

BODi rS™

More Bandwidth. More Reliability. More Survivability

Intelligent Load Balancing: Low Latency Balance

Application Note

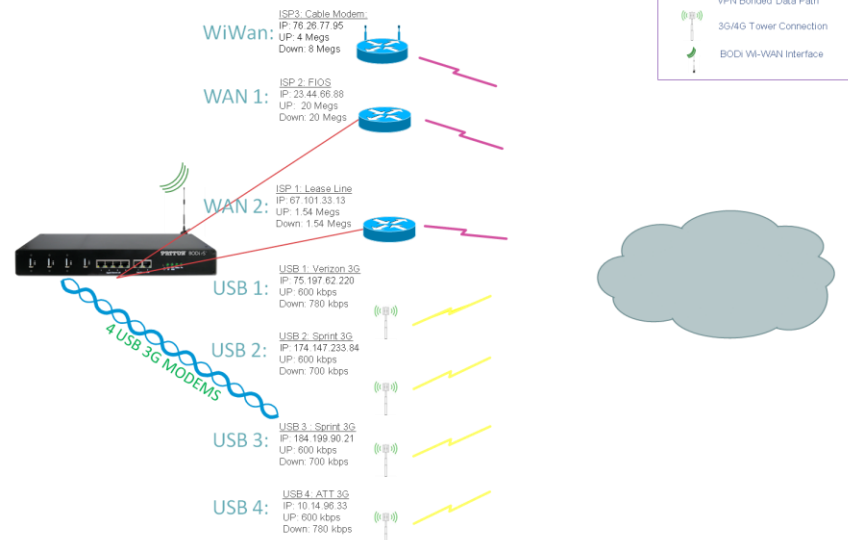
Understanding Outbound Balance Routing

- The BODi delivers a simple, cost effective way to manage Multi WAN network environments through intelligent Load Balancing Algorithms and advanced VPN bonding technology. The BODi delivers in box solutions to help migrate away from expensive lease line WAN providers in favor of less expensive WAN deliveries, such as cable providers, fiber, and dsl providers, while providing or maintaining business or mission critical reliability and survive-ability to your network. This presentation will focus on pre-configured WAN Balancing Algorithms and how to easily setup and configure your BODi rS for your network needs.

Load sharing across multiple WAN connections

- **Balance up to 7 WAN interfaces using preconfigured balancing algorithms**
 - **Weighted Balance:** Assign more traffic to a faster links or less traffic to a connection with a costly bandwidth caps.
 - **Priority:** Route traffic to your preferred link as long as it's available.
 - **Overflow Balance:** Prevent traffic flow from slowing down when the connection runs out of available bandwidth.
 - **Least Used:** Help you choose the better connection with more free bandwidth.
 - **Enforced:** Restrict outbound traffic to a particular connection.
 - **Lowest Latency:** Give you the fastest response time when using applications like online gaming.
 - **Persistence:** Eliminate session termination issue for HTTPS, E-banking, and other secure websites.

Traffic Balance Application Diagram for 7 WAN interfaces.



WAN Optimization: Let's Explore Lowest Latency WAN Balance

- Configure Lowest Latency Algorithm
 - Outbound traffic matching this rule will be routed through a healthy WAN connection
 - Route by Source and Destination IP, Network, Protocol, Port
 - Latency checking packets will be performed on all enabled WAN interfaces
 - Routes traffic to the WAN link with the best response time

Edit Custom Rule ✕

WB-Webinar	
Service Name *	WB-Webinar
Enable	<input checked="" type="checkbox"/>
Source	Any
Destination	Domain Name <input type="text" value="www.gotomeeting.com"/>
Protocol	Any <input type="text" value=":: Protocol Selection Tool ::"/>
Algorithm	Lowest Latency <small>Note: Use of Lowest Latency will incur additional network usage.</small>
Connection	<input checked="" type="checkbox"/> FIOS <input checked="" type="checkbox"/> Lease Line 4T MLPPP <input checked="" type="checkbox"/> LTE 4G <input type="checkbox"/> USB 2 <input type="checkbox"/> USB 3 <input type="checkbox"/> USB 4 <input checked="" type="checkbox"/> Wi-Fi Cable Modem

