

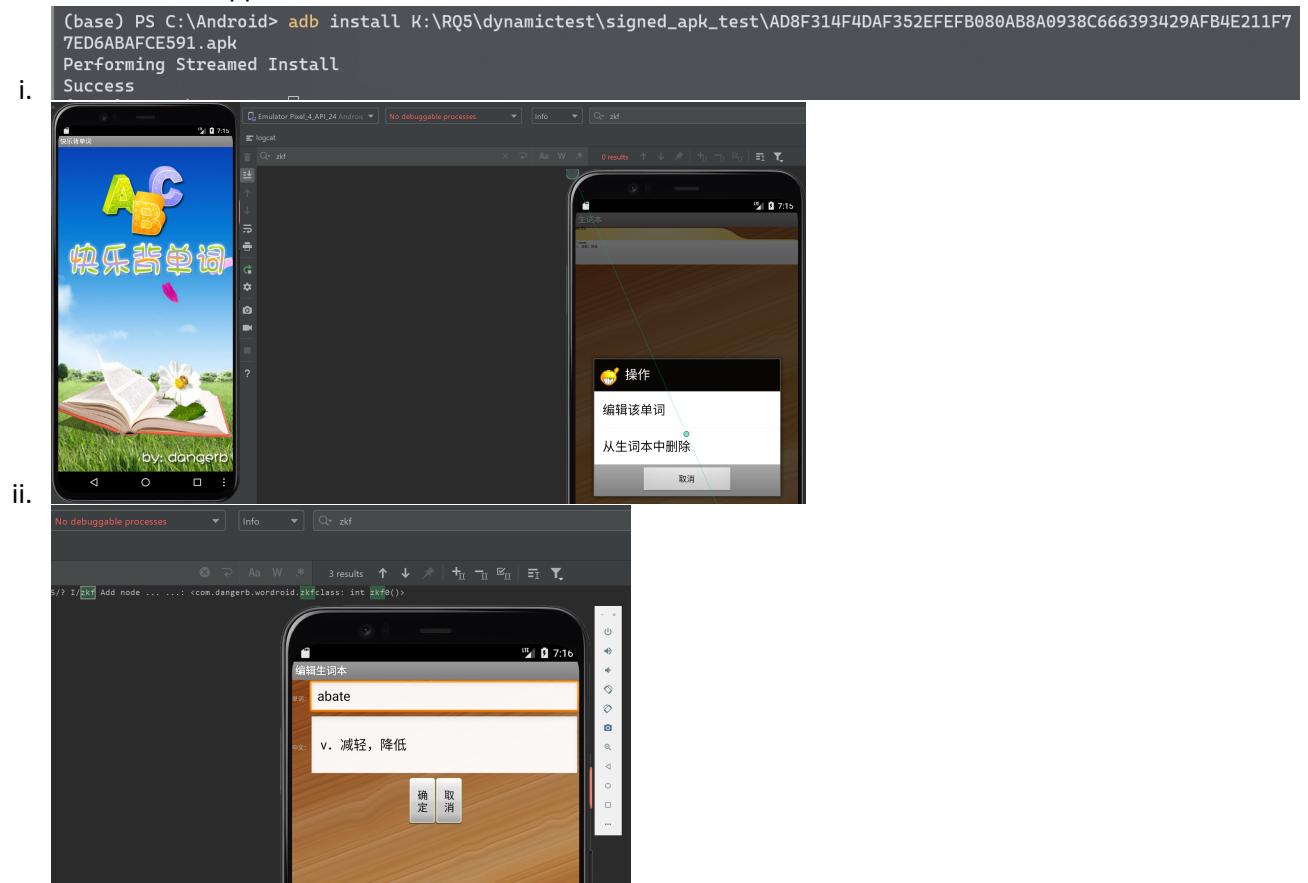
1. AD8F314F4DAF352EFEFB080AB8A0938C666393429AFB4E211F77ED6ABAFC591

a. Modify sequence:

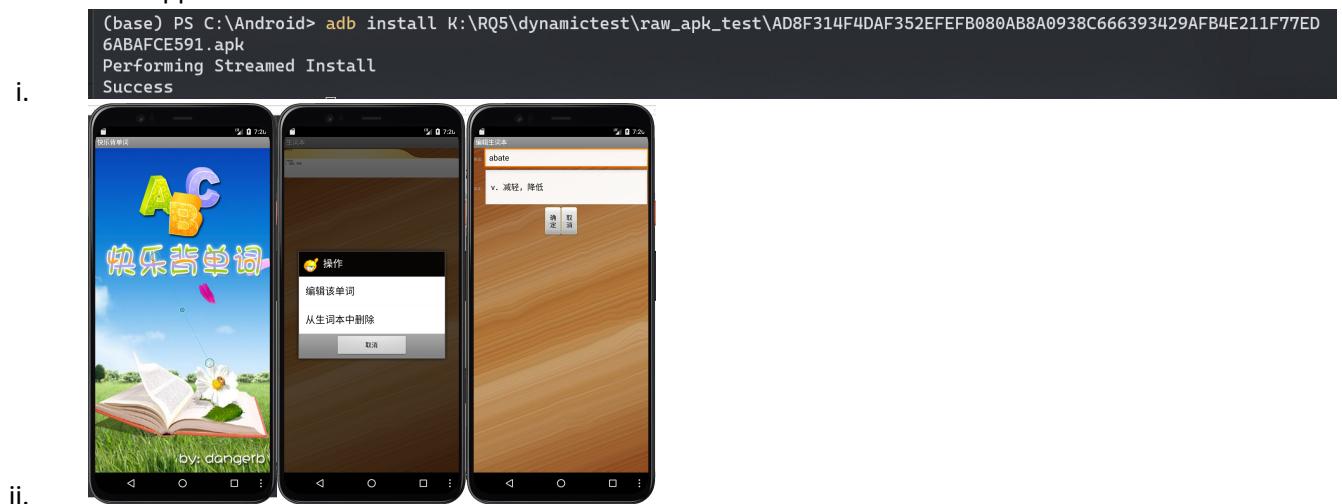
i. add_node,:<com.dangerb.wordroid.activitys.EditWord: void initWidgets()> ==> 0

b. The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrate the same functionality with raw app.

c. For adversarial app:



d. For raw app:



2. 5CB3763DC1001BCB36843DFB857A6B2FE42E3212F974B1DC4B9BA1135190ED9B.apk
- Modify sequence: delete_node,:<net.youmi.android.ax: int a()>
 - The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrate the same functionality with raw app.
 - For adversarial app:

```
(base) PS C:\Android> adb install K:\RQ5\dynamictest\signed_apk_test\5CB3763DC1001BCB36843DFB857A6B2FE42E3212F974B1DC4B9BA1135190ED9B.apk
Performing Streamed Install
Success
(base) PS C:\Android>
```

i.

