

For each task, I'm using a custom built gaming rig with 16gb RAM, 6-core FX-6100 AMD CPU, an SSD with a small amount of storage, and an extra hard drive with 1TB. I have the computer set up for dual boot vanilla Ubuntu/Windows 7 Home. For my device, I'm using a Moto E 2<sup>nd</sup> Gen. I originally tried to use a rooted Kindle Fire HD 7", but I ran into problems with detection of F-Droid software.

It has taken me at least 5 straight hours to complete task one, including enabling necessary developer settings, installing applications via Google Play, installing via F-Droid, installing via APK, taking screenshots through my devices, taking screenshots on my desktop PC, learning how to use each app to some extent, and dealing with various technical incompatibilities of some of the applications.

Task two took me a few hours, including setting up necessary build files, figuring out how to make an Android app change screens, formatting the Java coded layouts to work with other elements on the screen, and so on.

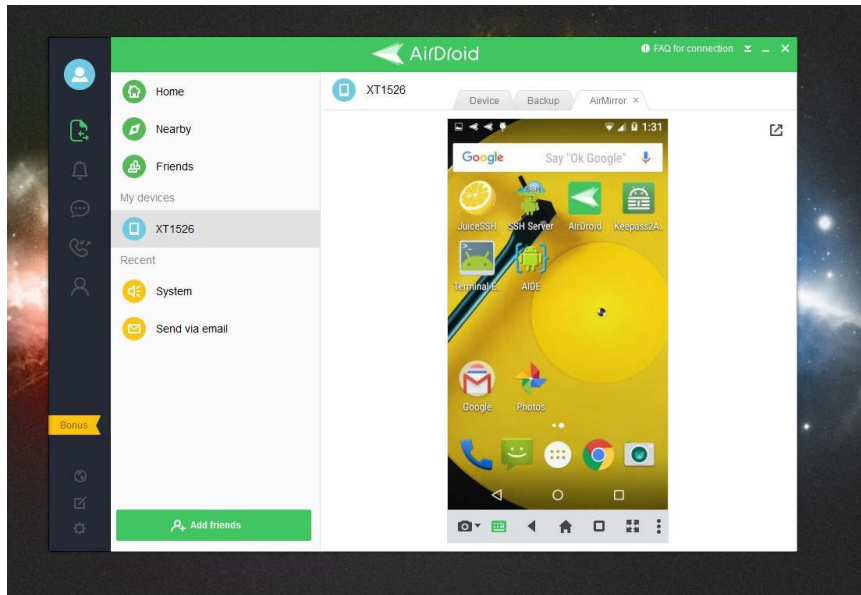
Task three took me an hour or less to complete.

Task four took about thirty minutes to complete. I've already dealt with ADB before when rooting other devices.

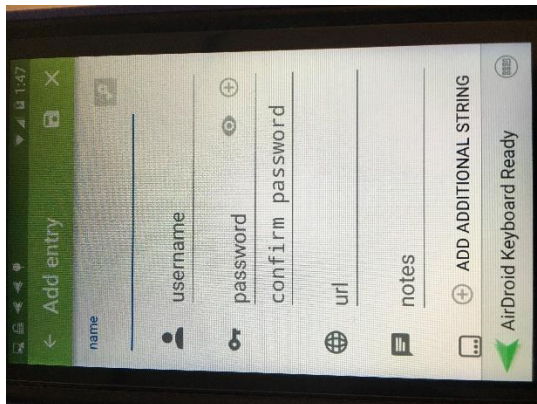
Task 5 took an hour or two to get everything working and set up the accounts.

#### Task 1:

My experience with running AirDroid was positive overall, but there were a few issues. For one thing, I found that AirMirror, the software used to remotely access my android device from my computer, only works for Windows and Mac OS. The option to download the desktop application wasn't even available for Linux. However, the rest of the features included with AirDroid seem to work on their web application, even on Linux. I had to plug my Android device directly into my computer, as this device is not rooted. The image below is of me using the AirDroid AirMirror remote access tool.

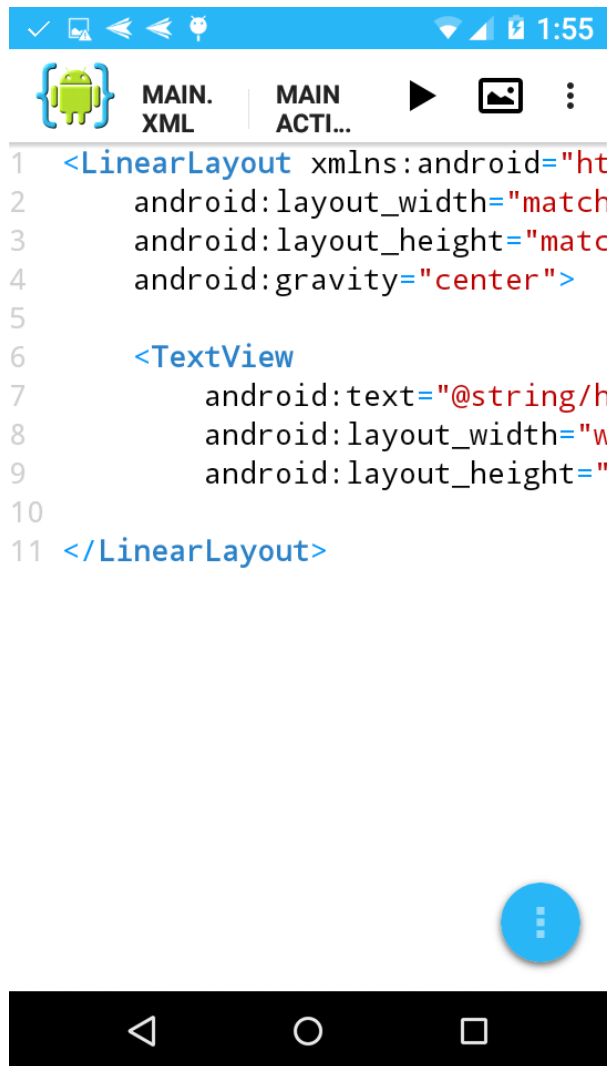


I found that the app KeepPass is actually called KeePass and it goes by different variations for Android Devices, such as KeePass for Android, the one I went with. KeepPass2Android disables screenshots and access to AirDroid (probably for security reasons, as it stores passwords), so I took a direct image from another device below.

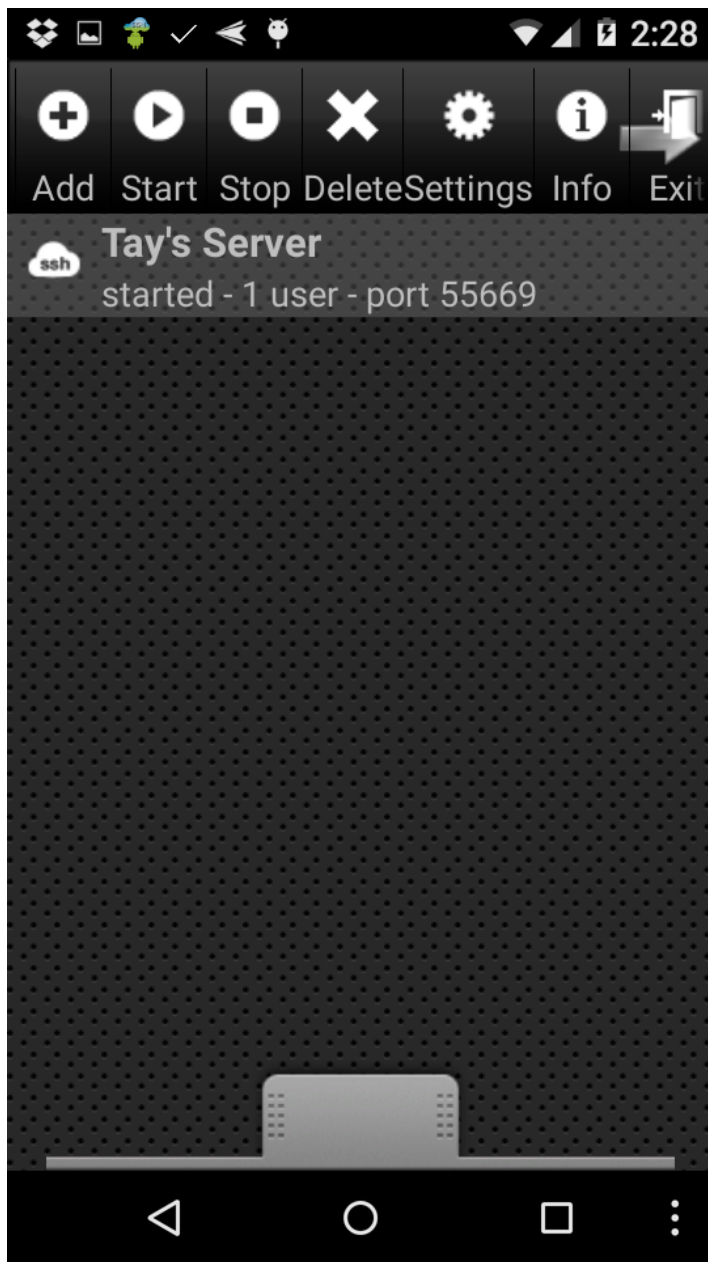


Adding passwords and credit cards was easy, and I was able to back up my database on my Dropbox cloud storage.

