

# BlueCat Linux Board Support Guide

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BlueCat Linux Release 5.4

DOC-0736-01

*for x86 Boards*

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# Preface

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## 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; <i>italicized</i> for emphasis, new terms, and book titles	Refer to the <i>BlueCat Linux User's Guide</i> .
Environment variables, filenames, functions, methods, options, parameter names, path names, commands, and computer data	<code>ls</code> <code>-l</code> <code>myprog.c</code> <code>/dev/null</code>
Commands that need to be highlighted within body text, or commands that must be typed as is by the user are <b>bolded</b> .	<code>login: <b>myname</b></code> <code># <b>cd</b> /usr/home</code>
Text that represents a variable, such as a filename or a value that must be entered by the user, is <i>italicized</i> .	<code>cat &lt;filename&gt;</code> <code>mv &lt;file1&gt; &lt;file2&gt;</code>
Blocks of text that appear on the display screen after entering instructions or commands	<code>Linux version 2.4.10-1</code> <code>(bin@build1) (gcc version</code> <code>2.95.3 20010315 (release)) #5</code> <code>Tue Dec 18 13:33:08 MSK 2001</code> <code>Processor: Intel StrongARM-</code> <code>IXP1200 revision 3</code> <code>Architecture: Intel IXP1200</code> <code>On node 0 totalpages: 32768</code> <code>zone(0): 32768 pages.</code> <code>zone(1): 0 pages.</code> <code>zone(2): 0 pages.</code>
Keyboard options, button names, and menu sequences	<b>Enter</b> , <b>Ctrl-C</b>

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## Special Notes

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

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

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

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## 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.”

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## Features Overview

This following sections describe the new features of this release.

### Kernel Version

BlueCat Linux release 5.4 is based on the Linux kernel version 2.6.13.4 available from [www.kernel.org](http://www.kernel.org).

### BlueCat Linux Cross-Development Tools

#### GNU Toolchain

BlueCat Linux release 5.4 supports the following versions of GNU toolchain:

- `gcc` version 3.4.3
- `binutils` version 2.14

#### `gdb`

BlueCat Linux release 5.4 supports `gdb` version 6.3.

## BlueCat Linux Target Components

BlueCat Linux release 5.4 uses Fedora Core 4 as a code base for the target RPM packages.

### glibc

BlueCat Linux release 5.4 supports the `glibc` version 2.3.3.

### mkboot

The `mkboot` utility in BlueCat Linux release 5.4 is extended with the ability to create a any number of partitions.

### mkrootfs

The `mkrootfs` utility in BlueCat Linux release 5.4 is extended to support the ext3 Journalling file system.

### X11 Support

BlueCat Linux release 5.4 supports the `xorg-x11` package as a target component. This package provides basic fonts, programs, and documents for an X workstation.

### High Resolution Timers Support

BlueCat Linux release 5.4 supports high resolution POSIX clocks and timers. Configured in the kernel via the `CONFIG_HIGH_RES_RESOLUTION` configuration option, the resolution for the clocks and timers can be set as finely as 1 microsecond.

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## Supported Hardware

Table 1-1 describes the hardware supported with this release. For available BlueCat Linux drivers, please see Chapter 5, “Supported Device Drivers.”

**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"> <li>• PCI, PCMCIA, ISA, and USB 10/100 Mbit Ethernet adapters</li> <li>• Up to two IDE/EIDE interfaces and up to four hard disks, CD-ROM drives, or CompactFlash disk</li> <li>• PCI, ISA, and on-board SCSI controllers</li> <li>• DiskOnChip 2000/Millennium</li> <li>• FDD controller</li> <li>• Keyboard</li> <li>• Mouse PS/2, USB</li> <li>• Serial Ports 8250, 16450, 16550, and 16550A UARTs</li> <li>• PCI, AGP, and on-board video controllers</li> <li>• USB</li> <li>• USB Flash drivers</li> <li>• Parallel ports</li> <li>• PCI, Cardbus, and ISA PCMCIA adapters</li> </ul>

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## BlueCat Linux Debugging, Development, and Programming Tools for Embedded System Design

Please contact your LinuxWorks Account Manager for information about the availability of the following premium LynxOS 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

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## 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:

- Windows XP Professional
- Red Hat Enterprise Linux 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.

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## **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*.

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## 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, DiskOnChip, or CD-ROM, 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, the 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.

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## 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 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.

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## 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**

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

**Table 3-2: Code Maturity Level Options**

Description	Setting
Prompt for development and/or incomplete code/drivers	Y
Select only drivers expected to compile cleanly	Y

**Table 3-3: General Setup**

Description	Setting
Local version - append to kernel release	is not set
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	Y
BSD Process Accounting version 3 file format	is not set
Sysctl support	Y
Auditing support	is not set
Support for hot-pluggable devices	is not set
Kernel Userspace Events	Y
Kernel .config support	Y
Enable access to .config through /proc/ikconfig	is not set
<b>Configure standard kernel features (for small systems)</b>	Y
<i>--- Configure standard kernel features (for small systems).</i>	
Load all symbols for debugging/kksymoops	Y
Do an extra kallsyms pass	is not set
Enable support for printk	Y
BUG( ) support	Y

**Table 3-3: General Setup (Continued)**

Description	Setting
Enable full-sized data structures for core	Y
Enable futex support	is not set
Enable eventpoll support	Y
CODETEST device driver configuration	is not set
Optimize for size	is not set
Use full shmem filesystem	Y
Function alignment	0
Label alignment	0
Loop alignment	0
Jump alignment	0

