

# Configuring Load Balancing

With the help of the dual WAN ports the Twin WAN Router line up is able to utilize both connections for Load Balancing and Automatic Failover. The router utilizes a session based Load Balancing mechanism. To make this easier to understand lets split up Load Balancing into three levels:

Level 1: Round Robin – splits up the traffic by IP address, it will either go out of WAN 1 or WAN 2.

Level 2: Session Based – manages sessions of a single IP address and allows you to sends the sessions to both WAN ports at the same time.

Level 3: Packet Based – splits up a session into packets, sending one packet out of WAN 1 and the other out of WAN 2.

## Load Balance Type

The Twin WAN line of products uses Level 2 Load Balancing by allowing you to manage sessions using several different options:

Bytes rx+tx	By monitoring real time speed of both connections, the router tries to establish new sessions on the line with the lower speed over by using the average over the last 5 seconds. Use this if there is a fairly even speed on both lines and would like to benefit the most from the speed available.
Packets rx+tx	Same as above but in this case the router monitors the packet flow and tries to maintain an even number of packets. Use this if transmitting a lot of small packets, such as web browsing and Usenet, helps you maintain the best latency.
Sessions Established	The router tries to maintain an even number of sessions on each WAN port by looking at the current amount of sessions currently established. Very general setting, use this only if you have similar types of connections (Cable and cable, DSL and DSL) to promote good internet traffic.

## Load Share Percentage

By changing the Load Sharing on WAN 1 you are able to indicate which line to favor. For example, there are 2 lines, both lines have a 200 kb/s capacity and the user is performing a bandwidth intensive task that is utilizing 8 sessions, 200 kb/s and 136 packets per second (assuming that each packet is approximately 1500 bytes). Below is an example of various Load Shares\*:

Loading Share on WAN 1 at 100%

Load Balance Type	WAN 1	WAN 2
Bytes rx+tx	200	0
Packets rx+tx	136	0
Sessions Established	8	0

Loading Share on WAN 1 at 75%

Load Balance Type	WAN 1	WAN 2
Bytes rx+tx	150	50
Packets rx+tx	102	34
Sessions Established	6	2

## Load Share Percentage (continued)

Loading Share on WAN 1 at 50%

Load Balance Type	WAN 1	WAN 2
Bytes rx+tx	100	100
Packets rx+tx	68	68
Sessions Established	4	4

Loading Share on WAN 1 at 25%

Load Balance Type	WAN 1	WAN 2
Bytes rx+tx	50	150
Packets rx+tx	34	102
Sessions Established	2	6

Loading Share on WAN 1 at 0%

Load Balance Type	WAN 1	WAN 2
Bytes rx+tx	0	200
Packets rx+tx	0	136
Sessions Established	0	8

\*In this scenario each Load Balance type will act in fairly similar manner because the data being transmitted is consistent, different types of data will benefit from the use of different Load Balance type.

## NAT Statistics

This section displays the real-time information of the current WAN port utilization, status and load.

Connection Status	Displays the current connection status of each WAN port.
Default Loading Share	Statically set Loading Share.
Current Loading Share	Current Loading Share based on the setting of Load Balance Type.
Current Loading	In Bytes, Packets and Sessions; indicates the current loading of the WAN ports.
Current Bandwidth	In Bytes/second, tells the user current speed/bandwidth on each WAN port.

## Interface Statistics

This field shows the usage of each WAN port in kilobytes. Use this to fine tune your Balance Type and Loading share and to monitor how much data is transferred on each interface. This field is reset every time the router is restarted.