To flash (update) the firmware of the D6, you have a couple of different options or ways. In this document, I will show you two options. One using the Arduino IDE (Integrated Development Environment) and the other using a program called Xloader. The Arduino is great if you have the original source code and you want to make specific changes to your machine's firmware. The Xloader program is easier to use and it idea if you have a "hex" file, which is just a compiled version of the source code. Think of it as an APP that your 3D printer can run.

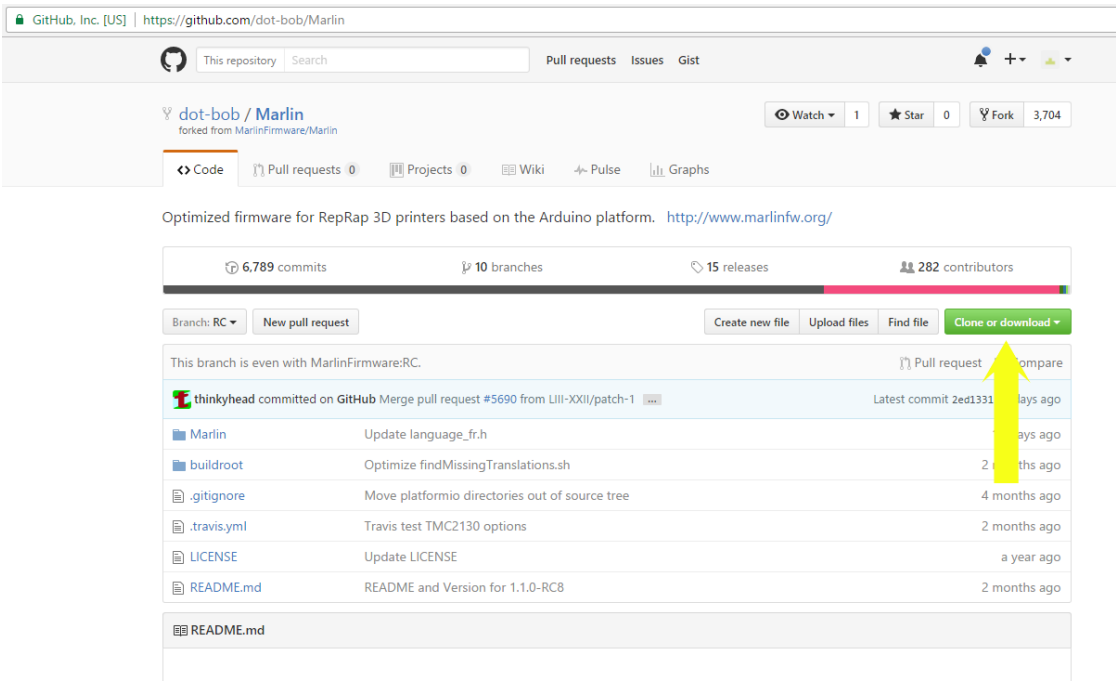
Method 1:

For uploading firmware (machine control settings) you need to install Arduino software. You can download the Arduino IDE from:
https://www.arduino.cc/en/Main/Software

You want the latest version (this version of Marlin 1.1rc8 for D6 was compiled with version 1.8.1) but any version past 1.8 will be fine. Note, the Arduino IDE is a pretty large file, so it can take a while to download. I also recommend the Installer version as it will associate the Marlin.ino file with the Arduino IDE, allowing you to double click on that file to launch the whole Marlin project into the Arduino IDE.
NOTE: If you are using something other than Windows, the Arduino IDE works for Apple Mac, as well as other Linux distributions (including the Raspberry Pi). This guide is targeted to the Windows platform.

