# Setting up the Beagle Bone with blank SD card

1. Insert SD card into SD card slot (must be 8GB or higher) with the AM3358 Debian 10.3 2020-04-06 4GB SD IoT operating system image installed.
2. Press and hold the user button before plugging in the board and wait until all four LED lights turn on.
3. Connect to the board VIA cloud9 IDE interface (<http://192.168.7.2:3000>). This usually takes time to connect so be patient with the board.
4. Once you are in the IDE open a terminal.
5. Either connect the board through ethernet or WIFI. Steps for connecting are found here <https://beagleboard.org/upgrade>
6. Run the following commands
   1. cd /opt/scripts
   2. git pull
   3. sudo tools/update\_kernel.sh
      1. When asked for password the default is set to “temppwd”
   4. sudo shutdown -r now
7. Turn the Beaglebone back on and run the following commands
   1. sudo apt update
   2. sudo apt upgrade
   3. y
   4. sudo apt install -y ti-tidl mjpg-streamer-opencv-python
   5. sudo /opt/scripts/tools/version.sh
   6. apt-get install python-tk
   7. sudo apt-get -y install lxde lxde-core lxde-icon-theme
8. Restart the Beaglebone with the HDMI plugin to the beaglebone and you should see the LXDE display popup. The login is username:debain and password: temppwd.
9. Open a terminal and do a “git clone *dispenser repo*” to then download the code to the beagleBone.
10. Run the “main.py” file with the command “python3 main.py”

# Hardware connection setup for Beagle Bone black prototype

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| --- | --- |
| **Beagle pin** | **connection** |
| P8\_19 | Angle step |
| P8\_7 | Angle Dir |
| P8\_9 | Angle Slp |
| P8\_15 | Angle MS1 |
| P8\_17 | Angle MS2 |
| P8\_8 | Angle Ena |
| P8\_13 | Trickle Step |
| P8\_10 | Trickle Dir |
| P8\_12 | Trickle Slp |
| P8\_14 | Trickle MS1 |
| P8\_16 | Trickle MS2 |
| P8\_26 | Trickle Ena |
| DGND | acc GND |
| P9\_40 | Read Angle |
| P8\_27 | LCD\_VSYNC |
| P8\_29 | LCD\_HSYNC |
| P8\_31 | LCD\_DATA14 |
| P8\_33 | LCD\_DATA13 |
| P8\_35 | LCD\_DATA12 |
| P8\_37 | LCD\_DATA8 |
| P8\_39 | LCD\_DATA6 |
| P8\_41 | LCD\_DATA4 |
| P8\_43 | LCD\_DATA2 |
| P8\_45 | LCD\_DATA0 |
| P8\_28 | LCD\_PCLK |
| P8\_30 | LCD\_AC\_BIAS |
| P8\_32 | LCD\_DATA15 |
| P8\_34 | LCD\_DATA11 |
| P8\_36 | LCD\_DATA10 |
| P8\_38 | LCD\_DATA9 |
| P8\_40 | LCD\_DATA7 |
| P8\_42 | LCD\_DATA5 |
| P8\_44 | LCD\_DATA3 |
| P8\_46 | LCD\_DATA1 |
| DGND | Speaker Gnd |
| P9\_22 | Speaker output |
| DGND | Haptic GND |
| P9\_24 | Haptic |