Lowest Latency Balance configuration window

Destination Domain Address

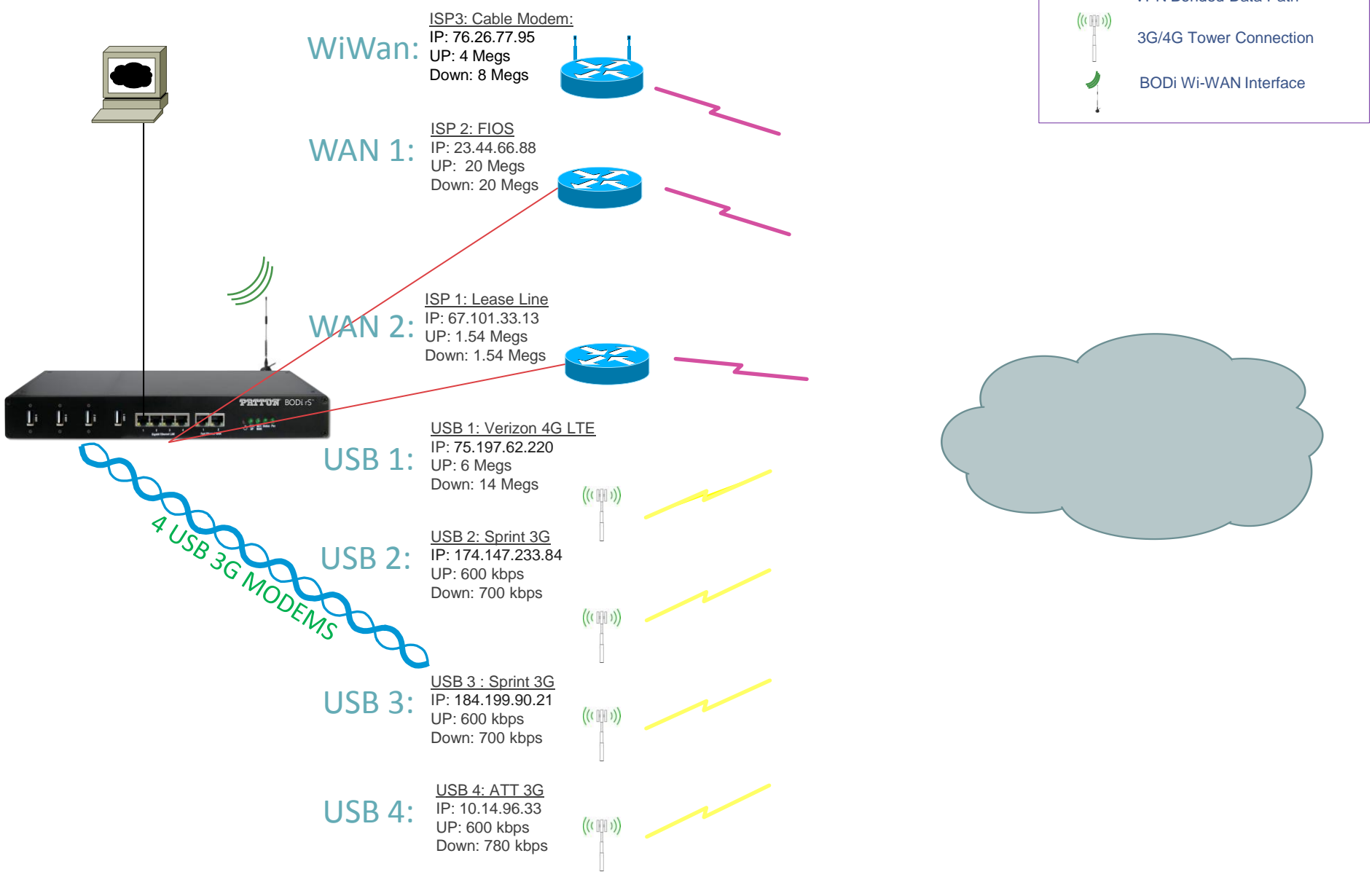
WB-Webinar	
Service Name *	WB-Webinar
Enable	<input checked="" type="checkbox"/>
Source	Any
Destination	Domain Name: www.gotomeeting.com
Protocol	Any ← :: Protocol Selection Tool ::
Algorithm	Lowest Latency <small>Note: Use of Lowest Latency will incur additional network usage.</small>
Connection	<input checked="" type="checkbox"/> FIOS <input checked="" type="checkbox"/> Lease Line 4T MLPPP <input checked="" type="checkbox"/> LTE 4G <input type="checkbox"/> USB 2 <input type="checkbox"/> USB 3 <input type="checkbox"/> USB 4 <input checked="" type="checkbox"/> Wi-Fi Cable Modem