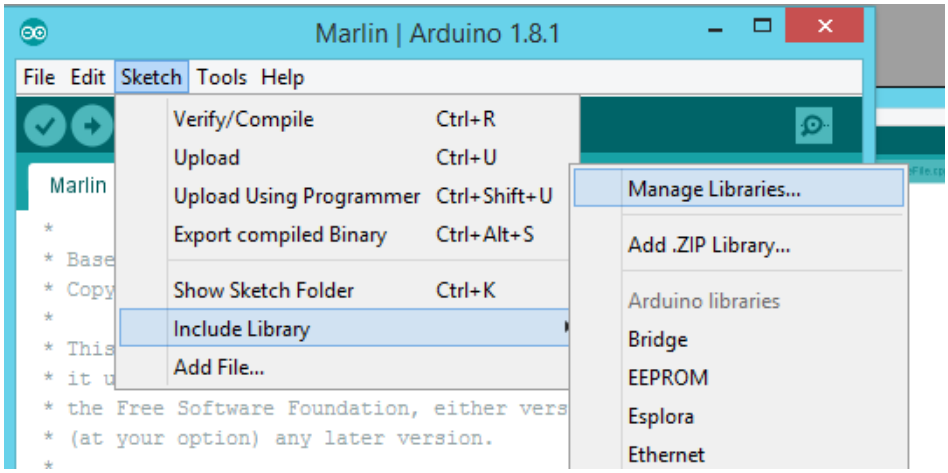
If you have not already installed the Arduino IDE, do that now.

You will also need to download the Marlin D6 port from Rob Mendon's Github (an online repository for source code files) at the following:
https://github.com/dot-bob/Marlin/tree/Wanaho-Duplicator-6
Download the project by selecting "Clone or Download" button in the upper left hand of the window. When pressed, it will give you an option to Clone With HTTP or "Download Zip". Press "Download Zip" and save the file.

