Shifts in Underground Markets

Past, Present, and Future

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For Raimund Genes (1963-2017)

Contents

This research paper presents a wide-ranging view of dark web marketplaces and underground cybercriminal forums. It delves into notable trends and market movements within these selling environments. The first section looks back, focusing on relevant data from Trend Micro's Cybercriminal Underground Economy Series (2015 -2016).[1] Then, we revisit those same spaces in 2019. Finally, we share predictions on the goods and services we expect to be on the rise in the next three years.

What changed?

In 2019, changes in the types of commodities being sold underground were in line with changes in the public market; for example, there was a proliferation of IoT botnets and a boom in fake news services. We also found an abundance of stolen account credentials, credit cards, and gaming-related goods. Aimbots, wallhacks, and skins services became popular offerings.

Methods of communication also changed. Sellers used to communicate through direct messages and Telegram. However, in 2019, Discord became the popular method of communication. Underground forums also began to move to private Discord channels for transactions.

Many sellers also shifted their selling platforms and began using e-commerce shops run by an underground forum administrator. Law enforcement agencies (LEA) shut down many popular dark web marketplaces that once dominated the underground landscape. User paranoia grew after new marketplaces closed within months after they were set up.

The current marketplace environment is still quite volatile. Trust has become such a critical issue that a search engine has been created to verify sellers on top dark web marketplaces. New dark web email businesses have also appeared to make sure communication is private and anonymous.

According to an academic study on the cybercrime economy, cybercrime (which includes ransomware, sales of counterfeit goods, data theft, and others) generates around US$1.5 trillion in annual revenue.[2] This widespread business outpaces top global revenue earners like Apple (US$260 billion in 2019),[3] Saudi Aramco (US$356 billion in 2018),[4] and Amazon (US$281 billion in 2019).[5]

English and Russian remain the dominant languages in the cybercrime market. And although many markets have been taken down by law enforcement agencies, we found that some popular hacking and cybercrime forums were still operating at the start of 2020, namely: Exploit[.]im (forum moves around and also uses Exploit[.]in), Hackforums, Nulled, Raid Forums and Joker's Stash. We also found that their membership numbers continued to increase.

The cybercriminal underground is not as separated by language as much as it was five years ago. We spotted overlapping posts and cross-market advertising in forums of different languages. Russian actors regularly participated in English and Arabic forums, while Spanish actors participated in English forums. It seems cybercriminals have adopted a more global view and found that advertising in multiple language forums is a must if they wanted to earn more money. Still, the cybercriminal underground economy remains diverse, and different markets carry unique goods and services for the country or region to which they cater.

Prices for different commodities have fluctuated since our 2015 reports on the Russian and English underground. In 2015, generic botnets started selling at around US$200 in Russian underground forums. Generic botnet prices today cost around US$5 a day, and prices for builders start at US$100. United States credit cards were sold at US$20 in 2015, but prices start at US$1 in 2020. High-balance credit cards are selling for over US$500 in 2020. Meanwhile, monthly crypting services dropped to around US$20.

The cost of some services and goods remained relatively stable. Ransomware has not changed—ransomware-as-service prices still start at US$5. Crypterlocker, which has been around since 2013, continues to demand a high price (around $100). Scanned document services, such as copies of driver's licenses, passports, and bill statements, still start at US$5 — similar to the prices in 2015. Similarly, the price of remote access tools (RAT) did not change, starting at US$2 for malware-as-a-service (MaaS). NJRat, which has been around since 2012, continues to be found in multiple language forums for free. Online account credentials are still priced at around US$1. The price of spam services has not changed, but they are now sending SMS rather than emails.

One notable trend we observed is accessible MaaS services for RATS, crypters, botnets, and ransomware. The MaaS service model delivers a complete package: infrastructure, support, and updates. These services are also affordable, with some MaaS offerings starting at around US$20 a month. There is virtually no pricing barrier, and the technical skills that buyers need to have to setup attacks have been greatly reduced.

