



6WIND Design Services

Ensure Scalability and Performance for Applications with Multicore Technology that Addresses Today's and Future Network Traffic Growth in IP-Based Applications and Services

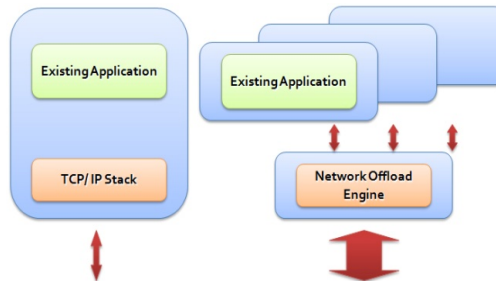
KEY BENEFITS

- **Remove networking performance bottlenecks** to meet demanding performance requirements legacy applications and equipment can no longer support
- **Enable a scalable network offload engine** with multicore to focus networking functionalities on an architecture **capable of addressing all network traffic growth scenarios**
- Specifically designed as a **scalable solution** to meet gradual or multiple highest performance requirements for all IP-based applications
- Use **6WIND's proven 6WINDGate™ multicore technology** – adopted and used by the majority of tier one telecommunications equipment providers – to move applications to higher network performance architectures
- **Ready-to-implement** complete L2 – L4 networking functionalities, **hides multicore complexity, simplifies migration** to multicore architectures and **maximizes software reuse** with no performance penalties. Modular set of features, optimized for multicore:

IP Forwarding and Routing (including Virtual Routing)
IP Reassembly
L2 – VLAN, GRE, Bridging, Link Aggregation, GTP, PPP, L2TP
ECMP
VRRP
IPsec using crypto engines, IKEv1/IKEv2
IP Filtering
NAT
Flow Inspection
TCP QoS
IP Multicast
IPv6 Ready (Forwarding, Tunneling, Transition, IPsec, QoS, Reassembly, Filtering, Multicast)

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The Challenge: Scaling Applications When Network Traffic Grows

IP-Based Networks Require Multicore:

Telecommunications and enterprise networks continue to move to all-IP-based equipment, applications and services to benefit from simplified architectures and cost advantages. Traditional single-core based equipment cannot sustain required performance. This has placed stringent bandwidth performance demands on IP-based applications. Multicore technology provides a more sophisticated and powerful communications layer to offload networking performance concerns. The IP layer implemented in equipment handling this bandwidth is business critical and green computing is also essential to limit power consumption. Multicore addresses these challenges.

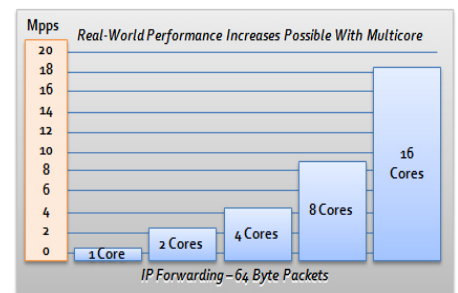
6WIND Design Services to Offload Networking Concerns:

6WIND provides 6WIND Design Services, a packaged embedded software solution, to allow telecommunications service providers and enterprises to scale performance so applications can work optimally despite any sized network traffic growth. This is done seamlessly – without requiring applications to be repurposed – because 6WIND Design Services easily migrate applications to run on multicore-based architectures capable of the intelligence and performance needed to meet network traffic growth requirements. Using multicore technology, you can offload networking requirements to multicore technology, enabling you to ensure maximum performance of IP applications in line with any network traffic.

6WIND Design Services - Remove Multicore Challenges:

By removing all design complexities and creating a simplified method to integrate existing and future applications onto multicore-based architectures, 6WIND Design Services enable any application to scale to optimally meet all network traffic growth.

6WIND leverages its in-depth knowledge and expertise about multicore, all application architectures and performance bottlenecks to ensure applications and services can be seamlessly scaled to meet all network traffic growth requirements. 6WIND Design Services is a modular solution, allowing customer flexibility in selecting any desired IP functionalities. 6WIND helps you define a clear and cost-effective path for you to move applications to run on multicore technology so you benefit from advanced networking performance, to include support for 10 Gbps Ethernet links.



6WIND Design Services Advantages:

- Scale performance of IP-based applications and services to meet any network traffic growth scenario
- Offload networking performance concerns to multicore technology with an ease not available with anything else
- Ensure existing or future applications work seamlessly, with no performance penalties, across your new multicore-based architectures
- Maximize software development reuse
- Ensure an optimal dedicated front-end or sharing of cores with simplicity to maximize network traffic performance without requiring application modifications
- Delivered with a complete XML-based management solution including, an industry standard CLI and web management toolset
- Easy to install and easy to use end-to-end solution

6WIND Design Services

6WIND Design Services leverage multiple strengths – 6WIND’s market-leading expertise and knowledge in multicore, 6WIND’s expertise in application architectures, 6WIND’s expertise in performance bottlenecks and 6WIND’s 6WINDGate solutions – to enable specific results for scaling applications using multicore technology to meet today’s and tomorrow’s network growth requirements. Ideal for high performance applications, 6WIND Design Services ensure this performance with multicore for a myriad of applications.

