeled 'Download'.
- Upload Configurations**: A 'Configuration File' section with a 'Choose File' button and 'No file chosen' text, followed by an 'Upload' button.
- Upload Configurations from High Availability Pair**: A 'Configuration File' section with a 'Choose File' button and 'No file chosen' text, followed by an 'Upload' button.

Configuration	
Restore Configuration to Factory Settings	The Restore Factory Settings button is to reset the configuration to factory default settings. After clicking the button, you will need to click the Apply Changes button on the top right corner to make the settings effective.
Download Active Configurations	Click Download to backup the current active settings.
Upload Configurations	To restore or change settings based on a configuration file, click Choose File to locate the configuration file on the local computer, and then click Upload . The new settings can then be applied by clicking the Apply Changes button on the page header, or you can cancel the procedure by pressing discard on the main page of the web admin interface.
Upload Configurations from High Availability Pair	In a high availability (HA) configuration, the Balance unit can quickly load the configuration of its HA counterpart. To do so, click the Upload button. After loading the settings, configure the LAN IP address of the Peplink Balance unit so that it is different from the HA counterpart.

12.1.11 Feature Add-ons

Some balance models have features that can be activated upon purchase. Once the purchase is complete, you will receive an activation key. Enter the key in the **Activation Key** field, click **Activate**, and then click **Apply Changes**.

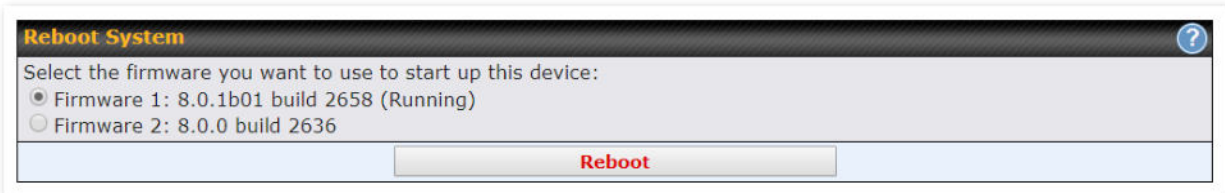


The 'Feature Activation' form has a dark header with the title 'Feature Activation' in orange. Below the header is a light gray box with the label 'Activation Key' on the left and a large white text input field on the right.

12.1.12 Reboot

This page provides a reboot button for restarting the system. For maximum reliability, the Peplink Balance Series can be equipped with two copies of firmware, and each copy can be a different version. You can select the firmware version you would like to reboot the device with. The firmware marked with **(Running)** is the current system boot up firmware.

Please note that a firmware upgrade will always replace the inactive firmware partition.

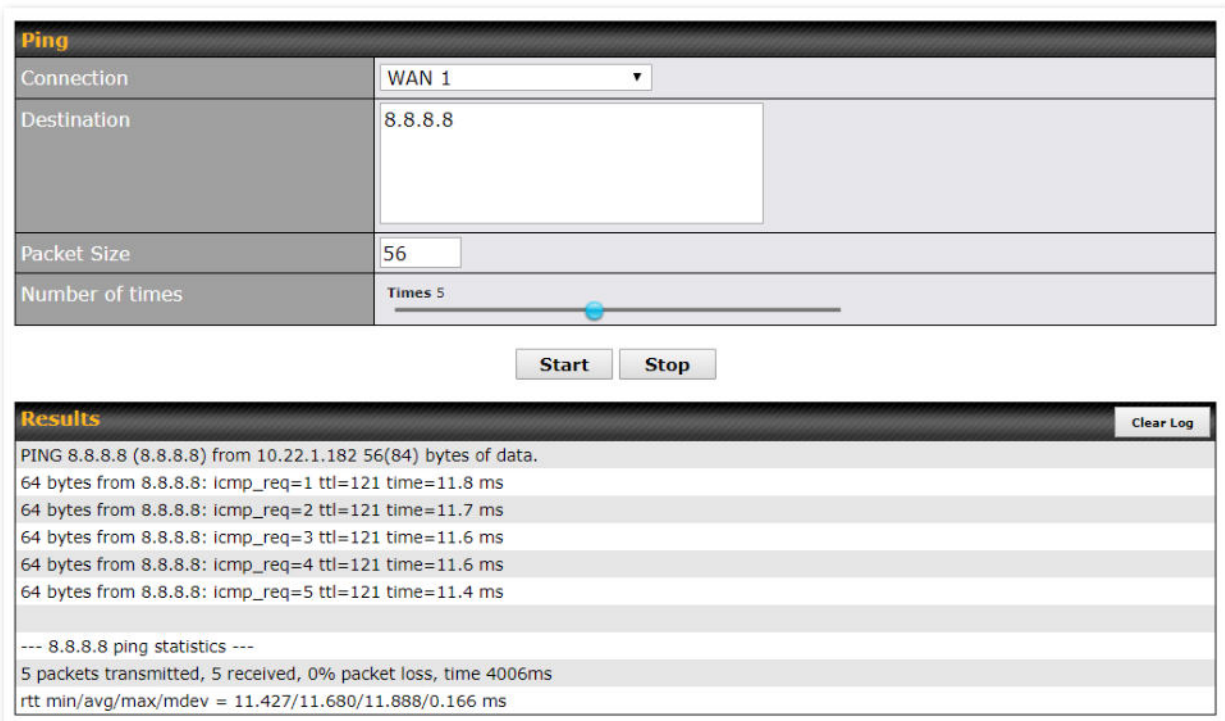


The 'Reboot System' form has a dark header with the title 'Reboot System' in orange and a help icon (question mark in a blue circle) on the right. Below the header is a light gray box with the text 'Select the firmware you want to use to start up this device:'. There are two radio button options: 'Firmware 1: 8.0.1b01 build 2658 (Running)' (which is selected) and 'Firmware 2: 8.0.0 build 2636'. At the bottom of the form is a light blue bar containing a gray button with the red text 'Reboot'.

12.2 Tools

12.2.1 Ping

The ping test tool sends pings through a specific Ethernet interface or a SpeedFusion™ VPN connection. You can specify the number of pings in the field **Number of times** to a maximum number of 10 times. **Packet Size** can be set to a maximum of 1472 bytes. The ping utility is located at **System>Tools>Ping**, illustrated below:



Ping

Connection	WAN 1
Destination	8.8.8.8
Packet Size	56
Number of times	Times 5

Start Stop

Results Clear Log

```

PING 8.8.8.8 (8.8.8.8) from 10.22.1.182 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_req=1 ttl=121 time=11.8 ms
64 bytes from 8.8.8.8: icmp_req=2 ttl=121 time=11.7 ms
64 bytes from 8.8.8.8: icmp_req=3 ttl=121 time=11.6 ms
64 bytes from 8.8.8.8: icmp_req=4 ttl=121 time=11.6 ms
64 bytes from 8.8.8.8: icmp_req=5 ttl=121 time=11.4 ms

--- 8.8.8.8 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4006ms
rtt min/avg/max/mdev = 11.427/11.680/11.888/0.166 ms
    
```

Tip

A system administrator can use the ping utility to manually check the connectivity of a particular LAN/WAN connection.

12.2.2 Traceroute

The traceroute test tool traces the routing path to the destination through a particular Ethernet interface or a SpeedFusion™ connection. The traceroute test utility is located at **System>Tools>Traceroute**.

[illegible]

Tip

A system administrator can use the traceroute utility to analyze the connection path of a LAN/WAN connection.

