

## WIND RIVER PLATFORM FOR GATEWAYS, RESIDENTIAL PROFILE

Your Turnkey Solution for Smart Services Gateways to the Home

Wind River Platform for Gateways offers original equipment manufacturers (OEMs) and original design manufacturers (ODMs) a pre-integrated, fully supported reference platform to create products that aggregate and manage devices and services at the network edge. Built on Wind River's market-leading commercial embedded Linux, Platform for Gateways provides the software stack, the open standards, and the hardware support customers need to prototype highly differentiated residential gateways quickly and cost effectively.

As a "turnkey" solution, Wind River chooses, integrates, manages, and supports key independent software vendor (ISV) technologies. We select, optimize, and test the open source packages needed to create a robust and extensible residential gateway. You can choose one or more middleware software components and then customize the stack for your specific device. Platform for Gateways provides a configuration profile to create a residential gateway software stack out of the box.

In short, Platform for Gateways gives players in a high-volume, low-margin market the head start they need to build competitive products.

### USE CASES: DELIVERING VALUE ACROSS A COMPLEX SUPPLY CHAIN

By their very nature, gateways sit at the center of a complex web of technologies, commercial interests, and human needs. In this interconnected world, device manufacturers need to create software stacks that are flexible enough to run the growing number of applications available to consumers while fitting into the existing networks of service providers.

#### Meeting Residential Needs

The typical use case for Wind River Platform for Gateways is a residential gateway connected to a broadband network. In this application, the gateway device routes many different services through one consolidated broadband network. The hardware used in Platform for Gateways is a small-footprint, low-power device with appropriate peripherals, depending on the application, that connects to the Internet through a wireline connection. Within the residence, it routes voice calls, multimedia content, and Wi-Fi Internet traffic and can connect to Z-Wave devices and security devices. Platform for Gateways is remotely managed by an operator, using the industry-standard TR-069 protocol, allowing software bundles to be deployed using Open Services Gateway initiative (OSGi) provisioning.

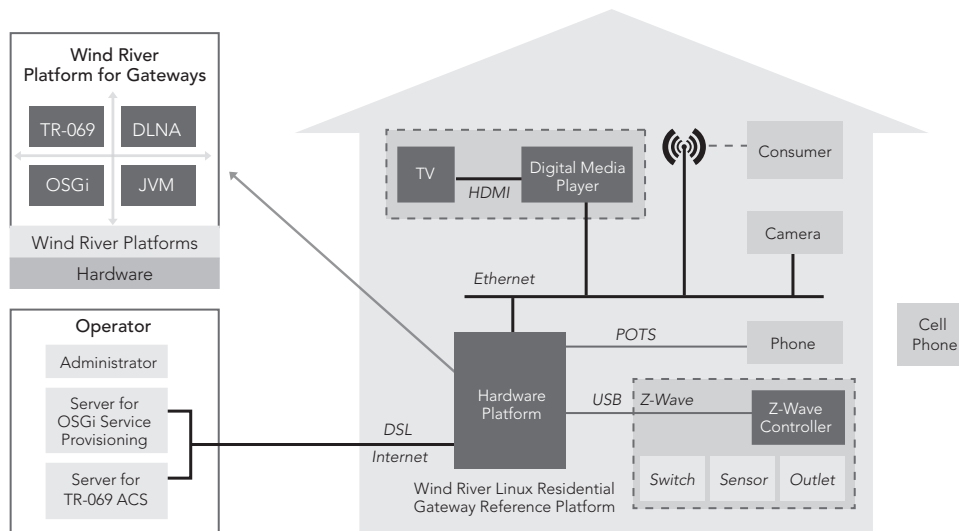


Figure 1: Typical residential profile deployment

### Meeting Consumer Demand

As products and services converge in the home, consumers have come to expect high levels of performance and service. Instant-on configuration, no disruption of service from competing technologies, wired and wireless broadband connectivity, and new services on demand have become table stakes for home gateway customers. And it's not just about home entertainment and home office applications anymore. Consumers are adding home automation, surveillance, and even medical device functionality to their gateways. Platform for Gateways lets operators deliver, remotely configure, diagnose, and support a wide range of services at consumer-friendly prices.

