

Patrick**Jul 4**


Since when does Armbian not expand the ROOTFS?

Franco_Gaetan**Jul 4**

Well when I've imaged from their website, booted from MicroSD card the first thing it says is that it has no space.

I was looking at your patches, I've been documenting everything on my github. Specifically the k1-x file and how many options are not enabled. When reading the the documentation for u-boot there's a lot that's not there like:

```
CONFIG_USE_PREBOOT=y CONFIG_PREBOOT="pci enum; usb start; scsi scan;
nvme scan; virtio scan"
```



rcman/BPI-F3
Working with my banana-pi F3 board and figuring it out

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GitHub - rcman/BPI-F3: Working with my banana-pi F3 board and figuring it out

Working with my banana-pi F3 board and figuring it out - rcman/BPI-F3

Franco

Patrick**Jul 4**

If you use the extlinux patch it won't require the k1-x env file. It will basically make the unit boot like any other board and also adds overlay support. Of course there are things I haven't tested U-BOOT wise, so I can't speak to every feature that may be available in that ENV file.

Franco_Gaetan**Jul 4**

Thanks.

Here's the docs from this link: [Bootimg from TPL/SPL — Das U-Boot unknown version documentation](#)

NVMe

This methods load the image from an NVMe drive. Required configuration settings include:

- CONFIG_SPL_PCI=y
- CONFIG_SPL_PCI_PNP=y
- CONFIG_SPL_NVME=y
- CONFIG_SPL_NVME_PCI=y
- CONFIG_SPL_NVME_BOOT_DEVICE (number of the NVMe device)
- CONFIG_SYS_NVME_BOOT_PARTITION (partition to read from)

To load from a file system use:

- CONFIG_SPL_FS_FAT=y or CONFIG_SPL_FS_EXT=y
- CONFIG_SPL_FS_LOAD_PAYLOAD_NAME=""

I wanted to know if this worked, that's the path I was going down.

Franco

Patrick

Jul 4

I have no clue. Best I was able to do using the ENV file was boot from a partition on a SD or EMMC and have the ROOTFS located on the NVMe.

From what I can tell there is no way to just straight boot the NVMe using that file. Maybe it requires flashing to SPI? Which is something I haven't figured out yet.

Franco_Gaetan

Jul 4

Thank you so much for your help. I just wanted to clarify some things. I can understand the changes to the source that are in the patches. So when you re-compile u-boot with the changes it will give you the files again like bootinfo_emmc.bin and FSBL.bin.

Are they still written to dev/mmcblk2boot0 as they are in the docs like below?

```
echo 0 | sudo tee /sys/block/mmcblk2boot0/force_ro sudo dd if=bootinfo_emmc.bin of=/dev/mmcblk2boot0 sudo dd if=FSBL.bin of=/dev/mmcblk2boot0 seek=512 bs=1 sync
```

Thanks Franco

Patrick

Jul 4

There seems to be diff ways and combinations of flashing the bins, but this is how I do it.

EMMC

```
echo 0 > /sys/block/mmcblk2boot0/force_ro
sleep .50
dd if="bootinfo_emmc.bin" of="/dev/mmcblk2boot0" bs=512 conv=notrunc
dd if="FSBL.bin" of="/dev/mmcblk2boot0" bs=512 seek=1 conv=notrunc
dd if="FSBL.bin" of="/dev/mmcblk2boot0" bs=512 seek=512 conv=notrunc
dd if="fw_dynamic.itb" of="/dev/mmcblk2" bs=512 seek=1280 conv=notrunc
dd if="u-boot.itb" of="/dev/mmcblk2" bs=512 seek=2048 conv=notrunc
sync
```

SDCARD

```
dd if="bootinfo_emmc.bin" of="/dev/mmcblk0" bs=512 conv=notrunc
dd if="FSBL.bin" of="/dev/mmcblk0" bs=512 seek=1 conv=notrunc
dd if="FSBL.bin" of="/dev/mmcblk0" bs=512 seek=512 conv=notrunc
dd if="fw_dynamic.itb" of="/dev/mmcblk0" bs=512 seek=1280 conv=notrunc
dd if="u-boot.itb" of="/dev/mmcblk0" bs=512 seek=2048 conv=notrunc
sync
```

EDIT: and yes, it will produce the same files using those patches.

lu_zero Luca Barbato

Jul 5

If you want ubuntu from nvme, you may take a recent bianbu (or build one using the instructions [here](#) , copy the bootloader to the emmc and replace the u-boot configuration with one that sets root=/nvme0n1p{ } in the final bootargs.

Once the upstreaming efforts complete things will get more smooth.

Franco_Gaetan

Jul 5

Patrick I have a few questions.