12.2.3 Wake-on-LAN

Peplink routers can send special “magic packets” to any client specified from the Web UI. To access this feature, navigate to **System > Tools > Wake-on-LAN**

Wake-on-LAN

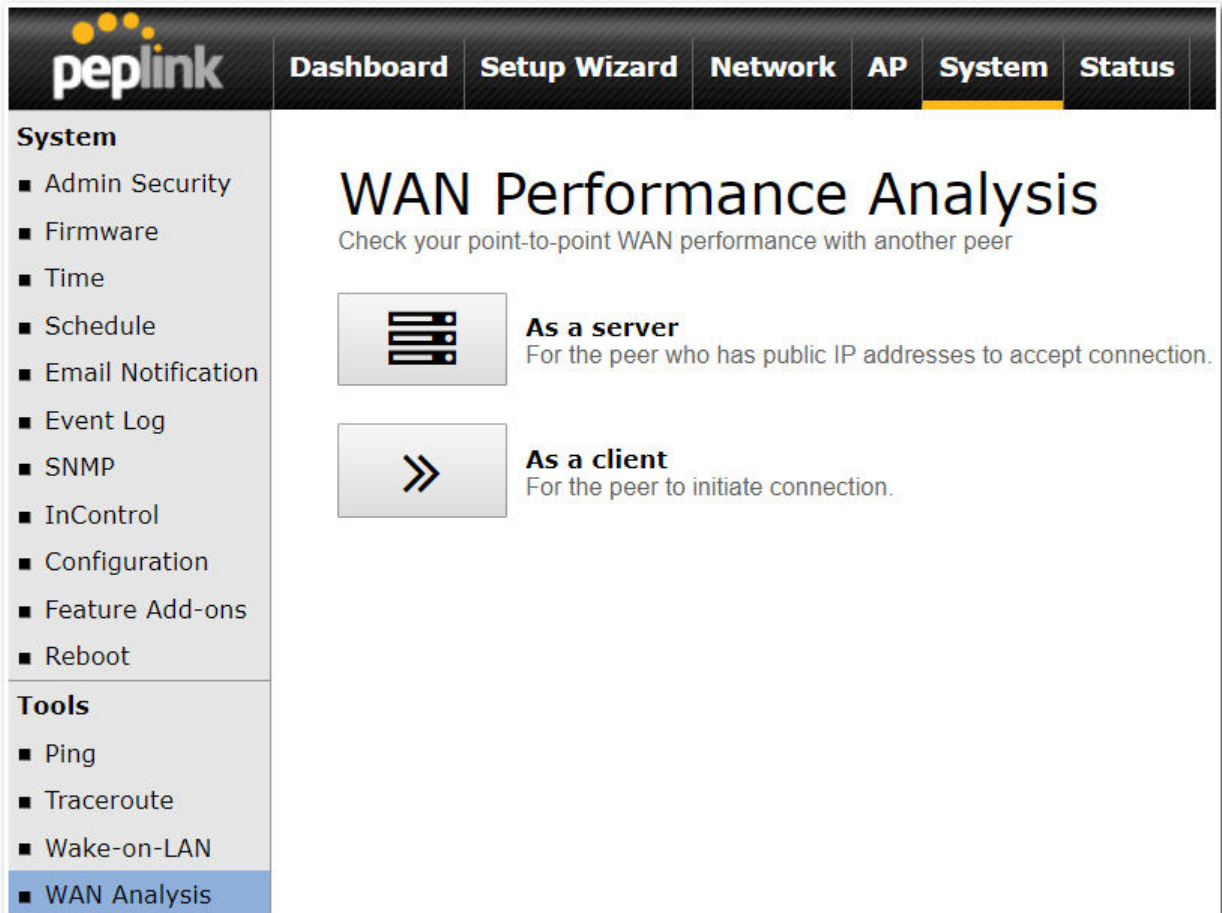
Wake-on-LAN Target: Custom MAC Address... 00:00:00:00:00:00

Select a client from the drop-down list and click **Send** to send a “magic packet”

12.2.4 WAN Analysis

The WAN Analysis feature allows you to run a WAN to WAN speed test between 2 Peplink devices .

You can set a device up as a **Server** or a **Client**. One device must be set up as a server to run the speed tests and the server must have a public IP address.



The default port is 6000 and can be changed if required. The IP address of the WAN interface will be shown in the **WAN Connection Status** section.



[Dashboard](#)
[Setup Wizard](#)
[Network](#)
[AP](#)
[System](#)
[Status](#)

System

- Admin Security
- Firmware
- Time
- Schedule
- Email Notification
- Event Log
- SNMP
- InControl
- Configuration
- Feature Add-ons
- Reboot

Tools

- Ping
- Traceroute
- Wake-on-LAN
- WAN Analysis

WAN Performance Analysis

Check your point-to-point WAN performance with another peer.

Server Settings

Status	☒ Listening (Control Port: 6000)
Control Port	6000

Apply
Stop

WAN Connection Status

1 WAN 1	☒ 10.22.1.182
2 WAN 2	☐ Disabled
3 WAN 3	☐ Disabled
4 WAN 4	☐ Disabled
5 WAN 5	☐ Disabled
Mobile Internet	☐ Disabled

The client side has a few more settings that can be changed. Make sure that the **Control Port** matches what's been entered on the server side. Select the WAN(s) that will be used for testing and enter the Servers WAN IP address. Once all of the options have been set, click the **Start Test** button.



[Dashboard](#)
[Setup Wizard](#)
[Network](#)
[AP](#)
[System](#)
[Status](#)

System

- Admin Security
- Firmware
- Time
- Schedule
- Email Notification
- Event Log
- SNMP
- InControl
- Configuration
- Feature Add-ons
- Reboot

Tools

- Ping
- Traceroute
- Wake-on-LAN
- WAN Analysis
- Storage Manager
- Package Manager

WAN Performance Analysis

Check your point-to-point WAN performance with another peer.

Client Settings

Control Port	6000
Data Port	57280 - 57287
Type	☒ TCP ☐ UDP
Direction	☒ Upload ☐ Download
Duration	20 seconds (5 - 600)

Data Streams

Local WAN Connection	Remote IP Address
1. -- Not Used --	
2. -- Not Used --	
3. -- Not Used --	
4. -- Not Used --	
5. -- Not Used --	
6. -- Not Used --	
7. -- Not Used --	
8. -- Not Used --	

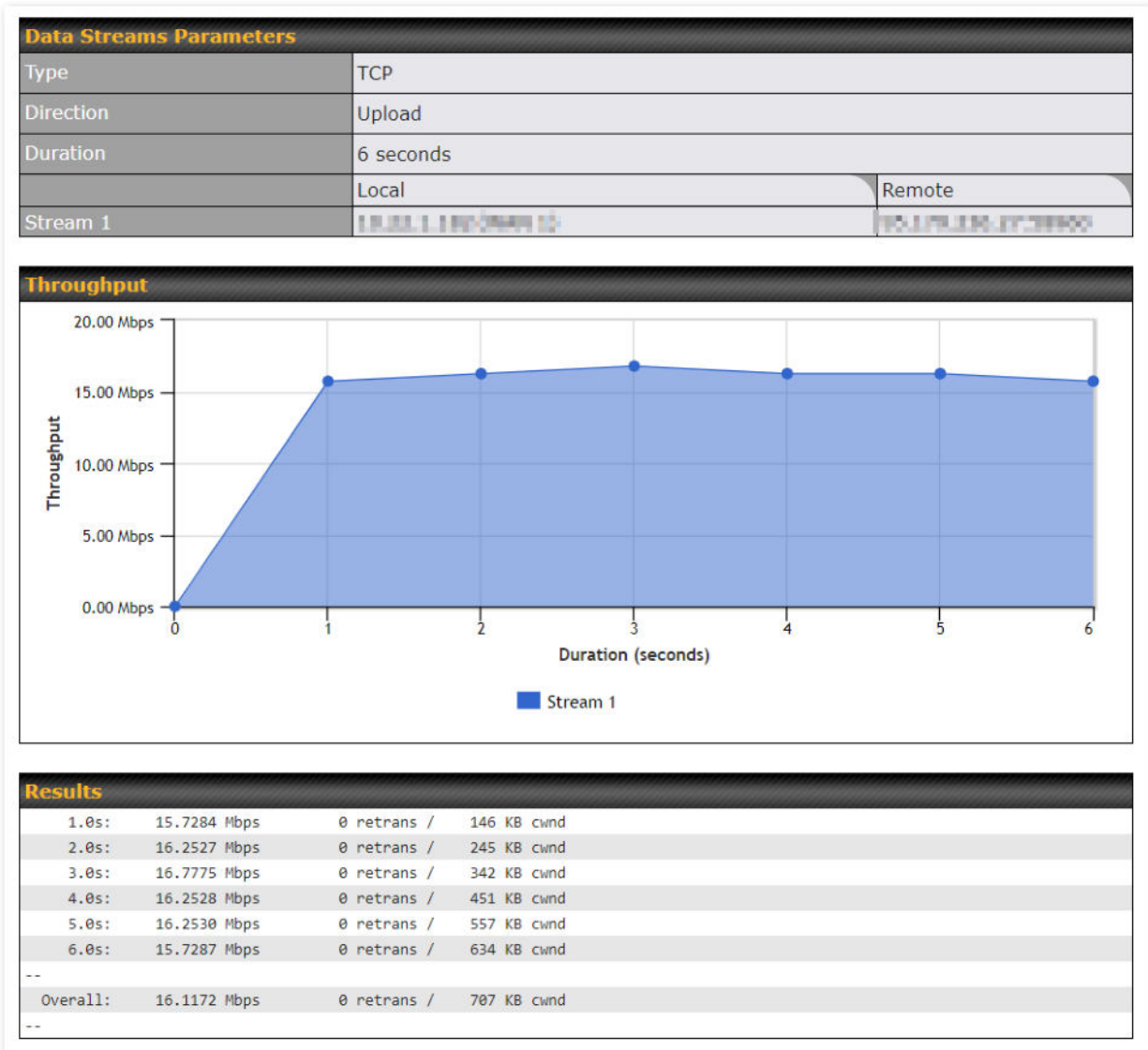
Start Test

<https://www.peplink.com>

216

Copyright @ 2021 Peplink

The test output will show the **Data Streams Parameters**, the **Throughput** as a graph, and the **Results**.

