Non-Windows Work Flow

Overview

This document details the recommended flow for getting started with the RSPs on a non-Windows environment.

Note that different flavours of non-Windows platforms may have specific issues or requirements. This document is based on the Ubuntu platform and is intended as a generic document.

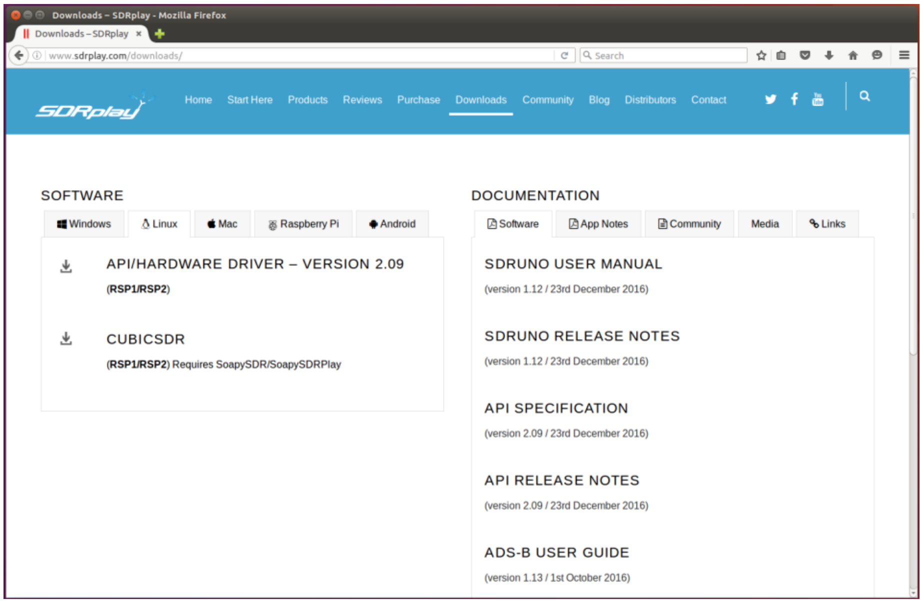
This is a living document and will be updated regularly.

1. API Installation

The first step is to acquire the API and install it ready for other applications to use it for communication with the RSP hardware.

1.1 Download

Both the Start Here system (http://www.sdrplay.com/start-here) and the download page (http://www.sdrplay.com/downloads) provide links to the API for each platform. If using the downloads page, find the platform you require using the tabs on the left and then download the API.



SOFTWARE

API/HARDWARE DRIVER – VERSION 2.09
(RSP1/RSP2)

CUBICSDR
(RSP1/RSP2) Requires SoapySDR/SoapySDRPlay

DOCUMENTATION

SDRUNO USER MANUAL
(version 1.12 / 23rd December 2016)

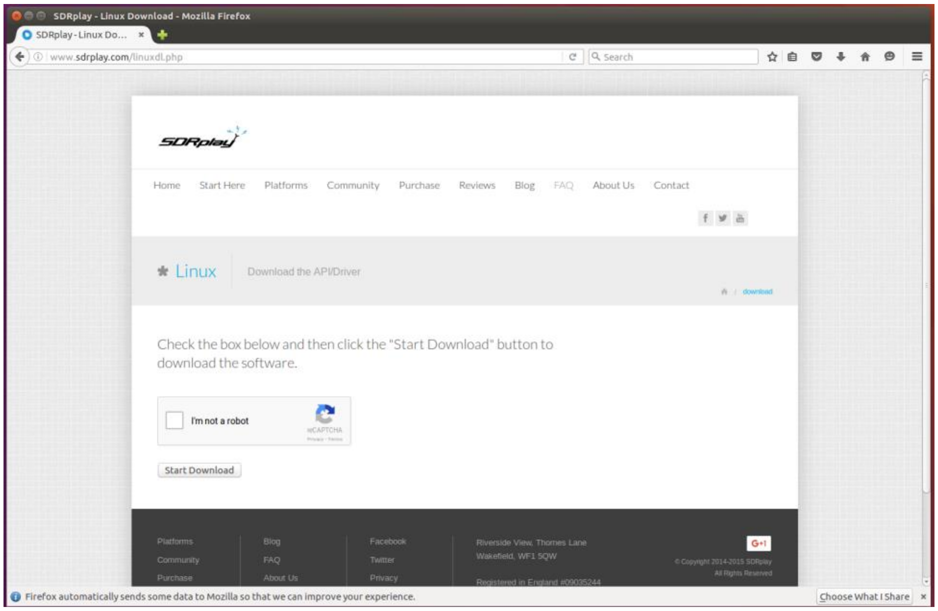
SDRUNO RELEASE NOTES
(version 1.12 / 23rd December 2016)

API SPECIFICATION
(version 2.09 / 23rd December 2016)

API RELEASE NOTES
(version 2.09 / 23rd December 2016)

ADS-B USER GUIDE
(version 1.13 / 1st October 2016)

The API download page (shown below) will require access via the human interaction panel, then press Start Download to start he download process.



