

BODi rS™

More Bandwidth. More Reliability. More Survivability

Intelligent Load Balancing: Overflow Balance

Application Note

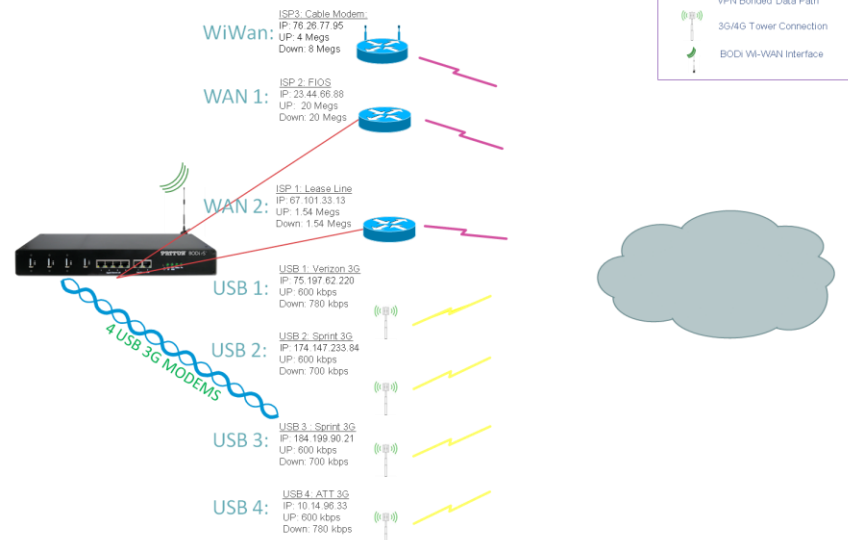
Understanding Outbound Balance Routing

- 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 Overflow WAN Balance

- Configure WAN interfaces according overflow priority
 - Never slow down or experience bottlenecks on saturated links.
 - Route specified outgoing traffic in order to saturate inexpensive WAN links
 - 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 is for a rule named "WB-SaveCash". The fields are as follows:

WB-SaveCash	
Service Name *	WB-SaveCash
Enable	<input checked="" type="checkbox"/>
Source	Any
Destination	Any
Protocol	Any ← :: Protocol Selection Tool ::
Algorithm	Overflow
Overflow Order	Highest Priority <ul style="list-style-type: none"><input checked="" type="checkbox"/> Wi-Fi Cable Modem<input checked="" type="checkbox"/> FIOS<input checked="" type="checkbox"/> USB 2<input checked="" type="checkbox"/> USB 3<input checked="" type="checkbox"/> USB 4<input checked="" type="checkbox"/> LTE 4G<input checked="" type="checkbox"/> Lease Line 4T MLPPP Lowest Priority

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

Overflow Balance configuration window

The screenshot shows a configuration window titled "Edit Custom Rule" for a rule named "WB-SaveCash". The window contains the following fields and options:

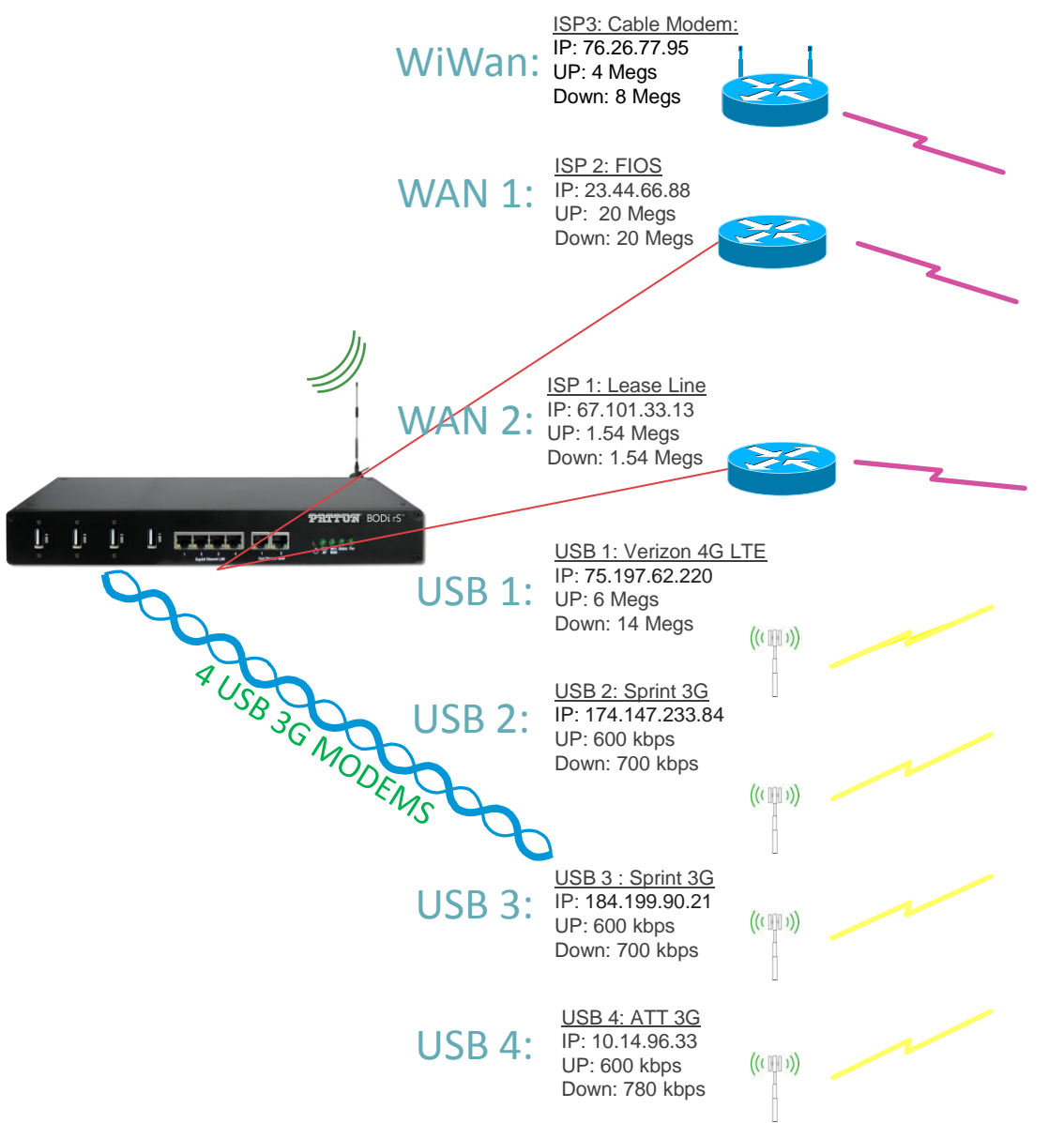
- Service Name ***: WB-SaveCash
- Enable**:
- Source**: Any
- Destination**: Any
- Protocol**: Any (with a "Protocol Selection Tool" button)
- Algorithm**: Overflow
- Overflow Order**: A list of services ordered from highest to lowest priority:
 - Wi-Fi Cable Modem
 - FIOS
 - USB 2
 - USB 3
 - USB 4
 - LTE 4G
 - Lease Line 4T MLPPP
 - Lowest Priority