I found that a lot of features of AIDE that I would want, such as debugging and saving Java files, required a \$10 "Developer License" to use. Creating an Android application within the app is a neat concept, though, and that part seems to work well.

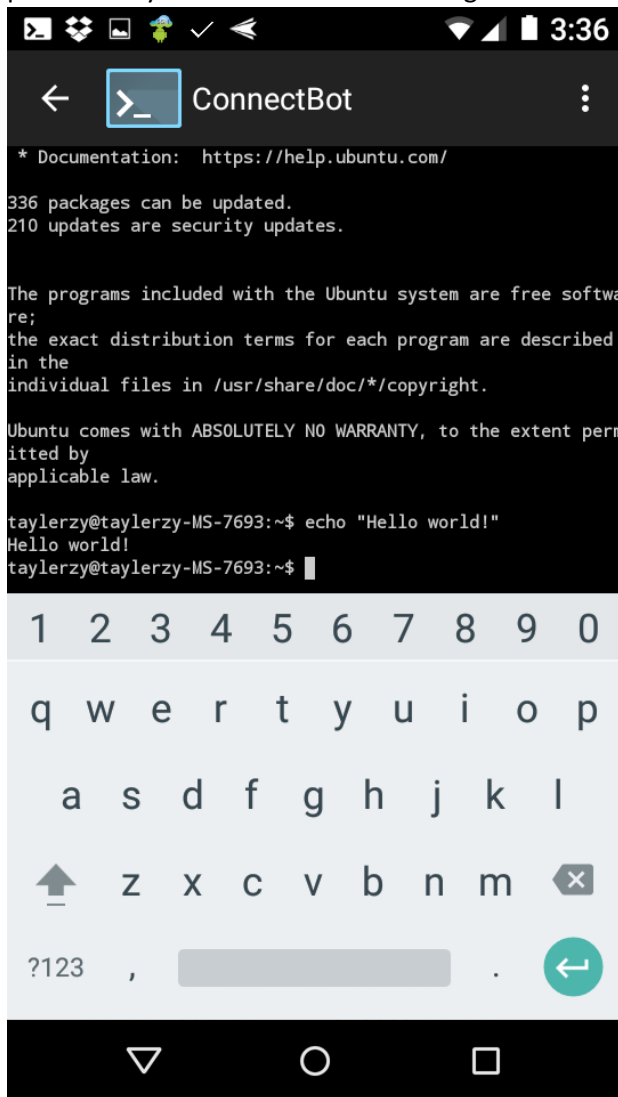


For the SFTP/SSH server application(s), I found an app that can do both, called SSH Server. It's easy to set up a server and login credentials, and I was able to connect to it quickly with `ssh username@ip -p portnumber`.



As for an SSH client/terminal, I chose to use ConnectBot. I originally tried a program called JuiceSSH, but I felt more comfortable executing the commands myself instead of from a GUI. My SSH attempt didn't work originally because I had openssh-client installed, but not openssh-server. It's amazing how

powerful my device can be in executing commands on my desktop computer



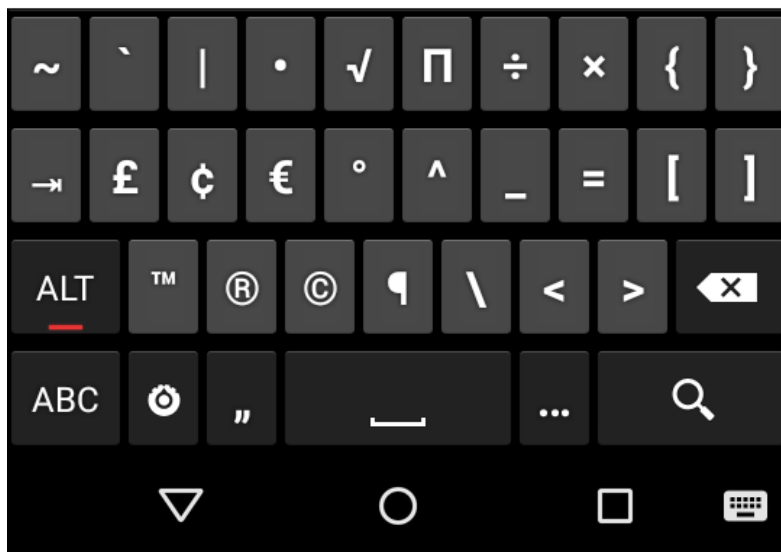
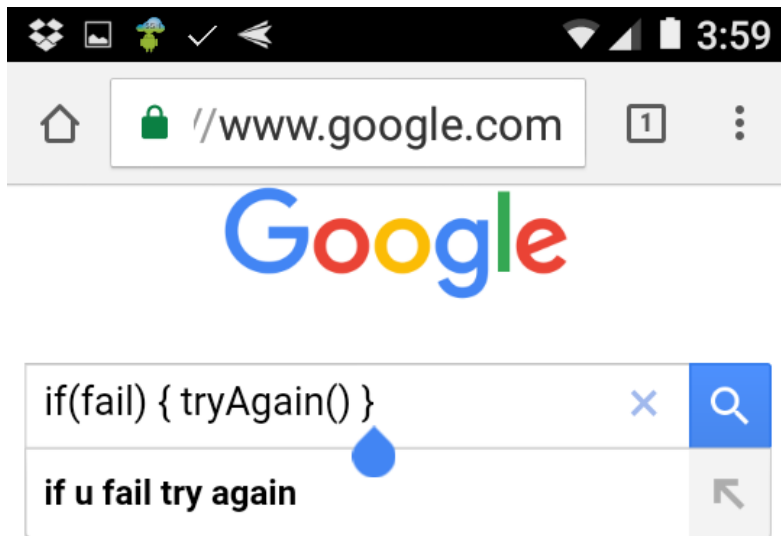
For a local terminal, I used Terminal Emulator. I found that some of the common commands didn't work on it, such as `dir`, but it still worked well considering I was using an Android device.



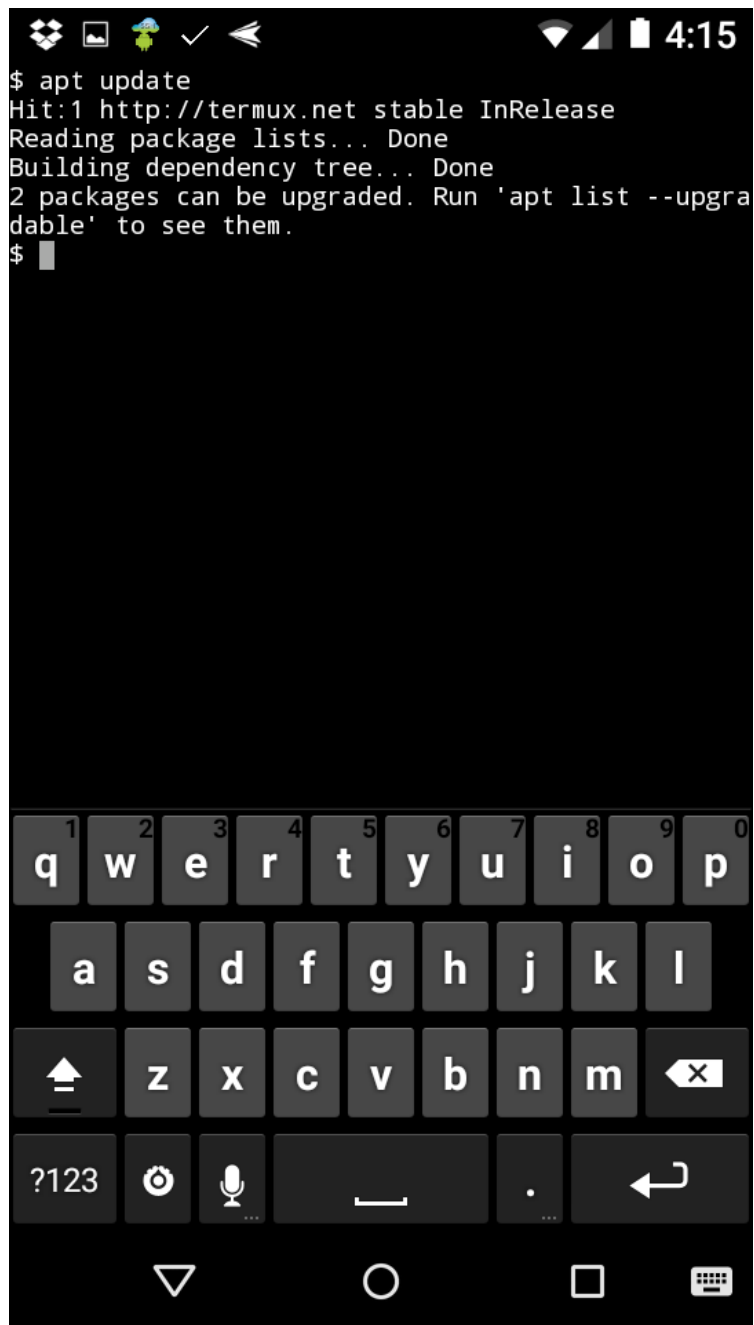
The image shows a terminal window titled "Window 1" on an Android device. The status bar at the top displays various icons including a camera, a file manager, a gallery, a weather icon, a checkmark, a signal strength indicator, a battery level indicator, and the time 3:48. The terminal window has a dark background with white text. It lists a large number of system files and directories, including init scripts, recovery scripts, and various system directories. At the bottom, a user prompt shows the user 'u0\_a119' at the 'surnia\_cdma' location, having entered the 'dir' command, which resulted in an error message: '/system/bin/sh: dir: not found'.

```
init.mmi.touch.sh
init.mmi.usb.rc
init.mmi.usb.sh
init.qcom.bms.sh
init.qcom.class_core.sh
init.qcom.early_boot.sh
init.qcom.rc
init.qcom.sh
init.qcom.syspart_fixup.sh
init.rc
init.recovery.qcom.rc
init.sprint.rc
init.target.rc
init.trace.rc
init.usb.rc
init.zygote32.rc
mnt
module_hashes
pds
persist
proc
property_contexts
res
root
sbin
sdcard
seapp_contexts
selinux_version
sepolicy
service_contexts
storage
sys
system
tombstones
ueventd.qcom.rc
ueventd.rc
vendor
verity_key
xbin
u0_a119@surnia_cdma:/ $ dir
/system/bin/sh: dir: not found
127|u0_a119@surnia_cdma:/ $
```

