

# BlueCat Linux Board Support Guide

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BlueCat Linux Release 5.1

DOC-0658-00

*for Motorola MVME6100 Boards*

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U.S. Patents 5,469,571; 5,594,903

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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.

- *Read Me First!*

This document provides instructions on how to install BlueCat Linux 5.1 for Motorola MVME6100 boards on the Red Hat Enterprise Linux 4.0 (RHEE 4.0) and SUSE Linux 9.3 development hosts.

- *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.

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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 Motorola MVME6100 Boards* provides information about the BlueCat Linux Board Support Package (BSP) for the Motorola MVME6100 board.

The Motorola MVME6100 series is designed to meet the needs in the defense and aerospace, industrial automation, and medical imaging market segments. The innovative design of the MVME6100 provides a high performance platform that allows customers to leverage their investment in their VME infrastructure.

The Motorola MVME6100 board is based on a high performance MPC7457 PowerPC processor running at 1.267 GHz, ideal for data-intensive applications. The MVME6100 board uses a 2eSST VME bus protocol with 320 MB/s transfer rate across the VMEbus. It contains a 128AltiVec co-processor for parallel processing. It supports up to 1 GB of on-board DDR ECC memory. Two 33/66/100 MHz PMC-X sites allow the addition of industry-standard, application specific modules. It supports dual Gigabit Ethernet interfaces and 128 MB of Flash memory in two 64 MB banks.

Throughout this Board Support Guide (BSG), the BSP is referred to as the “mvme6100” and the target board is referred to as the “MVME6100 board” or simply as the “target board.”

---

## Features Overview

The following sections describe the new features of this release.

### Kernel Version

BlueCat Linux release 5.1 is based on the Linux kernel version 2.6.7 available from [www.kernel.org](http://www.kernel.org).

## BlueCat Linux Cross-Development Tools

BlueCat Linux release 5.1 supports the following versions of the GNU toolchain:

- gcc version 3.2.2
- binutils version 2.13.1

## 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
Motorola MVME6100 board	<ul style="list-style-type: none"> <li>• MPC7457 PowerPC processor core</li> <li>• Big-endian</li> <li>• 1 GB of on-board DDR ECC memory</li> <li>• 32 Kbyte on-chip L1 and L2 cache and 2 MB of L3 cache. 128-bit AltiVec coprocessor for parallel processing integrated to the MPC7457 PowerPC core</li> <li>• Memory Management Units, one for each cache integrated to the MPC7457 PowerPC core</li> <li>• Marvell MV64360 used as System controller</li> <li>• 28 MB of Flash memory in two 64MB banks</li> <li>• 32 KB Capacity, 4 KB available for users</li> <li>• Tundra Tsi148 VMEBus interface compliant to VME64</li> <li>• Ethernet controller integrated into hostbridge. Two Gigabit Ethernet interfaces. Interface speeds of 10/100/1000Mb/s</li> <li>• PCI Expansion connector with PCI Bus clock of 33/66 MHz, integrated into the Host bridge</li> <li>• Asynchronous Serial Ports ST16C554DCQ64 Controller, two 16550 compatible ports</li> <li>• Timer STM4T28 with four 32-bit programmable Real Time Timers/Counters and Watchdog Timer</li> <li>• Dual IEEE P1386.1 PMC slots with PCI Bus clock of 33MHz, 66MHz, or 100MHz</li> <li>• IPMC supporting PMC interface, SCSI bus interface (Symbios 53C895A controller), asynchronous (16C550 UART, 85230/8536)/synchronous (85230/8536) serial ports, and parallel port controller PC97307 Master mode</li> </ul>

---

## Available BlueCat Linux Development Tools

Table 1-2 indicates the availability of BlueCat Linux development tools on the cross-development platforms listed for use with the mvme6100 BSP.

**Table 1-2: BlueCat Linux Tools Availability**

Tool	Windows	Linux
CodeWarrior	N/A	N/A
SpyKer	N/A	N/A
VisualLinux	✓	N/A

---

## 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 2000/Pro with SP1 or later
- Windows XP
- PC running Red Hat Linux 8.0
- PC running Red Hat Linux 9.0
- PC running Red Hat Enterprise Linux 4<sup>†</sup>
- PC Running SUSE 9.3<sup>†</sup>

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<sup>†</sup>. For more information about how to install BlueCat Linux 5.1 for Motorola MVME6100 boards on the Red Hat Enterprise Linux 4.0 and SUSE Linux 9.3 development hosts, refer to the BlueCat Linux 5.1 *Read Me First*.



# *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 platform.

---

## **Prerequisites**

This document is a guide to downloading and booting BlueCat Linux systems onto the user's target platform. Scenarios that use demo systems included in the BlueCat Linux distribution are presented. A basic familiarity with the target platform 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 PowerPC configuration and the mvme6100 BSP have been installed on the cross-development host. This means that the user must:

1. Install the BlueCat Linux PowerPC 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 mvme6100 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 mvme6100 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 a BlueCat Linux system on the MVME6100 target consists of the following main steps:

- Setting up hardware
- Setting up the Motorola MotLoad firmware
- Downloading and booting a BlueCat Linux system from the target Flash memory or a network

Downloading and booting a BlueCat Linux system can be performed using the Motorola MotLoad firmware.