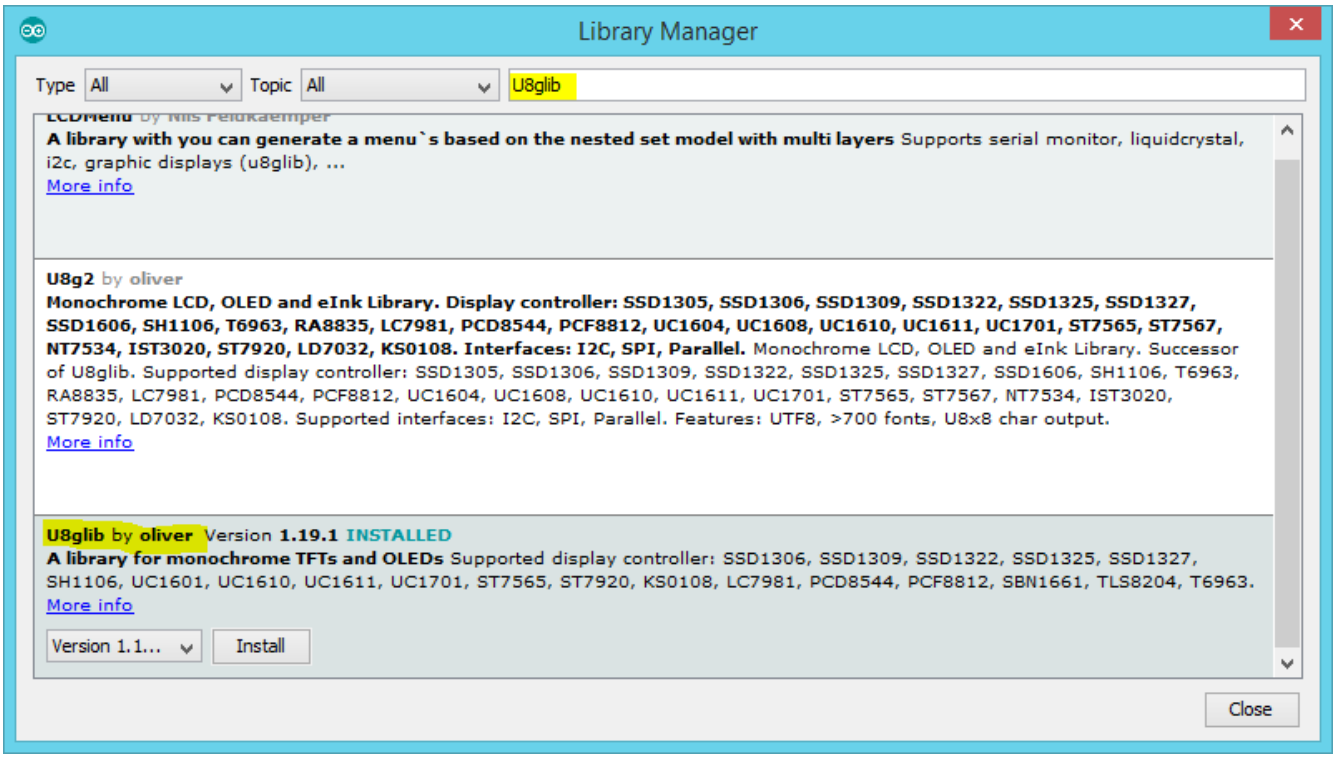


After it is downloaded, extract the Marlin folder to where you can find it. Open the folder and locate the file “Marlin.ino”. Double click this file and the Arduino IDE will open.

Now before we can build Marlin, we needs some addition files called libraries. These are very easy to install, as the Arduino IDE has a function to search and download libraries.
NOTE: if you try to build the project without downloading the necessary libraries, you will get compilation errors.
From the Arduino IDE menu bar, click Sketch → Include Library → Manage libraries.

