

BlueCat Linux Board Support Guide

BlueCat Linux Release 5.5

DOC-0776-00

for x86 Boards

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— *Preface*

For More Information

For more information on the features of BlueCat Linux, refer to the following printed and online documentation.

- *BlueCat Linux Release Notes*

This printed document contains late-breaking information about the current release of BlueCat Linux.

- *BlueCat Linux User's Guide*

This document contains information about installing, configuring and using BlueCat Linux.

- Online information

The complete BlueCat Linux documentation set is available on the BlueCat Linux Documentation CD-ROM. Books are provided in both HTML and PDF formats.

Updates to these documents are available online at the LynuxWorks Website: <http://www.lynuxworks.com>.

Additional information about commands and utilities is provided online with the `man` command. For example, to find information about the GNU GCC compiler, use the following syntax:

```
man gcc
```

Typographical Conventions

The typefaces used in this manual, summarized below, emphasize important concepts. All references to filenames and commands are case-sensitive and should be typed accurately.

Kind of Text

Examples

Body text; *italicized* for emphasis, new terms, and book titles

Refer to the *BlueCat Linux User's Guide*.

Environment variables, filenames, functions, methods, options, parameter names, path names, commands, and computer data

```
ls
-l
myprog.c
/dev/null
```

Commands that need to be highlighted within body text, or commands that must be typed as is by the user are **bolded**.

```
login: myname
# cd /usr/home
```

Text that represents a variable, such as a filename or a value that must be entered by the user, is *italicized*.

```
cat <filename>
mv <file1> <file2>
```

Blocks of text that appear on the display screen after entering instructions or commands

```
Linux version 2.4.10-1
(bin@build1) (gcc version
2.95.3 20010315 (release)) #5
Tue Dec 18 13:33:08 MSK 2001
Processor: Intel StrongARM-
IXP1200 revision 3
Architecture: Intel IXP1200
On node 0 totalpages: 32768
zone(0): 32768 pages.
zone(1): 0 pages.
zone(2): 0 pages.
```

Keyboard options, button names, and menu sequences

Enter, **Ctrl-C**

Special Notes

The following notations highlight any key points and cautionary notes that may appear in this manual.

NOTE: These callouts note important or useful points in the text.



CAUTION! Used for situations that present minor hazards that may interfere with or threaten equipment/performance.

Technical Support

LynuxWorks Support handles support requests from current support subscribers.

For questions regarding LynuxWorks products or evaluation CDs, or to become a support subscriber, our knowledgeable sales staff will be pleased to help you (<http://www.lynuxworks.com/corporate/contact/sales.php3>).

How to Submit a Support Request

When you are ready to submit a support request, please include *all* the following information:

- First name
- Last name
- Your job title
- Phone number
- Fax number
- E-mail address
- Company name
- Address
- City, state, ZIP

- Country
- LynxOS or BlueCat Linux version you are using
- Target platform (for example, PowerPC or x86)
- Board Support Package (BSP)
- Current patch revision level
- Development host OS version
- Description of problem you are experiencing

Where to Submit a Support Request

By E-mail:

Support, Europe	tech_europe@lnxw.com
Support, worldwide except Europe	support@lnxw.com
Training and courses	USA: training-usa@lnxw.com Europe: training-europe@lnxw.com

By Phone:

Training and courses	USA: +1 408-979-4353 Europe: +33 1 30 85 06 00
Support, Europe (from our Paris, France office)	+33 1 30 85 93 96
Support, worldwide except Europe and Japan (from our San José, CA, USA headquarters)	+1 800-327-5969 or +1 408-979-3940
Support, Japan	+81 33 449 3131

By Fax:

Support, Europe (from our Paris, France office)	+33 1 30 85 06 06
Support, worldwide except Europe and Japan (from our San José, CA, USA headquarters)	+1 408-979-3945
Support, Japan	+81 22 449 3803

The *BlueCat Linux Board Support Guide for x86 Boards* provides information about the BlueCat Linux Board Support Package (BSP) for the x86 desktop PCs based on Intel 386-compatible processors.

Throughout this Board Support Guide (BSG), the BSP is referred to as the “x86” and the target board is referred to as the “x86” or simply as the “target board.”

Features Overview

This following sections describe the new features of this release.

Kernel Version

BlueCat Linux release 5.5 is based on the Linux kernel version 2.6.18.3 available from www.kernel.org.

BlueCat Linux Cross-Development Tools

GNU Toolchain

BlueCat Linux release 5.5 supports the following versions of GNU toolchain:

- `gcc` version 4.1.1
- `binutils` version 2.17

`gdb`

BlueCat Linux release 5.5 supports `gdb` version 6.5.

BlueCat Linux Target Components

BlueCat Linux release 5.5 uses Fedora Core 6 as a codebase for the target RPM packages excluding `glibc`. This release of BlueCat Linux supports the `glibc` version 2.5 that is based on Fedora Core 6.

Read-Only Flash Partitions Support

BlueCat Linux release 5.5 provides support for read-only Flash partitions.

To make Flash partitions read-only, add the `r` character to the end of configuration string of the `flash_fdisk` utility. Refer to *BlueCat User's Guide* for a detailed description of `flash_fdisk` configuration string options.

Supported Hardware

Table 1-1 describes the hardware supported with this release. For available BlueCat Linux drivers, please see Table 1-1.

Table 1-1: Hardware Supported

Model	Description
Intel 386, 486, Pentium, Pentium Pro, Pentium II, Pentium III, Pentium IV, and compatible processors	<ul style="list-style-type: none">• PCI, PCMCIA, ISA, and USB 10/100 Mbit Ethernet adapters• Up to two IDE/EIDE interfaces and up to four hard disks, CD-ROM drivers, or CompactFlash disk• PCI, ISA, and on-board SCSI controllers• FDD controller• Keyboard• Mouse PS/2, USB• Serial Ports 8250, 16450, 16550, and 16550A UARTs• PCI, AGP, and on-board video controllers• USB• USB storage devices• Parallel ports• PCI, Cardbus, and ISA PCMCIA adapters

Available LynuxWorks Development Tools

Please contact your LynuxWorks Account Manager for information about the availability of the following premium LynuxWorks development tools on the cross-development platforms listed for use with this BSP:

- Luminosity—an Eclipse-based IDE providing an enhanced tool set that enables embedded system developers to accelerate product time-to-market in the aerospace, telecommunications, and military sectors
- SpyKer—a dynamically instrumented system trace tool to debug, diagnose, and optimize system performance

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 environment:

- Red Hat Enterprise Linux Release 4

Downloading and Booting BlueCat Linux on the Target

This chapter provides instructions for downloading a BlueCat Linux demo system from a cross-development host onto the target and then booting the demo system on the target board.

Prerequisites

This document is a guide to downloading and booting BlueCat Linux systems onto the user's target board. Scenarios that use demo systems included in the BlueCat Linux distribution are presented. A basic familiarity with the target board hardware and operation is required. The user must also have an understanding of system administration for the particular cross-development host on which the BlueCat Linux Core and the BSP are installed. It is assumed that the user has the manufacturer's documentation for the target board as well as system administration reference material for the cross-development host.

