# Petalcontroller Setup Instructions (Version 1.1)

1. **Transferring the petalcontroller image to your beaglebone**
   1. Dowload the image from the docDB and unzip:

https://desi.lbl.gov/DocDB/cgi-bin/private/ShowDocument?docid=2623

* 1. Load the image onto a 4 GB or bigger formatted SD card via a program like Win32 disk imager or the dd command in linux.
  2. Insert the SD card into a powered off beaglebone and power the device up. You will see a back and forth shifting LED pattern which indicates that the image is being transferred (this will take ~20 minutes).
  3. When the LED pattern stops, turn the beaglebone off and remove the SD card. Power it back on and your petalcontroller can now be configured.

1. **Configuring the petalcontroller**
   1. All configuration settings are now found in /home/msdos/dos\_home/dos\_config. The petalcontroller service now starts automatically and initializes the CAN channels/device overlays/petalcontroller service. The following scripts/configuration files are no longer used and have been removed: startpc.sh, caninit.sh, caninit.py, devtree.py, devtree.sh, petalcontroller.ini, and petalcontroller.conf.
   2. Open /home/msdos/dos\_home/dos\_config/start\_PETALCONTROLLER and change the PC# for your device (see comments of this file for namespace). The freshly flashed beaglebone will auto-start as PC99. Please change it as soon as possible. The number 99 will be reserved for newly flashed devices to avoid disturbing existing petalcontrollers.
   3. To give the petalcontroller a stable, human-readable dhcp address:
      * See what names are already taken: <https://desi.lbl.gov/trac/wiki/DOS/LBNLhosts>
      * Open a terminal and ssh into the beaglebone (see <https://desi.lbl.gov/trac/wiki/FPS/PosFidBeaglebone> for information about how to get the beaglebone’s numeric ip address or follow the process given here: <https://beagleboard.org/getting-started>)
      * Using the nano text editor:
        1. sudo nano /etc/hostname
        2. replace ‘beaglebone’ with the name you want to give (eg. pc45)
        3. save and exit
        4. sudo nano /etc/hosts
        5. replace “127.0.1.1 beaglebone.localdomain beaglebone” with “127.0.1.1 pc45.localdomain pc45”
        6. save and exit
        7. type “hostname” in the terminal to verify that the hostname has changed, you may have to reboot the beaglebone
        8. you should now be able to ssh into an address such as pc45.dhcp.lbl.gov
      * Make sure to update <https://desi.lbl.gov/trac/wiki/DOS/LBNLhosts> with this information
   4. If using the database, link setup\_site.sh to your site specific setup file (currently generic site file is used). If needed, set the host name in /home/msdos/dos\_home/dos\_config/setup\_dos.sh.
2. **Useful commands for monitoring the petalcontroller service**
   1. **‘dosctl restart/stop/start/status** – restarts, starts, stops, or gets status from the autoDOS service on the petalcontrollers
   2. **‘doslogs –f’** – shows messages from the petalcontroller service
3. **Running the positioner control GUI**
   1. The positioner control GUI is run with the command ‘poscontrol’ from any directory (once you SSH into the beaglebone with the –Y flag set). No petalcontroller number is passed in as an argument since this information is now read from start\_PETALCONTROLLER. The GUI can now run positioners on different CAN buses, though the syntax for this still needs to be finalized.