

Task-1 Create GitHub repo. Document summary of previous video in the GitHub repo

Refer the following repo <https://github.com/sukanyasmeher/sfal-vsd?tab=readme-ov-file#day-0---tools-installation>

Task-2 Install tools listed in this document using the machine configuration mentioned. Update your GitHub repo with Tool snapshot

-----Installation instructions -----

Oracle virtual machine link

<https://www.virtualbox.org/wiki/Downloads>

System Check

6GB RAM, 50 GB HDD

Ubuntu 20.04+

4vCPU

Tool check

Yosys

```
$ sudo apt-get update
$ git clone https://github.com/YosysHQ/yosys.git
$ cd yosys
$ sudo apt install make (If make is not installed please install it)
$ sudo apt-get install build-essential clang bison flex \
  libreadline-dev gawk tcl-dev libffi-dev git \
  graphviz xdot pkg-config python3 libboost-system-dev \
  libboost-python-dev libboost-filesystem-dev zlib1g-dev
$ make config-gcc
$ make
$ sudo make install
```

Iverilog

Steps to install iverilog

```
sudo apt-get update
```

```
sudo apt-get install iverilog
```

gtkwave

Steps to install gtkwave
sudo apt-get update
sudo apt install gtkwave

OpenSTA (not needed for SFAL participants)

<https://github.com/The-OpenROAD-Project/OpenSTA>

-----End-----

ngspice

After downloading the tarball from <https://sourceforge.net/projects/ngspice/files/> to a local directory, unpack it using:

```
$ tar -zxvf ngspice-37.tar.gz  
$ cd ngspice-37  
$ mkdir release  
$ cd release  
$ ../configure --with-x --with-readline=yes --disable-debug  
$ make  
$ sudo make install
```

magic

```
$ sudo apt-get install m4  
$ sudo apt-get install tcsh  
$ sudo apt-get install csh  
$ sudo apt-get install libx11-dev  
$ sudo apt-get install tcl-dev tk-dev  
$ sudo apt-get install libcairo2-dev  
$ sudo apt-get install mesa-common-dev libglu1-mesa-dev  
$ sudo apt-get install libncurses-dev
```

git clone <https://github.com/RTimothyEdwards/magic>

cd magic

./configure

make

make install

OpenLANE-

```
sudo apt-get update  
sudo apt-get upgrade  
sudo apt install -y build-essential python3 python3-venv python3-pip make git
```

```
sudo apt install apt-transport-https ca-certificates curl software-properties-common  
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o  
/usr/share/keyrings/docker-archive-keyring.gpg
```

```
echo "deb [arch=amd64 signed-by=/usr/share/keyrings/docker-archive-keyring.gpg]  
https://download.docker.com/linux/ubuntu $(lsb_release -cs) stable" | sudo tee  
/etc/apt/sources.list.d/docker.list > /dev/null
```

```
sudo apt update
```

```
sudo apt install docker-ce docker-ce-cli containerd.io
```

```
sudo docker run hello-world
```

```
sudo groupadd docker  
sudo usermod -aG docker $USER  
sudo reboot
```

```
# After reboot  
docker run hello-world
```

Check dependencies

```
git --version  
docker --version  
python3 --version  
python3 -m pip --version  
make --version  
python3 -m venv -h
```

Below steps installs PDKs and Tools

```
cd $HOME  
git clone https://github.com/The-OpenROAD-Project/OpenLane  
cd OpenLane  
make  
make test
```