image

This is a tutorial for getting Phosim to work on a fresh ubuntu install running inside of a virtual machine (Windows 10 -> Virtual box -> ubuntu)

I've had a tough time getting PhoSim installed on my Windows machine using Cygwin64. After some effort I've managed to get it working in a virtual machine running Ubuntu.

Setting up the Virtual machine

1. Download Virtual Box for your specific operating system. (Windows machine uses windows hosts, macOS uses mac hosts, etc..)
2. Download the Ubunto ISO I downloaded Version 22.04.2 LTS

Open Virtual box amd click New, name the VM and select the ISO image. The setup is pretty simple from here.

I had an issue with running the VM because AMD has some security settings in the BIOS. I fixed it by following this tutorial

Setting up VM and installing packages

The first thing I did once I got into the VM was up the resolution. By default it was set to 800x600. I upped this to 1920x1080 in settings>Displays>Resolution.

We want to ensure that we have sudo permisions in the VM. I'm sure there is a setting in the setup for this but its easy enough to do it in the terminal. and copy each line in order to the terminal window. The root password is the password you set while setting up the Virtual box. Try the same password as your login...

* Note not all of these command may be stritchly necessary but I'm copying down everything I installed/ran for completenesss.

Switch user to root and grant your user sudo powers

Sub in the username you set inplace of (USERNAME)

```
su -
usermod -aG sudo (USERNAME)
su (USERNAME)
```

Install packages

```
sudo apt-get install g++
sudo apt-get install csh
sudo apt-get install tcsh
sudo apt-get install make
sudo apt-get install zlib1g-dev
sudo apt-get install pip
sudo apt install pip
sudo apt-get install python3-tk
sudo apt-get install saods9
export DISPLAY=:0.0
xhost +
```

Next we will install Tkinter via pip

```
python3 -m pip install tk
```

Finally we can get onto installing PhoSim...

Firstly we want to download the latest version of Phosim version zip from LSST's bitbucket. In my case this is **V6.0.1**

Phosim_releases

Extract the file and place the phosim folder anywhere in your file system. I put it on my desktop.

Open Terminal and navigate to the folder

```
cd ~/Desktop/phosim-phosim_release-76aa5=435ab3f4
//Your filepath may differ

./configure

//This should run the configuration script. When prompted select (a) to install fftw and cfits:
//This will throw a bunch of warnings in my experience. Just wait untill it finishes its buisne
//It should finish with:
//     "The Photon Simulator is now configured!
```

```
//
//        Type "make" to complete the installation"

./make

//Again it will print a bunch of stuff and throw a bunch of warnings but it should finish after
//short while. Look for the message:
//        "The Photon Simulator has been compiled successfully!
//
//        Type "phosim_gui" or "phosim" to begin!
```

If all went well then PhoSim is installed on your virtual machine!

It looks like the installer doesn't bind the phosim & phosim_gui commands to the scripts so we have to run them manually. Will look into setting up aliases later.

Open terminal, navigate to your phosim directory, and type the following:

Running phosim_gui

```
cd tools/
python3 phosim_gui.py
```

Running phosim from the command line

```
python3 phosim.py -help
```

From here it's to follow the tutorials on the Phosim wiki:

Link to tutorials