The large assortment of alternate keys on the Hacker's Keyboard can be seen below. I like the look of the Hacker's Keyboard better than the Moto E 2<sup>nd</sup> Gen's default keyboard, which is quite a bit more colorful. It was very easy to enable the keyboard in settings.



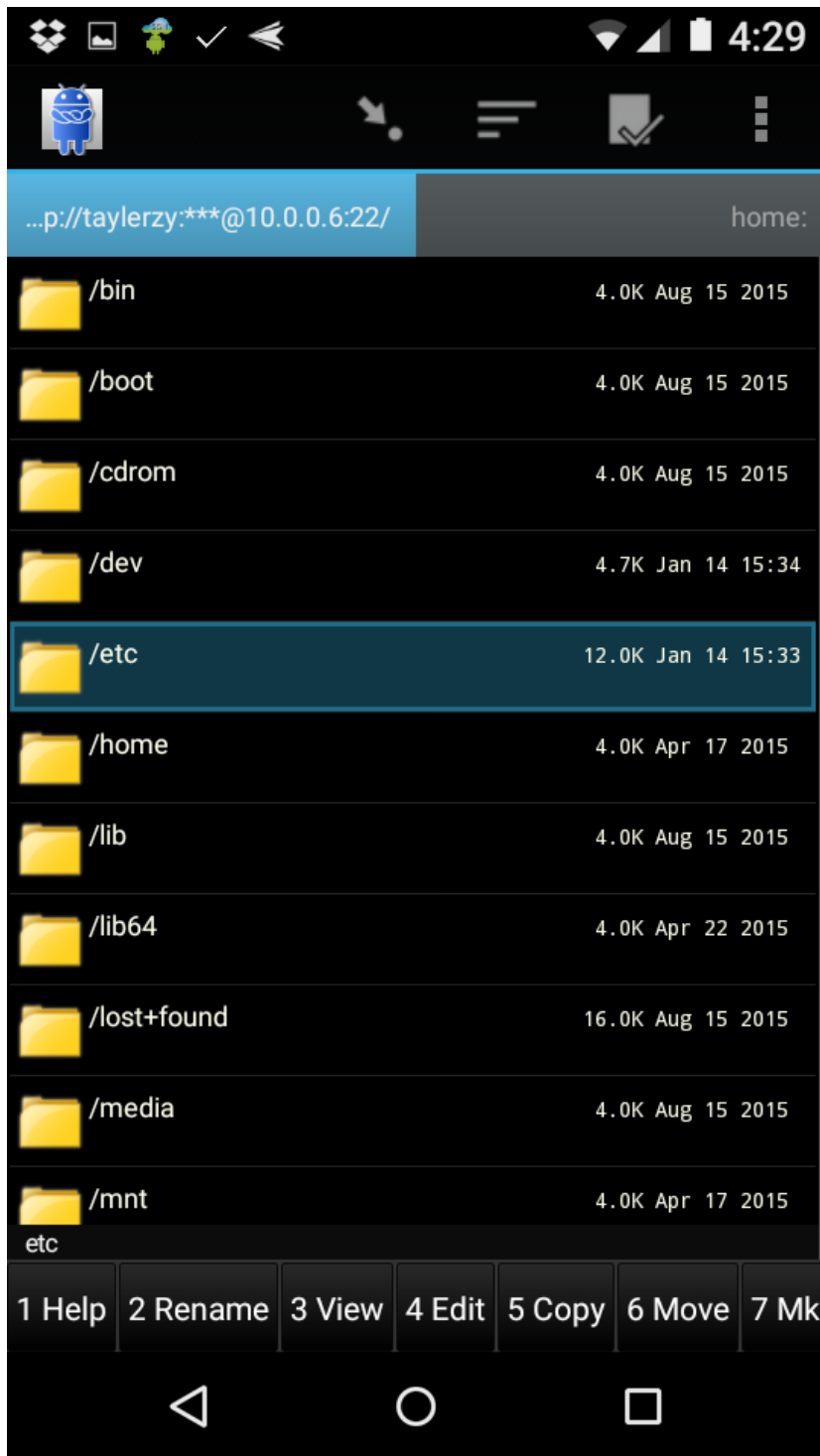
There isn't an app called tmux in F-Droid, so I assume that the correct name is Termux. I didn't have any problems with installing or using the Termux app. I used apt update to test it, as shown below.



```
$ apt update
Hit:1 http://termux.net stable InRelease
Reading package lists... Done
Building dependency tree... Done
2 packages can be upgraded. Run 'apt list --upgradable' to see them.
$
```

I used Ghost Commander with the Ghost Commander SFTP Add-on, both available via F-Droid. Accessing files on my Linux computer was easier than I expected it to be. I was able to see the files on my desktop computer, without having to resort to terminal commands. However, it failed to read my home directory; I'm not sure what happened there.



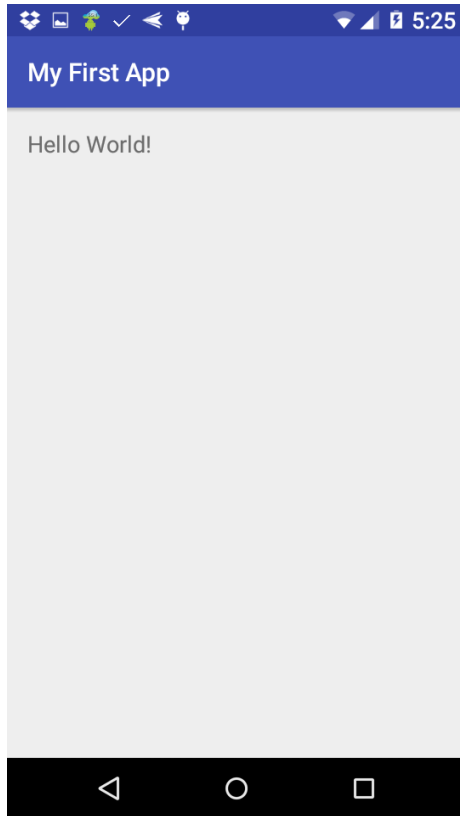


## Task 2:

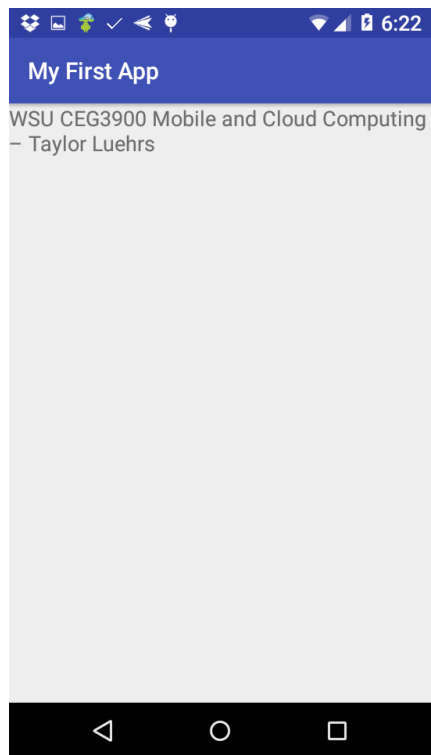
Android Studio was fairly straightforward to install on my Linux OS, as I have had some experience with installing it on a Windows machine in the past. I had an error of "Instant run requires that the platform

corresponding to your target device is installed.”. It had an Install and Continue button, but the button didn't work until I unplugged and plugged back in my Android device.

