

VIA SOLUTION For Red Hat Linux 9 Boot Problem with CN400+VT8237 or Px800/880+VT8237 Motherboard

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1. Summary

This guide describes how to avoid the Red Hat Linux 9.0 boot up problem on VIA CN400+VT8237 or Px800/880+VT8237 motherboard. VIA provides a patched kernel to solve this problem. The information in this document is provided “AS IS,” without guarantee of any kind.

2. File description

This package requires 2 files as described below.

vmlinuz-2.4.20-8-ide 03-16-04 14:59 1,122,265 VIA patched kernel

Readme.doc this file

3. Problem description

After installing the Red Hat Linux 9.0, the system will hang with kernel panic during boot-up. The error message is shown below.

VP_IDE: Unknown VIA SouthBridge, disabling DMA.

Unable to handle kernel NULL pointer dereference at virtual address 00000010

Printing eip:

C010ab2c

*pde = 00000000

Oops: 0000

CPU: 0

EIP: 0060:[<c010ab2c>] Not tainted

EFLAGS: 00010002

EIP is at disable_irc [kernel] 0x4c (2.4.20-8)

eax: 00000000 ebx: fffff680 ecx: ffffffff edx: c036ef90

esi: 00000293 edi: 00000000 ebp: ffffffff esp: c3fb9f48

ds: 0068 es: 0068 ss:0068

Process swapper (pid: 1, stackpage=c3gb9000)

Stack: ffffffff 00000000 c03c9e80 c01bd1fc ffffffff 00000000 c031da20 00000000

c03c9e80 00000000 00000000 c01bdcd8 c03c9e80 00000000 00000028

00000001 00000001 00000001 00000001 00000001 00000001 00000001

00000001 00000001

Call Trace: [<c01bd1fc>] probe_hwif [kernel] 0x27c (0xc3fb9f54)

[<c01bdcd8>] ideprobe_init [kernel] 0xb8 (0xc3fb9f74)

[<c0105053>] init [kernel] 0x13 (0xc3fb9ff8)

[<c0105040>] init [kernel] 0x0 (0xc3fb9fe0)

[<c010742d>] kernel_thread_helper [kernel] 0x5 (0xc3fb9ff0)

Code: ff 50 10 eb d0 eb 0d 90 90 90 90 90 90 90 90 90 90 90 90 90

<0>Kernel panic: Attempted to kill init

4. Solution

The package provides an IDE patched kernel to avoid this problem happens again.

First, copy the patched kernel (vmlinuz-2.4.20-8-ide) into floppy disk. Then, select one of the cases applies to your situation below.

(a) Clean install the Red Hat Linux 9.0.

Before exiting the installation of Red Hat Linux 9.0, press <Ctrl>+<Alt>+<F2> to enter console mode. Then, skip the case (b) to proceed.

(b) Use the kernel in existing Red Hat Linux 9.0 system.

Make sure the first boot device is CD-ROM in your system BIOS, then put the installation CD 1 into CD-ROM. When booting the installation CD, type the following command when the “boot:” message appears on the screen.

```
linux rescue
```

Then follow the instructions, and select the partition that the existing Red Hat Linux 9.0 is located in the “System to Rescue” window. Then it will enter the console mode after a while.

After entering the console mode, run the following commands.

```
# cd /mnt/sysimage  
# mount /dev/fd0 mnt/  
# cp mnt/vmlinuz-2.4.20-8-ide boot/  
# vi boot/grub/menu.lst
```

Add the following lines into /mnt/sysimage/boot/grub/menu.lst file.

```
title Red Hat Linux (2.4.20-8) IDE-patched

root (hd0,0)

kernel /vmlinuz-2.4.20-8-ide ro root=LABEL=/

initrd /initrd-2.4.20-8.img
```

Then, reboot system then enter the “Red Hat Linux (2.4.20-8) IDE-patched” kernel.

The problem would not happen again. Enjoy it.

5. Test Configuration

The following hardware configurations were used for test.

Motherboard	VT5814B (CN400+VT8237)	VT5818B (PM800+VT8237)
CPU	VIA C3 Nehemiah 1.2 GHz	Intel P4 1.6 GHz