Before downloading and booting BlueCat Linux on the target board, it is assumed that the default BlueCat Linux x86 configuration and the x86 BSP have been installed on the development host. The user must:

1. Install the BlueCat Linux i386 Core onto the cross-development host as described in the "Installing the Default Configuration" section in Chapter 1, "Introduction and Installation" in the *BlueCat Linux User's Guide*.
2. Install the x86 BSP onto the cross-development host as detailed in the "Installing Target Board Support" section of Chapter 1, "Introduction and Installation" in the *BlueCat Linux User's Guide*.
3. Activate support for the x86 BSP as detailed in the "Activating Support for a Target Board" section of Chapter 1, "Introduction and Installation" in the *BlueCat Linux User's Guide*.

Downloading and Booting Overview

The procedure for downloading and booting BlueCat Linux onto an x86 target consists of the following main steps:

- Setting up hardware
- Booting the BlueCat Linux OS loader on the target board from floppy, hard disk, or CD-ROM, or over a network from the CompactFlash card or the USB Flash drive

or:

- Installing a BlueCat Linux embedded system onto a target floppy, hard disk, CD-ROM, Flash, CompactFlash card, or the USB Flash drive
- Booting a BlueCat Linux embedded system

Please refer to Chapter 3, “Downloading and Booting BlueCat Linux” in the *BlueCat Linux User’s Guide* for a discussion of the BlueCat Linux OS loader.

Setting up Hardware

Connecting the Video Monitor, Keyboard, and Mouse

For the typical desktop PC (for example, x86 target), BlueCat Linux configures the default Linux console to the video monitor and keyboard. A video monitor and keyboard must be connected in the default BlueCat Linux configuration on x86 targets.

Similarly, if mouse support is required, a standard mouse device must be connected to the PC.

Connecting the Target Board Serial Port to the Host

BlueCat Linux supports a configuration in which the Linux console is redirected to a serial terminal. Additionally, BlueCat Linux supports debugging of the kernel via a serial port.

The typical desktop PC (for example, x86 target) has two serial ports. The first serial port (COM1) is usually used to connect a serial mouse. LynuxWorks recommends using the second port (COM2) as a BlueCat Linux serial console. If

kernel debugging is required, the mouse should be disconnected from the first serial port and the kernel debugger console should be configured to use the first serial port. Of course, this configuration can be swapped to one in which the BlueCat Linux serial console goes to the first serial port and the kernel debugger console goes to the second port.

In either case, target serial ports are to be connected to the development host. A standard serial cable is suitable for this purpose. The serial port connected to the target has a baud rate of 9600.

Booting Scenarios

The boot scenarios are fully described in the *BlueCat Linux User's Guide*. Refer to this manual for more information.

The x86 BSP comes with a default BlueCat Linux kernel. This kernel has a number of configuration options. This chapter details these options in the tables listed in Table 3-1: “BlueCat Linux Default Configuration for the x86 BSP Distribution” below. Boldfaced entries in the tables represent subordinate menus. Italicized entries represent comments.

Table 3-1: BlueCat Linux Default Configuration for the x86 BSP Distribution

Table Number and Configuration Parameter
Table 3-2: “Code Maturity Level Options”
Table 3-3: “General Setup”
Table 3-4: “Loadable Module Support”
Table 3-5: “Block Layer”
Table 3-6: “Processor Type and Features”
Table 3-7: “Power Management Options (ACPI, APM)”
Table 3-8: “Bus Options (PCI, PCMCIA, EISA, MCA, ISA)”
Table 3-9: “Executable File Formats”
Table 3-10: “Networking”
Table 3-11: “Device Drivers”
Table 3-12: “File Systems”
Table 3-13: “Instrumentation Support”
Table 3-14: “Kernel Hacking”
Table 3-15: “Security Options”
Table 3-16: “Cryptographic Options”
Table 3-17: “Library Routines”

Table 3-2: Code Maturity Level Options

Description	Setting
Prompt for development and/or incomplete code/drivers	Y

Table 3-3: General Setup

Description	Setting
Local version—append to kernel release	is not set
Automatically append version information	Y
Support for paging of anonymous memory (swap)	Y
System V IPC	Y
POSIX Message Queues	is not set
BlueCat Linux OS loader support	is not set
Memory sizing benchmarks	is not set
BSD Process Accounting	is not set
Export task/process statistics through netlink (Experimental)	is not set
Auditing support	is not set
Kernel <code>.config</code> support	is not set
Kernel->user space relay support (formerly relayfs)	is not set
Initramfs source file(s)	is not set
Optimize for size (Look out for broken compilers!)	is not set
Configure standard kernel features (for small systems)	Y
<i>--- Configure standard kernel features (for small systems).</i>	
Enable 16-bit UID system calls	Y
Sysctl support	Y
Load all symbols for debugging/ <code>kksymoops</code>	Y
Do an extra <code>kallsyms</code> pass	is not set
Support for hot-pluggable devices	is not set

Table 3-3: General Setup (Continued)

Description	Setting
Enable support for <code>printk</code>	Y
<code>BUG()</code> support	Y
Enable ELF core dumps	Y
Enable full-sized data structures for core	Y
Enable futex support	Y
Enable eventpoll support	Y
CODETEST device driver configuration	is not set
Use full <code>shmem</code> file system	Y
Use full SLAB allocator	Y
Enable VM event counters for <code>/proc/vmstat</code>	Y

Table 3-4: Loadable Module Support

Description	Setting
Enable loadable module support	Y
Module unloading	Y
Forced module unloading	is not set
Module versioning support (Experimental)	Y
Source checksum for all modules	is not set
Automatic kernel module loading	is not set

Table 3-5: Block Layer

Description	Setting
Support for Large Block Devices	is not set
Support for tracing block I/O actions	is not set
Support for Large Single Files	is not set

Table 3-5: Block Layer (Continued)

Description	Setting
IO Schedulers	
Anticipatory I/O scheduler	Y
Deadline I/O scheduler	Y
CFQ I/O scheduler	Y
Default I/O scheduler (CFQ)	
Anticipatory	is not set
Deadline	is not set
CFQ	Y
No-op	is not set

Table 3-6: Processor Type and Features

Description	Setting
Symmetric multiprocessing support	is not set
Subarchitecture Type (PC-compatible)	
PC-compatible	Y
AMD Elan	is not set
Voyager (NCR)	is not set
NUMAQ (IBM/Sequent)	is not set
SGI 320/540 (Visual Workstation)	is not set
Processor Family	
386	Y
486	is not set
586/K5/5x86/6x86/6x86MX	is not set
Pentium Classic	is not set
Pentium MMX	is not set

Table 3-6: Processor Type and Features (Continued)

