

# BODi rS™

More Bandwidth. More Reliability. More Survivability

## Intelligent Load Balancing: Persistence Balance

Application Note

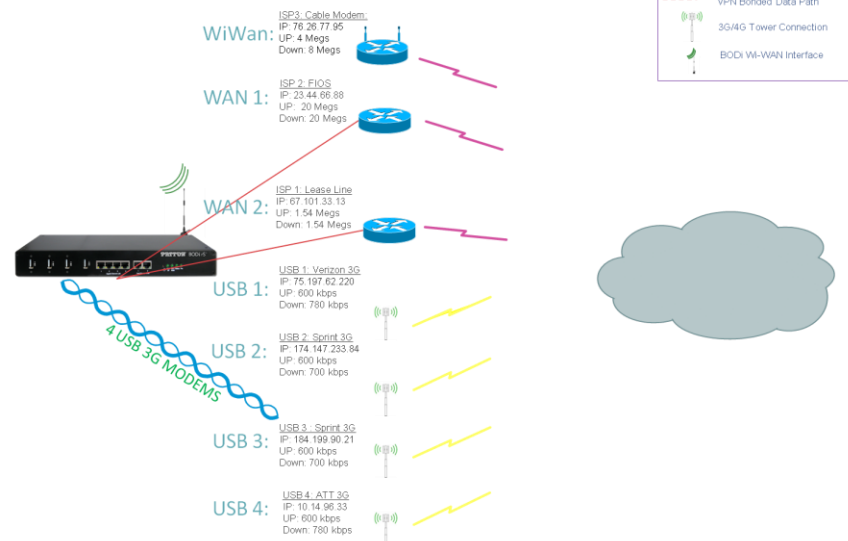
## Understanding Outbound Balance Routing

- 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 Persistence WAN Balance

- Configure Persistence Algorithm
  - Outbound traffic matching this rule will consistently be routed the original WAN interface the session began until the original session has ended.
  - Route by Source and Destination IP, Network, Protocol, Port

The screenshot shows a dialog box titled "Edit Custom Rule" with a close button (X) in the top right corner. The dialog contains a table of configuration options for a rule named "WB-HTTPS".

WB-HTTPS	
Service Name *	WB-HTTPS
Enable	<input checked="" type="checkbox"/>
Source	Any
Destination	Any
Protocol	TCP ← :: Protocol Selection Tool ::
Port *	Single Port Port: 443
Algorithm	Persistence
Persistence Mode	<input type="radio"/> By Source <input checked="" type="radio"/> By Destination
Load Distribution	<input checked="" type="radio"/> Auto <input type="radio"/> Custom
Terminate Sessions on Link Recovery	<input type="checkbox"/> Enable

At the bottom of the dialog are two buttons: "Save" and "Cancel".

## Persistence WAN Balance configuration window

The screenshot shows the 'Edit Custom Rule' window for a rule named 'WB-HTTPS'. The configuration is as follows:

WB-HTTPS	
Service Name *	WB-HTTPS
Enable	<input checked="" type="checkbox"/>
Source	Any
Destination	Any
Protocol	TCP ← :: Protocol Selection Tool ::
Port *	Single Port Port: 443
Algorithm	Persistence
Persistence Mode	<input type="radio"/> By Source <input checked="" type="radio"/> By Destination
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Terminate Sessions on Link Recovery	<input type="checkbox"/> Enable

