# Ultra96 dm5 How to

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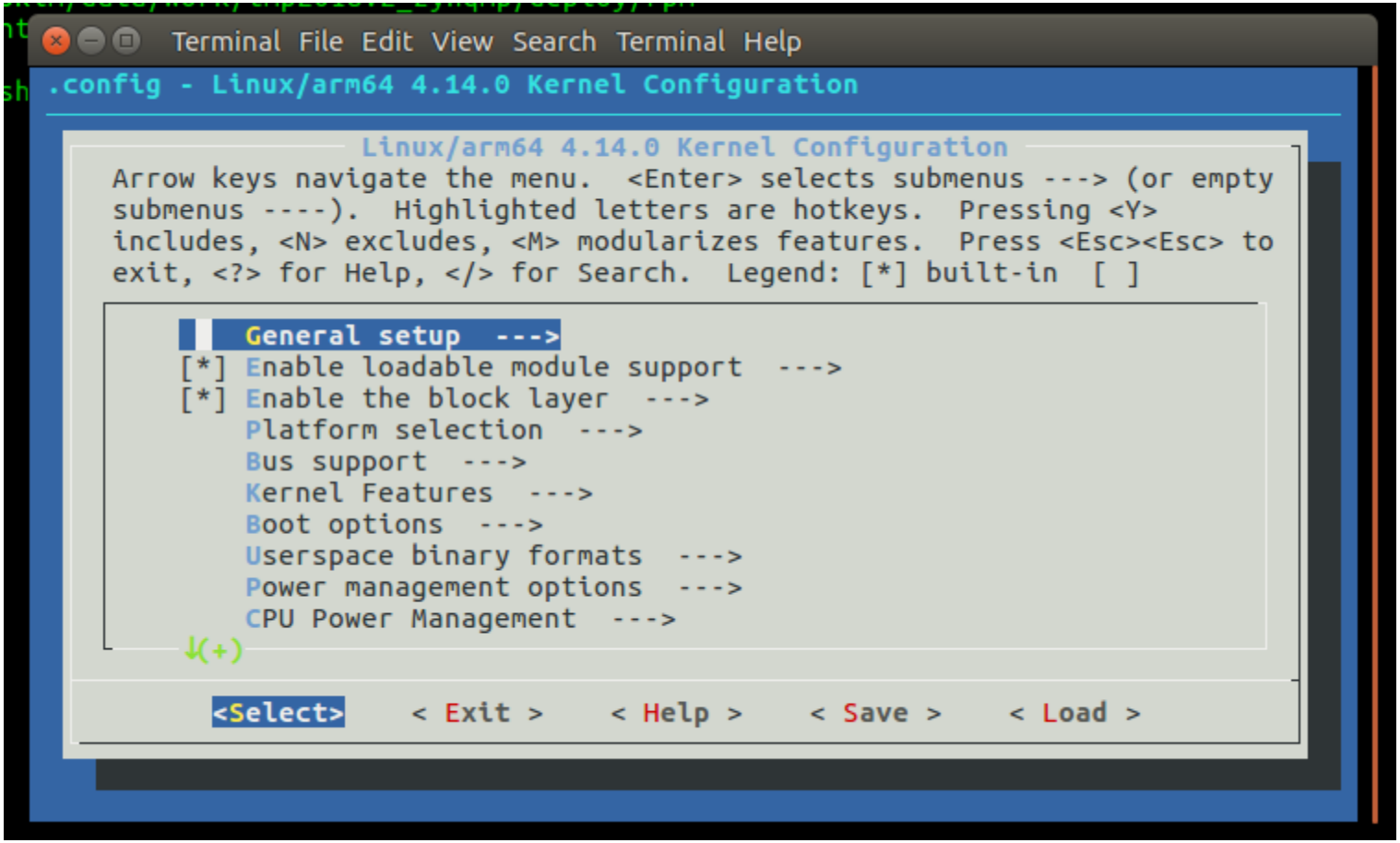
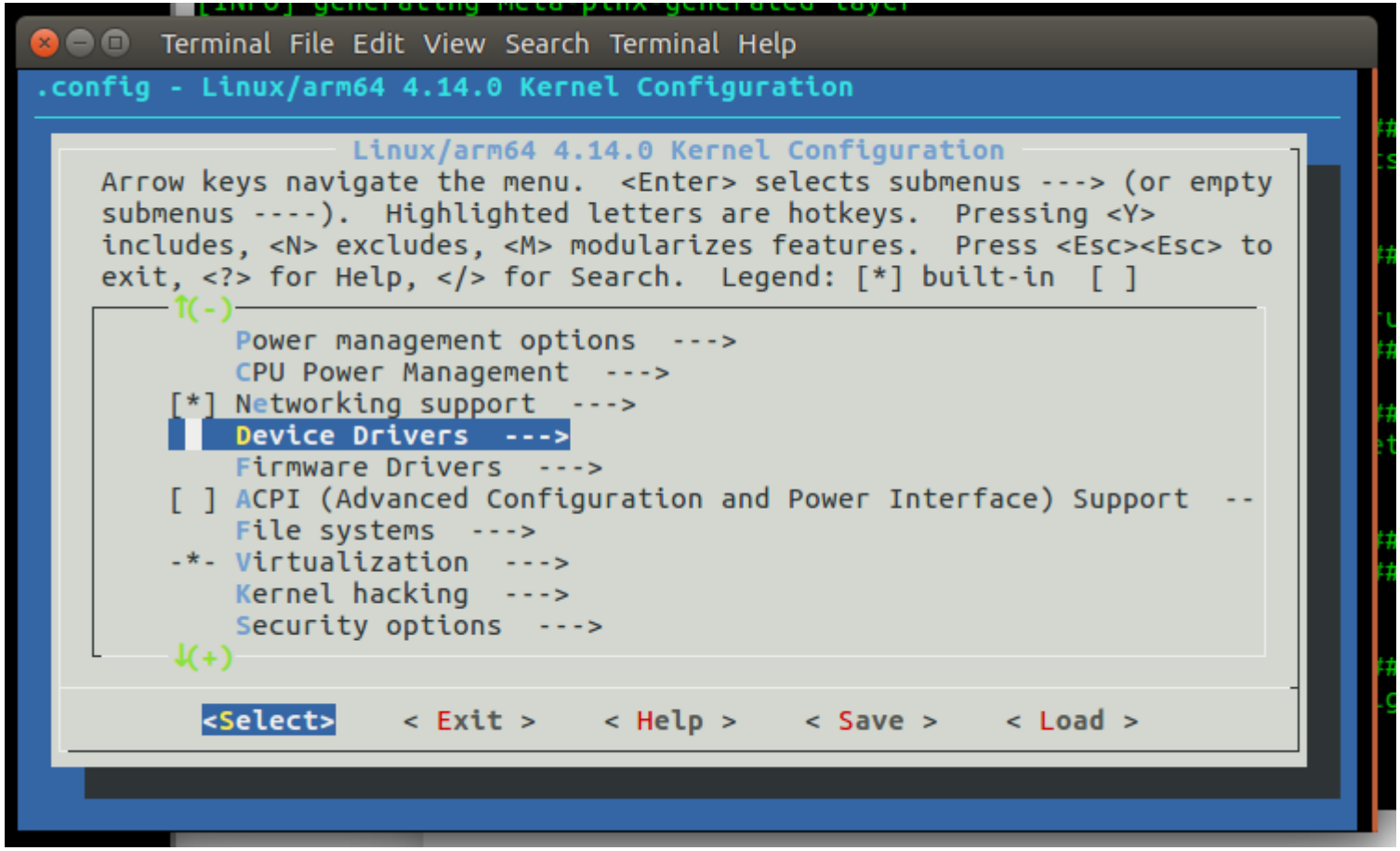
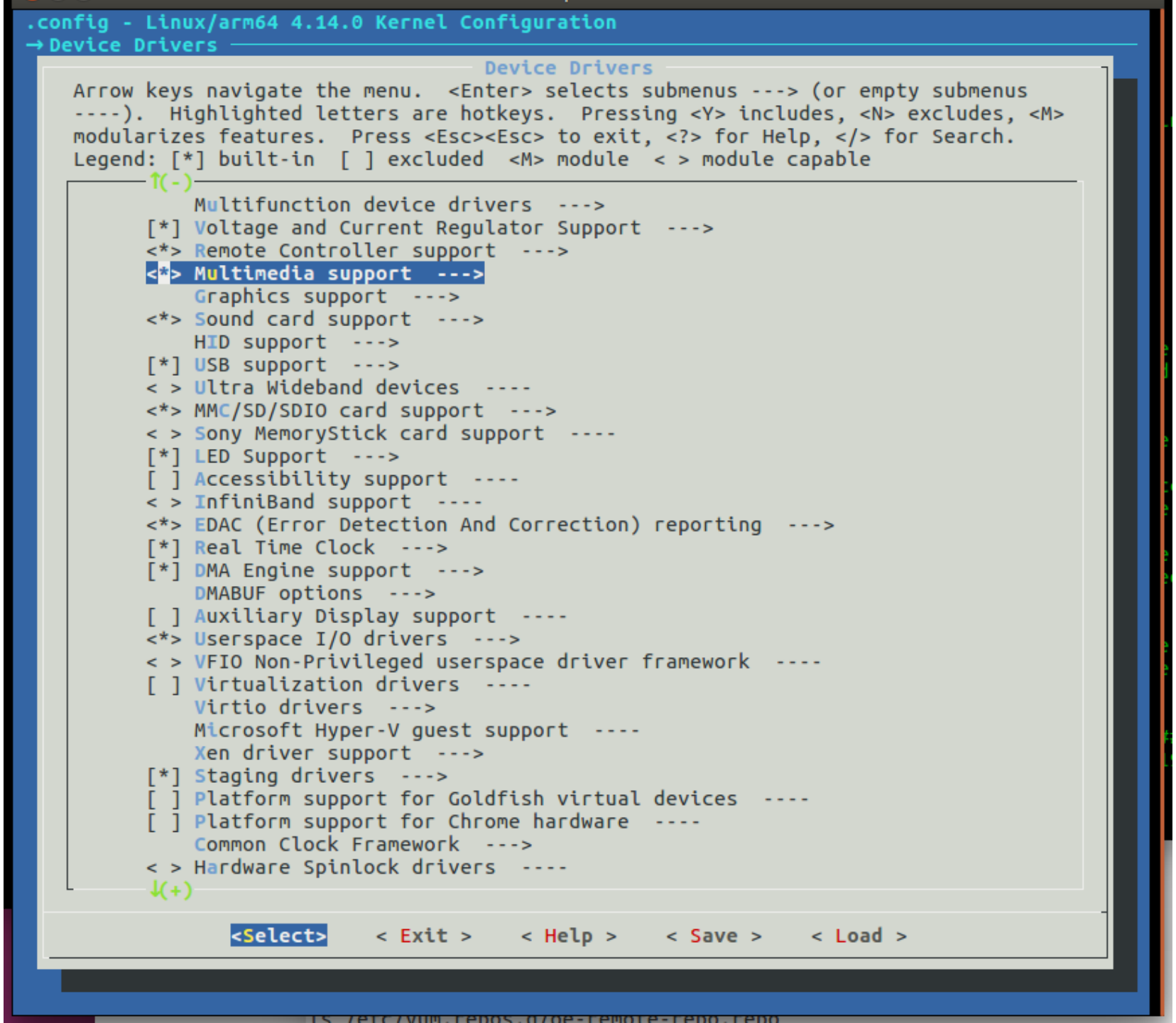
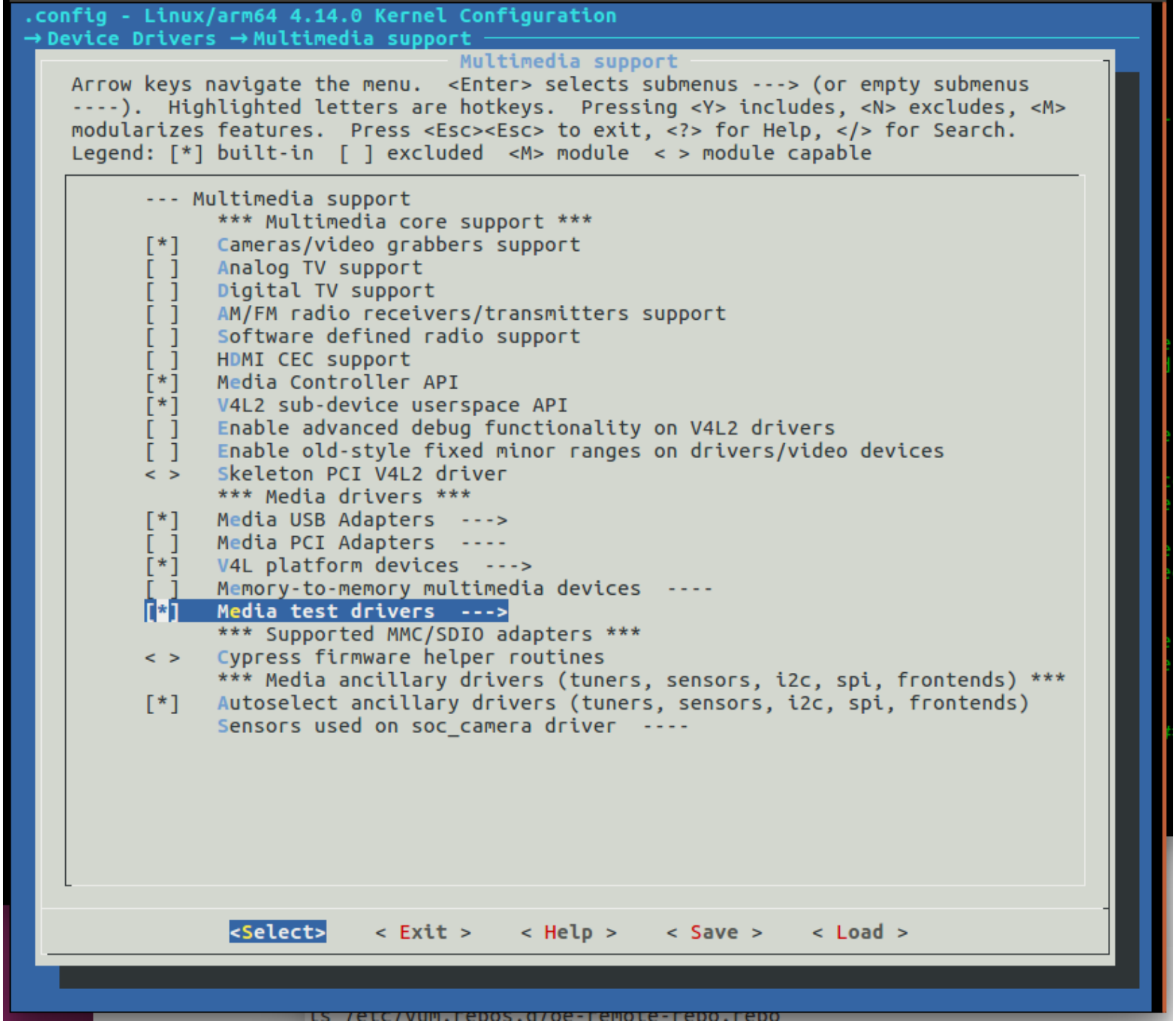
본 문서 작업의 절차는
이니프로의 hokim(김현옥)님에 의해 만들어졌습니다.
카페 문의 : cafe.naver.com/plduser (이니프로카페)

