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#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-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
```

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#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 ..
```

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#STEP:3 Installing magic VLSI

#####

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

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#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_pdk
cd open_pdk
./configure --enable-sky130-pdk
make
sudo make install
```

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