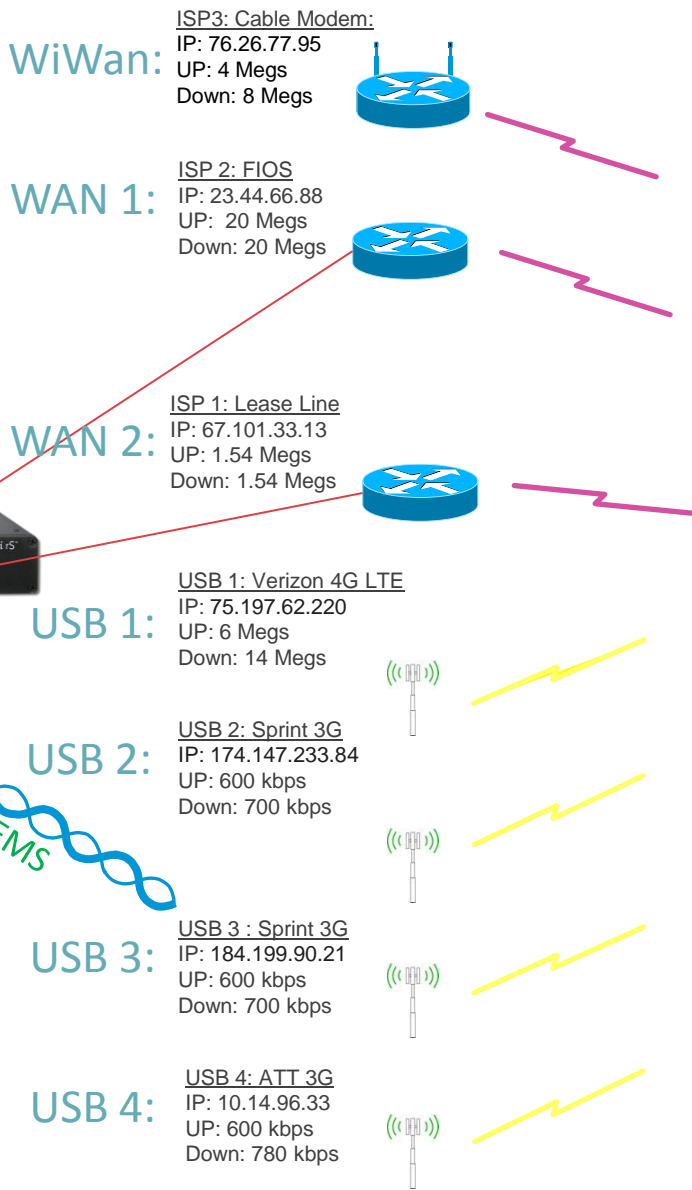
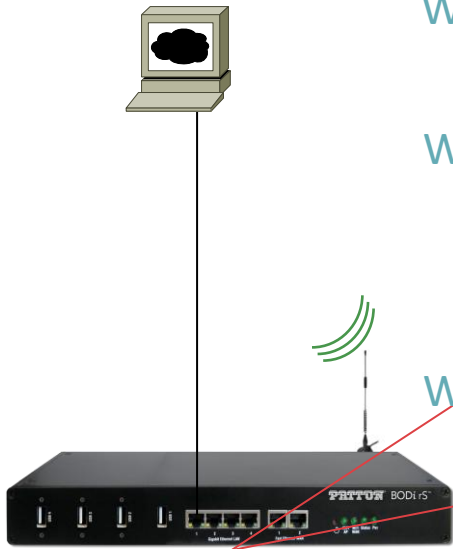
At the bottom of the window are 'Save' and 'Cancel' buttons.

*Protocol : TCP*  
*Destination Port : 443*  
*Mode: By Destination*  
*Link Distribution: Auto*

### *Persistence Application:*

I want all of my SSL traffic to be routed persistently through the same WAN link that originates the session. *All TCP traffic destined Port 443* will be routed out the same originating link.