**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	Y

**Table 3-5: Processor Type and Features**

Description	Setting
<b>Subarchitecture Type (PC-compatible)</b>	
PC-compatible	Y
AMD Elan	is npt set

**Table 3-5: Processor Type and Features (Continued)**

<b>Description</b>	<b>Setting</b>
Voyager (NCR)	is not set
NUMAQ (IBM/Sequent)	is not set
SGI 320/540 (Visual Workstation)	is not set
<b>Processor Family</b>	
386	Y
486	is not set
586/K5/5x86/6x86/6x86MX	is not set
Pentium-Classic	is not set
Pentium-MMX	is not set
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	Y
XADD, CMPXCHG, BSWAP, CMOV instruction emulation	Y
HPET Timer support	Y

**Table 3-5: Processor Type and Features (Continued)**

<b>Description</b>	<b>Setting</b>
Ktimers 64bit scalar representation	is not set
High Resolution Timer Support	Y
High Resolution Timer resolution (nanoseconds)	1000
Symmetric multiprocessing support	is not set
<b>Preemption Model (Preemptible Kernel (Low-Latency Desktop))</b>	
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
Toshiba Laptop support	is not set
Force CPCI-735/736 support	is not set
Dell laptop support	is not set
Enable X86 board specific fixups for reboot	is not set
/dev/cpu/microcode—Intel® IA32 CPU microcode support	is not set
/dev/cpu/*/msr—Model-specific register support	is not set
/dev/cpu/*/cpuid—CPU information support	is not set
<b>Firmware Drivers</b>	
BIOS Enhanced Disk Drive calls determine boot disk (Experimental)	is not set
<b>High Memory Support (off)</b>	
off	Y
4GB	is not set
64GB	is not set

**Table 3-5: Processor Type and Features (Continued)**

<b>Description</b>	<b>Setting</b>
<b>Memory model (Flat Memory)</b>	
Flat Memory	Y
Math emulation	Y
MTRR (Memory Type Range Register) support	Y
Use register arguments (Experimental)	is not set
Enable seccomp to safely compute untrusted bytecode	Y
<b>Timer frequency (250 HZ)</b>	
100 HZ	is not set
250 HZ	Y
1000 HZ	is not set
Physical address where the kernel is loaded	0x100000
kexec system call (Experimental)	is not set

**Table 3-6: Power Management Options (ACPI, APM)**

<b>Description</b>	<b>Setting</b>
Power Management support	is not set
<b>CPU Frequency scaling</b>	
CPU frequency scaling	is not set

**Table 3-7: Bus Options (PCI, PCMCIA, EISA, MCA, ISA)**

<b>Description</b>	<b>Setting</b>
PCI support	Y
<b>PCI Access Mode (Any)</b>	
BIOS	is not set

**Table 3-7: Bus Options (PCI, PCMCIA, EISA, MCA, ISA) (Continued)**

<b>Description</b>	<b>Setting</b>
MMConfig	is not set
Direct	is not set
Any	Y
PCI Express support	is not set
Message Signaled Interrupts (MSI and MSI-X)	is not set
Legacy <code>/proc/pci</code> interface	is not set
PCI device name database	Y
ISA support	Y
EISA support	Y
Vesa Local Bus priming	is not set
Generic PCI/EISA bridge	Y
EISA virtual root device	Y
EISA device name database	Y
MCA support	is not set
NatSemi SCx200 support	is not set
<b>PCCARD (PCMCIA/CardBus) support</b>	
PCCard (PCMCIA/CardBus) support	is not set
<b>PCI Hotplug Support</b>	
Support for PCI Hotplug (Experimental)	is not set

**Table 3-8: Executable File Formats**

<b>Description</b>	<b>Setting</b>
Kernel support for ELF binaries	Y
Kernel support for <code>a.out</code> and ECOFF binaries	M
Kernel support for MISC binaries	M

**Table 3-9: Networking**

Description	Setting
Networking support	Y
<b>Networking options</b>	
Packet socket	Y
Packet socket: mmaped IO	is not set
UNIX domain sockets	Y
PF_KEY sockets	is not set
TCP/IP networking	Y
IP: multicasting	Y
IP: advanced router	is not set
IP: kernel level autoconfiguration	is not set
IP: tunneling	M
IP: GRE tunnels over IP	M
IP: broadcast GRE over IP	is not set
IP: multicast routing	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: tunnel transformation	is not set
IP: TCP socket monitoring interface	Y
TCP: advanced congestion control	is not set
The IPv6 protocol (Experimental)	is not set
Network packet filtering (replaces ipchains)	is not set
<b>SCTP Configuration (Experimental)</b>	
SCTP Configuration (Experimental)	is not set

**Table 3-9: Networking(Continued)**

<b>Description</b>	<b>Setting</b>
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
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
Frame Diverter (Experimental)	is not set
Acorn Econet/AUN protocols (Experimental)	is not set
WAN router	M
<b>QoS and/or fair queueing</b>	
QoS and/or fair queueing	is not set
<b>Network testing</b>	
Packet Generator (Use with Caution)	is not set
<b>Amateur Radio support</b>	is not set
<b>IrDA (infrared) subsystem support</b>	is not set
<b>Bluetooth subsystem support</b>	is not set

**Table 3-10: Device Drivers**

<b>Description</b>	<b>Settings</b>
<b>Generic Driver Options</b>	
Select only drivers that don't need compile-time external firmware	Y
Prevent firmware from being built	Y

