

[2016 Spring] Wireless Networking - Fundamentals and Applications

lab1 - Zigduino Hardware + Arduino Software Installation Guide (for Mac/ Windows)

1. Download and Install Arduino Software 1.0.5
<http://arduino.cc/en/Main/Software#.UwRzVUKSz5U>
2. Download Zigduino Source
<https://github.com/logos-electromechanical/Zigduino-1.0/archive/new-extension.zip>

For Mac

Unzip Zigduino-1.0-new-extension.zip, and open
“Zigduino-1.0-new-extension” directory,
Rename “hardware” directory to “hardware_old” directory,
Unzip zigduino-1_0.zip, and there will be a “hardware” directory,
Copy this “hardware” directory to ~/Documents/Arduino/

You also can do the above things by the following commands:

```
1 unzip Zigduino-1.0-new-extension.zip
2 cd Zigduino-1.0-new-extension
3 mv hardware hardware_old
4 unzip zigduino-1_0.zip
5 cp -r hardware ~/Documents/Arduino/
```

For Windows (**Assume the Arduino app is installed on C:\ drive**)

Unzip Zigduino-1.0-new-extension.zip, and open
“Zigduino-1.0-new-extension” directory,
Rename “hardware” directory to “hardware_old” directory,
Unzip zigduino-1_0-win.zip, and there will be a “hardware” directory,
Copy this “hardware” directory to C:\Program Files\Arduino\ (You may
rename or delete the “hardware” directory in the C:\Program Files\Arduino\
first)

3. Install other required kit

For Mac (**Assume the Arduino app has been moved to /Applications/**)

Download and install CrossPack - AVR
<http://www.obdev.at/products/crosspack/download.html>

Go to /Applications/Arduino.app/Contents/Resources/Java/hardware/tools/
Rename “avr” directory to “avr_old” directory
Create a new “avr” directory
Copy everything in the /usr/local/CrossPack-AVR/ to /Applications/
Arduino.app/Contents/Resources/Java/hardware/tools/avr/

You also can do the above things by the following commands:

```
1 cd /Applications/Arduino.app/Contents/Resources/Java/hardware/tools/  
2 mv avr avr_old  
3 mkdir avr  
4 cp -r /usr/local/CrossPack-AVR/* avr
```

Install FTDI Driver (If your OS X version is 10.9 Mavericks , you need to uninstall the FTDI driver which is developed by Mac first, and then install the origin version of FTDI Virtual COM Port Driver. You can ignore this step if your OS X version is before 10.9.)

To uninstall the FTDI driver developed by Mac, use the following commands:

```
1 cd /System/Library/Extensions/IOWUSBFamily.kext/Contents/PlugIns  
2 sudo mv AppleUSBFTDI.kext AppleUSBFTDI.disabled  
3 sudo touch /System/Library/Extensions
```

Then restart your computer

After restarting, download and install the origin version of FTDI VCP driver
<http://www.ftdichip.com/Drivers/VCP.htm>

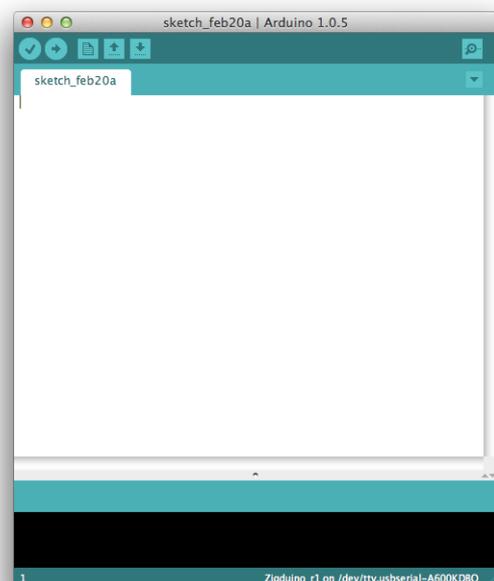
For Windows

Download and install FTDI Driver

<http://www.ftdichip.com/Drivers/VCP.htm>

4. Testing

You will need a Zigduino r1 board and a USB to Mini USB cable connected to your computer. The PWR LED will light up.



Open your Arduino application, Select Tools -> Board -> Zigduino_r1 in the toolbar on the top of the screen.

Select Tools -> Serial Port -> /dev/tty.usb/*

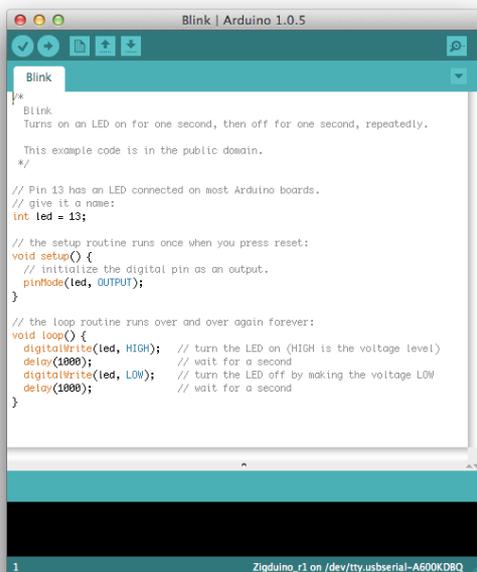
Now we are going to build a very simple project, select File -> Examples -> 01.Basics -> Blink

Press the “Verify Button” to compile code.

A message “Done Compiling” will show up if succeeded.

Press the “Upload Button” to compile code and upload the program to the board.

A message “Done Uploading” will show up if succeeded.

A screenshot of the Arduino IDE interface. The window title is "Blink | Arduino 1.0.5". The main editor area shows the code for the "Blink" example. The code includes comments explaining the setup and loop functions, and the actual code for initializing the LED pin and toggling it on and off with delays. The status bar at the bottom indicates the board is "Zigduino_r1 on /dev/tty.usbserial-A600KDBQ".

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If everything is OK, you will see there is a blinking LED(L) on the board.

Otherwise, make sure every step has been done correctly.

You can also ask teammates or TAs for help! =)

Reference

Arduino in OS X 10.9 Mavericks - Serial Port Issues

<http://forum.arduino.cc/index.php?topic=198539.0>