# Persistent Outbound Traffic Balance App

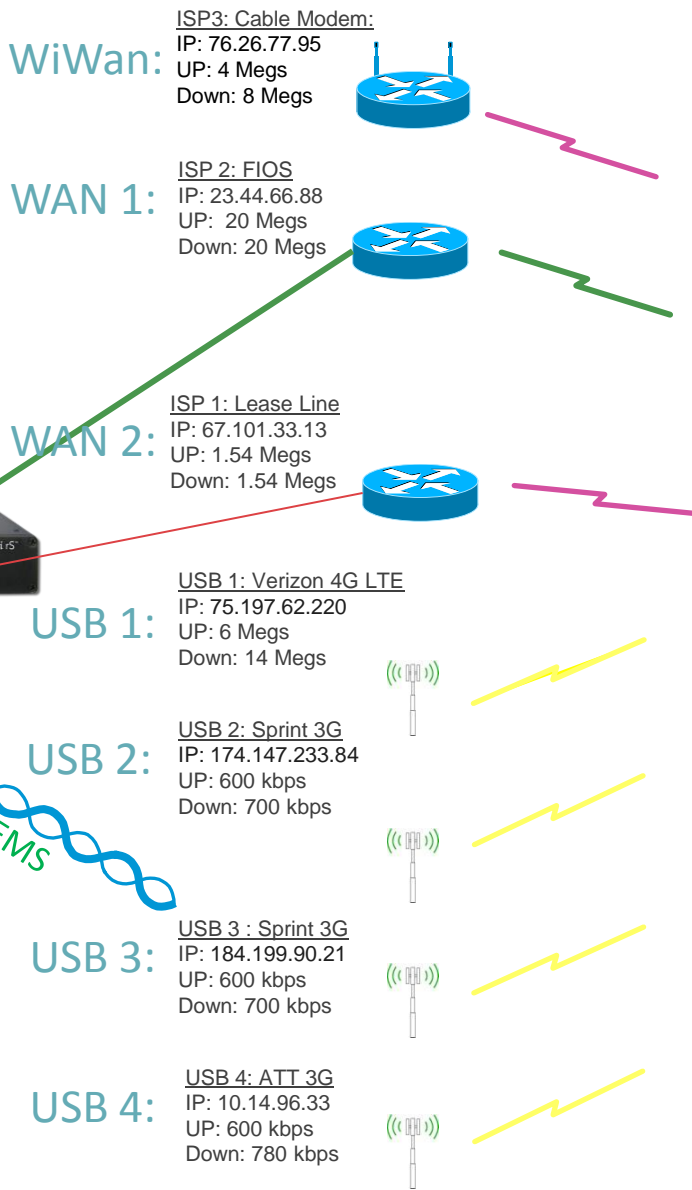
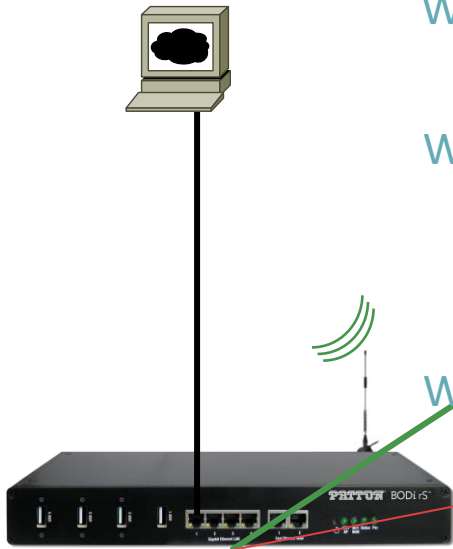






4 USB 3G MODEMS

- WAN Bonding VPN
- VPN Bonded Data Path
- 3G/4G Tower Connection
- BODi Wi-WAN Interface



