

Made by Moez Javed



Applied Cyber Security Industry Led-Course

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Lab Instructor: **Moez Javed**

Lab 11: Android Penetration testing and Forensics

Availability:

🕒 Monday to Friday: 9 AM – 5 PM (at CUST)

✉ After 5 PM: Please drop a message instead of calling.

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Mobile Penetration Testing Manual

Introduction

Mobile devices have become a primary target for attackers due to their widespread usage and storage of sensitive personal data. This manual serves as a professional guide for conducting penetration testing on Android mobile devices using Kali or Parrot Linux environments. It outlines necessary configurations, installations, tools (such as **Drozer**, **APKTool**, and **Andriller**), and commands, while also explaining their purposes and use cases.

The goal is to provide a step-by-step, professional-grade workflow for ethical hackers, security testers, and learners interested in mobile application security.

Device Preparation

Enable Developer Mode on Android

In your phone

Setting -> About Phone -> Build Number -> Tap 7 times -> Developer Setting mode turned on -> Go to USB Debug -> Enabled.

Enabling **Developer Options** allows USB debugging, which is essential for direct device interaction during testing.

Tool Setup and Installation

1. Drozer

Drozer is a comprehensive security testing framework for Android.

Now in Kali linux

wget <https://bootstrap.pypa.io/pip/2.7/get-pip.py>

```
(kali㉿kali)-[~]
└─$ wget https://bootstrap.pypa.io/pip/2.7/get-pip.py
--2025-05-07 07:27:30-- https://bootstrap.pypa.io/pip/2.7/get-pip.py
Resolving bootstrap.pypa.io (bootstrap.pypa.io)... 2a04:4e42:7b::175, 146.75.44.175
Connecting to bootstrap.pypa.io (bootstrap.pypa.io)|2a04:4e42:7b::175|:443 ...
failed: Connection timed out.
Connecting to bootstrap.pypa.io (bootstrap.pypa.io)|146.75.44.175|:443 ... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1908226 (1.8M) [text/x-python]
Saving to: 'get-pip.py'

get-pip.py          100%[=====] 1.82M  1.80MB/s  in 1.0s
2025-05-07 07:29:48 (1.80 MB/s) - 'get-pip.py' saved [1908226/1908226]
```

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sudo python2 get-pip.py

```
(kali@kali)-[~]
$ sudo python2 get-pip.py
DEPRECATION: Python 2.7 reached the end of its life on January 1st, 2020. Please upgrade your Python as Python 2.7 is no longer maintained. pip 21.0 will drop support for Python 2.7 in January 2021. More details about Python 2 support in pip can be found at https://pip.pypa.io/en/latest/development/release-process/#python-2-support pip 21.0 will remove support for this functionality.
Collecting pip<21.0
  Downloading pip-20.3.4-py2.py3-none-any.whl (1.5 MB)
    | 1.5 MB 687 kB/s
Collecting wheel
  Downloading wheel-0.37.1-py2.py3-none-any.whl (35 kB)
Installing collected packages: pip, wheel
Successfully installed pip-20.3.4 wheel-0.37.1
```

python3 -m venv venv source venv/bin/activate pip install twisted

```
(kali@kali)-[~]
$ python3 -m venv venv
$ source venv/bin/activate
$ pip install twisted
Collecting twisted
  Downloading twisted-24.11.0-py3-none-any.whl.metadata (20 kB)
Collecting attrs>=22.2.0 (from twisted)
  Downloading attrs-25.3.0-py3-none-any.whl.metadata (10 kB)
Collecting automat>=24.8.0 (from twisted)
  Downloading automat-25.4.16-py3-none-any.whl.metadata (8.4 kB)
Collecting constantly>=15.1 (from twisted)
  Downloading constantly-23.10.4-py3-none-any.whl.metadata (1.8 kB)
Collecting hyperlink>=17.1.1 (from twisted)
  Downloading hyperlink-21.0.0-py2.py3-none-any.whl.metadata (1.5 kB)
Collecting incremental>=24.7.0 (from twisted)
  Downloading incremental-24.7.2-py3-none-any.whl.metadata (8.1 kB)
Collecting typing_extensions>=4.2.0 (from twisted)
  Downloading typing_extensions-4.13.2-py3-none-any.whl.metadata (3.0 kB)
Collecting zope.interface>=5 (from twisted)
  Downloading zope.interface-7.2-cp313-cp313-manylinux_2_5_x86_64.manylinux1_x86_64.manylinux2_17_x86_64.manylinux2014_x86_64.whl.metadata (44 kB)
Collecting idna>=2.5 (from hyperlink>=17.1.1->twisted)
  Downloading idna-3.10-py3-none-any.whl.metadata (10 kB)
Collecting setuptools>=61.0 (from incremental>=24.7.0->twisted)
  Downloading setuptools-80.3.1-py3-none-any.whl.metadata (6.5 kB)
Downloaded twisted-24.11.0-py3-none-any.whl (3.2 MB)
3.2/3.2 MB 506.9 kB/s eta 0:00:00
Downloaded attrs-25.3.0-py3-none-any.whl (63 kB)
Downloaded automat-25.4.16-py3-none-any.whl (42 kB)
Downloaded constantly-23.10.4-py3-none-any.whl (13 kB)
Downloaded hyperlink-21.0.0-py2.py3-none-any.whl (74 kB)
Downloaded incremental-24.7.2-py3-none-any.whl (20 kB)
Downloaded typing_extensions-4.13.2-py3-none-any.whl (45 kB)
Downloaded zope.interface-7.2-cp313-cp313-manylinux_2_5_x86_64.manylinux1_x86_64.manylinux2_17_x86_64.manylinux2014_x86_64.whl (264 kB)
Downloaded idna-3.10-py3-none-any.whl (70 kB)
Downloaded setuptools-80.3.1-py3-none-any.whl (1.2 MB)
1.2/1.2 MB 1.2 MB/s eta 0:00:00
Installing collected packages: attrs, automat, constantly, hyperlink, incremental, typing_extensions, zope.interface, idna, setuptools, twisted
Successfully installed attrs-25.3.0 automat-25.4.16 constantly-23.10.4 hyperlink-21.0.0 incremental-24.7.2 idna-3.10 setuptools-80.3.1 twisted-24.11.0 typing_extensions-4.13.2 zope.interface-7.2
```

pip install pyOpenSSL

```
(venv)-(kali@kali)-[~]
$ pip install pyOpenSSL
Collecting pyOpenSSL
  Downloading pyOpenSSL-25.0.0-py3-none-any.whl.metadata (16 kB)
Collecting cryptography<45, >=41.0.5 (from pyOpenSSL)
  Downloading cryptography-44.0.3-cp39-abi3-manylinux_2_34_x86_64.whl.metadata (5.7 kB)
Collecting cffi>=1.12 (from cryptography<45, >=41.0.5->pyOpenSSL)
  Downloading cffi-1.17.1-cp313-cp313-manylinux_2_17_x86_64.manylinux2014_x86_64.whl.metadata (1.5 kB)
Collecting pycparser (from cffi>=1.12->cryptography<45, >=41.0.5->pyOpenSSL)
  Downloading pycparser-2.22-py3-none-any.whl.metadata (943 bytes)
Downloaded pyOpenSSL-25.0.0-py3-none-any.whl (56 kB)
Downloaded cryptography-44.0.3-cp39-abi3-manylinux_2_34_x86_64.whl (4.2 MB)
4.2/4.2 MB 1.2 MB/s eta 0:00:00
Downloaded cffi-1.17.1-cp313-cp313-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (479 kB)
Downloaded pycparser-2.22-py3-none-any.whl (117 kB)
Installing collected packages: pycparser, cffi, cryptography, pyOpenSSL
Successfully installed cffi-1.17.1 cryptography-44.0.3 pyOpenSSL-25.0.0 pycparser-2.22
```

pip install protobuf

```
(venv)-(kali@kali)-[~]
$ pip install protobuf
Collecting protobuf
  Downloading protobuf-6.30.2-cp39-abi3-manylinux2014_x86_64.whl.metadata (593 bytes)
Downloaded protobuf-6.30.2-cp39-abi3-manylinux2014_x86_64.whl (316 kB)
Installing collected packages: protobuf
Successfully installed protobuf-6.30.2
```