### Meeting OEM Needs for Speed and Flexibility

OEMs in the residential gateway market often find themselves prototyping new products for multiple operators at a time. Speed counts, as do a low bill of materials, a single support contract, and an R&D-friendly pricing structure. An open, extensible, and standards-based platform is essential. Platform for Gateways provides OEMs and ODMs a complete, affordable turnkey solution for rapid prototyping and cost-effective production backed by world-class support. Its pre-integrated components have been validated to work together, reducing device manufacturers' development time.

### Meeting Operator Needs for Competitive Products and Prices

Broadband service providers have to deliver rich capability at low cost, remotely upsell services, and upgrade and support deployed gateways cost effectively. For operators, it's all about increasing average revenue per use (ARPU). Platform for Gateways provides a standards-based management agent that can be used by a provider's existing device management system, while the pricing model allows operators to control both operating expenses (OPEX) and capital expenditure (CAPEX).

## KEY FEATURES AND BENEFITS

### Validated, Supported Middleware Stack

- Simplifies vendor management
- Reduces R&D costs
- Shortens time-to-market

### Wind River Linux 4.2 Run-Time and Tools

- Provides quality assurance, reduces risk, delivers predictable roadmap and vendor stability
- Leverages Wind River's LDAT build system, the Wind River Workbench development environment, and extended open source tooling

### Easy Customization, Extensibility, In-Depth Support

- Enables fast response to requests for proposals and requests for qualification
- Reduces time-to-market by three to six months
- Increases productive life of customer premises equipment (CPE)

### Remote Provisioning and Management Enabled by Middleware Technologies

- Enables operators to continuously extend service offerings
- Reduces configuration and support costs for on-premise equipment

### Affordable Middleware Modules

- Provides development and pricing agility
- Allows OEMs to license only the technologies they use

## PLATFORM FOR GATEWAYS ARCHITECTURE

### Platform for Gateways Core

The core of Platform for Gateways contains configuration and build information to integrate its components to generate an optimized, functional run-time image. This layer includes 63 additional open source software packages such as network routing (arptables, dnsmasq, igmpproxy, libnetfilter\_conntrack), VoIP (asterisk), multimedia (libupnp, ffmpeg), and others to implement firewall, IPsec VPN, PPTP VPN, PPPoE, UPnP, VoIP, Web user interface, WLAN, VLAN, and IPv6. It also includes a profile specifically designed for residential gateways.

### Wind River Linux

Platform for Gateways leverages the run-time components of Wind River Linux 4.2. This includes the 2.6.34 Linux kernel, the glibc C library, and other operating system libraries and utilities (sold separately).

The Linux Distribution Assembly Tool (LDAT) is a Wind River build system that allows software developers to integrate different software components together. Developers can add their own software and still apply service updates to their software stack. Wind River Workbench, the Eclipse-based development environment, provides sophisticated development tools (sold separately).