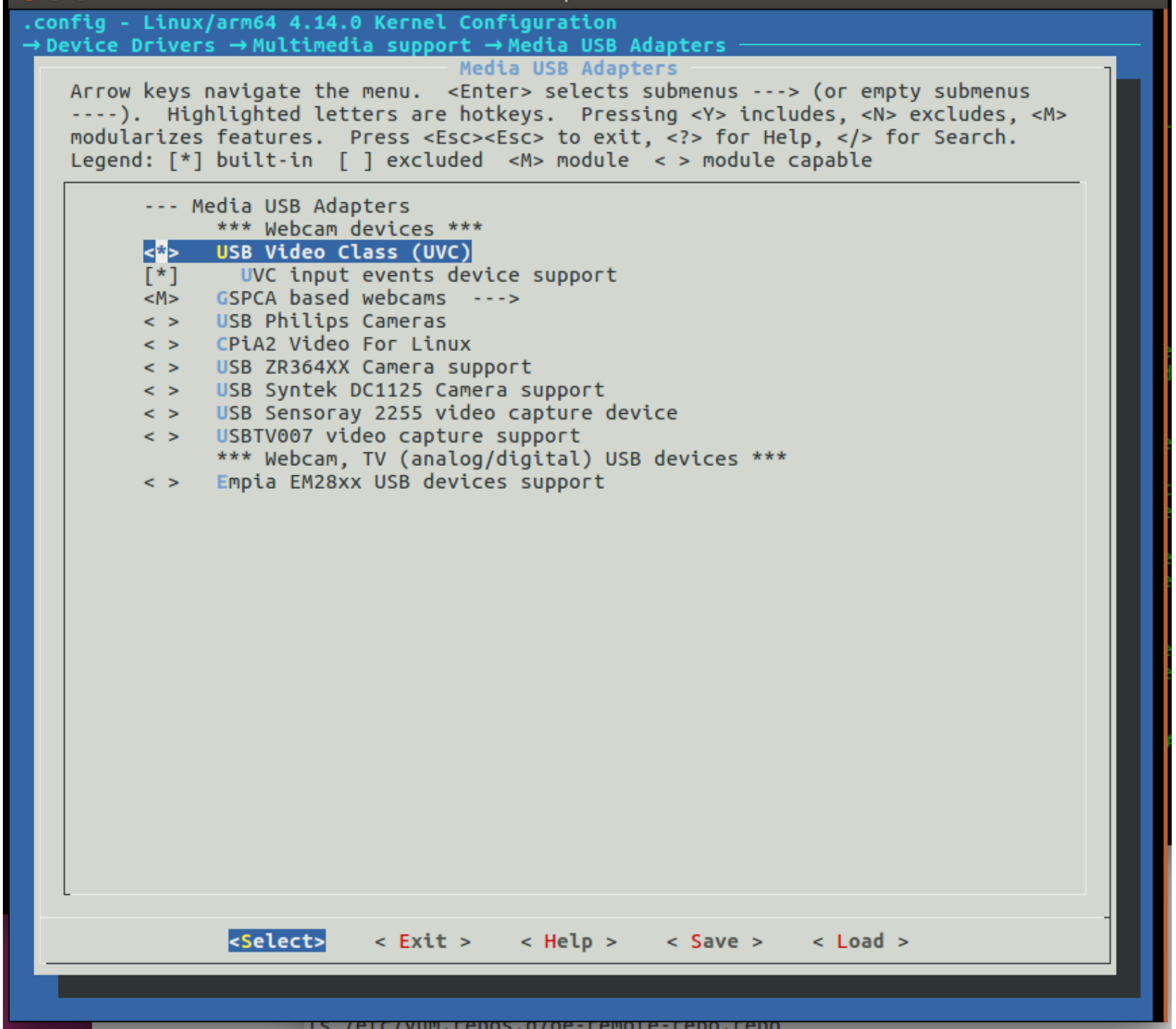
```
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd$ ls
create_dsa.tcl  dm1.tcl         dm6.tcl  mipi_csi2_rx_hier.tcl  sdsoc
dm1             dm1.xdc         dm6.xdc  petalinux              tpg_input_hier.tcl
dm1_preset.tcl  dm6_preset.tcl  LICENSE  README.md              workspaces
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd$ cd petalinux/
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux$ ls
dm1.bif  dm2.txt  dm4.bif  dm6.bif  dm8.txt         petalinux-ultra96-2018.2-dm1.bsp
dm1.txt  dm3.bif  dm4.txt  dm6.txt  gstsdxfilter2d  repo_server.txt
dm2.bif  dm3.txt  dm5.txt  dm7.txt  meta-inipro     ultra96_trd
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux$ cd ultra96_trd/
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd$ petalinux-confi
g -c kernel
[INFO] generating Kconfig for project

[INFO] sourcing bitbake
[INFO] generating plnxtool conf
[INFO] generating meta-plnx-generated layer
[INFO] configuring: kernel
[INFO] generating kernel configuration files
[INFO] bitbake virtual/kernel -c menuconfig
Parsing recipes: 100% |#########################################################| Time: 0:01:52
Parsing of 2564 .bb files complete (0 cached, 2564 parsed). 3453 targets, 114 skipped, 0 maske
d, 0 errors.
NOTE: Resolving any missing task queue dependencies
Initialising tasks: 100% |######################################################| Time: 0:00:00
NOTE: Executing RunQueue Tasks
NOTE: Tasks Summary: Attempted 2 tasks of which 0 didn't need to be rerun and all succeeded.
Loading cache: 100% |##########################################################| Time: 0:00:00
Loaded 3449 entries from dependency cache.
Parsing recipes: 100% |#########################################################| Time: 0:00:05
Parsing of 2564 .bb files complete (2525 cached, 39 parsed). 3453 targets, 114 skipped, 0 mask
ed, 0 errors.
NOTE: Resolving any missing task queue dependencies
Initialising tasks: 100% |######################################################| Time: 0:00:01
Checking sstate mirror object availability: 100% |##############################| Time: 0:00:01
NOTE: Executing SetScene Tasks
NOTE: Executing RunQueue Tasks
Currently  1 running tasks (360 of 360)  99% |############################################ |
0: linux-xlnx-4.14-xilinx-v2018.2+gitAUTOINC+ad4cd988ba-r0 do_menuconfig - 6s (pid 19929)
```

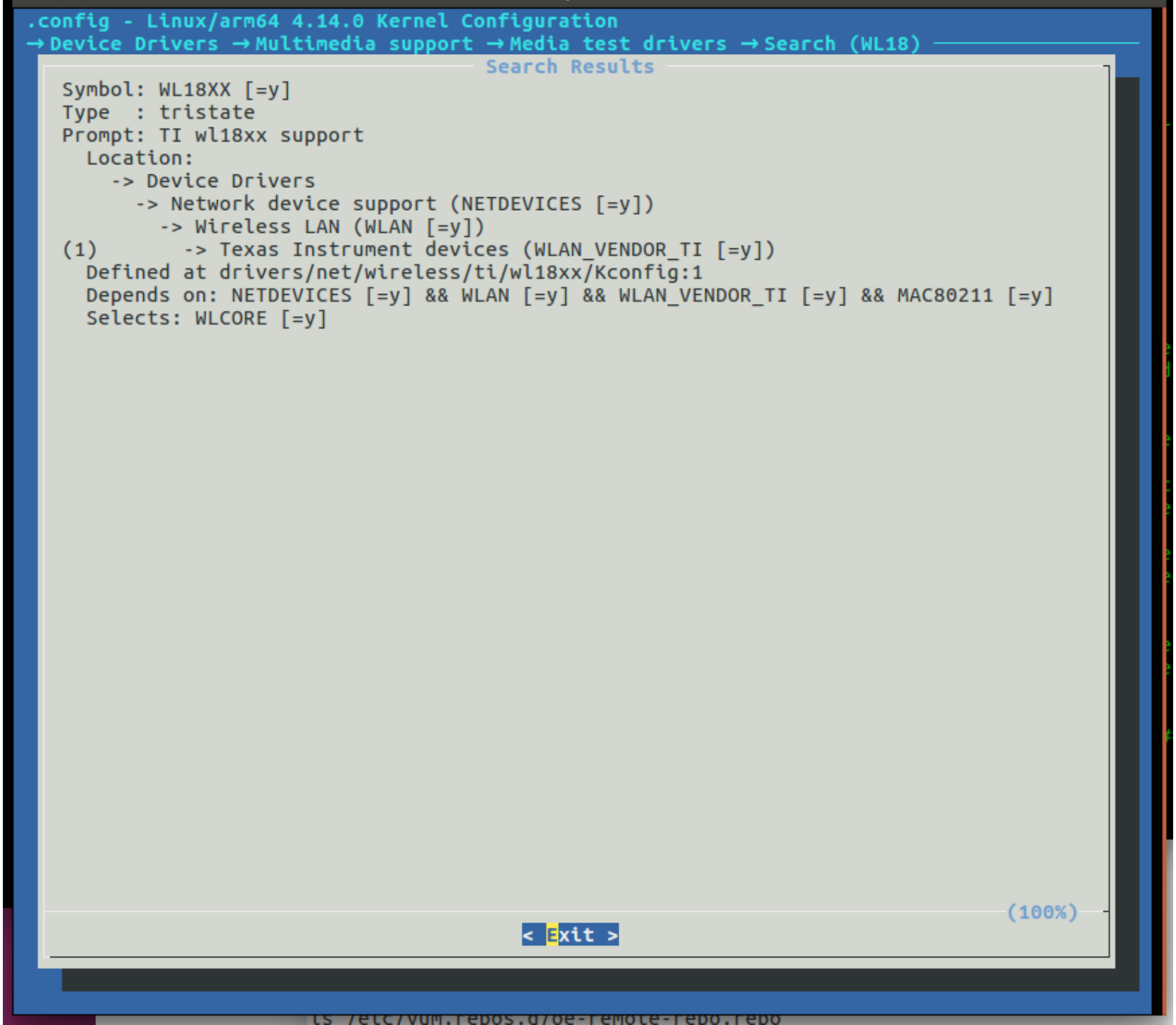

Terminal File Edit View Search Terminal Help
.config - Linux/arm64 4.14.0 Kernel Configuration
Linux/arm64 4.14.0 Kernel Configuration
Arrow keys navigate the menu. <Enter> selects submenus ---> (or empty submenus ----). Highlighted letters are hotkeys. Pressing <Y> includes, <N> excludes, <M> modularizes features. Press <Esc><Esc> to exit, <?> for Help, </> for Search. Legend: [*] built-in [ ]
General setup ---><br>[*] Enable loadable module support ---><br>[*] Enable the block layer ---><br>Platform selection ---><br>Bus support ---><br>Kernel Features ---><br>Boot options ---><br>Userspace binary formats ---><br>Power management options ---><br>CPU Power Management ---><br>(+)
<Select> < Exit > < Help > < Save > < Load >