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pip install service_identity

```
(venv)-(kali@kali)-[~]
$ pip install service_identity
Collecting service_identity
  Downloading service_identity-24.2.0-py3-none-any.whl.metadata (5.1 kB)
Requirement already satisfied: attrs>=19.1.0 in ./venv/lib/python3.13/site-packages (from service_identity) (25.3.0)
Requirement already satisfied: cryptography in ./venv/lib/python3.13/site-packages (from service_identity) (44.0.3)
Collecting pyasn1 (from service_identity)
  Downloading pyasn1-0.6.1-py3-none-any.whl.metadata (8.4 kB)
Collecting pyasn1-modules (from service_identity)
  Downloading pyasn1_modules-0.4.2-py3-none-any.whl.metadata (3.5 kB)
Requirement already satisfied: cffi>=1.12 in ./venv/lib/python3.13/site-packages (from cryptography->service_identity) (1.17.1)
Requirement already satisfied: pycparser in ./venv/lib/python3.13/site-packages (from cffi>=1.12->cryptography->service_identity) (2.22)
Downloading service_identity-24.2.0-py3-none-any.whl (11 kB)
Downloading pyasn1-0.6.1-py3-none-any.whl (83 kB)
Downloading pyasn1_modules-0.4.2-py3-none-any.whl (181 kB)
Installing collected packages: pyasn1, pyasn1-modules, service_identity
Successfully installed pyasn1-0.6.1 pyasn1-modules-0.4.2 service_identity-24.2.0
```

pip2.7 install setuptools

```
(venv)-(kali@kali)-[~]
$ pip2.7 install setuptools
DEPRECATION: Python 2.7 reached the end of its life on January 1st, 2020. Please upgrade your Python as Python 2.7 is no longer maintained. pip 21.0 will drop support for Python 2.7 in January 2021. More details about Python 2 support in pip can be found at https://pip.pypa.io/en/latest/development/release-process/#python-2-support pip 21.0 will remove support for this functionality.
Defaulting to user installation because normal site-packages is not writeable
Collecting setuptools
  Downloading setuptools-44.1.1-py2.py3-none-any.whl (583 kB)
    |#####| 583 kB 417 KB/s
Installing collected packages: setuptools
Successfully installed setuptools-44.1.1
```

sudo pip2.7 install drozer-2.4.4-py2-none-any.whl

```
(venv)-(kali@kali)-[~]
$ sudo pip2.7 install drozer-2.4.4-py2-none-any.whl
[sudo] password for kali:
DEPRECATION: Python 2.7 reached the end of its life on January 1st, 2020. Please upgrade your Python as Python 2.7 is no longer maintained. pip 21.0 will drop support for Python 2.7 in January 2021. More details about Python 2 support in pip can be found at https://pip.pypa.io/en/latest/development/release-process/#python-2-support pip 21.0 will remove support for this functionality.
Processing ./drozer-2.4.4-py2-none-any.whl
Collecting pyyaml>=3.11
  Downloading PyYAML-5.4.1-cp27-cp27mu-manylinux1_x86_64.whl (574 kB)
    |#####| 574 kB 373 KB/s
Collecting protobuf>=3.0.1
  Downloading protobuf-3.17.3-cp27-cp27mu-manylinux2_5_x86_64.whl (1.0 MB)
    |#####| 1.0 MB 3.8 MB/s
Collecting pyopenssl>=16.2
  Downloading pyOpenSSL-21.0.0-py2.py3-none-any.whl (55 kB)
    |#####| 55 kB 1.1 MB/s
Collecting six>=1.9
  Downloading six-1.17.0-py2.py3-none-any.whl (11 kB)
Collecting cryptography>=3.3
  Downloading cryptography-3.3.2-cp27-cp27mu-manylinux2010_x86_64.whl (2.6 MB)
    |#####| 2.6 MB 1.0 MB/s
Requirement already satisfied: cffi>=1.12 in /usr/lib/python2.7/dist-packages (from cryptography>=3.3->pyopenssl>=16.2->drozer==2.4.4) (1.14.0)
Collecting enum34; python_version < "3"
  Downloading enum34-1.1.10-py2-none-any.whl (11 kB)
Collecting ipaddress; python_version < "3"
  Downloading ipaddress-1.0.23-py2.py3-none-any.whl (18 kB)
Installing collected packages: pyyaml, six, protobuf, enum34, ipaddress, cryptography, pyopenssl, drozer
Successfully installed cryptography-3.3.2 drozer-2.4.4 enum34-1.1.10 ipaddress-1.0.23 protobuf-3.17.3 pyopenssl-21.0.0 pyyaml-5.4.1 six-1.17.0
```

drozer

```
(venv)-(kali@kali)-[~]
$ drozer
usage: drozer [COMMAND]
  installed google-android-platform-tools-installer
  script subprocess returned error exit status 2
Run `drozer [COMMAND] --help` for more usage information.
Commands:
  console      start the drozer Console
  module       manage drozer modules
  server       start a drozer Server
  ssl          manage drozer SSL key material
  exploit      generate an exploit to deploy drozer
  agent        create custom drozer Agents
  payload      generate payloads to deploy drozer
```

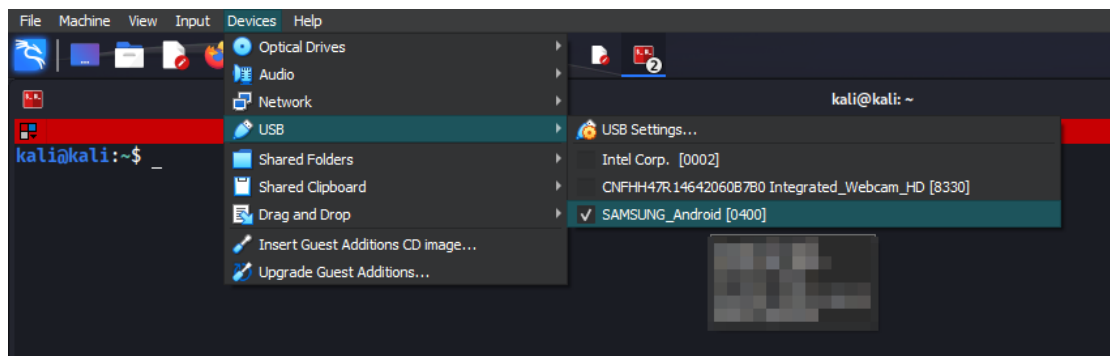
First, We have to install the Drozer agent([drozer-agent.apk](#)) on the

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Android device we are using, so the drozer client can connect to the server.

Then connect to the Android device through USB and check whether it's connected by ADB.

Note: You have to select the device on your virtual box via the Devices tab.