- For raw app:

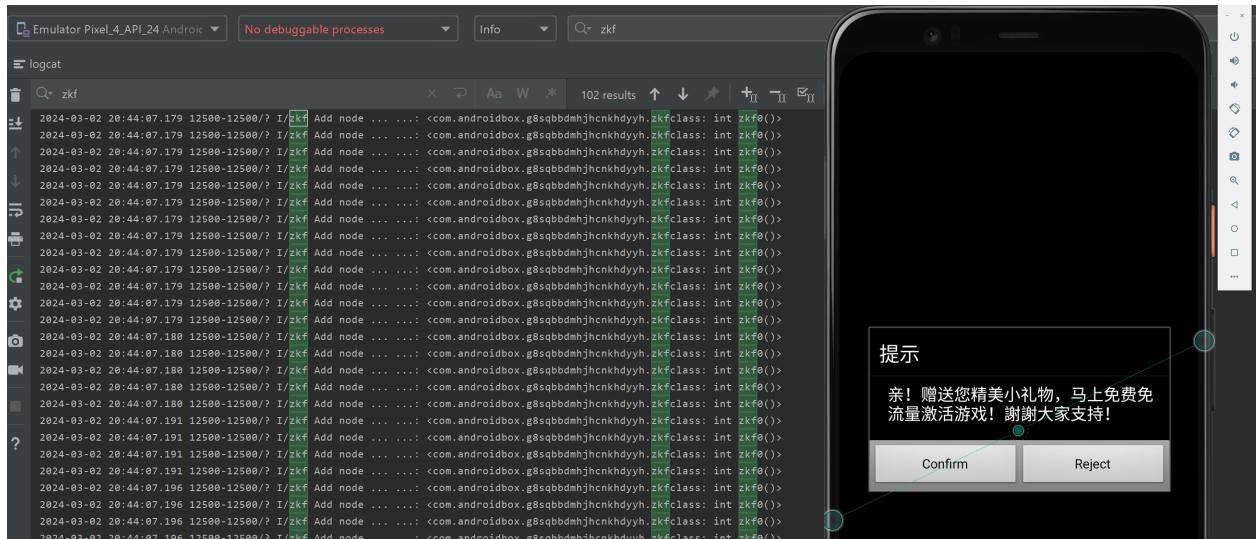
```
(base) PS C:\Android> adb install F:/apk/2011/malware/5CB3763DC1001BCB36843DFB857A6B2FE42E3212F974B1DC4B9BA1135190ED9B.apk
Performing Streamed Install
adb: failed to install F:/apk/2011/malware/5CB3763DC1001BCB36843DFB857A6B2FE42E3212F974B1DC4B9BA1135190ED9B.apk: Failure
[INSTALL_FAILED_UPDATE_INCOMPATIBLE: Package com.androidbox.g34predatorscn signatures do not match the previously installed version; ignoring!]
(base) PS C:\Android> adb uninstall com.androidbox.g34predatorscn
Success
(base) PS C:\Android> adb install F:/apk/2011/malware/5CB3763DC1001BCB36843DFB857A6B2FE42E3212F974B1DC4B9BA1135190ED9B.apk
Performing Streamed Install
Success
```

i.

3. 5A05AF2412B72A94CF0872AD693752D2F897529038832EB7EFDE17E2246B8302
- Modify sequence: add_node,:<az: void a(int,java.lang.String)> ==> 0
 - The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrate the same functionality with raw app.
 - For adversarial app:

```
adb install K:\RQ5\dynamictest\signed_apk_test\5A05AF2412B72A94CF0872AD693752D2F897529038832EB7EFDE17E2246B8302.apk
Performing Streamed Install
Success
(base) PS C:\Android>
```

i.



- ii.
- d. For raw app:

```
(mytorch11) PS K:\RQ5\dynamictest> adb uninstall com.androidbox.g8sqbbdmjhcnkhdyyy
Success
(mytorch11) PS K:\RQ5\dynamictest> adb install F:/apk/2011/malware/5A05AF2412B72A94CF0872AD693752D2F897529038832EB7EFDE17E2246B8302.apk
Performing Streamed Install
Success
```

- i.



4. 0CCD7CE49BF854DDA25EA3D4AEC3592BE29F81ADEE7A24A89A910247D3AC991F

- Modify sequence: add_node; <com.inauinterpopo.Sprite: int getSavedId()> ==> 0
- The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrate the same functionality with raw app.
- For adversarial app:

```

adb install K:/RQ5/dynamictest/signed_apk_test/0CCD7CE49BF854DDA25EA3D4AEC3592BE29F81ADEE7A24A89A910247D3AC991F.apk
Performing Streamed Install
Success

i.


```

d. For raw app:

```

(mytorch11) PS K:\RQ5\dynamictest> adb install F:/apk/2011/malware/0CCD7CE49BF854DDA25EA3D4AEC3592BE29F81ADEE7A24A89A910247D3AC991F.apk
Performing Streamed Install
adb: failed to install F:/apk/2011/malware/0CCD7CE49BF854DDA25EA3D4AEC3592BE29F81ADEE7A24A89A910247D3AC991F.apk: Failure [INSTALL_FAILED_UPDATE
es do not match the previously installed version; ignoring!]
(mytorch11) PS K:\RQ5\dynamictest> adb uninstall com.inauinterpopo
Success
(mytorch11) PS K:\RQ5\dynamictest> adb install F:/apk/2011/malware/0CCD7CE49BF854DDA25EA3D4AEC3592BE29F81ADEE7A24A89A910247D3AC991F.apk
Performing Streamed Install
Success

```

i.