Description	Setting
Pentium Pro	is not set
Pentium II/Celeron (pre-Coppermine)	is not set
Pentium III/Celeron (Coppermine)/Pentium III Xeon	is not set
Pentium M	is not set
Pentium 4/Celeron (P4-based)/Pentium 4 M/Xeon	is not set
K6/K6-II/K6-III	is not set
Athlon/Duron/K7	is not set
Opteron/Athlon64/Hammer/K8	is not set
Crusoe	is not set
Efficeon	is not set
Winchip C6	is not set
Winchip 2	is not set
Winchip 2A/Winchip 3	is not set
CyrixIII/VIA-C3	is not set
VIA C3-2 (Nehemiah)	is not set
Generic x86 support	is not set
XADD, CMPXCHG, BSWAP, CMOV instruction emulation	Y
HPET Timer support	Y
Preemption Model (Preemptible Kernel (Low-Latency Desktop))	
No Forced Preemption (server)	is not set
Voluntary Kernel Preemption (desktop)	is not set
Preemptible Kernel (low-latency desktop)	Y
Preempt the Big Kernel Lock	Y
Local APIC support on uniprocessors	Y
IO-APIC support on uniprocessors	Y
Machine Check Exception	is not set
Enable VM86 support	Y

Table 3-6: Processor Type and Features (Continued)

Description	Setting
Toshiba Laptop support	is not set
Force CPCI-735/736 support	is not set
Dell laptop support	is not set
Enable x86 board-specific fixes for reboot	is not set
<code>/dev/cpu/microcode</code> —Intel IA32 CPU microcode support	is not set
<code>/dev/cpu/*/msr</code> —Model-specific register support	is not set
<code>/dev/cpu/*/cpuid</code> —CPU information support	is not set
Firmware Drivers	
BIOS Enhanced Disk Drive calls determine boot disk	is not set
BIOS update support for Dell systems via <code>sysfs</code>	is not set
Dell Systems Management Base Driver	is not set
High Memory Support (off)	
off	Y
4 GB	is not set
64 GB	is not set
Memory split (3G/1G user/kernel split)	
3 G/1 G user/kernel split	Y
3 G/1 G user/kernel split (for full 1 G low memory)	is not set
2 G/2 G user/kernel split	is not set
1 G/3 G user/kernel split	is not set
Memory model (Flat Memory)	
Flat Memory	Y
Sparse Memory	is not set
64 bit Memory and IO resources (Experimental)	is not set
Math emulation	is not set
Memory Type Range Register (MTRR) support	is not set

Table 3-6: Processor Type and Features (Continued)

Description	Setting
Boot from EFI support	is not set
Use register arguments	is not set
Enable seccomp to safely compute untrusted bytecode	Y
Timer frequency (250 HZ)	
100 HZ	is not set
250 HZ	Y
1000 HZ	is not set
<code>kexec</code> system call (Experimental)	is not set
Physical address where the kernel is loaded	0x100000
Compat VDSO support	is not set

Table 3-7: Power Management Options (ACPI, APM)

Description	Setting
<i>--- Power Management support</i>	
Legacy Power Management API	Y
Power Management Debug support	is not set
Software Suspend	is not set
ACPI (Advanced Configuration and Power Interface) Support	
ACPI support	Y
Sleep States	Y
<code>/proc/acpi/sleep</code> (Deprecated)	is not set
AC adapter	Y
Battery	Y
Button	Y
Video	is not set

Table 3-7: Power Management Options (ACPI, APM) (Continued)

Description	Setting
Generic hotkey (Experimental)	is not set
Fan	Y
Dock	is not set
Processor	Y
Thermal Zone	Y
ASUS/Medion Laptop extras	is not set
IBM ThinkPad Laptop extras	is not set
Toshiba Laptop extras	is not set
Disable ACPI for systems before January 1st this year	0
Debug statements	is not set
Power Management Timer support	Y
ACPI0004, PNP0A05, and PNP0A06 Container Driver (Experimental)	is not set
APM (Advanced Power Management) BIOS Support	
Advanced Power Management (APM) BIOS support	is not set
CPU Frequency scaling	
CPU frequency scaling	is not set

Table 3-8: Bus Options (PCI, PCMCIA, EISA, MCA, ISA)

Description	Setting
PCI support	Y
PCI Access Mode (Any)	
BIOS	is not set
MMConfig	is not set
Direct	is not set
Any	Y
PCI Express support	is not set

Table 3-8: Bus Options (PCI, PCMCIA, EISA, MCA, ISA) (Continued)

Description	Setting
Message Signaled Interrupts (MSI and MSI-X)	is not set
ISA support	Y
EISA support	is not set
MCA support	is not set
National Semiconductor SCx200 support	is not set
PCCARD (PCMCIA/CardBus) support	is not set
PCI Hotplug Support	is not set

Table 3-9: Executable File Formats

Description	Setting
Kernel support for ELF binaries	Y
Kernel support for a.out and ECOFF binaries	is not set
Kernel support for MISC binaries	is not set

Table 3-10: Networking

Description	Setting
Networking support	Y
Networking options	
Network packet debugging	is not set
Packet socket	is not set
UNIX domain sockets	Y
IPsec user configuration interface	is not set
PF_KEY sockets	is not set
TCP/IP networking	Y
IP: multicasting	is not set

Table 3-10: Networking (Continued)

Description	Setting
IP: advanced router	is not set
IP: kernel level autoconfiguration	is not set
IP: tunneling	is not set
IP: GRE tunnels over IP	is not set
IP: ARP daemon support (Experimental)	is not set
IP: TCP syncookie support (disabled per default)	is not set
IP: AH transformation	is not set
IP: ESP transformation	is not set
IP: IPComp transformation	is not set
IP: IPsec transport mode	is not set
IP: IPsec tunnel mode	is not set
INET: socket monitoring interface	is not set
TCP: advanced congestion control	is not set
The IPv6 protocol (Experimental)	is not set
Security Marking	is not set
Network packet filtering (replaces ipchains)	is not set
DCCP Configuration (Experimental)	
The DCCP protocol (Experimental)	is not set
SCTP Configuration (Experimental)	
SCTP configuration (Experimental)	is not set
TIPC Configuration (Experimental)	
The TIPC protocol (Experimental)	is not set
Asynchronous Transfer Mode (ATM) (Experimental)	is not set
802.1d Ethernet Bridging	is not set
802.1Q VLAN support	is not set
DECnet support	is not set

Table 3-10: Networking (Continued)

Description	Setting
ANSI/IEEE 802.2 LLC type 2 support	is not set
The IPX protocol	is not set
AppleTalk protocol support	is not set
CCITT X.25 Packet Layer (Experimental)	is not set
LAPB Data Link Driver (Experimental)	is not set
Acorn Econet/AUN protocols (Experimental)	is not set
WAN router	is not set
QoS and/or fair queueing	
QoS and/or fair queueing	is not set
Network testing	
Packet Generator (Use with Caution)	is not set
Amateur Radio support	is not set
IrDA (infrared) subsystem support	is not set
Bluetooth subsystem support	is not set
Generic IEEE 802.11 networking stack	is not set

