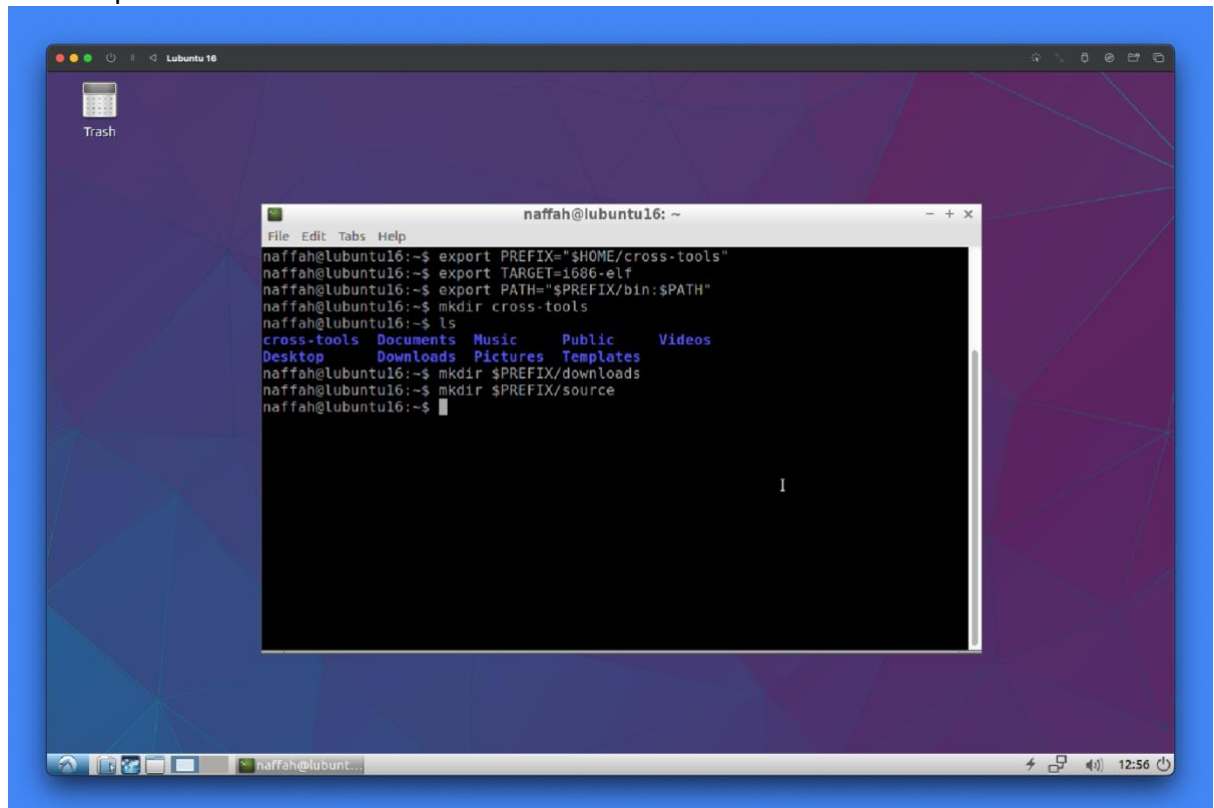
