

BlueCat Linux Release Notes

Release 4.0
DOC-0484-00

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Contents

CHAPTER 1	INTRODUCTION.....	1
	Distribution Packages	1
	Documentation	2
	World Wide Web	2
	Supported Cross Development Hosts	2
	New Features in BlueCat Linux 4.0	2
	New Binary Architecture CD-ROM	2
	New Board Support Packages	3
	Technical Support	3
	World Wide Web	3
	LinuxWorks U.S. Headquarters	3
	LinuxWorks Europe	3
CHAPTER 2	KNOWN PROBLEMS AND LIMITATIONS	5
	IQ80310 Target Board Problems and Limitations	5
CHAPTER 3	LATE-BREAKING NOTES.....	7
CHAPTER 4	DEFECT FIXES IN BLUECAT LINUX.....	9

BlueCat Linux is a member of the LynuxWorks, Inc. family of embedded development and deployment solutions.

Combined with LynxOS, the leading Linux compatible real-time embedded operating system, BlueCat Linux offers a complete solution to embedded operating system requirements. For a complete overview of the LynuxWorks product family, please visit www.lynuxworks.com.

Distribution Packages

BlueCat Linux distribution packages are available for multiple architecture platforms and target boards. The release of new or updated architecture support and Board Support Packages (BSPs) may or may not coincide with new releases of the BlueCat Linux core product. Specific architectures and BSPs may be supported by specific versions of BlueCat Linux.

In order to support LynuxWorks's ability to provide BSPs more frequently, the structure of the BlueCat Linux distribution CD-ROMs includes the following:

- *Binary Architecture CD-ROM*: This CD-ROM contains the binary files for all supported boards for a specific microprocessor family (e.g., IA-32).
- *Board Support Package CD-ROM*: This CD-ROM contains both the BlueCat Linux binary and source files to support a specific target board (e.g., IQ80310).
- *Source Architecture CD-ROM*: This CD-ROM contains the source files required to rebuild the binaries.
- *User Documentation CD-ROM*: This CD-ROM contains the *BlueCat Linux User's Guide*, and *BlueCat Linux Board Support Guides*.

Documentation

The following BlueCat Linux documents are provided in PDF format on the BlueCat Linux User Documentation CD-ROM:

- *BlueCat Linux User's Guide*
- *BlueCat Linux Board Support Guide* for a specific target board

World Wide Web

All BlueCat Linux documentation, including the *BlueCat Linux Release Notes* are available and maintained on the BlueCat Linux Web site:

<http://www.lynxworks.com/bluecat>

Release notes are continually updated with information about new developments and defect fixes.

Supported Cross Development Hosts

The BlueCat Linux development environment requires an installed, functional cross development host with an Intel 386 or higher CPU. This host needs to be running one of the following development environments:

- Red Hat Linux 6.2, 7.1
- Windows NT, 2000

New Features in BlueCat Linux 4.0

New Binary Architecture CD-ROM

BlueCat Linux 4.0 now includes support for *Intel Xscale* architecture.

The Binary Architecture CD-ROM for the Xscale processor family has a different tool chain from the other BlueCat Linux 4.0 processor families. The BlueCat Linux XScale binaries have a tool chain optimized for the Xscale processor core.

The components of this tool chain are free software, covered by the GNU General Public License, and you are welcome to change it and/or distribute copies of it under certain conditions. See the GNU/GPL for conditions.

New Board Support Packages

- Intel Xscale microarchitecture IQ80310 Board

Technical Support

LynuxWorks Technical Support is available to answer questions about BlueCat Linux. Please feel free to contact us Monday-Friday (holidays excluded) between 8:00 AM and 5:00 PM Pacific Time (LynuxWorks U.S. Headquarters) or between 9:00 AM and 6:00 PM Central European Time (LynuxWorks Europe).

In addition, browse our World Wide Web home page for additional information about LynuxWorks products and LynuxWorks news groups.

World Wide Web

<http://www.lynuxworks.com>

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This section provides an overview of the limitations of BlueCat Linux for the IQ80310 platform.

IQ80310 Target Board Problems and Limitations

- This release of BlueCat Linux supports binary compatibility with Revision D of the IQ80310 board. However, only very limited testing has been accomplished on Revision D targets. The currently shipping version of BlueCat Linux for IQ80310 has been extensively tested for and supports Revision F of the board.
- The IQ80310 board lacks some functionality for controlling the interrupt signal for the PCI INT#A-INT#C interrupt lines. Specifically, selective masking for these interrupts is not supported in the hardware. This limitation forces the handlers for the PCI INT#A-INT#C interrupts to be executed as if they were registered with the SA_INTERRUPT flag. This lowers the responsiveness of the BlueCat Linux kernel.

However, if the board is inserted into a passive backplane, the IQ80310 board's ability to route PCI interrupts to a host can be used to mask them, without side effects or performance impact. Support for such a masking method is implemented in the BlueCat Linux kernel and can be enabled with the `CONFIG_IQ80310_PCI_MASK_ROUTING` kernel configuration option.

To change the `CONFIG_IQ80310_PCI_MASK_ROUTING` using the `make xconfig` interface, the user must select the Mask PCI interrupts by routing them to host item from the **IQ80310-Specific Options** submenu of the **System Type** menu.

- When booting a BlueCat Linux demo system on the IQ80310 board using the RedBoot monitor, the kernel may sporadically crash on initialization. After resetting the board, the same demo system usually starts successfully. This problem does not exist when BlueCat Linux is booted using the BlueCat OS loader.
- The speed of memory transfers on the IQ80310 board is about 20-40 Mb/s, however, according to the board's documentation, the speed should be 69 Mb/s in the worst case.
- All demo systems (see Chapter 4 of the Board Support Guide) for the IQ80310 board are preconfigured to use 32 MB of RAM. The demo systems can be configured for other RAM sizes by setting the `CONFIG_IQ80310_RAMSIZE` kernel configuration option to the desired size in megabytes. Autodetection of the size of RAM is also supported, and can be enabled by setting the `CONFIG_IQ80310_RAMSIZE` option to 0.

To change `CONFIG_IQ80310_RAMSIZE` using the `make xconfig` interface, the user must select the **Support memory size (in MB)** item from the **IQ80310-Specific Options System Type** submenu of the **Select Type** menu.

- If `mkrootfs` is terminated (either by error or by a signal), it tries to clean all of its temporary files before exiting. However, due to certain features of the Cygwin environment, temporary files can remain uncleaned in the `/tmp` directory on a Windows host. It is recommended that the `/tmp` directory be regularly checked and cleaned.
- The `tc1x` RPM package is not included in the Windows-hosted distribution.
- On Windows hosts some file permissions (including `r` and `s`) always have the default values. To set permissions different from the default ones, the `chmod` command should be used in the `.spec` file.

CHAPTER 3 *Late-Breaking Notes*

There are no late-breaking notes for this release of BlueCat Linux.

Table 4-1 shows defect fixes in this release of BlueCat Linux:

Table 4-1: Defect Fixes in BlueCat Linux

Platform	Subcomponent	ID	Summary
All	BlueCat Linux Misc	16057	Ctrl-C, Ctrl-Z , etc. do not work from the shell.
Windows NT/2000 Cross	BlueCat Installation	16130	Windows install does not installing on non-C drives.
All	BlueCat Linux OS loader	16358	The BLOSH ntar command hangs the system.
All	BlueCat Misc	16684	<code>make menuconfig</code> does not work on a Windows host.
All	BlueCat Linux Misc	17308	Certain sequence of file updates sometimes causes FFS to crash after reboot.