Table 3-11: Device Drivers

Description	Settings
Generic Driver Options	
Select only drivers that don't need compile-time external firmware	Y
Prevent firmware from being built	Y
Connector - unified userspace <-> kernelspace linker	
Connector - unified userspace <-> kernelspace linker	is not set
Memory Technology Devices (MTD)	

Table 3-11: Device Drivers (Continued)

Description	Settings
Memory Technology Device (MTD) support	is not set
Parallel Port Support	
Parallel port support	Y
PC-style hardware	Y
Multi-I/O cards (parallel and serial)	is not set
Use FIFO/DMA if available (Experimental)	is not set
Super-I/O chipset support (Experimental)	is not set
AX88796 Parallel Port	is not set
IEEE 1284 transfer modes	Y
BlueCat bidirectional parallel port transfer driver	Y
Polling mode	is not set
Plug And Play Support	
Plug and Play support	is not set
Block Devices	
Normal floppy disk support	Y
XT hard disk support	is not set
Parallel port IDE device support	is not set
Compaq SMART2 support	is not set
Compaq Smart Array 5xxx support	is not set
Mylex DAC960/DAC1100 PCI RAID Controller support	is not set
Micro Memory MM5415 Battery Backed RAM support (Experimental)	is not set
Loopback device support	is not set
Network block device support	is not set
Promise SATA SX8 (carmel) support	is not set
RAM disk support	Y
Default number of RAM disks (kbytes)	16

Table 3-11: Device Drivers (Continued)

Description	Settings
Default RAM disk size	4096
Default RAM disk block size (bytes)	1024
Initial RAM file system and RAM disk (<code>initramfs/initrd</code>) support	is not set
BlueCat Linux RFS support	Y
Packet writing on CD-ROM/DVD media	is not set
ATA over Ethernet support	is not set
ATA/ATAPI/MFM/RLL Support	
ATA/ATAPI/MFM/RLL support	Y
Enhanced IDE/MFM/RLL disk/CD-ROM/tape/floppy support	Y
<i>---Please see Documentation/ide.txt for help/info on IDE drives.</i>	
Support for SATA (Deprecated; conflicts with libata SATA driver)	is not set
Use old disk-only driver on primary interface	is not set
Include IDE/ATA-2 DISK support	Y
Use multimode by default	is not set
Include IDE/ATAPI CD-ROM support	is not set
Include IDE/ATAPI tape support (Experimental)	is not set
Include IDE/ATAPI floppy support	is not set
IDE taskfile access	is not set
<i>---IDE chipset support/bugfixes</i>	
Generic/default IDE chipset support	Y
CMD640 chipset bugfix/support	is not set
PCI IDE chipset support	Y
Sharing PCI IDE interrupts support	is not set
Boot off-board chipsets first support	is not set
Generic PCI IDE chipset support	Y
OPTi 82C621 chipset enhanced support (Experimental)	is not set

Table 3-11: Device Drivers (Continued)

Description	Settings
RZ1000 chipset bugfix/support	is not set
Generic PCI bus-master DMA support	is not set
Other IDE chipset support	Y
<i>--- Note: Most of these also require special kernel boot parameters.</i>	
Generic 4 drives/port support	is not set
ALI M14xx support	is not set
DTC-2278 support	is not set
Holtek HT6560B support	is not set
QDI QD65xx support	is not set
UMC-8672 support	is not set
SCSI Device Support	
RAID Transport Class	is not set
<i>--- SCSI device support</i>	
legacy /proc/scsi/ support	Y
<i>--- SCSI support type (disk, tape, CD-ROM)</i>	
SCSI disk support	Y
SCSI tape support	is not set
SCSI OnStream SC-x0 tape support	is not set
SCSI CD-ROM support	is not set
SCSI generic support	Y
SCSI media changer support	is not set
<i>--- Some SCSI devices (e.g., CD jukebox) support multiple LUNs.</i>	
Probe all LUNs on each SCSI device	is not set
Verbose SCSI error reporting (kernel size +=12K)	is not set
SCSI logging facility	is not set
SCSI Transport Attributes	

Table 3-11: Device Drivers (Continued)

Description	Settings
<i>--- Parallel SCSI (SPI) Transport Attributes</i>	
FiberChannel Transport Attributes	is not set
iSCSI Transport Attributes	is not set
SAS Transport Attributes	is not set
SCSI low-level drivers	
iSCSI Initiator over TCP/IP	is not set
3ware 5/6/7/8xxx ATA-RAID support	is not set
3ware 9xxx SATA-RAID support	is not set
7000FASST SCSI support	is not set
ACARD SCSI support	is not set
Adaptec AHA152X/2825 support	Y
Adaptec AHA1542 support	Y
Adaptec AACRAID support	is not set
Adaptec AIC7xxx Fast -> U160 support (new driver)	is not set
Adaptec AIC7xxx support (old driver)	is not set
Adaptec AIC79xx U320 support	is not set
Adaptec I2O RAID support	is not set
AdvanSys SCSI support	is not set
Always IN2000 SCSI support	is not set
LSI Logic New Generation RAID Device Drivers	is not set
LSI Logic Legacy MegaRAID Driver	is not set
LSI Logic MegaRAID SAS RAID Module	is not set
Serial ATA (SATA) support	is not set
HighPoint RocketRAID 3xxx Controller support	is not set
BusLogic SCSI support	is not set
DMX3191D SCSI support	is not set
DTC3180/3280 SCSI support	is not set

Table 3-11: Device Drivers (Continued)

Description	Settings
EATA ISA/EISA/PCI (DPT and generic EATA/DMA-compliant boards) support	is not set
Future Domain 16xx SCSI/AHA-2920A support	is not set
Intel/ICP (former GDT SCSI Disk Array) RAID Controller support	is not set
Generic NCR5380/53c400 SCSI PIO support	is not set
Generic NCR5380/53c400 SCSI MMIO support	is not set
IBM ServeRAID support	is not set
Initio INI-A100U2W support	is not set
IOMEGA parallel port (ppa—older drives)	is not set
IOMEGA parallel port (imm—newer drives)	is not set
NCR53c406a SCSI support	is not set
SYM53C8XX Version 2 SCSI support	is not set
IBM Power Linux RAID adapter support	is not set
PAS16 SCSI support	is not set
PSI240i support	is not set
Qlogic FAS SCSI support	is not set
Qlogic QLA 1240/1x80/1x160 SCSI support	is not set
Qlogic QLA 1240/1x80/1x160 SCSI support	is not set
Emulex LightPulse Fibre Channel support	is not set
Symbios 53c416 SCSI support	is not set
Tekram DC395(U/UW/F) and DC315(U) SCSI support (Experimental)	is not set
Tekram DC390(T) and Am53/79C974 SCSI support	is not set
Trantor T128/T128F/T228 SCSI support	is not set
UltraStor 14F/34F support	is not set
UltraStor SCSI support	is not set
Workbit NinjaSCSI-32Bi/UDE support	is not set
SCSI debugging host simulator	is not set

Table 3-11: Device Drivers (Continued)