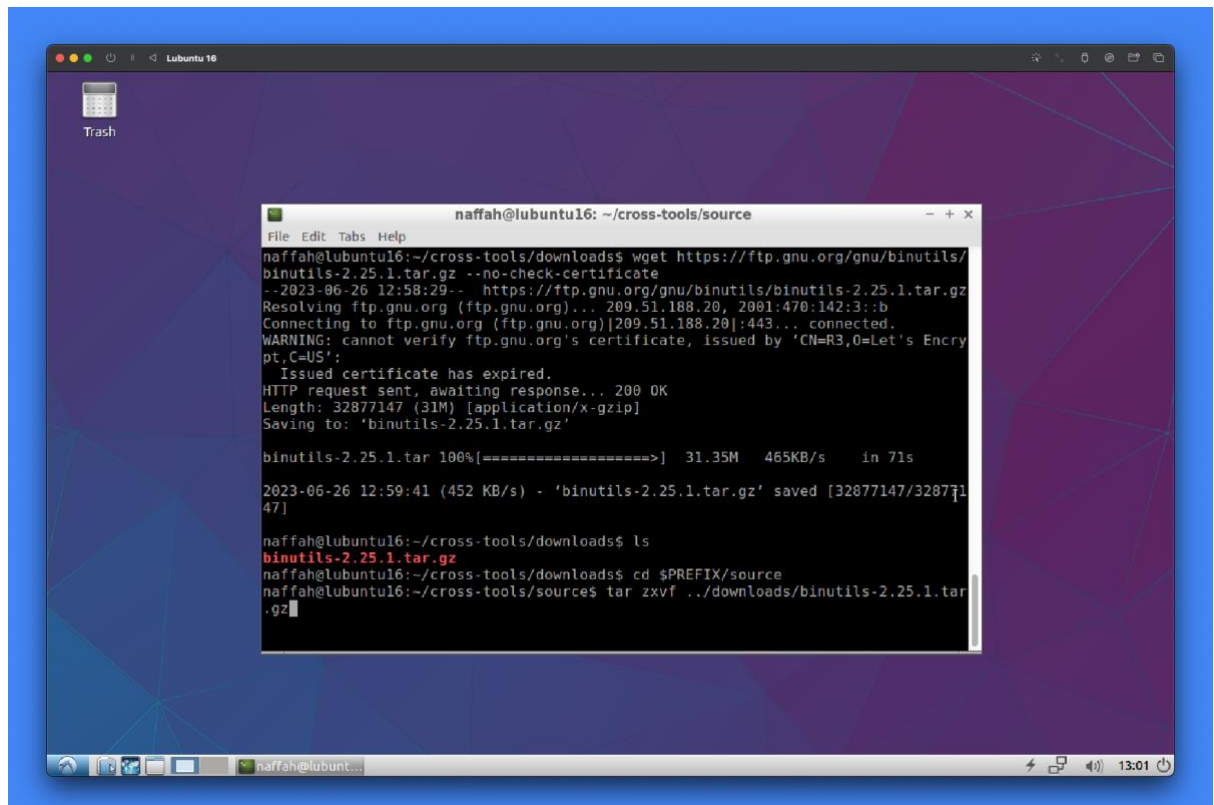


