

# TinyOS Installation

## Installing JDK 1.6

1. Make sure that your install JDK in a folder that has no spaces in it's name. For example C:\Java. PS: The installation wizard will default to "C:\Program Files\Java" Make sure that you change it.
2. Time to check that the java compiler is working correctly. To do so go to the command prompt and type "*javac -version*" if you got "command not recognized error..." you have to set your environmental variables.

### To set the environmental variable

1. Right click on my computer and choose properties.
2. Go to the advanced tab.
3. Click on environmental variables.
4. Look for the PATH variable in the system variables and double click on it.
5. Add the following to the beginning of the value line "c:\xxx\bin;" don't forget the ";" at the end. xxx is where JDK is installed.
6. Test your java again and make sure it's working

## Installing Cygwin

1. Start the setup.exe file then choose installing from a local folder
2. The installation wizard will automatically point to the correct directory "Cygwin-files"
3. Choose the installation folder. It's recommended to keep the Default folder or choose "C:\cygwin"
4. Finish the installation wizard.

## Installing TinyOS

1. Make sure that you have all the folder needed (MSP430, specificTools, TOS).
2. Copy the 3 folder to cygwin root i.e. "C:\Cygwin".
3. Start Cygwin by double click on the icon on your desktop. PS if you're using Windows Vista you'll have to right click and choose "run as administrator".
4. Navigate to the MSP430 folder by typing "`cd /MSP430`"
5. In each folder you'll find a text file called `commands.txt`
6. You must execute these commands in order. All what you have to do is copy and past the commands.
7. When you're finished with a folder navigate to the next one in order.
8. After installation is done you need to make sure that all files are installed do so by typing "`tos-check-env`" this will start a script that will check for all TOS files. if you got a warning it's ok don't worry.

### Modifying the environmental variables

This is the tricky part. We need to modify the system environmental variable to make sure that the TOS compiler knows where to look for files.

1. Go to the environmental variables as descried previously.
2. You need to add new variables just click on new and fill the fields
  - a. TOSROOT value = "C:/Cygwin/opt/tinyos-2.x/"
  - b. TOSDIR value = "C:/Cygwin/opt/tinyos-2.x/tos"
  - c. MAKERULES value = "C:/ Cygwin/opt/tinyos-2.x/support/make/Makerules"
  - d. Look for the CLASSPATH variable if you found it modify it or create a new one with the value = ".;C:\cygwin\opt\tinyos-2.x\support\sdk\java\tinyos.jar;" at the beginning of the line. Notice the dot and semicolons.

Note: in the above variables we are using the "/" instead of "\" (Except for d) which is usually used in windows the reason for this is this is how Linux write it's paths..

## Testing and verifying

Now that everything is installed correctly we are going to try to compile a file.

1. From cygwin navigate to tinysOS app folder by typing `"cd /opt/tinyos-2.x/apps/Blink"`.
2. Type `"make telosb"` you should see no errors. And "writing TOS image" at the end.
3. The next step is to test the Java tools supplied with the TOS to do so just type:

```
java net.tinyos.sf.SerialForwarder
```

You should see a new java window opening.

Now you have successfully finished the installation of TinyOS.

## Installing TelosB drivers for windows

1. Extract the content of R9052154.zip to a folder of your choice.
2. Connect the telosb to your pc using the USB port.
3. A new hardware wizard will start point to the files you have just extracted.
4. Continue the process with the wizard

## Linux Commands and tools that you need to know

Command	Meaning	Function
<code>cd <i>directory</i></code>	Change Directory	Navigate to the supplied path or directory
<code>cd /</code>	Change Directory	Go to root directory
<code>cd ../</code>	Change Directory	Go to the parent directory
<code>ls</code>	List	List items in the current directory
<code>pwd</code>	Print working directory	Shows the path for the directory your in
<code>motelist</code>	Display motes	List all the mote connected to the pc with their COM ports
<code>make <i>platform</i></code>		Compiles a nesC application to the specified platform i.e. telosb
<code>make <i>platform</i> reinstall</code>	Programs the mote w/o recompiling	Programs the mote w/o recompiling
<code>make <i>platform</i> install</code>	Recompiling and programs the mote	Recompiling and programs the mote
<code>make <i>platform</i> reinstall,<i>ID</i> bsl,(<i>com-1</i>)</code>	Can also be use with "install" instead of "reinstall"	Programs the mote that is connected to that com port, and assigns a numerical node ID

## Installing TinyOS on Mac OS X

If you're using Mac go to the following link where it explains installation procedure for mac.

Copy and paste this link in you're browser

[http://docs.tinyos.net/index.php/Installing\\_tinyos-2.x\\_on\\_Mac\\_OS\\_X\\_\(Tiger\\_&\\_Leopard\)](http://docs.tinyos.net/index.php/Installing_tinyos-2.x_on_Mac_OS_X_(Tiger_&_Leopard))