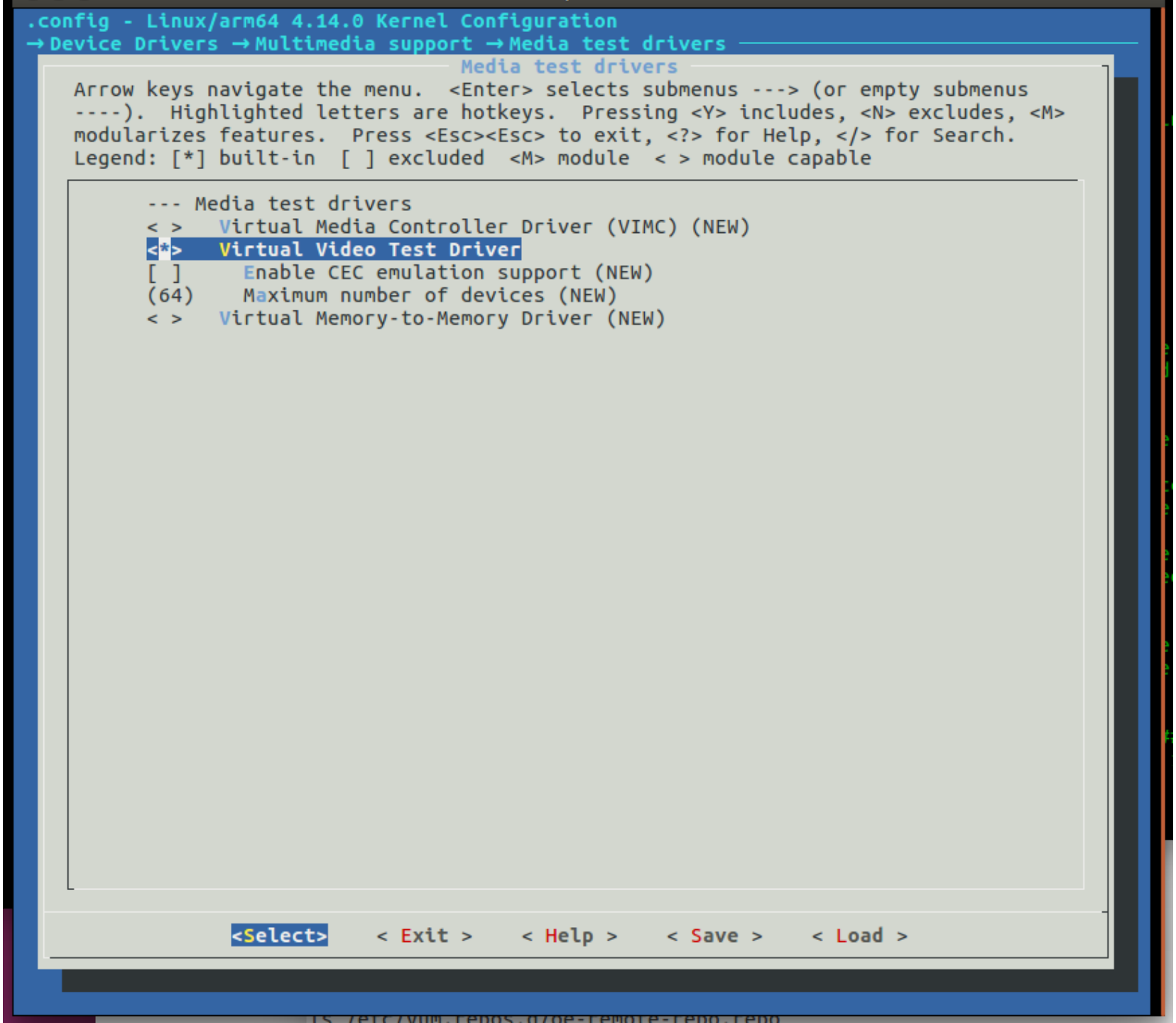

Terminal File Edit View Search Terminal Help
.config - Linux/arm64 4.14.0 Kernel Configuration
Linux/arm64 4.14.0 Kernel Configuration
Arrow keys navigate the menu. <Enter> selects submenus ---> (or empty submenus ----). Highlighted letters are hotkeys. Pressing <Y> includes, <N> excludes, <M> modularizes features. Press <Esc><Esc> to exit, <?> for Help, </> for Search. Legend: [*] built-in [ ]
↑(-)
Power management options --->
CPU Power Management --->
[*] Networking support --->
Device Drivers --->
Firmware Drivers --->
[ ] ACPI (Advanced Configuration and Power Interface) Support --
File systems --->
-*- Virtualization --->
Kernel hacking --->
Security options --->
↓(+)
<Select> < Exit > < Help > < Save > < Load >

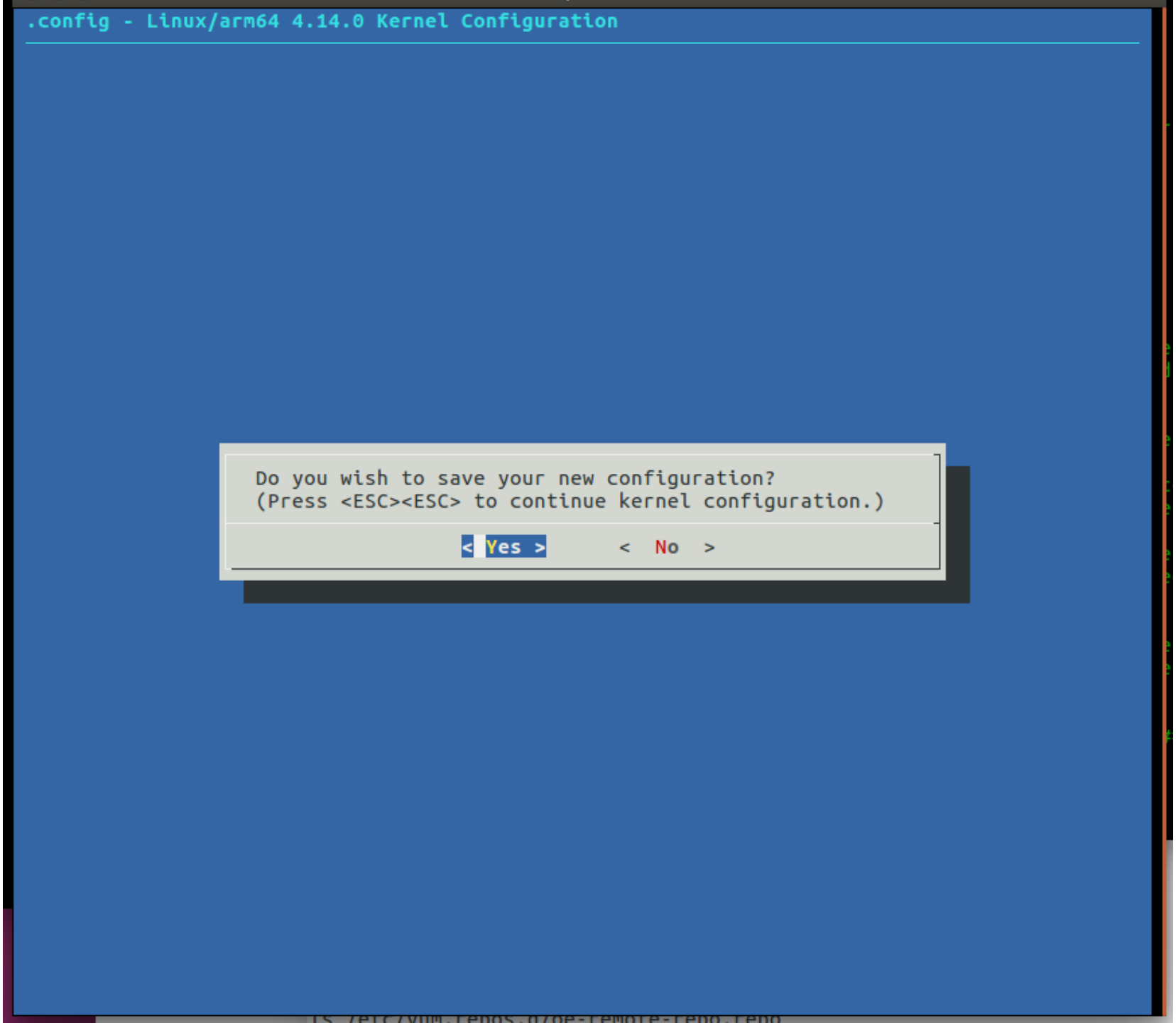

.config - Linux/arm64 4.14.0 Kernel Configuration
→ Device Drivers
Device Drivers
Arrow keys navigate the menu. <Enter> selects submenus ---> (or empty submenus ----). Highlighted letters are hotkeys. Pressing <Y> includes, <N> excludes, <M> modularizes features. Press <Esc><Esc> to exit, <?> for Help, </> for Search.
Legend: [*] built-in [ ] excluded <M> module < > module capable
↑(-)
Multifunction device drivers --->
[*] Voltage and Current Regulator Support --->
<*> Remote Controller support --->
<*> Multimedia support --->
Graphics support --->
<*> Sound card support --->
HID support --->
[*] USB support --->
< > Ultra Wideband devices ----
<*> MMC/SD/SDIO card support --->
< > Sony MemoryStick card support ----
[*] LED Support --->
[ ] Accessibility support ----
< > InfiniBand support ----
<*> EDAC (Error Detection And Correction) reporting --->
[*] Real Time Clock --->
[*] DMA Engine support --->
DMABUF options --->
[ ] Auxiliary Display support ----
<*> Userspace I/O drivers --->
< > VFIO Non-Privileged userspace driver framework ----
[ ] Virtualization drivers ----
Virtio drivers --->
Microsoft Hyper-V guest support ----
Xen driver support --->
[*] Staging drivers --->
[ ] Platform support for Goldfish virtual devices ----
[ ] Platform support for Chrome hardware ----
Common Clock Framework --->
< > Hardware Spinlock drivers ----
↓(+)
<Select> < Exit > < Help > < Save > < Load >


.config - Linux/arm64 4.14.0 Kernel Configuration
→ Device Drivers → Multimedia support
Multimedia support
Arrow keys navigate the menu. <Enter> selects submenus ---> (or empty submenus ----). Highlighted letters are hotkeys. Pressing <Y> includes, <N> excludes, <M> modularizes features. Press <Esc><Esc> to exit, <?> for Help, </> for Search.
Legend: [*] built-in [ ] excluded <M> module < > module capable
--- Multimedia support
*** Multimedia core support ***
[*] Cameras/video grabbers support
[ ] Analog TV support
[ ] Digital TV support
[ ] AM/FM radio receivers/transmitters support
[ ] Software defined radio support
[ ] HDMI CEC support
[*] Media Controller API
[*] V4L2 sub-device userspace API
[ ] Enable advanced debug functionality on V4L2 drivers
[ ] Enable old-style fixed minor ranges on drivers/video devices
< > Skeleton PCI V4L2 driver
*** Media drivers ***
[*] Media USB Adapters --->
[ ] Media PCI Adapters ----
[*] V4L platform devices --->
[ ] Memory-to-memory multimedia devices ----
[*] Media test drivers --->
*** Supported MMC/SDIO adapters ***
< > Cypress firmware helper routines
*** Media ancillary drivers (tuners, sensors, i2c, spi, frontends) ***
[*] Autoselect ancillary drivers (tuners, sensors, i2c, spi, frontends)
Sensors used on soc_camera driver ----
<Select> < Exit > < Help > < Save > < Load >


.config - Linux/arm64 4.14.0 Kernel Configuration
→ Device Drivers → Multimedia support → Media USB Adapters
Media USB Adapters
Arrow keys navigate the menu. <Enter> selects submenus ---> (or empty submenus ----). Highlighted letters are hotkeys. Pressing <Y> includes, <N> excludes, <M> modularizes features. Press <Esc><Esc> to exit, <?> for Help, </> for Search.
Legend: [*] built-in [ ] excluded <M> module < > module capable
--- Media USB Adapters
*** Webcam devices ***
<*> USB Video Class (UVC)
[*] UVC input events device support
<M> GSPCA based webcams --->
< > USB Philips Cameras
< > CPiA2 Video For Linux
< > USB ZR364XX Camera support
< > USB Syntek DC1125 Camera support
< > USB Sensoray 2255 video capture device
< > USBTV007 video capture support
*** Webcam, TV (analog/digital) USB devices ***
< > Empia EM28xx USB devices support
<Select> < Exit > < Help > < Save > < Load >


.config - Linux/arm64 4.14.0 Kernel Configuration
→ Device Drivers → Multimedia support → Media test drivers → Search (WL18)
Search Results
Symbol: WL18XX [=y]
Type : tristate
Prompt: TI wl18xx support
Location:
-> Device Drivers
-> Network device support (NETDEVICES [=y])
-> Wireless LAN (WLAN [=y])
(1) -> Texas Instrument devices (WLAN_VENDOR_TI [=y])
Defined at drivers/net/wireless/ti/wl18xx/Kconfig:1
Depends on: NETDEVICES [=y] && WLAN [=y] && WLAN_VENDOR_TI [=y] && MAC80211 [=y]
Selects: WLCORE [=y]
(100%)
< Exit >

