



## Embedded Solutions for Java™ Developers

### THE ONLY JSE-LEVEL SOLUTION WITH PATENTED RELIABILITY FEATURES

#### RTOS Support:

- ◆ INTEGRITY
- ◆ Linux (BlueCat, Moblinux, Red Hat, RedHawk, Wind River Linux and many others)
- ◆ LynxOS
- ◆ LynxOS-I78
- ◆ LynxOS-SE
- ◆ Neutrino
- ◆ OSE
- ◆ PikeOS
- ◆ VxWorks
- ◆ Windows NT
- ◆ WinCE
- ◆ Others\*

#### Architecture Support:

- ◆ PowerPC
- ◆ Intel x86
- ◆ Xscale
- ◆ ARM
- ◆ MIPS\*
- ◆ Coldfire\*

#### Host Support:

- ◆ Windows
- ◆ Linux
- ◆ Solaris

Java virtual machines are common technology today, but generally they are too unpredictable and unreliable to be of use for sophisticated embedded applications. PERC Ultra combines predictable and reliable performance with Java Standard Edition compatibility

Compared to traditional development platforms, the benefits of PERC Ultra are both clear and compelling: a more productive development cycle, and more efficient and reliable programs. These advantages result in faster time to market and higher customer satisfaction, on budget, and are why PERC Ultra is the most field-tested virtual machine for real-time Java developers.

#### MORE PRODUCTIVE DEVELOPMENT CYCLE

- ◆ Compatibility with off-the-shelf Standard Edition class libraries - rather than limited "personal" or "micro" subsets.
- ◆ Desktop-caliber developer tools including symbolic debuggers, run-time performance profilers, and simulators for popular real-time operating systems running on Solaris and Windows.
- ◆ Transparency APIs and command shells to provide visibility and control over internal operation of the virtual machine.
- ◆ Native compiler and operating systems ports for key real-time operating systems

#### MORE EFFICIENT AND RELIABLE PROGRAMS

- ◆ Industry leading, patented real-time garbage collector featuring ultra-reliable performance.
- ◆ Predictable real-time operation of threads, synchronization, and timers.
- ◆ Rich set of pre-optimized libraries allows engineers to focus on optimizing application-specific modules.

These features combine to make PERC Ultra the ideal virtual machine environment and toolset for software targeted to complex automation projects such as distributed real-time control, network infrastructure management plane, fleet telematics, and industrial automation equipment.

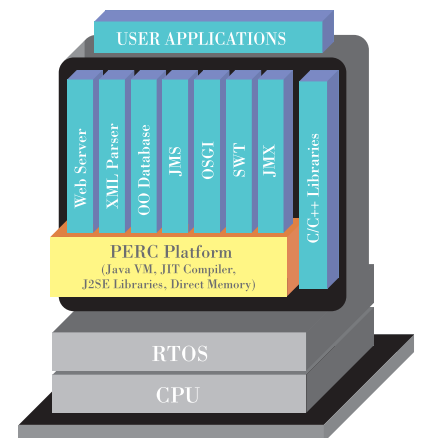
#### PERFORMANCE HIGHLIGHTS

- ◆ Compilation options offer up to 20x runtime performance over interpreted implementations.
- ◆ Garbage collection pre-emption as low as 100 microseconds.
- ◆ Deterministic timing services eliminate clock drift and jitter from fixed-rate tasks.
- ◆ Direct Memory API gives compiler optimized access to buffers and memory-mapped I/O.
- ◆ Scheduled Native Tasks improve performance of JNI and simplify native application and operating system integration.
- ◆ Task priority management and priority inheritance behave consistently and predictably across all targets.