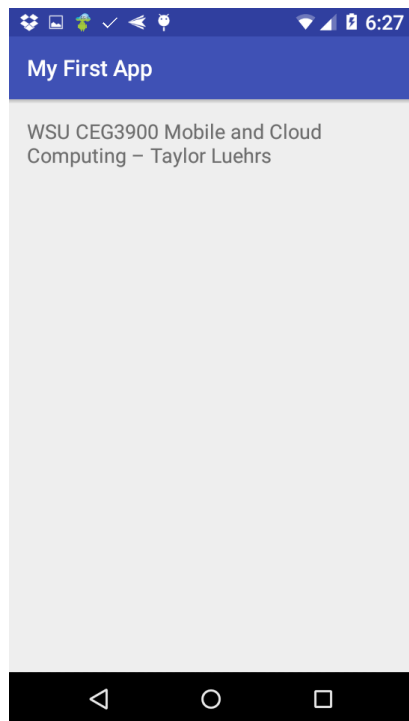
The Hello World program ran fine in both the emulator and on my android phone. Here's an image of it from my phone.



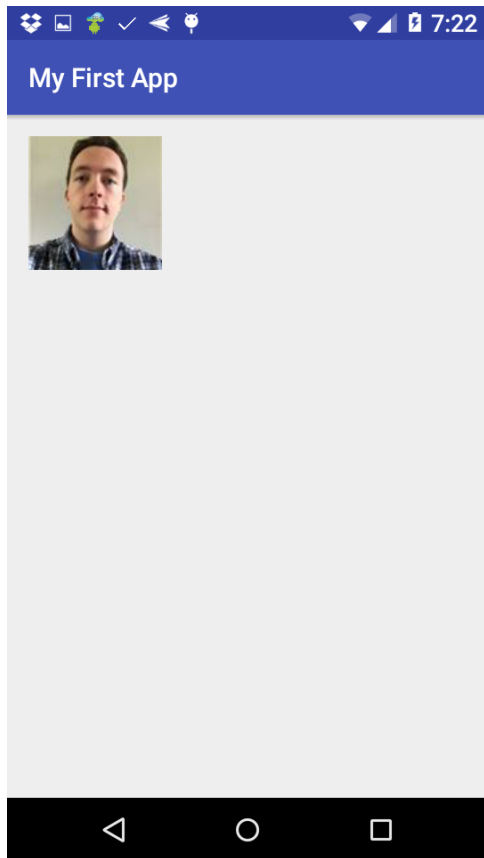
I had a bit of trouble figuring out how to get messages to display without using XML, but I finally figured it out. I created a new text view, set the text, and then set the content view to the text that I just made. The XML version of the message was easy, as it was very similar to the default “Hello World” program.



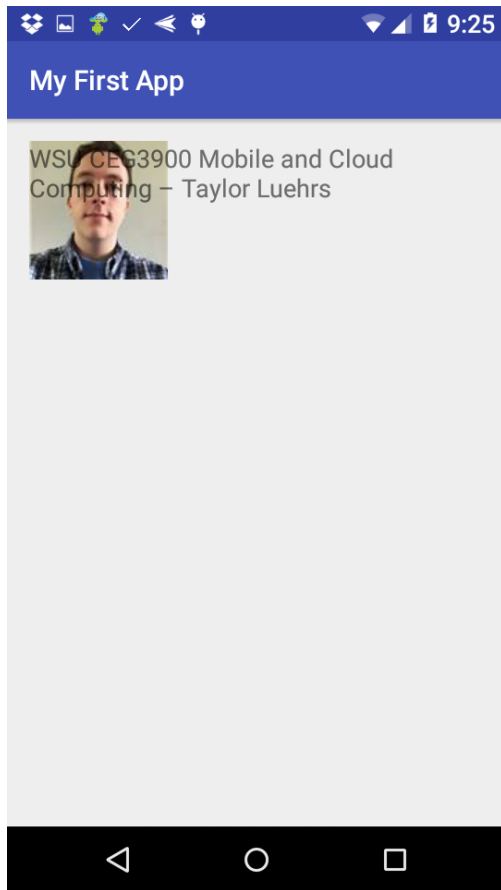
I was surprised to find that the text display when using XML (below) was formatted slightly differently than the Java version (above).



Adding an image wasn't much different from adding text.

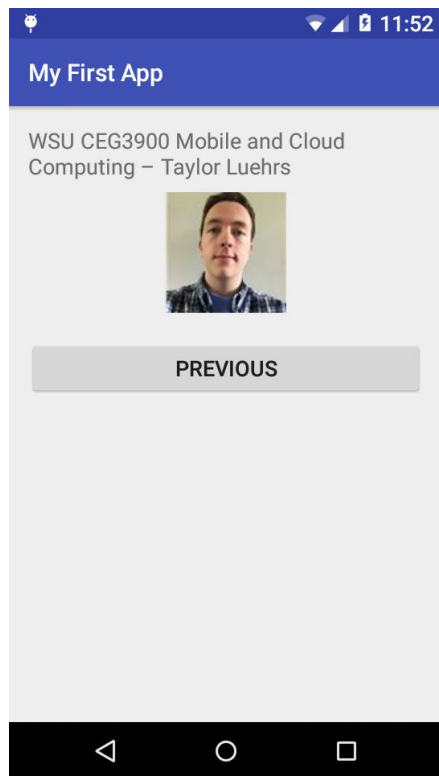


Figuring out how to add another layer was somewhat difficult, but I finally found out that `include` should be used in one of the activity files to add another one, as shown in the screenshot below.



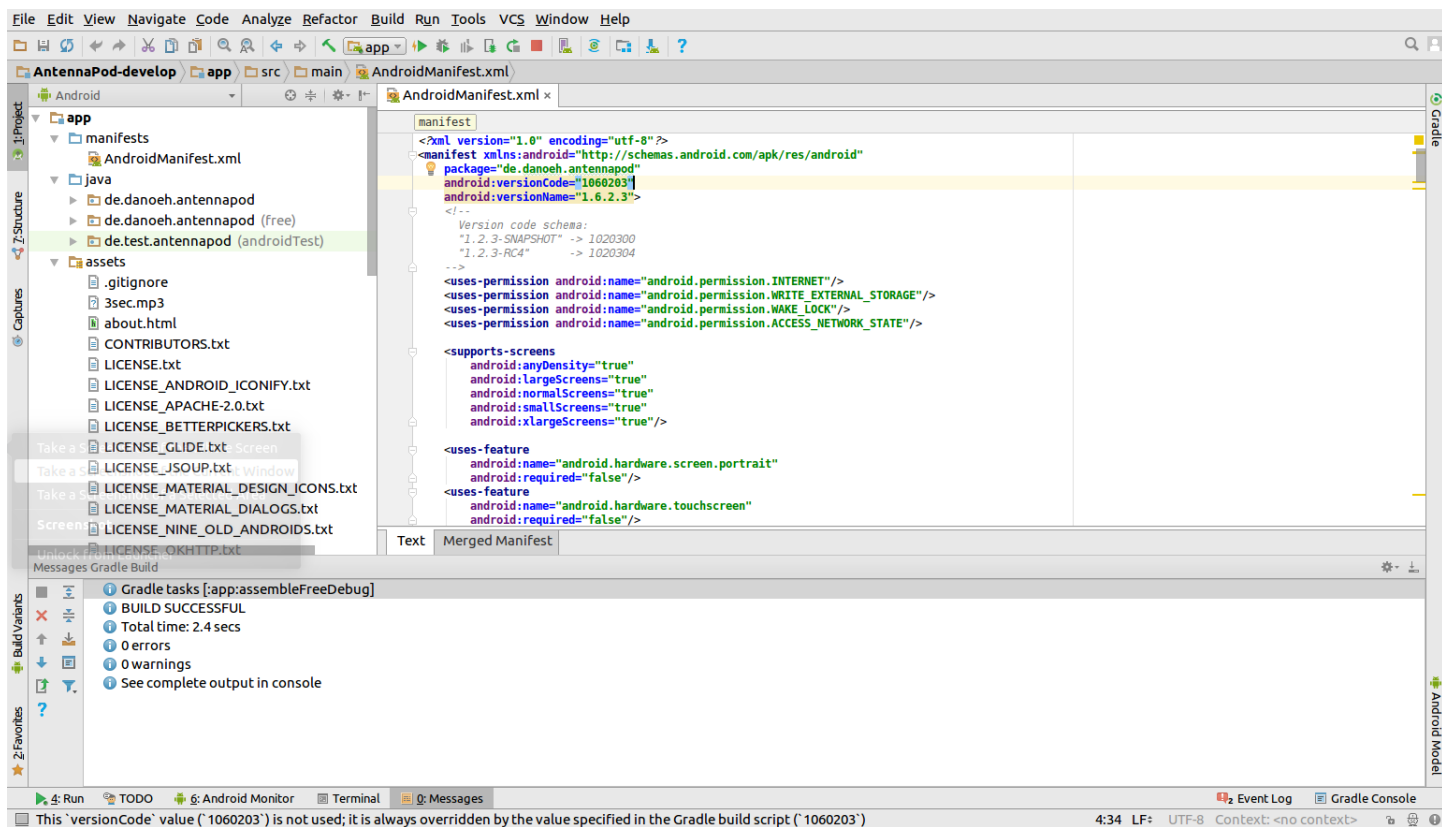
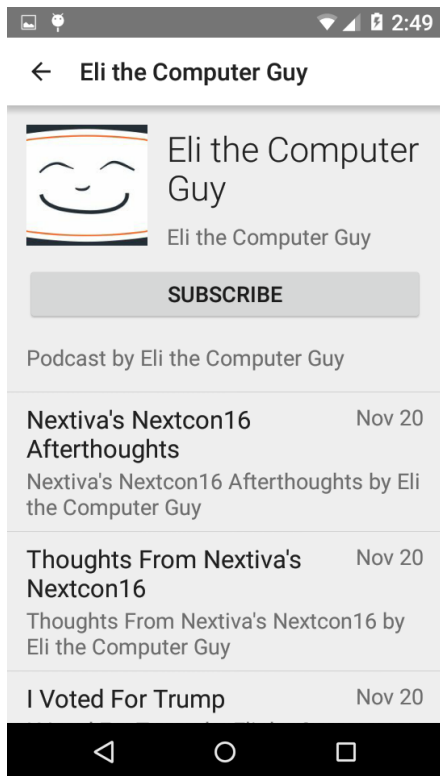
I originally had some difficulty with placing two elements on the screen at once. With XML, they would sometimes overlap. That part was easy to fix, but I had a harder time trying to add a button with XML and text with Java at the same time. I found that `setContent`, the standard way to add a text node to the screen, created an entirely new layout that took up an entire screen. As a result, I could only seem to fit either the text or the button, but not both. I eventually created a new `LinearLayout` programmatically in order to add the text node. I also wound up creating the button in Java as well, so that I could easily control the order in which the elements appeared on the screen.

