Subject: SCSI DPT vs I2O problems [was: Will development now move to 2.6.16?]
Posted by mephisto on Mon, 20 Mar 2006 17:31:40 GMT
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Hi,

now that linux 2.6.16 is released I'm wondering if development will be based on that instead on 2.6.15. I'm asking because 2.6.16 introduces some driver changes that are quite important to me.

Regards,

Mephisto

Subject: Re: Will development now move to 2.6.16?
Posted by kir on Mon, 20 Mar 2006 19:08:13 GMT
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Yes, we will release a 2.6.16-based kernel Real Soon Now. I have already said that today in OpenVZ blog.

Quote:I'm asking because 2.6.16 introduces some driver changes that are quite important to me.
If you have problem with a particular hardware driver (not working, missing, etc.) -- do not hesitate to file a bug report. We are already supporting a lot of new hardware in our stable kernel series (by either backporting stuff and/or taking vendor drivers).

Subject: Re: Will development now move to 2.6.16?
Posted by mephisto on Mon, 20 Mar 2006 20:04:43 GMT
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Great! I'll look into this. The problem is that I couldn't even get the 2.6.8 kernel to work on my server, yet - 2.6.15 patch was bootin with the same config, but was always crashing after the machine was running for 1-2 days. I'm about 150 miles away, to this is a bit problematic to look into.

Subject: Re: Will development now move to 2.6.16?
Posted by dev on Mon, 20 Mar 2006 20:34:34 GMT
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Can you please provide the output of lspci and lspci -n?
It would help me to understand what hardware you use and which driver is responsible for it.

Thanks

Subject: Re: Will development now move to 2.6.16?
Posted by mephisto on Mon, 20 Mar 2006 20:39:20 GMT
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Sure:
lspci
00:00.0 Host bridge: Intel Corporation E7501 Memory Controller Hub (rev 01)
00:00.1 Class ff00: Intel Corporation E7500/E7501 Host RASUM Controller (rev 01)
00:02.0 PCI bridge: Intel Corporation E7500/E7501 Hub Interface B PCI-to-PCI Bridge (rev 01)
00:03.0 PCI bridge: Intel Corporation E7500/E7501 Hub Interface C PCI-to-PCI Bridge (rev 01)
00:1d.0 USB Controller: Intel Corporation 82801CA/CAM USB (Hub #1) (rev 02)
00:1d.1 USB Controller: Intel Corporation 82801CA/CAM USB (Hub #2) (rev 02)
00:1d.2 USB Controller: Intel Corporation 82801CA/CAM USB (Hub #3) (rev 02)
00:1e.0 PCI bridge: Intel Corporation 82801 PCI Bridge (rev 42)
00:1f.0 ISA bridge: Intel Corporation 82801CA LPC Interface Controller (rev 02)
00:1f.1 IDE interface: Intel Corporation 82801CA Ultra ATA Storage Controller (rev 02)
00:1f.3 SMBus: Intel Corporation 82801CA/CAM SMBus Controller (rev 02)
01:1c.0 PIC: Intel Corporation 82870P2 P64H2 I/OxAPIC (rev 04)
01:1d.0 PCI bridge: Intel Corporation 82870P2 P64H2 Hub PCI Bridge (rev 04)
01:1e.0 PIC: Intel Corporation 82870P2 P64H2 I/OxAPIC (rev 04)
01:1f.0 PCI bridge: Intel Corporation 82870P2 P64H2 Hub PCI Bridge (rev 04)
03:02.0 Ethernet controller: Intel Corporation 82546EB Gigabit Ethernet Controller (Copper) (rev 01)
03:02.1 Ethernet controller: Intel Corporation 82546EB Gigabit Ethernet Controller (Copper) (rev 01)
04:1c.0 PIC: Intel Corporation 82870P2 P64H2 I/OxAPIC (rev 04)
04:1d.0 PCI bridge: Intel Corporation 82870P2 P64H2 Hub PCI Bridge (rev 04)
04:1e.0 PIC: Intel Corporation 82870P2 P64H2 I/OxAPIC (rev 04)
04:1f.0 PCI bridge: Intel Corporation 82870P2 P64H2 Hub PCI Bridge (rev 04)
06:01.0 RAID bus controller: Adaptec (formerly DPT) SmartRAID V Controller (rev 01)
07:01.0 VGA compatible controller: ATI Technologies Inc Rage XL (rev 27)
lspci -n
00:00.0 0600: 8086:254c (rev 01)
00:00.1 ff00: 8086:2541 (rev 01)
00:02.0 0604: 8086:2543 (rev 01)
00:03.0 0604: 8086:2545 (rev 01)
00:1d.0 0c03: 8086:2482 (rev 02)
00:1d.1 0c03: 8086:2484 (rev 02)
00:1d.2 0c03: 8086:2487 (rev 02)
00:1e.0 0604: 8086:244e (rev 42)
00:1f.0 0601: 8086:2480 (rev 02)
00:1f.1 0101: 8086:248b (rev 02)
00:1f.3 0c05: 8086:2483 (rev 02)
01:1c.0 0800: 8086:1461 (rev 04)
01:1d.0 0604: 8086:1460 (rev 04)
01:1e.0 0800: 8086:1461 (rev 04)
01:1f.0 0604: 8086:1460 (rev 04)
03:02.0 0200: 8086:1010 (rev 01)
03:02.1 0200: 8086:1010 (rev 01)

