Replicate an ESPRESSObin Ultra Installation

DRAFT

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TRACKED CHANGES

DATE	REVISION	PAGES AFFECTED
28 Apr 2022	00	Initial draft
11 May 2022	01	Updated procedure to use tar instead of dd. Informed that ESPRESSObin eMMC sizes vary

1. Purpose of this document

The purpose of this document is to provide instructions for replicating a pre-configured ESPRESSObin-Ultra to a new ESPRESSObin-Ultra before Installation into a Cube by manufacturing. The ultimate goals are to enable more comprehensive end-of-line testing and dramatically reduce configuration time in the field.

This document is applicable to the Fluence internal project team and site contractors, including the latter's subcontractors, all of whom shall conform to its requirements, including the applicable implementing procedures identified herein, as well as to those standards and specifications found in other applicable contractual, engineering, quality assurance, procurement, construction, and commissioning documents.

2. PROCEDURE

- Use (or format) a bootable FAT32 USB drive 4GB+.

- Copy files from SharePoint, [Replicate an ESPRESSObin Ultra Installation](#) to the drive.

- Connect to ESPRESSObin-Ultra with a console cable (USB micro to USB A).

- Install USB into ESPRESSObin-Ultra.

- Boot ESPRESSObin-Ultra.

- Hit any key to stop autoboot (you have a few seconds).

- Update bootloader

  - Marvell>> bubt espressobin_ultra-bootloader-cpu-1000-ddr4-1cs-1g-atf-eff6ede8-uboot-g926d08c7ce-utils-52d9aef-20220307-rel.bin spi usb

- Boot from USB.

  - Marvell>> usb reset; fatload usb 0 $loadaddr recovery.bin; source $loadaddr

- Press enter, next – check/correct eMMC filesystem corruption

  - # fsck.ext4 -y /dev/mmcblk0p1

- Mount usb & eMMC

  - # mount /dev/sda1 /media

- **OPTION 1**: Run mkemmc.sh command to restore to eMMC disk. Note: This will take a long time.

  - /root/mkemmc.sh /media/ebinx-fluence-rootfs.tgz

- **END OPTION 1**

- **OPTION 2:** Run tar command to restore to eMMC disk. Note: This will take a long time.

  - # mount /dev/mmcblk0p1 /mnt

  - # tar -zxvf /media/ebinx-fluence-rootfs.tgz -C /mnt

  - # sync

- **END OPTION 2**

- After restore completed.

  - umount eMMC.

    - # umount /mnt

  - umount usb.

    - # cd

    - # umount /media

- Reboot the device.

  - # reboot

- Log in to the device to umask the network service

  - systemctl unmask systemd-networkd.service

  - netplan generate

- netplan apply

- Apply Cube Program Updates

  - mount /dev/sda1 /media/disk0

  - mkdir /update

  - cd /update

  - cp /media/disk0/update.tar .

  - cp /media/disk0/update-remote.sh .

  - chmod 755 *.sh

  - Liquid Cooled Long Duration Cubes

    - ./update-remote.sh LC-LD

  - Liquid Cooled Short Duration Cubes

    - ./update-remote.sh LC-SD

  - Air Cooled Cubes

    - ./update-remote.sh LC-LD