

Question regarding e1000 driver and dropped packets (2.6.5 / 2.6.10)?

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To: linux-kernel@vger.kernel.org

I have two identical machines [mobo/hardware wise]:

Each machine is a Dell GX1p (500MHZ).

I have two Intel Gigabit NICs, one in each box, hooked up to a GigE switch.

Ethernet controller: Intel Corp. 82541GI/PI Gigabit Ethernet Controller
Ethernet controller: Intel Corp. 82541GI/PI Gigabit Ethernet Controller

I doubt its the kernel version; does anyone have any suggestions/ideas why one machine has virtually NO overruns/errors/drops and the other has tons?

Also, (I doubt this to be the case but I'll ask anyway) – Is the way the NIC's are setup in the box next to other cards / alter their PCI/IRQ routing which would effect error/drop rates?

IE:

PCI1 – promise card / pata

PCI2 – promise card / pata

PCI3 – promise card / sata

PCI4 – e1000 nic

PCI5 – 4 port nic

Would it make sense to order them in a different direction?

Also, is there a correlation between errors on the NIC and ERR in /proc/interrupts?

Secondly, could loading lm-sensors/temperature modules be causing these problems?

dmesg from box2 below:

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```
e1000: eth0: e1000_watchdog: NIC Link is Up 1000 Mbps Full Duplex
eth1: Setting full–duplex based on MII#1 link partner capability of 45e1.
eth2: Setting full–duplex based on MII#1 link partner capability of 45e1.
nfs warning: mount version older than kernel
nfs warning: mount version older than kernel
nfs warning: mount version older than kernel
nfs warning: mount version older than kernel
i2c /dev entries driver
piix4_smbus 0000:00:07.3: Found 0000:00:07.3 device
piix4_smbus 0000:00:07.3: WARNING: SMBus interface has been FORCEFULLY
ENABLED!
mtrr: no MTRR for fd000000,800000 found
spurious 8259A interrupt: IRQ7.
spurious 8259A interrupt: IRQ15.
```

I am currently out of ideas, if anyone can suggest anything, I'd be most grateful, thanks!

On the first box, there are hardly any problems receiving packets:

Note the errors & dropped on the receiving end:

BOX1: (2.6.5)

```
eth0 Link encap:Ethernet HWaddr 00:0E:0C:00:CD:B1
  inet addr:10.0.2.254 Bcast:10.0.2.255 Mask:255.255.255.0
  inet6 addr: fe80::20e:cff:fe00:cdb1/64 Scope:Link
  UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
  RX packets:196787934 errors:4 dropped:0 overruns:0 frame:2
  TX packets:101356779 errors:0 dropped:0 overruns:0 carrier:0
  collisions:0 txqueuelen:1000
  RX bytes:2602045376 (2481.5 Mb) TX bytes:4051930608 (3864.2 Mb)
  Base address:0xcc80 Memory:ff020000–ff040000
```

BOX1 MODULES:

```
$ lsmod
Module Size Used by
ip_nat_ftp 4016 0
ip_conntrack_ftp 71088 1 ip_nat_ftp
```

BOX2: (2.6.10)

On another box (same physical HW) I get this:

```
eth0 Link encap:Ethernet HWaddr 00:0E:0C:00:D2:06
  inet addr:10.0.2.253 Bcast:10.0.2.255 Mask:255.255.255.0
  UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
****--> RX packets:446380046 errors:1276833 dropped:1276833 overruns:1276833 frame:0
  TX packets:572550636 errors:0 dropped:0 overruns:0 carrier:0
  collisions:0 txqueuelen:1000
```

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Linux–Kernel: Question regarding e1000 driver and dropped packets (2.6.5 / 2.6.10)?

RX bytes:2351750726 (2.1 GiB) TX bytes:3659840330 (3.4 GiB)
Base address:0xd8c0 Memory:f8fa0000–f8fc0000

BOX2 MODULES:

```
$ lsmod
Module Size Used by
ip_nat_irc 3408 0
ip_contrack_irc 70480 1 ip_nat_irc
ip_nat_ftp 4112 0
ip_contrack_ftp 71344 1 ip_nat_ftp
adm1021 11060 0
i2c_piix4 6000 0
i2c_sensor 2784 1 adm1021
i2c_dev 7680 0
i2c_core 18224 4 adm1021,i2c_piix4,i2c_sensor,i2c_dev
```

I have tried using different cable and ports on the switch, the result is the same.

