GoPiGo and Raspberry Pi – SD Card Image Installation Guide for Linux

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Synopsis: This is a brief guide that will cover how to flash an installation image to the SD card for the GoPiGo project.

1. Download the latest Raspbian Raspberry Pi image from here
   1. <http://downloads.sourceforge.net/project/dexterindustriesraspbianflavor/2015.03.20_Dexter_Industries_wheezy.rar?r=http%3A%2F%2Fsourceforge.net%2Fprojects%2Fdexterindustriesraspbianflavor%2F&ts=1430176602&use_mirror=iweb>
   2. It’s a 1.1GB file, so be patient in downloading
2. The Dexter Industries website covers how to install the image using Windows and Mac OS X (http://www.dexterindustries.com/howto/raspberry-pi-tutorials/install-raspbian-for-robots-image-on-an-sd-card/). This guide will focus on the Linux installation (which is significantly easier/shorter)
3. Using a Linux laptop of any Debian-based distribution (K/X/Ubuntu, Linux Mint, etc), issue the following commands *exactly*. **Linux is case-sensitive!!!!**
   1. sudo apt-get update && sudo apt-get install dcfldd –y [this command updates system software first, and then installs a program called dcfldd, which is a command-line program that lets you “install” the earlier downloaded image to an SD card. The advantage of this program over the built-in ‘dd’ command is it will show a progress bar, so you know how much time is left]
   2. cd ~/Downloads [This command navigates into the users’ download folder, where the earlier downloaded .rar file will be located]
   3. unrar e 2015.03.20\_Dexter\_Industries\_wheezy.rar [this command extracts the .rar file into the current directory]
      1. Type ‘ls’ and you will see a list of all the files/folders in the directory. You should see something like 2015.03.20\_Dexter\_Industries\_wheezy, or similar. This is the file we want.
   4. df –h, and just take a note of the output.
   5. Now we will actually write the file to the SD card. At this point, insert the micro-SD card into an SD card adapter and insert it either into the computer or an SD card reader
   6. df –h again, and look for what has changed. You are looking for something like /dev/sdb or similar. Be careful! If you select the wrong device, it will ERASE THE HARD DRIVE ON THE COMPUTER. Check with a TA or professor before issuing this command.
      1. A brief explanation: The way hard drives/devices on Linux are displayed are by a /dev/sdXX notation. You might see /dev/sda1, /dev/sdb2, etc. What this means is, sda is the first hard drive or physical disk, sdb is the second disk, etc. So a = 1st, b = 2nd, etc. The 1 or 2 after the letters is the PARTITION number. So /dev/sda1 is the first disk, first partition. /dev/sdb2 is the 2nd disk, second partition, and so on. What we are doing in this command is using df –h, which will list all of our current drives. Then we insert the memory card, issue the command again, and look to see what changed. That is the device we want. But in this case, we will want the /dev/sdX, without the number at the end. So if it’s /dev/sdb2, we just want the /dev/sdb part.
   7. Issue the following command EXACTLY. Remember to press ‘tab’ as you’re typing and Linux will autocomplete large file names. If that doesn’t work, carefully type it out.
      1. sudo dcfldd if=2015.03.20\_Dexter\_Industries\_wheezy.img of=/dev/sdb
      2. the last part, /dev/sdb, will be based on what your device name is for the SD card. Again, be careful issuing this command!
   8. Press enter and wait for the image to write to the SD card, which shouldn’t take too long.
   9. Done! It seems like a lot of steps, but is really only a few. The explanations/understanding take longer than the actual commands. Now the Raspberry Pi can be set up for further use.