

## muhammed@muhammed-VirtualBox: ~









muhammed@muhammed-VirtualBox:-\$ nproc

4

muhammed@muhammed-VirtualBox:~\$ free -m

total	used	free
3935	644	2581
2047	Θ	2647

muhammed@muhammed-VirtualBox: \$ uname -r

5.8.1

Mem:

Swap:

muhammed@muhammed-VirtualBox:-\$

shared buff/cache 7 709

available 3061

linux-5.8.1.tar.xz

```
Reading package lists... Done
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following packages were automatically installed and are no longer required:
  chromium-codecs-ffmpeg-extra gstreamer1.0-vaapi libgstreamer-plugins-bad1.0-0 libva-wayland2
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
muhammed@muhammed-VirtualBox: $ sudo apt clean && sudo apt autoremove -v
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages will be REMOVED:
  chromium-codecs-ffmpeg-extra gstreamer1.0-vaapi libgstreamer-plugins-bad1.0-0 libva-wayland2
0 upgraded, 0 newly installed, 4 to remove and 0 not upgraded.
After this operation, 2,250 kB disk space will be freed.
(Reading database ... 189391 files and directories currently installed.)
Removing chromium-codecs-ffmpeg-extra (1:85.0.4183.83-Oubuntu0.20.04.2) ...
Removing gstreamer1.0-vaapi:amd64 (1.16.2-2) ...
Removing libgstreamer-plugins-bad1.0-0:amd64 (1.16.2-2.1ubuntu1) ...
Removing libva-wayland2:amd64 (2.7.0-2) ...
Processing triggers for libc-bin (2.31-Oubuntu9.2) ...
muhammed@muhammed-VirtualBox:-$ wget -P ~/ https://cdn.kernel.org/pub/linux/kernel/v5.x/linux-5.8.1.tar.xz
--2021-06-07 03:43:30-- https://cdn.kernel.org/pub/linux/kernel/v5.x/linux-5.8.1.tar.xz
Resolving cdn.kernel.org (cdn.kernel.org)... 199.232.81.176, 2a04:4e42:54::432
Connecting to cdn.kernel.org (cdn.kernel.org)|199.232.81.176|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 114458544 (109M) [application/x-xz]
Saving to: '/home/muhammed/linux-5.8.1.tar.xz'
```