04:1c.0 0800: 8086:1461 (rev 04)
04:1d.0 0604: 8086:1460 (rev 04)
04:1e.0 0800: 8086:1461 (rev 04)
04:1f.0 0604: 8086:1460 (rev 04)
06:01.0 0104: 1044:a511 (rev 01)
07:01.0 0300: 1002:4752 (rev 27)

This is a Supermicro X5DP8-G2 running two SCSI raids (using aic79xx).

Subject: Re: Will development now move to 2.6.16?
Posted by vaverin on Tue, 21 Mar 2006 06:50:42 GMT
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Hello mephisto,

Unfortunately I cannot understand what kind of problem you have on the node.
As far as I see from your lspci, you have I2O zero-channel raid controller. It supported by our kernel and your node should work even on the 2.6.8 kernel.
To load our kernel on this hardware you should create correct initrd image. Could you please send me /etc/modprobe.conf file and
output of the following command
mkinitrd -v -v -f /boot/custom.initrd.img 2.6.8-022stab070.1

thank you,
Vasily Averin

PS could you probably give me an access to the node?

Subject: Re: Will development now move to 2.6.16?
Posted by mephisto on Tue, 21 Mar 2006 10:15:02 GMT
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Hi Vasily,

thank you for your answer. I'm getting "-bash: mkinitrd: command not found". I'm using Gentoo and so far made no use of the initrd, because I had all the important modules compiled in. I do have a initramfs-genkernel-x86-2.6.8-022stab070-smp under /boot, I'll check if it helps to include it into my lilo.conf

I'm sorry, but I can't give you access to the server.