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

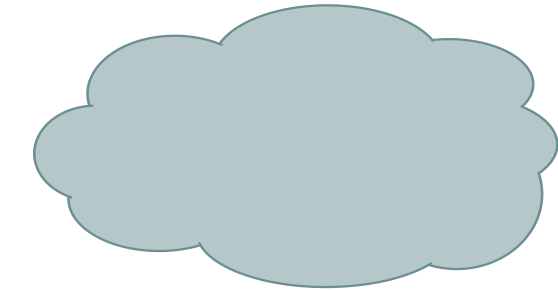
What links do I want to saturate first?

Cable Modem \$45.00
FIOS: \$ 99.00
USB 2: \$ 34.00 NO cap
USB 3: \$ 29.00 2 GIG cap
USB 4: \$ 29.00 2 GIG cap
LTE 4G: \$55.00 2 GIG cap
Lease Line: \$ 999.00

Overflow Outbound Traffic Balance App



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



Edit Custom Rule

WB-SaveCash

Service Name *

Enable

Source

Destination

Protocol Protocol Selection Tool

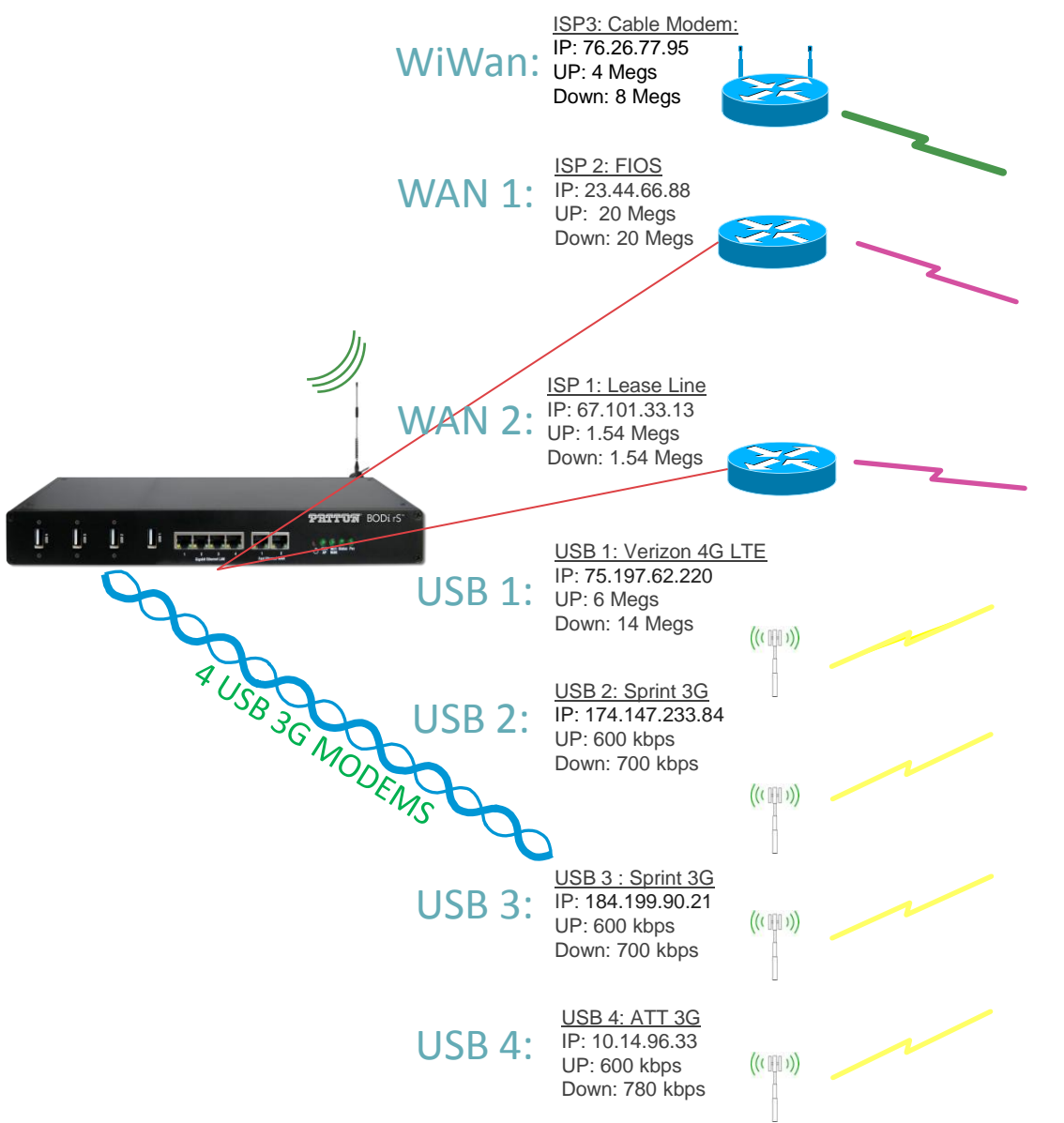
Algorithm

Overflow Order

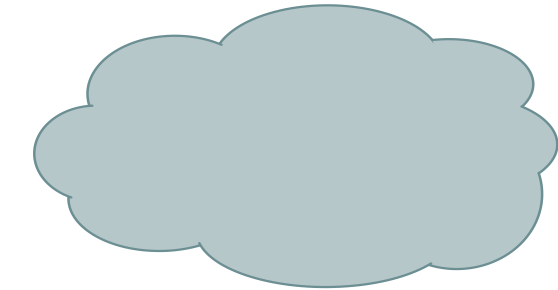
Highest Priority
<input type="checkbox"/> Wi-Fi Cable Modem
<input type="checkbox"/> FIOS
<input type="checkbox"/> USB 2
<input type="checkbox"/> USB 3
<input type="checkbox"/> USB 4
<input type="checkbox"/> LTE 4G
<input type="checkbox"/> Lease Line 4T MLPPP
Lowest Priority