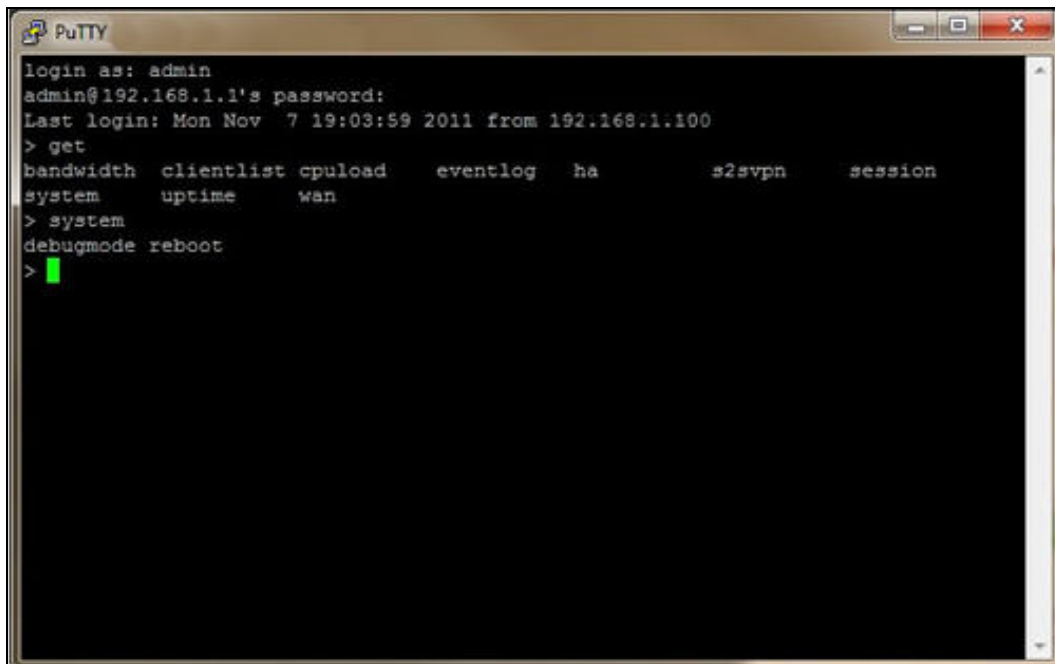


The test can be run again once it's complete by clicking the **Start** button or you can click **Close** and change the parameters for the test.

12.3 CLI (Command Line) Support

The serial console connector on some Peplink Balance units is RJ-45. To access the serial console port, prepare a RJ-45 to DB-9 console cable. Connect the RJ-45 end to the unit's console port and the DB-9 end to a terminal's serial port. The port setting will be *115200,8N1*.

The serial console connector on other Peplink Balance units is a DB-9 male connector. To access the serial console port, connect a null modem cable with a DB-9 connector on both ends to a terminal with the port setting of *115200,8N1*.



```
login as: admin
admin@192.168.1.1's password:
Last login: Mon Nov  7 19:03:59 2011 from 192.168.1.100
> get
bandwidth  clientlist  cpuload    eventlog   ha          s2svpn     session
system     uptime      wan
> system
debugmode  reboot
> 
```

13 Status Tab

13.1 Status

13.1.1 Device

System information is located at **Status>Device**.

System Information	
Router Name	Mediafast
Model	Peplink MediaFast 500
Product Code	MFA-500-B
Hardware Revision	2
Serial Number	
Firmware	8.0.0b03 build 2593
PepVPN Version	8.0.0
Modem Support Version	1022 (Modem Support List)
Host Name	mediafast
Uptime	54 days 23 hours 7 minutes
System Time	Wed Apr 17 14:08:23 BST 2019
Content Filtering Database	Download (r20180514) Update
Diagnostic Report	Download
Remote Assistance	Turn On

MAC Address	
LAN	10:56:CA:00:00:00:00:00
WAN 1	10:56:CA:00:00:00:00:00
WAN 2	10:56:CA:00:00:00:00:00
WAN 3	10:56:CA:00:00:00:00:00
WAN 4	10:56:CA:00:00:00:00:00
WAN 5	10:56:CA:00:00:00:00:00

System Information	
Router Name	This is the name specified in the Router Name field located at System>Admin Security .
Model	This shows the model name and number of this device.
Hardware Revision	This shows the hardware version of this device.
Serial Number	This shows the serial number of this device.
Firmware	This shows the firmware version this device is currently running.
Uptime	This shows the length of time since the device has been rebooted.
System Time	This shows the current system time.
Diagnostic Report	The Download link is for exporting a diagnostic report file required for system investigation.
Remote Assistance	Click Turn on to enable remote assistance.

The second table shows the MAC address of each LAN/WAN interface connected.

Important Note
If you encounter issues and would like to contact the Peplink Support Team (http://www.peplink.com/contact/), please download the diagnostic report file and attach it along with a description of your issue.

13.1.2 Active Sessions

Information on active sessions can be found at **Status>Active Sessions>Overview**.

Overview Search		
Session data captured within one minute. Refresh		
Service	Inbound Sessions	Outbound Sessions
DNS	0	51
Facebook	0	1
Google	0	33
Google Ads	0	5
HTTP	0	2
IPsec	0	2
QUIC	0	19
SIP	0	8
SSH	0	3
SSL	1	136
Skype	0	6
Spotify	0	4

Interface	Inbound Sessions	Outbound Sessions
BT	1	360
Virgin Media	0	0
WAN_3	0	0
WAN_4	0	6
WAN_5	0	2
WAN_6	0	0

Top Clients	
Client IP Address	Total Sessions
10.22.1.100	116
10.22.1.101	90
172.16.1.100	86
10.22.1.102	83
172.16.1.101	73

This screen displays the number of sessions initiated by each application. Click on each service listing for additional information. This screen also indicates the number of sessions initiated by each WAN port. Finally, you can see which clients are initiating the most sessions.

In addition, you can also perform a filtered search for specific sessions. You can filter by subnet, port, protocol, and interface. To perform a search, navigate to **Status>Active Sessions>Search**.

Overview

Search

Session data captured 2 mins ago. [Refresh](#)

IP / Subnet	Source or Destination ▾	255.255.255.255 (/32) ▾
Port	Source or Destination ▾	
Protocol / Service	Spotify ▾	
Interface	☐ 1 BT ☐ 2 Virgin Media ☐ 3 WAN 3 ☐ 4 WAN 4 ☐ 5 Peplink HK Net... ☐ Mobile Internet ☐ VPN	
Search		

Outbound

Protocol	Source IP	Destination IP	Service	Interface	Idle Time
TCP	10.0.0.1:58827	104.199.64.136:443	SSL/Spotify	BT	00:00:09
TCP	10.0.0.1:58828	104.199.64.136:443	SSL/Spotify	BT	00:00:09
TCP	10.0.0.1:58784	35.186.224.47:443	SSL/Spotify	BT	00:00:10
TCP	10.0.0.1:65369	35.186.224.53:443	SSL/Spotify	BT	00:00:29

Total searched results: 4

Inbound

Protocol	Source IP	Destination IP	Service	Interface	Idle Time
No sessions					

Total searched results: 0

Transit

Protocol	Source IP	Destination IP	Service	Interface	Idle Time
No sessions					

Total searched results: 0

This **Active Sessions** section displays the active inbound / outbound sessions of each WAN connection on the Peplink Balance. A filter is available to help sort out the active session information. Enter a keyword in the field or check one of the WAN connection boxes for filtering.

13.1.3 Client List

The client list table is located at **Status>Client List**. It lists DHCP and online client IP addresses, type, names (retrieved from the DHCP reservation table or defined by users), current download and upload rate, and MAC address.

Clients can be imported into the DHCP reservation table by clicking the  button on the right. Further update the record after the import by going to **Network>LAN**.

