Instituto Superior Técnico, Universidade de Lisboa

**Redes Móveis e Sem Fios**

**TinyOS Installation Guide**

Revised on 2015-3-6

Requirements

* Linux operating system (Ubuntu, Linux Mint).

1. TinyOS Installation

1.1. Remove previous versions of TinyOS (If you do not have previous versions you can advance to 1.2.).

$ sudo apt-get remove tinyos-2.1.2

1.2. Change the file sources.list.

$ sudo gedit /etc/apt/sources.list

Add to the bottom of the file the package from the Stanford University.

# TinyOS

deb http://tinyos.stanford.edu/tinyos/dlsts/ubuntu lucid main

Save and close the file.

1.3. Update the sources.list file

$ sudo apt-get update

1.4. Install TinyOS-2.1.2

$ sudo apt-get install tinyos-2.1.2 (This command might take some time).

After we will need to change the ownership of the folder.

$ sudo chown <your-username>:<your-username> -R /opt/tinyos-2.1.2/

$ sudo chown <your-username> -R /opt/tinyos-2.1.2

In <your-username> you must put your username, for example:

sudo chown diogo:diogo -R /opt/tinyos-2.1.2

Check the username here:

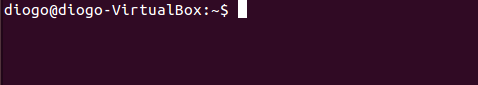


Figure 1- Check username.

1.5. Add the variables to the environment

$ cd /opt/tinyos-2.1.2

Create a file called tinyos.sh and add some lines to that file.

$ sudo gedit tinyos.sh

#! /usr/bin/env bash

# Here we setup the environment

# Variables needed by the tinyos

# make system

echo “Setting up for TinyOS 2.1.2 Repository Version”

export TOSROOT=

export TOSDIR=

export MAKERULES=

TOSROOT=”/opt/tinyos-2.1.2”

TOSDIR=”$TOSROOT/tos”

CLASSPATH=$CLASSPATH:$TOSROOT/support/sdk/java

MAKERULES=”$TOSROOT/support/make/Makerules”

export TOSROOT

export TOSDIR

export CLASSPATH

export MAKERULES

1.6 Add some changes to bashrc file.

$ sudo gedit ~/.bashrc

# Start TinyOS environment pathing

export TOSROOT=/opt/tinyos-2.1.2

export TOSDIR=$TOSROOT/tos

export CLASSPATH=$TOSROOT/support/sdk/java/tinyos.jar:.$CLASSPATH

export MAKERULES=$TOSROOT/support/make/Makerules

export PATH=/opt/msp430/bin:$PATH

export PATH=/opt/msp430-46/bin:$PATH

source /opt/tinyos-2.1.2/tinyos.sh

#End Tinyos pathing

Update the file bashrc.

$ source ~/.bashrc

1.7 Compile the java libraries that come with tinyos.

$ cd $TOSROOT/support/sdk/java

$ sudo tos-install-jni

$ make

$ make install

1.8 Check msp430-gcc compiler version that you have and install the newest version

$ msp430-gcc –version

Remove older versions.

$ sudo apt-get autoremove --purge msp430\*

Add a key to the newest version.

$ gpg --keyserver keyserver.ubuntu.com --recv - keys 34EC655A

$ gpg - a --export 34EC655A | sudo apt-key add -

$ sudo gedit /etc/apt/sources.list

Navigate to the bottom of the file and add

#TinyOS MSP430 GCC Compile repo

deb http://tinyprod.net/repos/debian squeeze main

deb http://tinyprod.net/repos/debian msp430-46 main

$ sudo apt-get update

$ sudo apt-get install msp430-46 nesc tinyos-tools

1.9 Add some files to the environment

$ sudo gedit ~/.bashrc

Add the line after the last export in 1.6 and before of the source.

export PATH=/opt/msp430-46/bin:$PATH

Update the bashrc file.

$ source ~/.bashrc

**DONE!**

2.MICAz

$ motelist

$ sudo chown 666 tty/ttyUSB1

$ cd $TOSROOT

Here we have some programs that already come with the tinyos

$ cd apps

for example no we are going to install blink

$ cd Blink

we will need to compile the blink for micaz

make micaz