My /etc/modprobe.conf looks like this

This file is automatically generated by modules-update
#

```
# Please do not edit this file directly. If you want to change or add
# anything please take a look at /etc/modules.conf and read
# the manpage for modules-update.
#
alias binfmt-204 binfmt_aout
alias binfmt-263 binfmt_aout
alias binfmt-264 binfmt_aout
alias binfmt-267 binfmt_aout
alias binfmt-387 binfmt_aout
alias binfmt-332 iBCS
alias binfmt--310 binfmt_java
alias block-major-1-* rd
alias block-major-2-* floppy
alias block-major-3-* ide-probe-mod
alias block-major-7-* loop
alias block-major-8-* sd_mod
alias block-major-9-* md
alias block-major-11-* sr_mod
alias block-major-13-* xd
alias block-major-15-* cdu31a
alias block-major-16-* gscd
alias block-major-17-* optcd
alias block-major-18-* sjcd
alias block-major-20-* mcdx
alias block-major-22-* ide-probe-mod
alias block-major-23-* mcd
alias block-major-24-* sonycd535
alias block-major-25-* sbpcd
alias block-major-26-* sbpcd
alias block-major-27-* sbpcd
alias block-major-29-* aztcd
alias block-major-32-* cm206
alias block-major-33-* ide-probe-mod
alias block-major-34-* ide-probe-mod
alias block-major-37-* ide-tape
alias block-major-44-* ftl
alias block-major-46-* pcd
alias block-major-47-* pf
alias block-major-56-* ide-probe-mod
alias block-major-57-* ide-probe-mod
alias block-major-58-* lvm-mod
alias block-major-88-* ide-probe-mod
alias block-major-89-* ide-probe-mod
alias block-major-90-* ide-probe-mod
alias block-major-91-* ide-probe-mod
alias block-major-93-* nftl
alias block-major-113-* viocd
alias char-major-4-* serial
```

```
alias char-major-5-* serial
alias char-major-6-* lp
alias char-major-9-* st
alias char-major-10-0 busmouse
alias char-major-10-2 msbusmouse
alias char-major-10-3 atixlmouse
alias char-major-10-116 snd
alias char-major-10-130 wdt
alias char-major-10-131 wdt
alias char-major-10-135 rtc
alias char-major-10-139 openprom
alias char-major-10-144 nvram
alias char-major-10-157 applicom
alias char-major-10-175 agpgart
alias char-major-10-181 toshiba
alias char-major-10-183 hw_random
alias char-major-10-184 microcode
alias char-major-10-187 irnet
alias char-major-10-189 ussp
alias char-major-10-200 tun
alias char-major-10-250 hci_vhci
alias char-major-13-* input
alias char-major-13-0 joydev
alias char-major-13-32 mousedev
alias char-major-14-* soundcore
alias char-major-19-* cyclades
alias char-major-20-* cyclades
alias char-major-21-* sg
alias char-major-22-* pcxx
alias char-major-23-* pcxx
alias char-major-27-* zftape
alias char-major-34-* scc
alias char-major-35-* tclmidi
alias char-major-36-* netlink
alias char-major-37-* ide-tape
alias char-major-48-* riscom8
alias char-major-49-* riscom8
alias char-major-57-* esp
alias char-major-58-* esp
alias char-major-63-* kdebug
alias char-major-90-* mtdchar
alias char-major-96-* pt
alias char-major-97-* pg
alias char-major-99-* ppdev
alias char-major-107-* 3dfx
alias char-major-108-* ppp_generic
alias char-major-109-* lvm-mod
alias char-major-161-* ircomm-tty
```

```
alias char-major-171-* raw1394
alias char-major-195-* NVdriver
alias char-major-200-* vxspec
alias char-major-206-* osst
alias char-major-216-* rfcomm
alias dos msdos
alias dummy0 dummy
alias dummy1 dummy
alias iso9660 isofs
alias md-personality-1 linear
alias md-personality-2 raid0
alias md-personality-3 raid1
alias md-personality-4 raid5
alias md-personality-7 multipath
alias net-pf-1 unix
alias net-pf-2 ipv4
alias net-pf-4 ipx
alias net-pf-5 appletalk
alias net-pf-15 af_key
alias net-pf-17 af_packet
alias net-pf-20 atm
alias net-pf-23 irda
alias net-pf-24 pppoe
alias net-pf-25 wanrouter
alias net-pf-26 llc
alias net-pf-31 bluez
alias netalias-2 ip_alias
alias irlan0 irlan
alias irda-dongle-0 tekram
alias irda-dongle-1 esi
alias irda-dongle-2 actisys
alias irda-dongle-3 actisys
alias irda-dongle-4 girbil
alias irda-dongle-5 litelink
alias irda-dongle-6 airport
alias irda-dongle-7 old_belkin
alias bt-proto-0 l2cap
alias bt-proto-2 sco
alias bt-proto-3 rfcomm
alias bt-proto-4 bnep
alias bt-proto-5 cmtp
alias bt-proto-6 hidp
alias bt-proto-7 avdtp
alias plip0 plip
alias plip1 plip
alias tunl0 ipip
alias cipcb0 cipcb
alias cipcb1 cipcb
```

```
alias cipcb2 cipcb
alias cipcb3 cipcb
alias ppp0 ppp_async
alias ppp1 ppp_async
alias slip0 slip
alias slip1 slip
alias tty-ldisc-1 slip
alias tty-ldisc-3 ppp_async
alias tty-ldisc-11 irtty
alias tty-ldisc-14 ppp_synctty
alias tty-ldisc-15 hci_uart
alias ppp-compress-18 ppp_mppe
alias ppp-compress-21 bsd_comp
alias ppp-compress-24 ppp_deflate
alias ppp-compress-26 ppp_deflate
alias ppp ppp_async
alias parport_lowlevel parport_pc
alias usbdevfs usbcore
alias xfrm-type-2-50 esp4
alias xfrm-type-2-51 ah4
alias xfrm-type-2-108 ipcomp
alias xfrm-type-10-50 esp6
alias xfrm-type-10-51 ah6
alias xfrm-type-10-108 ipcomp6
alias cipher_null crypto_null
alias digest_null crypto_null
alias compress_null crypto_null
alias sha384 sha512
alias char-major-81-* bttv
alias /dev/ppp ppp_generic
alias loop-xfer-gen-0 loop_gen
alias loop-xfer-3 loop_fish2
alias loop-xfer-gen-10 loop_gen
alias cipher-2 des
alias cipher-3 fish2
alias cipher-4 blowfish
alias cipher-6 idea
alias cipher-7 serp6f
alias cipher-8 mars6
alias cipher-11 rc62
alias cipher-15 dfc2
alias cipher-16 rijndael
alias cipher-17 rc5
alias char-major-89-* i2c-dev
alias /dev/nvidiactl NVdriver
alias binfmt-0064 binfmt_aout
options sb io=0x220 irq=7 dma=1 dma16=5 mpu_io=0x330
install binfmt-0000 /bin/true
```

