

How to build the “vanilla” linux kernel for Debian distribution

install necessary packages:

```
sudo apt-get install libncurses-dev fakeroot wget bzip2 build-essential libelf-dev
```

```
mkdir linux_kernel_build
```

```
cd linux_kernel_build
```

visit <https://www.kernel.org> and choose the release to build; for example, I chose the latest stable.

download linux kernel source tarball

```
wget https://cdn.kernel.org/pub/linux/kernel/v5.x/linux-5.14.11.tar.xz
```

uncompress source code

```
tar xf linux-5.14.11.tar.xz
```

```
cd linux-5.14.11
```

```
make clean && make mrproper
```

copy current kernel configuration; search for your current configuration in /boot/ directory

```
cp /boot/config-5.14.0-2xyz-amd64 .config
```

open the configuration file (.config) with kernel configuration menu

```
make menuconfig
```

IMPORTANT: save it with <save> command, then <exit>

this operation updates the configuration file with all the latest options

clean up

```
make clean
```

find out how many processors your system has:

```
getconf _NPROCESSORS_ONLN
```

```
16
```

start build of kernel; tell make to use 16 processors, to accelerate build

```
fakeroot make deb-pkg -j 16
```

#result:

```
$ls -la
```

```
...
```

```
drwxr-xr-x 27 marco marco    4096 Oct 10 12:43 linux-5.14.11
```

```
-rw-r--r--  1 marco marco 120700220 Oct  9 15:14 linux-5.14.11.tar.xz
```

```
-rw-r--r--  1 marco marco  8247384 Oct 10 12:43 linux-headers-5.14.11-mt_5.14.11-mt-1_amd64.deb
```

```
-rw-r--r--  1 marco marco  56589000 Oct 10 12:44 linux-image-5.14.11-mt_5.14.11-mt-1_amd64.deb
```

```
-rw-r--r--  1 marco marco 794396004 Oct 10 12:47 linux-image-5.14.11-mt-dbg_5.14.11-mt-1_amd64.deb
```

```
-rw-r--r--  1 marco marco  1184480 Oct 10 12:43 linux-libc-dev_5.14.11-mt-1_amd64.deb
```

```
...
```

#install the new linux kernel image and header:

```
sudo dpkg -i linux-headers-5.14.11-mt_5.14.11-mt-1_amd64.deb
```

```
sudo dpkg -i linux-image-5.14.11-mt_5.14.11-mt-1_amd64.deb
```

see also:

<https://kernel-team.pages.debian.net/kernel-handbook/ch-common-tasks.html#s-common-building>