What does the Underground Market Offer?

Regular monitoring of the cybercriminal underground shows us that the range of available goods and services has not radically changed. Over ten years, underground market staples—stolen accounts, fake documents, credit card dumps, remote access tools, ransomware, and crypters—remain consistently available. Currently, the top offerings are stolen accounts (banking, social media, streaming services and music services), gaming-related content, and credit cards. Point of sale (POS) and ATM malware sales account for 6% of all the offerings.

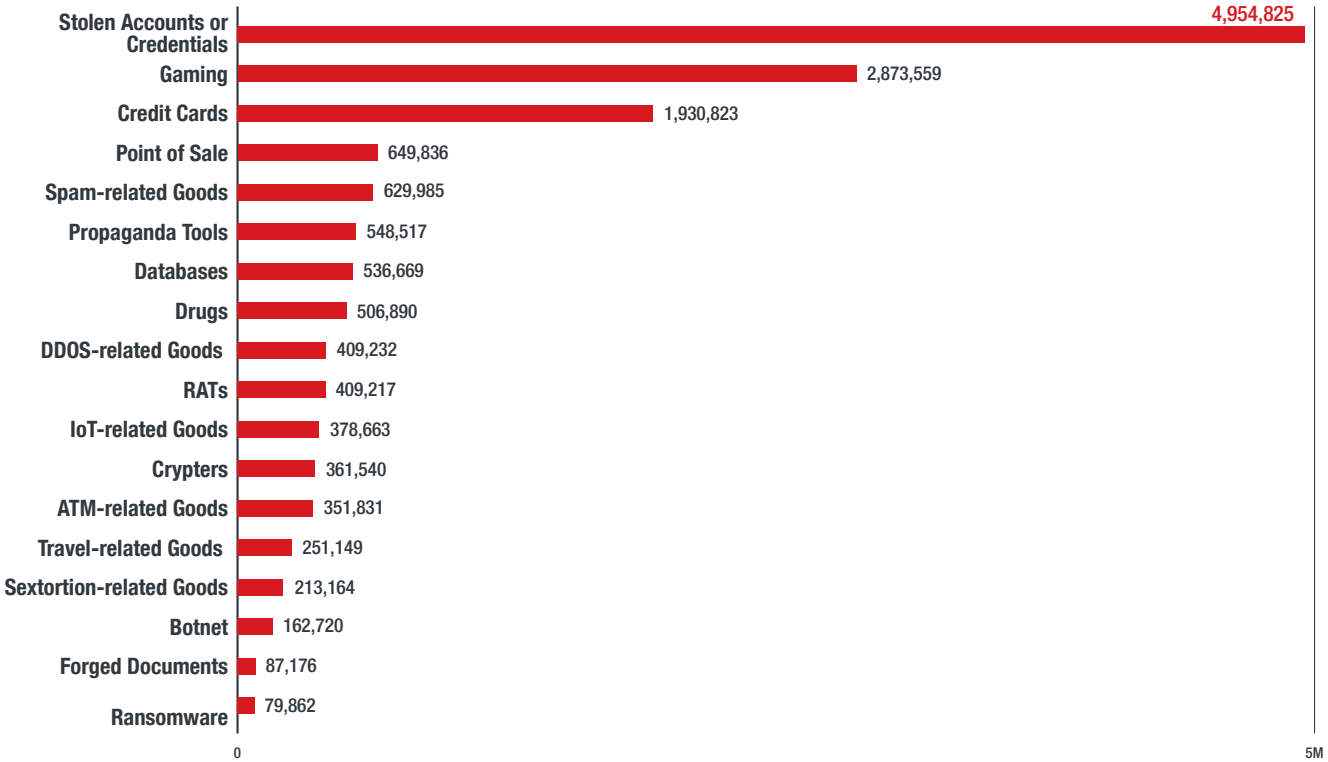


Figure 1. Popular underground goods and services

The above breakdown is based on the number of thread discussions in 600 forums across multiple languages. Every mention and thread reply related to the topic was included.