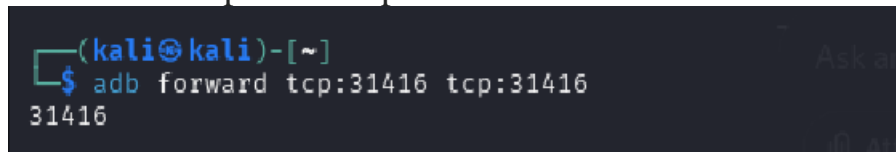


 Connect Android Device via ADB

adb devices -l



adb forward tcp:31415 tcp:31415



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drozer console connect

```
(kali@kali)-[~]
$ drozer console connect
/usr/share/offsec-awae-wheels/pyOpenSSL-19.1.0-py2.py3-none-any.whl/OpenSSL/c
rypto.py:12: CryptographyDeprecationWarning: Python 2 is no longer supported
by the Python core team. Support for it is now deprecated in cryptography, an
d will be removed in the next release.
:0: UserWarning: You do not have a working installation of the service_identi
ty module: 'No module named service_identity'. Please install it from <https
://pypi.python.org/pypi/service_identity> and make sure all of its dependenci
es are satisfied. Without the service_identity module, Twisted can perform o
nly rudimentary TLS client hostname verification. Many valid certificate/hos
tname mappings may be rejected.
Selecting a431d74492e64bc2 (samsung SM-A750F 10)

..                               .. :.
.. O ..                           .r ..
.. a ..   . .....   .   ..nd
      ro..idsnemesisisand..pr
      .otectorandroidsneme.
      ..sisandprotectorandroids+.
      ..nemesisisandprotectorandroidsn:.
      .emesisisandprotectorandroidsnemes..
      ..isandp,..,rotectorandro,..,idsnem.
      .isisandp..rotectorandroid..snemisis.
      ,andprotectorandroidsnemisisandprotec.
      .torandroidsnemesisisandprotectorandroid.
      .snemisisandprotectorandroidsnemesisan:
      .dprotectorandroidsnemesisandprotector.

drozer Console (v2.4.4)
dz> █
```

run app.package.list -f diva

```
dz> run app.package.list -f diva
dz> █
```

run app.package.list

```
dz> run app.package.list
com.samsung.android.provider.filterprovider (Filter Provider)
com.monotype.android.font.rosemary (RoseUKor)
com.sec.android.app.datacreate (Automation Test)
com.skype.raider (Skype)
com.android.cts.priv.ctsshim (com.android.cts.priv.ctsshim)
com.ms.poetry (Urdu Text Poetry)
com.sec.android.widgetapp.samsungapps (Galaxy Essentials Widget)
com.samsung.android.smartswitchassistant (com.samsung.android.smartswitchassistant)
com.sec.android.app.setupwizardlegalprovider (SetupWizardLegalProvider)
com.google.android.youtube (YouTube)
com.samsung.android.app.galaxyfinder (Finder)
com.sec.location.nfltp (Samsung Location SDK)
com.samsung.android.themestore (Galaxy Themes)
com.sec.android.app.chrome.customizations (com.sec.android.app.chrome.customizations)
com.samsung.android.app.ondservice (Always On Display)
com.sas.crocodile.scanner (QR Scanner)
com.android.internal.display.cutout.emulation.corner (Corner cutout)
com.google.android.ext.services (Android Services Library)
com.whisperapp.musically.go (TikTok Lite)
com.android.internal.display.cutout.emulation.double (Double cutout)
com.android.providers.telephony (Phone and Messaging Storage)
com.sec.android.app.vc.vobgm (Select background music)
com.sec.android.app.parser (QRParser Mode)
com.android.dynsystem (Dynamic System Updates)
com.samsung.internal.systemui.navbar.gestural.no_hint_wide_back (Gestural Navigation Bar)
adnet.startup.inDriver (inDriver)
com.google.android.googlequicksearchbox (Google)
com.samsung.android.calendar (Calendar)
com.samsung.android.timezone.updater (Time Zone Updater)
com.android.providers.calendar (Calendar storage)
com.ssp.app.signin (Samsung account)
com.samsung.clipboardsaveservice (ClipboardSaveService)
com.sec.automation (FetheringAutomation)
org.telegram.messenger (Telegram)
com.android.providers.media (Media Storage)
com.samsung.android.app.social (What's new)
com.android.theme.icon.square (Square)
```

run app.package.list -f com.snapchat.android

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```
drozer Console (v2.4.4)
dz> run app.package.list -f com.snapchat.android
com.snapchat.android (Snapchat)
dz> █
```

run app.package.info -a com.snapchat.android

```
dz> run app.package.info -a com.snapchat.android
Package: com.snapchat.android
Application Label: Snapchat
Process Name: com.snapchat.android
Version: 10.34.0.52
Data Directory: /data/user/0/com.snapchat.android
APK Path: /data/app/com.snapchat.android-6030UTT5kG0ZJ9Rj9Htm_w==/base.apk
UID: 3001
GID: [3002, 3003, 3001]
Shared Libraries: null
Shared User ID: null
Uses Permissions:
- android.permission.WRITE_EXTERNAL_STORAGE
- android.permission.READ_PHONE_STATE
- android.permission.READ_EXTERNAL_STORAGE
- android.permission.DETECT_SCREEN_CAPTURE
- com.snapchat.android.DYNAMIC_RECEIVER_NOT_EXPORTED_PERMISSION
- android.permission.ACCESS_NETWORK_STATE
- android.permission.WAKE_LOCK
- android.permission.RECEIVE_BOOT_COMPLETED
- android.permission.FOREGROUND_SERVICE
- android.permission.INTERNET
- com.google.android.c2dm.permission.RECEIVE
- android.permission.POST_NOTIFICATIONS
- com.snapchat.android.permission.UPDATE_STICKER_INDEX
- android.permission.CAMERA
- android.permission.GET_ACCOUNTS
- android.permission.READ_CONTACTS
- android.permission.READ_PHONE_NUMBERS
- android.permission.READ_PROFILE
- com.android.vending.BILLING
- android.permission.VIBRATE
- android.permission.ACCESS_WIFI_STATE
- android.permission.ACCESS_FINE_LOCATION
- com.vivo.notification.permission.BADGE_ICON
- android.permission.BLUETOOTH
- android.permission.BLUETOOTH_ADMIN
- android.permission.BLUETOOTH_SCAN
- android.permission.BLUETOOTH_CONNECT
```

run app.package.manifest com.snapchat.android

```
dz> run app.package.manifest com.snapchat.android
<manifest versionCode="196172"
  splitTypes="base__density"
  package="com.snapchat.android"
  split="config.xxhdpi">
  <application hasCode="false"
    extractNativeLibs="true">
    <meta-data name="com.android.vending.derived.apk.id"
      value="5">
    </meta-data>
  </application>
</manifest>
```

run app.package.attacksurface com.snapchat.android

```
dz> run app.package.attacksurface com.snapchat.android
Attack Surface:
  7 activities exported
  10 broadcast receivers exported
  0 content providers exported
  7 services exported
dz> █
```

run app.provider.info -a com.snapchat.android

```
dz> run app.provider.info -a com.snapchat.android
Package: com.snapchat.android
No matching providers.

