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New U-Boot image for better USB drive compatibility?

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kevpatt
New Member

Posts: 23
Kudos: 6
Solutions: 1
Registered: 08-06-2013

✔ New U-Boot image for better USB drive compatibility?   Options

05-23-2014 09:41 PM

Is there any chance I / we could get a newer version of u-boot?
I have replaced the internal USB flash drive on several ERLites (for various reasons), and I've noticed that some USB drives are not *quite* compatible. The most common issue I've seen is that u-boot hangs immediately after scanning the USB bus:

```
U-Boot 1.1.1 (UBNT Build ID: 4493936-g009d77b) (Build time: Sep 20 2012 - 15:48:51)

BIST check passed.
UBNT_E100 r1:2, r2:14, serial #: DC9FDB286BEE
Core clock: 500 MHz, DDR clock: 266 MHz (532 Mhz data rate)
DRAM:  512 MB
Clearing DRAM....... done
Flash:  4 MB
Net:   octeth0, octeth1, octeth2

USB:   (port 0) scanning bus for devices...
       USB device not responding, giving up (status=0)
1 USB Devices found
       scanning bus for storage devices...
No device found. Not initialized?
```

After poking around on the web, it looks like issues similar to these have been resolved in newer versions of u-boot. It seems to me like the version of u-boot (1.1.1) you're using is *ancient*...
I'm not sure exactly why this is happening, but it could be a power-on timing issue; the USB bus is scanned very soon after power-on (like 1 second or less), and *maybe* the USB drive I'm using hasn't had time to initialize itself yet. I'm pretty sure either a small delay would help, or, reset the USB bus once and scan it again if nothing is found the first time around.
Interestingly, I **CAN** boot the ERLite successfully from this USB drive, if I issue a "usb reset" command to u-boot. When I do this manually, the drive *is* found, and I can manually boot the box and it starts up normally. Also, you can do a reset or reboot and it will start up properly as long as you don't cycle the *power*.

```
usb reset
(Re)start USB...
USB:   (port 0) scanning bus for devices... 1 USB Devices found
       scanning bus for storage devices...
  Device 0: Vendor: PNY      Prod.: USB 2.0 FD      Rev: 1100
            Type: Removable Hard Disk
            Capacity: 30685.8 MB = 29.9 GB (62844672 x 512)
Octeon ubnt_e100# fatload usb 0 $loadaddr vmlinux.64;bootoctlinux $loadaddr coremask=0x3
root=/dev/sda2 rootdelay=15 rw rootsqimg=squashfs.img rootsqwdir=w
mtdparts=phys_mapped_flash:512k(boot0),512k(boot1),64k@3072k(eeprom)
```

Of course this requires interaction with the console on a cold start; it would be **great** if we could get u-boot to either delay after the reset of retry automatically.

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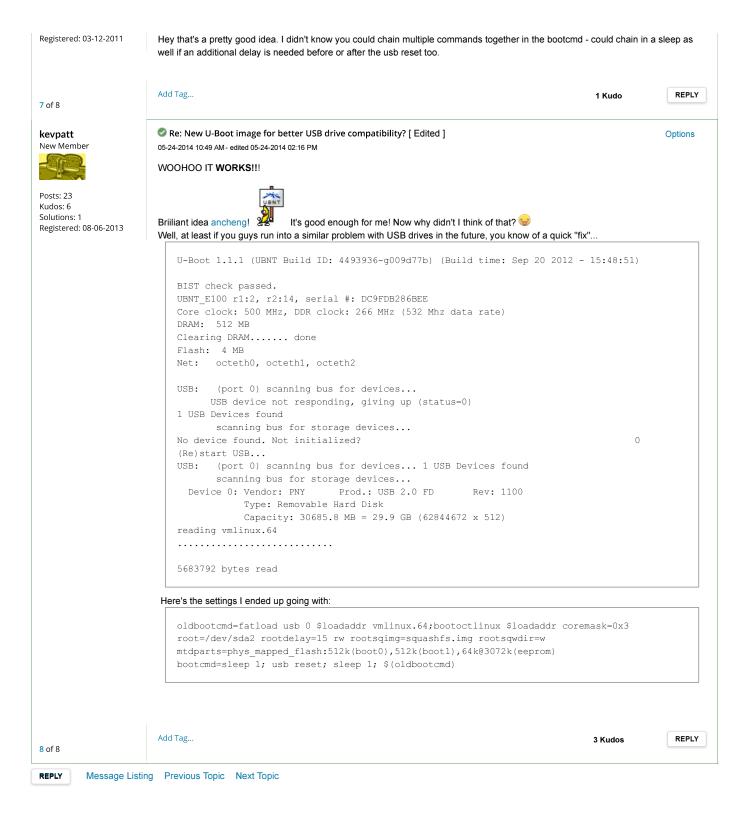Terms of Service   Privacy policy

Posts: 267
Kudos: 154
Solutions: 27
Registered: 05-09-2013

flash leads to some USB sticks not being detected. I would like a newer bootloader too, or the possibility to specify a delay but i really doubt that this will be generally available.

