

BlueCat Linux

Enabling robust embedded Linux solutions



BlueCat® Linux® from LynuxWorks™, based on the 2.6 kernel, is an implementation of the Linux model enhanced for use in embedded systems ranging from small consumer-type devices to large-scale, multi-CPU systems.

BlueCat Linux delivers the flexibility and cost benefits of open-source software. It's uniquely constructed to be a stable, commercial-grade embedded operating system release which provides immediate productivity and optimized performance through:

- Packages that are tailored to your varying requirements for tools and technical support
- Its comprehensive set of tools and board support packages for devel-

BlueCat Linux Features

- **Cross-development environment**
 - 2.6 kernel
 - Microsoft Windows XP Pro
 - Red Hat Enterprise Linux 4
- **Target support**
 - Intel IA-32, XScale, PowerPC 4xx, Embedded Xilinx FPGA-based processors, including MicroBlaze
- **LynuxWorks development environment**
 - Luminosity Eclipse-based IDE
 - GNU tool chains, gdb and gcc
 - Multithreaded debugger
 - Kernel debugging capabilities
- **Embedded target tools**
 - Footprint minimization and kernel configuration
 - TinyLogin support
 - BusyBox support
 - Watchdog timer (for specific BSPs)

oping, debugging and deploying Linux into embedded environments

- Customers' ability to leverage 20 years of LynuxWorks expertise and experience in embedded operating systems, the UNIX® programming model, POSIX® and more

Linux steps into real-time

The 2.6 kernel at the heart of BlueCat Linux is preemptible. Preemption points in the kernel allow you to suspend an executing process so that you can launch another, higher-priority process.

Linux 2.6 also features a rewritten scheduler that speeds up the process of selecting tasks for execution, which is of particular benefit to complex multitasking applications. Scheduling is now completed in a predictable amount of time.

These new features, together with improved POSIX threading support and new POSIX signals and timers, give your BlueCat Linux applications an improved level of real-time performance.

Another benefit is that applications written for BlueCat Linux can be migrated to the LynxOS® real-time operating system if you ever find that your Linux application requires stricter, hard real-time performance. Your Linux application code can run unmodified on LynxOS, and this protects you against high cost and time-to-market penalties if you need to switch to a real-time operating system later.

What's more, the Luminosity IDE and development tools support our whole family of operating systems, so there are no new tools or development environments to purchase and

no new learning curves. This value proposition is unique in the Linux and embedded-systems world.

Rapid time-to-market

Tap into the growing talent pool of experienced Linux programmers. BlueCat Linux empowers developers to become immediately productive through tool chains and board support packages for the embedded industry's widest range of popular processor architectures for Linux.

As a development platform, BlueCat Linux leads the industry. Our cutting-edge, cross-hosted development tools have grown out of our many years of experience and allow you to:

- Configure kernel functions, size and file systems for exact requirements
- Leverage advanced power-management facilities
- Set up host-to-target communications and boot method (FLASH, disk or network)
- Leverage dozens of bundled and tested components such as boot routines, web servers, application shells and demo programs

You get a standards-based development environment with Luminosity, an Eclipse-based IDE for BlueCat Linux development. After installation, developers proceed as usual, with the addition of all the commands and standard GNU tools needed to streamline the design and creation of applications targeted to run on any LynuxWorks operating system.

Streamlined debugging

Developers can also take advantage of the first dynamically instrumented



system trace analyzer, SpyKer™. Developed by LynuxWorks, the GUI-driven SpyKer removes the guesswork, labor, and time delays from event tracing so you can move higher quality products to market even more quickly. SpyKer allows developers to:

- Understand what is executing in a system over time
- Track down elusive application bugs
- Fine-tune the performance of embedded systems

Demonstration configurations

BlueCat Linux also includes demonstration configurations that are downloadable and bootable on the target system. These specially configured kernels and sample applications illustrate configuration options and provide developers a head start on using BlueCat Linux in their embedded applications. Many of these demonstration configurations are tailored to:

- Specific commercial boards from major manufacturers
- Development boards from CPU and system on-chip (SOC) manufacturers

Linux with an edge

BlueCat Linux represents a single source for embedded Linux technology. While it has open-source roots, BlueCat Linux is designed to be inherently stable and is offered with the support to get your projects moving today.

For developers with MMU-free hardware, the BlueCat-ME operating system takes the 2.6 kernel and utilizes the functionality without using an MMU. This is particularly of interest for smaller-footprint processors, and also soft processors such as the Microblaze™ architecture from Xilinx®.

Long-term value

To ensure that the needs of embedded environments are met without compromise, BlueCat Linux is subjected to the same rigorous ISO 9001:2000 test procedures that qualify the LynuxWorks family of real-time operating systems.

The end result is an embedded OS that is unique in the industry—open-source, yet version-stabilized and robust; royalty-free yet supportable over your embedded life cycle.

A solid base of support

The expertise that backs BlueCat Linux customers is unique in the industry. No other vendor comes close to LynuxWorks' decade and a half of experience in embedded operating systems based on the UNIX model—the same model that defines Linux.

LynuxWorks has supported millions of deployed targets and offers a range of support programs for periods of up to 15 years. You not only get fast answers, but you can count on them being based on careful, long-term analysis and proven success in implementing the Linux/UNIX paradigm.

All individual seats include priority support. Bundled packages are also available with priority support and premium tools to speed time-to-market.

Customized expert services, worldwide

LynuxWorks is committed to customer success based on our tenure in the embedded market. Customers can draw on this expertise through our professional-services group. Services available worldwide include:

- OS porting—complete and rapid ports of BlueCat Linux to custom CPU boards on any LynuxWorks-supported hardware architecture, such as Intel IA-32, Power Architecture, XScale®, ARM and Xilinx processors
- Device drivers—accelerated development of BlueCat Linux device drivers for a wide range of I/O solutions, including hardware such as custom boards, serial and parallel devices, and CD-ROM extensions, just to name a few



1.800.255.5969



LynuxWorks, Inc.
855 Embedded Way
San José, CA 95138-1018
408.979.3900
408.979.3920 fax
www.lynuxworks.com

LynuxWorks Europe
Craven House
121 Kingsway, Holborn
London WC2B 6PA
United Kingdom
+44 208 906 9506
+44 208 906 2338 fax

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