Save Cancel

Overflow Outbound Traffic Balance App



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



Edit Custom Rule

WB-SaveCash

Service Name *

Enable

Source

Destination

Protocol Protocol Selection Tool

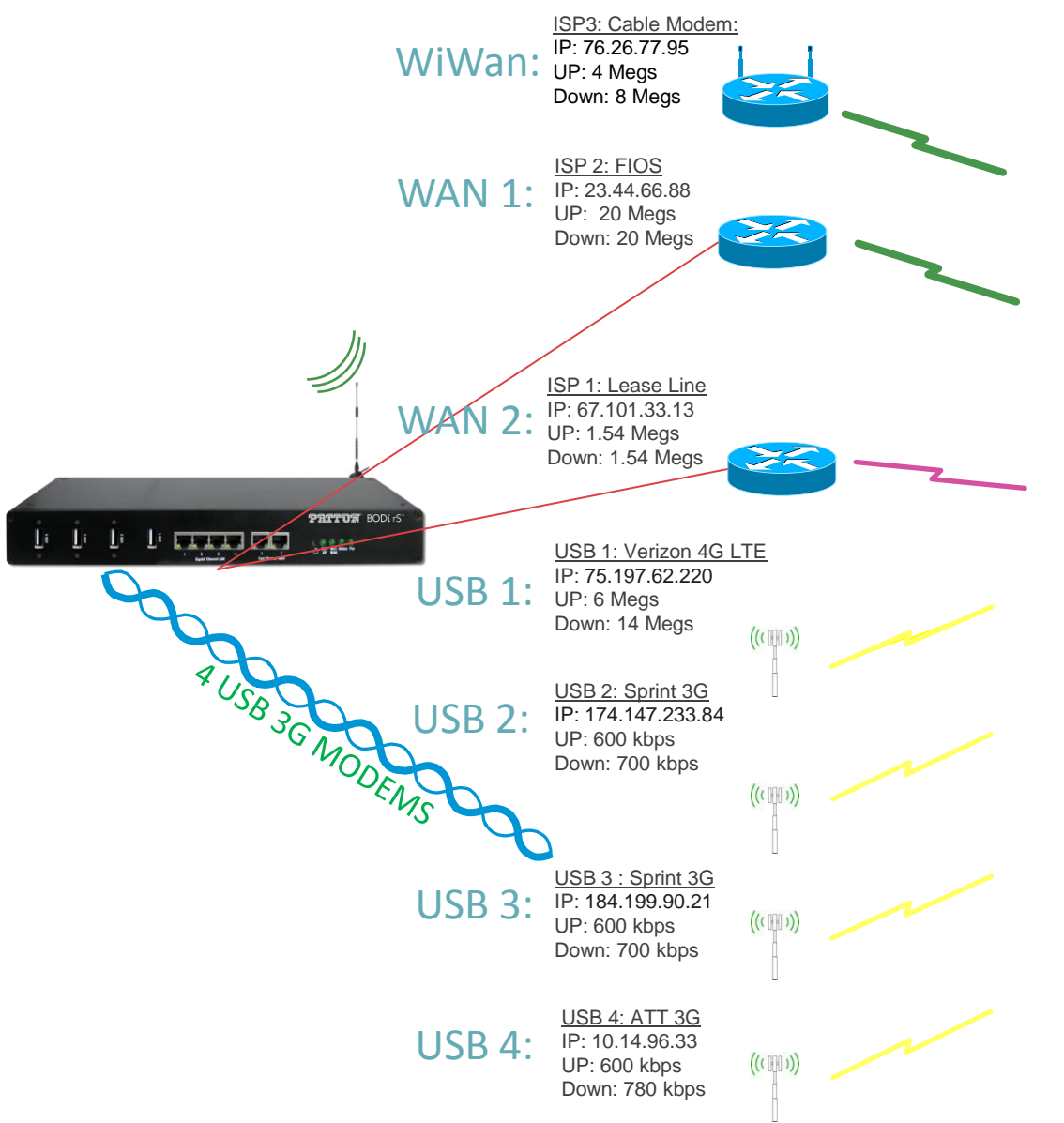
Algorithm

Overflow Order

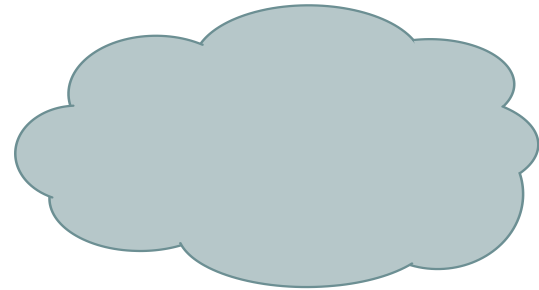
Highest Priority
Wi-Fi Cable Modem
FIOS
USB 2
USB 3
USB 4
LTE 4G
Lease Line 4T MLPPP
Lowest Priority