dz> █
```

run scanner.provider.finduris -a com.snapchat.android

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```
dz> run scanner.provider.finduris -a com.snapchat.android
Scanning com.snapchat.android...
Unable to Query content://com.snapchat.android.CCInitProvider
Unable to Query content://com.android.launcher3.cornermark.unreadbadge
Unable to Query content://com.android.launcher3.cornermark.unreadbadge/
Unable to Query content://com.android.badge/badge/
Unable to Query content://com.snapchat.android.media.fileprovider
Unable to Query content://com.teslacoilsw.notifier/unread_count/
Unable to Query content://com.teslacoilsw.notifier/unread_count
Unable to Query content://com.snapchat.android.locationprovider/
Unable to Query content://com.snapchat.android.media.fileprovider/
Unable to Query content://com.samsung.android.mapsagent.providers.apptracking/info/
Unable to Query content://com.snapchat.android.provider
Unable to Query content://com.samsung.android.mapsagent.providers.apptracking/info
Unable to Query content://com.sonymobile.home.resourceprovider/badge
Unable to Query content://com.sonymobile.home.resourceprovider/badge/
Unable to Query content://com.android.badge/badge
Unable to Query content://com.snapchat.android.provider/
Unable to Query content://com.snapchat.android.locationprovider
Unable to Query content://com.snapchat.android.CCInitProvider/

No accessible content URIs found.
```

adb -s device name shell

```
[kali@kali:~]$ adb -s 3208f15c031c59d shell
shyller/ $ ls
ls: ./init: Permission denied
ls: ./preload: Permission denied
acct          bugreports cpefs      default.prop etc          init.container.rc  init.usb.rc  lost+found  oem      product_services  sepolicy_version  ueventd.rc
audit_filter_table corrier  data      dpolicy      init.container.rc  init.zygote32.rc  mnt         prc      publiccert.pem  storage          vendor
bin           config   debug ramdisk efs          init.rc          init.zygote64_32.rc  odm       product  sdcard         sys             system
```

ls -la

```
127.0.0.1:~$ ls -la
ls: ./init: Permission denied
ls: ./preload: Permission denied
total 284
drwxr-xr-x 26 root root 4096 2008-12-31 20:00 .
drwxr-xr-x 26 root root 4096 2008-12-31 20:00 ..
dr-xr-xr-x 146 root root 0 2025-04-29 18:54 acct
drwxr-xr-x 14 root root 200 2025-04-29 18:54 apex
-rw-r--r-- 1 root root 36115 2008-12-31 20:00 audit_filter_table
lrwxr--r-- 1 root root 11 2008-12-31 20:00 bin -> /system/bin
lrwxr--r-- 1 root root 50 2008-12-31 20:00 bugreports -> /data/user_de/0/com.android.shell/files/bugreports
drwxrwx--- 7 system cache 4096 2022-11-26 21:19 cache
drwxr-xr-x 2 root root 4096 2008-12-31 20:00 corrier
drwxr-xr-x 4 root root 0 1970-01-01 05:00 config
drwxrwx--x 3 radio system 4096 2019-01-14 22:01 cpefs
lrwxr--r-- 1 root root 17 2008-12-31 20:00 d -> /sys/kernel/debug
drwxrwx--x 62 system system 4096 2025-04-29 18:54 data
drwxr-xr-x 2 root root 4096 2008-12-31 20:00 debug_ramdisk
lrwxr--r-- 1 root root 23 2008-12-31 20:00 default.prop -> system/etc/prop.default
drwxr-xr-x 21 root root 3840 2025-04-29 18:55 dev
-rw-r--r-- 1 root root 6112 2008-12-31 20:00 dpolicy
drwxrwx--x 26 system radio 4096 2022-11-26 21:15 efs
lrwxr--r-- 1 root root 11 2008-12-31 20:00 etc -> /system/etc
-rwxr-x--- 1 root shell 3599 2008-12-31 20:00 init.container.rc
-rwxr-x--- 1 root shell 2516 2008-12-31 20:00 init.environ.rc
-rwxr-x--- 1 root shell 101613 2008-12-31 20:00 init.rc
-rwxr-x--- 1 root shell 8860 2008-12-31 20:00 init.usb.configfs.rc
-rwxr-x--- 1 root shell 8856 2008-12-31 20:00 init.usb.rc
-rwxr-x--- 1 root shell 623 2008-12-31 20:00 init.zygote32.rc
-rwxr-x--- 1 root shell 1066 2008-12-31 20:00 init.zygote64_32.rc
drwxr-xr-x 3 root root 4096 2008-12-31 20:00 lib
drwxrwx--- 2 root root 16384 2008-12-31 20:00 lost+found
drwxr-xr-x 15 root system 320 2025-04-29 18:54 mnt
drwxr-xr-x 8 root root 4096 2008-12-31 20:00 odm
drwxr-xr-x 2 root root 4096 2008-12-31 20:00 oem
drwxrwx--x 3 root system 4096 2018-01-01 17:47 oem
dr-xr-xr-x 453 root root 0 1970-01-01 05:00 proc
drwxr-xr-x 2 root root 4096 2008-12-31 20:00 product
-rw-r--r-- 1 root root 24 2008-12-31 20:00 product_services -> /system/product_services
-rw-r--r-- 1 root root 1509 2008-12-31 20:00 publiccert.pem
```

Drozer Command Descriptions

Command	Description
run app.package.list	Lists all installed applications.
run app.package.list -f <filter>	Filters apps (e.g., diva, com.snapchat.android).
run app.package.info -a <package>	Provides package info.
run app.package.manifest <package>	Retrieves AndroidManifest.xml.
run app.package.attacksurface <package>	Identifies exposed components.
run app.provider.info -a <package>	Displays content provider info.
run scanner.provider.finduris -a <package>	Finds URI paths vulnerable to attacks.

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❌ 2. APKTool

Used to reverse engineer Android APKs.

```
wget
https://raw.githubusercontent.com/iBotPeaches/Apktool/master/scripts/linux/apktool
chmod +x apktool
sudo mv apktool /usr/local/bin/
```

```
wget
https://bitbucket.org/iBotPeaches/apktool/downloads/apktool_2.9.3.jar
sudo mv apktool_2.9.3.jar /usr/local/bin/apktool.jar
```

Mobile Forensics :

A mobile forensic tool to extract data from Android devices.

Installation on Kali/Parrot Linux

Since both Kali and Parrot are debian-based, installation is the same. First let's update our Kali system (advisable) then we clone the repo from github using the git command

```
(kali@kali)-[~]
$ sudo apt update
[sudo] password for kali:
Get:1 http://kali.download/kali kali-rolling InRelease [30.6 kB]
Get:2 http://kali.download/kali kali-rolling/main amd64 Packages [18.4 MB]
Get:3 http://kali.download/kali kali-rolling/main amd64 Contents (deb) [42.8 MB]
Get:4 http://kali.download/kali kali-rolling/contrib amd64 Packages [110 kB]
Get:5 http://kali.download/kali kali-rolling/contrib amd64 Contents (deb) [161 kB]
Get:6 http://kali.download/kali kali-rolling/non-free amd64 Packages [221 kB]
Get:7 http://kali.download/kali kali-rolling/non-free amd64 Contents (deb) [897 kB]
Fetched 62.6 MB in 1min 24s (742 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
1324 packages can be upgraded. Run 'apt list --upgradable' to see them.
```

Now let's clone the repo by using the following command

```
git clone https://github.com/den4uk/andriller.git
```

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```
(kali@kali)-[~]  
$ sudo git clone https://github.com/den4uk/andriller.git  
[sudo] password for kali:  
Cloning into 'andriller' ...  
remote: Enumerating objects: 499, done.  
remote: Counting objects: 100% (154/154), done.  
remote: Compressing objects: 100% (65/65), done.  
remote: Total 499 (delta 83), reused 140 (delta 82), pack-reused 345  
Receiving objects: 100% (499/499), 1.35 MiB | 388.00 KiB/s, done.  
Resolving deltas: 100% (283/283), done.
```

cloning the github repo

After cloning let's move into the directory

`cd andriller`