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
Hotplug firmware loading support	is not set
<b>Memory Technology Devices (MTD)</b>	
Memory Technology Device (MTD) support	is not set
<b>Parallel Port Support</b>	
Parallel port support	Y
PC-style hardware	Y
Multi-IO cards (parallel and serial)	is not set
Use FIFO/DMA if available (Experimental)	is not set
SuperIO chipset support (Experimental)	is not set
IEEE 1284 transfer modes	Y
BlueCat Linux bidirectional parallel port transfer driver	is not set
<b>Plug And Play Support</b>	
Plug and Play support	Y
PnP Debug Messages	is not set
<i>---Protocols</i>	
ISA Plug and Play support (Experimental)	is not set
Plug and Play BIOS support (Experimental)	is not set
<b>Block Devices</b>	
Normal floppy disk support	Y
XT hard disk support	M
Parallel port IDE device support	M
<i>---Parallel IDE high-level drivers</i>	
Parallel port IDE disks	M
Parallel port ATAPI CD-ROMs	M
Parallel port ATAPI disks	M
Parallel port ATAPI tapes	M

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
Parallel port generic ATAPI devices	M
<i>---Parallel IDE protocol modules</i>	
ATEN EH-100 protocol	M
MicroSolutions backpack (Series 5) protocol	M
MicroSolutions backpack (Series 6) protocol	is not set
DataStor Commuter protocol	M
DataStor EP-2000 protocol	M
FIT TD-2000 protocol	M
FIT TD-3000 protocol	M
Shuttle EPAT/EPEZ protocol	M
Support c7/c8 chips (Experimental)	is not set
Shuttle EPIA protocol	M
Freecom IQ ASIC-2 protocol	M
FreeCom power protocol	M
KingByte KBIC-951A/971A protocols	M
KT PHd protocol	M
OnSpec 90c20 protocol	M
OnSpec 90c26 protocol	M
Compaq SMART-2 support	M
Compaq Smart Array 5xxx support	is not set
Mylex DAC960/DAC1100 PCI RAID Controller support	M
Micro Memory MM5415 Battery Backed RAM support (Experimental)	is not set
Loopback device support	Y
Cryptoloop support	is not set
Network block device support	M
Promise SATA SX8 (carmel) support	is not set

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
Low Performance USB Block driver	is not set
RAM disk support	Y
Default number of RAM disks (kbytes)	16
Default RAM disk size	4096
Initial RAM disk ( <code>initrd</code> ) support	is not set
Initramfs source file(s)	is not set
BlueCat Linux RFS support	Y
Support for Large Block Devices	is not set
Packet writing on CD/DVD media	is not set
<b>IO Schedulers</b>	
Anticipatory I/O scheduler	is not set
Deadline I/O scheduler	Y
CFQ I/O scheduler	Y
ATA over Ethernet support	is not set
<b>ATA/ATAPI/MFM/RLL Support</b>	
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	Y
Include IDE/ATAPI tape support (Experimental)	M
Include IDE/ATAPI floppy support	M
SCSI emulation support	M
IDE taskfile access	is not set

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
<i>---IDE chipset support/bugfixes</i>	
Generic/default IDE chipset support	Y
CMD640 chipset bugfix/support	is not set
PNP EIDE 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	is not set
OPTi 82C621 chipset enhanced support (Experimental)	is not set
RZ1000 chipset bugfix/support	is not set
Generic PCI bus-master DMA support	Y
Force enable legacy 2.0.X HOSTS to use DMA	is not set
Use PCI DMA by default when available	is not set
AEC62XX chipset support	is not set
ALI M15x3 chipset support	is not set
AMD and nVidia IDE support	is not set
ATI IXP chipset IDE support	is not set
CMD64{3 6 8 9} chipset support	is not set
Compaq Triflex IDE support	is not set
CY82C693 chipset support	is not set
Cyrix CS5510/20 MediaGX chipset support (Very Experimental)	is not set
Cyrix/National Semiconductor CS5530 MediaGX chipset support	is not set
HPT34X chipset support	is not set
HPT36X/37X chipset support	is not set
National SCx200 chipset support	is not set
Intel PIIXn chipsets support	is not set
NS87415 chipset support	is not set

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
PROMISE PDC202{46 62 65 67} support	is not set
PROMISE PDC202{68 69 70 71 75 76 77} support	is not set
ServerWorks OSB4/CSB5/CSB6 chipsets support	is not set
Silicon Image chipset support	is not set
SiS5513 chipset support	is not set
SLC90E66 chipset support	is not set
Tekram TRM290 chipset support	is not set
VIA82CXXX chipset support	is not set
Other IDE chipset support	is not set
IGNORE word93 Validation BITS	is not set
<b>SCSI Device Support</b>	
SCSI device support	Y
legacy /proc/scsi/ support	Y
<i>---SCSI support type (disk, tape, CD-ROM)</i>	
SCSI disk support	Y
SCSI tape support	Y
SCSI OnStream SC-x0 tape support	is not set
SCSI CD-ROM support	Y
Enable vendor-specific extensions (for SCSI CD-ROM)	Y
SCSI generic support	Y
<i>---Some SCSI devices (for example, CD jukebox) support multiple LUNs.</i>	
Probe all LUNs on each SCSI device	Y
Verbose SCSI error reporting (kernel size +=12K)	is not set
SCSI logging facility	is not set
<b>SCSI Transport Attributes</b>	
Parallel SCSI (SPI) Transport Attributes	is not set