---

## Setting up Hardware

### Connecting the Target Board Serial Port to the Host

The target board has one serial port. This port is used both by the Motorola MotLoad firmware and the BlueCat Linux system console.

The serial port connected to the target serial port has a baud rate of 9600.

Throughout this chapter, the terminal window connected to the serial connector is referred to as the “Motorola MotLoad firmware console” or the “BlueCat Linux console,” depending on the context.

---

## Setting up the Motorola MotLoad Firmware

To set up the Motorola MotLoad firmware options for BlueCat Linux, perform the following steps:

1. Reset the target board.

The Motorola MotLoad firmware boots up, and the prompt (MVME6100>) appears on the Motorola MotLoad firmware console.

- To edit the environment variables, use the `MotLoad gevEdit` command. For example:

```
MVME6100> gevEdit <varname>
```

where `<varname>` is name of the variable to be modified. To view the environment variables, you use the `gevShow` command.

---

## Downloading a BlueCat Linux System into Flash

To download a BlueCat Linux embedded system into the target Flash memory using the Motorola MotLoad firmware, perform the steps below. This section uses the `osloader` demo system as an example, but these instructions are applicable to any of the demo systems.

- Copy the `osloader.kdi` file from the `$BLUECAT_PREFIX/demo/osloader` directory to the `/tftpboot` directory on the development host:

```
BlueCat:$ cp
$BLUECAT_PREFIX/demo/osloader/osloader.kdi \
/tftpboot/osloader.kdi
```

- Reset the target board.
- At the `MVME6100>` prompt, enter the following commands:

```
MVME6100> tftpGet -a4000000 -c<client_IP> \
-s<server_IP> -g<gateway_IP> -fosloader.kdi -v
MVME6100> flashProgram -s4000000 -n1000000
```

As a result, the `osloader` demo is programmed into Flash.

To boot the `osloader` demo installed into the Flash memory, type the following command at the `MVME6100>` prompt:

```
MVME6100> execProgram -lf4000020
```

This command starts the `osloader` demo system programmed into Flash.

## Booting a BlueCat Linux System from a Network

The Motorola MotLoad firmware uses the TFTP network protocol to load BlueCat Linux images over a network. To boot the `osloader` demo system over a network using the MotLoad firmware, perform the following steps:

1. Copy the `osloader.kdi` file from the `BLUECAT_PREFIX/demo/osloader` directory to the `/tftpboot` directory on the cross-development host.

```
BlueCat:$ cp $BLUECAT_PREFIX/demo/osloader/\
osloader.kdi /tftpboot/osloader.kdi
```

2. Reset the board.

The following information appears on the console:

```
Copyright Motorola Inc. 1999-2004, All Rights Reserved
MOTLoad RTOS Version 2.0, PAL Version 1.1 RM02
Fri Sep 17 09:44:47 MST 2004
```

```
MPU-Type           =MPC74x7
MPU-Int Clock Speed =1266MHz
MPU-Ext Clock Speed =133MHz
MPU-Int Cache(L2) Enabled, 512KB, L2CR =C0000000
MPU-Ext Cache(L3) Enabled, 1MB, 211MHz, L3CR =CC026000
```

```
PCI bus instance 0 =64 bit, 133 Mhz, PCI-X
PCI bus instance 1 =64 bit, PCI
```

```
Reset/Boot Vector =Flash1
```

```
Local Memory Found =40000000 (&1073741824)
User Download Buffer =006E8000:008E7FFF
```

```
MVME6100>
```

