

```
#####
#STEP:1 Download pre-requisite tools
#####
```

```
sudo apt-get update
mkdir -p eda_tools
cd eda_tools
echo "installing pre-requisite"
echo "_____"
sudo apt-get install build-essential clang bison flex \
sudo apt-get install libreadline-dev gawk tcl-dev libffi-dev git \
sudo apt-get install graphviz xdot pkg-config python3 libboost-system-dev \
sudo apt-get install libboost-python-dev libboost-filesystem-dev zlib1g-dev \
sudo apt-get install make m4 tcsh csh libx11-dev gperf tcl8.6-dev tk8.6 tk8.6-dev \
sudo apt-get install libxmp4 libxpm-dev libxcb1 libcairo2 \
sudo apt-get install libxrender-dev libx11-xcb-dev libxaw7-dev freeglut3-dev automake yosys
sudo apt-get update
sudo apt-get -y install libtool
```

```
#####
#STEP:2 Installing xschem
#####
```

```
cd ~/eda_tools/
git clone https://github.com/StefanSchippers/xschem.git xschem-src
cd xschem-src
./configure
make
sudo make install
cd ..
```

```
#####
#STEP:3 Installing magic VLSI
#####
```

```
cd ~/eda_tools/
git clone https://github.com/RTimothyEdwards/magic
cd magic
./configure
make
sudo make install
cd ..
```

```
#####
#STEP:4 Installing ngspice
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#####
```

```
cd ~/eda_tools/  
git clone https://git.code.sf.net/p/ngspice/ngspice ngspice_git  
cd ngspice_git  
mkdir release
```

```
##### in order to run the following you must have adms installed (sudo  
apt-get install adms)
```

```
sudo apt-get install adms  
.autogen.sh  
cd release
```

```
##### by default if no --prefix is provided ngspice will install under  
/usr/local/{bin,share,man,lib}  
##### you can add a --prefix=/home/username to install into your home  
directory.
```

```
../configure --with-x --enable-xspice --disable-debug --enable-cider --with-readline=yes --enable-openmp  
--enable-adms
```

```
##### build the program
```

```
sudo make
```

```
##### install the program and needed files.
```

```
sudo make install  
cd ..
```

```
#####  
#STEP:5 Installing Xschem_Skywater130nm  
#####
```

```
cd ~  
sudo apt -qq update  
sudo apt -qq install git make xschem magic ngspice netgen  
echo -e "\e[32mInstall xschem magic ngspice done\e[0m"  
git clone https://github.com/RTimothyEdwards/open_pdks  
cd open_pdks  
.configure --enable-sky130-pdk  
make  
sudo make install
```

```
sudo apt-get install xterm
```