0%[

muhammed@muhammed-VirtualBox: ~

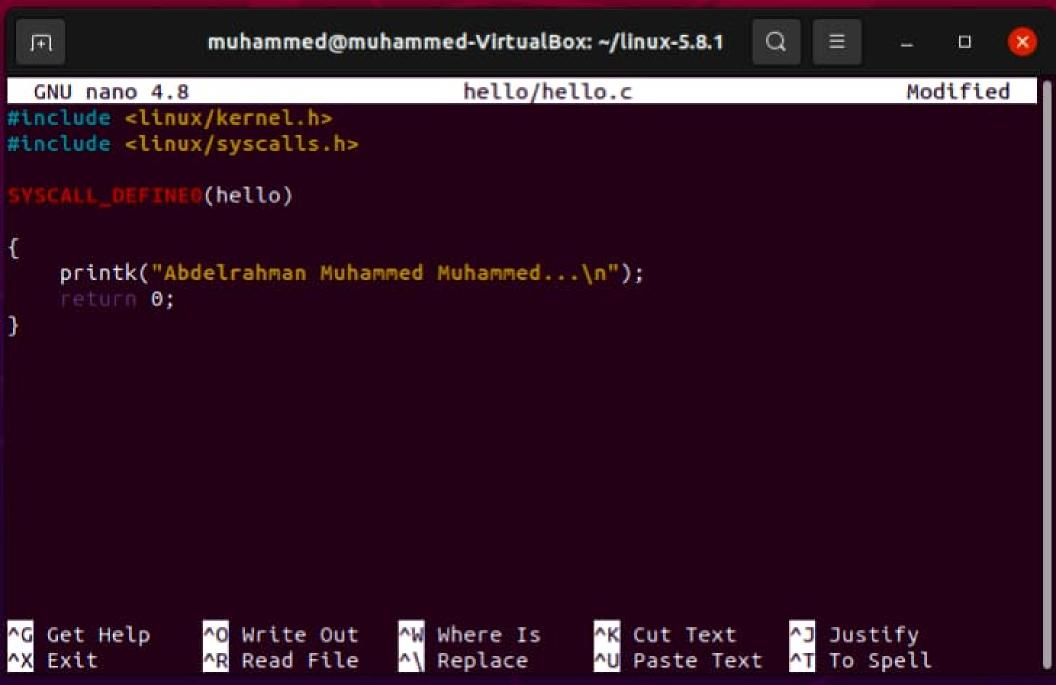
Q



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muhammed@muhammed-VirtualBox: \$ tar -xvf ~/linux-5.8.1.tar.xz -C ~/



```
muhammed@muhammed-VirtualBox: ~
 oxed{\mathbb{H}}
linux-5.8.1/usr/include/Makefile
linux-5.8.1/usr/initramfs data.S
linux-5.8.1/virt/
linux-5.8.1/virt/Makefile
linux-5.8.1/virt/kvm/
linux-5.8.1/virt/kvm/Kconfig
linux-5.8.1/virt/kvm/async pf.c
linux-5.8.1/virt/kvm/async pf.h
linux-5.8.1/virt/kvm/coalesced mmio.c
linux-5.8.1/virt/kvm/coalesced mmio.h
linux-5.8.1/virt/kvm/eventfd.c
linux-5.8.1/virt/kvm/irgchip.c
linux-5.8.1/virt/kvm/kvm main.c
linux-5.8.1/virt/kvm/vfio.c
linux-5.8.1/virt/kvm/vfio.h
linux-5.8.1/virt/lib/
linux-5.8.1/virt/lib/Kconfig
linux-5.8.1/virt/lib/Makefile
linux-5.8.1/virt/lib/irgbypass.c
muhammed@muhammed-VirtualBox:- $ uname -r
5.8.0-55-generic
muhammed@muhammed-VirtualBox:-S
muhammed@muhammed-VirtualBox: $ cd ~/linux-5.8.1/
```