Save Cancel

Overflow Outbound Traffic Balance App



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



Edit Custom Rule

WB-SaveCash

Service Name *

Enable

Source

Destination

Protocol Protocol Selection Tool

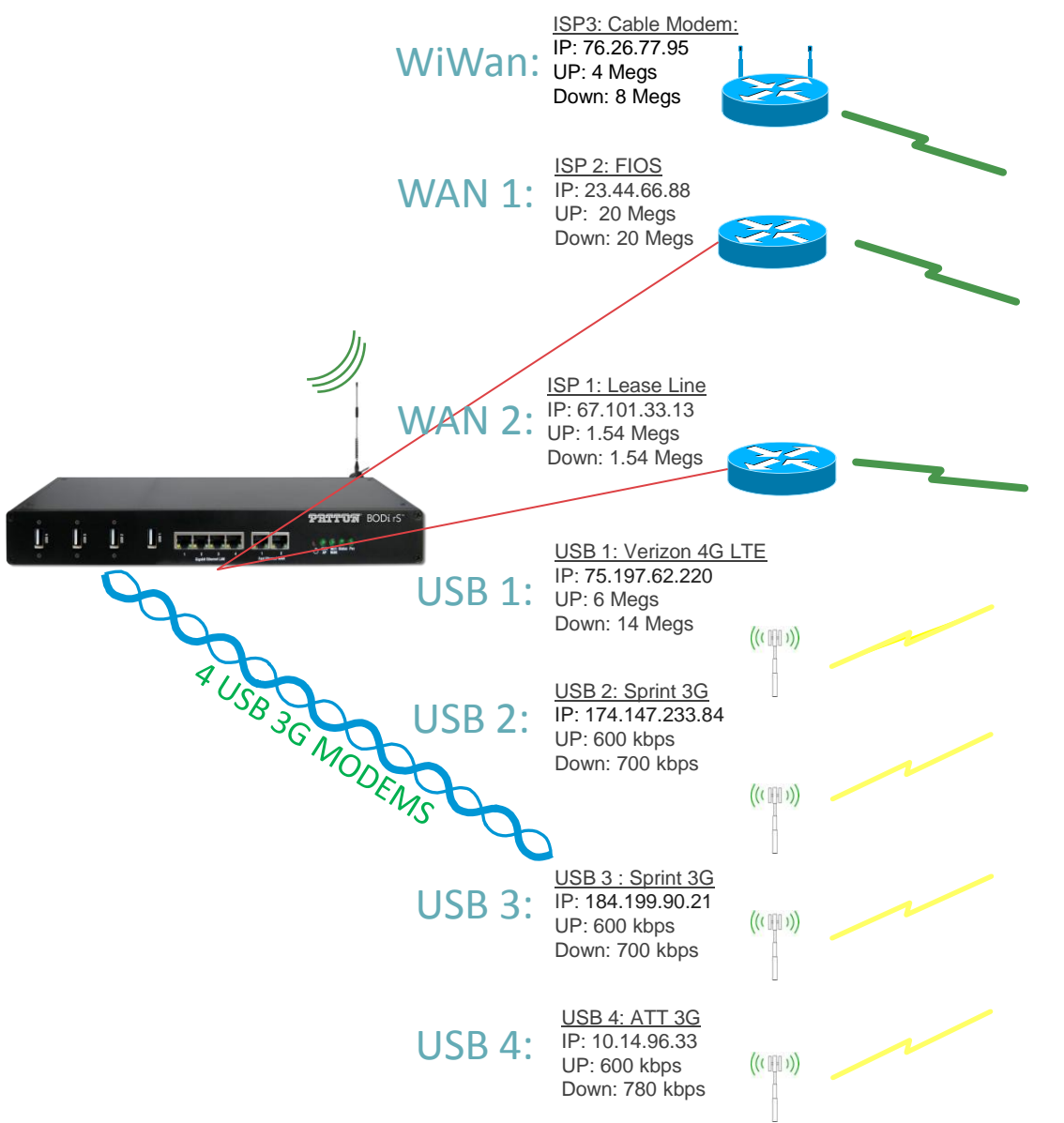
Algorithm

Overflow Order

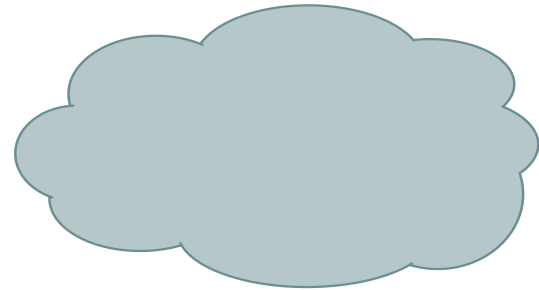
Highest Priority
Wi-Fi Cable Modem
FIOS
USB 2
USB 3
USB 4
LTE 4G
Lease Line 4T MLPPP
Lowest Priority