Adding Previous/Next buttons and working on transitioning between one page to the next was somewhat difficult, but I finally found that the best way is to create a new Java/XML file for each page that you want, and then add the corresponding XML file to the manifest.



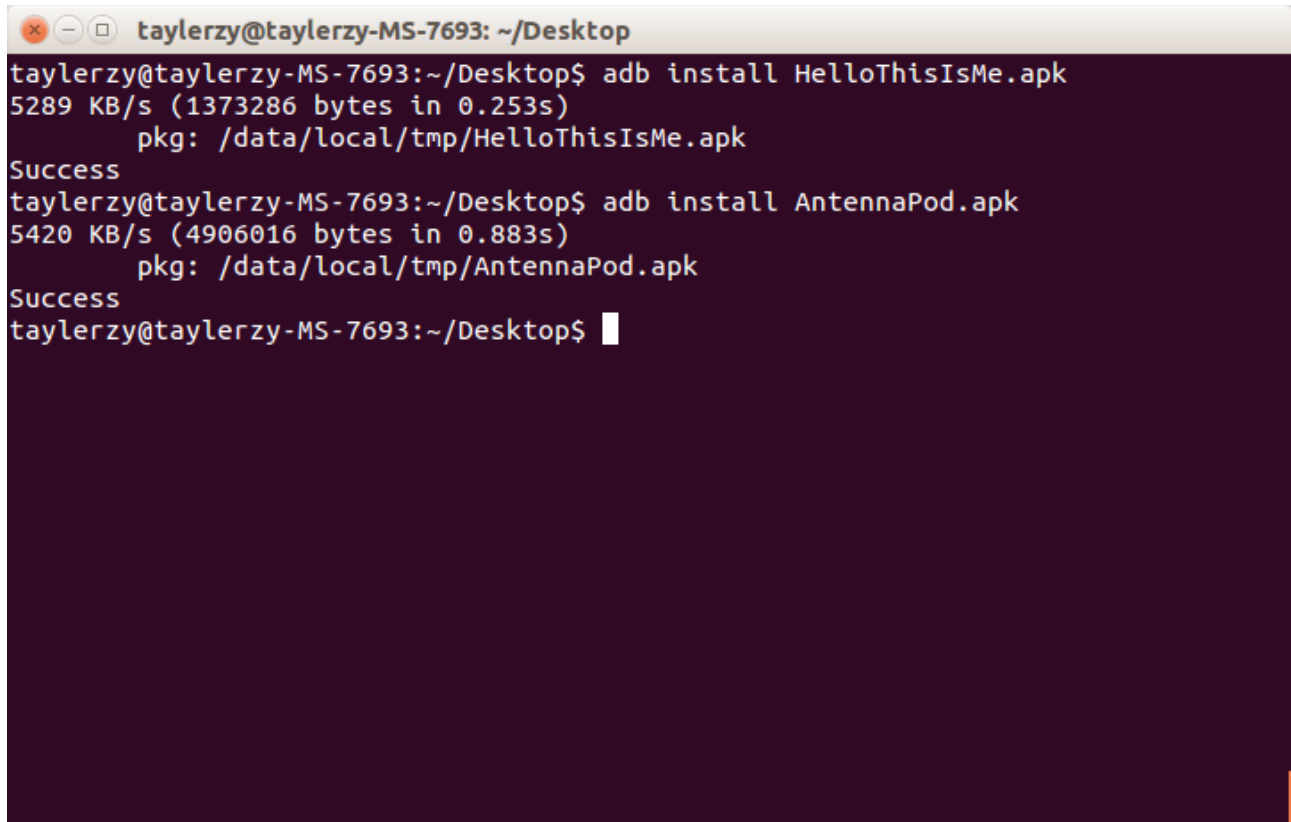
### Task 3:

Building an existing open source app is much more difficult than it sounds. I started out with about 50 errors and worked from there. First I had trouble with Gradle – it wouldn't move on from initialization. I installed some necessary libraries using `sudo apt-get install zlib1g:i386`, and then I changed Gradle to run in parallel so that the functions would work faster. Java tool errors occurred, but I found that they were specific to Java swing, and weren't needed for my application to run anyway. I found a way to suppress them online (this was the recommended option). I fixed dependencies that popped up automatically, such as build tools.



Task 4:

Getting ADB up and running was just slightly tricky, but only because I'm still thinking in terms of Windows executables. I found the directory of the adb, but I couldn't figure out how to run it. I then found that you can use adb devices to start the server, and simply use adb install apkgname.apk in order to install the apk on the intended device.

A terminal window with a dark purple background and a light-colored title bar. The title bar contains window control icons and the text 'taylorzy@taylorzy-MS-7693: ~/Desktop'. The terminal shows two successful ADB install commands. The first command is 'adb install HelloThisIsMe.apk', which outputs '5289 KB/s (1373286 bytes in 0.253s)', 'pkg: /data/local/tmp/HelloThisIsMe.apk', and 'Success'. The second command is 'adb install AntennaPod.apk', which outputs '5420 KB/s (4906016 bytes in 0.883s)', 'pkg: /data/local/tmp/AntennaPod.apk', and 'Success'. The prompt 'taylorzy@taylorzy-MS-7693:~/Desktop\$' is visible at the bottom.

```
taylorzy@taylorzy-MS-7693: ~/Desktop
taylorzy@taylorzy-MS-7693:~/Desktop$ adb install HelloThisIsMe.apk
5289 KB/s (1373286 bytes in 0.253s)
  pkg: /data/local/tmp/HelloThisIsMe.apk
Success
taylorzy@taylorzy-MS-7693:~/Desktop$ adb install AntennaPod.apk
5420 KB/s (4906016 bytes in 0.883s)
  pkg: /data/local/tmp/AntennaPod.apk
Success
taylorzy@taylorzy-MS-7693:~/Desktop$
```

Output of ls /system/bin and ls /system/xbin on device:

Script started on Sun 15 Jan 2017 04:07:30 PM EST

```
#]0;taylorzy@taylorzy-MS-7693: ~/Desktop#taylorzy@taylorzy-MS-7693:~/Desktop$ adb shell
```

```
shell@surnia_cdma:/ $ scr# ## ## ###ls /system/bin
```