5. 44B11D39CCEB9CA082EDD970AE423D1AB9E98F0698AEB157373F2BF6CD76E5BF

- Modify sequence: delete_node,:<com.liziyan.threesameline.GameView: void run()>
- The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrate the same functionality with raw app.
- For adversarial app:

d.

```
adb install K:/RQ5/dynamictest/signed_apk_test/44B11D39CCEB9CA082EDD970AE423D1AB9E98F0698AEB157373F2BF6CD76E5BF.apk
Performing Streamed Install
Success
```

The screenshot shows the Android Logcat interface. At the top, it says "Logcat" and "Emulator Pixel_4 API_24 Android". Below that is a search bar with "zkf" and a dropdown menu set to "Info". A toolbar with various icons is at the top right. The main area shows a single log entry: "2024-03-02 21:30:23.160 15144-15144/? I/zkf Check deleted method: <com.liziyuan.threesameline.GameView: void run()>". The status bar at the top right shows signal strength, battery level, and the time 9:30.

e. For raw app:

i.

```
(mytorch11) PS K:\RQ5\dynamictest> adb uninstall com.inavinterpopo
Failure [DELETE_FAILED_INTERNAL_ERROR]
(mytorch11) PS K:\RQ5\dynamictest> adb install F:/apk/2011/malware/44B11D39CCEB9CA082EDD970AE423D1AB9E98F0698AEB157373F2BF6CD76E5BF.apk
Performing Streamed Install
Success
```

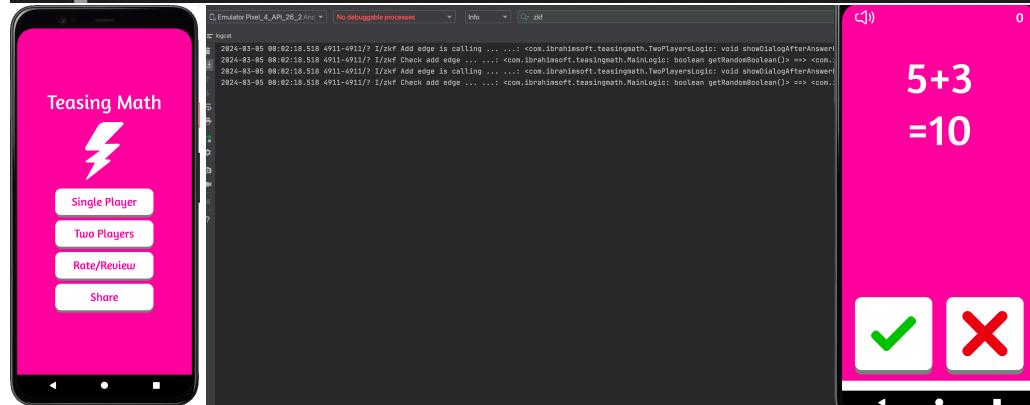
The screenshot shows an Android emulator screen. It features a black background with three small green circular dots connected by thin green lines. The screen has a standard Android navigation bar at the bottom with icons for back, home, and recent apps. The top status bar shows signal strength, battery level, and the time 9:30.

6. 0139DC89176560FF538B1B3D866AC28169073B120C761290C9914999717D6D02

- Modify sequence: add_edge,:<com.ibrahimsoft.teasingmath.MainLogic: boolean getRandomBoolean()> ==> <com.ibrahimsoft.teasingmath.TwoPlayersLogic: void showDialogAfterAnswerByUser(int,boolean)>
- The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrate the same functionality with raw app.
- For adversarial app:

```
\W $ adb install /Volumes/Data/RQ5/dynamictest/signed_apk_test/0139DC89176560FF538B1B3D866AC28169073B120C761290C9914999717D6D02.apk
Performing Streamed Install
Success
\W $
```

i.



d. For raw app:

```
\W $ adb install /Volumes/Data/RQ5/dynamictest/raw_apk/0139DC89176560FF538B1B3D866AC28169073B120C761290C9914999717D6D02.apk
Performing Streamed Install
adb: failed to install /Volumes/Data/RQ5/dynamictest/raw_apk/0139DC89176560FF538B1B3D866AC28169073B120C761290C9914999717D6D02.apk: Failure [INSTALL_FAILED_UPDAT
E_INCOMPATIBLE: Package com.ibrahimsoft.teasingmath signatures do not match the
previously installed version; ignoring!]
\W $ adb uninstall com.ibrahimsoft.teasingmath
Success
\W $ adb install /Volumes/Data/RQ5/dynamictest/raw_apk/0139DC89176560FF538B1B3D866AC28169073B120C761290C9914999717D6D02.apk
Performing Streamed Install
Success
```

i.



7. 039EBEF2E39A573C3B4720EA6E79B4E2594A4E81E3D904DA72CDC598A5BC75E5

- Modify sequence: <processing.core.PApplet: void onBackPressed()> ==> <processing.core.PApplet: void dispose()>
- The added edge is triggered when exit the app. The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node.
The adversarial app demonstrate the same functionality with raw app.
- For adversarial app:

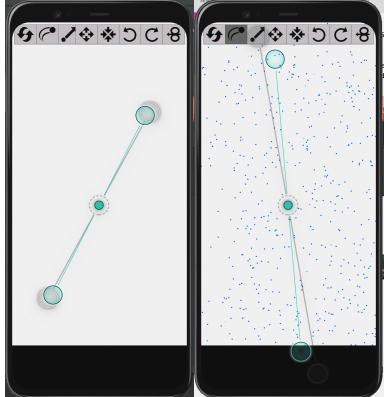
```
\W $ adb install /Volumes/Data/RQ5/dynamictest/signed_apk_test/039EBEF2E39A573C3B4720EA6E79B4E2594A4E81E3D904DA72CDC598A5BC75E5.apk
```

```
Performing Streamed Install
```

```
Success
```

```
\W $
```

i.



```
6327/? I/zkf Add edge is calling ... ...: <processing.core.PApplet: void dispose(int)>  
6327/? I/zkf Check add edge ... ...: <processing.core.PApplet: void onBackPressed()> ==> <processing.core.PApplet: void dispose(int)>
```

d. For raw app

```
adb: failed to install /Volumes/Data/RQ5/dynamictest/raw_apk/039EBEF2E39A573C3B4720EA6E79B4E2594A4E81E3D904DA72CDC598A5BC75E5.apk: Failure [INSTALL_FAILED_UPDATE_INCOMPATIBLE: Package processing.test.pflow3 signatures do not match the previously installed version; ignoring!]
```

```
\W $ adb uninstall processing.test.pflow3
```

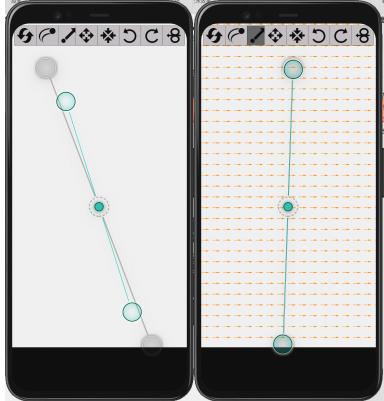
```
Success
```

```
\W $ adb install /Volumes/Data/RQ5/dynamictest/raw_apk/039EBEF2E39A573C3B4720EA6E79B4E2594A4E81E3D904DA72CDC598A5BC75E5.apk
```

```
Performing Streamed Install
```

```
Success
```

i.



8. 0D2551B92AAFCFFBCCF3CA1286F5F41BC66D6C6E1AA56EEA0B7EFB38F013C7EF

a. Modify sequence: add_edge,:<com.limmob.ad.sdk.l: void a(java.lang.String,java.lang.String)> ==> <com.airpush.android.PushService: void onStart(android.content.Intent,int)>

b. The added edge is triggered when the app triggers ad sdk. The adversarial app run successfully.

The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrate the same functionality with raw app.

c. For adversarial app:

```
\W $ adb install /Volumes/Data/RQ5/dynamictest/signed_apk_test/0D2551B92AAFCFFBC
CF3CA1286F5F41BC66D6C6E1AA56EEA0B7EFB38F013C7EF.apk
Performing Streamed Install
Success
```

i.



```
I/zkf Add edge is calling ... ...: <com.airpush.android.PushService: void onStart(android.content.Intent,int,int)>
I/zkf Check add edge ... ...: <com.lmmob.ad.sdk.l: void a(java.lang.String,java.lang.String)> ==> <com.airpush.android.PushService: void onStart(android.content.Intent,int,int)>
I/zkf Add edge is calling ... ...: <com.lmmob.ad.sdk.l: void a(java.lang.String,java.lang.String)> ==> <com.airpush.android.PushService: void onStart(android.content.Intent,int,int)>
I/zkf Add edge is calling ... ...: <com.airpush.android.PushService: void onStart(android.content.Intent,int,int)> ==> <com.airpush.android.PushService: void onStart(android.content.Intent,int,int)>
I/zkf Add edge is calling ... ...: <com.lmmob.ad.sdk.l: void a(java.lang.String,java.lang.String)> ==> <com.airpush.android.PushService: void onStart(android.content.Intent,int,int)>
```

d. For raw app:

```
\W $ adb install /Volumes/Data/RQ5/dynamictest/raw_apk/0D2551B92AAFCFFBCCF3CA128
6F5F41BC66D6C6E1AA56EEA0B7EFB38F013C7EF.apk
Performing Streamed Install
adb: failed to install /Volumes/Data/RQ5/dynamictest/raw_apk/0D2551B92AAFCFFBCC
F3CA1286F5F41BC66D6C6E1AA56EEA0B7EFB38F013C7EF.apk: Failure [INSTALL_FAILED_UPDAT
E_INCOMPATIBLE: Package jason.tarot.oneCard signatures do not match the previous
ly installed version; ignoring!]
\W $ adb uninstall jason.tarot.oneCard
Success
\W $ adb install /Volumes/Data/RQ5/dynamictest/raw_apk/0D2551B92AAFCFFBCCF3CA128
6F5F41BC66D6C6E1AA56EEA0B7EFB38F013C7EF.apk
Performing Streamed Install
Success
```

i.



9. 019F2F9FB1EF179302C719165E521DC2EDDD5EE1EB685A7B0A477DF19C096C9

a. Modification sequence: add_node,:<com.wallpaper.transwallpaper1.TransWallPaper1: int access\$0(com.wallpaper.transwallpaper1.TransWallPaper1)> ==> 0

- b. The added node will be triggered when transwallpaper is triggered, which could be changing the wall paper. The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrate the same functionality with raw app.

- c. For adv app:

```
\W $ adb install /Volumes/Data/RQ5/dynamictest/signed_apk_test/019F2F9FB1EF17930
2C719165E521DC2EDDDD5EE1EB685A7B0A477DF19C096C9.apk
Performing Streamed Install
Success
\W $
```

i.

```
7081/? I/zkf Add node ... ...: <com.wallpaper.transwallpaper1.zkfclass: int zkf0()>
7081/? I/zkf Add node ... ...: <com.wallpaper.transwallpaper1.zkfclass: int zkf0()>
```

- d. For raw app:

```
\W $ adb uninstall com.wallpaper.transwallpaper1
Success
\W $ adb install /Volumes/Data/RQ5/dynamictest/raw_apk/019F2F9FB1EF179302C719165
E521DC2EDDDD5EE1EB685A7B0A477DF19C096C9.apk
Performing Streamed Install
Success
```

i.