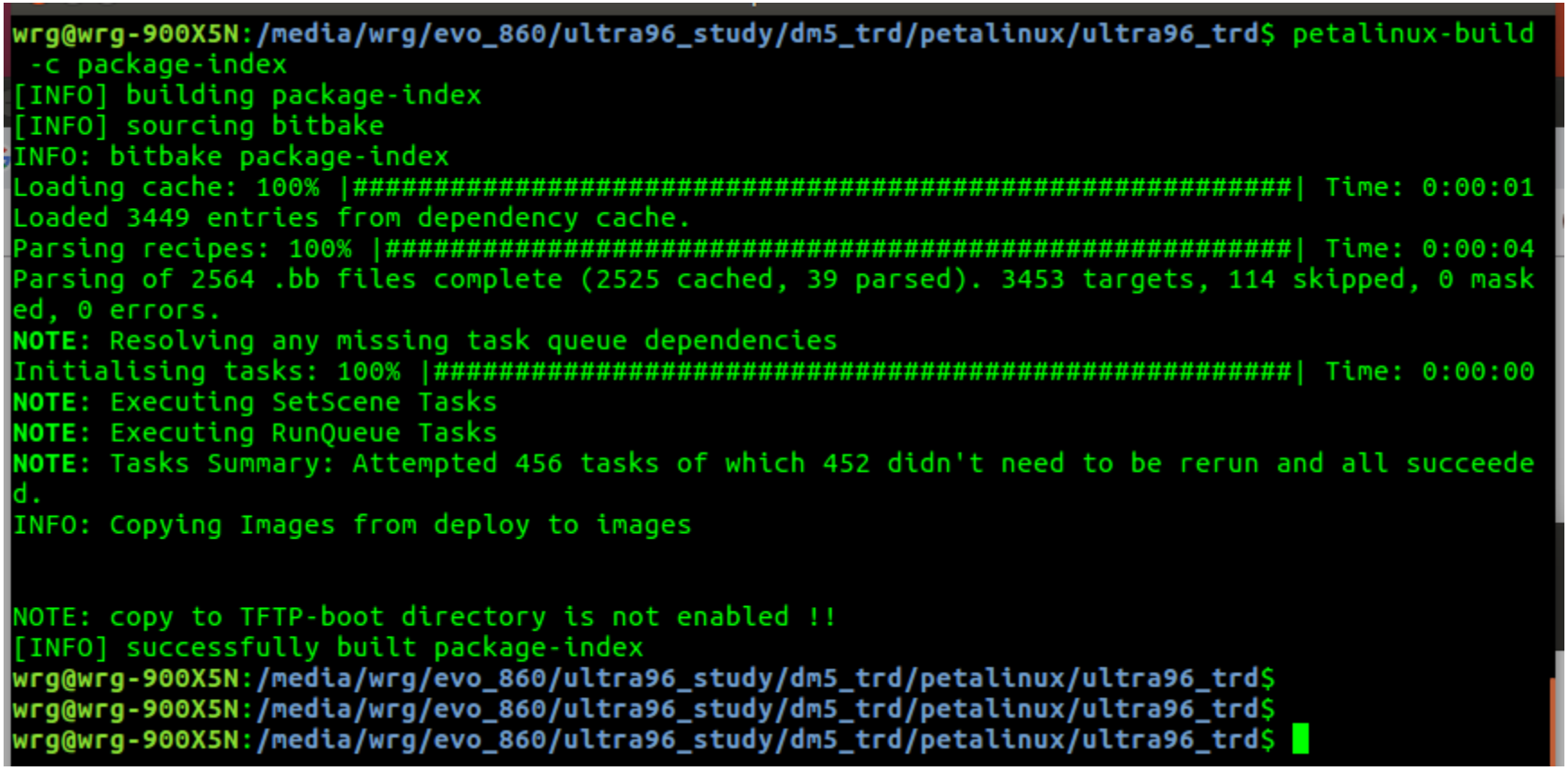

.config - Linux/arm64 4.14.0 Kernel Configuration
→ Device Drivers → Multimedia support → Media test drivers
Media test drivers
Arrow keys navigate the menu. <Enter> selects submenus ---> (or empty submenus ----). Highlighted letters are hotkeys. Pressing <Y> includes, <N> excludes, <M> modularizes features. Press <Esc><Esc> to exit, <?> for Help, </> for Search. Legend: [*] built-in [ ] excluded <M> module < > module capable
--- Media test drivers
< > Virtual Media Controller Driver (VIMC) (NEW)
<*> Virtual Video Test Driver
[ ] Enable CEC emulation support (NEW)
(64) Maximum number of devices (NEW)
< > Virtual Memory-to-Memory Driver (NEW)
<Select> < Exit > < Help > < Save > < Load >


.config - Linux/arm64 4.14.0 Kernel Configuration
Do you wish to save your new configuration?
(Press <ESC><ESC> to continue kernel configuration.)
< Yes >
< No >

```
NOTE: Executing RunQueue Tasks
NOTE: Running task 24 of 24 (/media/wrg/evo_860/pkg/petalinux/components/yocto/source/aarch64/layers/meta-xilinx/meta-xilinx-bsp/recipes-kernel/linux/linux-xlnx_2018.2.bb:do_diffconfig)
NOTE: recipe linux-xlnx-4.14-xilinx-v2018.2+gitAUTOINC+ad4cd988ba-r0: task do_diffconfig: Started
Config fragment has been dumped into:
 /media/wrg/evo_860/fpga_work/tmp2018.2_zynqmp/work/ultra96_zynqmp-xilinx-linux/linux-xlnx/4.14-xilinx-v2018.2+gitAUTOINC+ad4cd988ba-r0/fragment.cfg
NOTE: recipe linux-xlnx-4.14-xilinx-v2018.2+gitAUTOINC+ad4cd988ba-r0: task do_diffconfig: Succeeded
NOTE: Tasks Summary: Attempted 24 tasks of which 23 didn't need to be rerun and all succeeded.

generate_bbappend /media/wrg/evo_860/fpga_work/tmp2018.2_zynqmp/work/ultra96_zynqmp-xilinx-linux/linux-xlnx/4.14-xilinx-v2018.2+gitAUTOINC+ad4cd988ba-r0/user_2019-02-12-20-54-00.cfg /media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd/project-spec/meta-user/
recipetool appendsrcfile -wW /media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd/project-spec/meta-user/ virtual/kernel /media/wrg/evo_860/fpga_work/tmp2018.2_zynqmp/work/ultra96_zynqmp-xilinx-linux/linux-xlnx/4.14-xilinx-v2018.2+gitAUTOINC+ad4cd988ba-r0/user_2019-02-12-20-54-00.cfg
NOTE: Starting bitbake server...
Loading cache...done.
Loaded 3449 entries from dependency cache.
Parsing recipes...done.
Parsing of 2564 .bb files complete (2525 cached, 39 parsed). 3453 targets, 114 skipped, 0 masked, 0 errors.
NOTE: Writing append file /media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd/project-spec/meta-user/recipes-kernel/linux/linux-xlnx_%.bbappend
NOTE: Copying /media/wrg/evo_860/fpga_work/tmp2018.2_zynqmp/work/ultra96_zynqmp-xilinx-linux/linux-xlnx/4.14-xilinx-v2018.2+gitAUTOINC+ad4cd988ba-r0/user_2019-02-12-20-54-00.cfg to /media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd/project-spec/meta-user/recipes-kernel/linux/linux-xlnx/user_2019-02-12-20-54-00.cfg

Loading cache: 100% |################################################################| Time: 0:00:00
Loaded 3449 entries from dependency cache.
Parsing recipes: 100% |##############################################################| Time: 0:00:04
Parsing of 2564 .bb files complete (2524 cached, 40 parsed). 3453 targets, 114 skipped, 0 masked, 0 errors.
NOTE: Resolving any missing task queue dependencies
Initialising tasks: 100% |###########################################################| Time: 0:00:01
NOTE: Executing RunQueue Tasks
NOTE: Tasks Summary: Attempted 2 tasks of which 0 didn't need to be rerun and all succeeded.
[INFO] successfully configured kernel
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd$
```

```
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd$ petalinux-build
 -c virtual/boot-bin
[INFO] building virtual/boot-bin
[INFO] sourcing bitbake
INFO: bitbake virtual/boot-bin
Loading cache: 100% |#########################################################| Time: 0:00:00
Loaded 3449 entries from dependency cache.
Parsing recipes: 100% |#######################################################| Time: 0:00:04
Parsing of 2564 .bb files complete (2525 cached, 39 parsed). 3453 targets, 114 skipped, 0 mask
ed, 0 errors.
NOTE: Resolving any missing task queue dependencies
Initialising tasks: 100% |####################################################| Time: 0:00:02
Checking sstate mirror object availability: 100% |############################| Time: 0:00:06
NOTE: Executing SetScene Tasks
NOTE: Executing RunQueue Tasks
NOTE: pmu-firmware: compiling from external source tree /media/wrg/evo_860/pkg/petalinux/tools
/hsm/data/embeddedsw
NOTE: fsbl: compiling from external source tree /media/wrg/evo_860/pkg/petalinux/tools/hsm/dat
a/embeddedsw
NOTE: Tasks Summary: Attempted 822 tasks of which 705 didn't need to be rerun and all succeede
d.
INFO: Copying Images from deploy to images
NOTE: copy to TFTP-boot directory is not enabled !!
[INFO] successfully built virtual/boot-bin
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd$
```

```
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd$ petalinux-build
 -c video-qt2
[INFO] building video-qt2
[INFO] sourcing bitbake
INFO: bitbake video-qt2
Loading cache: 100% |#########################################################| Time: 0:00:01
Loaded 3449 entries from dependency cache.
Parsing recipes: 100% |#######################################################| Time: 0:00:04
Parsing of 2564 .bb files complete (2525 cached, 39 parsed). 3453 targets, 114 skipped, 0 mask
ed, 0 errors.
NOTE: Resolving any missing task queue dependencies
Initialising tasks: 100% |####################################################| Time: 0:00:05
Checking sstate mirror object availability: 100% |############################| Time: 0:00:20
NOTE: Executing SetScene Tasks
NOTE: Executing RunQueue Tasks
NOTE: Tasks Summary: Attempted 3638 tasks of which 3560 didn't need to be rerun and all succee
ded.
INFO: Copying Images from deploy to images


NOTE: copy to TFTP-boot directory is not enabled !!
[INFO] successfully built video-qt2
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd$
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd$
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd$
```


wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd$ petalinux-build -c package-index
[INFO] building package-index
[INFO] sourcing bitbake
INFO: bitbake package-index
Loading cache: 100% |############################################################| Time: 0:00:01
Loaded 3449 entries from dependency cache.
Parsing recipes: 100% |##########################################################| Time: 0:00:04
Parsing of 2564 .bb files complete (2525 cached, 39 parsed). 3453 targets, 114 skipped, 0 masked, 0 errors.
NOTE: Resolving any missing task queue dependencies
Initialising tasks: 100% |#######################################################| Time: 0:00:00
NOTE: Executing SetScene Tasks
NOTE: Executing RunQueue Tasks
NOTE: Tasks Summary: Attempted 456 tasks of which 452 didn't need to be rerun and all succeeded.
INFO: Copying Images from deploy to images
NOTE: copy to TFTP-boot directory is not enabled !!
[INFO] successfully built package-index
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd$
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd$
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd$