Filter

☐ Online Clients Only
☐ DHCP Clients Only

Client List

IP Address ▲	Type	Name	Download (kbps)	Upload (kbps)	MAC Address	Network Name (SSID)	Signal (dBm)	
 192.168.50.10		LAPTOP- 	32	85		PEPWAVE_ 	 -57	
 192.168.50.12		max-hd2- 	0	3				

Scale: ☒ kbps ☐ Mbps

If the PPTP server SpeedFusion™, or AP controller is enabled, you may see the corresponding connection name listed in the **Name** field.

In the client list table, there is a “Ban Client” feature which is used to disconnect the Wi-Fi and Remote User Access clients by clicking the  button on the right.

Filter

☐ Online Clients Only
☐ DHCP Clients Only

Client List

?

IP Address ▲	Type	Name	Download (kbps)	Upload (kbps)	MAC Address	Network Name (SSID)	Signal (dBm)	
 192.168.50.10		LAPTOP- 	279	14		PEPWAVE_ 	 -52	
 192.168.50.12		max-hd2- 	0	0				

Scale: ☒ kbps ☐ Mbps

There is a blocklist on the same page after you banned the Wi-Fi or Remote User Access clients.

Filter

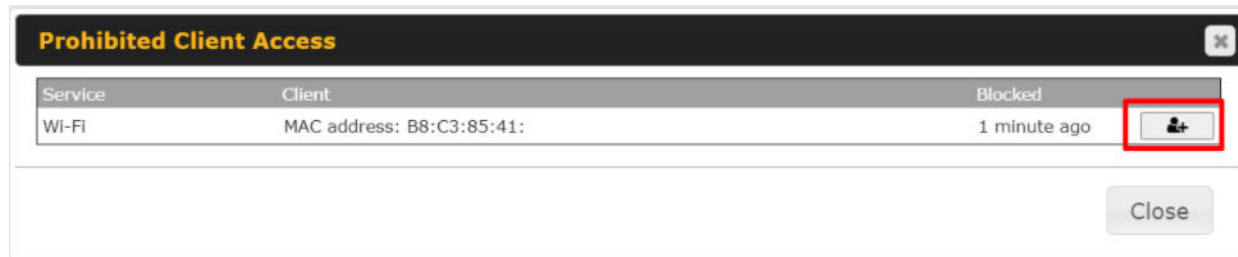
☐ Online Clients Only
 ☐ DHCP Clients Only

Access restriction in action, some clients are currently banned.

Client List

IP Address ▲	Name	Download (kbps)	Upload (kbps)	MAC Address	Network Name (SSID)	Signal (dBm)
--------------	------	-----------------	---------------	-------------	---------------------	--------------

You may also unblock the Wi-Fi or Remote User Access clients when the client devices need to reconnect the network by clicking  the button on the right.



13.1.4 WINS Clients

The WINS client list table is located at **Status>WINS Client**.

WINS Client List	
Name ▲	IP Address
UserA	10.9.2.1
UserB	10.9.30.1
UserC	10.9.2.4
Flush All	

The WINS client table lists the IP addresses and names of WINS clients. This option will only be available when you have enabled the WINS server. The names of clients retrieved will be automatically matched into the Client List (see previous section). Click **Flush All** to flush all WINS client records.

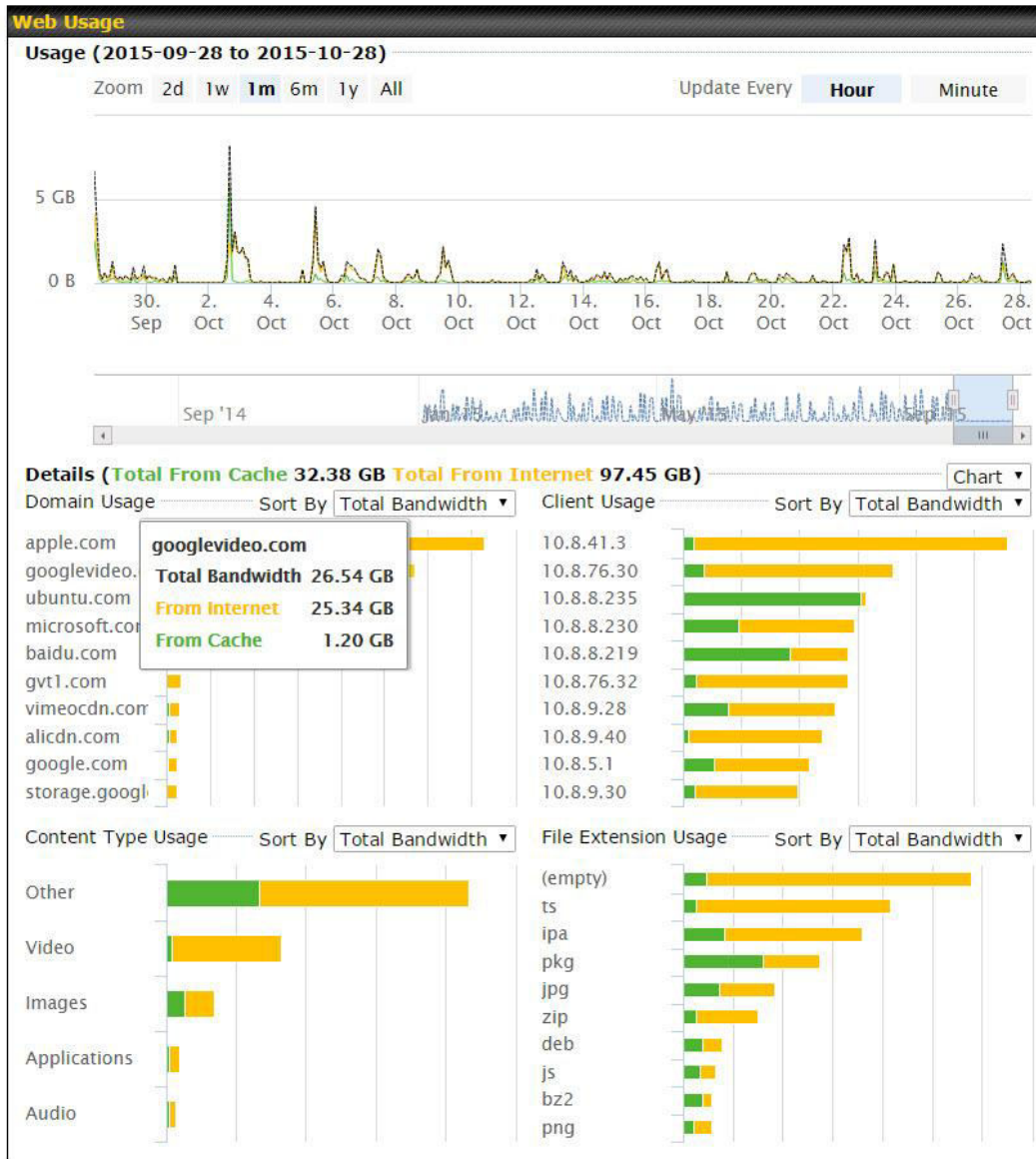
13.1.5 OSPF & RIPv2

Information on OSPF and RIPv2 routing setup can be found at **Status>OSPF & RIPv2**.

peplink		Dashboard	Setup Wizard	Network	AP	System	Status	Apply Changes
Status								
- Device - Active Sessions - Client List - OSPF & RIPv2 - BGP								
		OSPF & RIPv2						
		Area						
		Remote Networks						
		0.0.0.0 PepVPN						
		10.0.2.0/24 10.0.3.0/24 192.168.63.0/24 10.0.100.0/24 192.168.100.0/24 192.168.162.0/24						

13.1.6 MediaFast

To get details on storage and bandwidth usage, select **Status>MediaFast**.