install char-major-10 /bin/true
install char-major-10-1 /bin/true
install dummy0 /sbin/modprobe -o dummy0 --ignore-install dummy
install dummy1 /sbin/modprobe -o dummy1 --ignore-install dummy
install eth0 /bin/true
install net-pf-10 /bin/true
install net-pf-19 /bin/true
install net-pf-3 /bin/true
install net-pf-6 /bin/true
install scsi_hostadapter /bin/true

Subject: Re: Will development now move to 2.6.16?
Posted by vaverin on Tue, 21 Mar 2006 10:32:58 GMT
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Hello Mephisto,

Usually we tried to include all the required drivers int kernels, but our i2o driver did not work by this way and we should be forced to compile it as module. Therefore you should use initrd or initramfs images for our kernels.

I hope our kernel will work when you include initrd image to your lilo.conf file.

Unfortunately I'm not familiar with Gentoo. I suppose that the list of requierd modules on this distributive are stores in /etc/modules.conf file. If you will have problems with our kernel, please send me /etc/modules.conf file and your initramfs file.

Thank you,
Vasily Averin

Subject: Re: Will development now move to 2.6.16?
Posted by dev on Tue, 21 Mar 2006 10:34:12 GMT
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BTW, do you have any bootup logs/screens with the information how 2.6.8 crashed on your machines?

Subject: Re: Will development now move to 2.6.16?
Posted by mephisto on Tue, 21 Mar 2006 10:38:15 GMT
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2.6.8 never crashed, it didn't even start (could not mount root fs). It was 2.6.15. I have the feeling that it was a memory related problem because people complained that the server was getting slower and slower before beeing not available anymore - yes I'm using the node as a server even though it is not recommended.