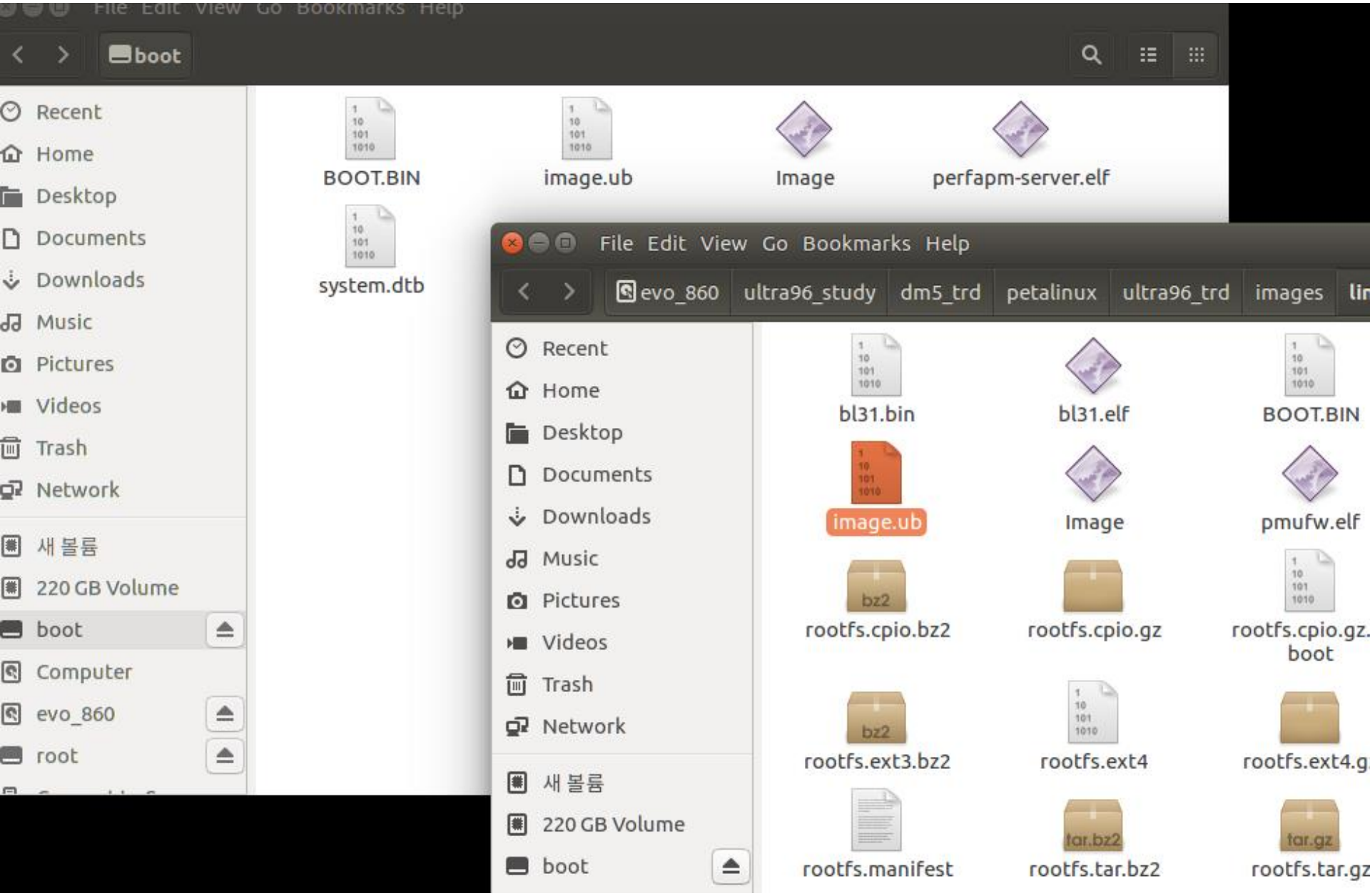
```
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd$ cd images/linux
/
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd/images/linux$ na
utilus ./

(nautilus:10553): GLib-GIO-CRITICAL **: g_dbus_interface_skeleton_unexport: assertion 'interfa
ce_->priv->connections != NULL' failed

(nautilus:10553): GLib-GIO-CRITICAL **: g_dbus_interface_skeleton_unexport: assertion 'interfa
ce_->priv->connections != NULL' failed

(nautilus:10553): Gtk-CRITICAL **: gtk_icon_theme_get_for_screen: assertion 'GDK_IS_SCREEN (sc
reen)' failed

(nautilus:10553): GLib-GObject-WARNING **: invalid (NULL) pointer instance

(nautilus:10553): GLib-GObject-CRITICAL **: g_signal_connect_object: assertion 'G_TYPE_CHECK_I
NSTANCE (instance)' failed
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd/images/linux$
```

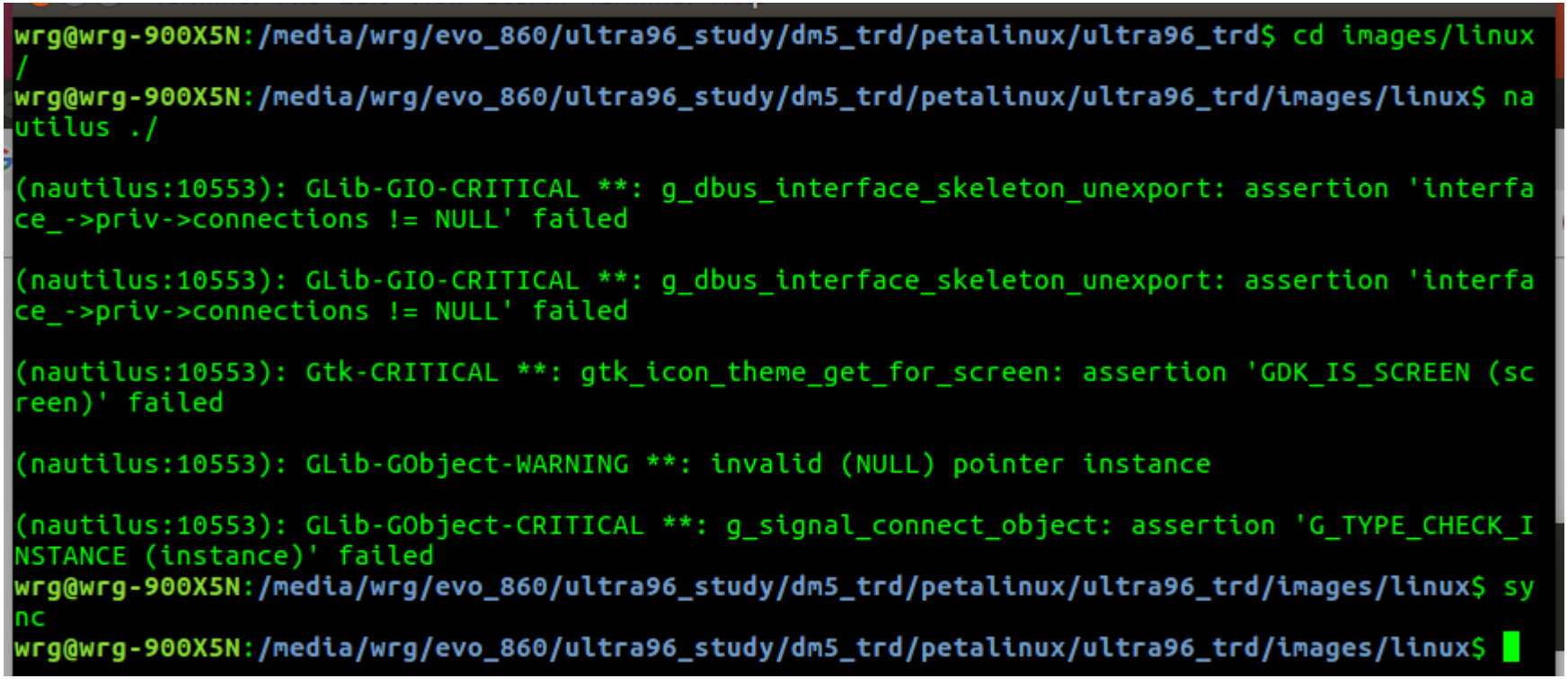
File Edit View Go Bookmarks Help

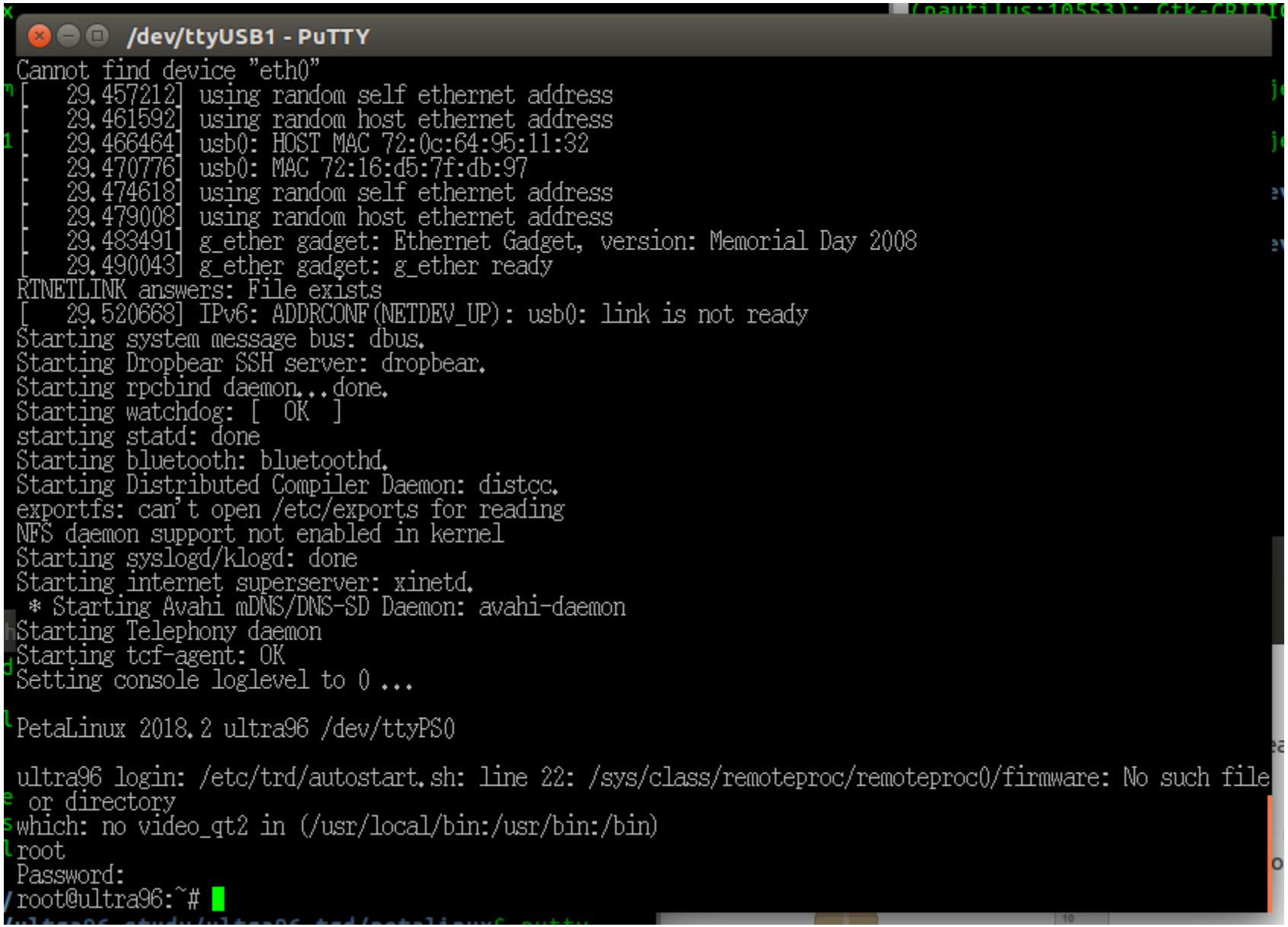
evo_860 | ultra96_study | dm5_trd | petalinux | ultra96_trd | images | linux

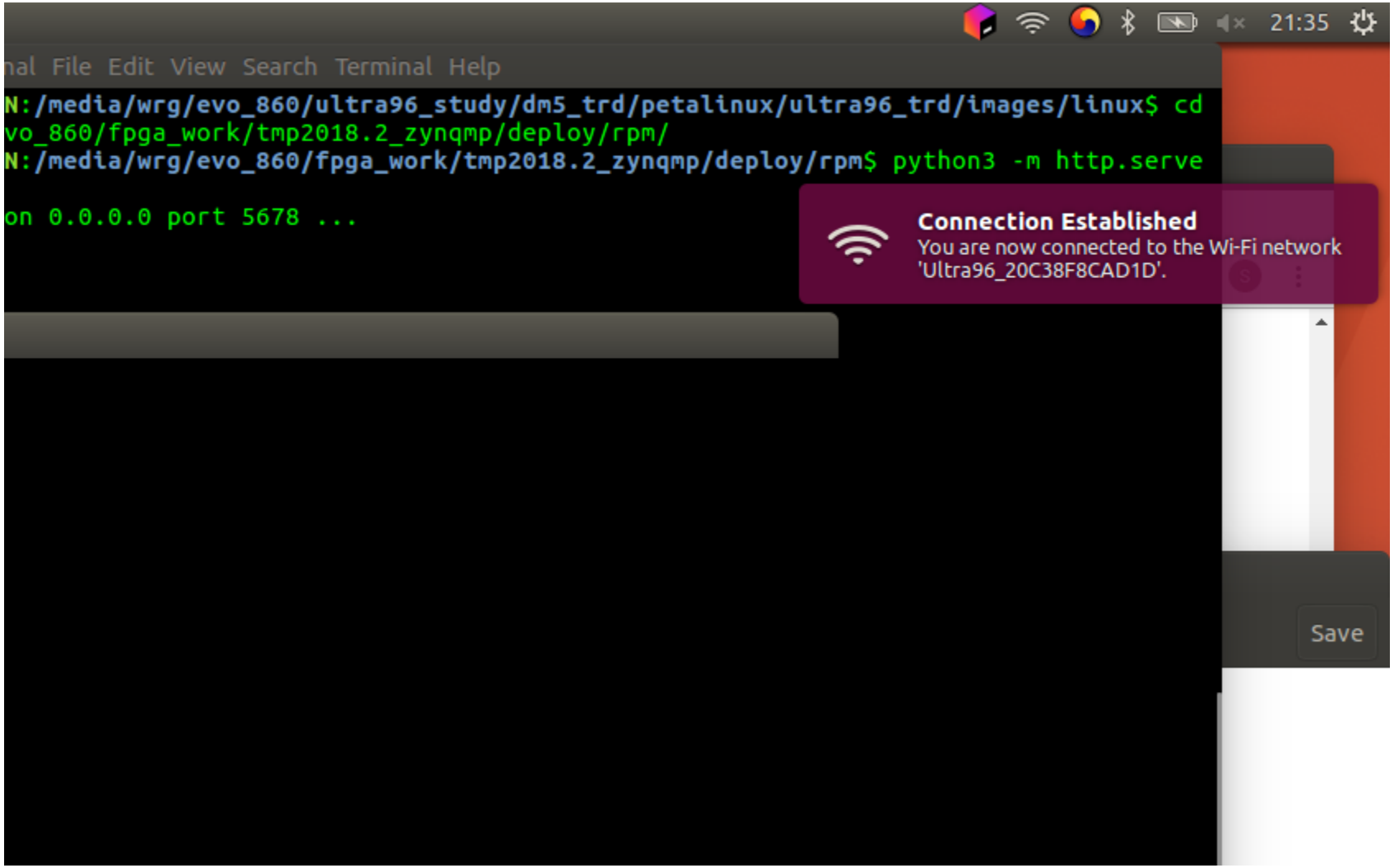
- Recent
- Home
- Desktop
- Documents
- Downloads
- Music
- Pictures
- Videos

bl31.bin
bl31.elf
BOOT.BIN
heartbeat.elf
image.ub
Image
pmufw.elf
rootfs.cpio
rootfs.cpio.bz2
rootfs.cpio.gz
rootfs.cpio.gz.u-boot
rootfs.ext3