ATFWD-daemon

Omadmloadproperty

PktRspTest



StoreKeybox

WifiLogger\_app

[

adsprpcd

am

aostlmd

ap\_gain.bin

ap\_gain\_mmul.bin

apanic\_annotate.sh

aplogcat

aplogd

app\_process

app\_process32

applypatch

appops

appwidget

atrace

audiod

batch

batt\_health

battery.sh

bcc

blkid

bmgr

bootanimation

brctl

btnvtool

bu

bug2go-bugreport

bug2go-bugreport-oem

bugreport

cat

charge\_only\_mode

chcon

chmod

chown

clatd

clear

cmp

content

cp

cplay

curl

dalvikvm

dalvikvm32

date

dbvc\_atvc\_property\_set

dd

debuggerd

dex2oat

df

dhcpcd

diag\_callback\_client

diag\_dci\_sample

diag\_klog

diag\_mdlog

diag\_mdlog-getlogs

diag\_mdlog-wrap

diag\_qshrink4\_daemon

diag\_socket\_log

diag\_uart\_log

dmesg

dnsmasq

dpm

dpmd

drmserver

dropboxd

dropboxhelper

du

dumpstate

dumpsys

dun-server

e2fsck

ebtables

esdpll

fm\_qsoc\_patches

fmconfig

fmfactorytest

fmfactorytestserver

fsck.f2fs

fsck\_msdos

ftmdaemon

ftmipcd

garden\_app

getconfig

getenforce

getevent

getprop

getsebool

gpsone\_daemon

grep

gzip

hal\_proxy\_daemon

hardware\_revisions.sh

hci\_qcomm\_init

hd

hostapd

hostapd\_cli

id

idmap

ifconfig

iftop

ime

ims\_rtp\_daemon

imscmservice

imsdatadaemon

imsqmidaemon

input

insmod

install-recovery.sh

installld

ioctl

ionice

ip

ip6tables

ipInfo



iptables

irsc\_util

isdbtmmtest

keymaster\_test

keystore

kill

kpgather

linker

lmkd

ln

load\_policy

loc\_launcher

location-mq

log

logcat

logd

logwrapper

ls

lsmod

lsof

make\_ext4fs

masterclear

mbm\_spy

mcStarter

md5

md5sum

mdnsd

media

mediaserver

memtest\_mode

mkdir

mknod

mkswap

mm-pp-daemon

mm-qcamera-app

mm-qcamera-daemon

mm-qjpeg-dec-test

mm-qjpeg-enc-test

mm-qomx-idec-test

mm-qomx-ienc-test

mm-vidc-omx-test

mmi

monkey

motobox

mount

msm-vidc-test

msm\_irqbalance

mtpd

mv

n\_smux

nandread

ndc

netcfg

netd

netmgrd

netstat

newfs\_msdos

nl\_listener

nohup

notify

oatdump

oemwvtest

patchoat

perfd

ping

ping6

pm

pm-service

port-bridge

pppd

printenv

prlimit

ps

ptf

ptt\_socket\_app

qfipsverify

qmi\_motext\_hook

qmuxd

qrngtest

qseecom\_sample\_client

qseecom\_security\_test

qseecomd

racoon

radish

readlink

reboot

renice

requestsync

resize2fs

restorecon

rfs\_access

rild

rm

rmdir

rmmod

rmnetcli

rmt\_storage

route

run-as

runcon

sapd

schedtest

schedtop

screencap

screenrecord

sdcard

sendevent

sendevent2

sensorservice

service

servicemanager

setconfig

setenforce

setfattr

setprop

setsebool



settings

setup\_fs

sh

slateipcd

sleep

smd

ssr\_setup

start

stm10xx

stop

subsystem\_ramdump

surfaceflinger

svc

swapoff

swapon

sync

tc

tcmd

tcmdhelp

test

test\_diag

thermal-engine

time\_daemon

timedexec

tinycap

tinymix

tinypcminfo

tinyplay

toolbox

top

touch

uiautomator

umount

uncrypt

updater

uptime

usb\_uicc\_client

vdc

vm\_bms

vmstat

vold

watchprops

wcnss\_service

wdsdaemon

wipe

wm

wpa\_supplicant

xtwifi-client

xtwifi-inet-agent

shell@surnia\_cdma:/ \$ ls /system/sbin

dexdump

shell@surnia\_cdma:/ \$ ^D

#]0;taylerzy@taylerzy-MS-7693: ~/Desktop#taylerzy@taylerzy-MS-7693:~/Desktop\$ exit

Script done on Sun 15 Jan 2017 04:08:32 PM EST

Task 5:

(note: Screenshots for task 5 were pasted in when I was finished – the word processor entered them in in a slightly different order, such as the kernel compilation at the top)

I compiled the kernel for Extra Credit, but I didn't do the second EC sub-task. It took about 4 hours to finish, not counting the first attempt when I ran out of space on my hard drive and had to switch drives.

Made note of the Public DNS: ec2-52-14-19-20.us-east-2.compute.amazonaws.com

```
taylerzy@taylerzy-MS-7693: /media/taylerzy/3BCD14273F2B7B16/linux-4.9.3
IHEX      firmware/mts_gsm.fw
IHEX      firmware/mts_edge.fw
H16TOFW   firmware/edgeport/boot.fw
H16TOFW   firmware/edgeport/boot2.fw
H16TOFW   firmware/edgeport/down.fw
H16TOFW   firmware/edgeport/down2.fw
IHEX      firmware/edgeport/down3.bin
IHEX2FW   firmware/whiteheat_loader.fw
IHEX2FW   firmware/whiteheat.fw
IHEX2FW   firmware/keyspan_pda/keyspan_pda.fw
IHEX2FW   firmware/keyspan_pda/xircom_pgs.fw
IHEX      firmware/cpia2/stv0672_vp4.bin
IHEX      firmware/yam/1200.bin
IHEX      firmware/yam/9600.bin
taylerzy@taylerzy-MS-7693: /media/taylerzy/3BCD14273F2B7B16/linux-4.9.3$ make modules
CHK       include/config/kernel.release
CHK       include/generated/uapi/linux/version.h
CHK       include/generated/utsrelease.h
CHK       include/generated/bounds.h
CHK       include/generated/timeconst.h
CHK       include/generated/asm-offsets.h
CALL      scripts/checksyscalls.sh
```

```
taylerzy@taylerzy-MS-7693: /media/taylerzy/3BCD14273F2B7B16/linux-4.9.3
IHEX2FW   firmware/emi62/spdif.fw
IHEX2FW   firmware/emi62/midi.fw
IHEX      firmware/kaweth/new_code.bin
IHEX      firmware/kaweth/trigger_code.bin
IHEX      firmware/kaweth/new_code_fix.bin
IHEX      firmware/kaweth/trigger_code_fix.bin
IHEX      firmware/ti_3410.fw
IHEX      firmware/ti_5052.fw
IHEX      firmware/mts_cdma.fw
IHEX      firmware/mts_gsm.fw
IHEX      firmware/mts_edge.fw
H16TOFW   firmware/edgeport/boot.fw
H16TOFW   firmware/edgeport/boot2.fw
H16TOFW   firmware/edgeport/down.fw
H16TOFW   firmware/edgeport/down2.fw
IHEX      firmware/edgeport/down3.bin
IHEX2FW   firmware/whiteheat_loader.fw
IHEX2FW   firmware/whiteheat.fw
IHEX2FW   firmware/keyspan_pda/keyspan_pda.fw
IHEX2FW   firmware/keyspan_pda/xircom_pgs.fw
IHEX      firmware/cpia2/stv0672_vp4.bin
IHEX      firmware/yam/1200.bin
IHEX      firmware/yam/9600.bin
taylerzy@taylerzy-MS-7693: /media/taylerzy/3BCD14273F2B7B16/linux-4.9.3$
```

```
taylerzy@taylerzy-MS-7693: /media/taylerzy/3BCD14273F2B7B16/linux-4.9.3
CC      arch/x86/boot/tty.o
CC      arch/x86/boot/video.o
CC      arch/x86/boot/video-mode.o
CC      arch/x86/boot/version.o
CC      arch/x86/boot/video-vga.o
CC      arch/x86/boot/video-vesa.o
CC      arch/x86/boot/video-bios.o
LD      arch/x86/boot/setup.elf
OBJCOPY arch/x86/boot/setup.bin
OBJCOPY arch/x86/boot/vmlinux.bin
HOSTCC  arch/x86/boot/tools/build
BUILD   arch/x86/boot/bzImage
Setup is 17308 bytes (padded to 17408 bytes).
System is 6855 kB
CRC 73e37d25
Kernel: arch/x86/boot/bzImage is ready (#1)
Building modules, stage 2.
MODPOST 4208 modules
CC      arch/x86/crypto/aes-x86_64.mod.o
LD [M]  arch/x86/crypto/aes-x86_64.ko
CC      arch/x86/crypto/aesni-intel.mod.o
LD [M]  arch/x86/crypto/aesni-intel.ko
CC      arch/x86/crypto/blowfish-x86_64.mod.o
```

```
taylerzy@taylerzy-MS-7693: ~/Desktop/linux-4.9.3
.config - Linux/x86 4.9.3 Kernel Configuration

Enter a filename to which this configuration
should be saved as an alternate. Leave blank to
abort.

.config

< Ok > < Help >
```

```
taylerzy@taylerzy-MS-7693: ~/Desktop/linux-4.9.3
.config - Linux/x86 4.9.3 Kernel Configuration

Linux/x86 4.9.3 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 [ ]

[*] 64-bit kernel
    General setup --->
[*] Enable loadable module support --->
[*] Enable the block layer --->
    Processor type and features --->
    Power management and ACPI options --->
    Bus options (PCI etc.) --->
    Executable file formats / Emulations --->
[*] Networking support --->
    Device Drivers --->

+ (+)

<Select>  < Exit >  < Help >  < Save >  < Load >
```

```
taylerzy@taylerzy-MS-7693: ~/Desktop
linux-4.9.3/virt/kvm/arm/vgic/vgic-its.c
linux-4.9.3/virt/kvm/arm/vgic/vgic-kvm-device.c
linux-4.9.3/virt/kvm/arm/vgic/vgic-mmio-v2.c
linux-4.9.3/virt/kvm/arm/vgic/vgic-mmio-v3.c
linux-4.9.3/virt/kvm/arm/vgic/vgic-mmio.c
linux-4.9.3/virt/kvm/arm/vgic/vgic-mmio.h
linux-4.9.3/virt/kvm/arm/vgic/vgic-v2.c
linux-4.9.3/virt/kvm/arm/vgic/vgic-v3.c
linux-4.9.3/virt/kvm/arm/vgic/vgic.c
linux-4.9.3/virt/kvm/arm/vgic/vgic.h
linux-4.9.3/virt/kvm/async_pf.c
linux-4.9.3/virt/kvm/async_pf.h
linux-4.9.3/virt/kvm/coalesced_mmio.c
linux-4.9.3/virt/kvm/coalesced_mmio.h
linux-4.9.3/virt/kvm/eventfd.c
linux-4.9.3/virt/kvm/irqchip.c
linux-4.9.3/virt/kvm/kvm_main.c
linux-4.9.3/virt/kvm/vfio.c
linux-4.9.3/virt/kvm/vfio.h
linux-4.9.3/virt/lib/
linux-4.9.3/virt/lib/Kconfig
linux-4.9.3/virt/lib/Makefile
linux-4.9.3/virt/lib/irqbypass.c
taylerzy@taylerzy-MS-7693:~/Desktop$
```

```
taylerzy@taylerzy-MS-7693: ~/Desktop
taylerzy@taylerzy-MS-7693:~$ cd Desktop
taylerzy@taylerzy-MS-7693:~/Desktop$ wget https://cdn.kernel.org/pub/linux/kernel/v4.x/linux-4.9.3.tar.xz
--2017-01-12 17:22:19-- https://cdn.kernel.org/pub/linux/kernel/v4.x/linux-4.9.3.tar.xz
Resolving cdn.kernel.org (cdn.kernel.org)... 151.101.56.69
Connecting to cdn.kernel.org (cdn.kernel.org)|151.101.56.69|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 93192408 (89M) [application/x-xz]
Saving to: 'linux-4.9.3.tar.xz'

linux-4.9.3.tar.xz 100%[=====>] 88.88M  927KB/s  in 1m 41s
2017-01-12 17:24:01 (903 KB/s) - 'linux-4.9.3.tar.xz' saved [93192408/93192408]

taylerzy@taylerzy-MS-7693:~/Desktop$
```

```
taylerzy@taylerzy-MS-7693: ~/Desktop
taylerzy@taylerzy-MS-7693:~/Desktop$ scp -i taylerzy.pem source.s ubuntu@ec2-52-14-19-20.us-east-2.compute.amazonaws.com:~
source.s 100% 406 0.4KB/s 00:00
taylerzy@taylerzy-MS-7693:~/Desktop$
```