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
FiberChannel Transport Attributes	is not set
iSCSI Transport Attributes	is not set
<b>SCSI Low-level Drivers</b>	
3ware 5/6/7/8xxx ATA-RAID support	is not set
3ware 9xxx SATA-RAID support	is not set
7000FASST SCSI support	M
ACARD SCSI support	M
Adaptec AHA152X/2825 support	Y
Adaptec AHA1542 support	Y
Adaptec AHA1740 support	Y
Adaptec AACRAID support (Experimental)	is not set
Adaptec AIC7xxx Fast -> U160 support (New Driver)	Y
Maximum number of TCQ commands per device	8
Initial bus reset delay in milliseconds	15000
Probe for EISA and VL AIC7XXX Adapters	is not set
Compile in Debugging Code	Y
Debug code enable mask (2047 for all debugging)	0
Decode registers during diagnostics	Y
Adaptec AIC7xxx support (old driver)	is not set
Adaptec AIC79xx U320 support	is not set
Adaptec I2O RAID support	is not set
Always IN2000 SCSI support	M
LSI Logic New Generation RAID Device Drivers	is not set
LSI Logic Legacy MegaRAID Driver	is not set
Serial ATA (SATA) support	is not set
BusLogic SCSI support	M
Omit FlashPoint support	is not set

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
DMX3191D SCSI support	is not set
DTC3180/3280 SCSI support	M
EATA ISA/EISA/PCI (DPT and generic EATA/DMA-compliant boards) support	M
enable tagged command queuing	Y
enable elevator sorting	is not set
maximum number of queued commands	16
Future Domain 16xx SCSI/AHA-2920A support	Y
Intel/ICP (former GDT SCSI Disk Array) RAID Controller support	M
Generic NCR5380/53c400 SCSI PIO support	Y
Generic NCR5380/53c400 SCSI MMIO support	is not set
Enable NCR53c400 extensions	is not set
IBM ServeRAID support	M
Initio INI-A100U2W support	is not set
IOMEGA parallel port (ppa—older drives)	M
IOMEGA parallel port (imm—newer drives)	M
ppa/imm option—Use slow (but safe) EPP-16	is not set
ppa/imm option—Assume slow parport control register	is not set
NCR53c406a SCSI support	Y
SYM53C8XX Version 2 SCSI support	is not set
IBM Power Linux RAID adapter support	is not set
PAS16 SCSI support	M
PSI240i support	M
Qlogic FAS SCSI support	M
Qlogic ISP FC SCSI support	M
Include loadable firmware in driver	is not set
Qlogic QLA 1240/1x80/1x160 SCSI support	is not set

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
QLogic ISP2100 host adapter family support	is not set
QLogic ISP2200 host adapter family support	is not set
QLogic ISP2300 host adapter family support	is not set
QLogic ISP2322 host adapter family support	is not set
QLogic ISP63xx host adapter family support	is not set
QLogic ISP24xx host adapter family support	is not set
Emulex LightPulse Fibre Channel Support	is not set
Simple 53c710 SCSI support (Compaq, NCR machines)	is not set
Symbios 53c416 SCSI support	Y
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	M
UltraStor 14F/34F support	M
enable tagged command queuing	is not set
enable elevator sorting	is not set
maximum number of queued commands	8
UltraStor SCSI support	M
Workbit NinjaSCSI-32Bi/UDE support	is not set
SCSI debugging host simulator	M
<b>Old CD-ROM Drivers (not SCSI, not IDE)</b>	
Support for non-SCSI/IDE/ATAPI CD-ROM drives	Y
Aztech/Orchid/Okano/Wearnes/TXC/CyDROM CD-ROM support	M
Goldstar R420 CD-ROM support	M
Matsushita/Panasonic/Creative, Longshine, TEAC CD-ROM support	M
Mitsumi CDROM support	M
Optics Storage DOLPHIN 8000AT CD-ROM support	M

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
Philips/LMS CM206 CD-ROM support	M
Sanyo CDR-H94A CD-ROM support	M
ISP16/MAD16/Mozart soft configurable CD-ROM interface support	M
Sony CDU31A/CDU33A CD-ROM support	M
Sony CDU535 CD-ROM support	M
<b>Multi-device support (RAID and LVM)</b>	
Multiple devices driver support (RAID and LVM)	is not set
<b>Fusion MPT Device Support</b>	
Fusion MPT ScsiHost drivers for SPI	is not set
Fusion MPT ScsiHost drivers for FC	is not set
<b>IEEE 1394 (FireWire) support (Experimental)</b>	
IEEE 1394 (FireWire) support	is not set
<b>I<sup>2</sup>O device support</b>	
I <sup>2</sup> O support	is not set
<b>Network device support</b>	
Network device support	Y
Dummy net driver support	M
Bonding driver support	is not set
EQL (serial line load balancing) support	M
Universal TUN/TAP device driver support	is not set
General Instruments Surfboard 1000	is not set
<b>ARCnet Devices</b>	
ARCnet support	is not set
<b>IBM On-chip net device</b>	is not set
<b>Ethernet (10 or 100Mbit)</b>	