3. To download and boot the `osloader` demo image, execute the following command:

```
MVME6100> netBoot -c<client_IP> -s<server_IP> \
-g<gateway_IP> -e20 -fosloader.kdi
```

```
-14000000 -v
Network Loading from: /dev/enet0
```

```
Client IP Address      = <client IP>
Server IP Address      = <server IP>
Gateway IP Address     = <gateway IP>
Subnet IP Address Mask = <subnet IP mask>
Boot File Name         = osloader.kdi
Load Address           = 04000000
Buffer Size            = 2000000
```



```
VME slot number: 7
Is not VME system controller
  Tundra VME Loaded.

Installing knfsd (copyright (C) 1996 okir@monad.swb.de).
JFFS version 1.0, (C) 1999, 2000 Axis Communications AB
JFFS2 version 2.2. (C) 2001-2003 Red Hat, Inc.
Generic RTC Driver v1.07
Serial: 8250/16550 driver $Revision: 1.90 $ 6 ports, IRQ sharing enabled
ttyS0 at MMIO 0x0 (irq = 64) is a 16550A
ttyS1 at MMIO 0x0 (irq = 64) is a 16550A
RAMDISK driver initialized: 16 RAM disks of 32768K size 1024 blocksize
loop: loaded (max 8 devices)
Using anticipatory io scheduler
nbd: registered device at major 43
Intel(R) PRO/1000 Network Driver - version 5.2.52-k4
Copyright (c) 1999-2004 Intel Corporation.
sym0: <825a> rev 0x14 at pci 0001:02:04.0 irq 80
sym0: No NVRAM, ID 7, Fast-10, SE, parity checking
sym0: SCSI BUS has been reset.
scsi0 : sym-2.1.18j
  Vendor: SEAGATE      Model: ST39216W      Rev: 0010
  Type:   Direct-Access      ANSI SCSI revision: 03
sym0:0:0: tagged command queuing enabled, command queue depth 16.
scsi(0:0:0:0): Beginning Domain Validation
sym0:0: wide asynchronous.
sym0:0: FAST-10 WIDE SCSI 20.0 MB/s ST (100.0 ns, offset 8)
scsi(0:0:0:0): Ending Domain Validation
sym1: <825a> rev 0x14 at pci 0001:02:06.0 irq 82
sym1: No NVRAM, ID 7, Fast-10, SE, parity checking
sym1: SCSI BUS has been reset.
scsil : sym-2.1.18j
st: Version 20040403, fixed bufsize 32768, s/g segs 256
SCSI device sda: 17942584 512-byte hdwr sectors (9187 MB)
SCSI device sda: drive cache: write back
  sda: sdal sda2
Attached scsi disk sda at scsi0, channel 0, id 0, lun 0
Attached scsi generic sg0 at scsi0, channel 0, id 0, lun 0,  type 0
physmap flash device: 4000000 at f4000000
cfi_cmdset_0001: Erase suspend on write enabled
Using buffer write method
cmdlinepart partition parsing not available
RedBoot partition parsing not available
mice: PS/2 mouse device common for all mice
NET: Registered protocol family 2
IP: routing cache hash table of 8192 buckets, 64Kbytes
TCP: Hash tables configured (established 262144 bind 65536)
NET: Registered protocol family 1
NET: Registered protocol family 17
IP-Config: Entered.
eth0: Ethernet port changed link status to DOWN
eth0: Ethernet port changed link status to DOWN
IP-Config: eth0 UP (able=0, xid=00000000)
eth1: Ethernet port changed link status to DOWN
IP-Config: eth1 UP (able=0, xid=00000000)
eth0: Ethernet status : Link up, Full Duplex, Speed 100 Mbps
IP-Config: Incomplete network configuration information.
IP-Config: Downing eth0
IP-Config: Downing eth1
RAMDISK: Compressed image found at block 9740
Freeing BlueCat RFS memory: 330k freed
VFS: Mounted root (ext2 filesystem).
Freeing unused kernel memory: 96k init
BlueCat Loader Shell
```

---

# Kernel Configuration Options

The mvme6100 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 mvme6100 BSP Distribution” below. Boldfaced entries in the tables represent subordinate menus. Italicized entries represent comments.

**Table 3-1: BlueCat Linux Default Configuration for the mvme6100 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: “Processor”
Table 3-6: “Platform Options”
Table 3-7: “Bus Options”
Table 3-8: “Advanced Setup”
Table 3-9: “Device Drivers”
Table 3-10: “File Systems”
Table 3-11: “Library Routines”
Table 3-12: “Kernel Hacking”
Table 3-13: “Security Options”
Table 3-14: “Cryptographic Options”

**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
Select only drivers that don't need compile-time external firmware	is not set

**Table 3-3: General Setup**

Description	Setting
Support for paging of anonymous memory	Y
System V IPC	Y
POSIX message queues	is not set
BlueCat Linux OS loader support	Y
BlueCat Linux ignore printk	is not set
Memory sizing benchmarks	is not set
BSD process accounting	is not set
Sysctl support	Y
Auditing support	is not set
Kernel log buffer size (16 => 64KB, 17 => 128KB)	14
Support for hot-pluggable devices	Y
Kernel <code>.config</code> support	Y
<b>Configure standard kernel features (for small systems)</b>	is not set
Load all symbols for debugging/ <code>kksymoops</code>	Y
Include all symbols in <code>kallsyms</code>	is not set
Enable futex support	Y
Enable eventpoll support	Y
No-op I/O scheduler	Y

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

Description	Setting
Anticipatory I/O scheduler	Y
Deadline I/O scheduler	Y
CFQ I/O scheduler	Y
<b>CODETEST device driver configuration</b>	is not set
Optimize for size	is not set

**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
Automatic kernel module loading	Y

**Table 3-5: Processor**

Description	Setting
<b>Processor Type</b>	
6xx/7xx/74xx/8260	Y
40x	is not set
44x	is not set
POWER3	is not set
POWER4 and 970 (G5)	is not set
8xx	is not set
AltiVec support	Y

**Table 3-5: Processor (Continued)**

Description	Setting
Thermal management support	Y
CPU frequency scaling	is not set
IRQ to user delivery	is not set