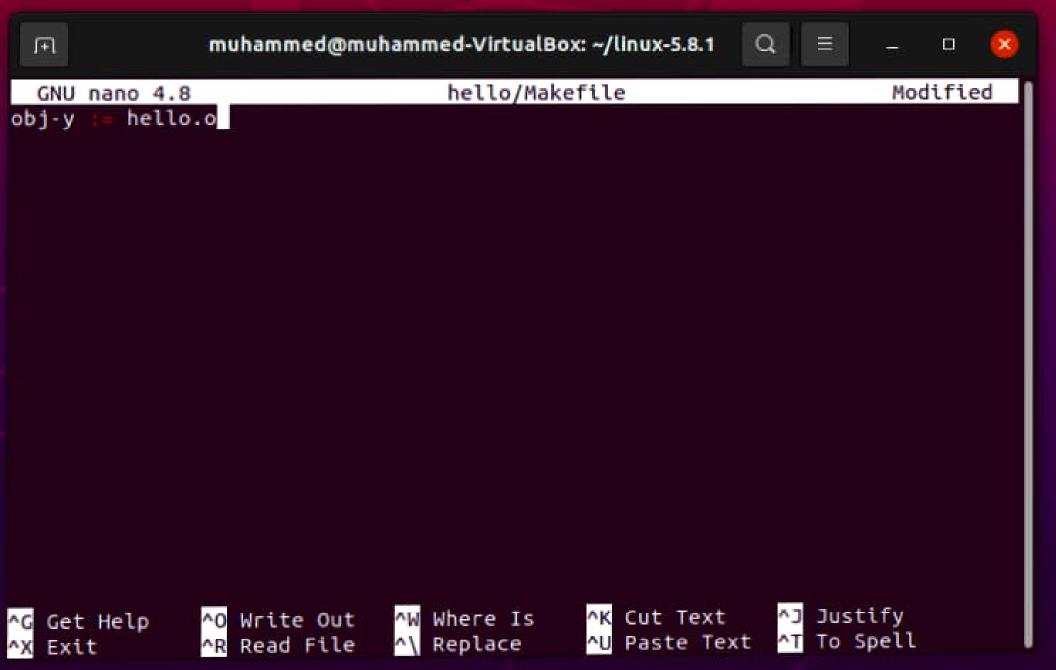




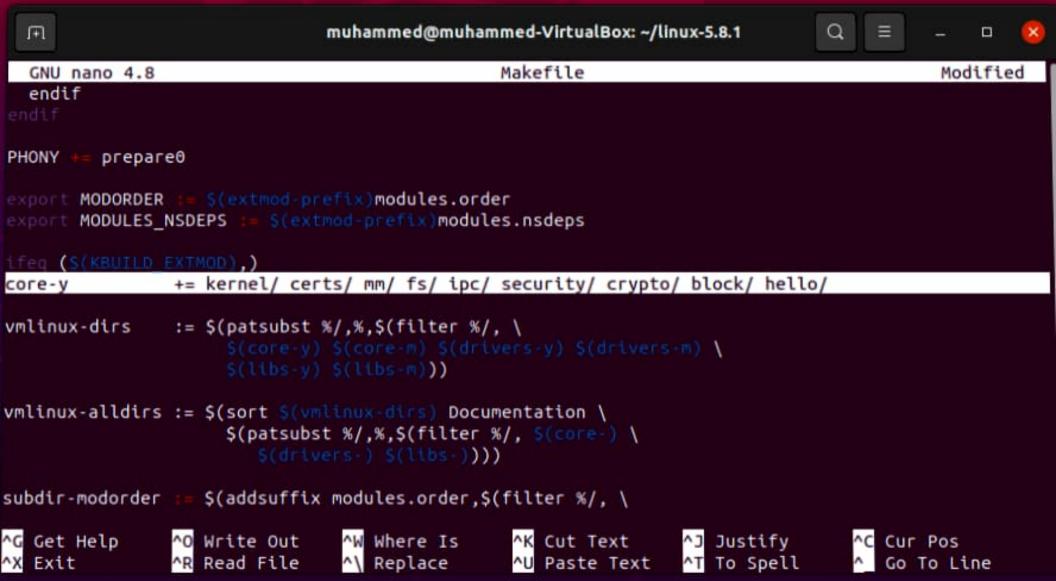


muhammed@muhammed-VirtualBox:~/linux-5.8.1\$ ls arch CREDITS ipc lib scripts mm USF block Kbuild LICENSES crypto hello net security virt Documentation include Kconfig MAINTAINERS certs README sound drivers kernel Makefile COPYING init samples tools

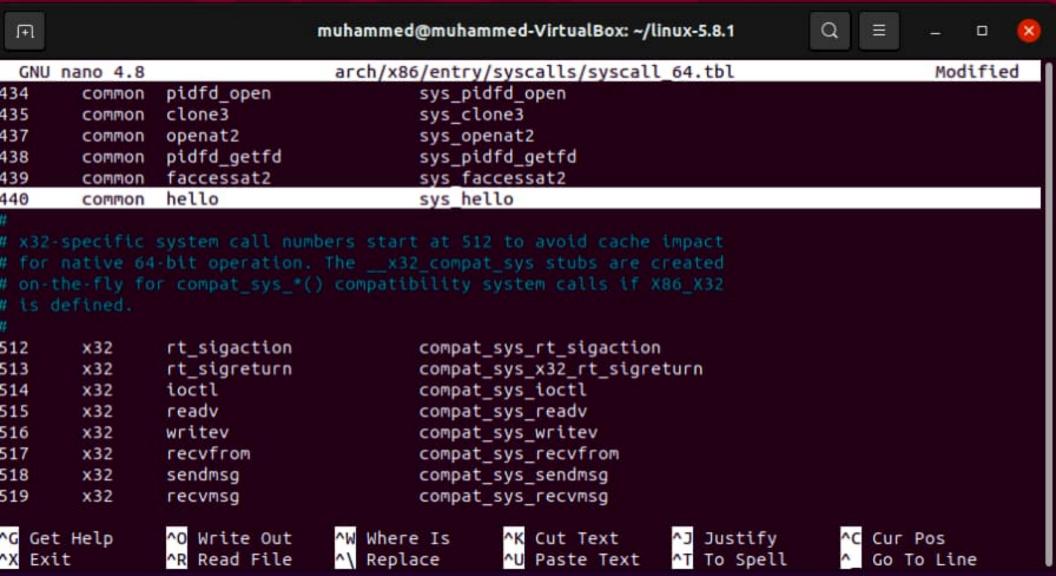
muhammed@muhammed-VirtualBox:~/linux-5.8.1\$ nano hello/hello.c muhammed@muhammed-VirtualBox:~/linux-5.8.1\$ nano hello/Makefile