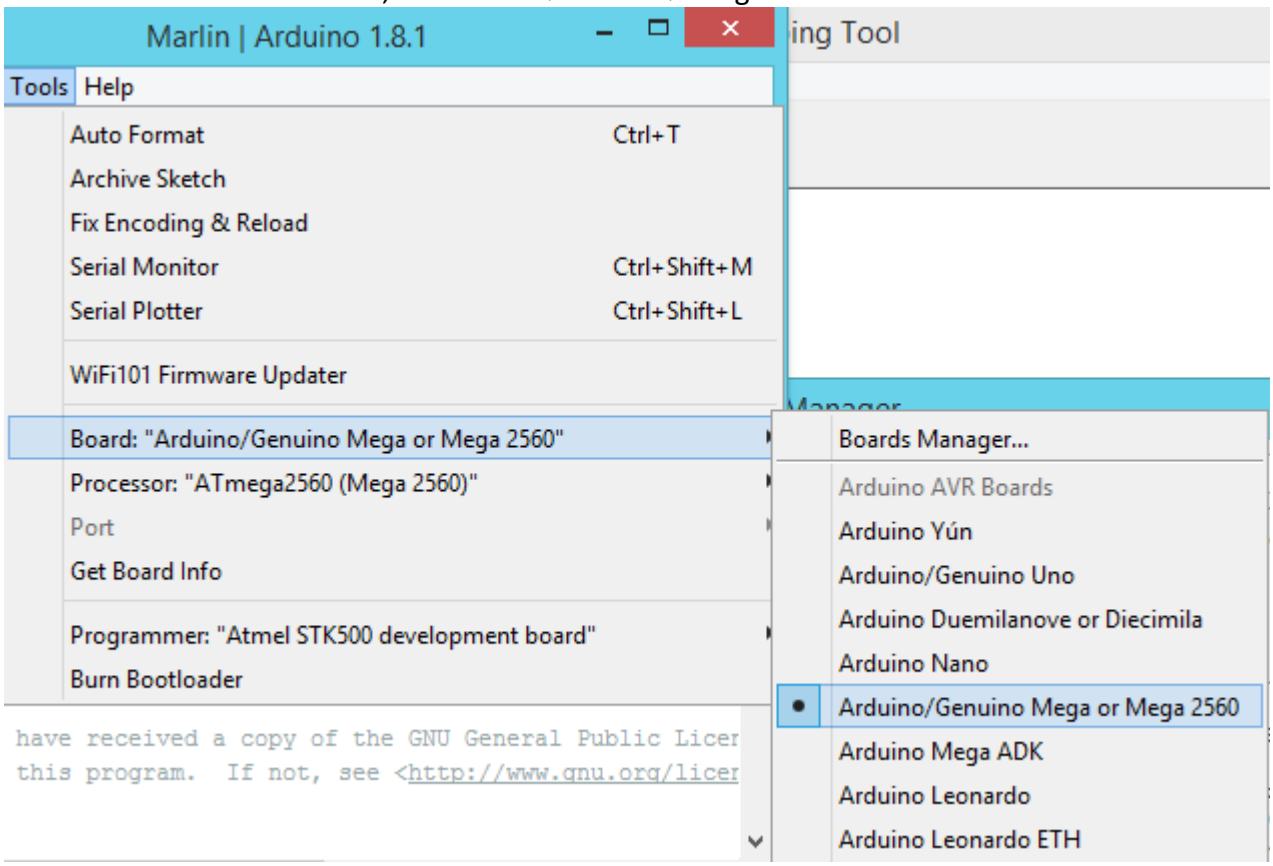


In the library manager scroll down to U8glib and click install.



Now that the Arduino IDE is all set to compile our Marlin source code, we need to make sure the IDE can talk to the printer. Make sure the printer is plugged in and turned on. Also make sure the USB cable is connected from the Windows PC to the D6.

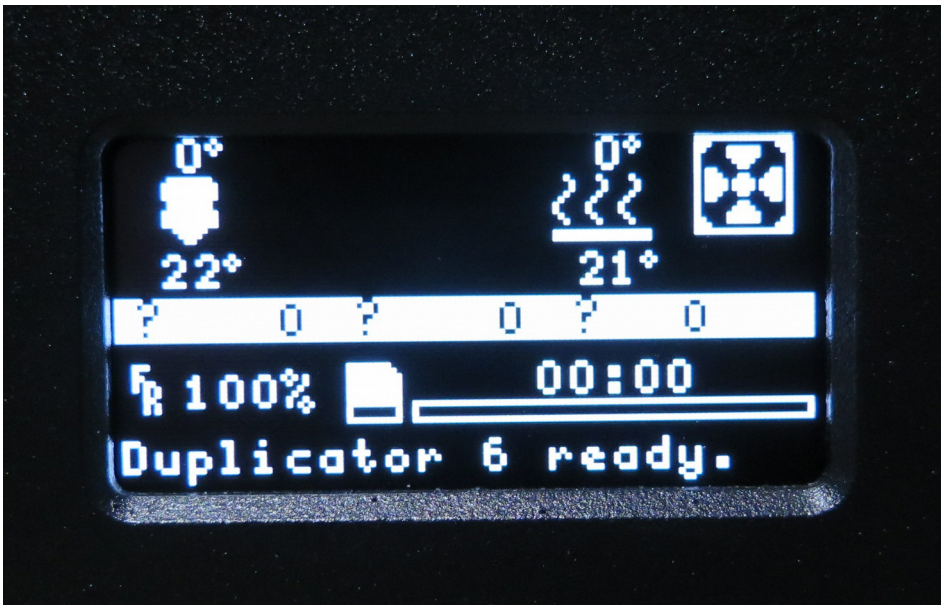
You need to tell the IDE that you have an Arduino Mega 2560.
From the Arduino IDE menu bar, click Tools → Board → Mega 2560.



You now need to tell it which COM port your printer is connected to. The IDE is pretty good at listing only valid COM ports. If nothing else is connected to your Windows PC (COM port wise) it will be the only COM port listed. Select the correct COM port. If you are unsure, select the "Get board info" and the IDE will ask the 3D printer what type of Arduino board it has. This is a pretty good way of knowing if your printer is talking to your computer. If you have multiple COM ports to choose from, and the "Get board info" does not return valid information, then you have not selected the correct COM port. Reselect and try again.

Also make sure all other programs that can communicate with the 3d printer like Pronterface, Repetier or S3D are not running.

Press the "Build and Upload" button. It will take about 5 minutes (depending on speed of your Windows PC) to build all the code and upload the new firmware to your printer. When it is done building your printer will restart and the display will now greet you with this:



Congratulations! Your printer is now updated with the latest and greatest Marlin firmware.