```
(kali@kali)-[~]  
$ cd andriller
```

changing into the directory

We now need to setup permissions for the two files inside the directory

using the command below

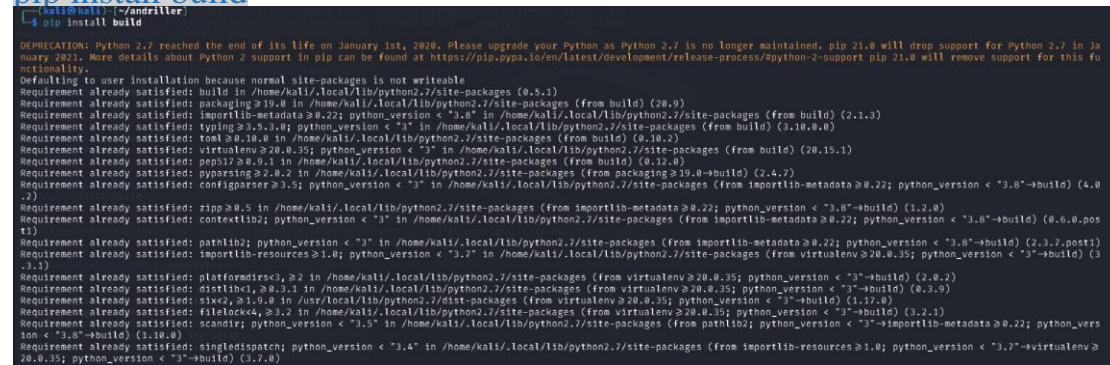
`sudo chmod +x setup.py andriller-gui.py`

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Now we can run the setup & install andriller. To do that we run the following command on our terminal:

`pip install build`



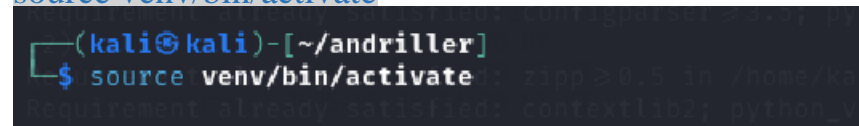
`sudo apt install python3-venv`



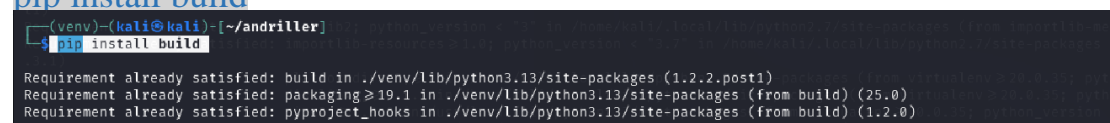
`python3 -m venv venv`



`source venv/bin/activate`



`pip install build`



`python -m build`

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```

C:\Users\kati@kali: ~/andriiler
python -m build

* Creating isolated environment: venvuvpip...
* Installing packages in isolated environment:
  - setuptools ≥ 40.8.0
* Getting build dependencies for sdist...
/tmp/build-env-4f3gmrry/lib/python3.13/site-packages/setuptools/dist.py:759: SetuptoolsDeprecationWarning: License classifiers are deprecated.
!!
=====
Please consider removing the following classifiers in favor of a SPDX license expression:

License :: OSI Approved :: MIT License

See https://packaging.python.org/en/latest/guides/writing-pyproject-tool/ for details.
=====
!!

self._finalize_license_expression()
running egg_info
writing andriiler.egg-info/PKG-INFO
writing dependency links to andriiler.egg-info/dependency_links.txt
writing requirements to andriiler.egg-info/requires.txt
writing top-level names to andriiler.egg-info/top_level.txt
reading manifest file 'andriiler.egg-info/SOURCES.txt'
reading manifest template 'MANIFEST.in'
warning: no previously-included files matching 'env' found anywhere in distribution
warning: no previously-included files matching '*.tox' found anywhere in distribution
warning: no previously-included files matching 'coverage*' found anywhere in distribution
warning: no previously-included files matching '*.htmlcov' found anywhere in distribution
warning: no previously-included files matching '.*pycache*' found anywhere in distribution
warning: no previously-included files matching '*.git' found anywhere in distribution
warning: no previously-included files matching '*.py[coxd]' found anywhere in distribution
adding license file 'LICENSE'
writing manifest file 'andriiler.egg-info/SOURCES.txt'
* Building sdist...
/tmp/build-env-4f3gmrry/lib/python3.13/site-packages/setuptools/dist.py:759: SetuptoolsDeprecationWarning: License classifiers are deprecated.

```

```
sudo rm -rf andriller.egg-info
```

```
(venv)-(kali@kali)-[~/andriller]
$ sudo rm -rf andriller.egg-info
```

```
sudo chown -R $USER:$USER ~/andriller
```

```
(venv)-(kali@kali)-[~/andriller]
$ sudo chown -R $USER:$USER ~/andriller
```

```
pip install jinja2
```

```
(venv)-(kali@kali)-[~/andri1ler]
$ pip install Jinja2
Requirement already satisfied: Jinja2 in ./venv/lib/python3.13/site-packages (2.11.3)
Requirement already satisfied: MarkupSafe >=0.23 in ./venv/lib/python3.13/site-packages (from Jinja2) (2.0.1)
```

```
pip install -r requirements.txt
```

```

- pip install -r requirements.txt

Ignoring dataclasses: markers 'python_version < "3.6"' don't match your environment
Requirement already satisfied: dateutil in ./venv/lib/python3.13/site-packages (from -r requirements.txt (line 1)) (0.6.12)
Requirement already satisfied: jupyterlab-py3.9.4.3 in ./venv/lib/python3.13/site-packages (from -r requirements.txt (line 2)) (0.4.4)
Requirement already satisfied: jupyterlab in ./venv/lib/python3.13/site-packages (from -r requirements.txt (line 3)) (3.23.0)
Requirement already satisfied: jupyterlab_widgets in ./venv/lib/python3.13/site-packages (from -r requirements.txt (line 4)) (2.0.0.post0)
Requirement already satisfied: XlsxWriter in ./venv/lib/python3.13/site-packages (from -r requirements.txt (line 5)) (3.2.3)
Requirement already satisfied: Jinja2, >=2.11.3 in ./venv/lib/python3.13/site-packages (from -r requirements.txt (line 6)) (2.11.3)
Requirement already satisfied: MarkupSafe>=2.0.1 in ./venv/lib/python3.13/site-packages (from -r requirements.txt (line 7)) (2.0.1)
Requirement already satisfied: numpy>=1.1.0 in ./venv/lib/python3.13/site-packages (from -r requirements.txt (line 8)) (1.3.10)
Requirement already satisfied: appdirs<3.1.4.4 in ./venv/lib/python3.13/site-packages (from -r requirements.txt (line 9)) (1.4.4)
Requirement already satisfied: requests in ./venv/lib/python3.13/site-packages (from -r requirements.txt (line 10)) (2.32.3)
Requirement already satisfied: cli-exit-tools in ./venv/lib/python3.13/site-packages (from wrapt-timeout-decorator>=1.3.10->r requirements.txt (line 11)) (3.2.7)
Requirement already satisfied: wrapt-timeout-decorator>=1.3.10 in ./venv/lib/python3.13/site-packages (from -r requirements.txt (line 12)) (0.0.0)
Requirement already satisfied: dill in ./venv/lib/python3.13/site-packages (from wrapt-timeout-decorator>=1.3.10->r requirements.txt (line 13)) (0.4.0)
Requirement already satisfied: multiprocessing in ./venv/lib/python3.13/site-packages (from wrapt-timeout-decorator>=1.3.10->r requirements.txt (line 14)) (0.70.10)
Requirement already satisfied: wrapt in ./venv/lib/python3.13/site-packages (from wrapt-timeout-decorator>=1.3.10->r requirements.txt (line 15)) (1.17.2)
Requirement already satisfied: wrapt-timeout-decorator>=1.3.10 in ./venv/lib/python3.13/site-packages (from -r requirements.txt (line 16)) (0.0.0)
Requirement already satisfied: ip>=1.5 in ./venv/lib/python3.13/site-packages (from python-dateutil->r requirements.txt (line 17)) (1.7.0)
Requirement already satisfied: charset-normalizer<=3.2 in ./venv/lib/python3.13/site-packages (from requests->r requirements.txt (line 18)) (3.4.2)
Requirement already satisfied: idna<=3.2.5 in ./venv/lib/python3.13/site-packages (from requests->r requirements.txt (line 19)) (3.10)
Requirement already satisfied: certifi>=2023.7.26 in ./venv/lib/python3.13/site-packages (from requests->r requirements.txt (line 20)) (2024.0)
Requirement already satisfied: certifi>=2023.7.26 in ./venv/lib/python3.13/site-packages (from requests->r requirements.txt (line 20)) (2025.4.26)
Requirement already satisfied: click in ./venv/lib/python3.13/site-packages (from cli-exit-tools->wrapt-timeout-decorator>=1.3.10->r requirements.txt (line 21)) (8.2.1)