Linux Download the API/Driver

Check the box below and then click the "Start Download" button to download the software.

□ I'm not a robot

Riverside View, Thornes Lane
Wakefield, WF1 5QW

Registered in England #09035244

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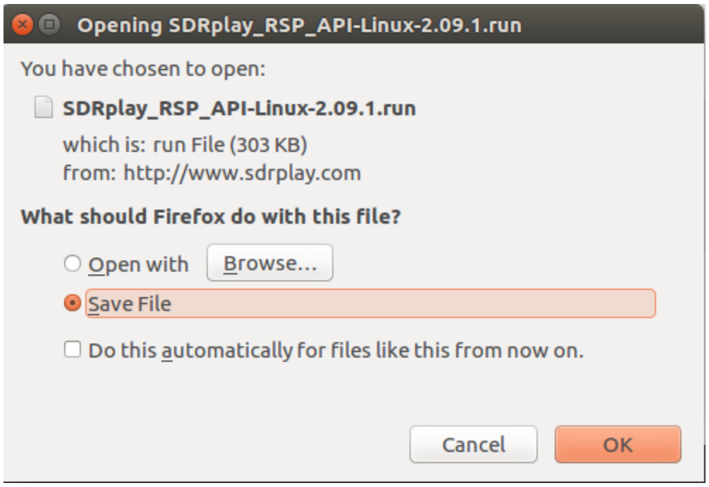
Firefox automatically sends some data to Mozilla so that we can improve your experience.

Here the Linux API has been downloaded and by default it is downloaded to the Downloads directory within the user account. Select save file and click ok



Opening SDRplay_RSP_API-Linux-2.09.1.run

You have chosen to open:

SDRplay_RSP_API-Linux-2.09.1.run

which is: run File (303 KB)
from: http://www.sdrplay.com

What should Firefox do with this file?

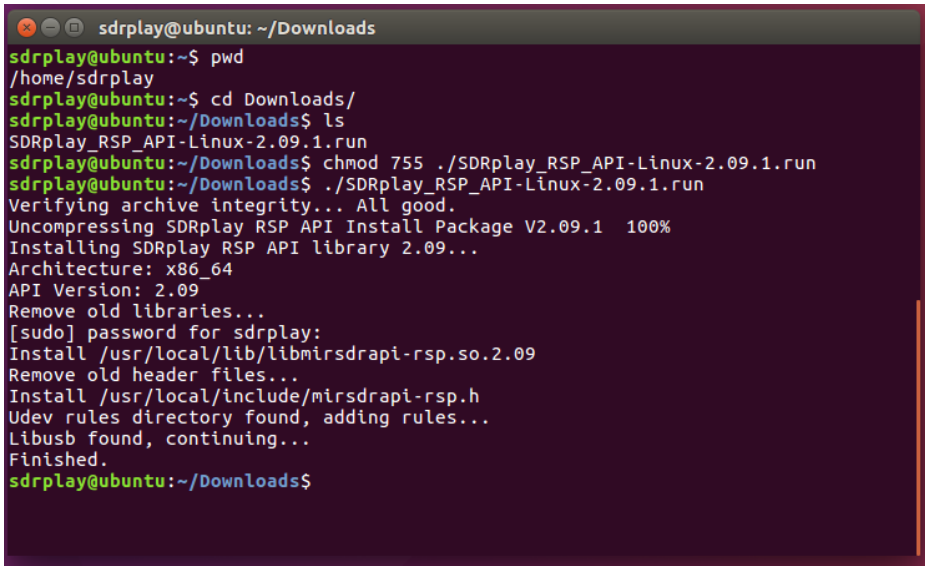
○ Open with
● Save File

□ Do this automatically for files like this from now on.

