



6WIND vRouter Software Replaces Hardware

Over 1 Million Routes
Scale from 1G to over 100G
Large Number of ARP Entries
DDoS Protection
VRRP High Availability



6WIND Case Study: Software vRouters

Togglebox Boosts Cloud Hosting Performance and Security with 6WIND vRouters

“6WIND vRouters allowed us to replace our Brocade MLX devices, and upgrade overall performance and security, with software.

No other hardware or software solutions were able to achieve these metrics for us previously.”

Matt Ayres, Owner



Togglebox, a brand of TekTonic based in Pennsylvania, USA, has a mission to provide “high performance, highly customizable cloud hosting for those seeking the highest level of customer service, and performance, without overpaying for cutting edge server technology.” It is an Infrastructure as a Service (IaaS) company that competes with cloud computing providers such as Amazon AWS and Microsoft Azure.

The Challenge

Togglebox was looking to replace aging Brocade MLX Layer 3 switches that had reached their maximum routing capacity at 512K routes and had performance challenges with the number of Address Resolution Protocol (ARP) entries. As a growing IaaS company with an increasing customer list, Togglebox required a solution that could support over 1 million routes and a large number of ARP entries. The company researched alternative hardware



devices such as new Brocade MLXe and XMR routers, and incumbent competitors, but discovered its performance requirements could not be met.

The 6WIND vRouter Solution

Upon further research, Togglebox discovered that 6WIND could solve its problem with vRouter software on Intel-based servers. Togglebox began testing the 6WIND Turbo Router™ software and discovered it met and exceeded its performance requirements to support over 1 million routes at line rate speeds for small packet sizes with a very large number of ARP entries. 6WIND's configuration designs were also simple to ease the transition from hardware to software. This impressed Togglebox as no other software solution was able to achieve these metrics previously.

Software Replaces Hardware

Togglebox was able to migrate the BGP and Layer 3 routing from its Brocade MLX devices to the 6WIND Turbo Routers running on commercial-off-the-shelf (COTS) server hardware. This deployment runs on 10G and 100G SuperMicro servers. One configuration includes an Intel® Xeon® E5-2630 v4 processor with Mellanox ConnectX-5 100G NICs

and another configuration includes an Intel® Xeon® E5-2630 v2 processor with Intel 10G NICs. By moving the routing configurations to 6WIND Turbo Router, Togglebox was able to keep its existing Brocade MLX devices as Layer 2 switches.

Performance, Flexibility and DDoS Protection

6WIND Turbo Router throughput and features can be added and increased as needed. It can scale from 1G to over 100G on Togglebox's SuperMicro servers, according to requirements. Togglebox is currently using 6WIND Turbo Router in 5G configurations for upstream BGP routing, Layer 3 routing of VLANs, Virtual Router Redundancy Protocol (VRRP) for high availability and as a firewall with security features such as sFlow and filtering.

Performance is not only for bandwidth; it is also for the ability to absorb DDoS attacks that would consume bandwidth if a routing solution is not able to absorb them. 6WIND's high performance security software features are important to protect Togglebox's customers from inbound and outbound DDoS attacks by handling bursts of small packets at line rate.

Success

The flexible 6WIND vRouter solution helps Togglebox continue its mission to provide the highest level of customer service, performance, and innovation, at an attractive price.

6WIND Turbo Router

- *Network Licenses: 1G, 2G, 5G, 10G, 25G, 40G, 100G, 200G throughput*
- *16 million packets per second per core of IP Forwarding performance, scalable*
- *Over 1 million routes, multiple full Internet routes*
- *IPv4 / IPv6 routing, BGP, OSPF, FlowSpec, Policy Based Routing and more*
- *CLI and NETCONF management options with YANG-based NETCONF APIs*
- *Bare metal deployments on Intel® Xeon® and Atom® based servers*
- *Virtual machine deployments on VMware ESXi, Linux KVM and Amazon Web Services*
- *1G, 10G, 25G, 40G, 50G, 100G Ethernet support includes Intel, Mellanox and Broadcom NICs*