`BeagleBone Black

Installed pre-built Linux 16.04 LTS from flasher:

* BBB-eMMC-flasher-ubuntu-16.04-console-armhf-2016-06-09-2gb.img.xz
* User: ubuntu pw: temppwd
* Wired (eth0) is DHCP. Connect monitor and keyboard to log in first time and use ifconfig to get current IP address

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dd image: FRC2017\_base.img

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Had trouble setting static IP address 192.168.0.8, (DHCP keeps coming back after reboot)

Workaround is to add a second and third (virtual) address

sudo nano /etc/network/interfaces

auto eth0:1

iface eth0:1 inet static

address 192.168.0.12

netmask 255.255.255.0

network 192.168.0.0

broadcast 192.168.0.255

gateway 192.168.0.1

auto eth0:2

iface eth0:2 inet static

address 10.42.76.12

netmask 255.355.255.0

network 10.42.76.0

broadcast 10.42.76.255

gateway 10.42.76.1

sudo apt-get update

sudo apt-get upgrade

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dd image: FRC2017\_update.img

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Install OpenCV 3.1

sudo apt-get install cmake git libgtk2.0-dev pkg-config libavcodec-dev libavformat-dev libswscale-dev

sudo apt-get install python-dev python-numpy libtbb2 libtbb-dev libjpeg-dev libpng-dev libtiff-dev libjasper-dev libdc1394-22-dev

sudo apt-get install zip

Insufficient disk space in eMMC to build OpenCV.

After boot to eMMC, insert bootable SD card (it has 3GB free and a home dir owned by ‘ubuntu’)

sudo mkdir card

sudo chmod 777 card/

sudo mount -v /dev/mmcblk1p1 /media/card

cd card/home/ubuntu

mkdir build

cd build/

wget <https://github.com/Itseez/opencv/archive/3.1.0.zip>

unzip 3.1.0.zip

cd opencv-3.1.0

mkdir release

cd release

cmake -D CMAKE\_BUILD\_TYPE=RELEASE -D CMAKE\_INSTALL\_PREFIX=/usr/local ..

make

sudo make install

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dd image: FRC2017\_opencv310.img

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Use Samba to share the whole file system

sudo apt-get install samba

sudo nano /etc/samba/smb.conf

(add the following at the end)

[**ubuntu**]

path = /

valid users = **ubuntu**

read only = no

(Create samba user password for ‘ubuntu’

**sudo smbpasswd -a Ubuntu**

sudo apt-get install gdb

sudo apt-get install gdbserver

sudo apt-get install dos2unix

On the development system:

* Install NetBeans 7.4
  + Built Debug/Release, Debugged OK on BBB, install and run OK – everything works like last year except now on Linux 16.04 with OpenCV 3.1.0
* 🡪
* dd image: FRC2017\_dev.img
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sudo apt-get update

sudo apt-get upgrade

sudo apt-get install libjpeg8-dev imagemagick libv4l-dev

Created folder to receive images and text

cd /home/Ubuntu

mkdir log

chmod 777 log

Downloaded and built 2017\_VisionSystem for Release

used install.sh to make it ready to run

dos2unix \*.sh

./install.sh

Tested runs ok from command line:

viking\_mpg\_streamer

in /etc/init.d, create a startup scrip called S06viking\_streamer containing the following

#! /bin/sh

### BEGIN INIT INFO

# Provides: rc.local

# Required-Start: $all

# Required-Stop:

# Default-Start: 2 3 4 5

# Default-Stop:

# Short-Description: Run viking\_mpg\_streamer

### END INIT INFO

PATH=/sbin:/usr/sbin:/bin:/usr/bin

. /lib/init/vars.sh

. /lib/lsb/init-functions

case "$1" in

start)

/usr/bin/viking\_mpg\_streamer

;;

restart|reload|force-reload)

echo "Error: argument '$1' not supported" >&2

exit 3

;;

stop|status)

# No-op

exit 0

;;

\*)

echo "Usage: $0 start|stop" >&2

exit 3

;;

esac

in /etc/rc5.d, create a symbolic link to the startup script

sudo chmod +x /etc/init.d/viking\_streamer

cd /etc/rc5.d

sudo ln -s ../init.d/S06viking\_streamer S06viking\_streamer