Save Cancel

Overflow Outbound Traffic Balance App



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



Edit Custom Rule

WB-SaveCash

Service Name *

Enable

Source

Destination

Protocol Protocol Selection Tool

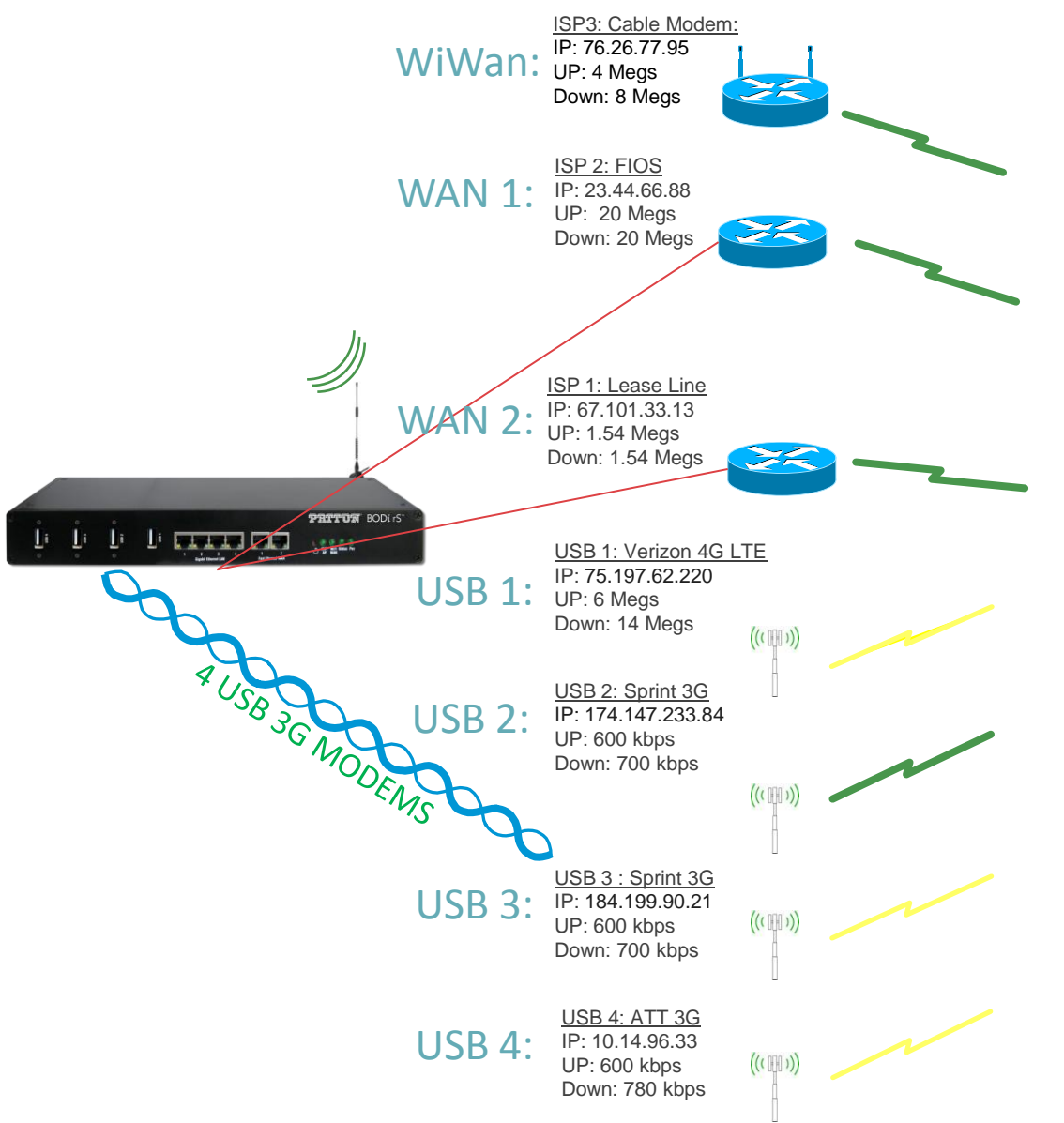
Algorithm

Overflow Order

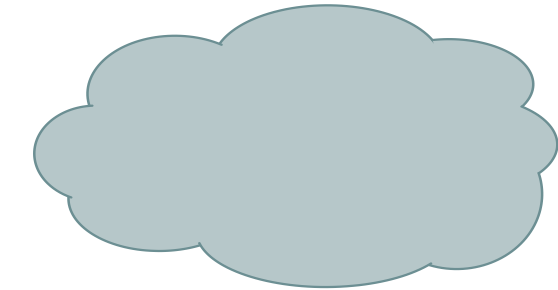
Highest Priority
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FIOS
USB 2
USB 3
USB 4
LTE 4G
Lease Line 4T MLPPP
Lowest Priority

Save Cancel

Overflow Outbound Traffic Balance App



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



Edit Custom Rule

WB-SaveCash

Service Name * WB-SaveCash

Enable

Source Any

Destination Any

Protocol Any Protocol Selection Tool

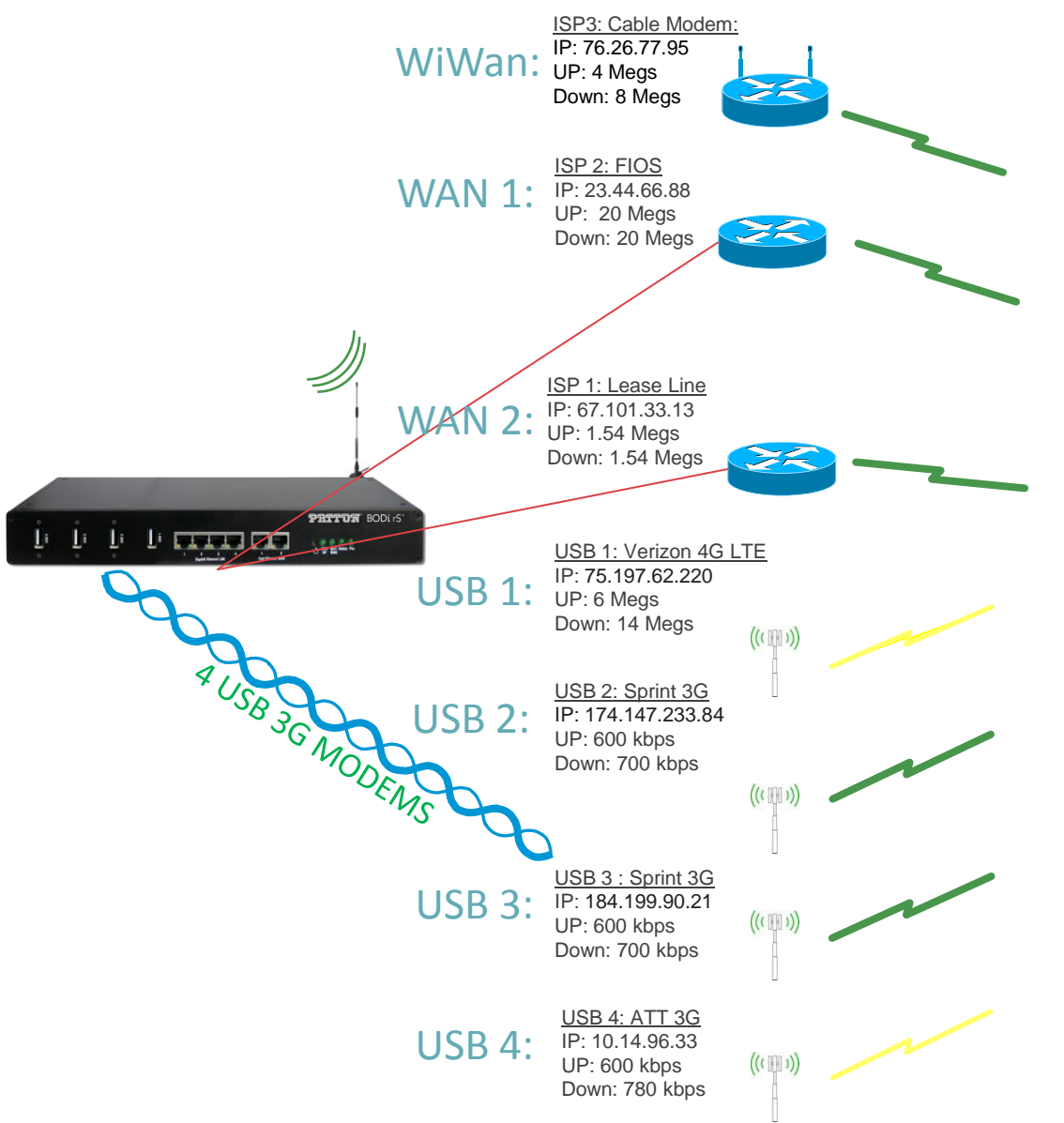
Algorithm Overflow

Overflow Order

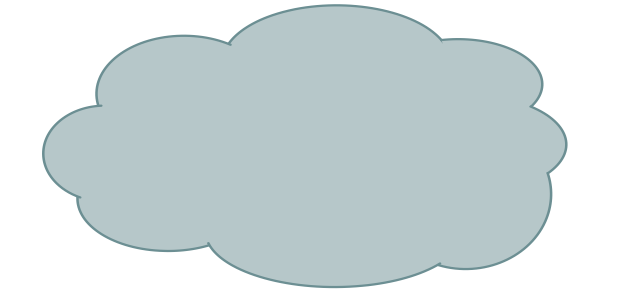
Highest Priority
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FIOS
USB 2
USB 3
USB 4
LTE 4G
Lease Line 4T MLPPP
Lowest Priority