Save Cancel

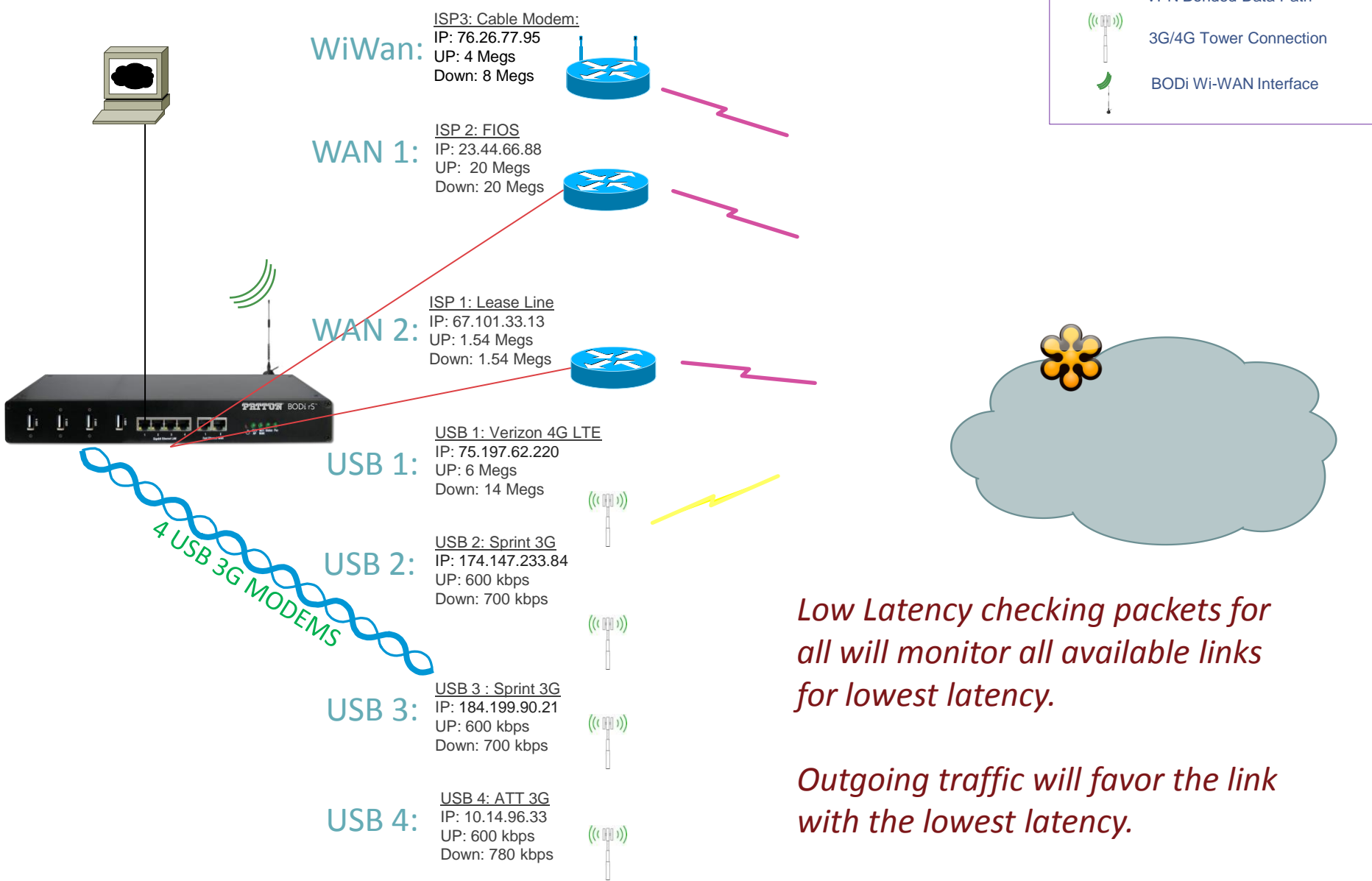
Lowest Latency Traffic GoToMeeting:

In this application we want to all audio and visual presentation outbound traffic to be routed out the fastest enabled links. Traffic destined for Domain Name: *www.gotomeeting.com*

Lowest Latency Outbound Traffic Balance App



Lowest Latency Outbound Traffic Balance App



Low Latency checking packets for all will monitor all available links for lowest latency.

Outgoing traffic will favor the link with the lowest latency.

Step-by-Step: Configuration for Low Latency Balance Policy

The screenshot displays the Patton router's web-based configuration interface. At the top, a blue navigation bar contains the Patton logo and menu items: Dashboard, Network, Advanced (highlighted), System, and Status. On the right side of this bar is an 'Apply Changes' button. Below the navigation bar is a left-hand sidebar menu with the following sections and items:

- Advanced**
 - Wi-Fi Settings
 - WAN Bonding
 - IPsec VPN
 - Outbound Policy** (highlighted)
 - Port Forwarding
- NAT Mappings**
- QoS**
 - User Groups
 - Bandwidth Control
 - Application
- Firewall**
- Misc. Settings**
 - PPTP Server
 - Service Forwarding
 - Service Passthrough

The main content area shows the 'Outbound Policy' configuration page. The page title is 'Outbound Policy' with a help icon. Below the title, the current policy is set to 'Custom', and there is an edit icon (pencil) to its right.

1. Click Advanced -> Click Outbound Policy

Step-by-Step: Configuration for Low Latency Balance Policy

The screenshot shows the Patton router configuration interface. The top navigation bar includes 'Dashboard', 'Network', 'Advanced', 'System', and 'Status', with 'Apply Changes' on the right. The left sidebar lists various settings categories: Advanced (Wi-Fi Settings, WAN Bonding, IPsec VPN, Outbound Policy, Port Forwarding), NAT Mappings, QoS (User Groups, Bandwidth Control, Application), and Firewall (Misc. Settings: PPTP Server, Service Forwarding, Service Passthrough). The 'Advanced' section is expanded, and 'Outbound Policy' is selected. A modal window titled 'Outbound Policy' is open, showing a dropdown menu with 'Custom' selected. Below the dropdown are 'Save' and 'Cancel' buttons.

1. Click Advanced -> Click Outbound Policy

2. Create Custom Outbound Policy and Save

Step-by-Step: Configuration for Low Latency Balance Policy

The screenshot shows the Patton router configuration interface. The top navigation bar includes 'Dashboard', 'Network', 'Advanced', 'System', and 'Status', with 'Apply Changes' on the right. The left sidebar lists various settings categories: Advanced (Wi-Fi Settings, WAN Bonding, IPsec VPN, Outbound Policy, Port Forwarding), NAT Mappings, QoS (User Groups, Bandwidth Control, Application), Firewall, and Misc. Settings (PPTP Server, Service Forwarding, Service Passthrough). The 'Advanced' section is expanded to show 'Outbound Policy', which is currently set to 'Custom'. A dialog box titled 'Outbound Policy' is open, showing a dropdown menu for 'Policy' with 'Custom' selected. Below the dropdown are 'Save' and 'Cancel' buttons. A second dialog box titled 'Select an Outbound Policy' is also open, showing the same dropdown menu with 'Custom' selected. Below this dialog are 'Save' and 'Cancel' buttons. The 'Rules' section is visible at the bottom, showing a table with columns for Service, Algorithm, Source, Destination, and Protocol / Port. The 'Default' rule is listed with '(Auto)' in the Algorithm column. An 'Add Rule' button is located at the bottom of the Rules section.