**Table 3-6: Platform Options**

Description	Setting
<b>Machine Type</b>	
CHRP/Power Mac/PreP	is not set
Amiga-APUS	is not set
Cogent-Willow	is not set
Force-PowerCore	is not set
Force-PowerPMC250	is not set
Galileo-EV-64260-BP	is not set
IBM-Spruce	is not set
Motorola-LoPEC	is not set
Motorola-MCPN765	is not set
Motorola-MVME5100	is not set
Motorola-MVME6100	Y
Motorola-PowerPlus	is not set
Motorola-PrPMC750	is not set
Motorola-PrPMC800	is not set
Motorola-Sandpoint	is not set
SBS-Adirondack	is not set
SBS-K2	is not set
SBS-Palomar4	is not set
Synergy-Gemini	is not set

**Table 3-6: Platform Options (Continued)**

Description	Setting
EST8260	is not set
SBC82xx	is not set
SBS8260	is not set
RPXSUPER	is not set
TQM8260	is not set
Freescale LITE5200/(IceCube)	Y
Disable cache coherency HW assist in MV64360 DRAM interface	is not set
Consistent memory in integrated SRAM	is not set
Symmetric multiprocessing support	is not set
Preemptible kernel	Y
High memory support	Y
Kernel support for ELF binaries	Y
Kernel support for MISC binaries	M
Default boot loader kernel arguments	Y
Initial kernel command string	console=ttyS0, 9600, root=/dev/ram rw ip= <client_IP>

**Table 3-7: Bus Options**

Description	Setting
Legacy /proc/pci interface	Y
PCI device name database	Y
PCMCIA/CardBus support	is not set

**Table 3-8: Advanced Setup**

Description	Setting
Prompt for advanced kernel configuration options	Y
Set high memory pool address	is not set
Set maximum low memory	Y
Maximum low memory size (in bytes)	0x40000000
Set custom kernel base address	Y
Virtual address of kernel base	0x90000000
Set custom user task size	is not set
Set the boot link/load address	Y
Link/load address for booting	0x00800000

**Table 3-9: Device Drivers**

Description	Settings
<b>Generic Driver Options</b>	
Hotplug firmware loading support	is not set
Driver Core verbose debug messages	is not set
<b>Memory Technology Devices</b>	
Memory Technology Device (MTD) support	Y
Debugging	is not set
MTD partitioning support	Y
MTD concatenating support	is not set
RedBoot partition table parsing	is not set
Command line partition table parsing	is not set
<i>--- User Modules And Translation Layers</i>	
Direct char device access to MTD devices	is not set

**Table 3-9: Device Drivers (Continued)**

Description	Settings
Caching block device access to MTD devices	is not set
Read-only block device access to MTD devices	Y
Flash Translation Layer (FTL) support	is not set
NAND Flash Translation Layer (NFTL) support	is not set
Inverse NAND Flash Translation Layer (INFTL) support	is not set
<b>RAM/ROM/Flash Chip Drivers</b>	
Detect Flash chips by Common Flash Interface (CFI) probe	Y
Detect non-CFI AMD/JEDEC-compatible Flash chips	is not set
Flash chip driver advanced configuration options	is not set
Support for Intel/Sharp Flash chips	Y
Support for AMD/Fujitsu Flash chips	Y
Support for ST (Advanced Architecture) Flash chips	is not set
Support for RAM chips in bus mapping	is not set
Support for ROM chips in bus mapping	is not set
Support for absent chips in bus mapping	is not set
Older (theoretically obsoleted now) drivers for non-CFI chips	is not set
<b>Mapping Drivers for Chip Access</b>	
Support nonlinear mappings of Flash chips	Y
CFI Flash device in physical memory map	Y
Physical start address of Flash mapping	0xf4000000
Physical length of Flash mapping	0x4000000
Bus width in octets	4
PCI MTD driver	is not set
<b>Self-Contained MTD Device Drivers</b>	
Ramix PMC551 PCI Mezzanine RAM card support	is not set
Uncached system RAM	is not set

**Table 3-9: Device Drivers (Continued)**

Description	Settings
Test driver using RAM	is not set
MTD emulation using block device	is not set
<i>--- Disk-On-Chip Device Drivers</i>	
M-Systems Disk-On-Chip 2000 and Millennium	is not set
M-Systems Disk-On-Chip Millennium-only alternative driver	is not set
M-Systems Disk-On-Chip Millennium Plus	is not set
<b>NAND Flash Device Drivers</b>	
NAND device support	is not set
<b>Parallel Port Support</b>	
Parallel port support	Y
IEEE 1284 transfer modes	Y
BlueCat Linux bidirectional parallel port transfer driver	is not set
Polling mode	is not set
<b>Plug and Play support</b>	
<b>Block Devices</b>	
Normal floppy disk support	is not set
Compaq SMART-2 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	Y
Cryptoloop Support	is not set
Network block device support	Y
Promise SATA SX8 (carmel) support	is not set
RAM disk support	Y
Default RAM disk size	65536

