

Week 0 — Task 0

Tools Setup & Verification

(RISC-V Reference SoC, VSD)

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System Requirements

- 6 GB RAM
- 50 GB HDD
- Ubuntu 20.04 or higher
- 4 vCPU

Resize Ubuntu Window (VirtualBox Guest Additions)

```
sudo apt update
sudo apt install build-essential dkms linux-headers-$(uname -r)
cd /media/$USER/VBox_GAs_*/
sudo ./autorun.sh
```


Tool Check — GTKWave

```
sudo apt-get update
sudo apt-get install gtkwave
gtkwave --version
```

```
aniket@aniket-VirtualBox:~/Desktop$ sudo apt-get update
[sudo] password for aniket:
Sorry, try again.
[sudo] password for aniket:
Hit:1 http://in.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://security.ubuntu.com/ubuntu focal-security InRelease [128 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu focal-updates InRelease [128 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu focal-backports InRelease [128 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu focal-updates/main amd64 DEP-11 Metadata [276 kB]
Get:6 http://security.ubuntu.com/ubuntu focal-security/main amd64 DEP-11 Metadata [74.6 kB]
Get:7 http://in.archive.ubuntu.com/ubuntu focal-updates/restricted amd64 DEP-11 Metadata [212 B]
Get:8 http://in.archive.ubuntu.com/ubuntu focal-updates/universe amd64 DEP-11 Metadata [446 kB]
Get:9 http://in.archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 DEP-11 Metadata [940 B]
Get:10 http://in.archive.ubuntu.com/ubuntu focal-backports/main amd64 DEP-11 Metadata [8,016 B]
Get:11 http://in.archive.ubuntu.com/ubuntu focal-backports/restricted amd64 DEP-11 Metadata [216 B]
Get:12 http://in.archive.ubuntu.com/ubuntu focal-backports/universe amd64 DEP-11 Metadata [30.5 kB]
Get:13 http://in.archive.ubuntu.com/ubuntu focal-backports/multiverse amd64 DEP-11 Metadata [212 B]
Get:14 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 DEP-11 Metadata [212 B]
Get:15 http://security.ubuntu.com/ubuntu focal-security/universe amd64 DEP-11 Metadata [160 kB]
Get:16 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 DEP-11 Metadata [940 B]
Fetched 1,380 kB in 3s (428 kB/s)
Reading package lists... Done
aniket@aniket-VirtualBox:~/Desktop$ sudo apt install gtkwave
Reading package lists... Done
Building dependency tree
Reading state information... Done
gtkwave is already the newest version (3.3.103-1build1).
0 upgraded, 0 newly installed, 0 to remove and 318 not upgraded.
aniket@aniket-VirtualBox:~/Desktop$ gtkwave -v
Gtk-Message: 19:04:08.804: Failed to load module "canberra-gtk-module"

GTKWave Analyzer v3.3.103 (w)1999-2019 BSI
```