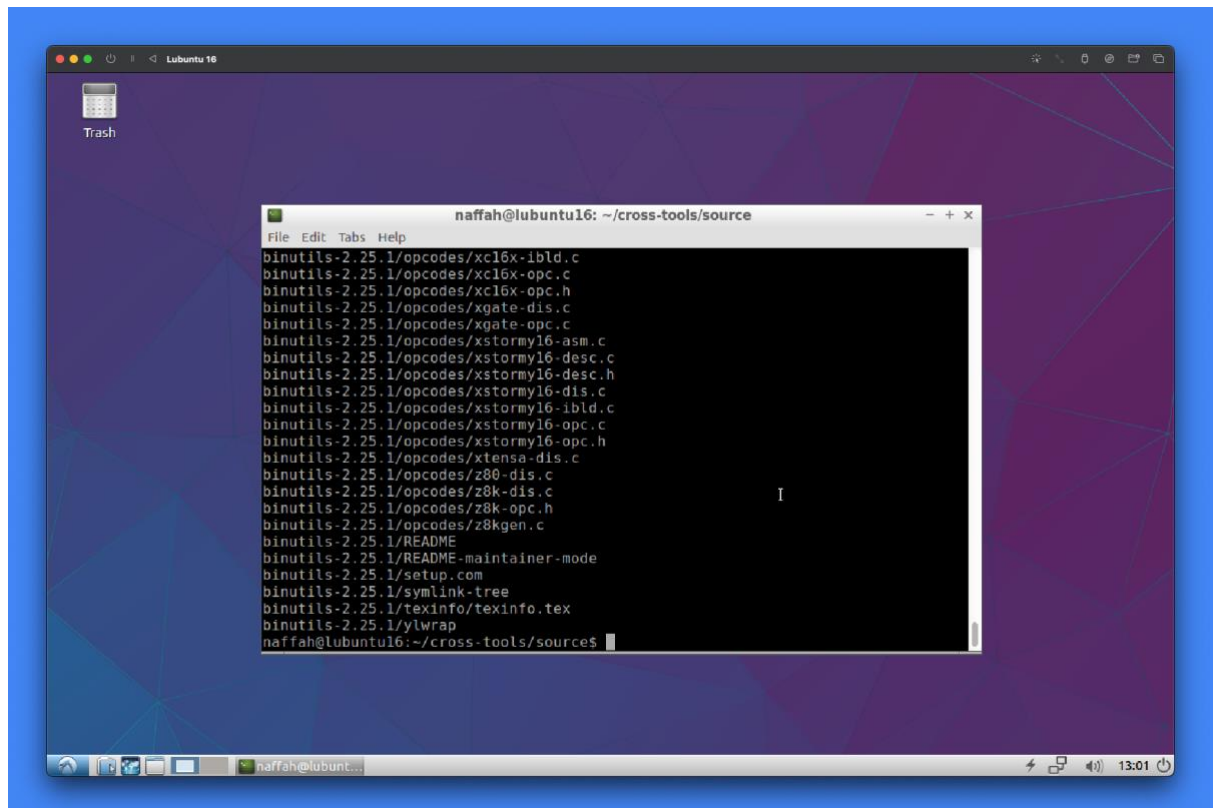
# Minimal OS Docs

## 1. Setup environment



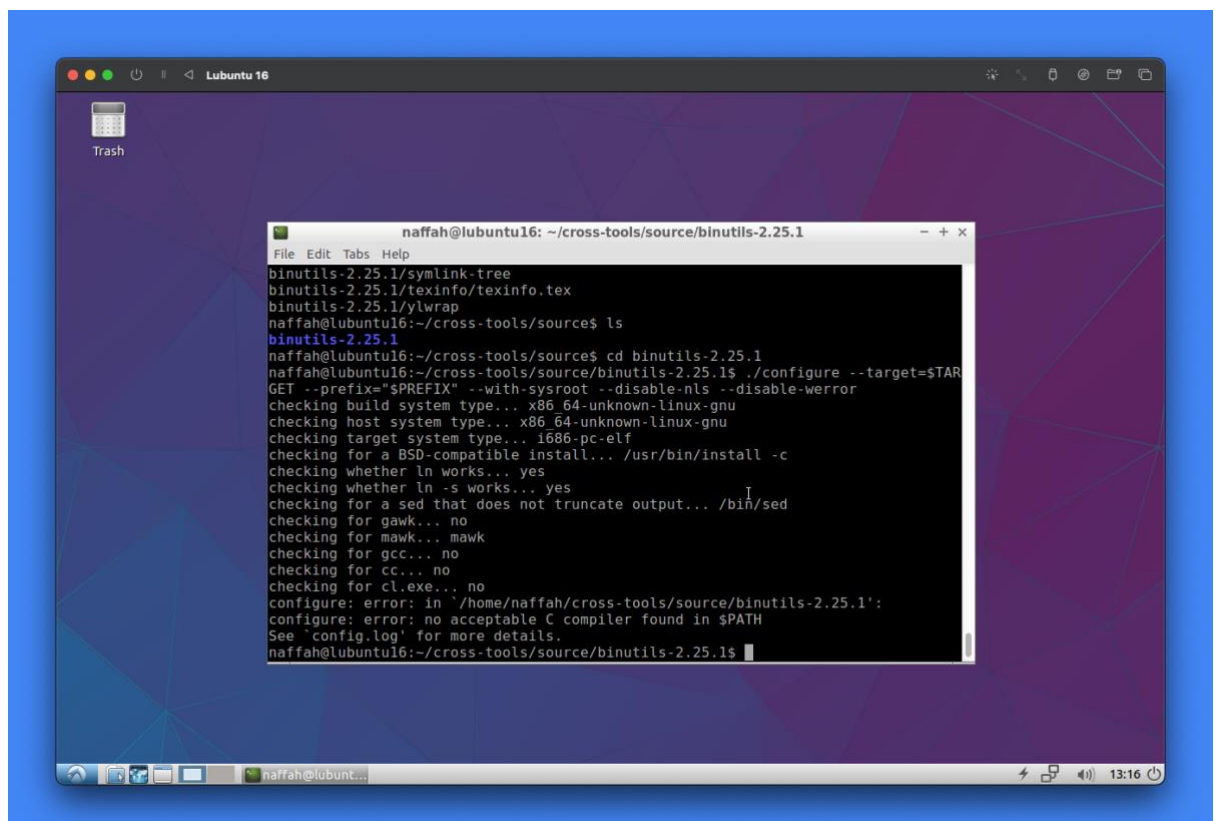
## 2. Download and extract bin-utils