**Table 3-9: Device Drivers (Continued)**

Description	Settings
Initial RAM disk ( <code>initrd</code> ) support	is not set
BlueCat Linux RFS support	Y
Support for Large Block Devices	Y
<b>ATA/ATAPI/MFM/RLL support</b>	
ATA/ATAPI/MFM/RLL support	is not set
<b>SCSI device support</b>	
SCSI device support	Y
legacy <code>/proc/scsi/</code> support	Y
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
--- Some SCSI devices (e.g. CD jukebox) support multiple LUNs	
Probe all LUNs on each SCSI device	is not set
Verbose SCSI error reporting (kernel size +=12K)	Y
SCSI logging facility	is not set
<b>SCSI Transport Attributes</b>	
--- Parallel SCSI (SPI) Transport Attributes	
FiberChannel Transport Attributes	is not set
<b>SCSI low-level drivers</b>	
3ware Hardware ATA-RAID support	is not set
ACARD SCSI support	is not set
Adaptec AACRAID support (Experimental)	is not set
Adaptec AIC7xxx Fast -> U160 support (new driver)	is not set
Adaptec AIC7xxx support (old driver)	is not set

**Table 3-9: Device Drivers (Continued)**

Description	Settings
Adaptec AIC79xx U320 support	is not set
Adaptec I2O RAID support	is not set
AdvanSys SCSI support	is not set
AMI MegaRAID support	is not set
Serial ATA (SATA) support	is not set
BusLogic SCSI support	is not set
DMX3191D SCSI support	is not set
EATA ISA/EISA/PCI (DPT and generic EATA/DMA-compliant boards) support	is not set
EATA-PIO (old DPT PM2001, PM2012A) 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
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
SYM53C8XX Version 2 SCSI support	Y
DMA addressing mode	1
Default tagged command queue depth	16
Maximum number of queued commands	64
Use port I/O	is not set
IBM Power Linux RAID adapter support	is not set
Qlogic ISP SCSI support	is not set
Qlogic ISP FC SCSI support	is not set
Qlogic QLA 1280 SCSI support	is not set
QLogic ISP2100 host adapter family support	is not set
QLogic ISP2200 host adapter family support	is not set

**Table 3-9: Device Drivers (Continued)**

Description	Settings
QLogic ISP2300 host adapter family support	is not set
QLogic ISP2322 host adapter family support	is not set
QLogic ISP6312 host adapter family support	is not set
QLogic ISP6322 host adapter family 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
Workbit NinjaSCSI-32Bi/UDE support	is not set
SCSI debugging host simulator	is not set
<b>Multiple device support (RAID and LVM)</b>	
Multiple devices driver support (RAID and LVM)	is not set
<b>Fusion MPT device support</b>	
<b>IEEE 1394 (FireWire) support</b>	
IEEE 1394 (FireWire) support	is not set
<b>I2O device support</b>	
I2O support	is not set
<b>Macintosh device drivers</b>	
<b>Networking Support</b>	
Networking support	Y
<b>Networking options</b>	
Packet socket	Y
Packet socket: mmapped I/O	is not set
Netlink device emulation	Y
UNIX domain sockets	Y
PF_KEY sockets	is not set
TCP/IP networking	Y

**Table 3-9: Device Drivers (Continued)**

Description	Settings
IP: multicasting	Y
IP: advanced router	is not set
IP: kernel level autoconfiguration	Y
IP: tunneling	M
IP: GRE tunnels over IP	M
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
The IPv6 protocol (Experimental)	is not set
<b>Network packet filtering (replaces ipchains)</b>	is not set
<b>SCTP Configuration (Experimental)</b>	
The SCTP protocol (Experimental)	is not set
Asynchronous Transfer Mode (ATM)	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	is not set
Fast switching (read help!)	is not set

**Table 3-9: Device Drivers (Continued)**

Description	Settings
Forwarding between high speed interfaces	is not set
<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>	
<b>IrDA (infrared) subsystem support</b>	
<b>Bluetooth subsystem support</b>	
Network device support	Y
Dummy net driver support	is not set
Bonding driver support	M
EQL (serial line load balancing) support	is not set
Universal TUN/TAP device driver support	is not set
<b>ARCnet devices</b>	
ARCnet support	is not set
<b>IBM On-chip net device</b>	
<b>Ethernet (10 or 100Mbit)</b>	
Ethernet (10 or 100Mbit)	Y
Generic Media Independent Interface device support	is not set
National DP83902AV (Oak Ethernet) support	is not set
Sun Happy Meal 10/100baseT support	is not set
Sun GEM support	is not set
3Com cards	is not set
<b>Tulip family network device support</b>	
"Tulip" family network device support	Y

**Table 3-9: Device Drivers (Continued)**

Description	Settings
Early DECchip Tulip (dc2104x) PCI support (Experimental)	is not set
DECchip Tulip (dc2114x) PCI support	Y
New bus configuration (Experimental)	is not set
Use PCI shared mem for NIC registers	is not set
Use NAPI RX polling	is not set
Generic DECchip & DIGITAL EtherWORKS PCI/EISA	is not set
Winbond W89c840 Ethernet support	is not set
Davicom DM910x/DM980x support	is not set
HP 10/100VG PCLAN (ISA, EISA, PCI) support	is not set
EISA, VLB, PCI, and on-board controllers	Y
EtherExpressPro/100 support (eeepro100, original Becker driver)	Y
AMD 8111 (new PCI lance) support	is not set
Adaptec Starfire/DuraLAN support	is not set
Broadcom 4400 ethernet support (Experimental)	is not set
Reverse Engineered nForce Ethernet support (Experimental)	is not set
EtherExpressPro/100 support (eeepro100, original Becker driver)	Y
Use PIO instead of MMIO	is not set
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	is not set
RealTek RTL-8139 PCI Fast Ethernet Adapter support	is not set
SiS 900/7016 PCI Fast Ethernet Adapter support	is not set
SMC EtherPower II	is not set
Sundance Alta support	is not set
TI ThunderLAN support	is not set

