

# Lab #6: Android Cats:

## CYBR 570 : Reverse Engineering Spring 2025

Submitted By: Lilly Carlascio

Submission Date: 5/13/25

### Steps and Screenshots Explained:

- At home, I am using my Amazon Fire Tablet that can go into developer mode and have USB debugging enabled. I plugged it into my Ubuntu computer and was able to find the device when running

```
adb devices
GN434J0243020BLA    device
```

- Figure 1 shows part of the output from this command:

```
adb logcat -d -v color
```

- To only get the Warnings and Errors, the output can be seen in Figure 2, and I ran this command:

```
adb logcat *:W
```

- To specifically get warnings/errors about the battery of the device, the output can be seen in Figure 3, and I ran this command:

```
adb logcat *:W | grep battery
```

- Finally, to download an app for future reverse engineering use, I downloaded a "Guess That Pokemon" game from F-Droid.org and installed it. The output can be seen in Figure 4, and I installed it using this command:

```
adb install com.nima.guessthatpokemon_4.apk
```

```
lillycarlascio@carlasciohome: ~  
d error ---  
05-13 07:35:02.342 1389 1389 D WifiHAL : enter wifi_get_link_stats id[0] iface  
[0x0xb400007f94a14520]  
05-13 07:35:02.342 1389 1389 I WifiHAL : Creating message to get link statisti  
cs; iface = 13  
05-13 07:35:02.342 1389 1389 D WifiHAL : WifiRequest::create vendor command to  
iface 13, vendor_id=0x1a11, subcmd=0x1200, res=0  
05-13 07:35:02.352 1389 1389 D WifiHAL : In GetLinkStatsCommand::handleRespons  
e  
05-13 07:35:02.352 1389 1389 D WifiHAL : on_time: = 822620  
05-13 07:35:02.352 1389 1389 D WifiHAL : tx_time: = 16976  
05-13 07:35:02.352 1389 1389 D WifiHAL : rx_time: = 255833  
05-13 07:35:02.352 1389 1389 D WifiHAL : on_time_scan: = 8304  
05-13 07:35:02.352 1389 1389 D WifiHAL : beacon_rx: = 12121  
05-13 07:35:02.352 1389 1389 D WifiHAL : rssi_mgmt: = -49  
05-13 07:35:02.352 1389 1389 D WifiHAL : received mpdu: = 1089949  
05-13 07:35:02.352 1389 1389 D WifiHAL : transmute mpdu: = 308839  
05-13 07:35:02.352 1389 1389 D WifiHAL : lost mpdu: = 38301  
05-13 07:35:02.352 1389 1389 D WifiHAL : retry mpdu: = 95791  
05-13 07:35:02.352 1389 1389 D WifiHAL : mId[0] mIface[0x0xb400007f94a14520]  
05-13 07:35:05.370 1389 1389 D WifiHAL : enter wifi_get_link_stats id[0] iface  
[0x0xb400007f94a14520]  
05-13 07:35:05.370 1389 1389 I WifiHAL : Creating message to get link statisti  
cs; iface = 13  
05-13 07:35:05.370 1389 1389 D WifiHAL : WifiRequest::create vendor command to  
iface 13, vendor_id=0x1a11, subcmd=0x1200, res=0  
05-13 07:35:05.380 1389 1389 D WifiHAL : In GetLinkStatsCommand::handleRespons  
e  
05-13 07:35:05.380 1389 1389 D WifiHAL : on_time: = 825648  
05-13 07:35:05.380 1389 1389 D WifiHAL : tx_time: = 16976  
05-13 07:35:05.380 1389 1389 D WifiHAL : rx_time: = 255923  
05-13 07:35:05.380 1389 1389 D WifiHAL : on_time_scan: = 8304  
05-13 07:35:05.380 1389 1389 D WifiHAL : beacon_rx: = 12150  
05-13 07:35:05.380 1389 1389 D WifiHAL : rssi_mgmt: = -49  
05-13 07:35:05.380 1389 1389 D WifiHAL : received mpdu: = 1089949  
05-13 07:35:05.380 1389 1389 D WifiHAL : transmute mpdu: = 308839  
05-13 07:35:05.380 1389 1389 D WifiHAL : lost mpdu: = 38301  
05-13 07:35:05.380 1389 1389 D WifiHAL : retry mpdu: = 95791  
05-13 07:35:05.381 1389 1389 D WifiHAL : mId[0] mIface[0x0xb400007f94a14520]  
05-13 07:35:08.399 1389 1389 D WifiHAL : enter wifi_get_link_stats id[0] iface  
[0x0xb400007f94a14520]  
05-13 07:35:08.399 1389 1389 I WifiHAL : Creating message to get link statisti  
cs; iface = 13  
05-13 07:35:08.399 1389 1389 D WifiHAL : WifiRequest::create vendor command to  
iface 13, vendor_id=0x1a11, subcmd=0x1200, res=0  
05-13 07:35:08.409 1389 1389 D WifiHAL : In GetLinkStatsCommand::handleRespons  
e  
05-13 07:35:08.409 1389 1389 D WifiHAL : on_time: = 828676  
05-13 07:35:08.410 1389 1389 D WifiHAL : tx_time: = 16978  
05-13 07:35:08.410 1389 1389 D WifiHAL : rx_time: = 256060  
05-13 07:35:08.410 1389 1389 D WifiHAL : on_time_scan: = 8304  
05-13 07:35:08.410 1389 1389 D WifiHAL : beacon_rx: = 12185  
05-13 07:35:08.410 1389 1389 D WifiHAL : rssi_mgmt: = -54  
05-13 07:35:08.410 1389 1389 D WifiHAL : received mpdu: = 1089952  
05-13 07:35:08.410 1389 1389 D WifiHAL : transmute mpdu: = 308839  
05-13 07:35:08.410 1389 1389 D WifiHAL : lost mpdu: = 38301  
05-13 07:35:08.410 1389 1389 D WifiHAL : retry mpdu: = 95793  
05-13 07:35:08.410 1389 1389 D WifiHAL : mId[0] mIface[0x0xb400007f94a14520]  
lillycarlascio@carlasciohome:~$
```