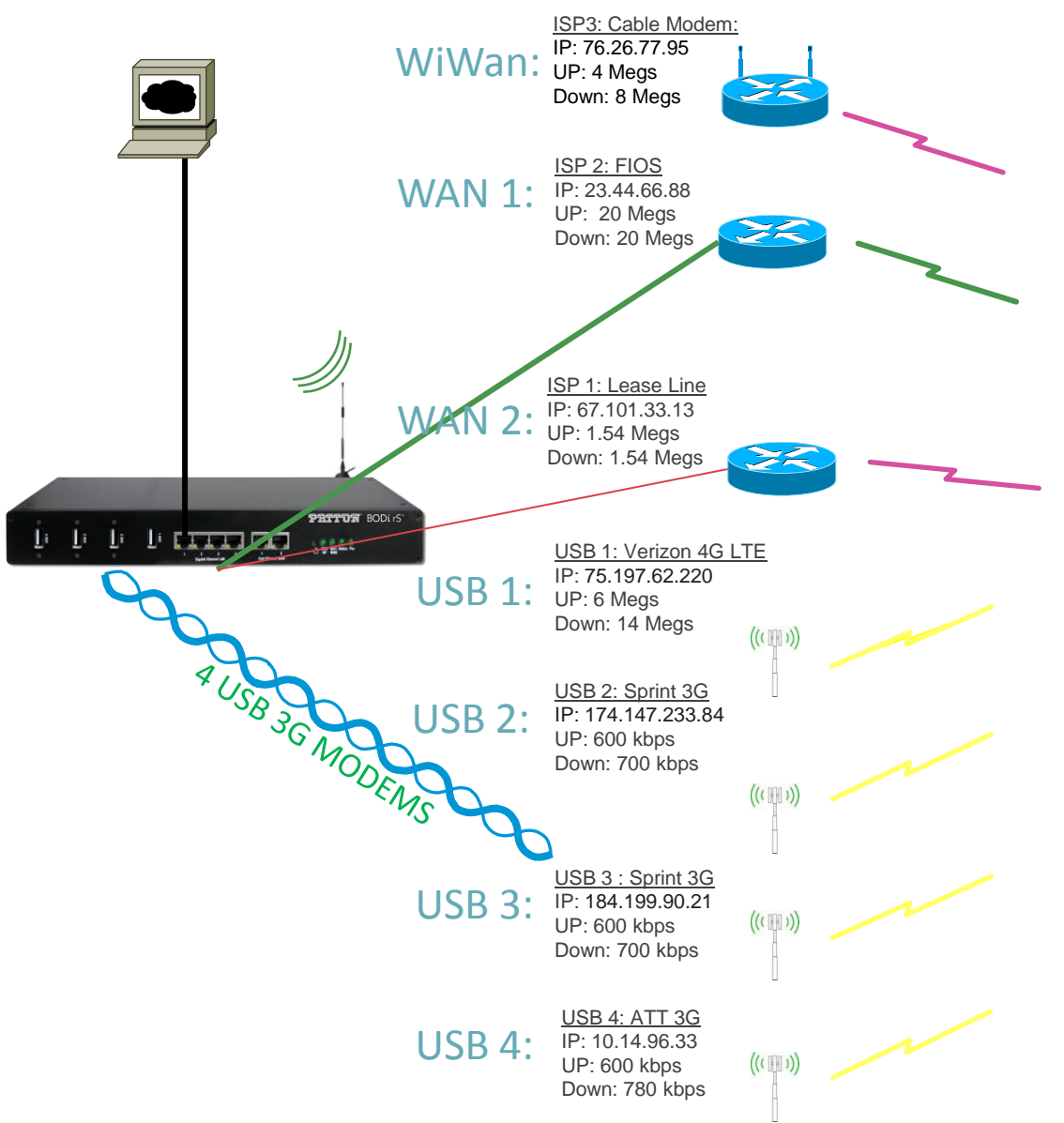
# Persistent Outbound Traffic Balance App







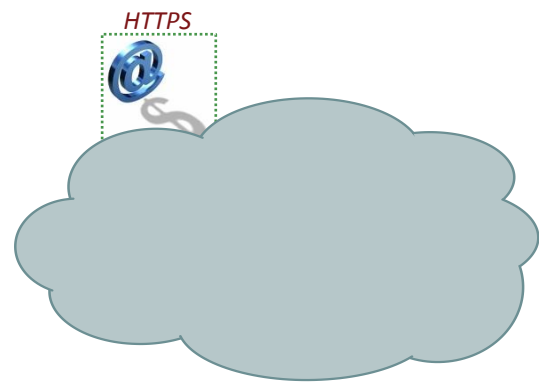
-  WAN Bonding VPN
-  VPN Bonded Data Path
-  3G/4G Tower Connection
-  BODi Wi-WAN Interface



# Persistent Outbound Traffic Balance App



-  WAN Bonding VPN
-  VPN Bonded Data Path
-  3G/4G Tower Connection
-  BODi Wi-WAN Interface



*Once the session begins with port 443 All traffic will remain persistent on that outgoing link until the session is closed.*

# Step-by-Step: Configuration for Persistent Balance Policy

The screenshot displays the Patton router's web-based configuration interface. At the top, a blue navigation bar contains the 'PATTON' logo on the left and menu items: 'Dashboard', 'Network', 'Advanced', 'System', and 'Status'. On the far right 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

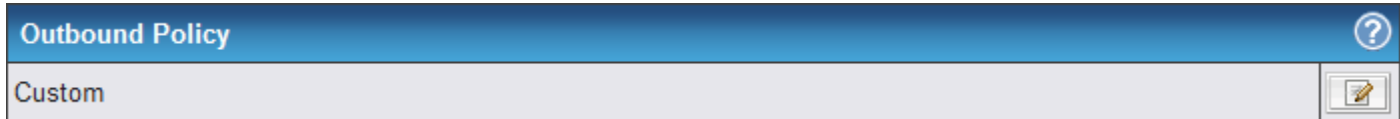
The main content area shows the 'Outbound Policy' configuration page. The page title is 'Outbound Policy' with a help icon. Below the title, the current policy is set to 'Custom', and there is an edit icon (pencil) to its right. A large teal text overlay reads: '1. Click Advanced -> Click Outbound Policy'.