**Table 3-9: Device Drivers (Continued)**

Description	Settings
VIA Rhine support	is not set
<b>Ethernet (1000 Mbit)</b>	
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
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
Marvell Yukon Chipset/SysKonnnect SK-98xx support	is not set
Broadcom Tigon3 support	is not set
<b>Marvel MV6436X Gigabit Ethernet support</b>	Y
Use MV64360 Ethernet Port 0	Y
Use MV64360 Ethernet Port 1	Y
Use MV64360 Ethernet Port 2	is not set
Preserve firmware-assigned Port 0 MAC address	Y
Preserve firmware-assigned Port 1 MAC address	Y
Preserve firmware-assigned Port 2 MAC address	is not set
MV64360 Gigabit Ethernet TX queue size	1000
MV64360 Gigabit Ethernet RX queue size	400
MV64360 Gigabit Ethernet TX coalescing timeout	200
MV64360 Gigabit Ethernet RX coalescing timeout	200
<b>Ethernet (10000 Mbit)</b>	
Intel PRO/10GbE support	is not set
S2IO 10Gbe XFrame NIC	is not set
<b>Token Ring devices</b>	

**Table 3-9: Device Drivers (Continued)**

Description	Settings
Token Ring driver support	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
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
<b>ISDN subsystem</b>	
ISDN support	is not set
<b>Telephony Support</b>	
Linux telephony support	is not set
<b>Input device support</b>	
Input devices (needed for keyboard, mouse, ...)	is not set
<i>---Userland interfaces</i>	
<i>--- Input I/O drivers</i>	
Gameport support	is not set
Serial I/O support	is not set
i8042 PC keyboard controller	is not set
<i>--- Input Device Drivers</i>	
<b>Character Devices</b>	
Virtual terminal	Y

**Table 3-9: Device Drivers (Continued)**

Description	Settings
Nonstandard serial port support	is not set
<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
<b>Extended 8250/16550 serial driver options</b>	
Support more than 4 legacy serial ports	is not set
Support for sharing serial interrupts	Y
Autodetect IRQ on standard ports (unsafe)	is not set
Support special multiport boards	is not set
Support RSA serial ports	is not set
<i>--- Non-8250 serial port support</i>	
Unix98 PTY support	Y
Legacy (BSD) PTY support	Y
Maximum number of legacy PTY in use	256
QIC-02 tape 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
/dev/nvram support	is not set
Generic /dev/rtc emulation	Y
Extended RTC operation	Y
DoubleTalk PC internal speech card support	is not set
Siemens R3964 line discipline	is not set
Applicom intelligent fieldbus card support	is not set

**Table 3-9: Device Drivers (Continued)**

Description	Settings
<b>Ftape, the floppy tape device driver</b>	
Ftape (QIC-80/Travan) support	is not set
/dev/agpgart (AGP support)	is not set
Direct Rendering Manager (XFree86 4.1.0 and higher DRI support)	is not set
RAW driver (/dev/raw/rawN) (Obsolete)	is not set
<b>I2C support</b>	
I2C support	is not set
I2C device interface	is not set
<b>I2C Algorithms</b>	
I2C bit-banging interfaces	is not set
I2C PCF 8584 interfaces	is not set
<b>I2C Hardware Bus support</b>	
ALI 1535	is not set
ALI 1563	is not set
ALI 15x3	is not set
AMD 756/766	is not set
AMD 8111	is not set
Intel 801	is not set
Intel 810/815	is not set
ISA bus support	is not set
NVIDIA Nforce2	is not set
Parallel port adapter (light)	is not set
Intel PIIX4	is not set
S3/VIA (Pro)Savage	is not set
S3 Savage 4	is not set
National Semiconductor SCx200 ACCESS.bus	is not set

**Table 3-9: Device Drivers (Continued)**

Description	Settings
SiS 5595	is not set
SiS 630/730	is not set
SiS 96x	is not set
VIA 82C586B	is not set
VIA 82C596/82C686/823x	is not set
Voodoo 3	is not set
<b>Hardware Sensors Chip support</b>	
Analog Devices ADM1021 and compatibles	is not set
ASUS ASB100 Bach	is not set
Dallas Semiconductor DS1621 and DS1625	is not set
FSC Hermes	is not set
Genesys Logic GL518SM	is not set
ITE IT87xx and compatibles	is not set
National Semiconductor LM75 and compatibles	is not set
National Semiconductor LM78 and compatibles	is not set
National Semiconductor LM80	is not set
National Semiconductor LM83	is not set
National Semiconductor LM85 and compatibles	is not set
National Semiconductor LM90 and compatibles	is not set
Maxim MAX1619 sensor chip	is not set
VIA686A	is not set
Winbond W83781D, W83782D, W83783S, W83627HF, ASUS AS99127F	is not set
Winbond W83L785TS-S	is not set
Winbond W83627HF, W83627THF, W83637HF, W83697HF	is not set
<b>Other I2C Chip support</b>	
EEPROM reader	is not set