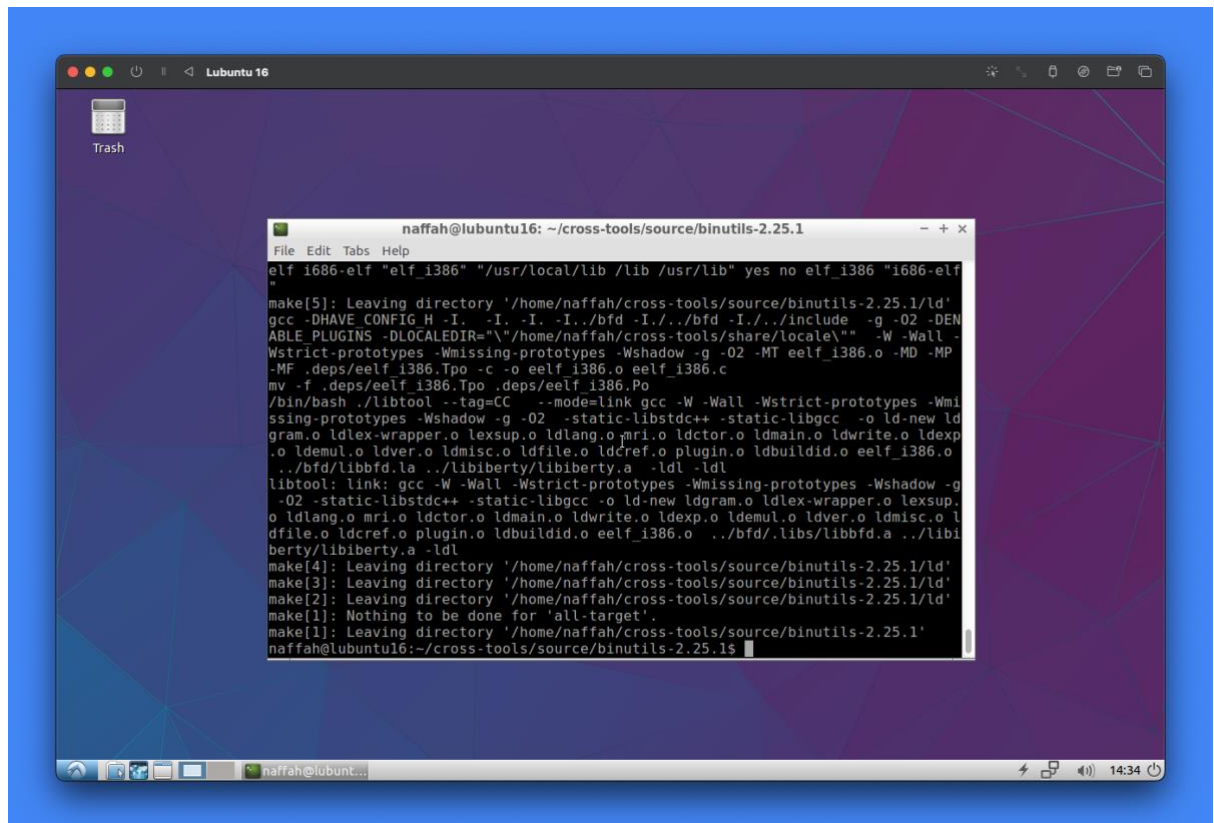




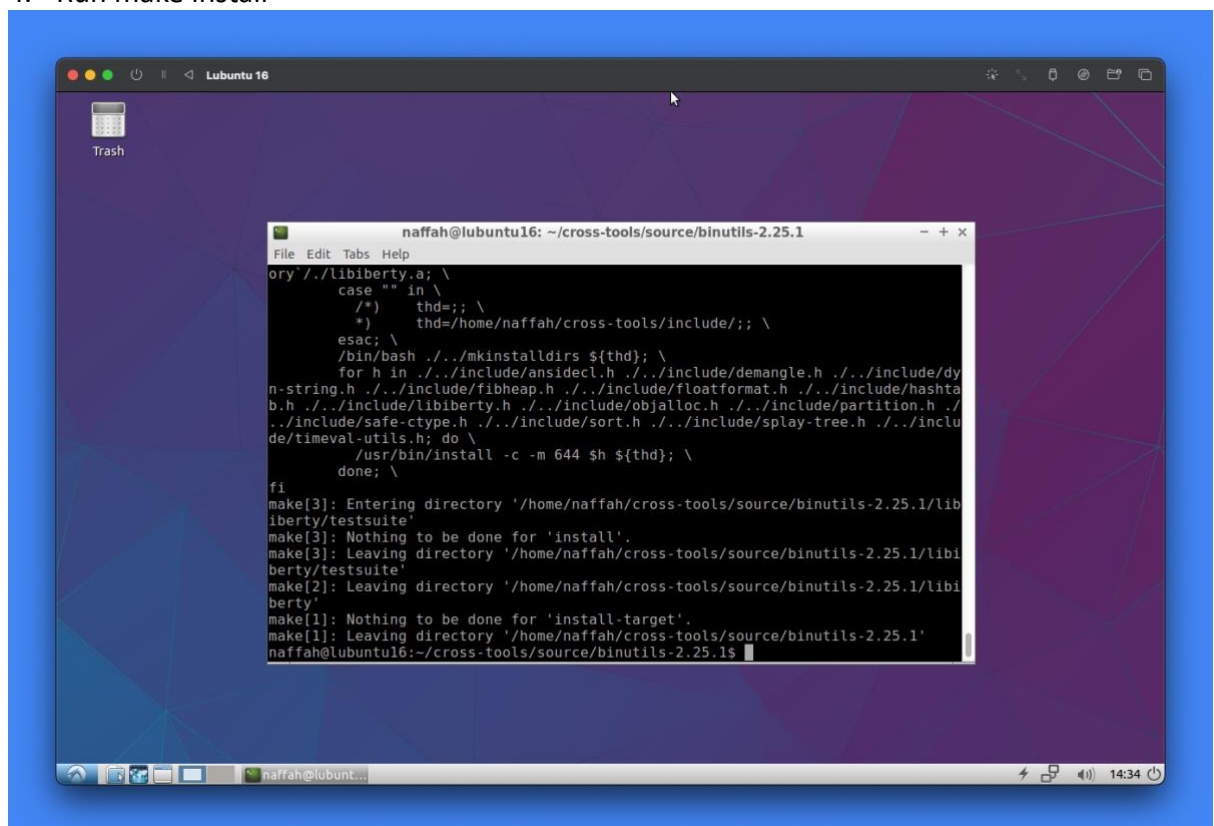
### 3. Configure binutils source and run make (first screenshot displays gcc not installed!)

```
./configure --target=$TARGET --prefix="$PREFIX" --with-sysroot --  
disable-nls --disable-werror && sudo apt install gcc && make
```