13.1.7 PepVPN / SpeedFusion Status

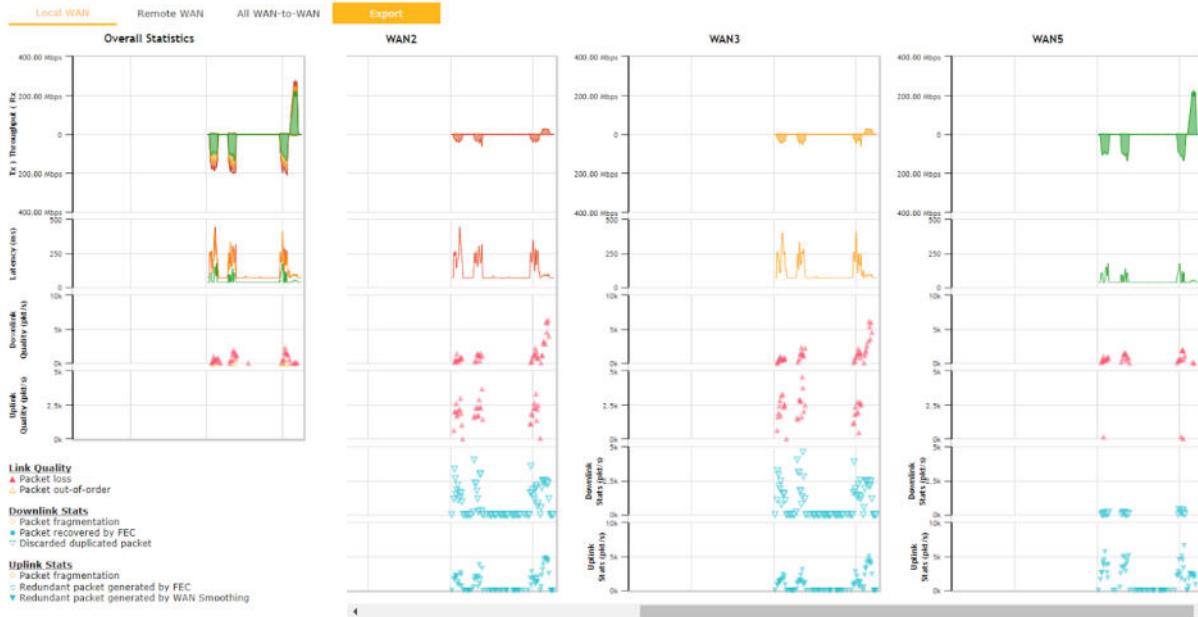
PepVPN/SpeedFusion Status shows the current connection status of each connection profile and is displayed at **Status> PepVPN/SpeedFusion**.

PepVPN with SpeedFusion - Remote Peer				Show all profiles
Search				
Remote Peer ▲	Profile	Information		
MAX-BR1-001 (SFC-SIN-001)	SFC	SpeedFusion Cloud		
MAX-BR1-002 (SFC-SIN-002)	SFC	SpeedFusion Cloud		

Click on the corresponding peer name to explore the WAN connection(s) status and subnet information of each VPN peer.

PepVPN with SpeedFusion - Remote Peer				Show all profiles
Search		SFC		
Remote Peer ▲	Profile	Information		
▼ SFC-SIN-001 (SFC-SIN-001)	SFC	SpeedFusion Cloud		
WAN1		Not available - WAN disabled		
WAN2	Rx:	< 1 kbps	Tx: < 1 kbps	Loss rate: 0.0 pkt/s Latency: 42 ms
WAN3	Rx:	< 1 kbps	Tx: < 1 kbps	Loss rate: 0.0 pkt/s Latency: 42 ms
WAN4		Not available - WAN disabled		
WAN5	Rx:	< 1 kbps	Tx: < 1 kbps	Loss rate: 0.0 pkt/s Latency: 10 ms
Mobile Internet	Rx:	< 1 kbps	Tx: < 1 kbps	Loss rate: 0.0 pkt/s Latency: 32 ms
Total	Rx:	< 1 kbps	Tx: 1.1 kbps	Loss rate: 0.0 pkt/s

Click the  button for PepVPN/SpeedFusion chart displaying real-time throughput, latency, and drop-rate information for each WAN connection.



When pressing the  button for a PepVPN/SpeedFusion Tunnel Bandwidth Test Tool, the following menu will appear:

PepVPN Details

Connection Information

Profile

SFC

Remote ID

SFC-SIN-001

Device Name

SFC-SIN-001

Serial Number

1197-A047-2E3D

☐ More information

WAN Statistics

Remote Connections

☐ Show remote connections

WAN Label

☒ WAN Name
☐ IP Address and Port

☐ WAN1	Not available - WAN disabled				
☒ WAN2	Rx:	< 1 kbps	Tx:	< 1 kbps	Loss rate: 0.0 pkt/s Latency: 43 ms
☒ WAN3	Rx:	< 1 kbps	Tx:	< 1 kbps	Loss rate: 0.0 pkt/s Latency: 44 ms
☐ WAN4	Not available - WAN disabled				
☒ WAN5	Rx:	< 1 kbps	Tx:	< 1 kbps	Loss rate: 0.0 pkt/s Latency: 10 ms
☒ Mobile Internet	Rx:	< 1 kbps	Tx:	< 1 kbps	Loss rate: 0.0 pkt/s Latency: 42 ms
Total	Rx:	< 1 kbps	Tx:	< 1 kbps	Loss rate: 0.0 pkt/s

PepVPN Test Configuration

Type

☒ TCP
☐ UDP

Streams

4

Direction

☒ Upload
☐ Download

Duration

20

seconds (5 - 600)

Start

The **connection information** shows the details of the selected PepVPN profile, consisting of the Profile name, **Router ID**, **Router Name** and **Serial Number** of the remote router. Advanced features for the PepVPN profile will also be shown when the **More Information** checkbox is selected.

The **WAN statistics** show information about the local and remote WAN connections (when **show Remote connections**) is selected.

The available details are **WAN Name**, **IP address** and **port** used for the Speedfusion connection. **Rx and Tx rates**, **Loss rate** and **Latency**.

Connections can be temporarily disabled by sliding the switch button next to a WAN connection to the left.

The wan-to-wan connection disabled by the switch is temporary and will be re-enabled after 15 minutes without any action.

This can be used when testing the PepVPN speed between two locations to see if there is interference or network congestion between certain WAN connections.

WAN Statistics	
Remote Connections	☒ Show remote connections
WAN Label	☒ WAN Name ☐ IP Address and Port
BT ☒ WAN Rx: < 1 kbps Tx: < 1 kbps Loss rate: 0.0 pkt/s Latency: 17 ms	
Virgin Media Not available - WAN disabled	

The PepVPN/SpeedFusion test configuration allows us to configure and perform thorough tests. This is usually done after the initial installation of the routers and in case there are problems with aggregation.

PepVPN Test Configuration	
Type	☒ TCP ☐ UDP
Streams	4 ▼
Direction	☒ Upload ☐ Download
Duration	20 seconds (5 - 600)
Start	

Press the Start button to perform throughput test according to the configured options.

If TCP is selected, 4 parallel streams will be generated to get the optimal results by default. This can be customized by selecting a different value of streams.

Using more streams will typically get better results if the latency of the tunnel is high.

PepVPN Test Results			
1.0s:	14.6724 Mbps	0 retrans /	323 KB cwnd
2.0s:	15.1620 Mbps	0 retrans /	416 KB cwnd
3.0s:	15.2438 Mbps	0 retrans /	513 KB cwnd
4.0s:	16.2522 Mbps	0 retrans /	609 KB cwnd
5.0s:	14.6811 Mbps	0 retrans /	699 KB cwnd
6.0s:	15.2058 Mbps	0 retrans /	804 KB cwnd
7.0s:	15.7294 Mbps	0 retrans /	935 KB cwnd
8.0s:	15.2053 Mbps	0 retrans /	1024 KB cwnd
9.0s:	15.6881 Mbps	0 retrans /	1045 KB cwnd
10.0s:	14.7147 Mbps	0 retrans /	1045 KB cwnd
--			
Stream 1:	4.0414 Mbps	0 retrans /	254 KB cwnd
Stream 2:	4.2783 Mbps	0 retrans /	253 KB cwnd
Stream 3:	2.8789 Mbps	0 retrans /	285 KB cwnd
Stream 4:	4.1534 Mbps	0 retrans /	253 KB cwnd
Overall:			
	15.3520 Mbps	0 retrans /	1045 KB cwnd
--			
TEST DONE			

13.1.8 Event Log

Event log information is located at **Status>Event Log**.

Device Event Log

The screenshot shows the 'Device Event Log' tab selected. It features a table of events with columns for time and description. An 'Auto Refresh' checkbox is checked in the top right. A 'Clear Log' button is at the bottom left.

Device Event Log	
Apr 17 14:54:52	System: [Description]
Apr 17 14:39:44	System: [Description]
Apr 17 09:12:42	System: [Description]
Apr 17 09:07:33	System: [Description]
Apr 16 10:01:13	System: [Description]
Apr 16 10:00:23	System: [Description]
Apr 16 09:59:04	System: [Description]
Apr 16 09:58:57	System: [Description]
Apr 16 09:57:10	System: [Description]
Apr 16 09:57:04	System: [Description]
Apr 16 09:56:16	System: [Description]
Apr 16 09:56:15	System: [Description]
Apr 16 09:56:15	System: [Description]
Apr 16 09:56:13	System: [Description]
Apr 16 09:54:41	System: [Description]
Apr 16 09:50:28	System: [Description]
Apr 16 09:50:28	System: [Description]

The log section displays a list of events that have taken place on the Peplink Balance unit. Check **Auto Refresh** to refresh log entries automatically. Click the **Clear Log** button to clear the log.