```

```
pip install .
```

```

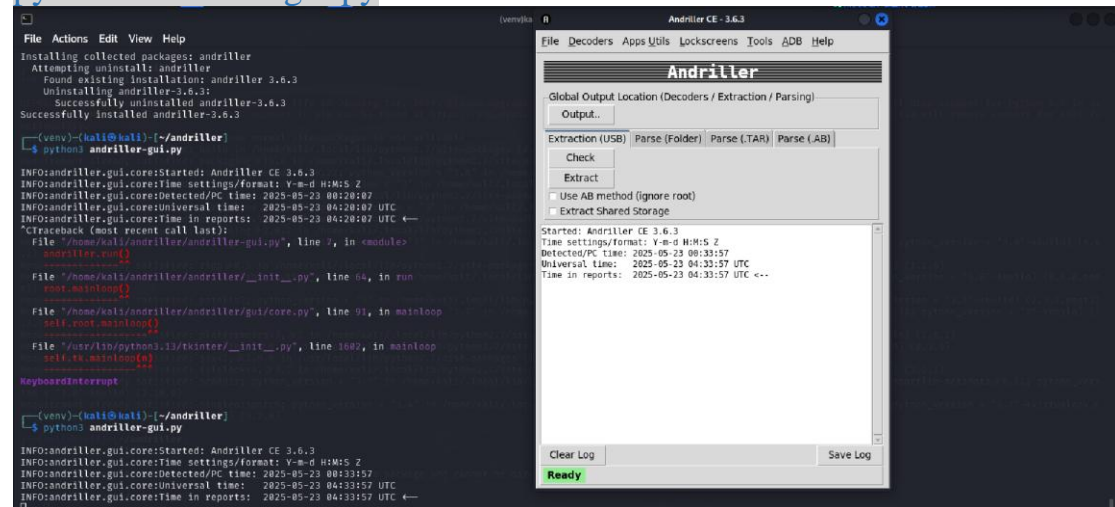
$ ./env/kali@kali:~/andrriller
$ pip install .

Processing ./home/kali/andrriller
  Installing build dependencies ... done
  Getting requirements to build wheel ... done
  Preparing metadata (pyproject.toml) ... done
Requirement already satisfied: datatuttl in /./env/lib/python3.13/site-packages (from andrriller==3.6.3) (0.6.12)
Requirement already satisfied: javaobj>py3>0.4.3 in /./env/lib/python3.13/site-packages (from andrriller==3.6.3) (0.4.4)
Requirement already satisfied: pycryptodome in /./env/lib/python3.13/site-packages (from andrriller==3.6.3) (3.23.0)
Requirement already satisfied: python-datutil in /./env/lib/python3.13/site-packages (from andrriller==3.6.3) (2.9.0.post2)
Requirement already satisfied: pycrypt in /./env/lib/python3.13/site-packages (from andrriller==3.6.3) (3.0.2)
Requirement already satisfied: bin32c3, >2.11.3 in /./env/lib/python3.13/site-packages (from andrriller==3.6.3) (2.11.3)
Requirement already satisfied: MarkupSafe<2.0.1 in /./env/lib/python3.13/site-packages (from andrriller==3.6.3) (2.0.1)
Requirement already satisfied: wrapt timeout-decorator<1.3.10 in /./env/lib/python3.13/site-packages (from andrriller==3.6.3) (1.3.10)
Requirement already satisfied: idm4r52, >1.3.4 in /./env/lib/python3.13/site-packages (from andrriller==3.6.3) (1.4.4)
Requirement already satisfied: requests in /./env/lib/python3.13/site-packages (from andrriller==3.6.3) (2.32.3)
Requirement already satisfied: cli-exit-tools in /./env/lib/python3.13/site-packages (from wrapt-timeout-decorator<1.3.10-andrriller==3.6.3) (1.2.2)
Requirement already satisfied: detect-test in /./env/lib/python3.13/site-packages (from wrapt-timeout-decorator<1.3.10-andrriller==3.6.3) (2.0.8)
Requirement already satisfied: till in /./env/lib/python3.13/site-packages (from wrapt-timeout-decorator<1.3.10-andrriller==3.6.3) (0.4.0)
Requirement already satisfied: multiprocessing in /./env/lib/python3.13/site-packages (from wrapt-timeout-decorator<1.3.10-andrriller==3.6.3) (0.78.10)
Requirement already satisfied: wrapt in /./env/lib/python3.13/site-packages (from wrapt-timeout-decorator<1.3.10-andrriller==3.6.3) (1.17.2)
Requirement already satisfied: py3 in /./env/lib/python3.13/site-packages (from wrapt-timeout-decorator<1.3.10-andrriller==3.6.3) (202.2)
Requirement already satisfied: idm4, >1.5 in /./env/lib/python3.13/site-packages (from python-datutil-andrriller==3.6.3) (1.17.0)
Requirement already satisfied: charset-normalizer<2, >2 in /./env/lib/python3.13/site-packages (from requests-andrriller==3.6.3) (3.4.2)
Requirement already satisfied: idm4c, >2.5 in /./env/lib/python3.13/site-packages (from requests-andrriller==3.6.3) (3.10)
Requirement already satisfied: urllib3<3, >2.12.1 in /./env/lib/python3.13/site-packages (from requests-andrriller==3.6.3) (2.4.0)
Requirement already satisfied: certifi<2017.4.17 in /./env/lib/python3.13/site-packages (from requests-andrriller==3.6.3) (2025.4.26)
Requirement already satisfied: click in /./env/lib/python3.13/site-packages (from cli-exit-tools>wrapt-timeout-decorator<1.3.10-andrriller==3.6.3) (8.2.1)
Building wheels for collected packages: andrriller
  Building wheel for andrriller (pyproject.toml) ... done
  Created wheel for andrriller: filename=andrriller-3.6.3-py3-none-any.whl size=1318054 sha256=63f5b0c8ea80e1797625103b20d78882598393c54ee51a22beeb76464661
  Stored in directory: /tmp/pip-ephem-wheel-cache-xrkxw63/wheels/b6/61/53/a5c5b257f5bba3f2d1fbaf2c8cc29f69b5848b987a201
Successfully built andrriller
Installing collected packages: andrriller
  Attempting uninstall: andrriller
    Found existing installation: andrriller 3.6.3
    Uninstalling andrriller-3.6.3:
      Successfully uninstalled andrriller-3.6.3
Successfully installed andrriller-3.6.3