# Step-by-Step: Configuration for Persistent Balance Policy

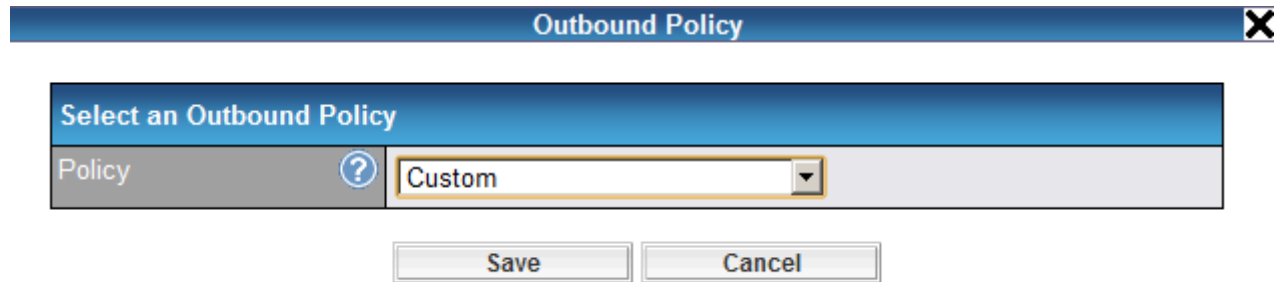


- Advanced**
  - Wi-Fi Settings
  - WAN Bonding
  - IPsec VPN
  - Outbound Policy**
  - Port Forwarding
- NAT Mappings**
- QoS**
  - User Groups
  - Bandwidth Control
  - Application
- Firewall**
- Misc. Settings**
  - PPTP Server
  - Service Forwarding
  - Service Passthrough

1. Click Advanced -> Click Outbound Policy



2. Create Custom Outbound Policy and Save



# Step-by-Step: Configuration for Persistent 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 to show 'Outbound Policy'.

**1. Click Advanced -> Click Outbound Policy**

The 'Outbound Policy' window is shown with a dropdown menu set to 'Custom'.

**2. Create Custom Outbound Policy and Save**

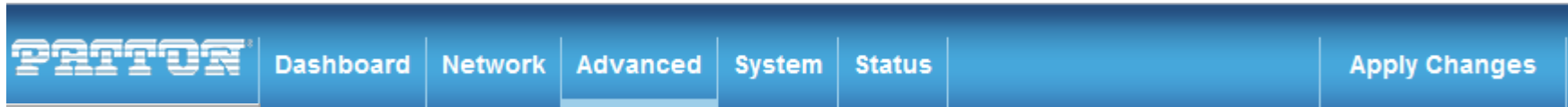
The 'Outbound Policy' configuration window is shown with a dropdown menu set to 'Custom' and 'Save' and 'Cancel' buttons.

**3. Add Rule**

The 'Rules' table is shown with columns for Service, Algorithm, Source, Destination, and Protocol / Port. A 'Default' rule is listed with '(Auto)' in the Algorithm column. An 'Add Rule' button is visible at the bottom.

Service	Algorithm	Source	Destination	Protocol / Port
Default	(Auto)			

# Step-by-Step: Configuration for Persistent Balance Policy



- 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-HTTPS	
Service Name *	WB-HTTPS
Enable	<input checked="" type="checkbox"/>
Source	Any
Destination	Any
Protocol	TCP ← :: Protocol Selection Tool ::
Port *	Single Port Port: 443
Algorithm	Persistence
Persistence Mode	<input type="radio"/> By Source <input checked="" type="radio"/> By Destination
Load Distribution	<input checked="" type="radio"/> Auto <input type="radio"/> Custom
Terminate Sessions on Link Recovery	<input type="checkbox"/> Enable

Save Cancel

# Step-by-Step: Configuration for Persistent 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** (Hand icon) 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	✖
Default	(Auto)				
<input type="button" value="Add Rule"/>					

## FOR FURTHER INFORMATION

For Further information visit us @ [www.patton.com](http://www.patton.com) or contact us:

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