Figure 1: Logcat output from the amazon fire tablet.

```

lillycarlascio@carlasciohome:~$ adb logcat *:W
----- beginning of system
05-13 07:20:41.639 218 218 W vold : Failed to LOOP_GET_STATUS64 /dev/bloc
k/loop10: No such device or address
05-13 07:20:41.639 218 218 W vold : Failed to LOOP_GET_STATUS64 /dev/bloc
k/loop5: No such device or address
05-13 07:20:41.639 218 218 W vold : Failed to LOOP_GET_STATUS64 /dev/bloc
k/loop0: No such device or address
05-13 07:20:41.639 218 218 W vold : Failed to LOOP_GET_STATUS64 /dev/bloc
k/loop4: No such device or address
05-13 07:20:41.639 218 218 W vold : Failed to LOOP_GET_STATUS64 /dev/bloc
k/loop8: No such device or address
05-13 07:20:41.639 218 218 W vold : Failed to LOOP_GET_STATUS64 /dev/bloc
k/loop9: No such device or address
05-13 07:20:41.639 218 218 W vold : Failed to LOOP_GET_STATUS64 /dev/bloc
k/loop11: No such device or address
05-13 07:20:41.639 218 218 W vold : Failed to LOOP_GET_STATUS64 /dev/bloc
k/loop3: No such device or address
05-13 07:20:41.639 218 218 W vold : Failed to LOOP_GET_STATUS64 /dev/bloc
k/loop15: No such device or address
05-13 07:20:41.639 218 218 W vold : Failed to LOOP_GET_STATUS64 /dev/bloc
k/loop1: No such device or address
05-13 07:20:41.639 218 218 W vold : Failed to LOOP_GET_STATUS64 /dev/bloc
k/loop12: No such device or address
05-13 07:20:41.639 218 218 W vold : Failed to LOOP_GET_STATUS64 /dev/bloc
k/loop14: No such device or address
05-13 07:20:41.639 218 218 W vold : Failed to LOOP_GET_STATUS64 /dev/bloc
k/loop7: No such device or address
05-13 07:20:41.639 218 218 W vold : Failed to LOOP_GET_STATUS64 /dev/bloc
k/loop13: No such device or address
05-13 07:20:41.639 218 218 W vold : Failed to LOOP_GET_STATUS64 /dev/bloc
k/loop2: No such device or address
05-13 07:20:41.639 218 218 W vold : Failed to LOOP_GET_STATUS64 /dev/bloc
k/loop6: No such device or address
05-13 07:20:41.640 218 218 W vold : [libfs_mgr]Warning: unknown flag: res
ize
05-13 07:20:42.029 218 218 E vold : begin failed, code -62
05-13 07:20:42.230 218 218 E vold : begin failed, code -62
05-13 07:20:42.458 218 218 E vold : begin failed, code -62
05-13 07:20:56.570 523 523 W HidlServiceManagement: Waited one second for an
droid.hardware.health@2.0::IHealth/default
05-13 07:20:57.571 523 523 W HidlServiceManagement: Waited one second for an
droid.hardware.health@2.0::IHealth/default
05-13 07:20:58.572 523 523 W HidlServiceManagement: Waited one second for an
droid.hardware.health@2.0::IHealth/default
05-13 07:21:03.650 523 523 E storaged: getService package_native failed
05-13 07:21:08.684 523 1047 E storaged: getService package_native failed
05-13 07:21:18.805 525 525 E wificond: No interface is found
05-13 07:21:18.904 1389 1389 W android.hardware.wifi@1.0-service-lazy: No acti
ve wlan interfaces in use! Using default
05-13 07:21:18.904 1389 1389 E android.hardware.wifi@1.0-service-lazy: Failed
to register radio mode change callback
05-13 07:21:18.904 1389 1389 W android.hardware.wifi@1.0-service-lazy: No acti
ve wlan interfaces in use! Using default
05-13 07:21:18.906 1389 1389 W android.hardware.wifi@1.0-service-lazy: No acti

```

Figure 2: General list of all warnings found on the device logs.

```
lillycarlascio@carlasciohome:~$ adb logcat *:W | grep battery
05-13 07:26:57.636 964 2843 W ActivityManager: Slow operation: 51ms so far, now at startProcess: done updating battery stats
05-13 07:27:09.826 964 1026 W ActivityManager: Slow operation: 72ms so far, now at startProcess: done updating battery stats
05-13 07:34:08.214 564 564 E charge_logger: --- charge_logger battery event ---
05-13 07:34:31.301 564 564 E charge_logger: --- charge_logger battery event ---
05-13 07:34:31.643 564 564 E charge_logger: --- charge_logger battery event ---
05-13 07:34:32.142 564 564 E charge_logger: --- charge_logger battery event ---
05-13 07:37:57.722 564 564 E charge_logger: --- charge_logger battery event ---
05-13 07:37:58.199 564 564 E charge_logger: --- charge_logger battery event ---
05-13 07:39:09.562 964 1026 W ActivityManager: Slow operation: 55ms so far, now at startProcess: done updating battery stats
```

Figure 3: Warning logs filtering specifically for warnings that contain the word 'battery'.

```
lillycarlascio@carlasciohome:~/Downloads$ adb install com.nima.guessthatpokemon_4.apk
Performing Streamed Install
Success
```

Figure 4: Success message showing the download of a 'Guess That Pokemon' game downloaded from F-Droid.