```


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python3 andriller-gui.py

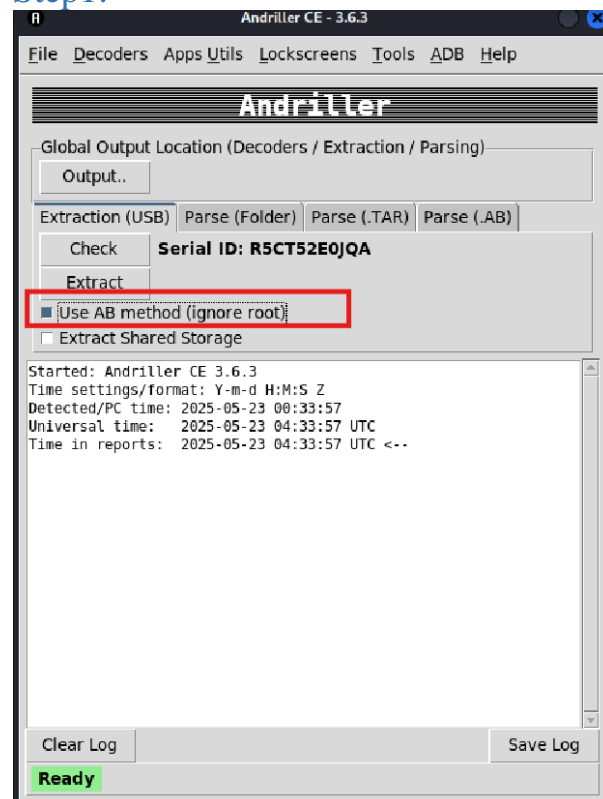


Now once you installed than reopened it.

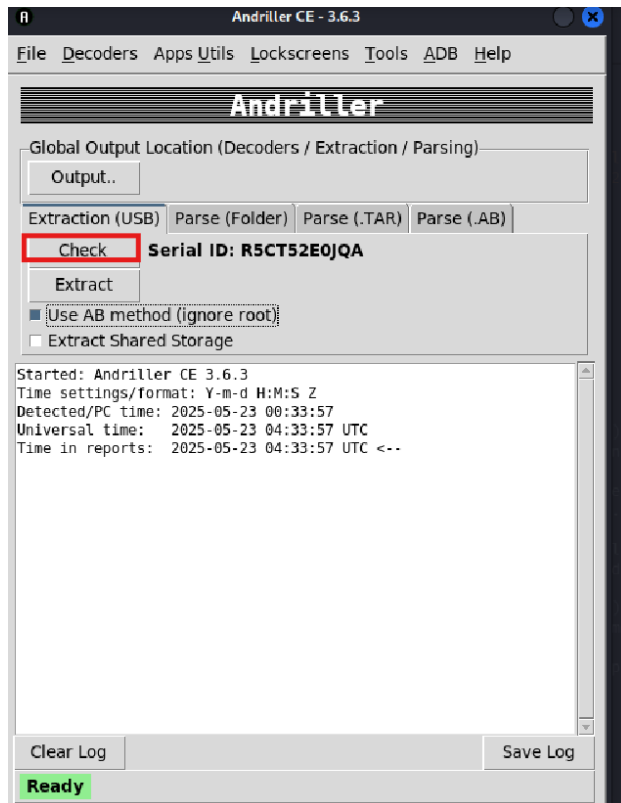
```
cd andriller
python3 -m venv venv
source venv/bin/activate
python3 andriller-gui.py
```

Now Steps

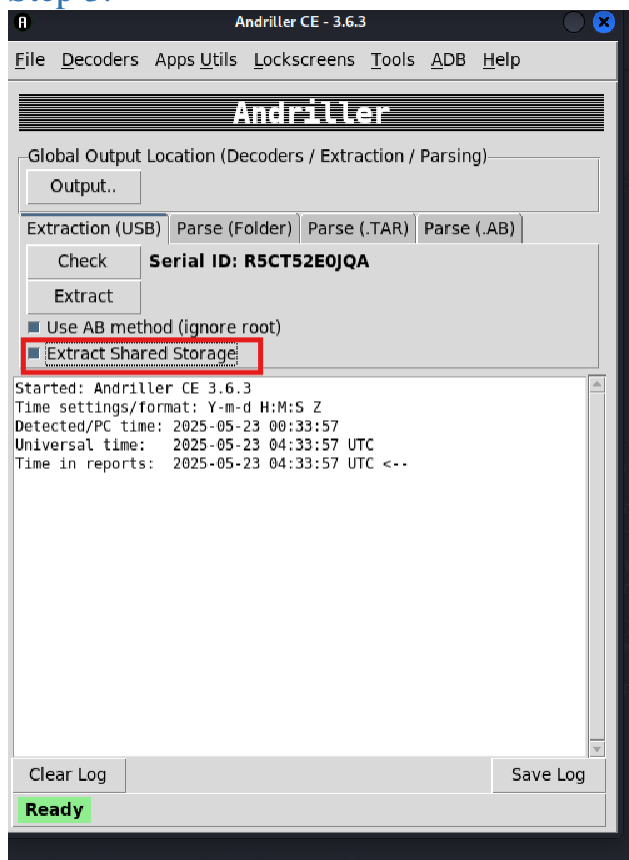
Step1:



Step2:

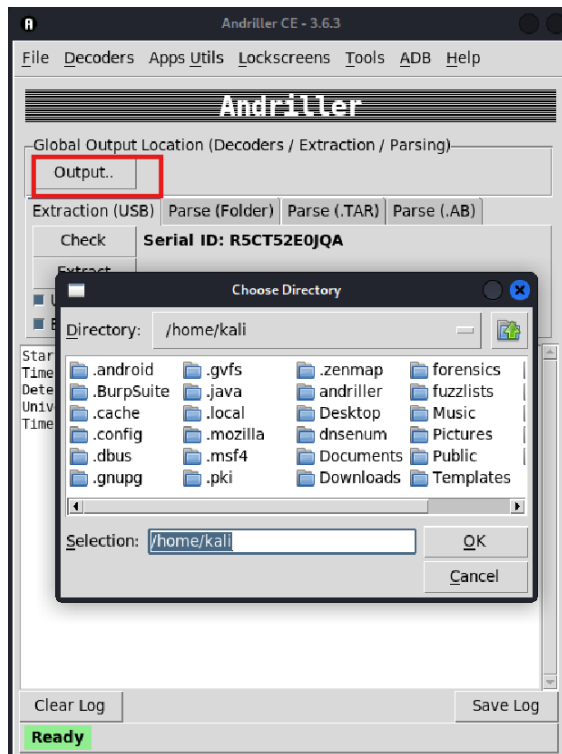


Step 3:

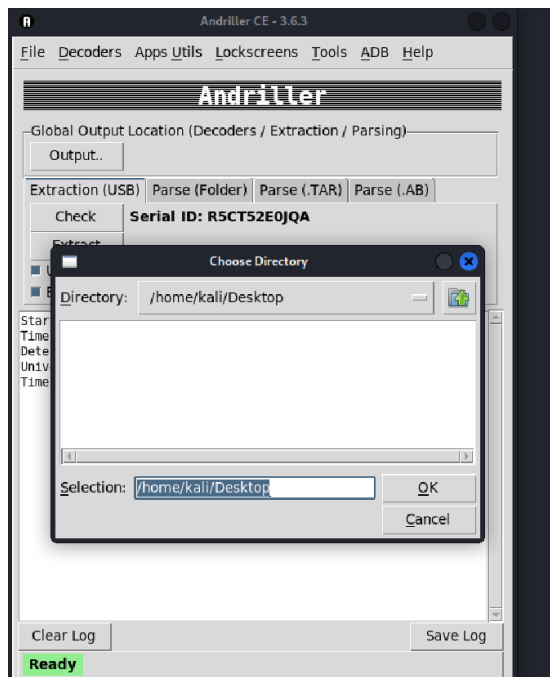


Step 4:

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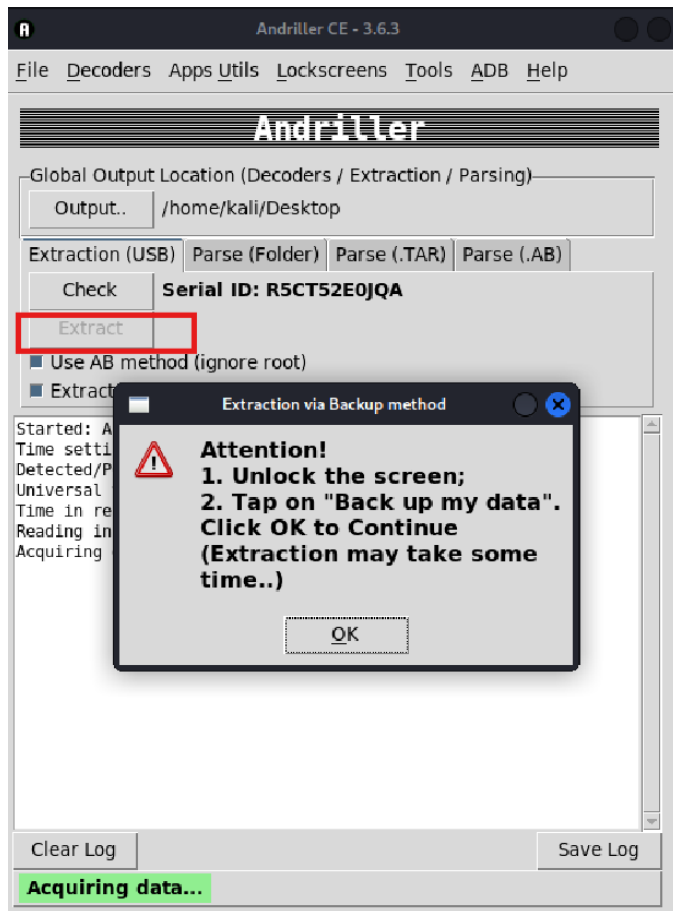


Step5:
Select the output file location.



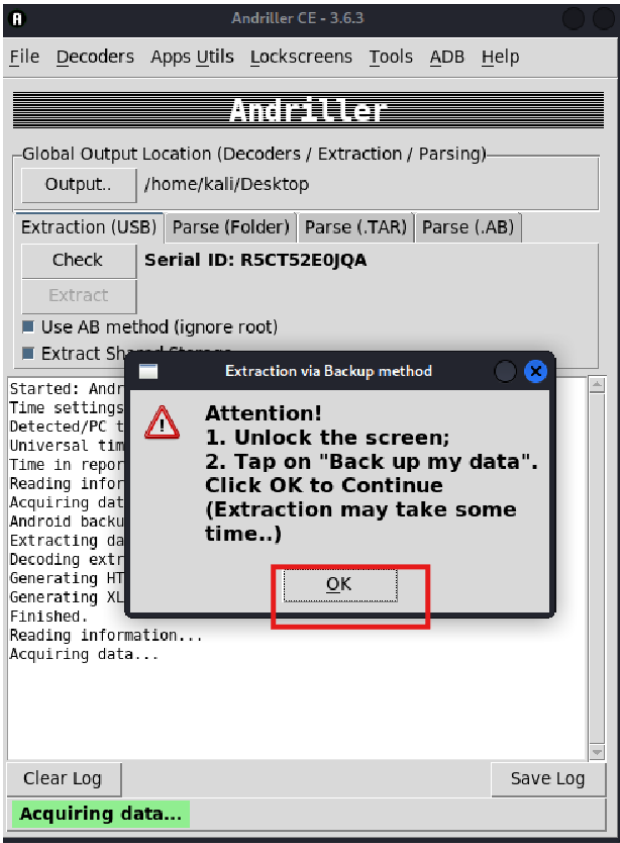
Step 6:
After selecting the output file location press th extract button.

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Step7:

In your phone click on backup my data than click ok on it.



Than in browser it display:

This report was generated using AndriLLer CE # (This field is editable in Preferences)

[AndriLLer Report]

Type	Data
Serial	R5CT52E0JQA
Status	device
Permission	shell
Wifi Mac	02:00:00:00:00:00
Local_Time	2025-05-23 00:53:35 EDT
Device_Time	2025-05-23 09:53:35 PKT
Accounts	<ul style="list-style-type: none">com.osp.app.signin: [REDACTED]com.samsung.android.mobileservices: [REDACTED]com.samsung.android.coreapps: [REDACTED]com.google: [REDACTED]com.google: [REDACTED]com.google: [REDACTED]com.google: [REDACTED]com.google: [REDACTED]com.google: [REDACTED]com.google: [REDACTED]com.google: [REDACTED]com.whatsapp: [REDACTED]com.twitter.android.auth.login: [REDACTED]com.facebook.auth.login: Facebookcom.facebook.auth.login: [REDACTED]com.whatsapp.wat: [REDACTED]org.telegram.messenger: [REDACTED]com.yandex.passport: [REDACTED]com.google.android.apps.tachyon: [REDACTED]com.imo.android.jmdns: Imocom.microsoft.workaccount.liv: [REDACTED]com.microsoft.workaccount.liv: [REDACTED]im.thebot.messenger: [REDACTED]com.microsoft.skydrive: [REDACTED]com.microsoft.office: [REDACTED]com.facebook.messenger: [REDACTED]www.instagram.com: [REDACTED]com.osp.app.signin: [REDACTED]

andriller.com # (This field is editable in Preferences)

❑ Sample Task: Android App Attack Surface Analysis

🛡️ Task Overview:

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Identify the exposed components and data leakage potential of a target Android application.

✂ Tools Required:

- Android Device (with USB Debugging)
- Kali Linux (with Drozer installed)
- ADB enabled

□ Steps:

1. **Connect Android device** via USB and verify:

```
adb devices -l
```

2. **Forward TCP port for Drozer communication:**

```
adb forward tcp:31415 tcp:31415
```

3. **Launch Drozer Console:**

```
drozer console connect
```

4. **List all packages:**

```
run app.package.list
```

5. **Identify the target app (e.g., Snapchat):**

```
run app.package.list -f com.snapchat.android
```

6. **Gather app info and attack surface:**

```
run app.package.info -a com.snapchat.android  
run app.package.manifest com.snapchat.android  
run app.package.attacksurface com.snapchat.android
```

7. **Scan for vulnerable URIs:**

```
run scanner.provider.finduris -a com.snapchat.android
```

8. **Analyze Results and Document Findings**

📁 Notes and Best Practices

- Always obtain **legal authorization** before conducting any pentesting.
- Use **virtual machines** (e.g., VirtualBox with USB pass-through).
- Maintain a **clean environment** by activating/deactivating virtual environments when switching projects.
- Use **APKTool** to inspect or decompile APKs for static analysis.

🎯 Final Output

Upon successful execution of the tools and commands, you will gain insights into:

- Installed applications
- AndroidManifest permissions
- Exported and unprotected components
- Vulnerable content providers
- Possible URI exposure

These insights can inform further attack simulations or defense mechanisms.