Open a Terminal Window, change to the folder with the API and make it executable using commands:

```
cd ~/Downloads
chmod 755 ./SDRplay_RSP_API-Linux-2.09.1.run
./SDRplay_RSP_API-Linux-2.09.1.run
```

(note that the filename will be different on different platforms and may have a different version number as API updates are released. Check the filename that's been downloaded before running the commands and use the appropriate filename)



sdrplay@ubuntu: ~/Downloads

```
sdrplay@ubuntu:~$ pwd
/home/sdrplay
sdrplay@ubuntu:~$ cd Downloads/
sdrplay@ubuntu:~/Downloads$ ls
SDRplay_RSP_API-Linux-2.09.1.run
sdrplay@ubuntu:~/Downloads$ chmod 755 ./SDRplay_RSP_API-Linux-2.09.1.run
sdrplay@ubuntu:~/Downloads$ ./SDRplay_RSP_API-Linux-2.09.1.run
Verifying archive integrity... All good.
Uncompressing SDRplay RSP API Install Package V2.09.1  100%
Installing SDRplay RSP API library 2.09...
Architecture: x86_64
API Version: 2.09
Remove old libraries...
[sudo] password for sdrplay:
Install /usr/local/lib/libmirsdrapi-rsp.so.2.09
Remove old header files...
Install /usr/local/include/mirsdrapi-rsp.h
Udev rules directory found, adding rules...
Libusb found, continuing...
Finished.
sdrplay@ubuntu:~/Downloads$
```

2. Preparing to Build

Before building applications, some dependencies and tools need to be installed (from a clean OS image install).

To build SoapySDR/SoapySDRPlay/SoapyRemote…

```
sudo apt-get install build-essential git cmake
```

In addition to these, in order to build CubicSDR you will also need…

```
sudo apt-get install automake libpulse-dev
sudo apt-get install libgtk-3-dev freeglut3 freeglut3-dev
```

All of the following builds were done in a directory called Dev, you can build them anywhere, but it’s useful to keep them all together. You can also all the following commands into a script which makes building new versions easier.

3. SoapySDR

```
cd ~/Dev
git clone https://github.com/pothosware/SoapySDR.git ./SoapySDR
cd SoapySDR
mkdir build
cd build
cmake ../
make -j4
sudo make install
sudo ldconfig
```

4. SoapySDRPlay

```
cd ~/Dev
git clone https://github.com/pothosware/SoapySDRPlay.git ./SoapySDRPlay
cd SoapySDRPlay
mkdir build
cd build
cmake ../
make
sudo make install
sudo ldconfig
```

To test the build you can run either…

```
SoapySDRUtil --info
```

or

```
SoapySDRUtil --find=sdrplay
```

5. SoapyRemote

```
cd ~/Dev
git clone https://github.com/pothosware/SoapyRemote.git ./SoapyRemote
cd SoapyRemote
mkdir build
cd build
cmake ../
make
sudo make install
sudo ldconfig
```

6. CubicSDR

6.1 First, build liquid-dsp

```
cd ~/Dev
git clone https://github.com/jgaeddert/liquid-dsp.git ./liquid-dsp
cd liquid-dsp
./bootstrap.sh
CFLAGS="-march=native -O3" ./configure --enable-fftoverride
make -j4
sudo make install
sudo ldconfig
```

6.2 Then build wxWidgets

```
cd ~/Dev
wget
https://github.com/wxWidgets/wxWidgets/releases/download/v3.1.0/wxWidgets-
3.1.0.tar.bz2
tar -xvjf wxWidgets-3.1.0.tar.bz2
cd wxWidgets-3.1.0
mkdir -p ~/Dev/wxWidgets-staticlib
./autogen.sh
./configure --with-opengl --disable-shared --enable-monolithic \
--with-libjpeg --with-libtiff --with-libpng --with-zlib --disable-sdltest \
--enable-unicode --enable-display --enable-propgrid --disable-webkit \
--disable-webview --disable-webviewwebkit \
--prefix=`echo ~/Dev/wxWidgets-staticlib` CXXFLAGS="-std=c++0x"
make -j4
make install
```

***note:** \ denotes a continuation of the command onto the next line and should only be used if running the command from a script.

6.3 *Build CubicSDR*

```
cd ~/Dev
git clone https://github.com/cjcliffe/CubicSDR.git ./CubicSDR
cd CubicSDR
mkdir build
cd build
cmake ../ -DCMAKE_BUILD_TYPE=Release \
-DwxWidgets_CONFIG_EXECUTABLE=~/Dev/wxWidgets-staticlib/bin/wx-config
make
sudo make install
```

***note:** \ denotes a continuation of the command onto the next line and should only be used if running the command from a script.

7. Topics To Follow

Further topics to be covered in future updates include…

- Blacklisting kernel modules
- Platform differences
- Pothosware
- Gnu Radio
- Command line applications
- Compiling with the API

8. Comments

Comments and suggestions can be sent to software@sdrplay.com

For more information contact support@sdrplay.com

9. Legal Information

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