Save Cancel

Overflow Outbound Traffic Balance App



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



Edit Custom Rule

WB-SaveCash

Service Name * | WB-SaveCash

Enable |

Source | Any

Destination | Any

Protocol | Any | Protocol Selection Tool

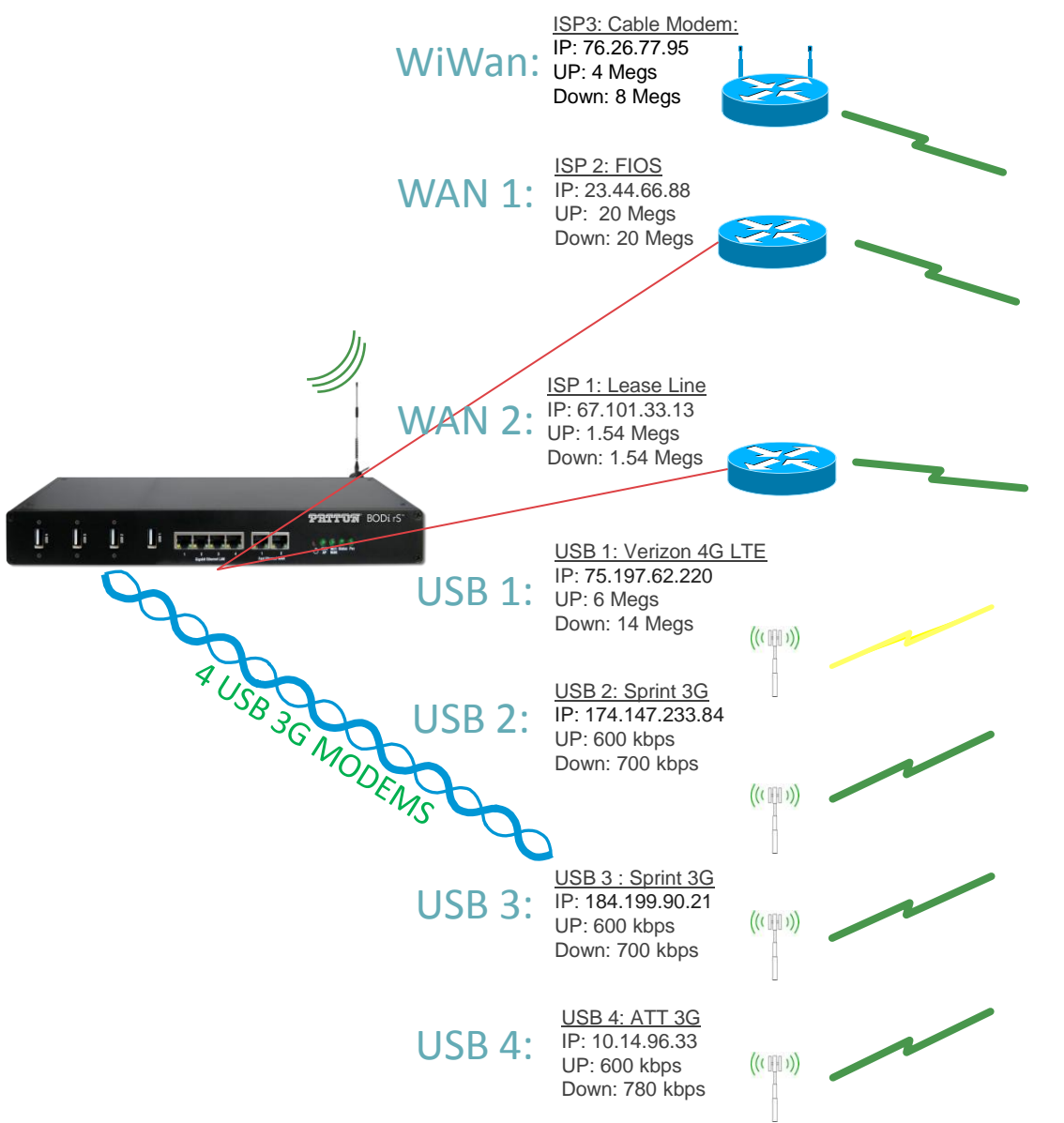
Algorithm | Overflow

Overflow Order

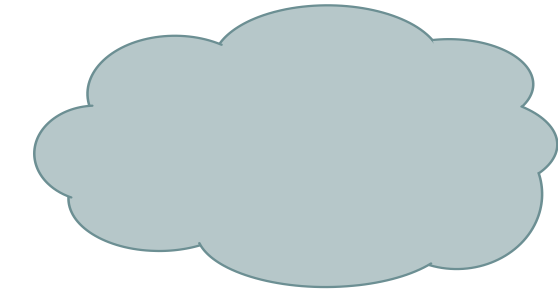
Highest Priority
Wi-Fi Cable Modem
FIOS
USB 2
USB 3
USB 4
LTE 4G
Lease Line 4T MLPPP
Lowest Priority