- the patching files, it seems some files are patched and some not. Are these already part of a build tree because I am having issues running the diff git commands. When I've dug down more I see there are other directories that were created like patches/spacemit and so on. Can I not download the changed files already?

Next thing is during my build it never creates FW_PAYLOAD I specify FW_PAYLOAD=y

when make is run, is it because all the patches have not been applied ?.

Your system, are you booting from EMMC and using NVME or are you booting from SD card and using NVME?

Sorry for all the questions. Just need to understand it all.

Thanks Franco

Patrick

Jul 5

My patches are meant to be patched against mainline; opensbi, u-boot and linux. If you are using the BPI or BL sources, you don't need most of the patches I'm using. To make ur life easier I would either pull mainline u-boot v2022.10 or git clone the BL sources and only apply patches 020 thru 023.

BL: <https://gitee.com/bianbu-linux>

I have the eMMC partitioned with a 100MB offset and flashed with u-boot.

```
sudo patrick@bananapif3:~$ sudo fdisk -l
Disk /dev/mmcblk2: 14.56 GiB, 15634268160 bytes, 30535680 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x4787fb22
```

Device	Boot	Start	End	Sectors	Size	Id	Type
/dev/mmcblk2p1		204800	30535679	30330880	14.5G	83	Linux

```
Disk /dev/nvme0n1: 238.47 GiB, 256060514304 bytes, 500118192 sectors
Disk model: KBG40ZNS256G NVMe KIOXIA 256GB
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x7ffb5003
```

Device	Boot	Start	End	Sectors	Size	Id	Type
/dev/nvme0n1p1		204800	1048575	843776	412M	83	Linux
/dev/nvme0n1p2		1048576	500117503	499068928	238G	83	Linux

Franco_Gaetan

Jul 5

Thanks for the info!

Much appreciated. Franco

Patrick

Jul 5

Precompiled bins if you want them; <https://github.com/pyavitz/binary/releases/download/060420/bpi-f3-u-boot-syslinux.tar.xz>

Franco_Gaetan

Jul 5

Thanks you're awesome! Franco

Franco_Gaetan

Jul 5

Hi,

I've been trying to do that but not having any luck. I'm trying to boot a kernel from TFTP. Even though I've make the ulmage from the kernel with mkimage it says it can't read the kernel format. The kernel is not compressed. I really wish I didn't have to deal with all this keys stuff for secure boot. I could care less about the box being hacked since I'm doing all the work.

I just want to the box to boot, SUPER EASY! I don't care how I force the boot to work the way I want. When I see the partition structure of bianbu it just makes me mad. Who the heck make their partition in that way? No One!

I should just be able to run the installer from micro sd card and install what ever I want where I want to. Not have to deal with the constant issues that I'd dealing with.

Franco

Franco_Gaetan

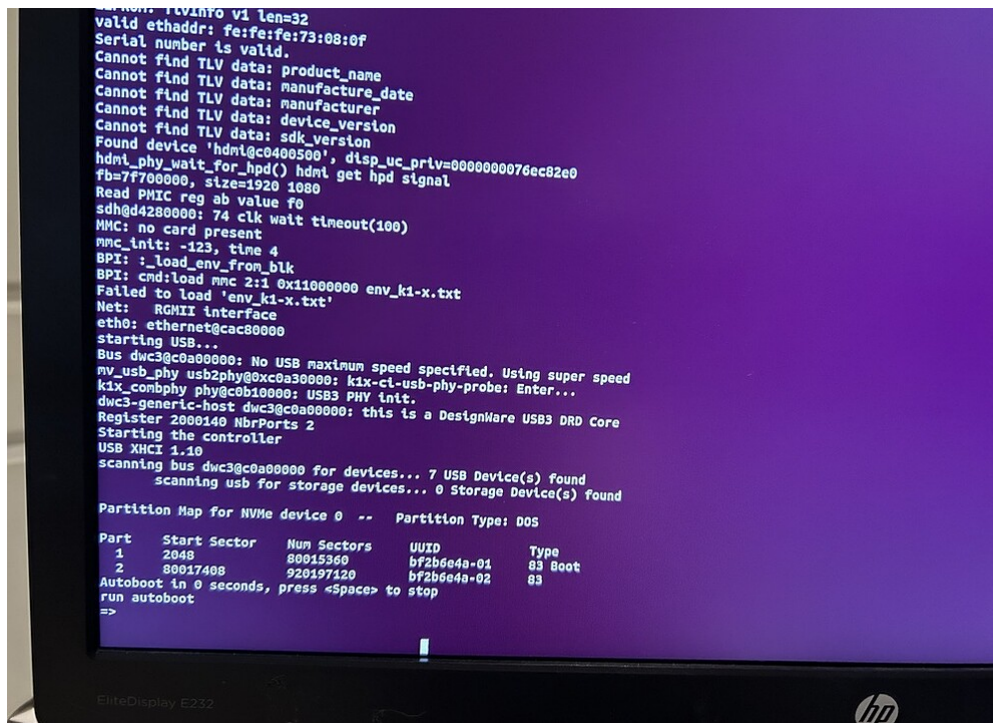
Jul 6

Hi again,

I'm making progress on booting and it shows my nvme partitions. I think my env files wrong.