10. 9742337482B477F87A524704EEB7863EED810A0DDEE62D9F10E446D6ECA73B041

- a. Modify sequence: add_node,:<com.livegame.wallpaperxinggaameinv2.MainActivity: void onDestroy() ==> 0

- b. The added node will be triggered when the app exits. The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrate the same functionality with raw app.
- c. For adv app:

```
adb install /Volumes/Data/RQ5/dynamictest/signed_apk_test/9742337482B477F87A524704EEB7863EED810A0DEE62D9F10E446D6ECA73B041.apk
Performing Streamed Install
Success

i. 
762 17313-17313/? I/zkf Add node ... ...: <com.livegame.wallpaperxinggaimeinv2.zkfclass: int zkf0()>
055 17313-17313/? I/zkf Add node ... ...: <com.livegame.wallpaperxinggaimeinv2.zkfclass: int zkf0()>
```

- d. For raw app:

```
[W $ adb uninstall com.livegame.wallpaperxinggaimeinv2
Success
[W $ adb install /Volumes/Data/HRAT/apk/2011/malware/9742337482B477F87A524704EEB
7863EED810A0DEE62D9F10E446D6ECA73B041.apk]
```



11. E36B2F10AAEB0453D83B6CC6912579B9D3C78FB0CA17EDB1C29D95B2308C9174

- a. Modify sequence: delete_edge,:<jzr.yS.Zp: boolean
onOptionsItemSelected(android.view.MenuItem)> ==> <android.widget.Toast: void show()> ==> <cn.appmedia.ad.a.d: void c(java.lang.Object)>
- b. The modified edge will be triggered when the setting the wallpaper. The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrates the same functionality with raw app.
- c. For adv app

```

adb install /Volumes/Data/RQ5/dynamictest/signed_apk_test/E36B2F10AAEB0453D83B6CC6912579B9D3C78FB0CA17EDB1C29D95B2308C9174.apk
Performing Streamed Install
Success
adb install /Volumes/Data/HRAT/apk/2011/malware/E36B2F10AAEB0453D83B6CC6912579B9D3C78FB0CA17EDB1C29D95B2308C9174.apk

```

i.



ii.



```

eck modify edge ... ...: <cn.appmedia.ad.a.d: void c(java.lang.Object)> ==> <android.widget.Toast: void show()
eck modify edge ... ...: <jzr.ys.Zp: boolean onOptionsItemSelected(android.view.MenuItem)> ==> <android.widget.Toast: void show()
eck modify edge ... ...: <cn.appmedia.ad.a.d: void c(java.lang.Object)> ==> <android.widget.Toast: void show()
eck modify edge ... ...: <jzr.ys.Zp: boolean onOptionsItemSelected(android.view.MenuItem)> ==> <android.widget.Toast: void show()
...
```

d. For raw app

```

[\W $ adb uninstall jzr.ys
Success
\W $ adb install /Volumes/Data/HRAT/apk/2011/malware/E36B2F10AAEB0453D83B6CC6912
579B9D3C78FB0CA17EDB1C29D95B2308C9174.apk

```

Performing Streamed Install
Success

e.



i.

12. 9276EDDA77193D09130069547A5BA5A50B4EF097F95174080A83F8723B2F436

- Modify sequence: add_edge,:<com.adpooh.adscast.utils.m: android.content.Context c()> ==> <com.adpooh.adscast.AdsWebViewActivity: boolean onOptionsItemSelected(android.view.MenuItem)>
- The modified edge will be triggered when the app starts. The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrates the same functionality with raw app.

c. For adv app:

```
adb install /Volumes/Data/RQ5/dynamictest/signed_apk_test/9276EDDA77193D09130069547A5BA5A50B4EF097F95174080A83F8723B2F436.apk
Performing Streamed Install
Success
```

i.



```
34 9898-9898/? I/zkf Add edge is calling ... ...: <com.adpooh.adscast.AdsWebViewActivity: boolean onOptionsItemSelected(android.view.MenuItem,int)>
34 9898-9898/? I/zkf Check add edge ... ...: <com.adpooh.adscast.utils.m: android.content.Context c()> ==> <com.adpooh.adscast.AdsWebViewActivity: boolean onOptionsItemSelectedItem>
34 9898-9898/? I/zkf Add edge is calling ... ...: <com.adpooh.adscast.AdsWebViewActivity: boolean onOptionsItemSelectedSelected(android.view.MenuItem,int)>
34 9898-9898/? I/zkf Check add edge ... ...: <com.adpooh.adscast.utils.m: android.content.Context c()> ==> <com.adpooh.adscast.AdsWebViewActivity: boolean onOptionsItemSelectedItemS>
35 9898-9898/? I/zkf Add edge is calling ... ...: <com.adpooh.adscast.AdsWebViewActivity: boolean onOptionsItemSelectedSelected(android.view.MenuItem,int)>
35 9898-9898/? I/zkf Check add edge ... ...: <com.adpooh.adscast.utils.m: android.content.Context c()> ==> <com.adpooh.adscast.AdsWebViewActivity: boolean onOptionsItemSelectedItemS>
35 9898-9898/? I/zkf Add edge is calling ... ...: <com.adpooh.adscast.AdsWebViewActivity: boolean onOptionsItemSelectedSelected(android.view.MenuItem,int)>
```

d. For raw app:

```
\W $ adb uninstall com.dong.animals
Success
\W $ adb install /Volumes/Data/HRAT/apk/2011/malware/9276EDDA77193D09130069547A5BA5A50B4EF097F95174080A83F8723B2F436.apk
```

i.



