Cat-Herding Development Boards

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DebConf19 2019-07-25
<table>
<thead>
<tr>
<th>Role</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>user</td>
<td>2001</td>
</tr>
<tr>
<td>contributor</td>
<td>2004</td>
</tr>
<tr>
<td>maintainer</td>
<td>2008</td>
</tr>
<tr>
<td>developer</td>
<td>2010</td>
</tr>
</tbody>
</table>
What is a Development Board
In October 2013
Almost 9 months since the last Debian upload.
18 supported platforms
https://bugs.debian.org/726699
I’ve done some work towards updating to the new version and could help with an upload or two if needed... but probably not long-term maintenance.
https://bugs.debian.org/726699

> I’ve done some work towards updating to the new version and could help with
> an upload or two if needed... but probably not long-term maintenance.

There’s basically no one willing to do long-term maintenance, so
have a blast!
Six years later

Today, 2019:
<blink>89 supported platforms!!!1one!!</blink>
https://salsa.debian.org/debian/u-boot/blob/master/debian/targets
Get people involved

How many people does it take to maintain 89 boards?
https://salsa.debian.org/debian/u-boot/blob/master/debian/targets
Get people involved, really

https://wiki.debian.org/U-boot/Status
irc.freenode.net: #u-boot
https://lists.denx.de/pipermail/u-boot/
https://patchwork.ozlabs.org/project/uboot/list/?q=SOMEBOARD
The Zoo

The Reproducible Builds Zoo
https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git
https://git.kernel.org/pub/scm/linux/kernel/git/next/linux-next.git
https://patchwork.kernel.org/project/linux-arm-kernel/list/?q=SOMETHING
https://salsa.debian.org/kernel-team/linux/

- multiplatform kernels only
- modular
https://salsa.debian.org/installer-team/flash-kernel/

- Generates boot scripts
- Copies around .dtb (device-tree-blob)
https://salsa.debian.org/installer-team/debian-installer

- bootloader
- kernel
- flash-kernel
debian-installer: the easy bit

diff --git a/build/boot/arm/u-boot-image-config b/build/boot/arm/u-boot-image-config
index 271fdf270..44bca5b33 100644
--- a/build/boot/arm/u-boot-image-config
+++ b/build/boot/arm/u-boot-image-config
@@ -21,6 +21,7 @@ A20-OLinuXino-Lime /usr/lib/u-boot/A20-OLinuXino-Lime/u-boot-sunxi-with-spl.bin
 A20-OLinuXino-MICRO /usr/lib/u-boot/A20-OLinuXino_MICRO/u-boot-sunxi-with-spl.bin 16
 BananaPi /usr/lib/u-boot/Bananapi/u-boot-sunxi-with-spl.bin 16
+BananaPiM2Berry /usr/lib/u-boot/bananapi_m2_berry/u-boot-sunxi-with-spl.bin 16
 BananaPro /usr/lib/u-boot/Bananapro/u-boot-sunxi-with-spl.bin 16
 Cubieboard /usr/lib/u-boot/Cubieboard/u-boot-sunxi-with-spl.bin 16
 Cubieboard2 /usr/lib/u-boot/Cubieboard2/u-boot-sunxi-with-spl.bin 16
debian-installer: the hard bit

Kernel modules in .udeb

crc-modules crypto-dm-modules crypto-modules fb-modules i2c-modules input-modules
md-modules mmc-modules mtd-core-modules nic-modules nic-shared-modules nic-usb-modules
nic-wireless-modules sata-modules scsi-core-modules scsi-modules scsi-nic-modules usb-modules
usb-storage-modules
debian-installer: the quick bits

https://d-i.debian.org/daily-images/armhf/daily/netboot/SD-card-images/
zcat firmware.none.img.gz partition.img.gz > test.img
dd if=/usr/lib/u-boot/NEWBOARD/u-boot.img of=test.img seek=N
sudo mount -o loop test.img /mnt
apt download linux-image-VERSION-armmp

dpkg-deb -x linux-image-VERSION-armmp

find lib/ cpio -quiet -o -H newc | gzip > cpio.modules.gz

cat initrd.gz cpio.modules.gz > initrd-with-all-the-modules.gz

cp initrd-with-all-the-modules.gz /mnt/initrd.gz

Working on a pinebook
Arm-Trusted-Firmware

https://salsa.debian.org/debian/arm-trusted-firmware

- Nearly all 64-bit ARM platforms need it
- Upstream recently migrated to trustedfirmware.org
Getting people involved: IRC

irc.freenode.net
#u-boot
#linux-sunxi
#linux-rockchip
#linux-amlogic
irc.oftc.net
#debian-arm
Thanks

- Debian
- #debian-arm
- #u-boot
- #debian-kernel
- #debian-boot
- #linux-sunxi
- And so many individuals others...
Only the basic kernel

[amd64,arm64,i386] Disable rt featureset.

diff --git a/debian/config/amd64/defines b/debian/config/amd64/defines
index 6ab7192fdb00..b61fd089f7dc 100644
--- a/debian/config/amd64/defines
+++ b/debian/config/amd64/defines
@@ -1,7 +1,6 @@
 [base]
 featuresets:
   none
- rt
 kernel-arch: x86

[build]
Sign like you have no access to the kernel signing keys

[amd64,arm64,i386] Disable signed-code.

diff --git a/debian/config/amd64/defines b/debian/config/amd64/defines
index 75705b2a8af3..6ab7192fdb00 100644
--- a/debian/config/amd64/defines
+++ b/debian/config/amd64/defines
@@ -7,7 +7,7 @@ kernel-arch: x86
 [build]
  debug-info: true
  image-file: arch/x86/boot/bzImage
- signed-code: true
+ signed-code: false
  vdso: true

 [image]
DEB_KERNEL_DISABLE_DEBUG=yes sbuild \ 
   --profiles='pkg.linux.notools nodoc nopython 
   pkg.linux.udeb-unsigned-test-build cross' \ 
   --no-arch-all \ 
   --host=arm64
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