6WIND Design Services Applications:

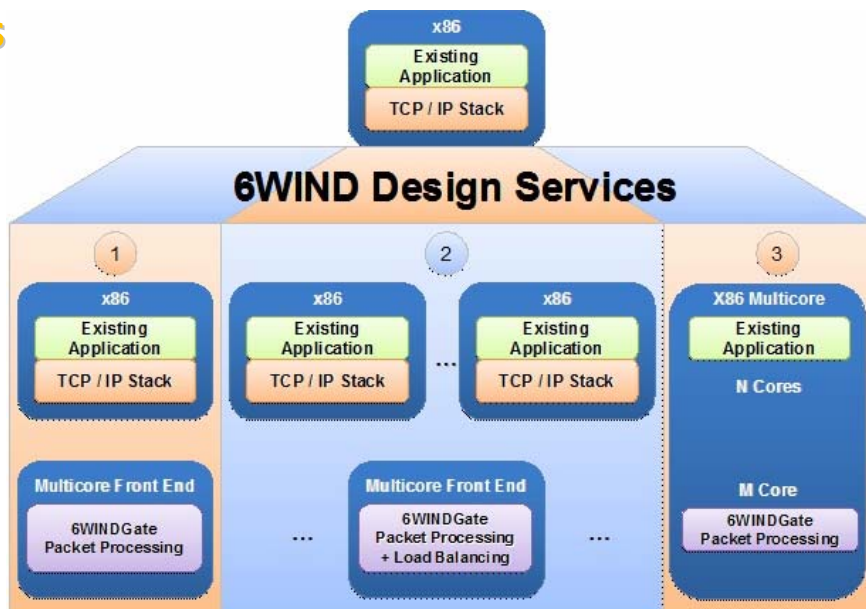
- Security Gateways, UTM Appliances
- IPTV
- Content Inspection
- IMS, VoIP & ToIP
- Wireless: 3G, WiMAX, LTE
- Billing Systems

6WIND Expertise:

Using 6WIND Design Services, 6WIND can help you define the best scenario for migrating your applications to higher performance architectures while maximizing software reuse. Leveraging optimal components of 6WINDGate technology suited for your needs, 6WIND Design Services offer simplicity, cost reductions and maximization of performance needed to ensure your IP-based applications perform as desired. To meet specific application requirements, 6WIND can also provide code optimization, configuration templates and more to maximize any application’s performance.

6WINDGate Technology:

Used by the majority of tier one telecommunications equipment providers, 6WINDGate technology has been ported and validated on market-leading multicore platforms (Cavium Networks™, Freescale™, Intel®, NetLogic, etc.) and are available on market leading boards. 6WIND’s solutions deliver a large range of networking features providing the highest level of performance. More information about 6WINDGate technology can be found online at: <http://www.6wind.com/6WINDGate-software.html>.



3 Typical Paths to Multicore:

6WIND Design Services ensure any existing application running on single-core architectures, using a standard Linux networking stack, can be made to seamlessly and transparently work on a multicore-based architecture. There are three typical migration path scenarios designers can take, starting from an existing x86 application:

Scenario 1	Add a high speed packet processing front end to offload the application processor.
Scenario 2	Add a high speed packet processing front end and load balance the traffic to several application processors.
Scenario 3	Migrate to multicore architecture and use a certain number of cores dedicated to packet processing.

In scenarios 1 and 2, 6WINDGate packet processing can provide standard features for front end packet processing such as L2, IP forwarding, IP packet reassembly, IPsec, etc. All these features are normally resource-consuming on a standard processor but are not so with 6WINDGate maximizing packet processing. 6WINDGate packet processing can also load balance the traffic (scenario 2) to have several x86 application servers running at the same time. Using multiple packet processing front ends extends processing capabilities and/or provides the application with high availability features.

"With 6WIND's proven market-leading expertise in multicore, application architecture and performance bottlenecks, you can now confidently offload all network traffic concerns to 6WINDGate, no matter your requirements."

Scenario 3 makes moving existing applications to x86 multicore possible by dedicating some cores to the applications and others to networking functions. Within the different scenarios, 6WINDGate can also provide specific packet processing to identify sessions in traffic (NAT sessions for large scale NATs, SIP flows for soft switches, SCTP sessions, etc.), informing applications when specific packets are received and significantly offloading it from the application.

Combining the first two scenarios with scenario 3 also makes sense for high end applications. 6WINDGate can be progressively introduced according to system technical and cost requirements and will scale to whatever the bandwidth of incoming traffic. It is also modular, to allow customer choice. With 6WIND’s proven market-leading expertise in multicore, application architecture and performance bottlenecks, you can now confidently offload all network traffic concerns to 6WINDGate, no matter your requirements.

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<http://www.6wind.com>

6WIND Design Services	
6WIND's Proven Expertise	<i>Helps you to define the best evolution scenario for your application</i>
6WINDGate Technology	<i>Use the multicore networking software selected by 2/3 of existing tier-1 telco equipment providers</i>
The optimal (performance, features and cost) network offloading solution for your applications	