Save | Cancel

Overflow Outbound Traffic Balance App



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



Edit Custom Rule

WB-SaveCash

Service Name *

Enable

Source

Destination

Protocol Protocol Selection Tool

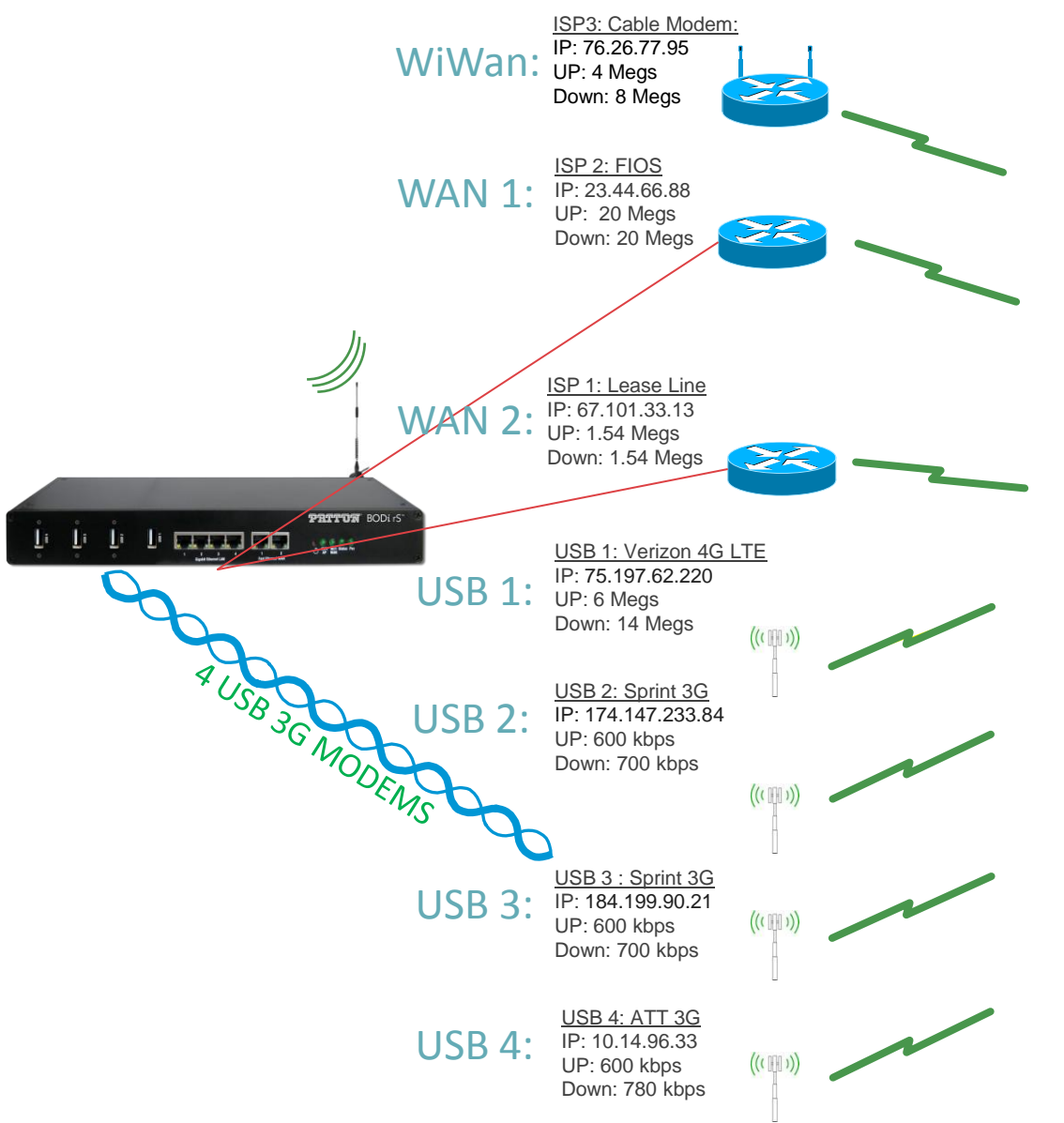
Algorithm

Overflow Order

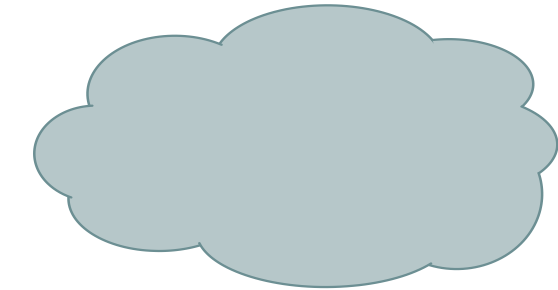
Highest Priority
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FIOS
USB 2
USB 3
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Lowest Priority

Save Cancel

Overflow Outbound Traffic Balance App



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- VPN Bonded Data Path
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- BODi Wi-WAN Interface



Edit Custom Rule

WB-SaveCash

Service Name * | WB-SaveCash

Enable |

Source | Any

Destination | Any

Protocol | Any | Protocol Selection Tool

Algorithm | Overflow

Overflow Order

Highest Priority
Wi-Fi Cable Modem
FIOS
USB 2
USB 3
USB 4
LTE 4G
Lease Line 4T MLPPP
Lowest Priority