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
Ethernet (10 or 100 Mbit)	Y
<i>---Generic Media Independent Interface device support</i>	
Sun Happy Meal 10/100baseT support	is not set
Sun GEM support	is not set
3Com cards	Y
3c501 EtherLink support	M
3c503 EtherLink II support	M
3c505 EtherLink Plus support	M
3c507 EtherLink 16 support (Experimental)	M
3c509/3c529 (MCA)/3c569B (98)/3c579 EtherLink III support	Y
3c515 ISA Fast EtherLink	M
3c590/3c900 series (592/595/597) Vortex/Boomerang support	Y
3cr990 series Typhoon support	is not set
AMD LANCE and PCnet (AT1500 and NE2100) support	M
Western Digital/SMC cards	Y
WD80*3 support	M
SMC Ultra support	M
SMC Ultra32 EISA support	M
SMC 9194 support	M
Racal-Interlan (Micom) NI cards	Y
NI5010 support (Experimental)	M
NI5210 support	M
NI6510 support	M
<b>Tulip family network device support</b>	
Tulip family network device support	is not set
AT1700/1720/RE1000Plus (C-Bus) support (Experimental)	M
DEPCA, DE10x, DE200, DE201, DE202, DE422 support	M

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
HP 10/100VG PCLAN (ISA, EISA, PCI) support	M
Other ISA cards	Y
Cabletron E21xx support	M
EtherWORKS 3 (DE203, DE204, DE205) support	is not set
EtherExpress 16 support	M
EtherExpressPro support/EtherExpress 10 (i82595) support	Y
HP PCLAN+ (27247B and 27252A) support	M
HP PCLAN (27245 and other 27xxx series) support	M
LP486E on-board Ethernet	is not set
ICL EtherTeam 16i/32 support	M
NE2000/NE1000 support	Y
Zenith Z-Note support (Experimental)	is not set
SEEQ8005 support (Experimental)	is not set
EISA, VLB, PCI, and on-board controllers	Y
AMD PCnet32 PCI support	M
AMD 8111 (new PCI lance) support	is not set
Adaptec Starfire/DuraLAN support	is not set
Ansel Communications EISA 3200 support (Experimental)	M
Apricot Xen-II on-board Ethernet	M
Broadcom 4400 Ethernet support (Experimental)	is not set
Reverse Engineered nForce Ethernet support (Experimental)	is not set
CS89x0 support	is not set
Digi International RightSwitch SE-X support	M
EtherExpressPro/100 support (eeepro100, original Becker driver)	Y
Intel PRO/100+ support	is not set
Mylex EISA LNE390A/B support (Experimental)	M
Myson MTD-8xx PCI Ethernet support	is not set

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
National Semiconductor DP8381x series PCI Ethernet support	is not set
PCI NE2000 and clones support (see help)	M
Novell/Eagle/Microdyne NE3210 EISA support (Experimental)	M
Racal-Interlan EISA ES3210 support (Experimental)	M
RealTek RTL-8139 C+ PCI Fast Ethernet Adapter support (Experimental)	is not set
RealTek RTL-8139 PCI Fast Ethernet Adapter support	M
Use PIO instead of MMIO	is not set
Support for uncommon RTL-8139 rev. K (automatic channel equalization)	is not set
Support for older RTL-8129/8130 boards	is not set
Support for RTL-8139 eeprom device	is not set
Use older RX-reset method	is not set
SiS 900/7016 PCI Fast Ethernet Adapter support	M
SMC EtherPower II	Y
Sundance Alta support	is not set
TI ThunderLAN support	M
VIA Rhine support	M
Use MMIO instead of PIO (Experimental)	is not set
Pocket and portable adapters	is not set
<b>Ethernet (1000 Mbit)</b>	
Alteon AceNIC/3Com 3C985/NetGear GA620 Gigabit support	M
Omit support for old Tigon I-based AceNICs	is not set
D-Link DL2000-based Gigabit Ethernet support	is not set
Intel PRO/1000 Gigabit Ethernet support	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)	M

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
Realtek 8169 Gigabit Ethernet support	is not set
New SysKonnnect GigaEthernet 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
<b>Ethernet (10000 Mbit)</b>	
Intel PRO/10GbE support	Y
Use Rx Polling (NAPI) (Experimental)	is not set
S2IO 10Gbe XFrame NIC	is not set
<b>Token Ring devices</b>	
Token Ring devices	is not set
<b>Wireless LAN (non-ham radio)</b>	
Wireless LAN drivers (non-ham radio) and wireless extensions	is not set
<b>WAN interfaces</b>	
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
PLIP (parallel port) support	M
Point-to-Point Protocol (PPP) support	M
PPP multilink support (Experimental)	is not set
PPP filtering	is not set
PPP support for async serial ports	is not set
PPP support for sync tty ports	is not set
PPP Deflate compression	is not set

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
PPP BSD-Compress compression	is not set
PPP over Ethernet (Experimental)	is not set
Serial Line Internet Protocol (SLIP) support	M
CSLIP compressed headers	Y
Keepalive and linefill	Y
Six bit SLIP encapsulation	Y
Fibre Channel driver support	is not set
Traffic Shaper (Experimental)	M
Network console logging support (Experimental)	is not set
<b>ISDN Subsystem</b>	
ISDN support	is not set
<b>Telephony Support</b>	
Linux telephony support	is not set
<b>Input Device Support</b>	
<i>---Generic Input Layer(needed for keyboard, mouse, ...)</i>	
<i>---Userland interfaces</i>	
Mouse interface	Y
Provide legacy /dev/psaux 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
Event debugging	is not set
<i>---Input device drivers</i>	
<b>Keyboards</b>	Y