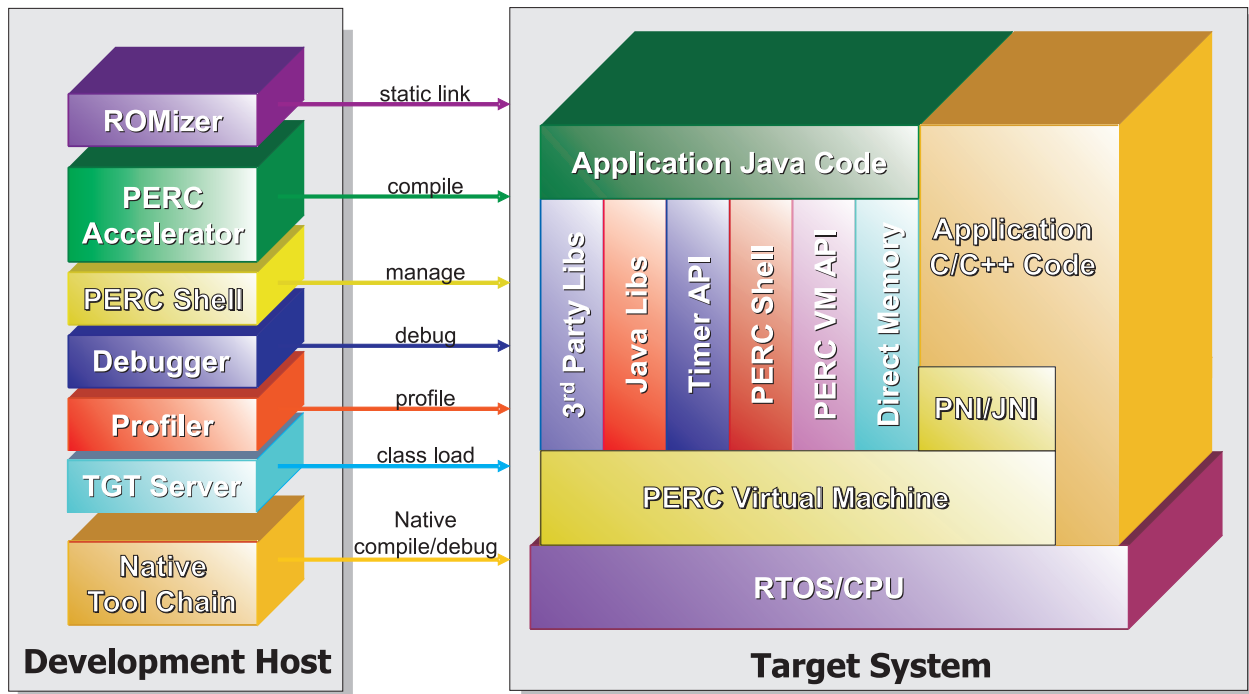
#### HIGH PRODUCTIVITY LIBRARY SET

- ◆ Standard Edition Class Library Emulation  
Enables the most compelling features of Java, including JNI, RMI, JDBC, Collections, etc.
- ◆ Embedded Graphics  
Support for embedded graphics includes an SWT implementation for the PEG+ library.
- ◆ Direct Memory API  
Provides compiler-optimized access to buffers and memory-mapped I/O.
- ◆ VM Management API  
Allows engineers to fine-tune on the fly. Programmatic access to PERC VM threads, monitors, memory, GC, I/O, and stack.

#### EMBEDDED SYSTEM



## Product Line Overview



### PERC ULTRA TOOLSET HIGHLIGHTS

- ◆ **PERC Accelerator** - AOT and JIT deliver superior performance by turbo-charging applications up to 20x over interpreted implementations. PERC is the only embedded VM to support symbolic debugging of native compiled code. PERC is also unique in its support for dynamic loading of native-compiled Java components.
- ◆ **Enterprise-Class Profiling** - Speeds time to market and optimizes system performance by helping to quickly detect and fix memory leaks and bottlenecks.
- ◆ **Remote Debugging** - Saves time, money, and programmer wear and tear. Lets programmers seamlessly debug on the target device.
- ◆ **ROMizer** - Improves execution speed by statically linking VM, libraries, and application object code into a single executable image, suitable for burning to ROM.
- ◆ **PERC Shell** - Cuts development time by providing direct access to the running VM via serial or telnet connection. The result: engineers can optimize system performance and functionality by remotely viewing information and directly controlling the VM running classes.
- ◆ **TFTP Classloader** - Cuts development time and movement between development and target platforms by automatically uploading code from a development machine to a target platform via a TFTP server. The same TFTP server can be used for RTOS downloads, PERC downloads, and class loading.

To obtain more information, please contact Atego at [www.atego.com](http://www.atego.com) or call one of our sales offices

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