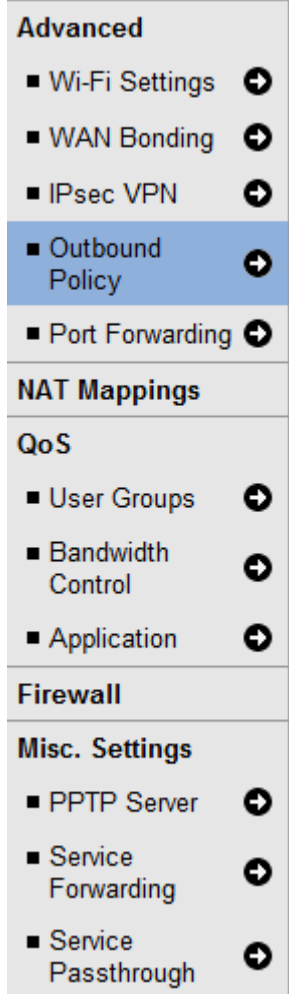
Save Cancel

Step-by-Step: Configuration for Overflow Balance Policy

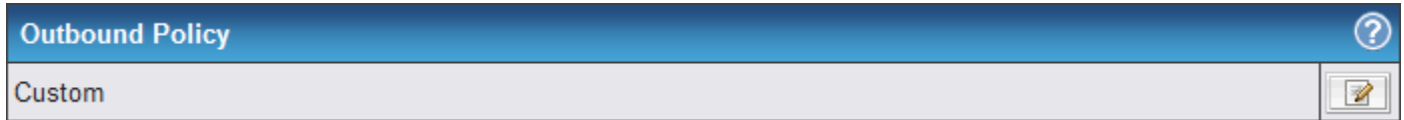
The screenshot displays the Patton router's web-based configuration interface. At the top, a blue navigation bar contains the 'PATTON' logo on the left and menu items: 'Dashboard', 'Network', 'Advanced', 'System', and 'Status'. On the far right of this bar is an 'Apply Changes' button. Below the navigation bar, a left-hand sidebar lists various configuration categories: 'Advanced', 'NAT Mappings', 'QoS', and 'Firewall'. Under the 'Advanced' category, several sub-items are listed with expandable arrows: 'Wi-Fi Settings', 'WAN Bonding', 'IPsec VPN', 'Outbound Policy' (which is highlighted in blue), and 'Port Forwarding'. Below these are 'User Groups', 'Bandwidth Control', and 'Application' under 'QoS', and 'PPTP Server', 'Service Forwarding', and 'Service Passthrough' under 'Firewall'. The main content area on the right 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 (a pencil inside a square) to the right of the 'Custom' text.

1. Click Advanced -> Click Outbound Policy

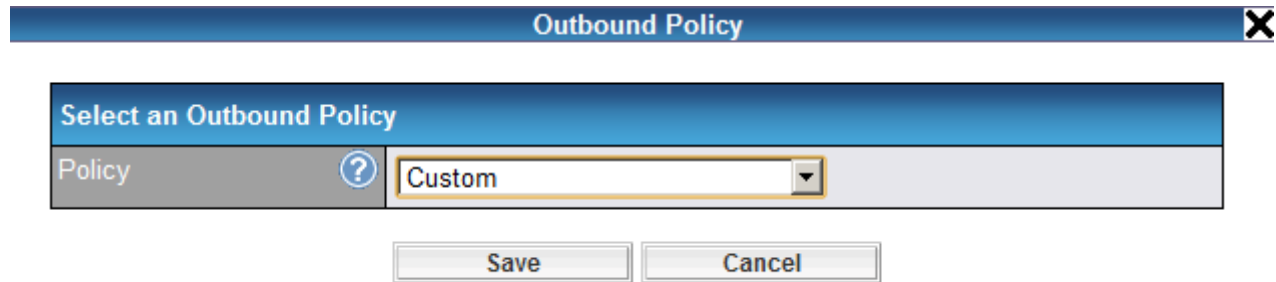
Step-by-Step: Configuration for Overflow Balance Policy



1. Click Advanced -> Click Outbound Policy



2. Create Custom Outbound Policy and Save



Step-by-Step: Configuration for Overflow Balance Policy

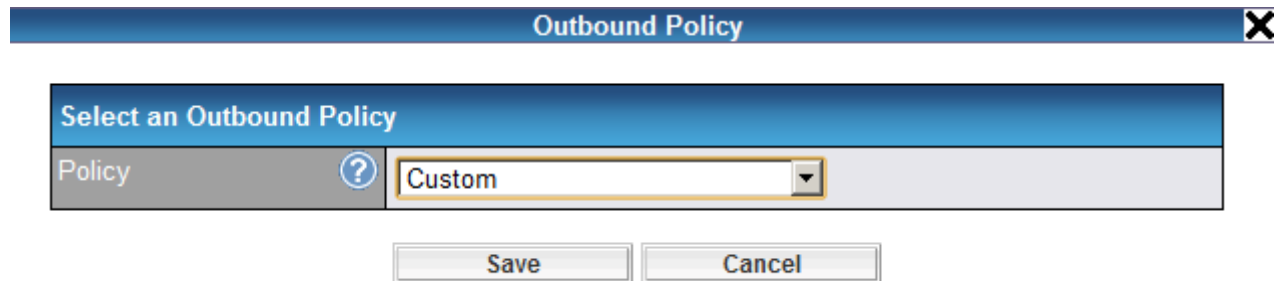


- Advanced**
 - Wi-Fi Settings
 - WAN Bonding
 - IPsec VPN
 - Outbound Policy**
 - Port Forwarding
- NAT Mappings**
- QoS**
 - User Groups
 - Bandwidth Control
 - Application
- Firewall**
- Misc. Settings**
 - PPTP Server
 - Service Forwarding
 - Service Passthrough

1. Click Advanced -> Click Outbound Policy



2. Create Custom Outbound Policy and Save



3. Add Rule

Rules (Drag and drop rows to change rule order)					
Service	Algorithm	Source	Destination	Protocol / Port	
Default			(Auto)		
<input type="button" value="Add Rule"/>					

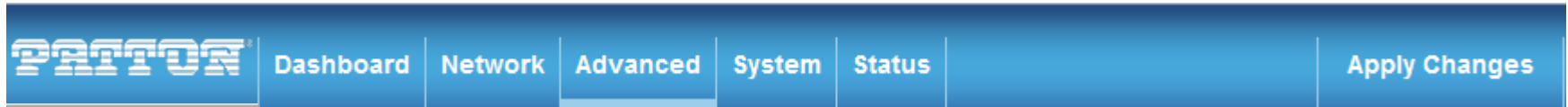
Step-by-Step: Configuration for Overflow Balance Policy

The screenshot shows the Patton network management interface. The top navigation bar includes 'Dashboard', 'Network', 'Advanced', 'System', and 'Status'. The 'Advanced' section is expanded, showing a sidebar 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' option is selected and highlighted. The main content area displays the following steps:

4. Create the Rule for outbound WEB Traffic

- Service Name: Text
- Enable:
- Source
- Destination
- Choose Overflow Algorithm
- Drag and drop your WAN links in proper Priority
- Save
- Apply Changes

Step-by-Step: Configuration for Overflow 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

4. Create the Rule for outbound WEB Traffic

Edit Custom Rule

WB-SaveCash	
Service Name *	WB-SaveCash
Enable	<input checked="" type="checkbox"/>
Source	Any
Destination	Any
Protocol	Any ← :: Protocol Selection Tool ::
Algorithm	Overflow
Overflow Order	Highest Priority <ul style="list-style-type: none">Wi-Fi Cable ModemFIOSUSB 2USB 3USB 4LTE 4GLease Line 4T MLPPP Lowest Priority

Save Cancel

Step-by-Step: Configuration for Overflow 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	✘
Default	(Auto)				
<input type="button" value="Add Rule"/>					

FOR FURTHER INFORMATION

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