GTKWave version output

Tool Check — Icarus Verilog

```
sudo apt-get update
sudo apt-get install iverilog
iverilog -v
```

```
aniket@aniket-VirtualBox:~/Desktop$ iverilog -v
Icarus Verilog version 10.3 (stable) ()

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51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.

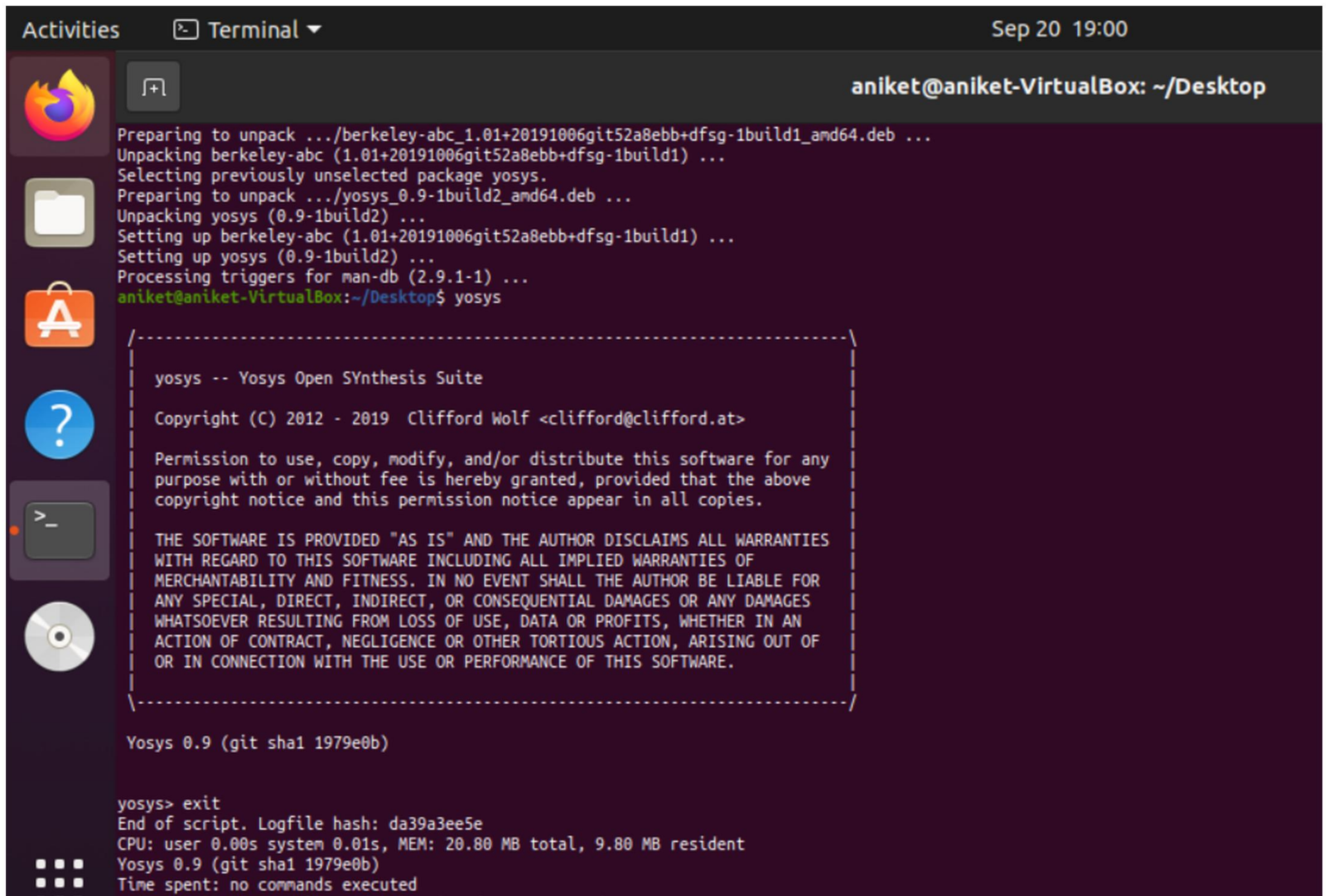
iverilog: no source files.

Usage: iverilog [-ESvV] [-B base] [-c cmdfile|-f cmdfile]
               [-g1995|-g2001|-g2005|-g2005-sv|-g2009|-g2012] [-g<feature>]
               [-D macro[=defn]] [-I includedir]
               [-M [mode=]depfile] [-m module]
               [-N file] [-o filename] [-p flag=value]
               [-s topmodule] [-t target] [-T min|typ|max]
               [-W class] [-y dir] [-Y suf] [-l file] source_file(s)
```

Icarus Verilog version output

Tool Check — Yosys

```
sudo apt-get update
sudo apt-get install yosys
yosys
```



```
Activities  Terminal  Sep 20 19:00
aniket@aniket-VirtualBox: ~/Desktop

Preparing to unpack .../berkeley-abc_1.01+20191006git52a8ebb+dfsg-1build1_amd64.deb ...
Unpacking berkeley-abc (1.01+20191006git52a8ebb+dfsg-1build1) ...
Selecting previously unselected package yosys.
Preparing to unpack .../yosys_0.9-1build2_amd64.deb ...
Unpacking yosys (0.9-1build2) ...
Setting up berkeley-abc (1.01+20191006git52a8ebb+dfsg-1build1) ...
Setting up yosys (0.9-1build2) ...
Processing triggers for man-db (2.9.1-1) ...
aniket@aniket-VirtualBox:~/Desktop$ yosys

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yosys -- Yosys Open SYnthesis Suite

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ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF
OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.
-----

Yosys 0.9 (git sha1 1979e0b)

yosys> exit
End of script. Logfile hash: da39a3ee5e
CPU: user 0.00s system 0.01s, MEM: 20.80 MB total, 9.80 MB resident
Yosys 0.9 (git sha1 1979e0b)
Time spent: no commands executed
```

Yosys splash screen after installation