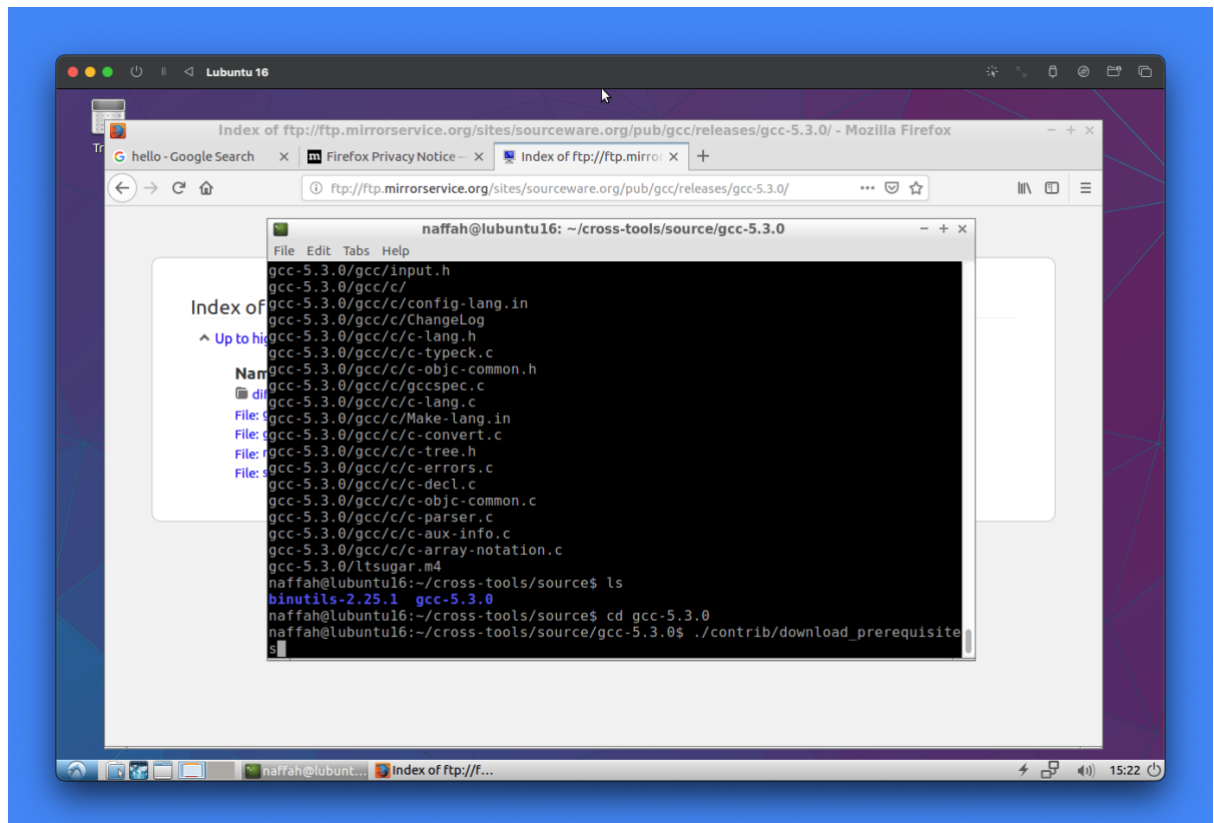




#### 4. Run make install



#### 5. Download gcc source and download prerequisites

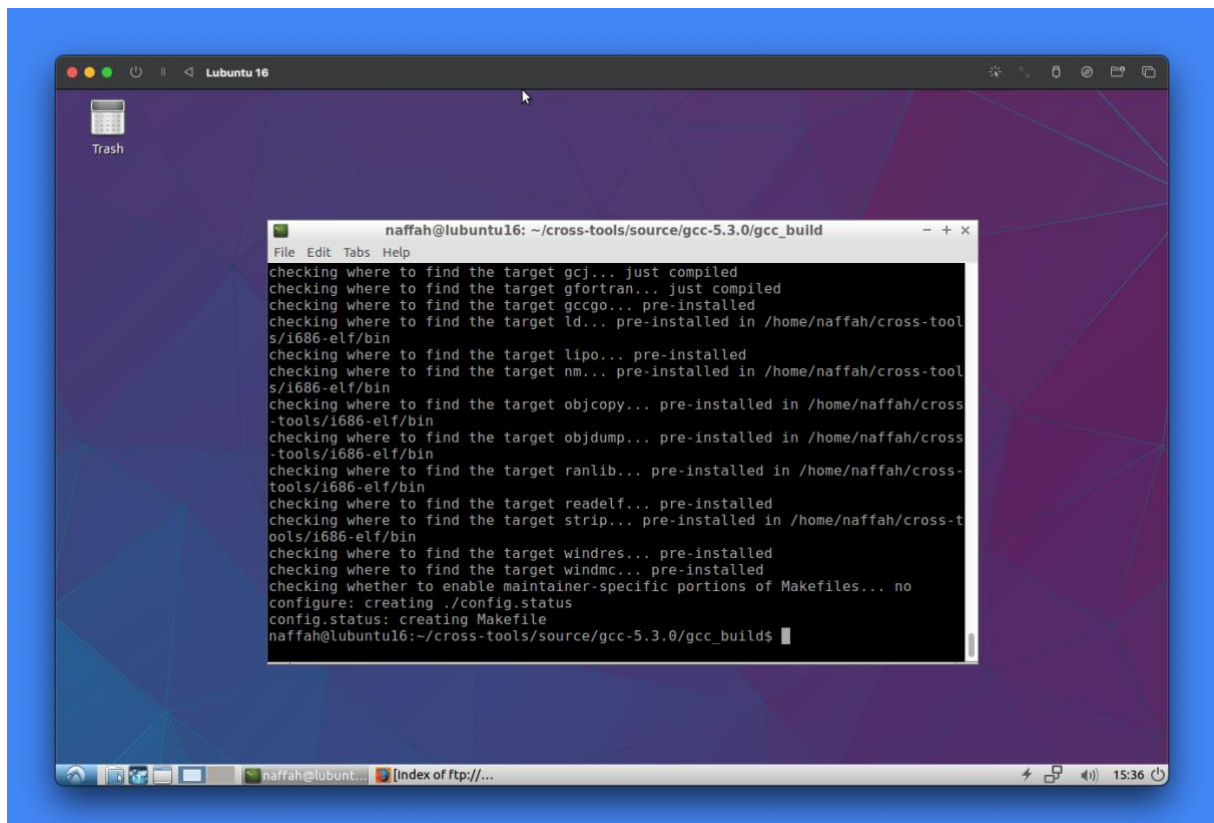


