

# 6WIND: Solving the Critical Performance Challenges for Software Defined Networks

## 6WINDGate™ Software



- ▶ High-performance data plane processing software for multicore platforms
- ▶ Fully compatible with standard application APIs, maximizing software reuse and scalability
- ▶ Seamless integration with cloud orchestrators and Layer 2/3 management software
- ▶ Delivers 10x improvement in data plane processing performance
- ▶ Comprehensive support for advanced security protocols and crypto engines
- ▶ Full suite of Layer 2 through Layer 4 protocols provides a complete networking solution
- ▶ Optimized for industry-leading multicore processor architectures, enabling fully portable application software
- ▶ Full support for industry-standard hypervisors with no performance penalty for running 6WINDGate in a virtual machine
- ▶ Higher performance, lower power consumption and faster time-to-market

### MOBILE INFRASTRUCTURE



The processing of mobile video and cloud traffic from ever-increasing numbers of 3G and 4G mobile users requires unprecedented levels of data plane processing performance, while sophisticated networking protocols are necessary to deliver and secure the advanced services expected by today's consumers. The 6WINDGate software enables OEMs to deliver best-in-class performance, latency, scalability and portability in mobile infrastructure equipment.

### NETWORK APPLIANCES



To improve cost-performance, accelerate time-to-market and maximize flexibility, network appliances for both enterprise and cloud applications are typically now implemented using commodity multicore processors rather than proprietary ASICs. Virtual network appliances are also deployed for further reductions in CAPEX and OPEX. For both configurations, 6WINDGate maximizes networking performance while maintaining compatibility with Layer 2/3 management protocols such as OpenFlow.

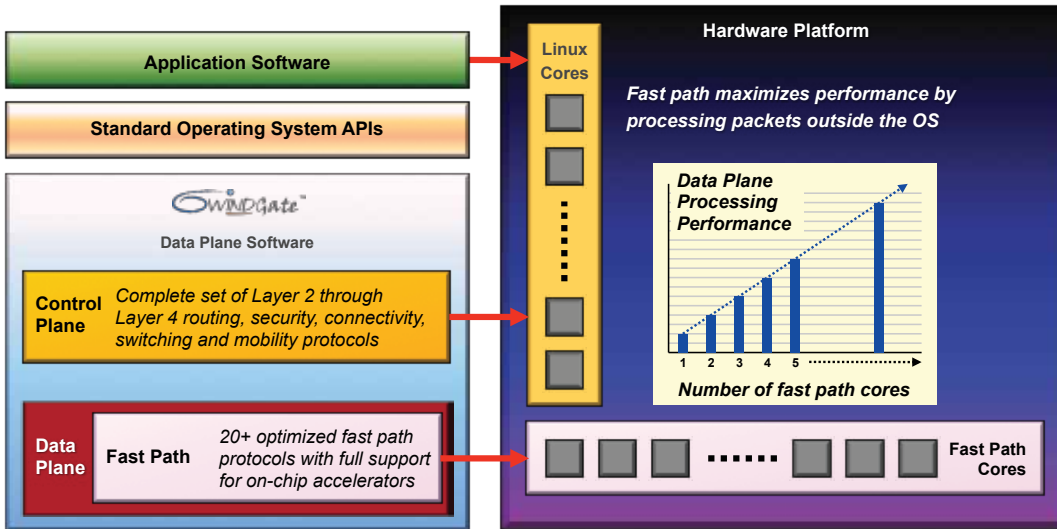
### DATA CENTER NETWORKING



In data centers, the number of Virtual Machines per server blade is increasing rapidly, leveraging improvements in processor performance. A virtual switch is required on each server blade to distribute network traffic to virtualized applications and perform traffic management for multi-tenant applications. 6WINDGate accelerates the performance of the virtual switch, provides advanced networking functions and enables the on-demand creation of large numbers of network tunnels.

# 6WINDGate Architecture

The 6WINDGate software has been specifically designed for high-performance networking applications. With support for commercial and open-source Linux distributions, it maintains compatibility with Linux APIs so that existing applications can easily be reused in new systems. Full support is provided for virtualization with no impact to system performance.



The vast majority of packets are processed in a fast path environment, executing outside the operating system in a "bare metal" or Linux userspace environment. By avoiding typical OS overheads associated with functions such as preemptions, threads, timers and locking, this architecture maximizes system-level performance for data plane processing functions.

Typically, 6WINDGate delivers 10x the data plane processing performance of a standard Linux networking stack, with performance increasing linearly based on the number of processor cores configured to run the fast path.

With optimized support for a wide range of industry-leading multicore processors, 6WINDGate enables developers to maintain a single, unified application software platform that can be deployed across a product portfolio based on one or more processor architectures. 6WINDGate fully leverages the services available in Multicore Execution Environments (MCEEs) provided by multicore processor suppliers.

6WINDGate includes a comprehensive set of networking protocols for routing, switching, security, mobility and protocol termination, minimizing the need to integrate protocols from multiple software suppliers. Available protocols include:

- ▶ VLAN, VXLAN, Mobile IP, link aggregation, GRE, NVGRE, PPP, L2TP, GTP, MPLS, ROHC
- ▶ IP forwarding, IP tunneling, routing and virtual routing
- ▶ IPv4, IPv6, IP multicast, IPsec, IKE, firewall, NAT
- ▶ UDP, TCP, SCTP, flow inspection, SSL termination, TCP termination

Evaluation licenses are available so that developers can efficiently evaluate the performance of 6WINDGate in their own target environments.

## SEMICONDUCTOR PARTNERS

6WIND works closely with leading processor manufacturers to ensure 6WINDGate fully leverages the performance, security and reliability features designed into their multicore architectures.

## SOLUTION PARTNERS

6WIND partners with industry-leading companies worldwide to provide software (security, DPI, control plane), operating systems, hypervisors, board-level products and system-level products which complement the 6WINDGate solution.

## HIGH AVAILABILITY

6WINDGate provides full support for High Availability (HA) frameworks, in order to ensure five-nines or zero-downtime reliability in Carrier Grade equipment.

## VIRTUALIZATION

6WINDGate integrates seamlessly with hypervisors, cloud orchestrators and Layer 2/3 management software (e.g. OpenFlow) supporting industry-standard configurations for virtualized data plane processing.

## TECHNICAL SUPPORT

6WIND delivers comprehensive, global services and support. Our expert team is available for custom software design and optimization.

For more information on any of our products, services or partners please visit [www.6wind.com](http://www.6wind.com) or call +1 (650) 968-8768.

©6WIND 2013.  
References to company names, products or other such items may be trademarks of their respective owners.

Specifications subject to change without notice.

V011713