1. Click Advanced -> Click Outbound Policy

2. Create Custom Outbound Policy and Save

3. Add Rule

Service	Algorithm	Source	Destination	Protocol / Port
Default	(Auto)			

Step-by-Step: Configuration for Low Latency Balance Policy

The screenshot shows the Patton network management interface. The top navigation bar includes 'Dashboard', 'Network', 'Advanced', 'System', and 'Status'. The 'Advanced' tab is selected, and the 'Apply Changes' button is visible on the right. The left sidebar contains a menu with categories: 'Advanced' (Wi-Fi Settings, WAN Bonding, IPsec VPN, Outbound Policy, Port Forwarding), 'NAT Mappings', 'QoS' (User Groups, Bandwidth Control, Application), 'Firewall', and 'Misc. Settings' (PPTP Server, Service Forwarding, Service Passthrough). The 'Outbound Policy' item is highlighted. The main content area displays the following configuration steps:

4. Create the Rule for outbound WEB Traffic

- Service Name: Text
- Enable:
- Source :
- IP Address:
- Destination Domain Name:
- Choose Lowest Latency Algorithm
- Enable WAN Connections
- Save
- Apply Changes

Step-by-Step: Configuration for Low Latency Balance Policy

PATTON | Dashboard | Network | **Advanced** | System | Status | Apply Changes

- Advanced
 - Wi-Fi Settings
 - WAN Bonding
 - IPsec VPN
 - Outbound Policy**
 - Port Forwarding
- NAT Mappings
- QoS
 - User Groups
 - Bandwidth Control
 - Application
- Firewall
- Misc. Settings
 - PPTP Server
 - Service Forwarding
 - Service Passthrough

4. Create the Rule for outbound WEB Traffic

Edit Custom Rule ✕

WB-Webinar	
Service Name *	WB-Webinar
Enable	<input checked="" type="checkbox"/>
Source	Any
Destination	Domain Name <input type="text" value="www.gotomeeting.com"/>
Protocol	Any ← :: Protocol Selection Tool ::
Algorithm	Lowest Latency <small>Note: Use of Lowest Latency will incur additional network usage.</small>
Connection	<input checked="" type="checkbox"/> FIOS <input checked="" type="checkbox"/> Lease Line 4T MLPPP <input checked="" type="checkbox"/> LTE 4G <input type="checkbox"/> USB 2 <input type="checkbox"/> USB 3 <input type="checkbox"/> USB 4 <input checked="" type="checkbox"/> Wi-Fi Cable Modem

Save Cancel

Step-by-Step: Configuration for Low Latency Balance Policy

PATTON
Dashboard
Network
Advanced
System
Status
Apply Changes

Advanced

- Wi-Fi Settings ➔
- WAN Bonding ➔
- IPsec VPN ➔
- Outbound Policy ➔
- Port Forwarding ➔

NAT Mappings

QoS

- User Groups ➔
- Bandwidth Control ➔
- Application ➔

Firewall

Misc. Settings

- PPTP Server ➔
- Service Forwarding ➔
- Service Passthrough ➔

Rules (Drag and drop rows to change rule order) ?

Service	Algorithm	Source	Destination	Protocol / Port	
WAN Bonding Routes					
<u>WB-SaveCash</u>	Overflow Wi-Fi Cable Modem...	Any	Any	Any	✘
<u>WB-HTTPS</u>	Persistence (Auto)	Any	Any	TCP 443	✘
<u>WB-VOIP</u>	Enforced WAN: Lease Line 4T...	MAC Address 00:A0:BA:12:34:56	IP Address 67.100.23.1	Any	✘
<u>WB-HTTP</u>	Priority WAN: Wi-Fi Cable M...	Any	Any	TCP 80	✘
<u>WB-staff</u>	Weighted Balance 10:5:4:4:4:0:10	IP Network 10.10.5.0/24	Any	Any	✘
<u>WB-guest</u>	Weighted Balance 10:0:0:0:0:0:10	IP Network 10.10.6.0/28	Any	Any	✘
<u>WB-Webinar</u>	Lowest Latency	Any	www.gotomeeting.com	Any	✘
<u>WB-Visuality</u>	Enforced VPN: WAN BONDING	MAC Address 00:A0:BA:12:34:57	Any	Any	✘
<u>Default</u>	(Auto)				
<input type="button" value="Add Rule"/>					

FOR FURTHER INFORMATION

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