Subject: Re: Will development now move to 2.6.16?
Posted by mephisto on Tue, 21 Mar 2006 10:41:28 GMT
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I just realized that CONFIG_SCSI_DPT_I2O was not compiled into the openvz kernel while it was compiled into the running kernel - might have been my own stupidity all along.

Subject: Re: Will development now move to 2.6.16?
Posted by dev on Tue, 21 Mar 2006 10:49:20 GMT
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Oh, ok. Give us to know whether it helped or some other efforts are needed from us to resolve it.

Subject: Re: Will development now move to 2.6.16?
Posted by vaverin on Tue, 21 Mar 2006 11:19:43 GMT
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hello Mephisto

We use a new driver for this hardware: i2o_block (CONFIG_I2O_BLOCK)
I would note that dpt_i2o driver also did not work inside kernel.
I've tried to build dpt_i2o driver as module and it works OK,

But dpt_i2o and i2o_block drivers have a conflicts and cannot be loaded together.

Thank you,
Vasily Averin

Subject: Re: Will development now move to 2.6.16?
Posted by mephisto on Tue, 21 Mar 2006 16:07:02 GMT
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So i2o_block is a replacement for dpt_i2o? What is the advantage of i2o_block? In my running 2.6.14 kernel I have CONFIG_I2O_EXT_ADAPTEC=y - is that a replacement for CONFIG_I2O_BLOCK?

Subject: Re: Will development now move to 2.6.16?
Posted by vaverin on Tue, 21 Mar 2006 17:39:41 GMT
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Hello Mephisto,

yes, i2o_block is new driver for i2o hardware, it replaced old dpt_i2o driver in 2.6-based Red Hat disributions.

CONFIG_I2O_EXT_ADAPTEC is not the same as CONFIG_I2O_BLOCK
There are 2 different suboption of new i2o layer.

to build new i2o layer you should enable at least following config options in kernel config file:
CONFIG_I2O=m
CONFIG_I2O_CONFIG=m
CONFIG_I2O_BLOCK=m
CONFIG_I2O_SCSI=m

I would note that i2o_block driver used unusual device names:
instead usual scsi-like /dev/sda it uses /dev/i2o/hda device names. If you not use LABEL's on your filesystem, you may have troubles with partition mounting.

I would note that the best solution is to use the same driver as on your linux distribution.
If Gentoo uses dpt_i2o driver -- that I would recommend you to _disable_ CONFIG_I2O option at all and enable compilation for old dpt_i2o driver:
CONFIG_SCSI_DPT_I2O=m

Thank you,
Vasily Averin

Subject: Re: Will development now move to 2.6.16?
Posted by dev on Wed, 22 Mar 2006 08:42:35 GMT
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Quote:I just realized that CONFIG_SCSI_DPT_I2O was not compiled into the openvz kernel while it was compiled into the running kernel - might have been my own stupidity all along.

mephisto, does it work now? have you managed starting it?

Subject: Re: Will development now move to 2.6.16?
Posted by mephisto on Wed, 22 Mar 2006 15:00:37 GMT
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So far not. I converted my fstab to use LABELS for my reiserfs partitions, but couldn't label my root partition. I'm uncertain what to add to my "root = " line in lilo.conf as /dev/i20/hda2 was not

accepted by lilo.
I recompiled my kernel to use dpt_i2o again and will try it later today.

Subject: Re: Will development now move to 2.6.16?
Posted by mephisto on Fri, 24 Mar 2006 13:47:31 GMT
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I've been so far unable to boot the kernel with CONFIG_I2O_BLOCK. The 2.6.15 and 2.6.16 kernels boot with dpt_i2o, but get unstable after the node has been running for about a day. I've copied about 100GB of data using rsync without problems, but once the Samba fileserver on the hardware node was running and under regular use the machine got slower and slower until it wasn't usable anymore. No VPS was running at that time, just the VZ modules were loaded. I don't think it's a memory issue, because I trippled the memory from 512MB to 1,5GB and the time until it goes down is the same.
My 2.6.16 kernel config can be found here

I will investigate the problem with 2.6.8 once I get it to boot.