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
<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	Y
Newton keyboard	M
<b>Mouse</b>	Y
<i>---Mouse</i>	
PS/2 mouse	Y
Serial mouse	Y
InPort/MS/ATIXL bus mouse	M
ATI XL variant	is not set
Logitech bus mouse	Y
IBM PC110 touchpad	M
DEC VSXXX-AA/GA mouse and VSXXX-AB tablet	is not set
<b>Joysticks</b>	is not set
<b>Touchscreens</b>	Y
<i>---Touchscreens</i>	
Gunze AHL-51S touchscreen	M
Elo serial touchscreens	is not set
MicroTouch serial touchscreens	is not set
ICS MicroClock MK712 touchscreen	is not set
<b>Miscellaneous devices</b>	is not set
<b>Hardware I/O ports</b>	
<i>--- Serial I/O support</i>	
i8042 PC Keyboard controller	Y

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
Serial port line discipline	Y
ct82c710 Aux port controller	is not set
Parallel port keyboard adapter	is not set
PCI PS/2 keyboard and PS/2 mouse controller	M
<i>--- PS/2 driver library</i>	
Raw access to serio ports	is not set
Gameport support	Y
Classic ISA and PnP gameport support	is not set
PDPI Lightning 4 gamecard support	is not set
SB Live and Audigy gameport support	is not set
ForteMedia FM801 gameport support	is not set
<b>Character Devices</b>	
Virtual terminal	Y
Support for console on virtual terminal	Y
Nonstandard serial port support	Y
Computone IntelliPort Plus serial support	M
Control RocketPort support	M
Cyclades async mux support	M
Cyclades-Z interrupt mode operation (Experimental)	is not set
Digiboard Intelligent Async support	M
Hayes ESP serial port support	M
Moxa Intellio support	is not set
Moxa SmartIO support	is not set
Multi-Tech multiport card support (Experimental)	M
Microgate SyncLink card support	M
SyncLink Multiport support	is not set
HDLC line discipline support	M

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
SDL RISCom/8 card support	M
Specialix IO8+ card support	M
Specialix DTR/RTS pin is RTS	Y
Specialix SX (and SI) card support	M
Specialix RIO system support	is not set
Stallion multiport serial support	Y
Stallion EasyIO or EC8/32 support	M
Stallion EC8/64, ONboard, Brumby support	M
<b>Serial drivers</b>	
8250/16550 and compatible serial support	Y
Console on 8250/16550 and compatible serial port	Y
Maximum number of nonlegacy 8250/16550 serial ports	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	M
Support for console on line printer	is not set
Support for user-space parallel port device drivers	is not set
Texas Instruments parallel link cable support	is not set
<b>IPMI</b>	
IPMI top-level message handler	is not set
<b>Watchdog Cards</b>	
Watchdog Timer support	is not set

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
Intel/AMD/VIA HW Random Number Generator support	is not set
/dev/nvram support	M
Enhanced Real Time Clock support	Y
Double Talk PC internal speech card support	M
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
<b>Ftape, the floppy tape device driver</b>	
Ftape (QIC-80/Travan) support	M
Zftape, the VFS interface	M
Default block size	10240
<i>--- The compressor will be built as a module only!</i>	
Number of ftape buffers (Experimental)	3
Enable procfs status report (+2 KB)	is not set
<b>Debugging output</b>	
Normal	Y
Excessive	is not set
Reduced	is not set
None	is not set
<i>--Hardware configuration</i>	
<b>Floppy tape controllers</b>	Standard
Standard	is not set
MACH-2	is not set
FC-10/FC-20	is not set
Alt/82078	is not set
Default FIFO threshold (Experimental)	8

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
Maximal data rate to use (Experimental)	2000
<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
RAW driver ( <code>/dev/raw/rawN</code> )	is not set
Hangcheck timer	is not set
<b>TPM devices</b>	
TPM Hardware Support	is not set
<b>I<sup>2</sup>C support</b>	
I <sup>2</sup> C support	is not set
<b>Dallas's 1-wire bus</b>	
Dallas's 1-wire support	is not set
<b>Hardware Monitoring support</b>	
Hardware Monitoring support	Y
Hardware Monitoring Chip debugging messages	is not set
<b>Misc devices</b>	
Device driver for IBM RSA service processor	is not set
Monitor detector	is not set
<b>Multimedia Devices</b>	
Video for Linux	is not set
<b>Digital Video Broadcasting Device</b>	
DVB for Linux	is not set
<b>Graphics Support</b>	
Support for frame buffer devices	Y
Enable Video Mode Handling Helpers	is not set

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
<i>--- Enable Tile Blitting Support</i>	
Cirrus Logic support	is not set
NEC neon 250 support	is not set
Permedia2 support	is not set
CyberPro 2000/2010/5000 support	is not set
Arc Monochrome LCD board support	is not set
Chips 69000 display support	is not set
IMS Twin Turbo display support	is not set
VGA 16-color graphics support	is not set
VESA VGA graphics support	Y
Hercules mono graphics support	is not set
nVidia Framebuffer Support	is not set
nVidia Riva support	is not set
Intel 810/815 support (Experimental)	is not set
Intel 830M/845G/852GM/855GM/865G support (Experimental)	is not set
Matrox acceleration	M
Millennium I/II support	Y
Mystique support	Y
G100/G200/G400/G450/G550 support	is not set
Multihead support	Y
ATI Radeon display support	is not set
ATI Radeon display support	is not set
ATI Rage128 display support	is not set
ATI Mach64 display support	is not set
S3 Savage support	is not set
SIS acceleration	is not set
NeoMagic display support	is not set

