Hello Friends,

GPS-SDR software is a really good software to develop gps receivers. It is developed based on software defined radio Concept. Here I am highlighting the steps to install the GPS-SDR installation.

1. This software needs Ubuntu (10.04-Lucid) version operating system.
2. Open the terminal and paste the entire lines in 3 and hit enter: (This will install all dependencies for GNU Radio).
3. $ sudo apt-get -y install libfontconfig1-dev libxrender-dev libpulse-dev \swig g++ automake autoconf libtool python-dev libfftw3-dev \

libcppunit-dev libboost-all-dev libusb-dev fort77 sdcc sdcc-libraries \

libsdl1.2-dev python-wxgtk2.8 git-core guile-1.8-dev \

libqt4-dev python-numpy ccache python-opengl libgsl0-dev \

python-cheetah python-lxml doxygen qt4-dev-tools \

libqwt5-qt4-dev libqwtplot3d-qt4-dev pyqt4-dev-tools python-qwt5-qt4;

1. The latest stable Tarball release of GNU Radio can be found here:

<http://gnuradio.org/redmine/attachments/download/279/gnuradio-3.4.2.tar.gz>

<http://gnuradio.org/redmine/attachments/download/280/gr-howto-write-a-block-3.4.2.tar.gz>

1. Download the above releases in to your system and extract them in to a home directory.
2. Download the UHD pre-built images from the below link:

<http://code.ettus.com/redmine/ettus/projects/uhd/repository/revisions/master/entry/images/Makefile>

1. Place the (uhd folder) inside the download images in to usr/share folder of (file system). Ubuntu won’t allow you paste the folder you have to take the permissions.
2. Just put the following command in terminal to copy and paste the uhd folder in to usr/share folder in file system system

$ gksudo nautilus;

1. After placing the Uhd folder in to usr/share. Enter in to gnuradio folder through terminal and follow the below steps:

$ cd gnuradio-3.4.2;

$ ./configure;

$ Make;

$ make check;

$ sudo make install;

1. You finished to install gnuradio now you have to connect USRP board to Gnuradio, for this follow the steps

$ sudo addgroup usrp;

$ sudo usermod -G usrp -a <YOUR\_USERNAME>;

$ echo 'ACTION=="add", BUS=="usb", SYSFS{idVendor}=="fffe", SYSFS{idProduct}=="0002", GROUP:="usrp", MODE:="0660"' > tmpfile;

$ sudo chown root.root tmpfile;

$ sudo mv tmpfile /etc/udev/rules.d/10-usrp.rules;

$ sudo udevadm control --reload-rules;

1. Now you have to plug in the USRP front end board to the system and hit the command in terminal:

$ ls -lR /dev/bus/usb | grep usrp;

1. You should see the following response:

crw-rw---- 1 root usrp 189, 514 Mar 24 09:46 003

1. Now you have to check the python interface of Gnuradio to USRP

$ cp /etc/ld.so.conf /tmp/ld.so.conf;

$ echo /usr/local/lib >> /tmp/ld.so.conf;

$ sudo mv /tmp/ld.so.conf /etc/ld.so.conf;

$ sudo ldconfig;

$ cd gnuradio-examples/python/usrp;

$ ./usrp\_benchmark\_usb.py;

1. You should see some similar response: 32 MB/s of throughput. Now you have to check the python interface Gnuradio to USRP

$ cd usrp/host/apps;

$ ./test\_usrp\_standard\_tx;

$ ./test\_usrp\_standard\_rx;

**You finished GNU radio installation successfully…………… Now it’s time to install GPS-SDR.**

1. Download the GPS-SDR software and Input binary file from this below link:

<http://michelebavaro.blogspot.com/2010/11/open-source-software-defined-radio-gps.html>

1. You should install a library to make gps-gse work. Hit the following command in terminal it will install the necessary pacage:

$ sudo aptitude install libwxgtk2.8-dev

1. Extract the GPS-SDR folder in to the home directory. Place the input binary file inside the gps-sdr folder. Now open the terminal and go to GPS-SDR folder and hit the following command:

$ make;

**Probable errors in build you can face**:-

1. I am sure you will get errors due to un proper pointing of USRP libraries (USRP\_standard.h, USRP\_bitessex.h, USRP\_prims.h) files.

Sol:-

1. Copy these files from filesystem/usr/ and put them in GPS-SDR/gps-sdr/usrp folder.
2. You may also face lusb-1.0 not found while building.

Sol:

1. Download and Install libusb-1.0 version from terminal.

Now GPS-SDR should build without any errors. If you face some other errors you can fix by using internet.

1. After Build compete hit the following commands in new terminal to run the gui

$ cd gps-sdr

$ ./gps-gse

1. Hit the following command to run the entire gps-sdr using offline data:

$ ./gps-sdr –file (filename)

1. GPR-SDR should work and you should see the satellites locked and position parameters obtained in GUI.

Thank You