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Add Tag...   0 Kudos   REPLY

NVX
Senior Member

Posts: 3011
Kudos: 1531
Solutions: 83
Registered: 03-12-2011

Re: New U-Boot image for better USB drive compatibility?   Options
05-24-2014 02:12 AM

As abu_cwarky mentioned, updating uboot would be a dangerous potentially device-bricking operation so I don't see it happening tbh.
That said, uboot has an option called bootdelay which determines how long it waits for input to break the boot process - what happens if you up that setting (which can be saved to presist across boots with saveenv) to be 10s or something? Seems like a much safer option if that works.

3 of 8

Add Tag...   0 Kudos   REPLY

---

kevpatt
New Member

Posts: 23
Kudos: 6
Solutions: 1
Registered: 08-06-2013

Re: New U-Boot image for better USB drive compatibility?   Options
05-24-2014 04:57 AM

I tried the bootdelay setting, with both a 2 second and 10 second delay. Either the delay is happening *after* the USB problem occurs, or it just doesn't help. I did notice a delay, but the error message appears just as soon after power-on as before.
I think a USB bus reset is likely necessary.
I can understand why ubnt would not want to upgrade the bootloader, but they may run into this problem themselves in the near future if the USB drives they are using are different for some reason.
FWIW, there are *two* bootloader images in NOR flash, so there is still a possibility to "recover" if you load a bad image. I don't think ubnt would make a new bootloader *generally* available, but they might build a newer one just for us *tinkerers*. 😊 After all, we are replacing the USB flash drive, monkeying around with u-boot anyway, so the possibility of "bricking" a device is understandable, and I at least take full responsibility if that should happen...

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Add Tag...   0 Kudos   REPLY

NVX
Senior Member

Posts: 3011
Kudos: 1531
Solutions: 83
Registered: 03-12-2011

Re: New U-Boot image for better USB drive compatibility?   Options
05-24-2014 06:23 AM

Yeah, the concern is of course about a rise in warranty claims from people bricking units by doing so. Of course the easy answer is "that's ok, just say warranty is void if you use that" - but that's not actually legally possible in many countries.
Using a newer bootloader on newly manufacturerd devices is a bit different than updating the bootloader on devices that already exist. Most of the cons to the latter don't apply to the former. The big issue with that though is there's now two different bootloader versions running on the same product depending on when it was made, which can make future testing and QA difficult as any changes have to be sure that they will run on both variants.
It really comes down to risk and cost vs reward.

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Add Tag...   0 Kudos   REPLY

UBNT-ancheng
Ubiquiti Employee

Posts: 8006
Kudos: 2588
Solutions: 977
Contributions: 2
Registered: 06-10-2011

✅ **Re: New U-Boot image for better USB drive compatibility?**   Options
05-24-2014 09:12 AM

The uboot we're using for each model is from the vendor SDK for the board. It is possible to get a newer uboot to work on the existing board but it would be like bringing up the board all over again, so even ignoring the warranty issue, at this time we really don't have the resources to do that.
By the way, this is **not** officially supported or recommended of course, but since you're already in there, maybe try prepending "usb reset" to "bootcmd"?

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Add Tag...   3 Kudos   REPLY

NVX
Senior Member

Posts: 3011
Kudos: 1531
Solutions: 83

Re: New U-Boot image for better USB drive compatibility?   Options
05-24-2014 09:16 AM

> UBNT-ancheng wrote:
> By the way, this is **not** officially supported or recommended of course, but since you're already in there, maybe try prepending "usb reset" to "bootcmd"?

Registered: 03-12-2011

Hey that's a pretty good idea. I didn't know you could chain multiple commands together in the bootcmd - could chain in a sleep as well if an additional delay is needed before or after the usb reset too.

Add Tag...

1 Kudo

REPLY

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kevpatt
New Member

Posts: 23
Kudos: 6
Solutions: 1
Registered: 08-06-2013

✓ Re: New U-Boot image for better USB drive compatibility? [Edited]

Options

05-24-2014 10:49 AM - edited 05-24-2014 02:16 PM

WOOHOO IT **WORKS!**!!

Briiliant idea ancheng!   It's good enough for me! Now why didn't I think of that? 😜

Well, at least if you guys run into a similar problem with USB drives in the future, you know of a quick "fix"...

```
U-Boot 1.1.1 (UBNT Build ID: 4493936-g009d77b) (Build time: Sep 20 2012 - 15:48:51)

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USB:   (port 0) scanning bus for devices...
       USB device not responding, giving up (status=0)
1 USB Devices found
        scanning bus for storage devices...
No device found. Not initialized?                                            0
(Re)start USB...
USB:   (port 0) scanning bus for devices... 1 USB Devices found
        scanning bus for storage devices...
  Device 0: Vendor: PNY      Prod.: USB 2.0 FD      Rev: 1100
            Type: Removable Hard Disk
            Capacity: 30685.8 MB = 29.9 GB (62844672 x 512)
reading vmlinux.64
...........................

5683792 bytes read
```

Here's the settings I ended up going with:

```
oldbootcmd=fatload usb 0 $loadaddr vmlinux.64;bootoctlinux $loadaddr coremask=0x3
root=/dev/sda2 rootdelay=15 rw rootsqimg=squashfs.img rootsqwdir=w
mtdparts=phys_mapped_flash:512k(boot0),512k(boot1),64k@3072k(eeprom)
bootcmd=sleep 1; usb reset; sleep 1; $(oldbootcmd)
```

Add Tag...

3 Kudos

REPLY

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