IPsec Event Log

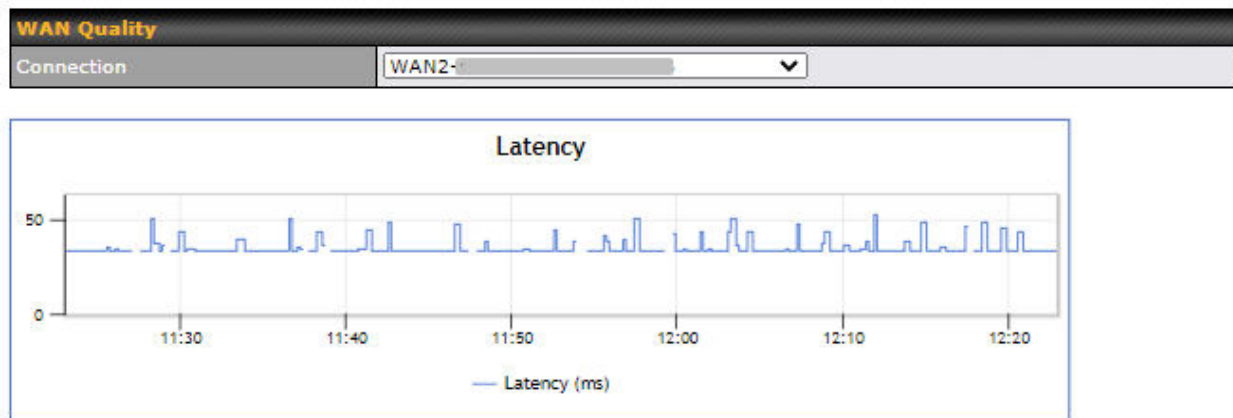
The screenshot shows the 'IPsec VPN Event Log' tab selected. It displays a table of events related to IPsec VPN connections. An 'Auto Refresh' checkbox is checked in the top right. The log ends with 'End of log'.

IPsec VPN Event Log	
Dec 30 08:32:26	IPsec: Amazon Singapore/1x1 - Initiating Main Mode connection...
Dec 30 08:31:46	IPsec: Amazon Singapore/1x1 - Initiating Main Mode connection...
Sep 04 01:01:29	IPsec: Amazon Singapore/1x1 - Initiating Main Mode connection...
End of log	

This section displays a list of events that have taken place within an IPsec VPN connection.

Check the box next to **Auto Refresh** and the log will be refreshed automatically.
For an AP event log, navigate to **AP > Info**.

13.2 WAN Quality



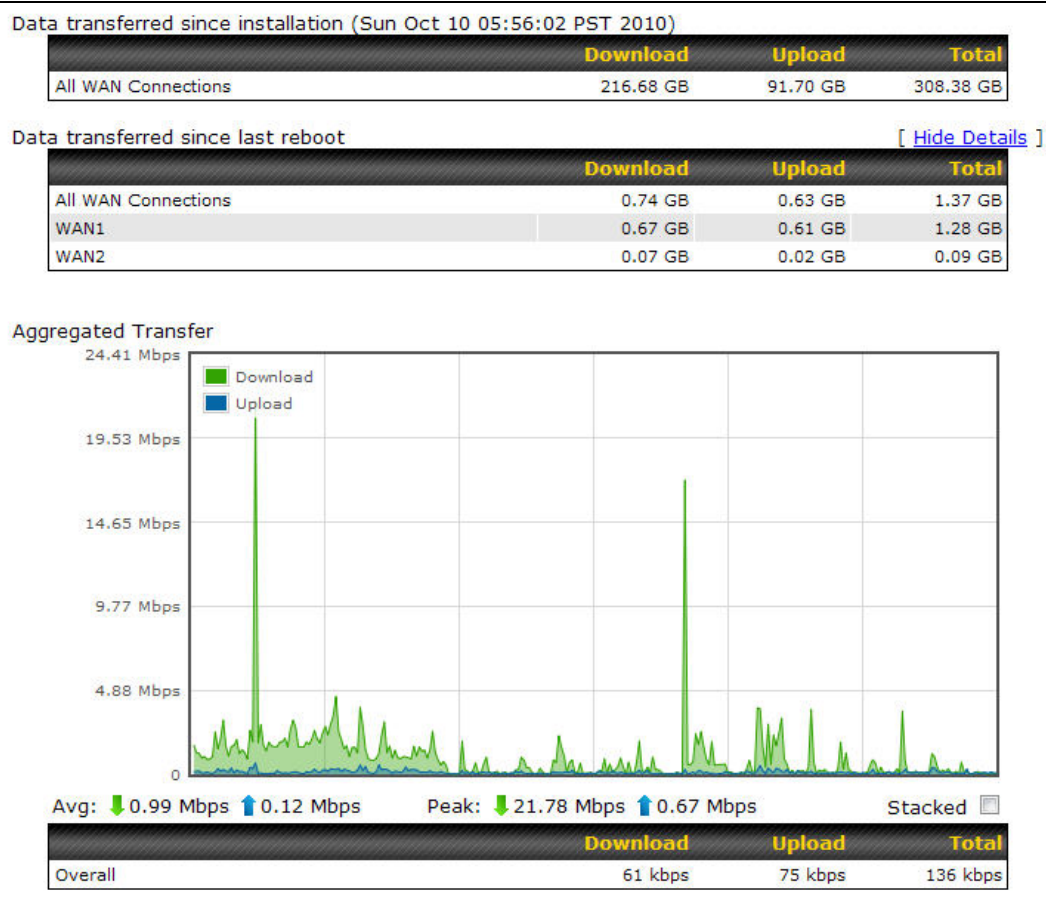
The **Status > WAN Quality** allows to show detailed information about each connected WAN connection.

13.3 Usage Reports

This section shows the bandwidth usage statistics, located at **Status > Bandwidth**. Bandwidth usage at the LAN while the device is switched off (e.g., LAN bypass) is neither recorded nor shown.

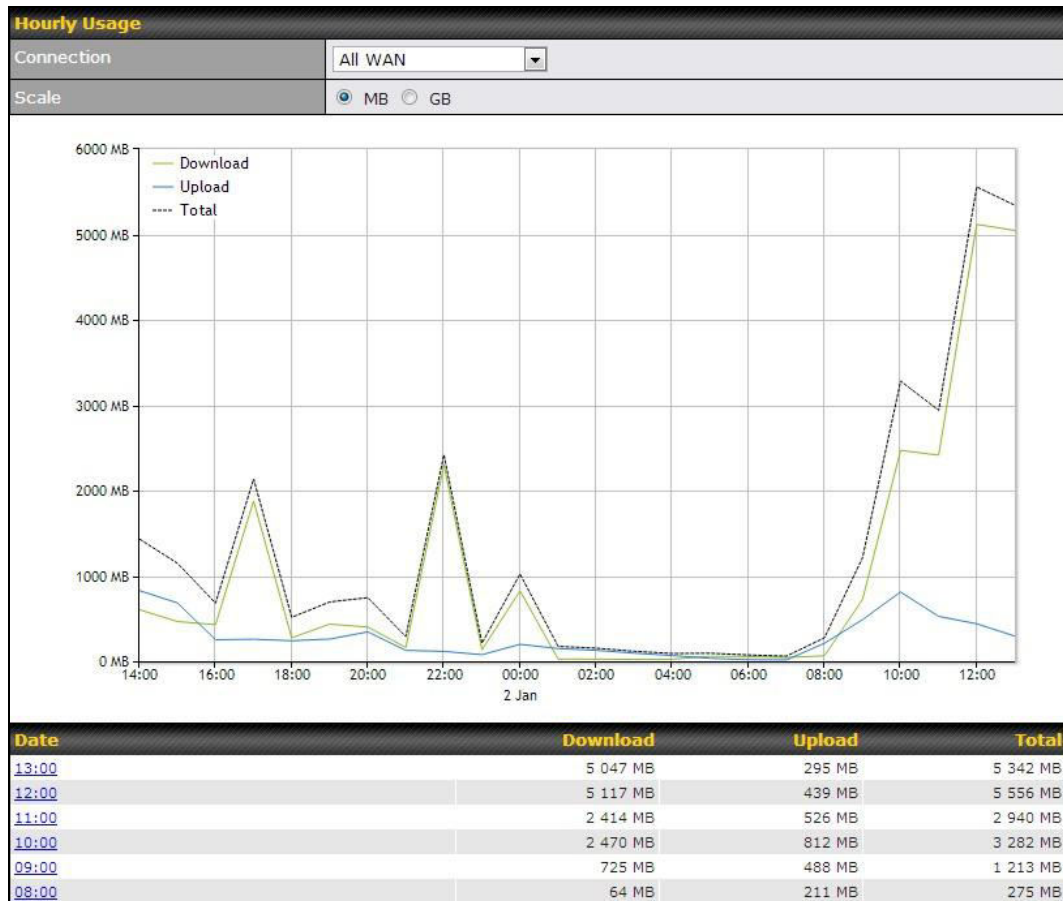
13.3.1 Real-Time

The **Data transferred since installation** table indicates how much network traffic has been processed by the device since the first bootup. The **Data transferred since last reboot** table indicates how much network traffic has been processed by the device since the last bootup.