In this chart, “internet of things (IoT)” includes malicious goods or services affecting routers, doorbells, Nest devices, webcams, supervisory control and data acquisition (SCADA), industrial control systems (ICS), smart pumps, smart meters, Alexa devices, Google Home devices, smart lights, drones, and IoT-based botnets. “Travel-related goods” includes hotel tickets, airline tickets, food gift cards, Uber- and Lyft-related goods, and airline miles. “Gaming” includes stolen account sales, wallhacks, aimbots, gaming hacks, discussion about games, and skin sales.

The sections below will go into greater detail about the goods and services offered in English, Russian, Spanish, and Arabic underground sites, highlighting the basic costs and notable offerings within the forums.

Distributed-Denial-of-Service and Botnets (non-Mirai)

Many different botnet services are sold in the underground: cryptocurrency mining, click-fraud, IoT device attacks, spamming, and spreading banking trojans. In our Russian underground report from 2015,[6] botnet prices averaged around US$200. Five years later, the most expensive non-Mirai botnets we found cost US$1,500, and buyers can pay a daily, weekly, or monthly fee starting at US$5. Aside from the Mirai-based botnets, Android botnets usually demand higher prices in the underground.


3/10/19 Posted by topic # 1

Powerfull DDoS Service # 1 powerful DDoS service No. 1
Good day, our team provides services for DDoS attacks on:
Layer 7 (sites) / Layer 4 (servers) / ONION sites.
types of attacks:
udp / T.38 / ssyn / tcp / nsudp / ssdp / ntp / get / xmlrpc / TCP-RST / TCP-ST / TCP-FIN / TCP-BotNet / snmp / dns amplification
For attacks using **private** software - developed **personally by us!**
Take enforce any site, even those that others have not been able to, we will do
work 24/7.

Our Advantages:
- **Experience** in the subject **for more than 6 years,** we know how to work
- Working **private** software, **proprietary**
-Works **without intermediaries 24/7** , we are performing services
-Uspeshno **attack any sites** , projects, server (excluding state sites.)
- Not We are participating in blackmail schemes.
-We can take orders for **an unlimited number of sites** / servers, at any time you can change the site address
- **We lay down** sites with **anti-dos, proxies, cloud**
fair -Fast **free test 5-10 minutes,** show what we can
-The power of our attack range from 100.000 to 50.000.000 PPS and PPS
-Kruglosutochny Monitoring g of the attacked resources
-Full **anonymity**
is a constant **online, 24/7**
-Mozhem take power in the rent!
- **Warranty for the service** , or money back
-Work with the **guarantor** at your expense
-Flexible conditions for wholesale and regular customers

Payment: -BTC / ETH / DASH -QIWI / WebMoney / YandexMoney

Prices: from $ 50 a day! from $ 300 a week!

Figure 2. DDOS service from a Russian language forum starting at US$50 a day

Download & Execute [+]

Panel & Bulider & support

100 $

method payment: BTC

contact me:

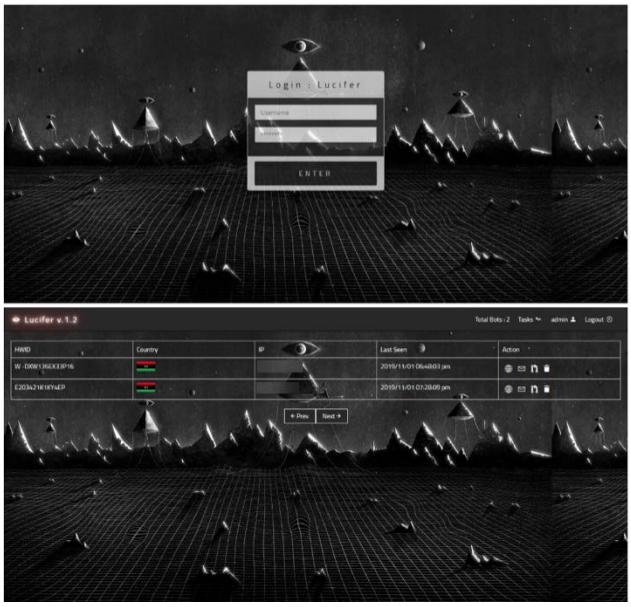


Figure 3. Lucifer botnet advertised in an Arabic and Russian language forum for US$100