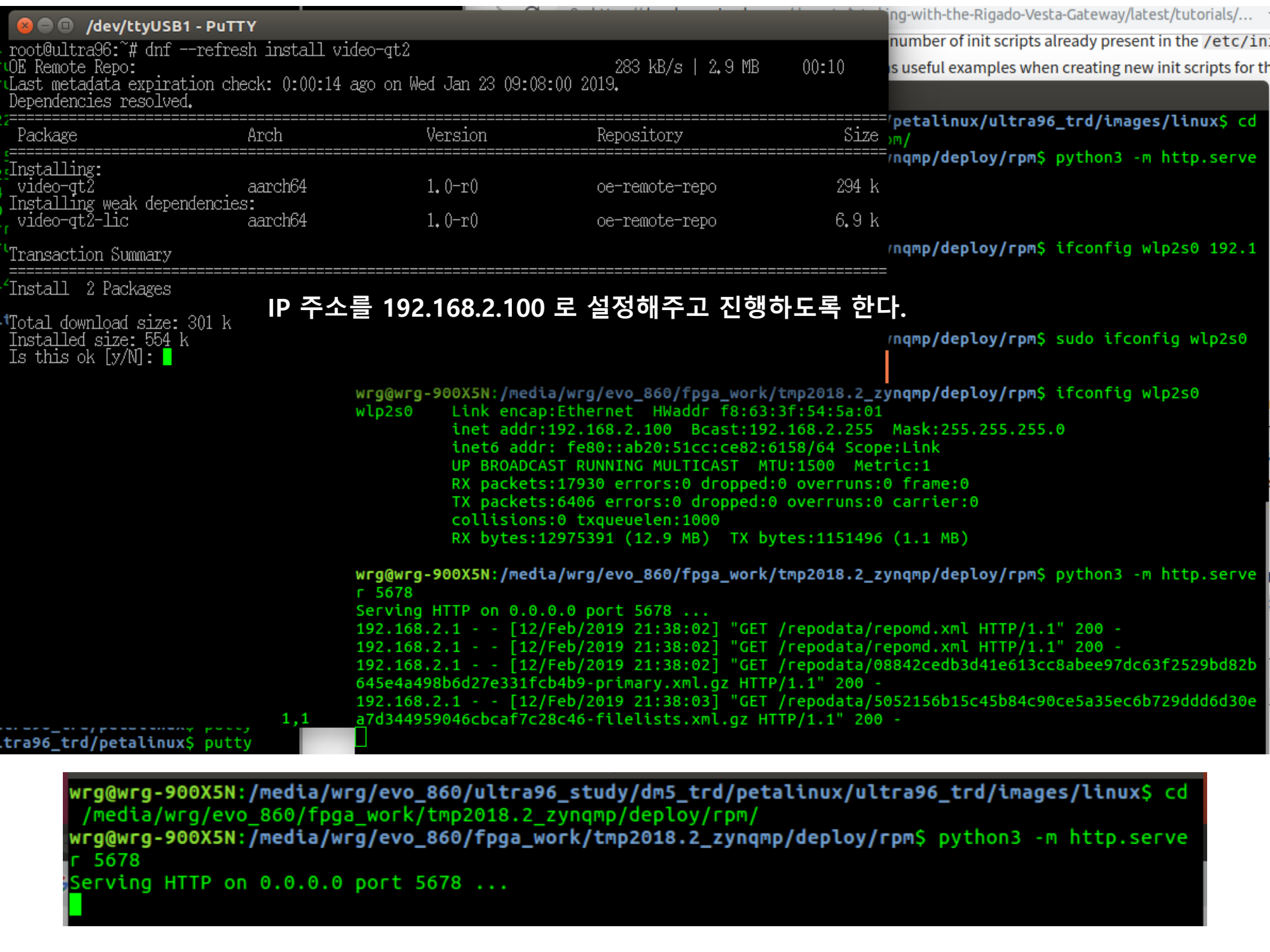

File Edit View Go Bookmarks Help
boot
Recent
Home
Desktop
Documents
Downloads
Music
Pictures
Videos
Trash
Network
새 볼륨
220 GB Volume
boot
Computer
evo_860
root
BOOT.BIN
image.ub
Image
perfapm-server.elf
system.dtb
File Edit View Go Bookmarks Help
evo_860
ultra96_study
dm5_trd
petalinux
ultra96_trd
images
Recent
Home
Desktop
Documents
Downloads
Music
Pictures
Videos
Trash
Network
새 볼륨
220 GB Volume
boot
bl31.bin
bl31.elf
BOOT.BIN
image.ub
Image
pmufw.elf
bz2
rootfs.cpio.bz2
rootfs.cpio.gz
rootfs.cpio.gz.
boot
bz2
rootfs.ext3.bz2
rootfs.ext4
rootfs.ext4.g
rootfs.manifest
tar.bz2
rootfs.tar.bz2
tar.gz
rootfs.tar.gz


wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd$ cd images/linux
/
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd/images/linux$ na
utilus ./
(nautilus:10553): GLib-GIO-CRITICAL **: g_dbus_interface_skeleton_unexport: assertion 'interfa
ce_->priv->connections != NULL' failed
(nautilus:10553): GLib-GIO-CRITICAL **: g_dbus_interface_skeleton_unexport: assertion 'interfa
ce_->priv->connections != NULL' failed
(nautilus:10553): Gtk-CRITICAL **: gtk_icon_theme_get_for_screen: assertion 'GDK_IS_SCREEN (sc
reen)' failed
(nautilus:10553): GLib-GObject-WARNING **: invalid (NULL) pointer instance
(nautilus:10553): GLib-GObject-CRITICAL **: g_signal_connect_object: assertion 'G_TYPE_CHECK_I
NSTANCE (instance)' failed
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd/images/linux$ sy
nc
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd/images/linux$

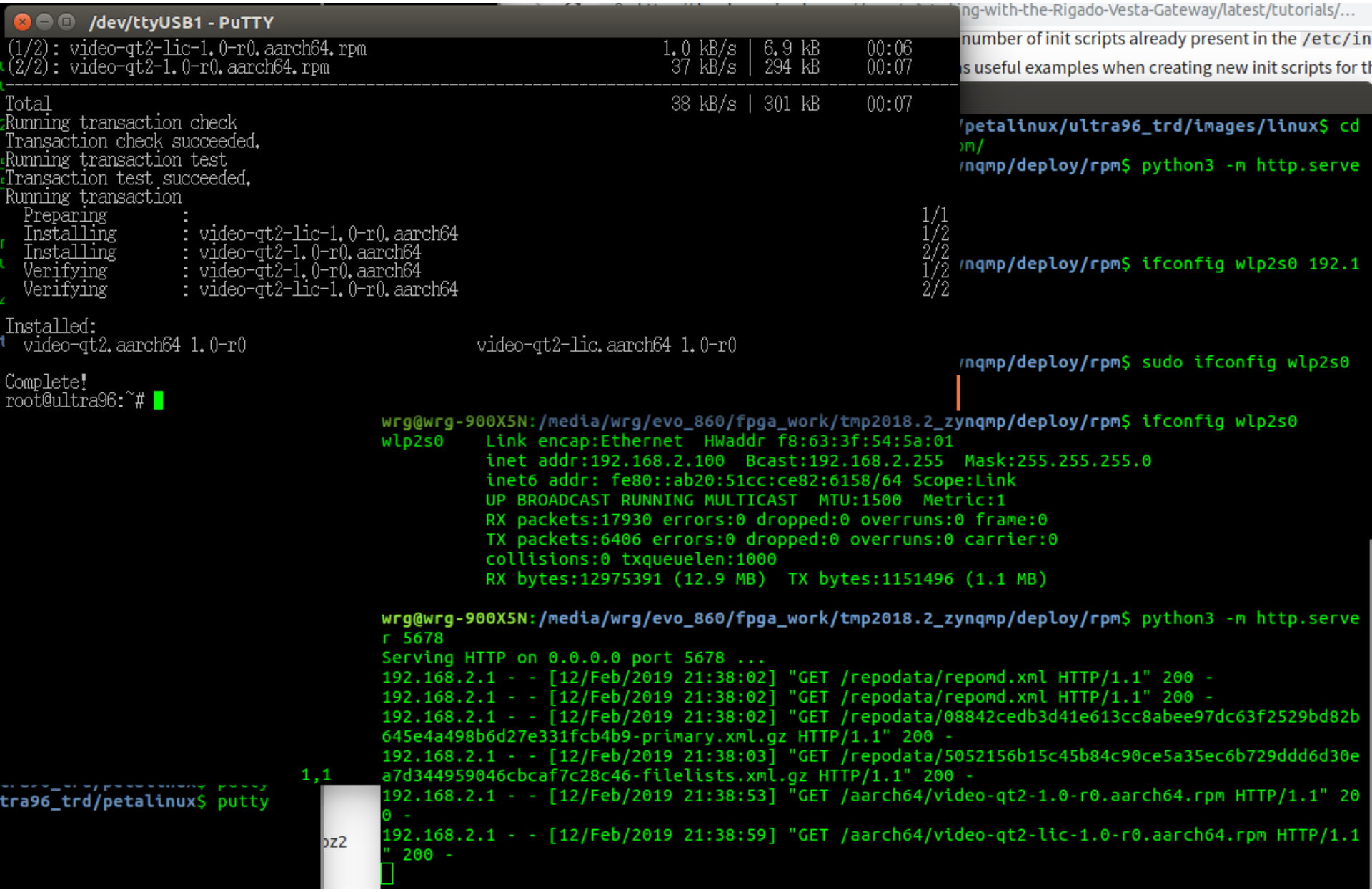

/dev/ttyUSB1 - PuTTY
Cannot find device "eth0"
[ 29.457212] using random self ethernet address
[ 29.461592] using random host ethernet address
[ 29.466464] usb0: HOST MAC 72:0c:64:95:11:32
[ 29.470776] usb0: MAC 72:16:d5:7f:db:97
[ 29.474618] using random self ethernet address
[ 29.479008] using random host ethernet address
[ 29.483491] g_ether gadget: Ethernet Gadget, version: Memorial Day 2008
[ 29.490043] g_ether gadget: g_ether ready
RTNETLINK answers: File exists
[ 29.520668] IPv6: ADDRCONF(NETDEV_UP): usb0: link is not ready
Starting system message bus: dbus.
Starting Dropbear SSH server: dropbear.
Starting rpcbind daemon...done.
Starting watchdog: [ OK ]
starting statd: done
Starting bluetooth: bluetoothd.
Starting Distributed Compiler Daemon: distcc.
exportfs: can't open /etc/exports for reading
NFS daemon support not enabled in kernel
Starting syslogd/klogd: done
Starting internet superserver: xinetd.
* Starting Avahi mDNS/DNS-SD Daemon: avahi-daemon
Starting Telephony daemon
Starting tcf-agent: OK
Setting console loglevel to 0 ...
PetaLinux 2018.2 ultra96 /dev/ttyPS0
ultra96 login: /etc/trd/autostart.sh: line 22: /sys/class/remoteproc/remoteproc0/firmware: No such file or directory
which: no video_qt2 in (/usr/local/bin:/usr/bin:/bin)
root
Password:
root@ultra96:~#

