6WIND
Virtualized Networking Software

Secure Site-to-Site VPNs

6WIND Turbo IPsec: **High Performance VPN** **Software For Commercial** **Off The Shelf (COTS)** **Servers**	**Cost Effective:** **Save 50 - 80%** **CAPEX**	**Scalable:** **Purpose-fit** **Performance** **with Software**	**Flexible:** **Bare Metal** **or Virtualized**

Secure and Scalable Site-to-Site Connectivity

IP Security (IPsec) Virtual Private Network (VPN) solutions are critical networking infrastructure used to create secure, high speed communication tunnels between trusted endpoints across the Internet. Examples include site-to-site VPNs for secure connectivity between data centers and between remote sites for corporate networks.

Since IP networks are inherently insecure, IPsec VPNs provide the encryption techniques required to maintain data confidentiality and integrity. However, secure connectivity must not sacrifice performance. IPsec VPN tunnels require scalable throughput to ensure the security solution is never a bottleneck.

Proprietary hardware gateways were historically required to solve high performance IPsec VPN challenges with well-known downsides including vendor lock-in and very high equipment costs. There is a market need for cost-effective alternatives to avoid a cost vs. security trade-off.

Cost Effective Secure Site-to-Site VPN Architecture

Network architects share common requirements for site-to-site VPNs to build a secure IP network architecture as follows:

. **High Performance IPsec:** Progressively increase and scale single IPsec throughput capacity above 10G and beyond.
. **Networking and Security Integration:** Include complete networking data plane and control plane protocols to integrate IPsec VPNs with High Availability networking architecture.
. **Management and Monitoring:** Leverage CLI and NETCONF/YANG based APIs for configuration, management and monitoring to preserve network operations.
. **Virtualization Readiness:** Provide incremental software upgrades from bare metal to virtual machine deployments.

Today, with Linux applications such as strongSwan, network architects can create IPsec VPN tunnels with software on COTS servers that include 10/40/100G NICs to reduce costs and vendor lock-in. However, while the Linux networking stack and control plane have the necessary features, there are numerous performance bottlenecks in the standard Linux kernel that prohibits it from scaling. As a result, network architects cannot leverage COTS servers with standard Linux to meet the performance requirements for IPsec VPN tunnels. To properly leverage COTS servers with 10/40/100G connectivity, high performance networking software is required.

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6WIND Solution: High Performance IPsec VPN vRouter on COTS Servers

6WIND leads market innovation by developing software networking products that can be deployed on COTS servers as an alternative to expensive, locked hardware solutions. For data centers, 6WIND Turbo IPsec is a ready-to-use IPsec VPN software appliance that can beat the performance of today's big name system vendors at a surprisingly low cost.

6WIND partners with hardware vendors to support major multi-core processors and 10/40/100G NICs, allowing customers to create scalable IPsec VPN networking appliances on common hardware platforms. Unlike other solutions, performance scales linearly with each additional CPU core added to data plane processing. Spare cores can be used to add more tunnels, scale security performance or increase services on an existing server.
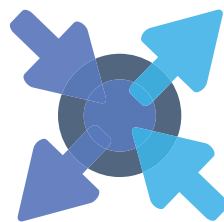
IPsec Performance

- 10, 40, 100 Gbps & beyond
- Raw: 12 Gbps per core
- VRF+IPinIP+Filtering 7 Gbps per Core

6WIND Turbo IPsec includes a rich set of accelerated networking features along with IPsec and IKE to be integrated into complex network architectures.

- . Layer 2 and IP-in-IP encapsulation
- . Filtering
- . Virtual Routing
- . High availability to avoid service outage

6WIND Turbo IPsec is Linux-friendly with management choices including CLI, NETCONF/YANG, Linux commands, SNMP and syslog to help network architects leverage existing Linux networking for network management and monitoring purposes. All 6WIND software works with existing Linux automation, configuration and management tools with no changes. 6WIND adds speed when managing constantly changing network requirements as configuration changes are much faster and more efficient in software versus hardware solutions, saving time and management costs.

6WIND Turbo IPsec includes an easy upgrade path from bare metal to virtualization with the same software, and the same performance. For virtualized configurations, 6WIND Turbo IPsec can run in a Virtual Machine (VM) in any KVM, VMware ESXi or AWS virtualized environment. 6WIND's open environment compatibility and software performance scalability make design goals for data center cloud transitions a reality.

6WIND VSR