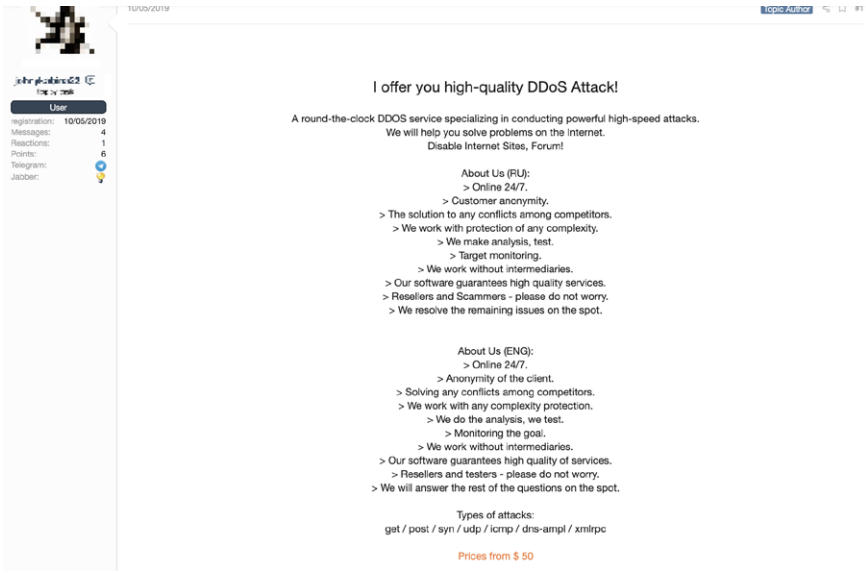


Figure 4. DDOS-as-a-service starting at US$50; the service includes 24/7 support, reseller services, and target monitoring

Botnet (non-Mirai) prices	
Generic Android botnet	Up to US$1,500
Generic DDOS botnet	US$50 a day
Panel/builder for a form grabber botnet	US$100
Botnet rentals	US$5 and up
Generic botnet builds	Free and up

Remote Access Tools

Remote access tools (RATs) allow cybercriminals to control a system remotely, and variations of these tools are commonly sold in underground forums and sites. Buyers can purchase RATs with additional features such as keylogging, downloading and executing commands, and capturing audio and video using microphones or webcams. The cost of RATs remains unchanged since 2015, with prices still starting at around US$5. Source code for older RATs like NJRat and RevengeRAT are often found for free — likely because they have been around for many years — and security solutions are equipped to deal with them. Spynote, which has been around since 2016, continues to be sold for US$2 and up. Generic RATs start at around US$50 for a build.