13. B9D5792ADF511459FBC6F0DDF09FD4AA5E6898D13C3ACC51D8D9CE39A5604F0D

- a. Modify sequence: add_edge,:<com.waps.AppConnect: com.waps.AppConnect getInstance(android.content.Context)> ==> <com.waps.OffersWebView: boolean onKeyDown(int,android.view.KeyEvent)>
- b. The modified edge will be triggered when the app starts. The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrates the same functionality with raw app.
- c. For adv app:

```
adb install /Volumes/Data/RQ5/dynamictest/signed_apk_test/B9D5792ADF511459FBC6F0DDF09FD4AA5E6898D13C3ACC51D8D9CE39A5604F0D.apk
Performing Streamed Install
Success
```

i.

```
I/zkf Add edge is calling ....: <com.waps.OffersWebView: boolean onKeyDown(int,android.view.KeyEvent,int)>
I/zkf Check add edge ....: <com.waps.AppConnect: com.waps.AppConnect getInstance(android.content.Context)> ==> <com.waps.OffersWebView: boolean onKeyDown(int,android.view.KeyEvent)>
I/zkf Add edge is calling ....: <com.waps.OffersWebView: boolean onKeyDown(int,android.view.KeyEvent,int)>
I/zkf Check add edge ....: <com.waps.AppConnect: com.waps.AppConnect getInstance(android.content.Context)> ==> <com.waps.OffersWebView: boolean onKeyDown(int,android.view.KeyEvent)>
```

- d. For raw app:

```
\W $ adb uninstall com.dreamwallpaper08.xyfxh
Success
\W $ adb install /Volumes/Data/HRAT/apk/2011/malware/B9D5792ADF511459FBC6F0DDF09FD4AA5E6898D13C3ACC51D8D9CE39A5604F0D.apk

Performing Streamed Install
Success
```

i.



14. CCDF4357430E8D7BEA283F0EABE3819BFBA375A90538E1D4E582E68DC5B87279

- a. Modify sequence: add_edge,:<com.waps.AppConnect: com.waps.AppConnect getInstance(android.content.Context)> ==> <com.waps.OffersWebView: boolean onKeyDown(int,android.view.KeyEvent)>
- b. The modified edge will be triggered when the app starts. The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrates the same functionality with raw app.
- c. For adv app:

```
adb install /Volumes/Data/RQ5/dynamictest/signed_apk_test/CCDF4357430E8D7BEA283F0EABE3819BFBA375A90538E1D4E582E68DC5B87279.apk
Performing Streamed Install
Success
```

i.

```
15159-15159/? I/zkf Add edge is calling ... ...: <com.waps.OffersWebView: boolean onKeyDown(int,android.view.KeyEvent,int)>
15159-15159/? I/zkf Check add edge ... ...: <>com.waps.AppConnect: com.waps.AppConnect getInstance(android.content.Context)> ==> <com.waps.OffersWebView: boolean onKeyDown(int,android.view.KeyEvent,int)>
```

- d. For Raw app:

```
\W $ adb uninstall cn.gw.aimeitu
Success
\W $ adb install /Volumes/Data/HRAT/apk/2011/malware/CCDF4357430E8D7BEA283F0EABE
3819BFBA375A90538E1D4E582E68DC5B87279.apk
```

Performing Streamed Install

Success

i.



15. FFF5E3563C7B40E0E046DF1EB065DF2E985ADDBADC85D0995097F936033E550D

- Modify sequence: add_edge,:<com.waps.AppConnect: com.waps.AppConnect
getInstance(android.content.Context)> ==> <com.waps.OffersWebView: boolean
onKeyDown(int,android.view.KeyEvent)>
- The modified edge will be triggered when the app starts. The adversarial app run successfully.
The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrates the same functionality with raw app.
- For ad

```
i. adb install /Volumes/Data/RQ5/dynamictest/signed_apk_test/FFF5E3563C7B40E0E046DF1EB065DF2E985ADDBADC85D0995097F936033E550D.apk  
Performing Streamed Install  
Success
```



```
03.449 15596-15596/? I/zkf Add edge is calling ... ...: <com.waps.OffersWebView: boolean onKeyDown(int,android.view.KeyEvent,int)>  
03.449 15596-15596/? I/zkf Check add edge ... ...: <com.waps.AppConnect: com.waps.AppConnect getInstance(android.content.Context)> ==> <com.waps.OffersWebView: boolean onKeyDown(int,android.view.KeyEvent,int)>  
03.455 15596-15596/? I/zkf Add edge is calling ... ...: <com.waps.OffersWebView: boolean onKeyDown(int,android.view.KeyEvent,int)>  
03.455 15596-15596/? I/zkf Check add edge ... ...: <com.waps.AppConnect: com.waps.AppConnect getInstance(android.content.Context)> ==> <com.waps.OffersWebView: boolean onKeyDown(int,android.view.KeyEvent,int)>  
03.458 15596-15596/? I/zkf Add edge is calling ... ...: <com.waps.OffersWebView: boolean onKeyDown(int,android.view.KeyEvent,int)>  
03.458 15596-15596/? I/zkf Check add edge ... ...: <com.waps.AppConnect: com.waps.AppConnect getInstance(android.content.Context)> ==> <com.waps.OffersWebView: boolean onKeyDown(int,android.view.KeyEvent,int)>
```

d. For Raw app:

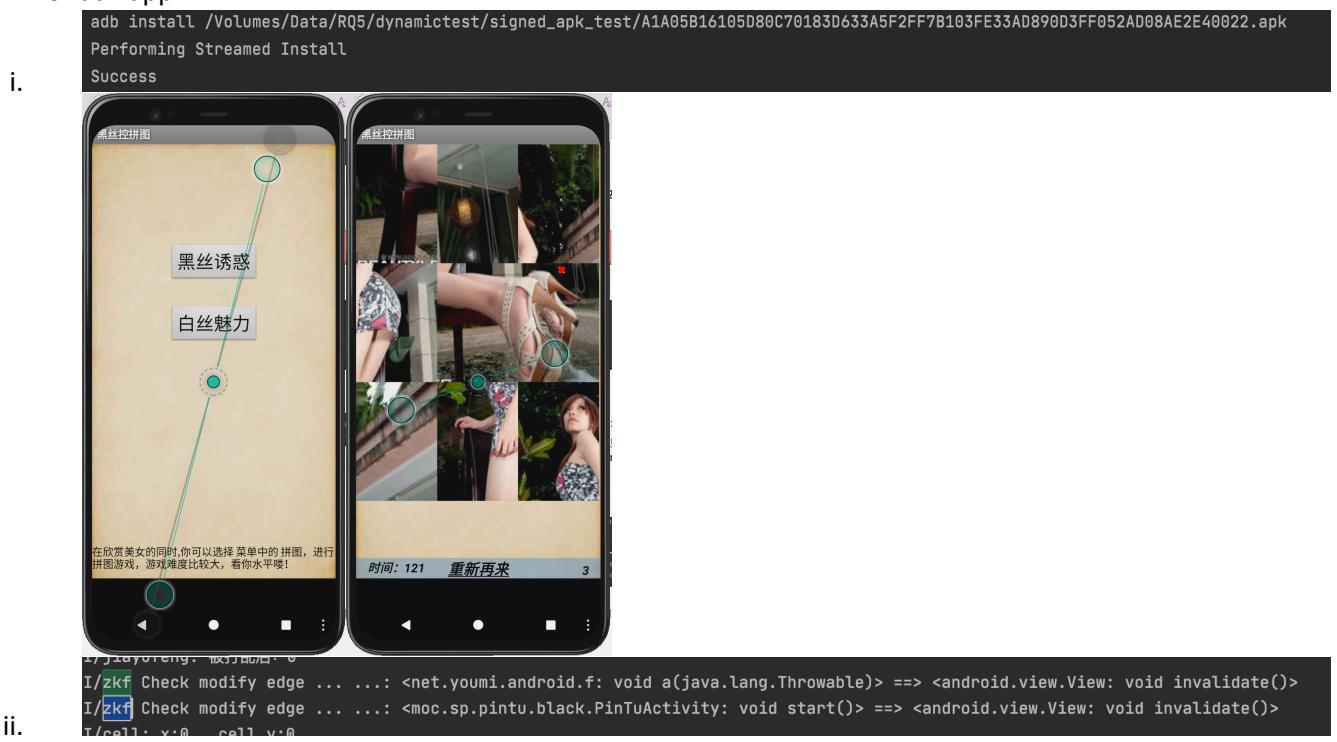
```
\W $ adb uninstall com.wangyh.android.bellewallpaper  
Success  
\W $ adb install /Volumes/Data/HRAT/apk/2011/malware/FFF5E3563C7B40E0E046DF1EB065DF2E985ADDBADC85D0995097F936033E550D.apk
```

Performing Streamed Install
Success



16. A1A05B16105D80C70183D633A5F2FF7B103FE33AD890D3FF052AD08AE2E40022

- a. Modify sequence: `delete_edge,:<moc.sp.pintu.black.PinTuActivity: void start()> ==> <android.view.View: void invalidate()> ==> <net.youmi.android.f: void a(java.lang.Throwable)>`
- b. The modified edge will be triggered. The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrates the same functionality with raw app.
- c. For adv app:



```
\W $ adb uninstall moc.sp.pintu.black  
Success  
\W $ adb install /Volumes/Data/HRAT/apk/2011/malware/A1A05B16105D80C70183D633A5F  
2FF7B103FE33AD890D3FF052AD08AE2E40022.apk
```

Performing Streamed Install
Success

i.



17. 16A987CC05CE83641C087FD540A06AA72921207FB8DA22F2E00C20D7F0CF9864

- Modify sequence: `delete_edge,:<net.youumi.android.AdActivity: void b()> ==> <android.view.Window: void setFlags(int,int)> ==> <net.youumi.android.g: void a(java.lang.Throwable)>`
- The modified edge will be triggered when the app starts. The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrates the same functionality with raw app.
- For adv app:

```
adb install /Volumes/Data/RQ5/dynamictest/signed_apk_test/16A987CC05CE83641C087FD540A06AA72921207FB8DA22F2E00C20D7F0CF9864.apk  
Performing Streamed Install  
Success
```



d. For raw app:

```
\W $ adb uninstall com.fairytale.fortune
Success
\W $ adb install /Volumes/Data/HRAT/apk/2011/malware/16A987CC05CE83641C087FD540A
06AA72921207FB8DA22F2E00C20D7F0CF9864.apk
```

i.



18. 345578FF78244F1F99B08C7B486BCE87F69EA21B2F03BFDE734458ABD55042EF

- a. Modify sequence: add_edge,:<net.cm3d.android.wordexpress.gaokao.engl: java.lang.String getEngl(int)> ==> <net.cm3d.android.wordexpress.gaokao.WordList: void ChangeLandScape()>

- b. The modified edge will be triggered when spell the word. The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrates the same functionality with raw app.
- c. For adv app:

i.

```

adb install /Volumes/Data/RQ5/dynamictest/signed_apk_test/345578FF78244F1F99B08C7B486BCE87F69EA21B2F03BFDE734458ABD55042EF.apk
Performing Streamed Install
Success

```

```

19311-19311/? I/zkf Add edge is calling ... ...: <net.cm3d.android.wordexpress.gaokao.WordList: void ChangeLandScape(int)>
19311-19311/? I/zkf Check add edge ... ...: <net.cm3d.android.wordexpress.gaokao.engl: java.lang.String getEngl(int)> ==> <net.cm3d.android.wordexpress.gaokao.WordList: void ChangeLandScape(int)>
19311-19311/? I/zkf Add edge is calling ... ...: <net.cm3d.android.wordexpress.gaokao.WordList: void ChangeLandScape(int)>
19311-19311/? I/zkf Check add edge ... ...: <net.cm3d.android.wordexpress.gaokao.engl: java.lang.String getEngl(int)> ==> <net.cm3d.android.wordexpress.gaokao.WordList: void ChangeLandScape(int)>
1779-1779/? W/InputConnectionWrapper: Fixing selection indices to 0, 0

```

d. For raw app:

```

the previously installed version, ignoring...
$ adb uninstall net.cm3d.android.wordexpress.gaokao
Success
$ adb install /Volumes/Data/HRAT/apk/2011/malware/345578FF78244F1F99B08C7
3CE87F69EA21B2F03BFDE734458ABD55042EF.apk