Can you share what's in your file? Thanks Franco





Patrick

Jul 6

It is looking for a /boot/extlinux/extlinux.conf file. I left an example of one inside the precompiled u-boot archive I linked above. It appears you have BOOT partition, so on the BOOT partition create a dir “extlinux” and inside place the file “extlinux.conf”. Edit the file to fit your needs.

Franco_Gaetan

Jul 8

Well I can't say I'm having any luck booting from NVME. I have started from scratch so many times but nothing yet.

I do have a few more questions. Does the root partition need to be labeled rootfs or does not matter? I noticed in your example for extlinux.conf you have root=UUID which I have also tried.

Right now my NVME has 2 partitions. Partition 1 is boot and partition 2 us root.

I also did out find something interesting. You know when you image bianbu to anything it creates partitions 1 through 4 and each is labeled. Whell instead if the traditional DD command with seek and bs I basically DD the 4 files to their respective partitions and a boot menu appears which is very interesting.

Also while investigating extlinux I found an app call u-boot-menu which sets all the menu options up for you, another interesting find.

Just wanted to let you know that. Franco

Patrick

Jul 8

It doesn't matter what the label is. You can actually use root=LABEL= in place of root=PARTUUID= if you prefer.

Yeap. SYSLINUX is basically like a low rent GRUB with very basic menu options.

As for the Bianbu and BPI images, I've only ever looked them over, I've never booted one before.

I did recently make some changes to my patching and added BOOT SCRIPT support to it. So if you understand boot.scr thats now an option.

```
Starting the controller
```

```
USB XHCI 1.10
```

```
scanning bus dwc3@c0a00000 for devices... 4 USB Device(s) found
```

```
    scanning usb for storage devices... 0 Storage Device(s) found
```

```
Partition Map for NVMe device 0 -- Partition Type: DOS
```

Part	Start Sector	Num Sectors	UUID	Type
------	--------------	-------------	------	------

1	204800	843776	7ffb5003-01	83
---	--------	--------	-------------	----

2	1048576	499068928	7ffb5003-02	83
---	---------	-----------	-------------	----

```
Autoboot in 0 seconds, press <Space> to stop
```

```
Loading ...
```

```
1642 bytes read in 15 ms (106.4 KiB/s)
```

```
## Executing script at 02000000
```

```
34006068 bytes read in 2084 ms (15.6 MiB/s)
```

```
101542 bytes read in 24 ms (4 MiB/s)
```

```
6319892 bytes read in 398 ms (15.1 MiB/s)
```

```
26 bytes read in 21 ms (1000 Bytes/s)
```

```
Loaded overlay.txt: k1-uart2 k1-qspi
```

```
Overlaying k1-uart2 ...
```

```
263 bytes read in 21 ms (11.7 KiB/s)
```

```
Overlaying k1-qspi ...
```

```
262 bytes read in 22 ms (10.7 KiB/s)
```

```
Booting BananaPi F3 from mmc 0:1 ...
```

```
Bad Linux RISC-V Image magic!
```

```
Trying bootm ...
```

```
## Loading kernel from FIT Image at 10000000 ...
```

```
Using 'conf-default' configuration
```

```
Verifying Hash Integrity ... OK
```

```
Trying 'kernel' kernel subimage
Description: Linux 6.1.97
Type: Kernel Image
Compression: uncompressed
Data Start: 0x100000bc
Data Size: 34004480 Bytes = 32.4 MiB
Architecture: RISC-V
OS: Linux
Load Address: 0x01400000
Entry Point: 0x01400000
Hash algo: crc32
Hash value: 582f5d9d
Verifying Hash Integrity ... crc32+ OK
## Flattened Device Tree blob at 31000000
Booting using the fdt blob at 0x31000000
Loading Kernel Image
Loading Ramdisk to 76ead000, end 76ead106 ... OK
Loading Device Tree to 0000000076e91000, end 0000000076eacfff ... OK

Starting kernel ...
```

Franco_Gaetan

Jul 8

Actually that's where I get to as well. How long should I wait for the kernel to boot?

I've waited a bit.

Franco

Patrick

Jul 8

You should see something happening after that right away, unless you have logging and whatnots off. Are you using a custom kernel or something?

Could try removing console=both from the extlinux cmdline and set logging to 7.