Figure 5. Pentagon RAT offered for US$49.99 in an English language forum

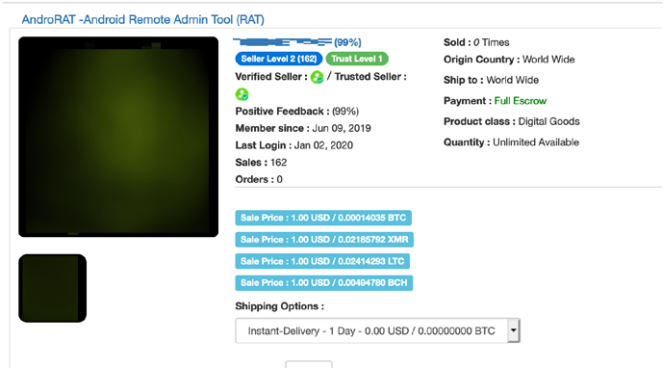


Figure 6. A dark web marketplace offering AndroRat install for US$1

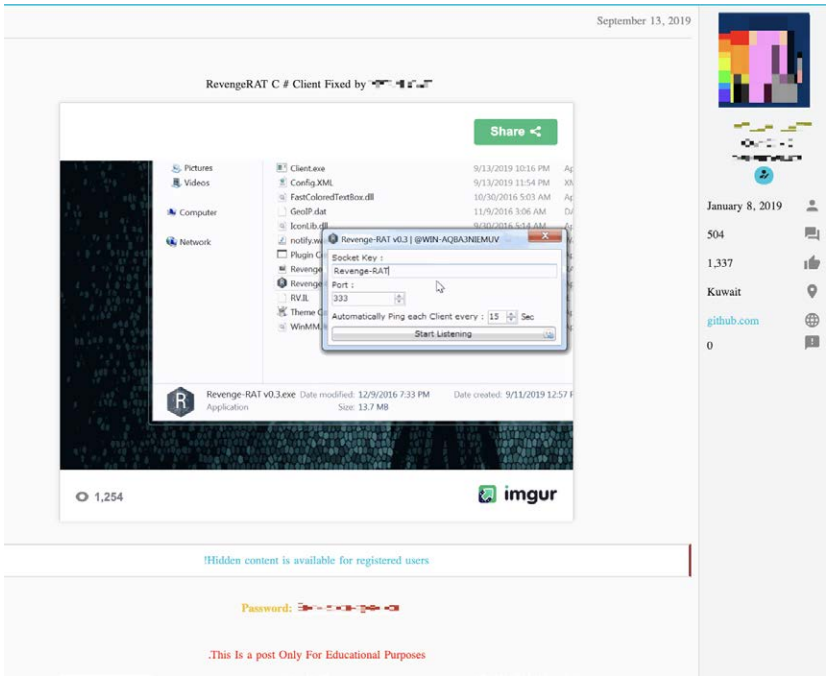


Figure 7. Free RevengeRat offered in an Arabic language forum

RAT prices	
RevengeRAT/NjRAT	Free
Generic Android RATs	US$1 and up
Source code for a generic RAT	US$49 and up
Monthly RAT subscriptions	US$5 and US$25

Ransomware

In 2016, ransomware was estimated to have generated at least US$1 billion in global revenues.[7] The affordability of ransomware during this period likely contributed to growth and earnings. In 2015, generic ransomware builds only cost around US$5. And now, in early 2020, the cost for generic builds still starts at around US$5. However, popular ransomware often mentioned in the news can cost more than US$1,000.