## 6. Configure gcc source under gcc\_build folder

```

../configure --target=$TARGET --prefix="$PREFIX" --disable-nls --
enable-languages=c,c++ --without-headers

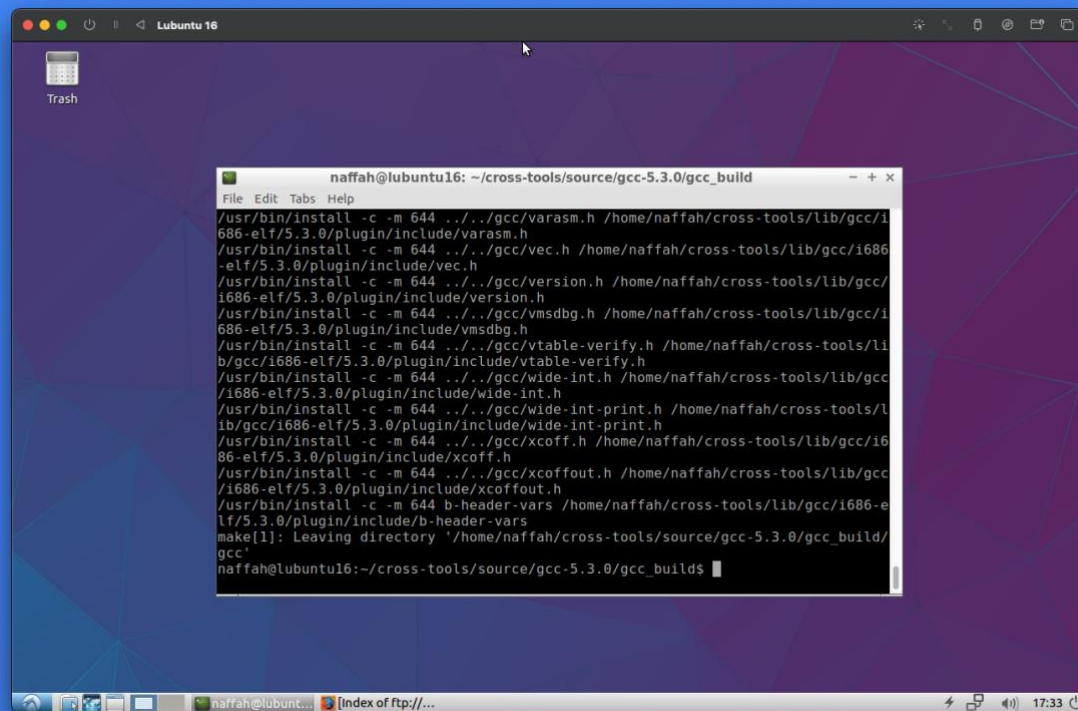
```