```
$ tar cvf /box2/4gb_of_stuff.tar 4gb_of_stuff # then the numbers rise rapidly
```

After copying only 1–2GB on BOX2, this is what I get:

```
eth0 Link encap:Ethernet HWaddr 00:0E:0C:00:D2:06
      inet addr:10.0.2.253 Bcast:10.0.2.255 Mask:255.255.255.0
      UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
      RX packets:1038733 errors:1459 dropped:1459 overruns:1459 frame:0
      TX packets:560952 errors:0 dropped:0 overruns:0 carrier:0
      collisions:0 txqueuelen:1000
      RX bytes:1491121900 (1.3 GiB) TX bytes:763420385 (728.0 MiB)
      Base address:0xd8c0 Memory:f8fa0000–f8fc0000
```

The only thing that is different is one has more HDD's and an extra PCI controller or so:

BOX1 LSPCI:

```
00:00.0 Host bridge: Intel Corp. 440BX/ZX/DX – 82443BX/ZX/DX Host bridge (rev 03)
00:01.0 PCI bridge: Intel Corp. 440BX/ZX/DX – 82443BX/ZX/DX AGP bridge (rev 03)
00:07.0 ISA bridge: Intel Corp. 82371AB/EB/MB PIIX4 ISA (rev 02)
00:07.1 IDE interface: Intel Corp. 82371AB/EB/MB PIIX4 IDE (rev 01)
00:07.2 USB Controller: Intel Corp. 82371AB/EB/MB PIIX4 USB (rev 01)
00:07.3 Bridge: Intel Corp. 82371AB/EB/MB PIIX4 ACPI (rev 02)
00:0d.0 Ethernet controller: Intel Corp. 82541GI/PI Gigabit Ethernet Controller
00:0e.0 Unknown mass storage controller: Promise Technology, Inc. 20268 (rev 02)
00:0f.0 PCI bridge: Digital Equipment Corporation DECchip 21152 (rev 03)
```

Question regarding e1000 driver and dropped packets (2.6.5 / 2.6.10)?

Linux–Kernel: Question regarding e1000 driver and dropped packets (2.6.5 / 2.6.10)?

00:11.0 Ethernet controller: 3Com Corporation 3c905B 100BaseTX [Cyclone]
(rev 24)
01:00.0 VGA compatible controller: ATI Technologies Inc 3D Rage Pro AGP
1X/2X (rev 5c)
02:09.0 Communication controller: Individual Computers – Jens Schoenfeld
Intel 537
02:0a.0 Ethernet controller: 3Com Corporation 3c590 10BaseT [Vortex]

BOX2 LSPCI:

0000:00:00.0 Host bridge: Intel Corp. 440BX/ZX/DX – 82443BX/ZX/DX Host
bridge (rev 03)
0000:00:01.0 PCI bridge: Intel Corp. 440BX/ZX/DX – 82443BX/ZX/DX AGP
bridge (rev 03)
0000:00:07.0 ISA bridge: Intel Corp. 82371AB/EB/MB PIIX4 ISA (rev 02)
0000:00:07.1 IDE interface: Intel Corp. 82371AB/EB/MB PIIX4 IDE (rev 01)
0000:00:07.2 USB Controller: Intel Corp. 82371AB/EB/MB PIIX4 USB (rev 01)
0000:00:07.3 Bridge: Intel Corp. 82371AB/EB/MB PIIX4 ACPI (rev 02)
0000:00:0d.0 Unknown mass storage controller: Promise Technology, Inc.
20269 (rev 02)
0000:00:0e.0 Unknown mass storage controller: Promise Technology, Inc.
20269 (rev 02)
0000:00:0f.0 PCI bridge: Digital Equipment Corporation DECchip 21152 (rev
03)
0000:01:00.0 VGA compatible controller: ATI Technologies Inc 3D Rage Pro
AGP 1X/2X (rev 5c)
0000:02:09.0 Unknown mass storage controller: Promise Technology, Inc.
PDC20375 (SATA150 TX2plus) (rev 02)
0000:02:0a.0 Ethernet controller: Intel Corp. 82541GI/PI Gigabit Ethernet
Controller
0000:02:0b.0 PCI bridge: Digital Equipment Corporation DECchip 21152 (rev
03)
0000:03:04.0 Ethernet controller: Digital Equipment Corporation DECchip
21140 [FasterNet] (rev 22)
0000:03:05.0 Ethernet controller: Digital Equipment Corporation DECchip
21140 [FasterNet] (rev 22)
0000:03:06.0 Ethernet controller: Digital Equipment Corporation DECchip
21140 [FasterNet] (rev 22)
0000:03:07.0 Ethernet controller: Digital Equipment Corporation DECchip
21140 [FasterNet] (rev 22)

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