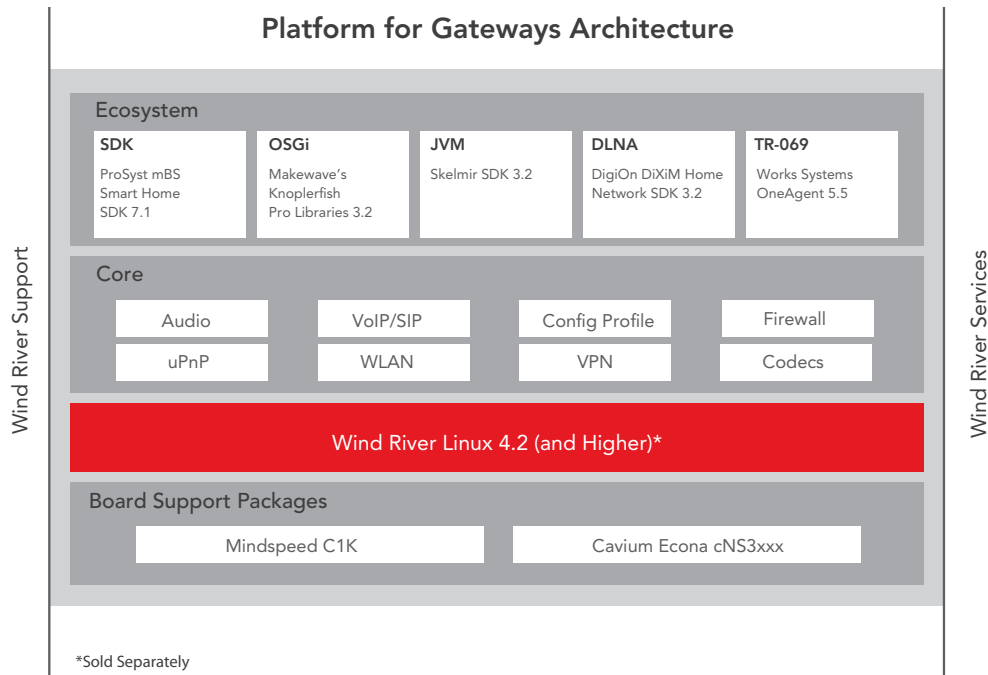


Figure 2: Configuration of Wind River and partner components that comprise the residential gateway solution

### Supported Hardware

Platform for Gateways supports the Cavium Networks ECONA CNS3XXX and Mindspeed Comcerto M83xxx boards in the form of board support packages (BSPs). These BSPs deeply and fully support all peripherals enabled in the chipset.

If the hardware you want to use is not presently supported, it may be on our roadmap. Additionally, Wind River can develop BSPs using an asynchronous BSP release process. Contact Wind River for more information.

### Middleware Partners

#### Digital Living Network Alliance

Digital Living Network Alliance (DLNA) provides a standard that allows different devices to transmit multimedia content within a network. It is frequently used in consumer devices. In Platform for Gateways, the DLNA SDK is DigiON's DiXiM stack, which includes a DiXiM Media Server (DMS) application.

#### JVM

The Java Virtual Machine (JVM) pre-validated with Platform for Gateways is Skelmir's CEE-J VM. It is a small-memory-footprint, fast-performing, clean-room virtual machine with optional Advanced Graphics support.

## WIND RIVER SUPPORT SERVICES

Platform for Gateways includes support for integrated partner technologies. It is delivered through Wind River's award-winning global support team, which offers multilingual support through six centers and 20 hubs worldwide.

## HOW TO PURCHASE

Visit [www.windriver.com/company/contact/index.html](http://www.windriver.com/company/contact/index.html) 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](mailto:inquiries@windriver.com).

## *OSGi Platform*

The Open Services Gateway initiative (OSGi) is a framework that provides a component model. Applications are delivered as bundles, which are then run within a JVM. In Platform for Gateways, the OSGi platform is Makewave's Knoplerfish Pro, which is an OSGi R4 v4.2-compliant service platform. It includes service bundles for UPnP and mobile management.

## *TR-069*

TR-069 is a specification for remote management of deployed devices. It is typically used in wired CPE devices. The TR-069 agent included in Platform for Gateways is OneAgent TR for CPE from Works Systems. This agent runs on the deployed device and provides a management channel for a centralized management console.

## *Home Automation SDK*

Platform for Gateways includes an SDK that can be used to develop OSGi-based home automation software components. It is implemented with the ProSyst mBS Smart Home SDK, which provides interfaces for UPnP, Z-Wave, and ZigBee.

## DOCUMENTATION

Wind River provides a document that contains configuration and build instructions that enable ISV technologies to work with Wind River Linux. ISVs provide documentation for their respective technologies.