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
IMG Kyro support	is not set
3Dfx Banshee/Voodoo3 display support	is not set
3Dfx Voodoo Graphics (sst1) support	is not set
Trident support	is not set
AMD Geode family framebuffer support (Experimental)	is not set
Epson S1D13XXX framebuffer support	is not set
Virtual Frame Buffer support (Only for Testing!)	is not set
<b>Console Display Driver Support</b>	
VGA text console	Y
Video mode selection support	is not set
MDA text console (dual-headed) (Experimental)	M
Frame Buffer Console support	is not set
<b>Logo Configuration</b>	
Bootup logo	is not set
<b>Backlight &amp; LCD device support</b>	
is not set	
<b>Sound</b>	
Sound card support	M
<b>Advanced Linux Sound Architecture</b>	
Advanced Linux Sound Architecture	is not set
<b>Open Sound System</b>	
Open Sound System (Deprecated)	is not set
<b>USB support</b>	
Support for host-side USB	Y
USB verbose debug messages	is not set
<i>---Miscellaneous USB options</i>	

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
USB device file system	Y
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	is not set
ISP116X HCD support	is not set
OHCI HCD support	is not set
UHCI HCD (most Intel and VIA) support	is not set
SL811HS HCD support	is not set
<i>---USB Device Class drivers</i>	
USB Audio support	M
USB Bluetooth TTY support	is not set
USB MIDI support	is not set
USB Modem (CDC ACM) support	M
USB Printer support	M
<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	M
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

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
<i>---USB Input Devices</i>	
USB Human Interface Device (full HID) support	Y
HID input layer support	is not set
<code>/dev/hiddev</code> 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
MicroTouch USB Touchscreen Driver	is not set
ITM Touch USB Touchscreen Driver	is not set
eGalax TouchKit USB Touchscreen Driver	is not set
X-Box gamepad support	is not set
ATI USB RF remote control	is not set
Keyspan DMR USB remote control (Experimental)	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
<i>---USB Multimedia devices</i>	
DABUSB driver	is not set
<i>---Video4Linux support is needed for USB Multimedia device support.</i>	
<b>USB Network Adapters</b>	
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

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
USB Monitor	Y
<i>---USB port drivers</i>	
USS720 parport driver	M
<b>USB Serial Converter support</b>	
USB Serial Converter support	M
USB Generic Serial Driver	Y
USB AirPrime CDMA Wireless Driver	is not set
USB Belkin and Peracom Single Port Serial Driver	M
USB ConnectTech WhiteHEAT Serial Driver	M
USB Digi International AccelePort USB Serial Driver	M
USB CP2101 UART Bridge Controller	is not set
USB Cypress M8 USB Serial Driver	is not set
USB Empeg empeg-car Mark I/II Driver	M
USB FTDI Single Port Serial Driver (Experimental)	M
USB Handspring Visor/Palm m50x/Sony Clie Driver	M
USB PocketPC PDA Driver	is not set
USB IR Dongle Serial Driver (Experimental)	M
USB Inside Out Edgeport Serial Driver	M
USB Inside Out Edgeport Serial Driver (TI devices)	is not set
USB Garmin GPS driver	is not set
USB IPWireless (3G UMTS TDD) Driver (Experimental)	is not set
USB Keyspan PDA Single Port Serial Driver	M
USB Keyspan USA-xxx Serial Driver	is not set
USB KL5KUSB105 (Palmconnect) Driver (Experimental)	is not set
USB KOBIL chipcard reader (Experimental)	is not set
USB MCT Single Port Serial Driver	M
USB Prolific 2303 Single Port Serial Driver	M

**Table 3-10: Device Drivers (Continued)**

<b>Description</b>	<b>Settings</b>
USB HP4x Calculators support	is not set
USB Safe Serial (Encapsulated) Driver (Experimental)	is not set
USB TI 3410/5052 Serial Driver	is not set
USB REINER SCT cyberJack pinpad/e-com chipcard reader (Experimental)	M
USB Xircom/Entregra Single Port Serial Driver	M
USB ZyXEL omni.net LCD Plus Driver (Experimental)	M
USB MX009 Serial Converter Driver	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 USB thermometer driver support	is not set
USB PhidgetKit support	is not set
USB PhidgetServo support	is not set
Siemens ID USB Mouse Fingerprint sensor support	is not set
USB LD drive	is not set
USB testing driver (Development)	is not set
<b>USB DSL Modem Support</b>	is not set
<b>USB Gadget Support</b>	
Support for USB Gadgets	is not set
<b>MMC/SD Card support</b>	
MMC support	is not set

**Table 3-10: Device Drivers (Continued)**

Description	Settings
<b>InfiniBand support</b>	
InfiniBand support	is not set
<b>SN Devices</b>	is not set
<b>CAN Devices</b>	is not set
CAN (Controller Area Network) support	is not set

**Table 3-11: 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	M
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	M
Enable reiserfs debug mode	is not set
Stats in <code>/proc/fs/reiserfs</code>	is not set
ReiserFS extended attributes	is not set
JFS file system support	is not set
XFS file system support	is not set
Minix file system support	is not set
ROM file system support	M
Inotify file change notification support	Y