Terminal

EC2 Dashboard

Launch Instance

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs
	i-08429a1d6a75cc22	t2.micro	us-east-2c	running	2/2 checks ...	None	ec2-52-14-19-20.us-eas...	52.14.19.20	-

```
ubuntu@ip-172-31-43-75: ~  
ubuntu@ip-172-31-43-75:~$ xlogo  
ubuntu@ip-172-31-43-75:~$ xeyes
```

Instance ID: i-08429a1d6a75cc22  
Instance state: running  
Instance type: t2.micro  
Elastic IPs: -  
Availability zone: us-east-2c  
Security groups: launch-wizard-2, vpc-70825119  
Scheduled events: No scheduled events  
AMI ID: ubuntu/images/hvm-ssd/ubuntu-precise-12.04-amd64-server-2014.09.09 ? (ami-f0a7b767)

VPC ID: vpc-70825119  
Subnet ID: subnet-83dbcf9

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xlogo

EC2 Dashboard

Launch Instance

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs
	i-08429a1d6a75cc22	t2.micro	us-east-2c	running	2/2 checks ...	None	ec2-52-14-19-20.us-eas...	52.14.19.20	-

```
ubuntu@ip-172-31-43-75:~$ xlogo
```

Instance ID: i-08429a1d6a75cc22  
Instance state: running  
Instance type: t2.micro  
Elastic IPs: -  
Availability zone: us-east-2c  
Security groups: launch-wizard-2, vpc-70825119  
Scheduled events: No scheduled events  
AMI ID: ubuntu/images/hvm-ssd/ubuntu-precise-12.04-amd64-server-2014.09.09 ? (ami-f0a7b767)

VPC ID: vpc-70825119  
Subnet ID: subnet-83dbcf9

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```
root@ip-172-31-43-75: /home/ubuntu
ubuntu@ip-172-31-43-75:~$ sudo su
root@ip-172-31-43-75:/home/ubuntu#

top - 21:45:24 up 28 min,  1 user,  load average: 0.00, 0.01, 0.04
Tasks: 61 total,  1 running, 60 sleeping,  0 stopped,  0 zombie
Cpu(s):  0.3%us,  0.0%sy,  0.0%ni, 99.7%id,  0.0%wa,  0.0%hi,  0.0%si,  0.0%st
Mem:  1017968k total,  107752k used,  910216k free,  8508k buffers
Swap:  0k total,  0k used,  0k free,  48224k cached
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
1	root	20	0	24292	2268	1340	S	0.0	0.2	0:00.88	init
2	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kthreadd
3	root	20	0	0	0	0	S	0.0	0.0	0:00.08	ksoftirqd/0
5	root	20	0	0	0	0	S	0.0	0.0	0:00.07	kworker/u:0
6	root	RT	0	0	0	0	S	0.0	0.0	0:00.00	migration/0
7	root	RT	0	0	0	0	S	0.0	0.0	0:00.00	watchdog/0
8	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	cpuset
9	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	khelper
10	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kdevtmpfs
11	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	netns
12	root	20	0	0	0	0	S	0.0	0.0	0:00.01	xenwatch
13	root	20	0	0	0	0	S	0.0	0.0	0:00.10	xenbus
14	root	20	0	0	0	0	S	0.0	0.0	0:00.00	sync_supers
15	root	20	0	0	0	0	S	0.0	0.0	0:00.00	bdi-default
16	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	kintegrityd
17	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	kblockd
18	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	ata_sff

```
ubuntu@ip-172-31-43-75: ~  
ubuntu@ip-172-31-43-75:~$ echo "Number of Programs: "; dpkg -l | wc -l  
Number of Programs:  
457  
ubuntu@ip-172-31-43-75:~$  
  
ubuntu@ip-172-31-43-75: ~  
ubuntu@ip-172-31-43-75:~$ wget http://www.cs.wright.edu/~pmateti/Courses/3900/Lectures/Cloud/worms12.cpp  
--2017-01-12 21:40:57-- http://www.cs.wright.edu/~pmateti/Courses/3900/Lectures/Cloud/worms12.cpp  
Resolving www.cs.wright.edu (www.cs.wright.edu)... 130.108.74.59  
Connecting to www.cs.wright.edu (www.cs.wright.edu)|130.108.74.59|:80... connected.  
HTTP request sent, awaiting response... 302 Found  
Location: http://cecs.wright.edu/~pmateti/Courses/3900/Lectures/Cloud/worms12.cpp [following]  
--2017-01-12 21:40:58-- http://cecs.wright.edu/~pmateti/Courses/3900/Lectures/Cloud/worms12.cpp  
Resolving cecs.wright.edu (cecs.wright.edu)... 130.108.74.79  
Connecting to cecs.wright.edu (cecs.wright.edu)|130.108.74.79|:80... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 13933 (14K) [text/x-c]  
Saving to: `worms12.cpp'  
  
100%[=====] 13,933 --.-K/s in 0.04s  
  
2017-01-12 21:40:58 (382 KB/s) - `worms12.cpp' saved [13933/13933]  
  
ubuntu@ip-172-31-43-75:~$
```

```
ubuntu@ip-172-31-43-75: ~
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/bin/sh
bin:x:2:2:bin:/bin:/bin/sh
sys:x:3:3:sys:/dev:/bin/sh
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/bin/sh
man:x:6:12:man:/var/cache/man:/bin/sh
lp:x:7:7:lp:/var/spool/lpd:/bin/sh
mail:x:8:8:mail:/var/mail:/bin/sh
news:x:9:9:news:/var/spool/news:/bin/sh
uucp:x:10:10:uucp:/var/spool/uucp:/bin/sh
proxy:x:13:13:proxy:/bin:/bin/sh
www-data:x:33:33:www-data:/var/www:/bin/sh
backup:x:34:34:backup:/var/backups:/bin/sh
list:x:38:38:Mailing List Manager:/var/list:/bin/sh
irc:x:39:39:ircd:/var/run/ircd:/bin/sh
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/bin/sh
nobody:x:65534:65534:nobody:/nonexistent:/bin/sh
libuuid:x:100:101::/var/lib/libuuid:/bin/sh
syslog:x:101:103::/home/syslog:/bin/false
messagebus:x:102:105::/var/run/dbus:/bin/false
whoopsie:x:103:106::/nonexistent:/bin/false
landscape:x:104:109::/var/lib/landscape:/bin/false
--More-- (90%)

ubuntu@ip-172-31-43-75: ~
* Documentation:  https://help.ubuntu.com/

System information as of Thu Jan 12 21:36:36 UTC 2017

System load:  0.0          Processes:           62
Usage of /:   14.1% of 7.86GB Users logged in:      0
Memory usage: 5%          IP address for eth0: 172.31.43.75
Swap usage:   0%

Graph this data and manage this system at:
https://landscape.canonical.com/

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

New release '14.04.5 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

*** /dev/xvda1 will be checked for errors at next reboot ***

Last login: Thu Jan 12 17:04:08 2017 from 99.175.79.86
ubuntu@ip-172-31-43-75:~$
```