Description	Settings
Old CD-ROM Drivers (not SCSI, not IDE)	
Support for non-SCSI/IDE/ATAPI CD-ROM drives	is not set
Multi-device support (RAID and LVM)	
Multiple devices driver support (RAID and LVM)	is not set
Fusion MPT Device Support	
Fusion MPT ScsiHost drivers for SPI	is not set
Fusion MPT ScsiHost drivers for FC	is not set
Fusion MPT ScsiHost drivers for SAS	is not set
IEEE 1394 (FireWire) support (Experimental)	
IEEE 1394 (FireWire) support	is not set
I2O device support	
I2O support	is not set
Network device support	
Network device support	Y
Dummy net driver support	is not set
Bonding driver support	is not set
EQL (serial line load balancing) support	is not set
Universal TUN/TAP device driver support	is not set
ARCnet Devices	
ARCnet support	is not set
PHY device support	
PHY Device support and infrastructure	is not set
IBM On-chip net device	is not set
Ethernet (10 or 100Mbit)	
Ethernet (10 or 100 Mbit)	Y

Table 3-11: Device Drivers (Continued)

Description	Settings
<i>---Generic Media Independent Interface device support</i>	
Sun Happy Meal 10/100baseT support	is not set
Sun GEM support	is not set
Sun Cassini support	is not set
3Com cards	Y
3c501 EtherLink support	is not set
3c503 EtherLink II support	is not set
3c505 EtherLink Plus support	is not set
3c507 EtherLink 16 support (Experimental)	is not set
3c509/3c529 (MCA)/3c569B (98)/3c579 EtherLink III support	Y
3c515 ISA Fast EtherLink	is not set
3c590/3c900 series (592/595/597) Vortex/Boomerang support	is not set
3cr990 series Typhoon support	is not set
AMD LANCE and PCnet (AT1500 and NE2100) support	is not set
Western Digital/SMC cards	is not set
Racal-Interlan (Micom) NI cards	is not set
Tulip family network device support	
Tulip family network device support	is not set
AT1700/1720/RE1000Plus (C-Bus) support (Experimental)	is not set
DEPCA, DE10x, DE200, DE201, DE202, DE422 support	is not set
HP 10/100VG PCLAN (ISA, EISA, PCI) support	is not set
Other ISA cards	Y
Cabletron E21xx support	is not set
EtherWORKS 3 (DE203, DE204, DE205) support	is not set
EtherExpress 16 support	is not set
EtherExpressPro support/EtherExpress 10 (i82595) support	is not set
HP PCLAN+ (27247B and 27252A) support	is not set

Table 3-11: Device Drivers (Continued)

Description	Settings
HP PCLAN (27245 and other 27xxx series) support	is not set
LP486E on-board Ethernet	is not set
ICL EtherTeam 16i/32 support	is not set
NE2000/NE1000 support	Y
Zenith Z-Note support (Experimental)	is not set
SEQ8005 support (Experimental)	is not set
EISA, VLB, PCI, and on-board controllers	Y
AMD PCnet32 PCI support	Y
AMD 8111 (new PCI lance) support	is not set
Adaptec Starfire/DuraLAN support	is not set
Ansel Communications EISA 3200 support (Experimental)	is not set
Apricot Xen-II on-board Ethernet	is not set
Broadcom 4400 Ethernet support	is not set
nForce Ethernet support	is not set
CS89x0 support	is not set
Digi International RightSwitch SE-X support	is not set
EtherExpressPro/100 support (eeepro100, original Becker driver)	Y
Intel PRO/100+ support	is not set
Myson MTD-8xx PCI Ethernet support	is not set
National Semiconductor DP8381x series PCI Ethernet support	is not set
PCI NE2000 and clones support (see help)	is not set
Realtek RTL-8139 C+ PCI Fast Ethernet Adapter support (Experimental)	is not set
Realtek RTL-8129/8130/8139 PCI Fast Ethernet Adapter support	is not set
SiS 900/7016 PCI Fast Ethernet Adapter support	is not set
SMC EtherPower II	Y
Sundance Alta support	is not set

Table 3-11: Device Drivers (Continued)

Description	Settings
TI ThunderLAN support	is not set
VIA Rhine support	is not set
Pocket and portable adapters	is not set
Ethernet (1000 Mbit)	
Alteon AceNIC/3Com 3C985/NetGear GA620 Gigabit support	is not set
D-Link DL2000-based Gigabit Ethernet support	is not set
Intel PRO/1000 Gigabit Ethernet support	Y
Use Rx Polling (NAPI)	is not set
Disable Packet Split for PCI Express adapters	is not set
National Semiconductor DP83820 support	is not set
Packet Engines Hamachi GNIC-II support	is not set
Packet Engines Yellowfin Gigabit-NIC support (Experimental)	is not set
Realtek 8169 Gigabit Ethernet support	is not set
SiS190/SiS191 Gigabit Ethernet support	is not set
New SysKonnnect GigaEthernet support (Experimental)	is not set
SysKonnnect Yukon2 support (Experimental)	is not set
Marvell Yukon Chipset/SysKonnnect SK-98xx support	is not set
VIA Velocity support	is not set
Broadcom Tigon3 support	is not set
Broadcom NetXtremeII support	is not set
Ethernet (10000 Mbit)	
Chelsio 10Gb Ethernet support	is not set
Intel PRO/10GbE support	is not set
S2IO 10Gbe XFrame NIC	is not set
Myricom Myri-10G Ethernet support	is not set
Token Ring devices	

Table 3-11: Device Drivers (Continued)

Description	Settings
Token Ring devices	is not set
Wireless LAN (non-hamradio)	
Wireless LAN drivers (non-ham radio) and Wireless Extensions	is not set
WAN interfaces	
WAN interfaces support	is not set
Fiber Distributed Data Interface (FDDI) driver support	is not set
High Performance Parallel Interface (HIPPI) driver support (Experimental)	is not set
Point-to-Point Protocol (PPP) support	is not set
Serial Line Internet Protocol (SLIP) support	is not set
Traffic Shaper (Experimental)	is not set
Network console logging support (Experimental)	is not set
ISDN Subsystem	
ISDN support	is not set
Telephony Support	
Linux telephony support	is not set
Input Device Support	
<i>---Generic Input Layer (needed for keyboard, mouse, ...)</i>	
<i>---Userland interfaces</i>	
Mouse interface	Y
Provide legacy <code>/dev/psaux</code> device	Y
Horizontal screen resolution	1024
Vertical screen resolution	768
Joystick interface	is not set
Touchscreen interface	is not set
Event interface	is not set

Table 3-11: Device Drivers (Continued)

Description	Settings
Event debugging	is not set
<i>---Input device drivers</i>	
Keyboards	Y
<i>---Keyboards</i>	
AT keyboard support	Y
Sun Type 4 and Type 5 keyboard support	is not set
DECstation/VAXstation LK201/LK401 keyboard support	is not set
XT keyboard support	is not set
Newton keyboard	is not set
Mouse	Y
<i>---Mouse</i>	
PS/2 mouse	Y
Serial mouse	is not set
InPort/MS/ATIXL bus mouse	is not set
Logitech bus mouse	is not set
IBM PC110 touchpad	is not set
DEC VSXXX-AA/GA mouse and VSXXX-AB tablet	is not set
Joysticks	is not set
Touchscreens	is not set
Miscellaneous devices	is not set
Hardware I/O ports	
<i>--- Serial I/O support</i>	
<i>--- i8042 PC Keyboard controller</i>	
Serial port line discipline	Y
ct82c710 Aux port controller	is not set