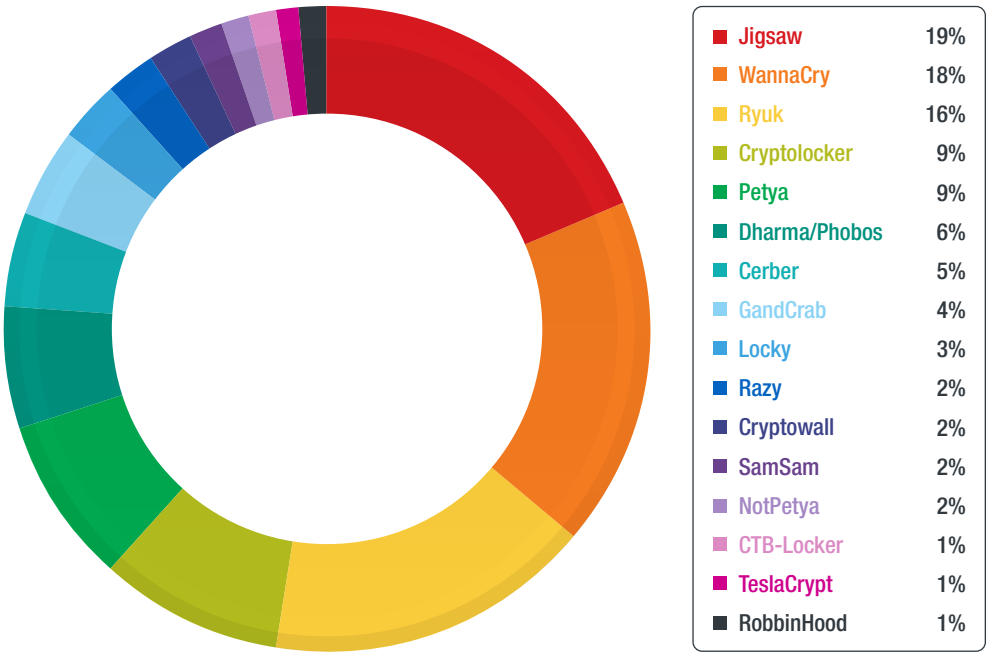


Figure 8. Top ransomware offerings

In 2019, ransomware prices varied depending on the family. Cryptolocker has been a pervasive threat since 2013 and continues to be one of the top five ransomware actively attacking victims. Builds for this variant can be found for US$100 in Russian language forums. The Jigsaw ransomware family, which has been around since 2016, currently sells for US$3,000 in English language forums. The Ranion ransomware-as-a-service has been around since 2017, with a yearly subscription that can cost up to US$900. Wannacry is still available in the underground, but it's usually distributed for free.