PS: I've been running 2.6.15-025stab014.1 without problems on another Gentoo system using the same build environment. That hardware node is running LAMP in addition to OpenVZ, so it must either be hardware related or related to Samba.

Subject: Re: Will development now move to 2.6.16?
Posted by dev on Sat, 08 Apr 2006 17:56:52 GMT
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mephisto, any progress with booting 2.6.8?
can I help somehow? maybe you can provide boot messages from 2.6.8 when it doesn't boot (e.g. through serial or net console?)

Subject: Re: SCSI DPT vs I2O problems [was: Will development now move to 2.6.16?]
Posted by mephisto on Thu, 13 Apr 2006 11:56:12 GMT
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Here is the output of the not booting 2.6.8-022stab072:

Loading Adaptec I2O RAID: Version 2.4 Build 5go
Detecting Adaptec I2O RAID controllers...
ACPI: PCI interrupt 0000:06:01.0[A] -> GSI 72 (level, low) -> IRQ 72
Adaptec I2O RAID controller 0 irq=72
    BAR0 f4807000 - size= 100000
    BAR1 f4998000 - size= 1000000

dpti: If you have a lot of devices this could take a few minutes
dpti0: Reading the hardware ressource table.
dpti0: Get status timeout.
scsi0: Vendor: Adaptec Model:
mice: PS/2 mouse device common for all mice
serio: i8042 AUX port at 0x60,0x64 irq 12
input: PS/2 Generic Mouse on isa0060/serio1
serio:i8042 KBD port at 0x60,0x64 irq 1
input: AT Translated Set 2 keyboard on isa0060/serio0
device-mapper: 4.1.0-ioctl (2003-12-10) initialised: dm@uk.sistina.com
NET: Registered protocol family 2
IP: routing cache hash table of 16384 buckets, 128Kbytes
TCP: Hash tables configured (established 524288 bind 65536)
NET: Registered protocol family 1
Starting balanced_irq
VFS: Cannot open root device "sda2" or unknown-block(0,0)
Please append a correct "root=" boot option
Kernel panic: VFS: Unable to mount root fs on unknown-block(0,0)

Both kernels have these options set. While the 2.6.16 kernel boots, the 2.6.8 kernel doesn't:

CONFIG_SCSI_AIC79XX=y
CONFIG_AIC79XX_CMDS_PER_DEVICE=32
CONFIG_AIC79XX_RESET_DELAY_MS=15000
# CONFIG_AIC79XX_BUILD_FIRMWARE is not set
CONFIG_AIC79XX_ENABLE_RD_STRM=y
CONFIG_AIC79XX_DEBUG_ENABLE=y
CONFIG_AIC79XX_DEBUG_MASK=0
CONFIG_AIC79XX_REG_PRETTY_PRINT=y
CONFIG_SCSI_DPT_I2O=y

#
I2O device support
#
CONFIG_I2O=m
CONFIG_I2O_CONFIG=m
# CONFIG_I2O_BLOCK is not set
CONFIG_I2O_SCSI=m
CONFIG_I2O_PROC=m

Subject: Re: SCSI DPT vs I2O problems [was: Will development now move to 2.6.16?]
Posted by khorenko on Fri, 21 Apr 2006 09:45:18 GMT
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mephisto, as vaverin have already said we had faced issues that i2o_block and dpt_i2o drivers do

not work properly in 2.6.8 kernel if compiled into the kernel.

Please, could you build a 2.6.8 OpenVZ kernel with _disabled_ CONFIG_I2O option and CONFIG_SCSI_DPT_I2O=m (message #2135)?

Yes, in that case you should create initrd file to boot, but it looks like this is the only possible way to make dpt_i2o driver working in 2.6.8 kernel.

Subject: Re: SCSI DPT vs I2O problems [was: Will development now move to 2.6.16?]
Posted by mephisto on Fri, 21 Apr 2006 09:52:07 GMT
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I also tried that and it did not work. I'm sorry I have no error message but I'm happy the system is running now and I can't reboot it.
