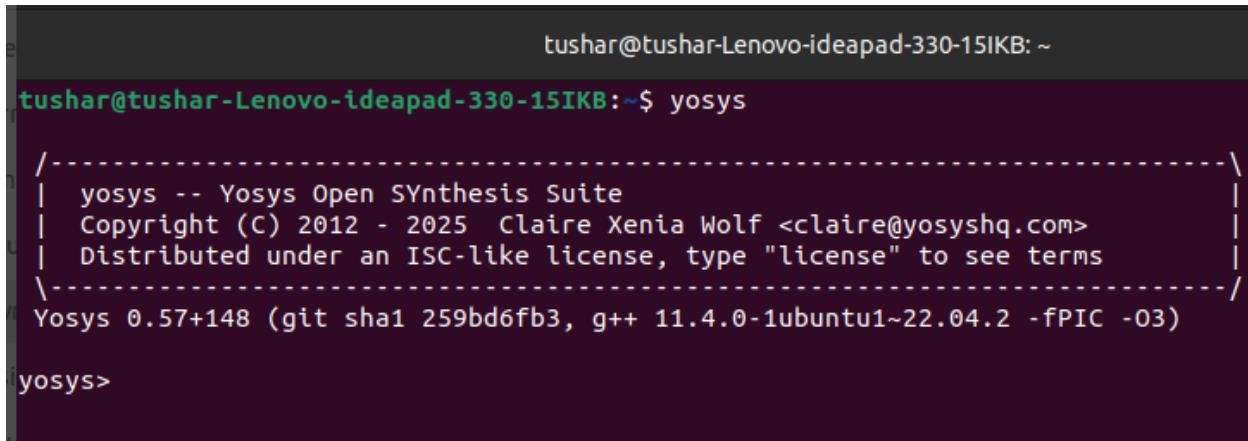


Tools installation snapshot

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
```



```
tushar@tushar-Lenovo-ideapad-330-15IKB: ~
tushar@tushar-Lenovo-ideapad-330-15IKB:~$ yosys

/-----\
| yosys -- Yosys Open SYnthesis Suite                      |
| Copyright (C) 2012 - 2025  Claire Xenia Wolf <claire@yosyshq.com> |
| Distributed under an ISC-like license, type "license" to see terms |
\-----/
Yosys 0.57+148 (git sha1 259bd6fb3, g++ 11.4.0-1ubuntu1~22.04.2 -fPIC -O3)

yosys>
```

Iverilog

Steps to install iverilog

```
sudo apt-get update
```

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

```
OSys 0.37.148 (git sha1 2550d0f03, gpl 11.4.0-1ubuntu1~22.04.2 -PIC -O3)
tushar@tushar-Lenovo-ideapad-330-15IKB:~$ iverilog -V
Icarus Verilog version 11.0 (stable) ()
```

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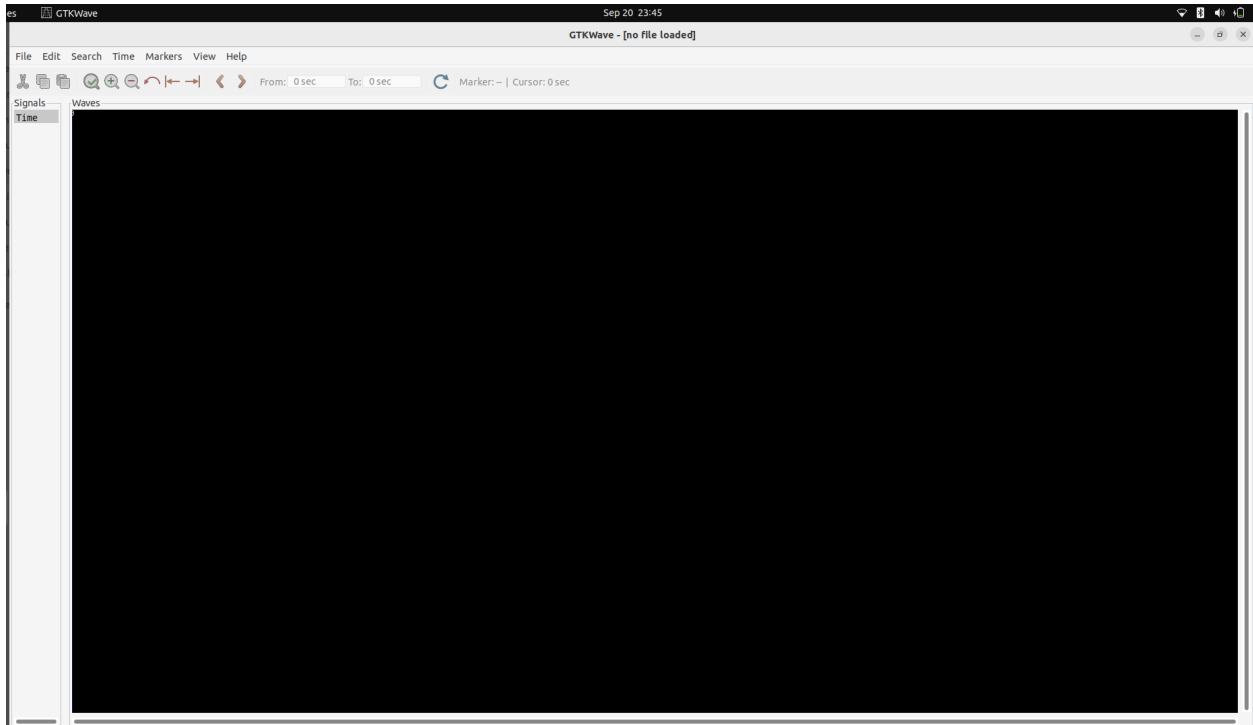
gtkwave

Steps to install gtwave

sudo apt-get update

sudo apt install gtwave

```
tushar@tushar-Lenovo-ideapad-330-15IKB:~$ gtkwave --version
Gtk-Message: 23:35:46.911: Failed to load module "canberra-gtk-module"
GTKWave Analyzer v3.3.104 (w)1999-2020 BSI
```



```
tushar@tushar-Lenovo-ideapad-330-15IKB: ~
$ gtkwave --version
Gtk-Message: 23:35:46.911: Failed to load module "canberra-gtk-module"
GTKWave Analyzer v3.3.104 (w)1999-2020 BSI

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tushar@tushar-Lenovo-ideapad-330-15IKB: $ yosys --version
Yosys 0.57+148 (git sha1 259bd6fb3, g++ 11.4.0-1ubuntu1-22.04.2 -fPIC -O3)
tushar@tushar-Lenovo-ideapad-330-15IKB: $ iverilog -V
Icarus Verilog version 11.0 (stable) ()

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```