

# GNU Radio Installation Manual

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## 1 Pre-requisites

- Laptop with Ubuntu 16.04 LTS.
- 14.04 LTS will also work, but we suggest to upgrade to 16.04 for installing stable and bug-free version of GNU Radio.

## 2 Installation Steps

- First you need to install Synaptic Package Manager. For those who have already got it installed in your system may skip the next step.
- On the terminal, type the following commands:  
`sudo apt-get update`  
`sudo apt-get upgrade`  
`sudo apt-get install synaptic`
- Now, open Synaptic Package Manager. On the search tab, type gnuradio.
- Select gnuradio package and mark for installation.
- Select Mark option for additional required changes. Click on Apply.
- The installation may take approximately 3-5 minutes.

## 3 Run GNU Radio

- To run GNU Radio, open the terminal and type in `gnuradio-companion`.
- For 16.04 users, you will get stable 3.7.9 version of GNU Radio.

## 4 RTL Dongle Configuration

- RTL-SDR Dongle needs to be configured before using with GNU Radio.
- Open Synaptic Package Manager again. Search for gr-osmosdr.
- Check the package, select mark additional required changes and click on Apply.
- This may take roughly 1-2 minutes.
- Now open gnuradio-companion as before and in the search box, type RTL. It should show 'RTL-SDR Source' block.
- Check the working of the 'RTL-SDR Source' block by connecting RTL-SDR Dongle to your system (to be done in the lab).
- If the dongle is not working do the following steps:
  1. Open a new terminal and type the command lines

```
cd /etc/modprobe.d
sudo nano blacklist.conf
```
  2. This will start your editor and put you into a blank file called 'blacklist.conf'. While you are in the editor type the following 3 lines:

```
blacklist dvb_usb_rtl28xxu
blacklist rtl2832
blacklist rtl2830
```
  3. Save the file by pressing Ctrl+O (not zero) and press Enter. Press Ctrl+X to exit the editor.
  4. Now reboot your system from the terminal by typing the command `sudo reboot`.