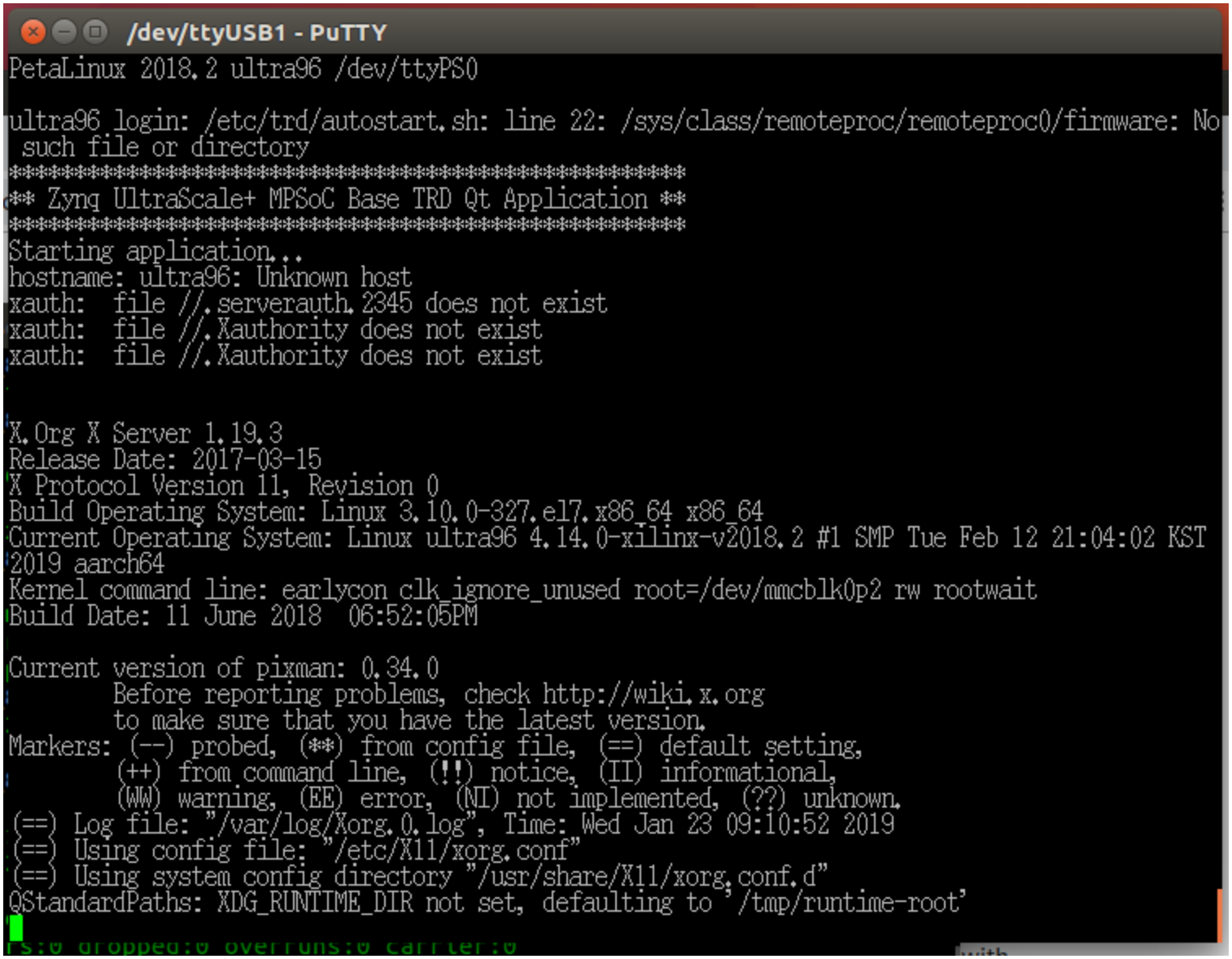

21:35
nal File Edit View Search Terminal Help
N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd/images/linux$ cd
vo_860/fpga_work/tmp2018.2_zynqmp/deploy/rpm/
N:/media/wrg/evo_860/fpga_work/tmp2018.2_zynqmp/deploy/rpm$ python3 -m http.serve
on 0.0.0.0 port 5678 ...
Connection Established
You are now connected to the Wi-Fi network
'Ultra96_20C38F8CAD1D'.
Save

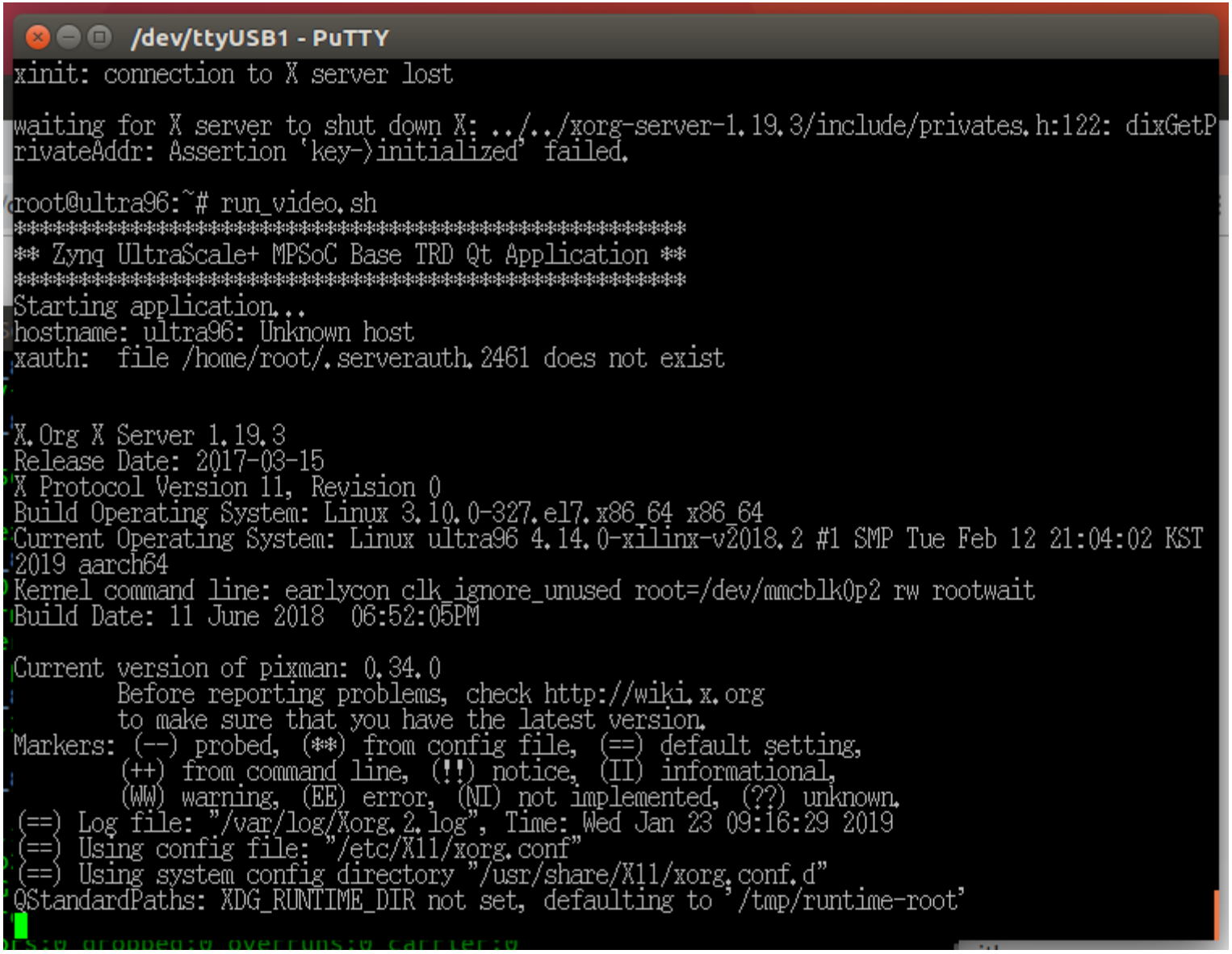
```
INFO: Checking installed development libraries
ifcoINFO: Checking network and other services
WARNING: No tftp server found - please refer to "PetaLinux SDK Installation Guid
e" for its impact and solution
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/ultra96_trd/petalinux$ ifconfig
lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:2362 errors:0 dropped:0 overruns:0 frame:0
          TX packets:2362 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:12224970 (12.2 MB)  TX bytes:12224970 (12.2 MB)

wlp2s0    Link encap:Ethernet  HWaddr f8:63:3f:54:5a:01
          inet addr:192.168.2.2  Bcast:192.168.2.255  Mask:255.255.255.0
          inet6 addr: fe80::ab20:51cc:ce82:6158/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:17928 errors:0 dropped:0 overruns:0 frame:0
          TX packets:6396 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:12974823 (12.9 MB)  TX bytes:1148911 (1.1 MB)

wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/ultra96_trd/petalinux$
```