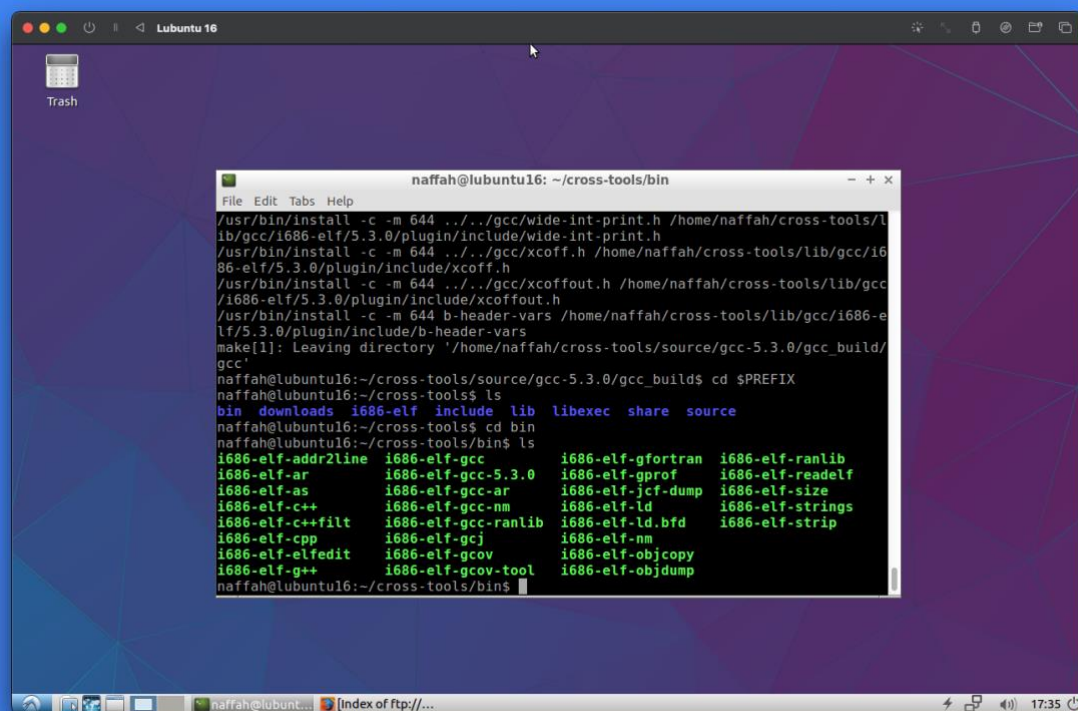


## 7. Run make and make install for gcc source

```
make all-gcc
make all-target-libgcc
make install-gcc
make install-target-libgcc
```



A terminal window titled 'naffah@ubuntu16: ~/cross-tools/source/gcc-5.3.0/gcc\_build' showing the execution of 'make install' for various gcc source files. The output shows the installation of headers like varasm.h, vec.h, version.h, vmsdbg.h, vtable-verify.h, wide-int.h, wide-int-print.h, xcoff.h, and xcoffout.h to the directory /usr/bin/install -c -m 644. The process concludes with the message 'make[1]: Leaving directory "/home/naffah/cross-tools/source/gcc-5.3.0/gcc\_build/'.



A terminal window titled 'naffah@ubuntu16: ~/cross-tools/bin' showing the execution of 'make install' for gcc target libraries. The output shows the installation of libraries like i686-elf-gcc, i686-elf-gcc-ar, i686-elf-gcc-nm, i686-elf-gcc-ranlib, i686-elf-gcj, i686-elf-gcov, i686-elf-gcov-tool, i686-elf-gfortran, i686-elf-gprof, i686-elf-jcf-dump, i686-elf-ld, i686-elf-ld.bfd, i686-elf-lib, i686-elf-readelf, i686-elf-size, i686-elf-strings, i686-elf-strip, i686-elf-nm, i686-elf-objcopy, and i686-elf-objdump to the directory /usr/bin/install -c -m 644. The process concludes with the message 'make[1]: Leaving directory "/home/naffah/cross-tools/source/gcc-5.3.0/gcc\_build/'.

8. Clone minimalOS and make the bootable image to run on QEMU

```
cd $PREFIX
git clone https://gitlab.uwe.ac.uk/na3-rasheed/minimalOS/
cd minimalOS
mkdir -p isodir/boot/grub
make
qemu-system-i386 --kernel minimal.bin
```