**Table 3-9: Device Drivers (Continued)**

Description	Settings
Philips PCF8574 and PCF8574A	is not set
Philips PCF8591	is not set
Epson 8564 RTC chip	is not set
I2C Core debugging messages	is not set
I2C Algorithm debugging messages	is not set
I2C Bus debugging messages	is not set
I2C Chip debugging messages	is not set
<b>Misc devices</b>	is not set
<b>Multimedia devices</b>	is not set
Video for Linux	is not set
<b>Digital Video Broadcasting Devices</b>	
DVB for Linux	is not set
<b>Graphics support</b>	
Support for frame buffer devices	is not set
<b>Sound</b>	
Sound card support	is not set
<b>USB support</b>	
Support for host-side USB	is not set
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	is not set
OHCI HCD support	is not set

**Table 3-9: Device Drivers (Continued)**

Description	Settings
UHCI HCD (most Intel and VIA) support	is not set
--- <i>USB Device Class drivers</i>	
USB Bluetooth TTY support	is not set
USB Modem (CDC ACM) support	is not set
USB Printer support	is not set
USB Mass Storage support	is not set
USB Human Interface Devices (HID)	is not set
USB Human Interface Device (full HID) support	is not set
--- <i>Input core support is needed for USB HID input layer or HIDBP support.</i>	
<b>USB HID Boot Protocol drivers</b>	
--- <i>USB Imaging devices</i>	
USB Mustek MDC800 Digital Camera support (Experimental)	is not set
--- <i>USB Multimedia devices</i>	
DABUSB driver	is not set
--- <i>Video4Linux support is needed for USB Multimedia device support.</i>	
--- <i>USB Network adaptors</i>	
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
--- <i>USB port drivers</i>	
<b>USB Serial Converter support</b>	
USB Serial Converter support	is not set
--- <i>USB Miscellaneous drivers</i>	

**Table 3-9: Device Drivers (Continued)**

Description	Settings
EMI 6 2m USB Audio interface support	is not set
EMI 2 6 USB Audio interface support	is not set
Texas Instruments Graph Link USB (aka SilverLink) cable 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 PhidgetServo support	is not set
<b>USB Gadget Support</b>	
Support for USB Gadgets	is not set

**Table 3-10: File Systems**

Description	Setting
Second extended file system support	Y
Ext2 extended attributes	Y
Ext2 POSIX access control lists	is not set
Ext2 security labels	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

**Table 3-10: File Systems (Continued)**

Description	Setting
XFS file system support	is not set
Minix file system support	is not set
ROM file system support	is not set
Quota support	is not set
Kernel automounter support	is not set
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	is not set
UDF file system support	is not set
<b>DOS/FAT/NT File Systems</b>	
DOS FAT file system support	is not set
NTFS file system support	is not set
<b>Pseudo File Systems</b>	
<code>/proc</code> file system support	Y
<code>sysfs</code> file system support	Y
<code>/dev</code> file system support (Obsolete)	is not set
<code>/dev/pts</code> Extended Attributes	Y
<code>/dev/pts</code> security labels	is not set
Virtual memory file system support (former <code>shm</code> file system)	Y
<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
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

**Table 3-10: File Systems (Continued)**

Description	Setting
EFS file system support (read-only) (Experimental)	is not set
Journalling Flash File System (JFFS) support	Y
JFFS debugging verbosity (0 = quiet, 3 = noisy)	0
Journalling Flash File System v2 (JFFS2) support	Y
JFFS2 debugging verbosity (0 = quiet, 2 = noisy)	0
JFFS2 support for NAND Flash (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 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 NFSv4 server support (Experimental)	is not set
Provide NFS server over TCP support (Experimental)	Y
Root file system on NFS	Y
Secure RPC: Kerberos V 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

**Table 3-10: File Systems (Continued)**

Description	Setting
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	is not set

**Table 3-11: Library Routines**

Description	Setting
CRC32 functions	is not set
CRC32c (Castagnoli et al.) Cyclic Redundancy-Check	is not set

**Table 3-12: Kernel Hacking**

Description	Setting
Kernel debugging	Y
Debug memory allocations	is not set
Magic SysRq key	Y
Spinlock debugging	is not set
Sleep-inside-spinlock checking	is not set
Include kgdb kernel debugger	is not set
BlueCat Linux kernel debugger	is not set
Include xmon kernel debugger	Y
Include BDI-2000 user context switcher	is not set

**Table 3-12: Kernel Hacking (Continued)**

Description	Setting
Compile the kernel with debug info	is not set
Support for early boot texts over serial port	is not set

**Table 3-13: Security Options**

Description	Setting
Enable different security models	is not set

**Table 3-14: Cryptographic Options**

Description	Setting
Cryptographic API	is not set

This chapter provides information about BlueCat Linux demo systems supported by the mvme6100 BSP.

