Wind River Simics is a full system simulator used by software developers to simulate the functional behavior of target hardware systems. Referred to as a virtual platform, it can run the same unmodified target software as the physical hardware, including the same BIOS, boot loader, operating system, middleware, and application.

With Simics, any size or complexity of electronic system can be simulated: from a single processor to multi-core, multiprocessor, multi-board, multi-rack networked systems.

Wind River offers many models of Intel devices, including the next-generation communications platform from Intel, code name Crystal Forest. Models of other next-generation Intel architecture devices will be available in the near future.

Figure 1: Wind River Simics simulates the functional characteristics of the target hardware, enabling the unmodified target software to run on it

**BENEFITS**

- **Accelerate time-to-market:** Begin software development and integration even before physical hardware is available.
- **Reduce costs and risks:** Try out new technology earlier; eliminate target resource issues.
- **Improve team collaboration and efficiency:** Parallelize hardware and software development and easily share virtual hardware configurations.
- **Optimize networked system development:** Debug, test, and view your networked system as a whole instead of in individual pieces.
Extensive Support for Intel Architecture

Processors/Cores
- Intel Atom Silverthorne
- Intel Sandy Bridge (Core i3/5/7, Xeon)
- Intel Nehalem (Core i3/5/7, Xeon)
- Intel Core 2
- Intel Core
- Intel Pentium M
- Intel Pentium 4E
- Intel Pentium 4
- Intel Pentium III
- Intel Pentium II
- Intel Pentium Pro
- Intel Pentium MMX
- Intel Pentium
- Intel8486
- Intel386

North/South Bridges and Controllers
- Intel 8254x, 82559, 82571, 82870P2 (P64H2)
- Intel US15WP
- Intel ICH10
- Intel ICH9R
- Intel QM67
- Intel 5100 MCH
- Intel X58 IOH
- Intel E7520 MCH
- Intel E7501 MCH
- Intel 6300ESEB
- Intel 82801CA (ICH3S)
- Intel PIIX4
- Intel 440BX

Preconfigured Virtual Systems
- Intel Crystal Forest CRBs
- Intel X58/ICH10 with Nehalem
- US15WP with Atom Silverthorne
- Intel QM67 with Sandy Bridge Mobile
- Intel 5100 with Core 2
- Intel E7520
- Intel E7501
- Intel 440BX

Uses
- Full product life cycle support: Use for all phases of product development, from system architecture exploration to system design, board bring-up, application development, integration, testing, and post-development customer support, to the next generation of the product.
- Prototyping: Try before you build by using virtual platforms for prototyping.
- Board and system bring-up: Bring up BIOS, systems, and boards faster than with physical hardware.
- Target access for entire team: Provide a virtual platform of the entire system to every team member, even those geographically dispersed.
- More efficient debugging: Use unique features to debug your target more efficiently than with physical hardware.
- Fault injection: Inject hardware and system faults such as memory corruption, a bad Ethernet card, periodic reset, and intermittent network connectivity.
- System level testing and debugging: Test your product in the context of the complete networked system.
- Management of multiple hardware variants: Easily configure many different virtual hardware variants to support a diverse user base.

Key Features
- Models of Intel architecture devices created by experts at Intel
- Ability to scale from one to hundreds of processors, from a single board to a complete custom heterogeneous system
- Control of virtual target time: stop, slow down, speed up, even reverse
- Repeatable and deterministic environment
- Record-and-replay system execution
- Symmetric/asymmetric OS installations
- Ability to run complete, unmodified software, including BIOS
- Simulation of Intel virtualization technologies

With Simics, developers can expand far beyond a single, predefined platform. Any target hardware system can be modeled with Simics, including those that contain custom hardware such as field programmable gate arrays (FPGAs) and application-specific integrated circuits (ASICs).

For more information on Wind River Simics, visit www.windriver.com/products/simics.

Figure 2: Wind River Simics simulates full systems from single board to networked