13.3.2 Hourly

This page shows the hourly bandwidth usage for all WAN connections, with the option of viewing each individual connection. Select the desired connection to check from the drop-down menu.



13.3.3 Daily

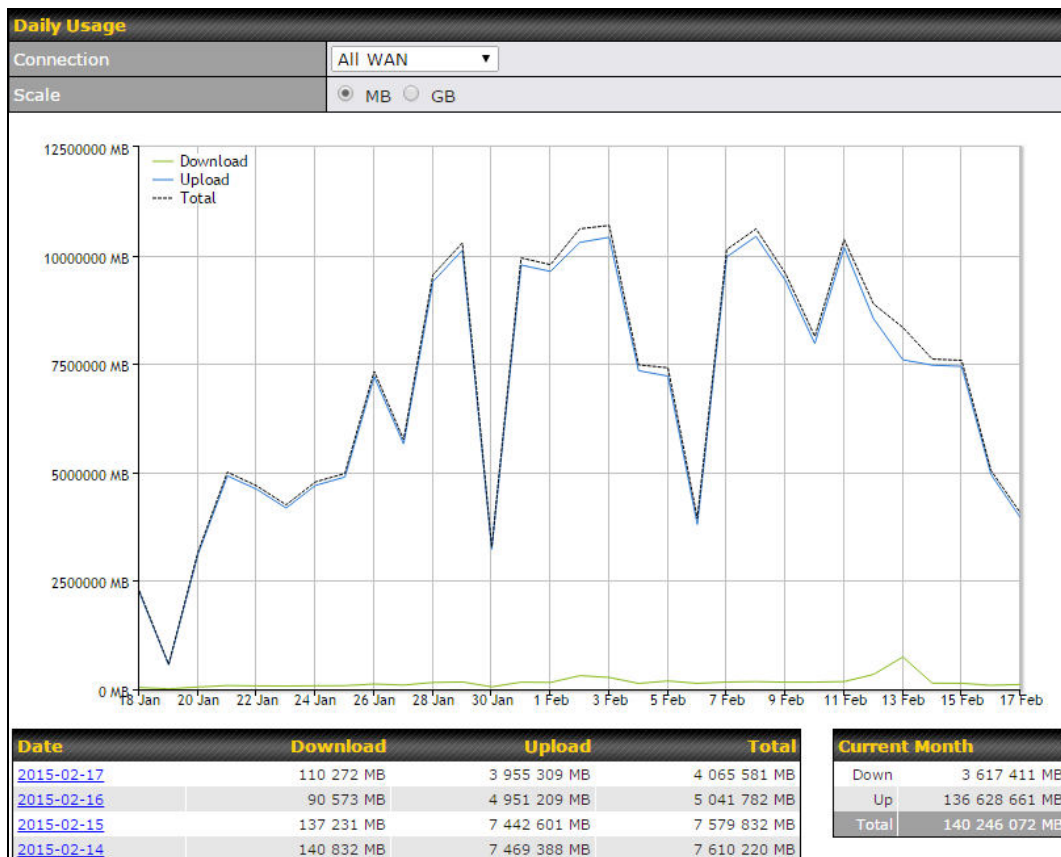
This page shows the daily bandwidth usage for all WAN connections, with the option of viewing each individual connection.

Select the connection to check from the drop-down menu. If you have enabled the **Bandwidth Monitoring** feature as shown in **Section 13.4**, the **Current Billing Cycle** table for that WAN connection will be displayed.

Click on a date to view the client bandwidth usage of that specific date. This feature is not available if you have selected to view the bandwidth usage of only a particular WAN connection. The scale of the graph can be set to display megabytes (**MB**) or gigabytes (**GB**).



Status



Click on a specific date to receive a breakdown of all client usage for that date.

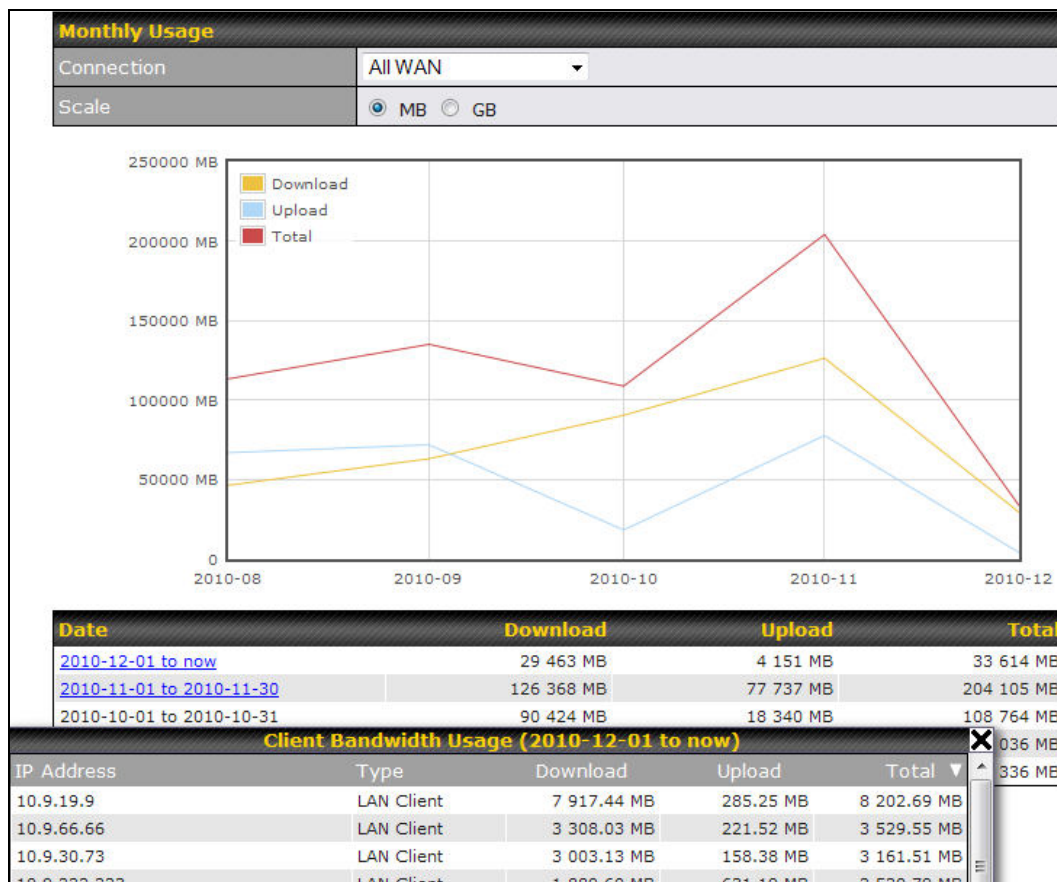
Client Bandwidth Usage (2015-02-15)

IP Address	Type	Download	Upload	Total
192.168.168.15	LAN Client	7 972.69 MB	1 217 122.81 MB	1 225 095.50 MB
192.168.168.14	LAN Client	7 432.25 MB	1 197 380.53 MB	1 204 812.79 MB
192.168.168.22	LAN Client	5 676.90 MB	617 109.49 MB	622 786.39 MB
192.168.168.21	LAN Client	5 693.38 MB	615 629.07 MB	621 322.46 MB
192.168.168.12	LAN Client	2 156.79 MB	339 779.46 MB	341 936.25 MB
192.168.168.16	LAN Client	2 107.10 MB	333 980.14 MB	336 087.23 MB
192.168.168.18	LAN Client	16.75 MB	9.50 MB	26.25 MB
192.168.167.14	LAN Client	4.74 MB	8.35 MB	13.09 MB
192.168.167.13	LAN Client	4.73 MB	8.35 MB	13.08 MB
192.168.168.19	LAN Client	0.02 MB	0.02 MB	0.03 MB
192.168.168.20	LAN Client	0.00 MB	0.00 MB	0.00 MB
192.168.168.11	LAN Client	0.00 MB	0.00 MB	0.00 MB

13.3.4 Monthly

This page shows the monthly bandwidth usage for each WAN connection. If you have enabled **Bandwidth Monitoring** feature as shown in **Section 13.4**, you can check the usage of each particular connection and view the information by **Billing Cycle** or by **Calendar Month**.