---

## Demo Systems

Table 4-1 lists the demo systems supported in the mvme6100 BSP distribution, the boot devices supported by each demo system, and their respective RAM and ROM requirements.

**Table 4-1: Demo Systems Supported by mvme6100 BSP**

Demo	Boot Devices Supported by Default	ROM Requirements	RAM Requirements
developer	Network (using Motorola MotLoad firmware) ROM/Flash (using Motorola MotLoad firmware)	20212.5 KB	128 MB
osloader	Network (using Motorola MotLoad firmware) ROM/Flash (using Motorola MotLoad firmware)	1890.5 KB	32 MB
showcase	Network (using Motorola MotLoad firmware) ROM/Flash (using Motorola MotLoad firmware)	14433.0 KB	128 MB

### developer Demo System

The `developer` demo system is a package consisting of the functionalities of `shell`, `ftp`, and `ping`. 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 system 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.

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## CHAPTER 5 *Supported Device Drivers*

Table 5-1 lists the device drivers supported by the mvme6100 BSP and provides important information about them.

**Table 5-1: Device Drivers Supported by the mvme6100 BSP**

Hardware Device	Device Drivers	Location in Source Tree	Kernel Configuration Options
Asynchronous Serial Port	*.c	drivers/serial	CONFIG_SERIAL_8250 CONFIG_SERIAL_8250_CONSOLE
Ethernet Controller	mv64360_eth.c	drivers/net/	CONFIG_MV64360_ETH=y CONFIG_MV64360_ETH_0=y CONFIG_MV64360_ETH_1=y
Flash Memory	phymap.c nettel.c	drivers/mtd/maps	CONFIG_MTD CONFIG_MTD_PARTITIONS CONFIG_MTD_CFI CONFIG_MTD_CFI_INTELEXT CONFIG_MTD_COMPLEX_MAPPING CONFIG_MTD_PHYSMAP CONFIG_MTD_PHYSMAP_START CONFIG_MTD_PHYSMAP_LEN CONFIG_MTD_PHYSMAP_BUSWIDTH
VME Interface	tsil48.c vmedrv.c	arch/ppc/syslib	CONFIG_MVME6100
Timers	todc_time.c	arch/ppc/syslib	CONFIG_MVME6100
SCSI Support	*.c	Drivers/scsi	CONFIG_SCSI=y CONFIG_SCSI_SYM53C8XX_2=y
PCI	*.c	drivers/pci	CONFIG_PCI
Parallel Ports	*.c	drivers/parport	CONFIG_PARPORT
Synchronous Serial Port	Z85230.c	Drivers/net/wan/	CONFIG_MVME6100



This chapter describes known problems and limitations of this release.

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## **Motorola MVME6100 Board Problems and Limitations**

Modification of the file system stored in a RAM disk does not persist across unmounting/mounting in BlueCat Linux 5.1. This limitation is due to a defect in the Linux kernel 2.6, described by official kernel maintainer Andrew Morton ([www.lkml.org](http://www.lkml.org)):

*“Because the kernel considers the ramdisk as being ‘memory backed’ it doesn’t do writeback into the blockdev pagecache. If you remove the memory-backed flag, ramdisk contributes to dirty memory in undesirable ways. That memory-backed flag is too overloaded and needs to be split up. It’s something I need to fix, but nobody seemed to be hurting from it up to now so I figured it could wait until after 2.6.0.”*

---

## **User Documentation Update**

The information in the *BlueCat Linux User's Guide* that states that `make xconfig` is supported on Linux hosts only is out of date.

`make xconfig` is now also supported on Windows hosts.

Ensure that Microsoft Visual Studio 6.0 or higher is installed on the cross-development host and that the Visual Studio environment tools have been set up to allow invocation of the Microsoft Visual Studio tools in command line mode.

Then, to install the Qt library on the Windows host, go to [www.trolltech.com](http://www.trolltech.com) and download the Qt software for Microsoft Visual Studio C++ Windows users. To install the Qt library, follow the instructions provided with the Qt software.

`$BLUECAT_PREFIX/usr/src/linux/scripts/kconfig/Makefile` (the `Makefile` for the Windows host) uses the `QTLIBS` environment variable to list the Qt libraries that are needed to link with the `qconf` executable used to implement `make xconfig` on the Windows host. The following default definition is used:

```
QTLIBS = qt-mteval323.lib qtmain.lib
```

This definition specifies that libraries from the Qt 3.2.3 evaluation version for Windows are needed to link with the `qconf` executable.

If the Qt version installed on the host differs from the Qt 3.2.3 evaluation version, the `QTLIBS` definition must be changed to specify the correct list of libraries. This can be done either by manually editing

`$BLUECAT_PREFIX/usr/src/linux/scripts/kconfig/Makefile` to modify the `QTLIBS` definition or by defining the `QTLIBS` environment variable using the **Properties->Advanced->Environment Variables** wizard in the context menu of the **My Computer** icon on the Windows desktop. The second approach allows the user to avoid changing the `Makefile` every time BlueCat Linux is reinstalled.