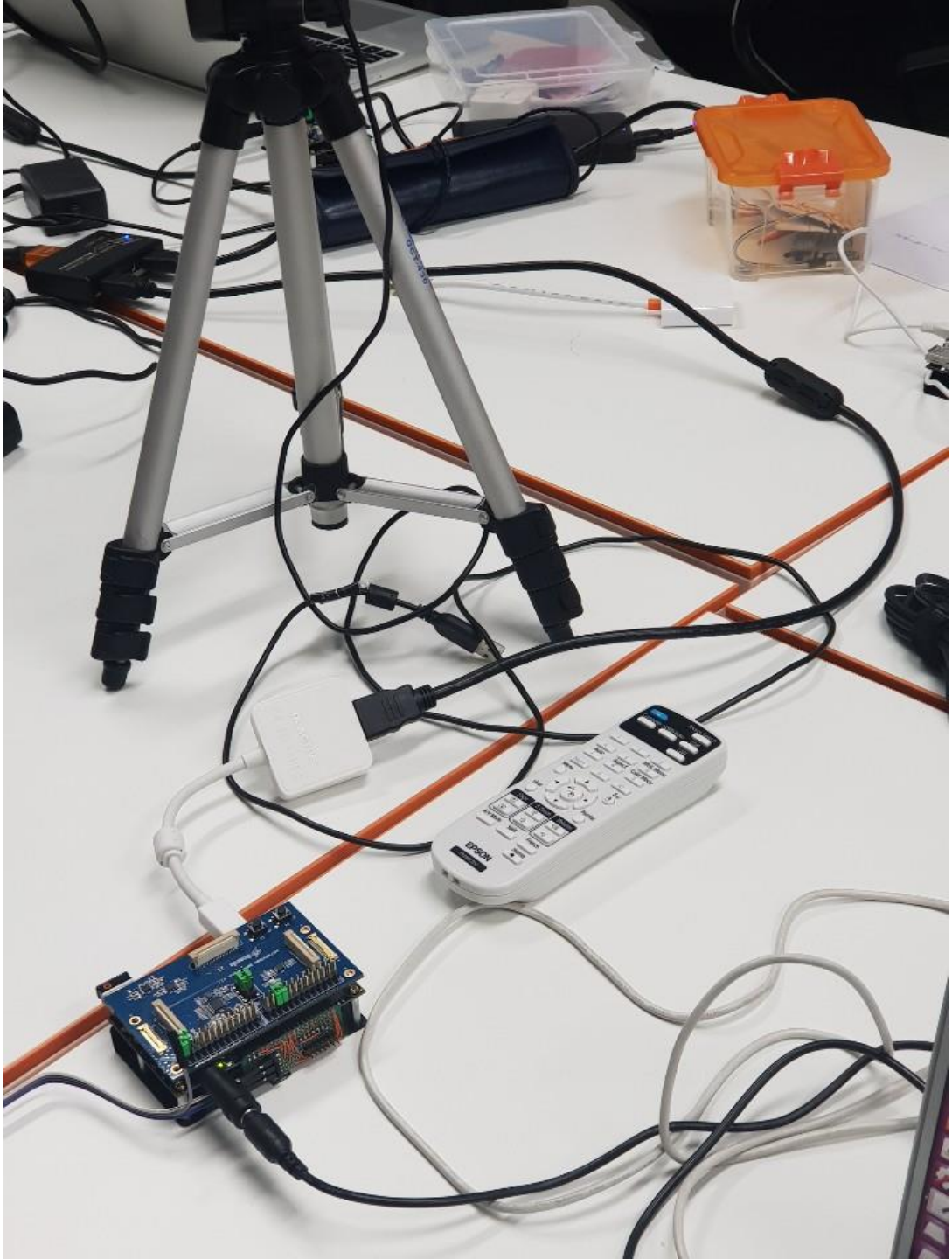


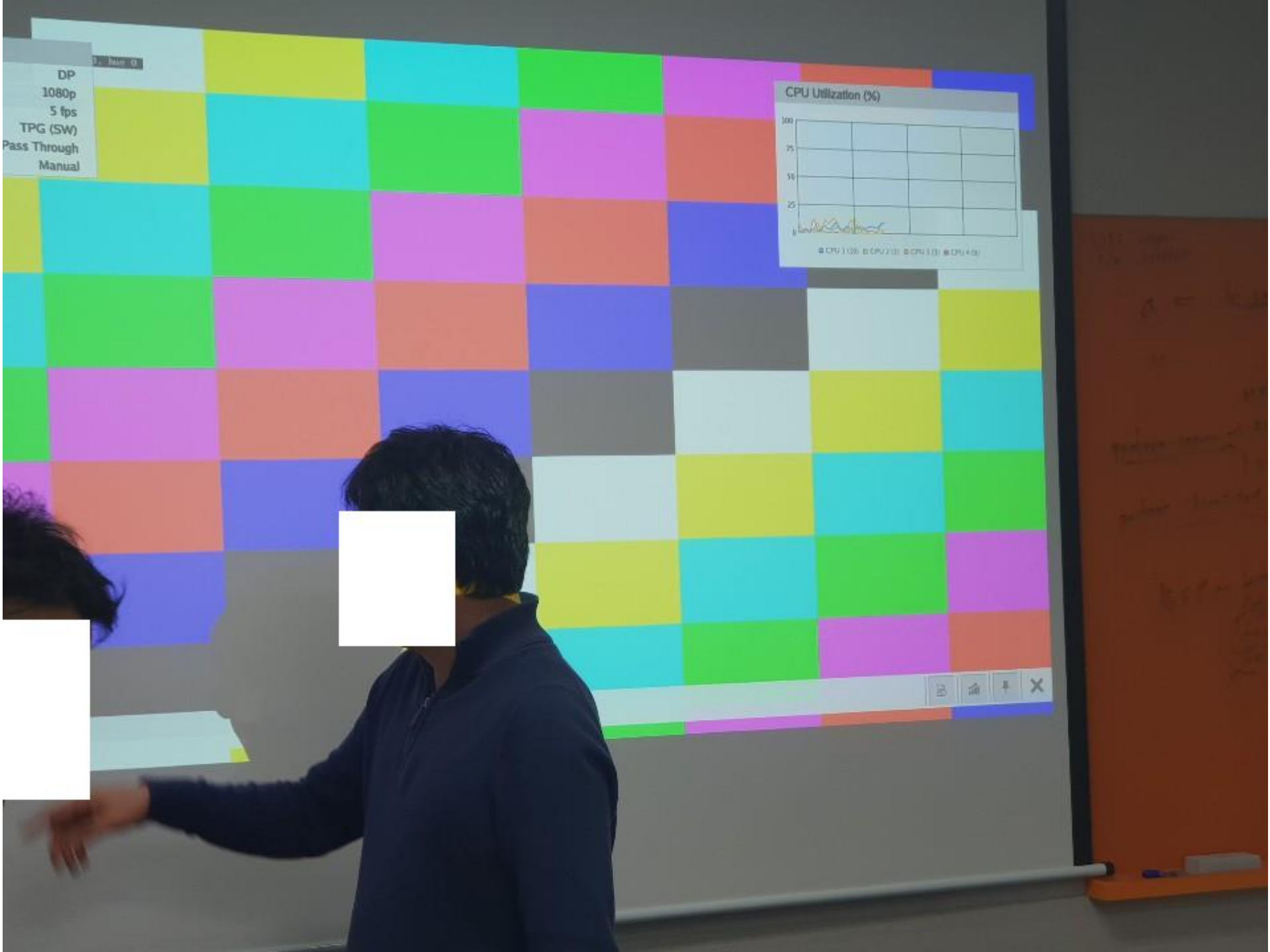
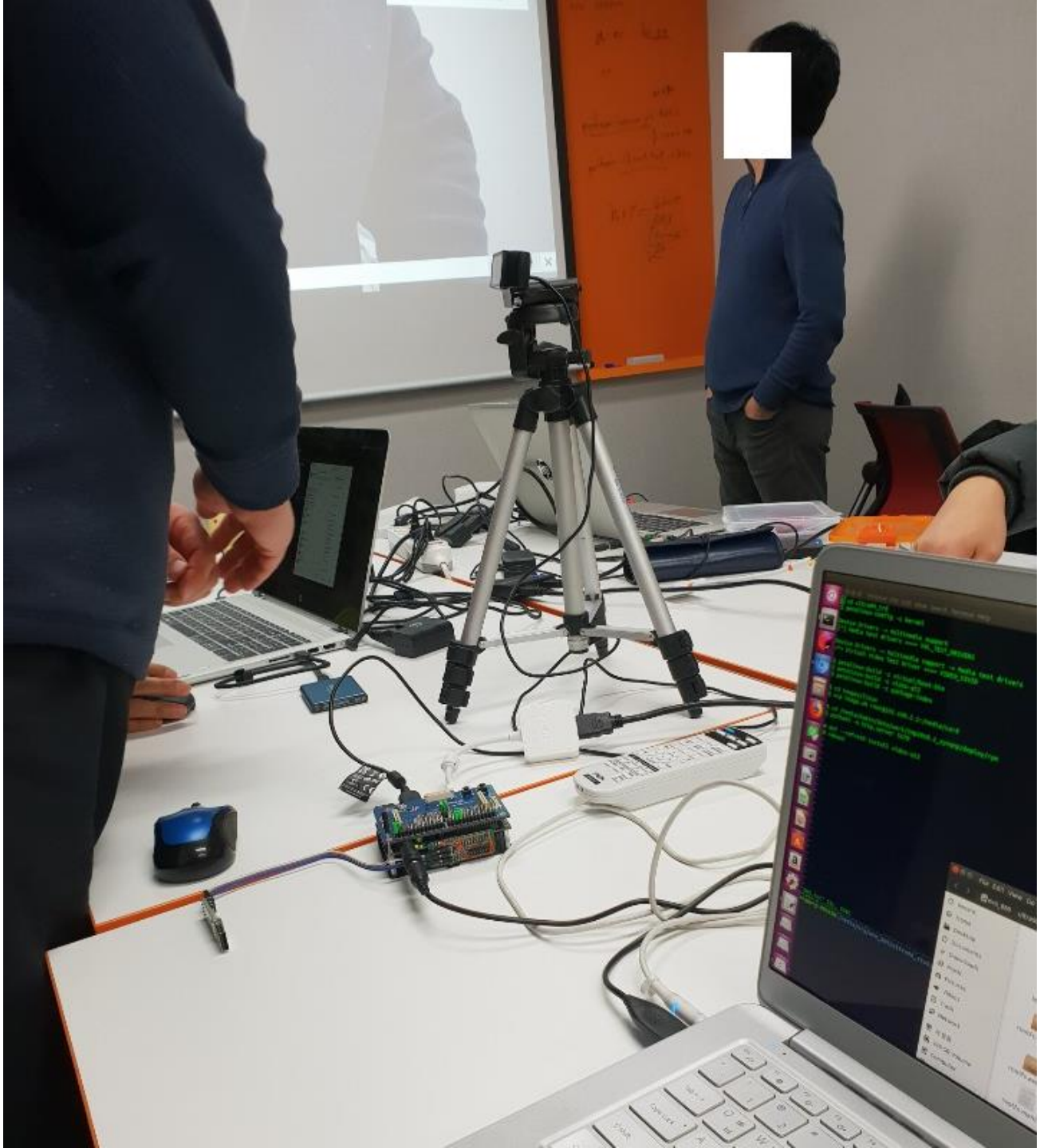

```
wrg@wrg-900X5N:/media/wrg/evo_860/ultra96_study/dm5_trd/petalinux/ultra96_trd/images/linux$ cd
 /media/wrg/evo_860/fpga_work/tmp2018.2_zynqmp/deploy/rpm/
wrg@wrg-900X5N:/media/wrg/evo_860/fpga_work/tmp2018.2_zynqmp/deploy/rpm$ python3 -m http.serve
r 5678
Serving HTTP on 0.0.0.0 port 5678 ...
```


/dev/ttyUSB1 - PuTTY
(1/2): video-qt2-lic-1.0-r0.aarch64.rpm 1.0 kB/s | 6.9 kB 00:06
(2/2): video-qt2-1.0-r0.aarch64.rpm 37 kB/s | 294 kB 00:07
Total 38 kB/s | 301 kB 00:07
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
Preparing : 1/1
Installing : video-qt2-lic-1.0-r0.aarch64 1/2
Installing : video-qt2-1.0-r0.aarch64 2/2
Verifying : video-qt2-1.0-r0.aarch64 1/2
Verifying : video-qt2-lic-1.0-r0.aarch64 2/2
Installed:
video-qt2.aarch64 1.0-r0 video-qt2-lic.aarch64 1.0-r0
Complete!
root@ultra96:~#
number of init scripts already present in the /etc/in
useful examples when creating new init scripts for th
petalinux/ultra96_trd/images/linux$ cd
nqmp/deploy/rpm$ python3 -m http.serve
nqmp/deploy/rpm$ ifconfig wlp2s0 192.1
nqmp/deploy/rpm$ sudo ifconfig wlp2s0
wrg@wrg-900X5N:/media/wrg/evo_860/fpga_work/tmp2018.2_zynqmp/deploy/rpm$ ifconfig wlp2s0
wlp2s0 Link encap:Ethernet HWaddr f8:63:3f:54:5a:01
inet addr:192.168.2.100 Bcast:192.168.2.255 Mask:255.255.255.0
inet6 addr: fe80::ab20:51cc:ce82:6158/64 Scope:Link
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:17930 errors:0 dropped:0 overruns:0 frame:0
TX packets:6406 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1000
RX bytes:12975391 (12.9 MB) TX bytes:1151496 (1.1 MB)
wrg@wrg-900X5N:/media/wrg/evo_860/fpga_work/tmp2018.2_zynqmp/deploy/rpm$ python3 -m http.serve
r 5678
Serving HTTP on 0.0.0.0 port 5678 ...
192.168.2.1 - - [12/Feb/2019 21:38:02] "GET /repodata/repomd.xml HTTP/1.1" 200 -
192.168.2.1 - - [12/Feb/2019 21:38:02] "GET /repodata/repomd.xml HTTP/1.1" 200 -
192.168.2.1 - - [12/Feb/2019 21:38:02] "GET /repodata/08842cedb3d41e613cc8abee97dc63f2529bd82b645e4a498b6d27e331fcb4b9-primary.xml.gz HTTP/1.1" 200 -
192.168.2.1 - - [12/Feb/2019 21:38:03] "GET /repodata/5052156b15c45b84c90ce5a35ec6b729ddd6d30ea7d344959046cbcaf7c28c46-filelists.xml.gz HTTP/1.1" 200 -
192.168.2.1 - - [12/Feb/2019 21:38:53] "GET /aarch64/video-qt2-1.0-r0.aarch64.rpm HTTP/1.1" 200 -
192.168.2.1 - - [12/Feb/2019 21:38:59] "GET /aarch64/video-qt2-lic-1.0-r0.aarch64.rpm HTTP/1.1" 200 -
1,1
tra96_trd/petalinux$ putty


/dev/ttyUSB1 - PuTTY
PetaLinux 2018.2 ultra96 /dev/ttyPS0
ultra96 login: /etc/trd/autostart.sh: line 22: /sys/class/remoteproc/remoteproc0/firmware: No such file or directory
** Zynq UltraScale+ MPSoC Base TRD Qt Application **
Starting application...
hostname: ultra96: Unknown host
xauth: file /.serverauth.2345 does not exist
xauth: file /.Xauthority does not exist
xauth: file /.Xauthority does not exist
X.Org X Server 1.19.3
Release Date: 2017-03-15
X Protocol Version 11, Revision 0
Build Operating System: Linux 3.10.0-327.el7.x86_64 x86_64
Current Operating System: Linux ultra96 4.14.0-xilinx-v2018.2 #1 SMP Tue Feb 12 21:04:02 KST 2019 aarch64
Kernel command line: earlycon clk_ignore_unused root=/dev/mmcblk0p2 rw rootwait
Build Date: 11 June 2018 06:52:05PM
Current version of pixman: 0.34.0
Before reporting problems, check http://wiki.x.org
to make sure that you have the latest version.
Markers: (--) probed, (**) from config file, (==) default setting,
(++) from command line, (!!) notice, (II) informational,
(WW) warning, (EE) error, (NI) not implemented, (??) unknown.
(==) Log file: "/var/log/Xorg.0.log", Time: Wed Jan 23 09:10:52 2019
(==) Using config file: "/etc/X11/xorg.conf"
(==) Using system config directory "/usr/share/X11/xorg.conf.d"
QStandardPaths: XDG_RUNTIME_DIR not set, defaulting to '/tmp/runtime-root'


/dev/ttyUSB1 - PuTTY
xinit: connection to X server lost
waiting for X server to shut down X: ../../xorg-server-1.19.3/include/privates.h:122: dixGetP
rivateAddr: Assertion 'key->initialized' failed.
root@ultra96:~# run_video.sh
**********
** Zynq UltraScale+ MPSoC Base TRD Qt Application **
**********
Starting application...
hostname: ultra96: Unknown host
xauth: file /home/root/.serverauth.2461 does not exist
X.Org X Server 1.19.3
Release Date: 2017-03-15
X Protocol Version 11, Revision 0
Build Operating System: Linux 3.10.0-327.el7.x86_64 x86_64
Current Operating System: Linux ultra96 4.14.0-xilinx-v2018.2 #1 SMP Tue Feb 12 21:04:02 KST
2019 aarch64
Kernel command line: earlycon clk_ignore_unused root=/dev/mmcblk0p2 rw rootwait
Build Date: 11 June 2018 06:52:05PM
Current version of pixman: 0.34.0
Before reporting problems, check http://wiki.x.org
to make sure that you have the latest version.
Markers: (--) probed, (**) from config file, (==) default setting,
(++) from command line, (!!) notice, (II) informational,
(WW) warning, (EE) error, (NI) not implemented, (??) unknown.
(==) Log file: "/var/log/Xorg.2.log", Time: Wed Jan 23 09:16:29 2019
(==) Using config file: "/etc/X11/xorg.conf"
(==) Using system config directory "/usr/share/X11/xorg.conf.d"
QStandardPaths: XDG_RUNTIME_DIR not set, defaulting to '/tmp/runtime-root'


EPSON


DP
1080p
5 fps
TPG (SW)
Pass Through
Manual
CPU Utilization (%)
100
75
50
25
0