System Log: i-08f429a1d6a75cc22

```
0.000000 Initializing cgroup subys cpuset
0.000000 Initializing cgroup subys cpu
0.000000 Linux version 3.2.0-68-virtual (build@brownie) (gcc version 4.6.3 (Ubuntu
0.000000 Command line: BOOT_IMAGE=/boot/vmlinuz-3.2.0-68-virtual root=UUID=a96a2
0.000000 KERNEL supported cpus:
0.000000 Intel GenuineIntel
0.000000 AMD AuthenticAMD
0.000000 Centaur: CentaurHauls
0.000000 BIOS-provided physical RAM map:
0.000000 BIOS-e820: 0000000000000000 - 000000000009e000 (usable)
0.000000 BIOS-e820: 000000000009e000 - 00000000000a0000 (reserved)
0.000000 BIOS-e820: 00000000000a0000 - 0000000000100000 (reserved)
0.000000 BIOS-e820: 0000000000100000 - 0000000000400000 (usable)
0.000000 BIOS-e820: 0000000000400000 - 0000000000000000 (reserved)
0.000000 NX (Execute Disable) protection: active
0.000000 SMBIOS 2.4 present.
0.000000 Hypervisor detected: Xen HVM
0.000000 Xen version 4.2.
0.000000 Netfront and the Xen platform PCI driver have been compiled for this ke
0.000000 Blkfront and the Xen platform PCI driver have been compiled for this ke
0.000000 You might have to change the root device
0.000000 from /dev/hda1 to /dev/xvda1.
0.000000 in your root= kernel command line option
0.000000 No AGP bridge found
0.000000 last_pfn = 0x40000 max_arch_pfn = 0x400000000
0.000000 x86 PAT enabled: cpu 0, old 0x7040600070406, new 0x7010600070106
0.000000 found SMP MP-table at [ffff880000fbc801] fbc80
0.000000 init_memory_mappings: 0000000000000000-0000000040000000
0.000000 RAMDISK: 57726500 - 37b8c000
0.000000 ACPI: RSDP 000000000000eae20 00024 (v02 Xen)
0.000000 ACPI: XSDT 00000000fcd0d4d0 00094 (v01 Xen HVM 00000000 HVM: 000
0.000000 ACPI: FACP 00000000fcd0d4d0 00024 (v01 Xen HVM 00000000 HVM: 000
```

Close

EC2 Dashboard

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs
	i-08f429a1d6a75cc22	t2.micro	us-east-2c	running	2/2 checks ...	None	ec2-52-14-19-20.us-east-2.compute.amazonaws.com	52.14.19.20	-

Bundle Tasks

- Take a Screenshot of the Whole Screen
- Take a Screenshot of the Current Window
- VolumesScreenshot of a Selected Area
- SnapshotsScreenshot

Instance ID: i-08f429a1d6a75cc22

Instance state: running

Instance type: t2.micro

Elastic IPs: -

Availability zone: us-east-2c

Security groups: launch-wizard-2. [view inbound rules](#)

Scheduled events: No scheduled events

AMI ID: ubuntu/images/hvm-ia1/ubuntu-precise-12.04-amd64-server-2014.08.29 ? (ami-172ec7767)

Public DNS (IPv4): ec2-52-14-19-20.us-east-2.compute.amazonaws.com

IPv4 Public IP: 52.14.19.20

IPv6 IPs: -

Private DNS: ip-172-31-43-75.us-east-2.compute.internal

Private IPs: 172.31.43.75

Secondary private IPs: -

VPC ID: vpc-70825119

Subnet ID: subnet-83dbcf9

2017 S... CEG39... S3... Home ... Transf... Is ther... Remot... applic... How to C... Home ... Mail-... S Tool... Sort fi... ubunt... Search

https://console.aws.amazon.com/s3/home?region=us-east-2&bucket=toyboxie&prefix=

Services Resource Groups Taylor Luehrs Global Support

Upload Create Folder Actions Search by prefix None Properties Transfers

All Buckets / toyboxie

Name	Storage Class	Size	Last Modified
2016 Agriculture and Environment.ppt	Standard	6 MB	Wed Jan 11 23:20:57 GMT-500 2017
File Oct 19, 6 48 08 PM.jpeg	Standard	1.2 MB	Wed Jan 11 23:18:55 GMT-500 2017
Luehrs, Taylor Cycle 2 Artifact 5-31-15.pptx	Standard	1.5 MB	Wed Jan 11 23:18:26 GMT-500 2017
Luehrs, Taylor Technical Briefing 10-3-16.pptx	Standard	2.4 MB	Wed Jan 11 23:17:49 GMT-500 2017
MagicBag.VC.db	Standard	10.9 MB	Wed Jan 11 23:19:40 GMT-500 2017
anti-static wrist strap diagram.jpg	Standard	1.9 MB	Wed Jan 11 23:18:02 GMT-500 2017
fall 2016 printable schedule.docx	Standard	1.4 MB	Wed Jan 11 23:18:47 GMT-500 2017
printable schedule and map for fall 2015.docx	Standard	1.7 MB	Wed Jan 11 23:18:15 GMT-500 2017
printable schedule and map for spring 2015.docx	Standard	1.4 MB	Wed Jan 11 23:18:37 GMT-500 2017
xKOVUoA.png	Standard	3 MB	Wed Jan 11 23:19:15 GMT-500 2017

Screenshot of the Whole Screen  
Take a Screenshot of the Current Window  
Take a Screenshot of a Selected Area  
Screenshot  
Unlock From Launcher

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2017 S... CEG39... EC2 M... Ho... Transf... Is ther... Remot... applic... How to C... Home ... Mail-... S Tool... Sort fi... ubunt... Search

Dropbox, Inc (US) https://www.dropbox.com/home

Upgrade account Aaron Cook

Dropbox

Name	Modified	Size
Luehrs, Taylor Cycle 2 Artifact 5-31-15.pptx	5/31/2015 5:00 PM	1.53 MB
printable schedule and map for spring 2015.docx	1/7/2016 10:30 PM	1.50 MB
fall 2016 printable schedule.docx	8/1/2016 12:33 PM	1.50 MB
File Oct 19, 6 48 08 PM.jpeg	10/19/2016 11:12 PM	1.28 MB
Alexandre Dumas pere-The Count of Monte Cristo (Peng...	8/11/2016 7:18 PM	1.28 MB
Dean R. Koontz, Dean Koontz-Lightning (1989).pdf	6/1/2016 8:19 PM	1.27 MB
(Ken_Kesey)_One_Flew_Over_the_Cuckoo's_Nest(BookF...	8/12/2016 5:22 PM	1.22 MB
Cracking the Coding Interview .pdf	11/3/2015 11:42 PM	1.12 MB
Dean R. Koontz-Watchers (1988).pdf	6/1/2016 8:12 PM	1.09 MB
Dean R. Koontz-The Taking (2004).pdf	6/1/2016 8:30 PM	1.08 MB
IMG.jpg	10/14/2015 9:07 PM	1.03 MB
Luehrs, Taylor Experiment 2 Lab Report 9-22-15.docx	9/23/2015 8:22 PM	1 MB
Thomas Cleary, Sun Tzu-The Art of War_ Complete Text ...	9/5/2016 3:10 PM	0.95 MB
ChromeSetup.exe	4/22/2015 12:30 PM	859.58 KB
...	...	...

Help Privacy

```
taylerzy@taylerzy-MS-7693: /media/taylerzy/3BCD14273F2B7B16/linux-4.9.3
H16TOFW firmware/edgeport/boot.fw
H16TOFW firmware/edgeport/boot2.fw
H16TOFW firmware/edgeport/down.fw
H16TOFW firmware/edgeport/down2.fw
IHEX    firmware/edgeport/down3.bin
IHEX2FW firmware/whiteheat_loader.fw
IHEX2FW firmware/whiteheat.fw
IHEX2FW firmware/keyspan_pda/keyspan_pda.fw
IHEX2FW firmware/keyspan_pda/xircom_pgs.fw
IHEX    firmware/cpia2/stv0672_vp4.bin
IHEX    firmware/yam/1200.bin
IHEX    firmware/yam/9600.bin
taylerzy@taylerzy-MS-7693: /media/taylerzy/3BCD14273F2B7B16/linux-4.9.3$ make modules
CHK      include/config/kernel.release
CHK      include/generated/uapi/linux/version.h
CHK      include/generated/utsrelease.h
CHK      include/generated/bounds.h
CHK      include/generated/timeconst.h
CHK      include/generated/asm-offsets.h
CALL     scripts/checksyscalls.sh
Building modules, stage 2.
MODPOST 4208 modules
taylerzy@taylerzy-MS-7693: /media/taylerzy/3BCD14273F2B7B16/linux-4.9.3$
```