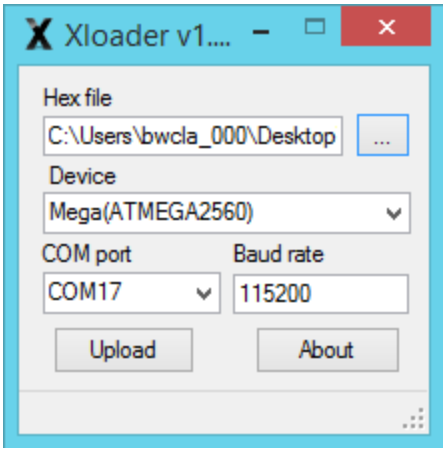
Method 2:
How to Install if you only have the HEX file.

You need to download the Marlin D6 port from Rob Mendon's Github (an online repository for source code files) at the following:
https://github.com/dot-bob/Duplicator-6-Marlin-Binary

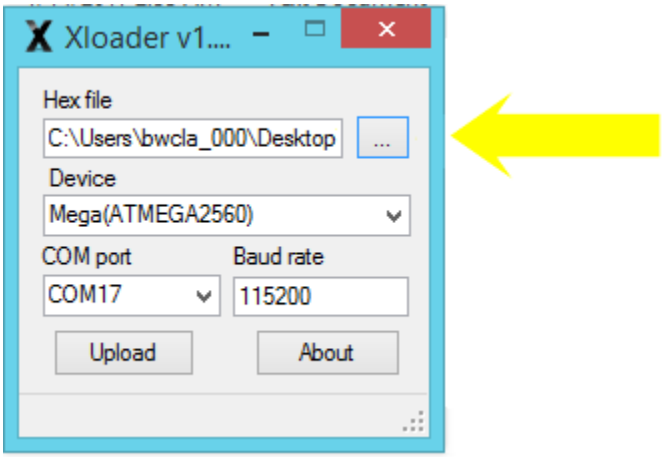
Download the project by selecting "Clone or Download" button in the upper left hand of the window. When pressed, it will give you an option to Clone With HTTP or "Download Zip". Press "Download Zip" and save the file. After it is downloaded, extract the Marlin folder to where you can find it. Open the folder and locate the file "Duplicator 6 Marlin 1.1.0-RC8 Version 4.hex". Note, as the firmware is updated, the file name may change, but it will always end in .HEX

Included in the folder is a program called Xloader. This is the program that we will use to "flash" (upload the hex file to the 3D printer).
If Xloader is not in the folder or you need to download the latest version, it can be found here:
http://russemotto.com/xloader/

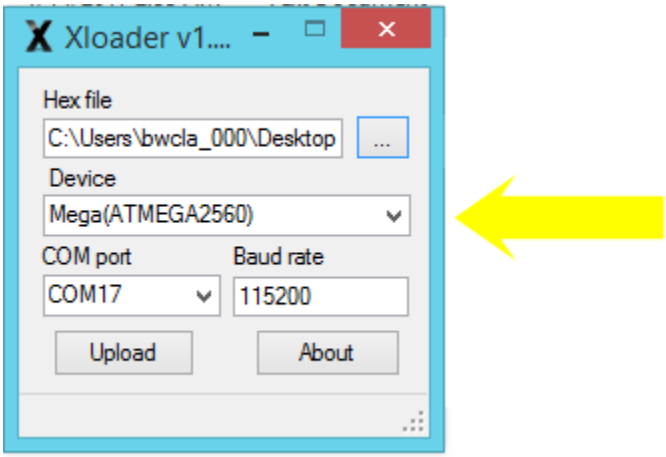
With your D6 machine powered up and connected to your Windows PC, we are going to flash the new firmware. There is nothing to install, so just extract the folder where it is easy to find (Desktop is a good starting place). Open the folder and look for Xloader.EXE. Double click on the icon and you should be greeted with this window:



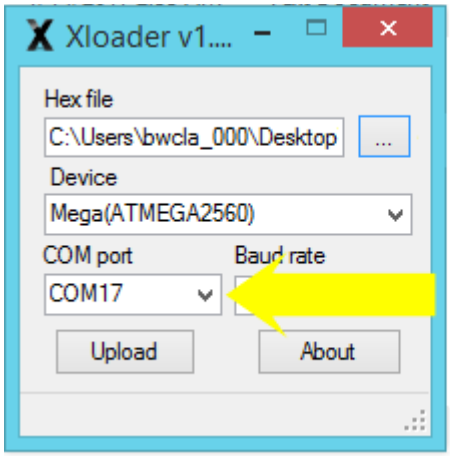
We need to load the “Duplicator 6 Marlin 1.1.0-RC8 Version 4.hex” file. Press the “…” button to open an explorer window and locate the “Duplicator 6 Marlin 1.1.0-RC8 Version 4.hex” file.



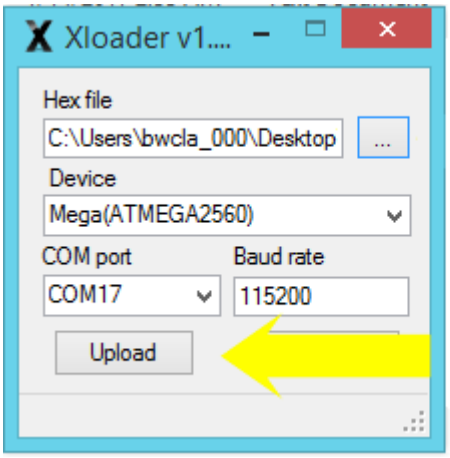
We now need to select “Mega(ATMEGA2560)”



Finally, we need to select the correct COM port that the D6 is on. Usually, Xloader will only show you valid COM ports.

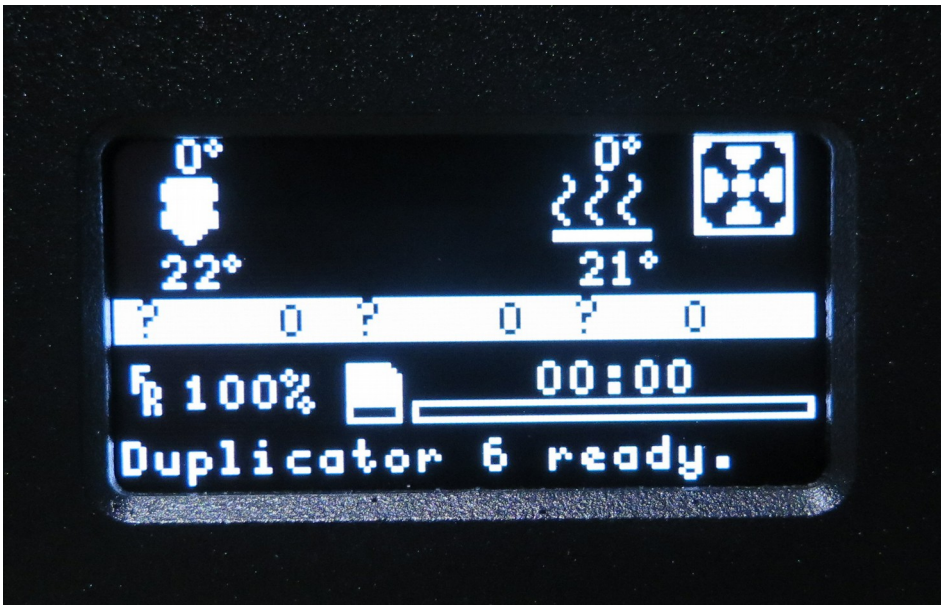


And finally, press Upload.



If all goes well, your machine will make a “thunk” noise and then it will reboot. The upload should take about 3 minutes. If it takes more than 5 minutes, Xloader was unable to talk to the printer. Verify that the COM port is correct and that your printer is powered on. Readjust the COM port and try again.

Congratulations, you have a NEW printer!!!
Your printer will reboot and you should be greeted by this screen:



This is your new “Home screen” or Info screen.

Bruce Clark – Documentation
Rob Mendon – Firmware porting to Wanhao D6