Table 3-11: Device Drivers (Continued)

Description	Settings
Parallel port keyboard adapter	is not set
PCI PS/2 keyboard and PS/2 mouse controller	is not set
<i>--- PS/2 driver library</i>	
Raw access to serio ports	is not set
Gameport support	is not set
Character Devices	
Virtual terminal	Y
Support for console on virtual terminal	Y
Support for binding and unbinding console drivers	is not set
Nonstandard serial port support	is not set
Serial drivers	
8250/16550 and compatible serial support	Y
Console on 8250/16550 and compatible serial port	Y
8250/16550 PCI device support	Y
Maximum number of 8250/16550 serial ports	4
Number of 8250/16550 serial ports to register at runtime	4
Extended 8250/16550 serial driver options	is not set
<i>--- Non-8250 serial port support</i>	
Digi International NEO PCI support	is not set
Unix98 PTY support	Y
Legacy (BSD) PTY support	Y
Maximum number of Unix98 PTYs in use (0 to 2048)	256
Parallel printer support	is not set
Support for user-space parallel port device drivers	is not set
Texas Instruments parallel link cable support	is not set
IPMI	

Table 3-11: Device Drivers (Continued)

Description	Settings
IPMI top-level message handler	is not set
Watchdog Cards	
Watchdog Timer support	is not set
Hardware Random Number Generator Core support	is not set
<code>/dev/nvram</code> support	is not set
Enhanced Real Time Clock support	is not set
Generic <code>/dev/rtc</code> emulation	is not set
Double Talk PC internal speech card support	is not set
Siemens R3964 line discipline	is not set
Applicom intelligent fieldbus card support	is not set
Sony Vaio Programmable I/O Control Device support (Experimental)	is not set
Ftape, the floppy tape device driver	
Ftape (QIC-80/Travan) support	is not set
<code>/dev/agpgart</code> (AGP support)	is not set
Direct Rendering Manager (XFree86 4.1.0 and higher DRI support)	is not set
ACP Modem (Mwave) support	is not set
National Semiconductor PC8736x GPIO support	is not set
National Semiconductor Base GPIO support	is not set
AMD CS5535/CS5536 GPIO (Geode Companion Device)	is not set
RAW driver (<code>/dev/raw/rawN</code>) (Obsolete)	is not set
High Precision Event Timer (HPET)	is not set
Hangcheck timer	is not set
TPM devices	
TPM hardware support	is not set
Telecom clock driver for MPBL0010 ATCA SBC	is not set
I2C support	

Table 3-11: Device Drivers (Continued)

Description	Settings
I2C support	is not set
SPI support	
SPI support	is not set
Dallas's 1-wire bus	is not set
Hardware Monitoring support	
Hardware Monitoring support	Y
Abit uGuru	is not set
Fintek F71805F/FG	is not set
IBM Hard Drive Active Protection System	is not set
Hardware Monitoring Chip debugging messages	is not set
Misc devices	
Device driver for IBM RSA service processor	is not set
Monitor detector	is not set
Multimedia Devices	
Video for Linux	is not set
Digital Video Broadcasting Device	
DVB for Linux	is not set
DABUSB driver	is not set
Graphics Support	
Enable firmware EDID	Y
Support for frame buffer devices	is not set
Console Display Driver Support	
VGA text console	Y
Enable Scrollback Buffer in system RAM	is not set
Video mode selection support	is not set

Table 3-11: Device Drivers (Continued)

Description	Settings
MDA text console (dual-headed) (Experimental)	is not set
Backlight & LCD device support	is not set
Sound	
Sound card support	is not set
USB support	
Support for host-side USB	Y
USB verbose debug messages	is not set
<i>---Miscellaneous USB options</i>	
USB device file system	is not set
Enforce USB bandwidth allocation (Experimental)	is not set
Dynamic USB minor allocation (Experimental)	is not set
<i>---USB Host Controller Drivers</i>	
EHCI HCD (USB 2.0) support	Y
Full speed ISO transactions (Experimental)	is not set
Root Hub Transaction Translators (Experimental)	is not set
Improved Transaction Translator scheduling (Experimental)	is not set
ISP116X HCD support	is not set
OHCI HCD support	Y
UHCI HCD (most Intel and VIA) support	is not set
SL811HS HCD support	is not set
<i>---USB Device Class drivers</i>	
USB modem (CDC ACM) support	is not set
USB printer support	is not set
<i>---NOTE: USB_STORAGE enables SCSI, and 'SCSI disk support' may also be needed; see USB_STORAGE help for more information</i>	
USB Mass Storage support	Y

Table 3-11: Device Drivers (Continued)

Description	Settings
USB Mass Storage verbose debug	is not set
Datafab Compact Flash Reader support (Experimental)	is not set
Freecom USB/ATAPI Bridge support	is not set
ISD-200 USB/ATA Bridge support	is not set
Microtech/ZiO! CompactFlash/SmartMedia support	is not set
USBAT/USBAT02-based storage support (Experimental)	is not set
SanDisk SDDR-09 (and other SmartMedia) support (Experimental)	is not set
SanDisk SDDR-55 SmartMedia support (Experimental)	is not set
Lexar Jumpshot Compact Flash Reader (Experimental)	is not set
Olympus MAUSB-10/Fuji DPC-R1 support (Experimental)	is not set
The shared table of common (or usual) storage devices	is not set
<i>---USB Input Devices</i>	
USB Human Interface Device (full HID) support	Y
HID input layer support	Y
Enable support for iBook/PowerBook special keys	is not set
Force feedback support (Experimental)	is not set
/dev/hiddev raw HID device support	is not set
Aiptek 6000U/8000U tablet support	is not set
Wacom Intuos/Graphire tablet support	is not set
Acecad Flair tablet support	is not set
KB Gear JamStudio tablet support	is not set
Griffin PowerMate and Contour Jog support	is not set
USB touchscreen driver	is not set
Yealink usb-plk voip phone	is not set
X-Box gamepad support	is not set
ATI/X10 USB RF remote control	is not set
ATI/Philips USB RF remote control	is not set

Table 3-11: Device Drivers (Continued)

