**NAND FLASH FOR BPI-R4 AND BPI-R3**

**Step -1: sdcard boot:**

* Write the Bpi-r3 or Bpi-r4 image(.bin) to the sdcard (e.g., build-bpi-r4-1.3-01.0007-Jun06-2024-161331.bin).
* Flashing command: bash –x flasher.sh (partition) /dev/sda 0 build-img.bin(build-bpi-r4-1.3-01.1010-Sep12-2024-164440.bin) 7456 (device-name)bpi-r3/bpi-r4

**Step 2: Copy Firmware Image to NFS Share**

* On the build machine, copy the required flash\_bpi-r3\_emmc.sh or flash\_bpi-r4\_emmc.sh based on device and firmware image to /mnt/nfs-share (e.g., image-bpi-r4-1.3-01.1010-Sep04-2024-135840\_emmc.img.gz).
* Verify the firmware image is copied to the NFS share.

**Step 3: Prepare the SD Card with the BPI-R4 Image**

* Connect a UART-to-USB adapter to the UART port of the BPI-R4 board.
* Use a serial communication program (e.g., PuTTY or Minicom) to connect to the board with 115200 speed range.

**Step 4: Power Off the Device and Insert the SD Card**

* Power off the BPI device.
* Insert the prepared SD card into the SD card slot.
* Set both switches A and B to the "down" position for bpi-r4.
* Set both switches down (0000) position for bpi-r3.
* Power on the BPI board.

Note: toggle for bpi-r3: 1-up, 0-down

**Step 5: Nand flash configuration and file details**

* Once the device powers on, access the bootloader menu via the serial interface.
  1. Access the secure shell and select Option 30 (this may be a hidden option).
  2. Enter the IP address of the build machine.
  3. Specify the firmware image path: /mnt/nfs-share.
  4. Provide the firmware image name (the one copied to the NFS share).
  5. Press Y to confirm and continue.
* After the device boots from the SD card:

**6: Boot NAND gate and flash the image to emmc**

* Confirm that the firmware image has been successfully transferred from the NFS share to the NAND by checking the logs.
  1. For BPI-R4: Set switch A to "up" and switch B to "down" to initiate the NAND write operation.  
     For BPI-R3: Set the switch as 1010 to initiate the NAND write operation.
  2. The device will automatically reboot once the image is successfully flashed to the eMMC.
  3. The device may reboot again to finalize the operation.

**Step 7: Reboot the Device**

* After the firmware has been moved to NAND, reboot the device.
  1. Set switch A to "down" and switch B to "up" for bpi-r4.
  2. Set switch 0110 for bpi-r3
  3. Remove the SD card.

**Step 8: Verify Firmware and NAND Operation**

* When the device powers back on, check the firmware version to ensure it matches the newly flashed version (e.g., 1.3-01.1010).
* During the reboot, the device should boot from the eMMC.

**This completes the flashing process with the new firmware.**