Click the first two rows to view the client bandwidth usage in the last two months. This feature is not available if you have chosen to view the bandwidth of an individual WAN connection. The scale of the graph can be set to display megabytes (**MB**) or gigabytes (**GB**).



Click on a specific month to receive a breakdown of all client usage for that month.

Appendix

Appendix A. Restoration of Factory Defaults

To restore the factory default settings on a Peplink Balance unit, perform the following:

For Balance models with a reset button:

1. Locate the reset button on the Peplink Balance unit.
2. With a paperclip, press and keep the reset button pressed.

Hold for 5-10 seconds for admin password reset (Note: The LED status light blinks in RED 2 times and release the button, green status light starts blinking)

Hold for approximately 20 seconds for factory reset (Note: The LED status light blinks in RED 3 times and release the button, all WAN/LAN port lights start blinking)

After the Peplink Balance router finishes rebooting, the factory default settings will be restored.

For Balance/MediaFast models with an LCD menu:

- Use the buttons on the front panel to control the LCD menu to go to **Maintenance>Factory Defaults**, and then choose **Yes** to confirm.

Afterwards, the factory default settings will be restored.

Important Note

All previous configurations and bandwidth usage data will be lost after restoring factory default settings. Regular backup of configuration settings is strongly recommended.

Appendix B. Routing under DHCP, Static IP, and PPPoE

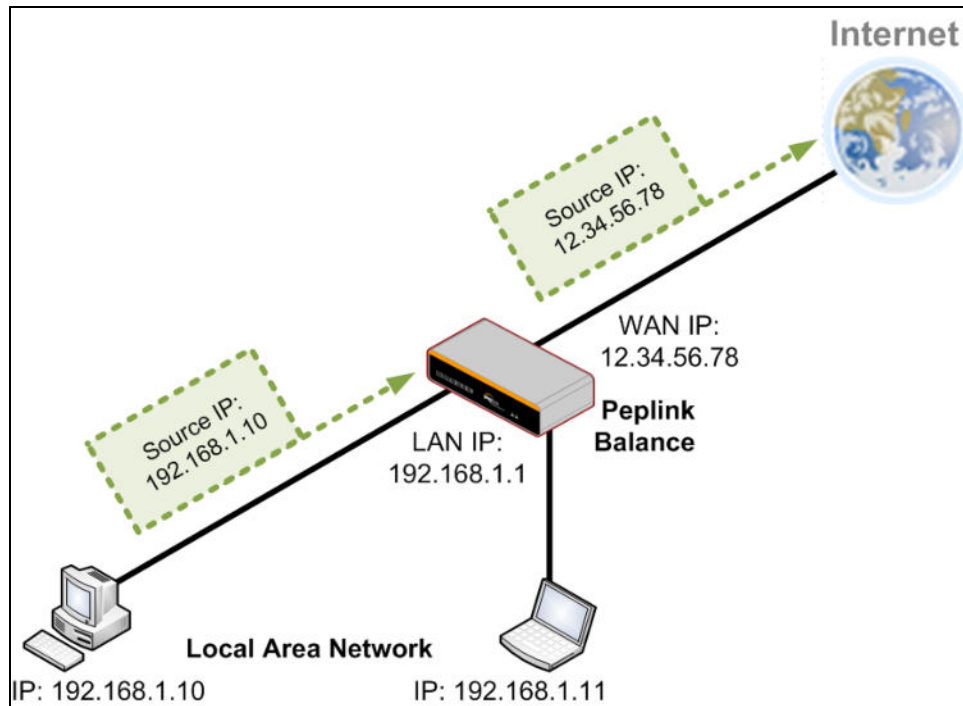
The information in this appendix applies only to situations where the Peplink Balance operates a WAN connection under DHCP, Static IP, or PPPoE.

B.1 Routing Via Network Address Translation (NAT)

When the Peplink Balance is operating under NAT mode, the source IP addresses of outgoing IP packets are translated to the WAN IP address of the Peplink Balance. With NAT, all LAN devices share the same WAN IP address to access the Internet (i.e., the WAN IP address of the Peplink Balance).

Operating the Peplink Balance in NAT mode requires only one WAN (Internet) IP address. In addition, operating in NAT mode also has security advantages because LAN devices are hidden behind the Peplink Balance. They are not directly accessible from the Internet and hence less vulnerable to attacks.

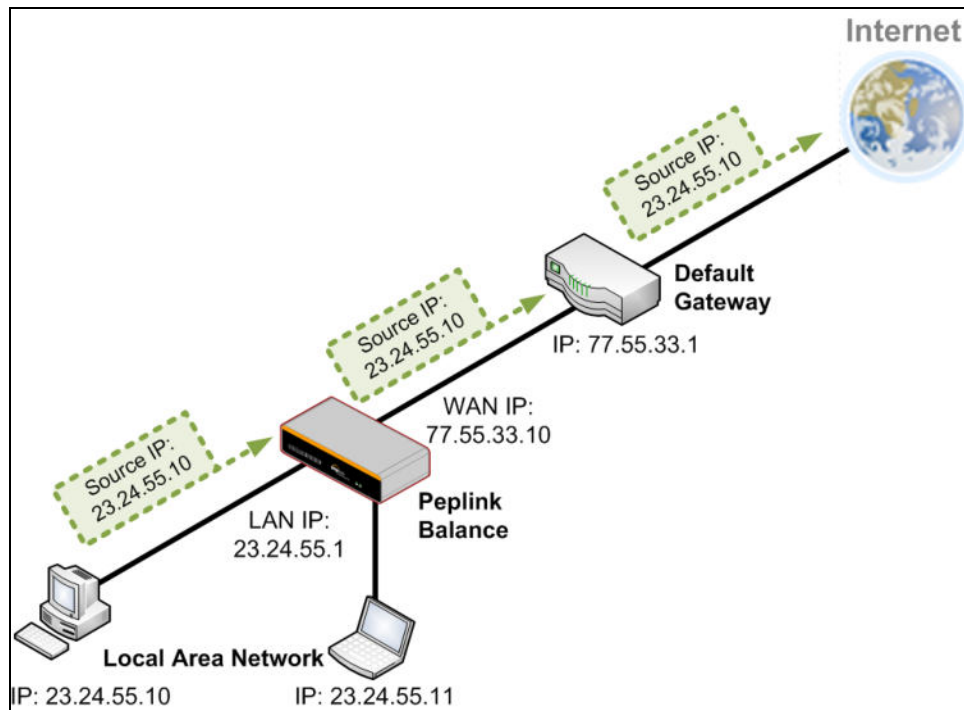
The following figure shows the packet flow in NAT mode:



B.2 Routing Via IP Forwarding

When the Peplink Balance is operating under IP forwarding mode, the IP addresses of IP packets are unchanged; the Peplink Balance forwards both inbound and outbound IP packets without changing their IP addresses.

The following figure shows the packet flow in IP forwarding mode:



Appendix C. FusionSIM Manual

Peplink has developed a unique technology called FusionSIM, which allows SIM cards to remotely link to a cellular router. This can be done via cloud or within the same physical network. There are a few key scenarios to fit certain applications.

The purpose of this manual is to provide an introduction on where to start and how to set up for the most common scenarios and uses.

Requirements

1. A Cellular router that supports FusionSIM technology
2. SIM Injector
3. SIM card

Notes:

- Always check for the latest [Firmware version](#) for both the cellular router and the SIM Injector. You can also check for the latest Firmware version on the device's WEB configuration page.
- A list of products that support FusionSIM can be found on the SIM Injector [WEB page](#). Please check under the section **Supported models**.

SIM Injector reset and login details

How to reset a SIM Injector:

- Hold the reset button for 5-10 seconds. Once the LED status light turns RED, the reset button can be released. SIM Injector will reboot and start with the factory default settings.

The default WEB login settings:

- **User:** admin
- **Password:** admin
- IP address: the device only has a DHCP client and no fallback IP address. Therefore, it is advised to check every time what IP address is assigned to the SIM Injector.

Notes:

- The SIM Injector can be monitored via InControl 2. Configuration is not supported.