```

Performing Streamed Install

i. Success



19. AF89E1A800590192573090B3F95846C7D4F3350B2B386399685B86B34631D4D3

- Modify sequence: `delete_edge; <net.youmi.android.AdActivity: void b()> ==> <android.view.Window: void setFlags(int,int)> ==> <net.youmi.android.g: void a(java.lang.Throwable)>`
- The modified edge will be triggered when the app is launched. The adversarial app runs successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrates the same functionality with raw app.
- For adv app

```
i. adb install /Volumes/Data/RQ5/dynamictest/signed_apk_test/AF89E1A800590192573090B3F95846C7D4F3350B2B386399685B86B34631D4D3.apk  
Performing Streamed Install  
Success
```



```
4510-4533/? I/zkf Check modify edge ... ...: <net.youmi.android.g: void a(java.lang.Throwable)> ==> <android.view.Window: void setFlags(int,int)>  
4510-4533/? I/zkf Check modify edge ... ...: <net.youmi.android.g: void a(java.lang.Throwable,int,int,android.view.Window,int)>  
1800-1987/? I/chatty: uid=10028(u0_a28) RenderThread identical 2 lines  
4510-4531/? I/zkf Check modify edge ... ...: <net.youmi.android.g: void a(java.lang.Throwable)> ==> <android.view.Window: void setFlags(int,int)>  
4510-4531/? I/zkf Check modify edge ... ...: <net.youmi.android.g: void a(java.lang.Throwable,int,int,android.view.Window,int)>
```

d. For raw app:

```
\W $ adb install /Volumes/Data/HRAT/apk/2011/malware/AF89E1A800590192573090B3F95846C7D4F3350B2B386399685B86B34631D4D3.apk
```

```
Performing Streamed Install  
Success
```

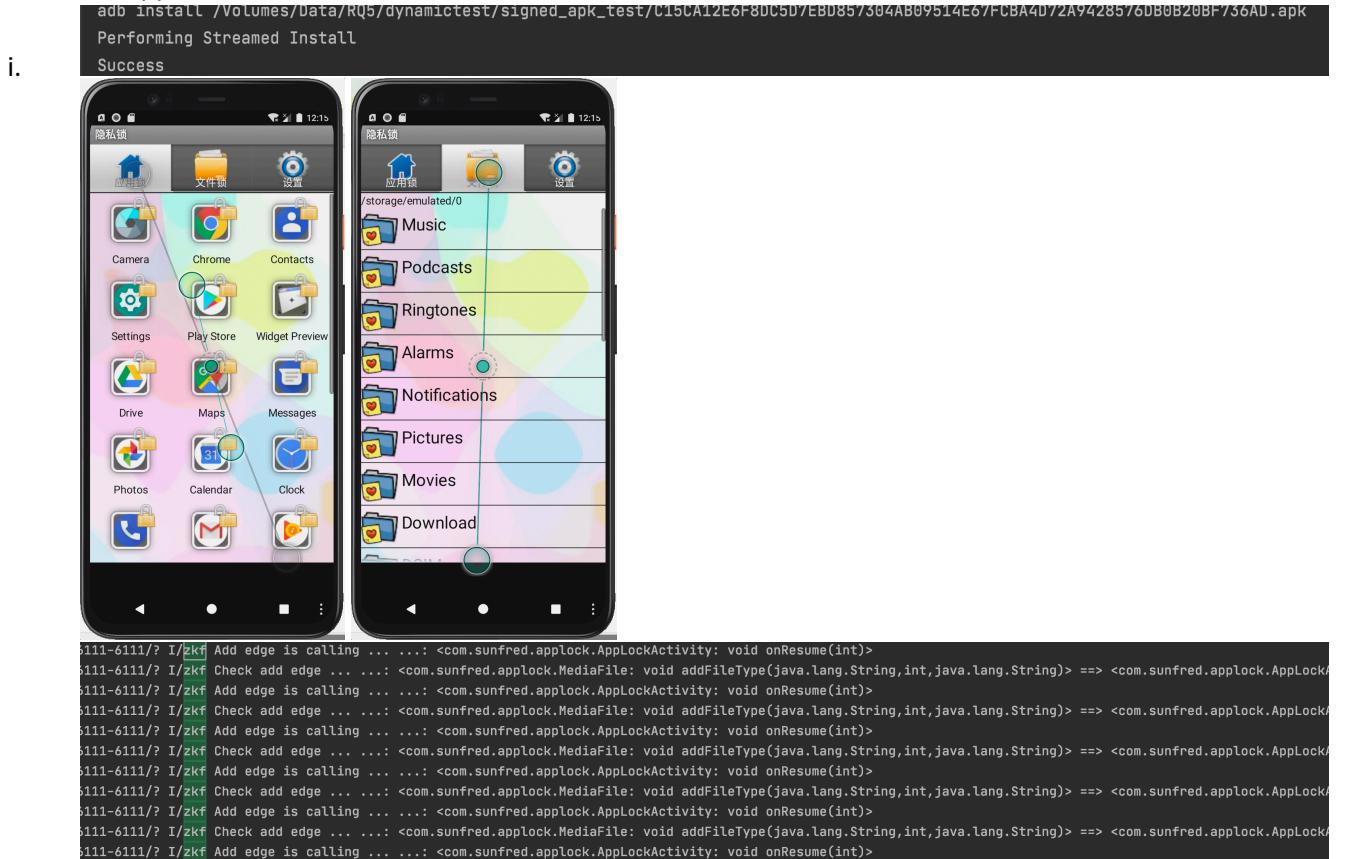


20. C15CA12E6F8DC5D7EBD857304AB09514E67FCBA4D72A9428576DB0B20BF736AD

- a. Modify sequence: add_edge,:<com.sunfred.applock.MediaFile: void addFileType(java.lang.String,int,java.lang.String)> ==> <com.sunfred.applock.AppLockActivity: void onResume()>

- b. The modified edge will be triggered when select folder in the app. The adversarial app run successfully. The modified sequence is triggered successfully. The log gives information for the triggered and added node. The adversarial app demonstrates the same functionality with raw app.

- c. For adv app



- d. For raw app:

```
\W $ adb uninstall com.sunfred.applock  
Success  
\W $ adb install /Volumes/Data/HRAT/apk/2011/malware/C15CA12E6F8DC5D7EBD857304AE  
09514E67FCBA4D72A9428576DB0B20BF736AD.apk
```

Performing Streamed Install

Success

i.