**Table 3-11: File Systems (Continued)**

<b>Description</b>	<b>Setting</b>
Quota support	is not set
Dnotify support	Y
Kernel automounter support	M
Kernel automounter version 4 support (also supports v3)	is not set
<b>CD-ROM/DVD File Systems</b>	
ISO 9660 CD-ROM file system support	M
Microsoft Joliet CD-ROM extensions	Y
Transparent decompression extension	is not set
UDF file system support	is not set
<b>DOS/FAT/NT File Systems</b>	
MS-DOS file system support	M
VFAT (Windows 95) file system support	M
Default codepage for FAT	437
Default iocharset for FAT	so8859-1
NTFS file system support	is not set
<b>Pseudo File Systems</b>	
/proc file system support	Y
/proc/kcore support	Y
sysfs file system support	Y
/dev/pts Extended Attributes	is not set
Virtual memory file system support (former shm file system)	is not set
HugeTLB file system support	is not set
<b>Miscellaneous File Systems</b>	
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

**Table 3-11: File Systems (Continued)**

<b>Description</b>	<b>Setting</b>
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
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
<b>Network File Systems</b>	
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 extension	is not set
Provide NFSv4 server support (Experimental)	is not set
Provide NFS server over TCP support (Experimental)	is not set
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)	M

**Table 3-11: File Systems (Continued)**

<b>Description</b>	<b>Setting</b>
Packet signatures	Y
Proprietary file locking	Y
Clear remove/delete inhibit when needed	Y
Use NFS namespace if available	Y
Use LONG (OS/2) namespace if available	Y
Lowercase DOS filenames	Y
Use Native Language support	Y
Enable symbolic links and execute flags	Y
Coda file system support (advanced network file system)	is not set
Andrew File System (AFS) support (Experimental)	is not set
<b>Partition Types</b>	
Advanced partition selection	is not set
<b>Native Language Support</b>	
Base native language support	Y
Default NLS Option	iso8859-1
Codepage 437 (United States, Canada)	M
Codepage 737 (Greek)	M
Codepage 775 (Baltic Rim)	M
Codepage 850 (Europe)	M
Codepage 852 (Central/Eastern Europe)	M
Codepage 855 (Cyrillic)	M
Codepage 857 (Turkish)	M
Codepage 860 (Portuguese)	M
Codepage 861 (Icelandic)	M
Codepage 862 (Hebrew)	M
Codepage 863 (Canadian French)	M
Codepage 864 (Arabic)	M

**Table 3-11: File Systems (Continued)**

<b>Description</b>	<b>Setting</b>
Codepage 865 (Norwegian, Danish)	M
Codepage 866 (Cyrillic/Russian)	M
Codepage 869 (Greek)	M
Simplified Chinese character set (CP936, GB2312)	is not set
Traditional Chinese character set (Big5)	is not set
Japanese character sets (Shift-JIS, EUC-JP)	is not set
Korean character set (CP949, EUC-KR)	is not set
Thai character set (CP874, TIS-620)	M
Hebrew character sets (ISO-8859-8, CP1255)	M
Windows CP1250 (Slavic/Central European Languages)	is not set
Windows CP1251 (Bulgarian, Belarusian)	is not set
ASCII (United States)	is not set
NLS ISO 8859-1 (Latin 1; Western European Languages)	M
NLS ISO 8859-2 (Latin 2; Slavic/Central European Languages)	M
NLS ISO 8859-3 (Latin 3; Esperanto, Galician, Maltese, Turkish)	M
NLS ISO 8859-4 (Latin 4; old Baltic character set)	M
NLS ISO 8859-5 (Cyrillic)	M
NLS ISO 8859-6 (Arabic)	M
NLS ISO 8859-7 (Modern Greek)	M
NLS ISO 8859-9 (Latin 5; Turkish)	M
NLS ISO 8859-13 (Latin 7; Baltic)	is not set
NLS ISO 8859-14 (Latin 8; Celtic)	M
NLS ISO 8859-15 (Latin 9; Western European Languages with Euro)	M
NLS KOI8-R (Russian)	M
NLS KOI8-U/RU (Ukrainian, Belarusian)	is not set
NLS UTF8	is not set

**Table 3-12: Profiling Support**

Description	Setting
Profiling support (Experimental)	is not set

**Table 3-13: Kernel Hacking**

Description	Setting
Show timing information on printks	is not set
Kernel debugging	is not set
Paranoid Timekeeping Checks	is not set
BlueCat Linux kernel debugger	is not set

**Table 3-14: Security Options**

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

**Table 3-15: Cryptographic Options**

Description	Setting
Cryptographic API	is not set
<b>Hardware crypto devices</b>	is not set

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**Table 3-16: Library Routines**

<b>Description</b>	<b>Setting</b>
CRC-CCITT 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) Hard disk CD-ROM ROM/Flash	34549 KB	7769.5 KB
osloader	Network (using BlueCat Linux OS loader) Floppy disk Hard disk CD-ROM Parallel port ROM/Flash	6775 KB	1144.5 KB
showcase	Network (using BlueCat Linux OS loader) Hard disk CD-ROM ROM/Flash	14229 KB	2809.5 KB
install_light	Removable boot media (CD-ROM, CompactFlash)	69652 KB	28702.4 KB

## **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, 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 CompactFlash 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
DiskOnChip 2000/ Millennium	*.c	drivers/mtd drivers/mtd/devices	CONFIG_MTD CONFIG_MTD_PARTITIONS CONFIG_NFTL CONFIG_NFTL_RW CONFIG_MTD_DOC2000	Not tested
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, 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  PCI, Cardbus, and ISA PCMCIA adapters	*.c	drivers/pcmcia/	CONFIG_HOTPLUG CONFIG_PCPCIA  CONFIG_YENTA CONFIG_I82092 CONFIG_I82365 CONFIG_TCIC	Not tested.  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.

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## **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
```

