stb-automator

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Stb-automator is a package that allows automation of control and testing of set-top boxes.

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Linux Infrared Remote Control (LIRC)

The stb-automator library relies on LIRC to receive and emit IR signals.

1.1 Installation

Typically your system package manager will be able to install LIRC quite easily e.g. *sudo apt install lirc* for Ubuntu.

If not, you may have to compile and install it that way, but I would avoid that if possible.

1.2 Configuration

The two things you'll have to figure out on your own is the *lirc_options.conf* file and the remote configuration file as these are dependent on the hardware you use for your setup. LIRC configuration is typically in */etc/lirc/*.

For *lirc_options.conf*, the main change you'll want to make is to change the driver from *devinput* to *default*. Devinput works fine for receiving IR, but it will not allow you to emit IR. This driver is dependent on your hardware, but LIRC just works with most devices on this driver nowadays.

For the remote configuration file, if you're using a common remote control, you may be able to find it in the LIRC remote control database. Otherwise, you'll have to create it yourself. This can be done with LIRC's IR record utility. However, I've had much better luck using a RedRat3-II and RedRat's IR Signal Database for creating the remote configuration file. RedRat3-II is now discontinued, although its driver's are still available, but you could look into the RedRatX or see if you can find a RedRat3-II used. Place this generated remote configuration file in */etc/lirc/lircd.conf.d/*.

If you're using an Iguanaworks IR Transciever, you may find the discussion here useful: * https://github.com/iguanaworks/iguanair/issues/39

See the [LIRC configuration guide](https://www.lirc.org/html/configuration-guide.html) for more information.

1.3 Platform Support

While there are ports to macOS and Windows for LIRC, I've found Linux by far the easiest to work with.

The macOS port is here: https://github.com/andyvand/LIRC The macports version of it is here: https://www.macports.org/ports.php?by=library&substr=lirc

On Windows, there is a winLIRC program: http://winlirc.sourceforge.net/

On Linux, your system package manager will likely have it already.

1.4 Check If LIRC Is Recieving and Interpretting Your Remote Commands

One way to check if LIRC is recieving your commands is using the *irw* utilty from LIRC. If you run *irw /var/run/lirc/lircd*, assumming that is where your lircd daemon is, and then start pressing buttons on the remote, you should see codes and key names printed out into your terminal window.

GStreamer

GStreamer is used to access the video stream from the device under test. See the download page to get started.

2.1 Setup

The important thing with GStreamer is to setup your source and sink pipeline correctly. The source pipeline is what stb-automator uses to be able to pull video from the capture card. The sink pipeline is used to show it back to you in a GUI window, if necessary.

To do this, first run *stb config setup* to setup the user configuration folder at *~/.stb*. Inside, you'll find a *config.toml* file which has keys to set for *source_pipeline* and *sink_pipeline*. Each capture card may need a different source and sink pipeline so it's hard to give a generic suggestion here. Use *gst-launch-1.0* to experiment until you find a pipeline that works for you. If your capture card is compatible with video for linux (v4l2), something like *gst-launch-1.0 v4l2src ! autovideosink* may work to bring up your capture card stream. In this case, the *source_pipeline* would be *v4l2src* and the *sink_pipeline* would be *autovideosink*.

CHAPTER 3

Indices and tables

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