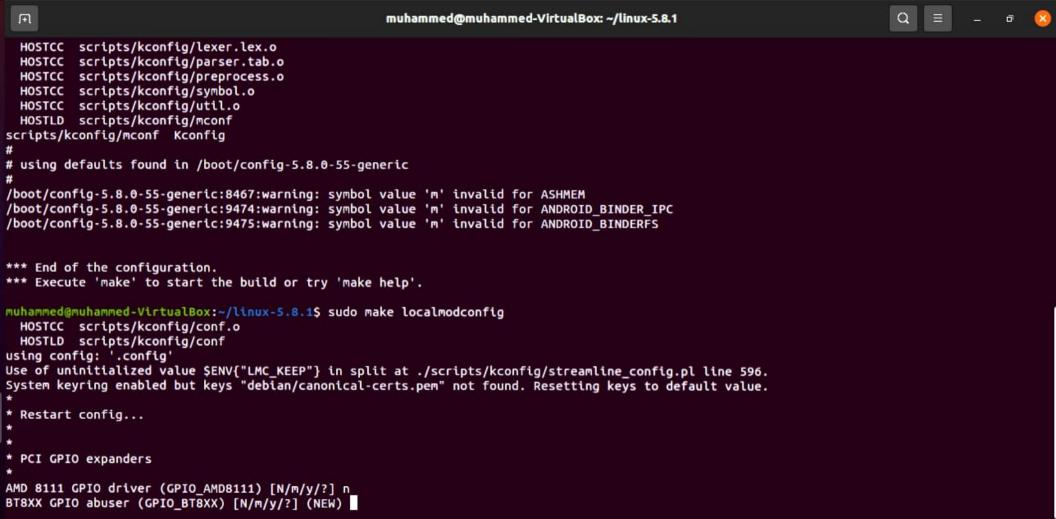


```
muhammed@muhammed: ~/linux-5.8.1/hello
                                                        a
 F
linux-5.8.1/virt/kvm/coalesced mmio.c
linux-5.8.1/virt/kvm/coalesced mmio.h
linux-5.8.1/virt/kvm/eventfd.c
linux-5.8.1/virt/kvm/irgchip.c
linux-5.8.1/virt/kvm/kvm_main.c
linux-5.8.1/virt/kvm/vfio.c
linux-5.8.1/virt/kvm/vfio.h
linux-5.8.1/virt/lib/
linux-5.8.1/virt/lib/Kconfig
linux-5.8.1/virt/lib/Makefile
linux-5.8.1/virt/lib/irqbypass.c
muhammed@muhammed:~/Desktop$ uname -r
5.8.0-55-generic
muhammed@muhammed:-/Desktop$ cd ~/linux-5.8.1/
muhammed@muhammed:~/ltnux-5.8.1$ ls
arch certs CREDITS Documentation fs init Kbuild
                                                                     LICENSE
     Makefile net samples security tools virt
block COPYING crypto drivers include ipc
                                                     Kconfig
                                                             lib
                                                                     MAINTAI
NERS mm
               README scripts sound
muhammed@muhammed:~/linux-5.8.1$ mkdir hello
muhammed@muhammed:-/linux-5.8.1$ cd hello
muhammed@muhammed:-/linux-5.8.1/hello$ gedit hello.c
```