Description	Settings
Keyspan DMR USB remote control (Experimental)	is not set
Apple USB Touchpad support	is not set
<i>---USB Imaging devices</i>	
USB Mustek MDC800 Digital Camera support (Experimental)	is not set
Microtek X6USB scanner support	is not set
USB Network Adapters	
USB CATC NetMate-based Ethernet device support (Experimental)	is not set
USB KLSI KL5USB101-based Ethernet device support	is not set
USB Pegasus/Pegasus-II based Ethernet device support	is not set
USB RTL8150 based Ethernet device support (Experimental)	is not set
Multipurpose USB Networking Framework	is not set
USB monitor	Y
<i>--- USB port drivers</i>	
USS720 parallel port driver	is not set
USB Serial Converter support	
USB serial converter support	is not set
<i>--- USB Miscellaneous drivers</i>	
EMI 6 2m USB Audio interface support	is not set
EMI 2 6 USB Audio interface support	is not set
USB Auerswald ISDN support (Experimental)	is not set
USB Diamond Rio500 support (Experimental)	is not set
USB Lego Infrared Tower support (Experimental)	is not set
USB LCD driver support	is not set
USB LED driver support	is not set
Cypress CY7C63xxx USB driver support	is not set
Cypress USB thermometer driver support	is not set

Table 3-11: Device Drivers (Continued)

Description	Settings
USB PhidgetKit support	is not set
USB PhidgetServo support	is not set
Siemens ID USB Mouse Fingerprint sensor support	is not set
Apple Cinema Display support	is not set
USB 2.0 SVGA dongle support (Net2280/SiS315)	is not set
USB LD driver	is not set
USB DSL modem support	is not set
USB Gadget Support	
Support for USB Gadgets	is not set
MMC/SD Card support	
MMC support	is not set
LED devices	
LED support	is not set
--- <i>LED drivers</i>	
--- <i>LED triggers</i>	
InfiniBand support	
InfiniBand support	is not set
EDAC - error detection and reporting (RAS) (Experimental)	
EDAC core system error reporting (Experimental)	is not set
Real Time Clock	
RTC class	is not set
DMA Engine support	
Support for DMA engines	is not set
--- <i>DMA clients</i>	is not set
--- <i>DMA devices</i>	is not set

Table 3-11: Device Drivers (Continued)

Description	Settings
CAN Devices	is not set
Controller Area Network (CAN) support	is not set

Table 3-12: File Systems

Description	Setting
Second extended file system support	Y
Ext2 extended attributes	is not set
Ext2 execute in place support	is not set
Ext3 journalling file system support	Y
Ext3 extended attributes	Y
Ext3 POSIX Access Control Lists	is not set
Ext3 Security Labels	is not set
JBD (ext3) debugging support	is not set
Reiserfs support	is not set
JFS file system support	is not set
XFS file system support	is not set
OCFS2 file system support (Experimental)	is not set
Minix file system support	is not set
ROM file system support	is not set
Inotify file change notification support	Y
Inotify support for userspace	Y
Quota support	is not set
Dnotify support	Y
Kernel automounter support	is not set
Kernel automounter version 4 support (also supports v3)	is not set
File system in Userspace support	is not set

Table 3-12: File Systems (Continued)

Description	Setting
CD-ROM/DVD File Systems	
ISO 9660 CD-ROM file system support	Y
Microsoft Joliet CD-ROM extensions	is not set
Transparent decompression extension	is not set
UDF file system support	is not set
DOS/FAT/NT File Systems	
MS-DOS file system support	is not set
VFAT (Windows 95) file system support	is not set
NTFS file system support	is not set
Pseudo File Systems	
<code>/proc</code> file system support	Y
<code>/proc/kcore</code> support	Y
<code>sysfs</code> file system support	Y
Virtual memory file system support (former <code>shm</code> file system)	Y
HugeTLB file system support	is not set
Userspace-driven configuration file system (Experimental)	is not set
Miscellaneous File Systems	
ADFS file system support (Experimental)	is not set
Amiga FFS file system support (Experimental)	is not set
Apple Macintosh file system support (Experimental)	is not set
Apple Extended HFS file system support	is not set
BeOS file system (BeFS) support (read-only) (Experimental)	is not set
BFS file system support (Experimental)	is not set
EFS file system support (read-only) (Experimental)	is not set
Compressed ROM file system support	is not set
FreeVxFS file system support (VERITAS VxFS™-compatible)	is not set

Table 3-12: File Systems (Continued)

Description	Setting
OS/2 HPFS file system support	is not set
QNX4 file system support (read-only)	is not set
System V/Xenix/V7/Coherent file system support	is not set
UFS file system support (read-only)	is not set
Network File Systems	
NFS file system support	Y
Provide NFSv3 client support	Y
Provide client support for the NFSv3 ACL protocol extension	is not set
Provide NFSv4 client support (Experimental)	is not set
Allow direct I/O on NFS files (Experimental)	is not set
NFS server support	Y
Provide NFSv3 server support	Y
Provide server support for the NFSv3 ACL protocol	is not set
Provide NFSv4 server support (Experimental)	is not set
Provide NFS server over TCP support	Y
Secure RPC: Kerberos V mechanism (Experimental)	is not set
Secure RPC: SPKM3 mechanism (Experimental)	is not set
SMB file system support (to mount Windows shares, etc.)	is not set
CIFS support (advanced network file system for Samba, Windows, and other CIFS-compliant servers)	is not set
NCP file system support (to mount NetWare volumes)	is not set
Coda file system support (advanced network file system)	is not set
Andrew File System (AFS) support (Experimental)	is not set
Plan 9 Resource Sharing support (9P2000) (Experimental)	is not set
Partition Types	
Advanced partition selection	Y
Acorn partition support	Y

Table 3-12: File Systems (Continued)

Description	Setting
Alpha OSF partition support	is not set
Amiga partition table support	is not set
Atari partition table support	is not set
Macintosh partition map support	is not set
PC BIOS (MS-DOS partition tables) support	Y
BSD disklabel (FreeBSD partition tables) support	is not set
Minix subpartition support	is not set
Solaris (x86) partition table support	is not set
Unixware slices support	is not set
Windows Logical Disk Manager (Dynamic Disk) support	is not set
SGI partition support	is not set
ULTRIX partition table support	is not set
Sun partition tables support	is not set
Karma Partition support	is not set
EFI GUID Partition support	is not set
Native Language Support	
Base native language support	is not set

Table 3-13: Instrumentation Support

Description	Setting
Profiling support (Experimental)	is not set
Kprobes (Experimental)	is not set

Table 3-14: Kernel Hacking

Description	Setting
Show timing information on <code>printks</code>	is not set
Magic SysRq key	is not set
Enable unused/obsolete exported symbols	Y
Kernel debugging	is not set
Debug file system	is not set
Compile the kernel with frame unwind information	is not set
BlueCat Linux kernel debugger	is not set
Enable doublefault exception handler	Y

Table 3-15: Security Options

Description	Setting
Enable access key retention support	is not set
Enable different security models	is not set

Table 3-16: Cryptographic Options

Description	Setting
Cryptographic API	is not set
Hardware crypto devices	is not set

Table 3-17: Library Routines

Description	Setting
CRC-CCITT functions	is not set
CRC16 functions	is not set
--- <i>CRC32 functions</i>	
CRC32c (Castagnoli et al.) Cyclic Redundancy-Check	is not set

This chapter provides information about BlueCat Linux demo systems supported by the x86 BSP.

