The network infrastructure is the backbone of the emerging intelligent connected world. Over the next several years, the number of connected devices and machines is expected to triple or even quadruple. This rising demand for wireless and wireline connectivity is having a profound impact on the network infrastructure and will create new challenges for equipment providers and operators alike. Equipment providers must find ways to expand capacity, consolidate systems, and reduce costs. And operators must find ways to expand and enhance the quality and value of their service, add new services that increase the average revenue per user and device, and lower total cost of ownership.

Wind River® Intelligent Network Platform is an integrated and optimized software system consisting of the critical run-time components and life cycle development tools needed to build next-generation intelligent network elements. The platform enables equipment providers to build high performance, high value products that accelerate, analyze, and secure network traffic and applications.

FEATURES

Consolidated Management and Data Plane Run-Time

Wind River Intelligent Network Platform is a comprehensive solution for the consolidation of management and data plane network applications. The platform offers customers maximum flexibility to utilize it in its entirety as a fully integrated and optimized system, or in whatever combination of the components best fits their specific design needs. Each component of the platform is available as a standalone offer.
Packet Acceleration and Throughput
Intelligent Network Platform takes full advantage of the powerful processing capabilities in today's leading multi-core processors, including the Intel® communications platform. By optimizing software with specific hardware technologies, significant performance gains can be achieved in IP forwarding and in UDP and TCP termination.

Wind River Application Acceleration Engine
The platform includes Wind River Application Acceleration Engine, a comprehensive, optimized network stack designed for the acceleration of layer 3 and 4 network protocols. Application Acceleration Engine works in conjunction with Linux in the data plane and has been fine-tuned for the Intel communications platform and processors. It leverages the performance of Intel’s Data Plane Development Kit (DPDK) to accelerate networking applications, protocols, and security components of all kinds.

Intel Data Plane Development Kit
DPDK provides an innovative Linux user-space packet acceleration model that forms the platform’s foundation and enables the consolidation of the management and data plane on a single system. Its link to the hardware plays a key role in enabling the platform to achieve high-performance data plane application acceleration.

Deep Packet Inspection
Wind River offers a complete software-enabled deep packet inspection (DPI) solution that identifies traffic flows, communication protocols, and applications. It can also be used to inspect packets for patterns that may contain viruses and malware. Our DPI solution is accelerated using Wind River Application Acceleration Engine with DPDK extensions, and includes two critical engines:

Wind River Flow Analysis Engine
Wind River Flow Analysis Engine is a set of software libraries and tools that enable deep visibility into layers 4–7 traffic flows, including real-time packet classification. Flow Analysis Engine categorizes the traffic into different flows, and may also be used to identify the communication protocols and applications that transmit the packets onto the network.

Wind River Content Inspection Engine
Wind River Content Inspection Engine is a high-speed pattern matching solution that matches large groups of regular expressions against blocks or streams of data. Content Inspection Engine is ideal for network applications that need to scan large amounts of data at high data rates, such as intrusion prevention (IPS), antivirus (AV), unified threat management (UTM), and other DPI systems.
The platform’s end-to-end DPI functionality is illustrated in the diagram below.

![Diagram of network acceleration, deep packet inspection, and packet identification in one system](image)

**Figure 2: Network acceleration, deep packet inspection, and packet identification in one system**

**Carrier Grade Linux**

The platform has been optimized for Wind River Carrier Grade Linux. Wind River Linux is a commercial-grade open source run-time solution that offers maximum flexibility and scalability for use across the entire product portfolio. Wind River Linux complies with the Carrier Grade Linux 5 specification, and all Carrier Grade Linux packages and patches have been integrated, tested, and validated. Wind River Linux is the only commercially available Linux that includes DPDK as an integrated and supported run-time component. The integration and optimization of Wind River Linux with the Intel communications platform and Xeon® processors offers an incredible time-to-market advantage, yet customers do have the flexibility to utilize their own Linux distribution.

**BENEFITS**

- One source for all critical management and data plane software components
- High performance run-time environment for maximum packet throughput results, in both legacy and next-generation applications
- Most comprehensive software-enabled DPI software
- Scalable run-time environment for use across all network element portfolio products
- Market synchronization with next-generation common hardware platforms and Intel DPDK
- Lowest total cost of ownership for a management and data plane consolidated software system
- Substantial time-to-market savings with several engineering years of development already completed, tested, integrated, and deployed
- Wind River life cycle tools portfolio for system simulation, quality testing, and development and debugging
- Globally supported project development for all platform components
- Access to Wind River Professional Services for customizations, additional optimizations, and run-time
USE CASES

Wind River Intelligent Network Platform serves as the foundation for network products in the access, edge, and core in wireless, wireline, and security appliance markets. The platform is ideally suited for the following use cases:

- Application and service gateway acceleration
  - eNodeB, Media gateways
  - Data centers
- Network intelligence for next-generation security appliances
  - Accelerated VPNs with hardware cryptographic offload
  - Devices that require greater network intelligence such as DPI
  - Next-generation firewalls
- Server offload
  - Offload of CPU-intensive applications to the data plane or to a complementary offload hardware unit
  - Transparent offload of native Linux applications to the data plane

TECHNICAL SPECIFICATIONS

- Wind River Linux 4.3 with integrated DPDK
- Fedora 16 and 17
- Ubuntu 12.0.4
- Intel communications platform
- Intel multi-core processors such as Xeon

WIND RIVER SUPPORT AND SERVICES

Wind River Intelligent Network Platform is backed by our award-winning global support organization. Customers can get the help they need in the language and time zone that best fits their needs. We also offer comprehensive network equipment design services to help our customers extend the capabilities of their own engineering team.

HOW TO PURCHASE

Visit www.windriver.com/company/contact to find your local Wind River sales contact. To have a sales representative contact you, call 800-545-9463 or write to inquiries@windriver.com.

For more information, visit www.windriver.com/IntelligentNetworkPlatform or call 800-545-9463.