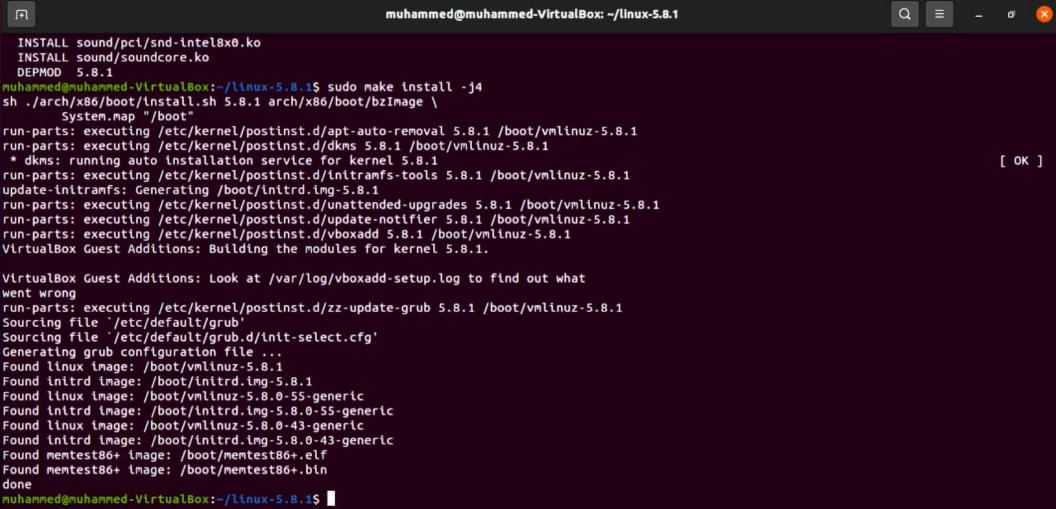


```
*syscalls.h
                                                                                      ≡
              Ħ
                                                                              Save
  Open
                                                                                                /usr/src/linux-4.17.4/include/linux
1250
             return close ra(current->rites, ra);
1251 }
                                                                                                                    Q
                                                                                                        inux
1252
1253 extern long do sys open(int dfd, const char user *filename, int flags,
                                                                                                             wireless.h
1254
                             umode t mode);
                                                                                                             wkup m3 ipc.h
1255
                                                                                                             wl12xx.h
1256 static inline long ksys open(const char user *filename, int flags,
                                                                                                             wm97xx.h
1257
                                  umode t mode)
                                                                                                             wmi.h
1258 {
                                                                                                             workqueue.h
1259
             if (force o largefile())
                                                                                                             writeback.h
1260
                     flags |= 0 LARGEFILE;
                                                                                                             ww mutex.h
1261
             return do sys open(AT FDCWD, filename, flags, mode);
                                                                                                             xarray.h
1262 }
                                                                                                             xattr.h
1263
                                                                                                             xxhash.h
1264 extern long do sys truncate(const char user *pathname, loff t length);
                                                                                                             xz.h
1265
                                                                                                             yam.h
1266 static inline long ksys truncate(const char user *pathname, loff t length)
                                                                                                             z2 battery.h
1267 {
                                                                                                             zbud.h
             return do sys truncate(pathname, length);
1268
                                                                                                             zconf.h
1269 }
                                                                                                             zlib.h
1270
                                                                                                             zorro.h
1271 asmlinkage long sys hello(void);
                                                                                                             zpool.h
1272
                                                                                                             zsmalloc.h
                                                C/ObjC Header ▼ Tab Width: 8 ▼
                                                                                Ln 1270, Col 1
                                                                                                   INS
                                                                                                             zstd.h
                                fixp-arith.h
                                                           memblock.h
                                                                                     rtc.h
                                                                                                             zutil.h
```





**Q** ≡



```
muhammed@muhammed-VirtualBox: ~
                                                          Q
                                                              \equiv
 用
   69.981255] 15:43:42.672091 main vbglR3GuestCtrlDetectPeekGetCancelSuppo
rt: Supported (#1)
   86.562674] rfkill: input handler disabled
   97.509078] rfkill: input handler enabled
   99.4789231 Service: Shared Clipboard
   99.482256] Service: Host Version Check
   99.4845921 Service: Seamless
   99.486727] Service: Drag and Drop (DnD)
   99.488478] Service: Display SVGA X11
   99.506986] Worker loop running
   99.532316] VMWARE's ctrl extension is available. Major Opcode is 128.
   99.533277] Proxy window=6291457, root window=1330 ...
   99.533514] Started
   99.533592 6.1.18 142142
   99.535775] Failed to register resizing support, rc=VERR INVALID FUNCTION
   99.5845791
              Failed to get display change request, rc=VERR_ACCESS_DENIED
   99.5849137
  102.956074] ISO 9660 Extensions: Microsoft Joliet Level 3
  103.005673 ISO 9660 Extensions: RRIP 1991A
  103.0607947 Service: Shared Clipboard
  103.0663631 rfkill: input handler disabled
  103.071809] Service: Host Version Check
  103.076316] Service: Seamless
  103.080965] Service: Drag and Drop (DnD)
  103.086164] Service: Display SVGA X11
  370.230174] Shared Clipboard: Converting VBox formats 0x5 to 'INVALID' for X
```

417.5510531 Abdel Rahman Muhammed Muhammed...

11 (idxFmtX11=0, fmtX11=0) failed, rc=VERR NOT SUPPORTED

## Refrences:

```
http://rjaan.narod.ru/docs/admin/deb-recipes/
debkbuild/sysadmin-build-5s-kernel-in-debian.html

https://dev.to/jasper/adding-a-system-call-to-the-linux-
kernel-5-8-1-in-ubuntu-20-04-lts-2ga8

https://medium.com/anubhav-shrimal/adding-a-hello-
world-system-call-to-linux-kernel-dad32875872
```