Demo Systems

Table 4-1 lists the demo systems supported in the x86 BSP distribution, the boot devices supported by each demo system, and their respective RAM and ROM requirements.

Table 4-1: Demo Systems Supported by the x86 BSP

Demo	Boot Devices Supported by Default	ROM Requirements	RAM Requirements
developer	Network (using BlueCat Linux OS loader) Parallel Port (using BlueCat Linux OS loader) Hard disk CD-ROM ROM/Flash	5.2 MB	32.2 MB
osloader	Network (using BlueCat Linux OS loader) Parallel Port Floppy disk Hard disk CD-ROM Parallel port ROM/Flash	1.4 MB	6.5 MB

Table 4-1: Demo Systems Supported by the x86 BSP (Continued)

Demo	Boot Devices Supported by Default	ROM Requirements	RAM Requirements
showcase	Network (using BlueCat Linux OS loader) Parallel Port (using BlueCat Linux OS loader) Hard disk CD-ROM ROM/Flash	3.1 MB	14.3 MB
install_light	Removable boot media (CD-ROM or CompactFlash)	28 MB	69.5 MB

developer Demo System

The `developer` demo system is a package consisting of the functionalities of the `shell`, `ftp`, `ping`, and `gdb` systems. For descriptions of `developer` and its components, refer to Chapter 4, “BlueCat Linux Demo Systems” in the *BlueCat Linux User’s Guide*.

osloader Demo System

`osloader` is the BlueCat Linux OS loader used to boot a BlueCat Linux system on the target board. Refer to Chapter 4, “BlueCat Linux Demo Systems” in the *BlueCat Linux User’s Guide* for details.

showcase Demo System

The `showcase` demo system starts and configures the Apache HTTP daemon, turning the target board into a web server. Refer to Chapter 4, “BlueCat Linux Demo Systems” in the *BlueCat Linux User’s Guide* for details.

install_light Demo System

The `install_light` demo system boots BlueCat Linux on the target from a removable boot media (CD-ROM or CompactFlash) and installs the BlueCat Linux system onto the hard disk. Refer to Chapter 4, “BlueCat Linux Demo Systems” in the *BlueCat Linux User’s Guide* for details.

Table 5-1 lists the device drivers supported by the x86 BSP and provides important information about them.

Table 5-1: Device Drivers Supported by the x86 BSP

Hardware Device	Device Drivers	Location in Source Tree	Kernel Configuration Options	Notes
Ethernet Controller PCI, PCMCIA, ISA, and USB 10/100 Mbit Ethernet adapters	*.c (Depends on the card installed.)	drivers/net/ drivers/usb/ net	Depends on the card installed.	Tested adapters: • ISA NE2000- compatible • 3Com 3C509 • Intel EtherExpress Pro+ 100
IDE/EIDE Controllers Up to two IDE/EIDE interfaces and up to four hard disks, CD-ROM drives, or CompactFlas h disks	*.c	drivers/ide/	CONFIG_IDE* CONFIG_BLK_DEV_IDE CONFIG_BLK_DEV*	

Table 5-1: Device Drivers Supported by the x86 BSP (Continued)

Hardware Device	Device Drivers	Location in Source Tree	Kernel Configuration Options	Notes
SCSI Controllers PCI, ISA, and on-board SCSI controllers	*.c	drivers/scsi/	CONFIG_SCSI CONFIG_BLK_DEV_SD CONFIG_BLK_DEV_SR CONFIG_SCSI_*	Tested adapters: AHA2940
FDD Controller	floppy.c	drivers/block/	CONFIG_BLK_DEV_FD	
Keyboard	atkbd.c	drivers/input/keyboard/	CONFIG_INPUT_KEYBOARD CONFIG_KEYBOARD_ATKBD	
Mouse PS/2	psmouse-base.c synaptics.o logips2pp.o	drivers/input/mouse/	CONFIG_INPUT_MOUSE CONFIG_MOUSE_PS2 CONFIG_INPUT_MOUSEDEV CONFIG_INPUT_MOUSEDEV_PSAUX	
Serial Ports 8250, 16450, 16550, and 16550A UARTs	*.c	drivers/serial/	CONFIG_SERIAL_8250 CONFIG_SERIAL_8250_CONSOLE	
Video PCI, AGP, and on-board video controllers	vgacon.c	drivers/video/console/	CONFIG_VGA_CONSOLE	

Table 5-1: Device Drivers Supported by the x86 BSP (Continued)

Hardware Device	Device Drivers	Location in Source Tree	Kernel Configuration Options	Notes
USB	*.c	drivers/usb/	CONFIG_USB CONFIG_INPUT CONFIG_USB_HID CONFIG_USB_HIDINPUT CONFIG_USB_PRINTER	Tested devices: keyboard and mouse
			CONFIG_USB_OHCI_HCD CONFIG_USB_EHCI_HCD CONFIG_USB_UHCI_HCD	Select one of these options, depending on the Host Controller. Tested adapters: UHCI Host Controller
Parallel Ports	*.c	drivers/parport/	CONFIG_PARPORT CONFIG_PARPORT_PC	
PCMCIA Controllers	*.c	drivers/pcmcia/	CONFIG_HOTPLUG CONFIG_PCPCIA	Not tested.
PCI, Cardbus, and ISA PCMCIA adapters			CONFIG_YENTA CONFIG_I82092 CONFIG_I82365 CONFIG_TCIC	Select one of these options, depending on the HBA device.
Parallel Port Printers	parport_pc.c	drivers/parport/	CONFIG_PARPORT CONFIG_PARPORT_PC	

This chapter describes known problems and limitations of this release.

x86 Target Board Problems and Limitations

The following are known problems and limitations of this release:

- For all demo systems, the VGA console is configured as the default Linux console. To redirect output to either of the serial ports, add the following to the kernel command line:

- To COM1:

```
console=ttyS0
```

- To COM2:

```
console=ttyS1
```

- The `sed` target RPM fails to build on a slow machine. As a workaround, install the `sed-4.1.5-5.src.rpm` package and edit the `sed_trg.spec` file by adding the following line between line 55 (`%configure...`) and line 56 (`make`):

```
touch doc/sed.1
```

Run the `rpmbuild -ba` command.

- The `nfs-utils` target RPM fails to build. As a workaround, install the `libgssapi` package from the Red Hat Enterprise Linux 4 distribution on the development host.
- Debugging of a multithreaded application does not work as expected after restarting the application.

- GDB does not stop on the breakpoints installed within shared libraries after restarting the program.

Resolved BlueCat Linux 5.4 Issues

The following improvements are made in this release of BlueCat Linux comparatively to the previous releases of BlueCat Linux for x86:

- Standard Linux MTD `ioctl()` commands are supported.
- JFFS2 problems related to a nonaligned access to the Flash memory are resolved.
- The defect in `mkrootfs` that result in creating incorrect JFFS2 images is fixed.
- The redundant per-partition MTD block device threads are removed.
- The MTD-related kernel code is cleaned up.
- Read-only Flash partitions are supported in this release of BlueCat Linux.