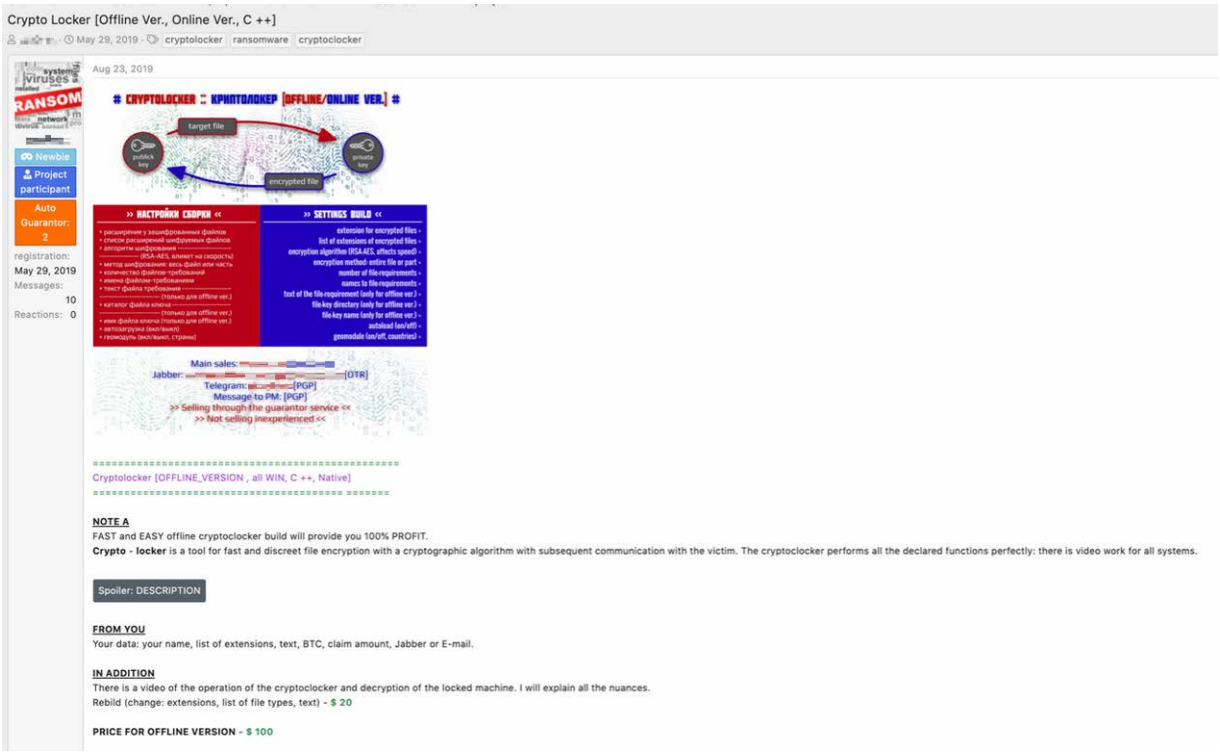


Figure 9. An offline version of Cryptolocker being sold for US$100

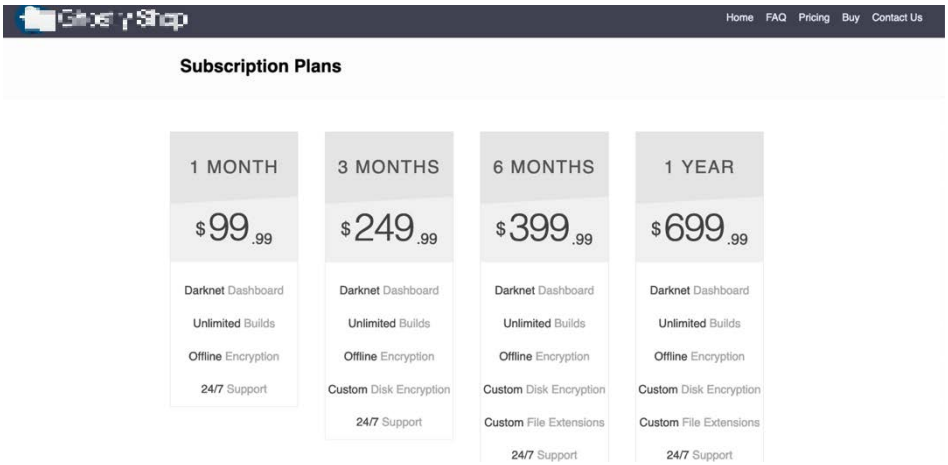


Figure 10. Ransomware subscription plan for Ghostly locker

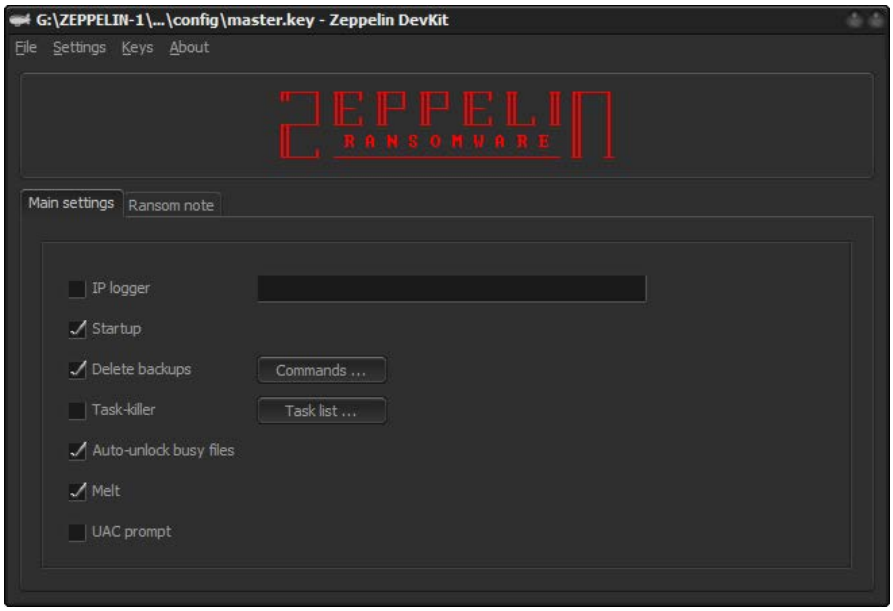


Figure 11. Zeppelin ransomware advertised in a Russian language forum

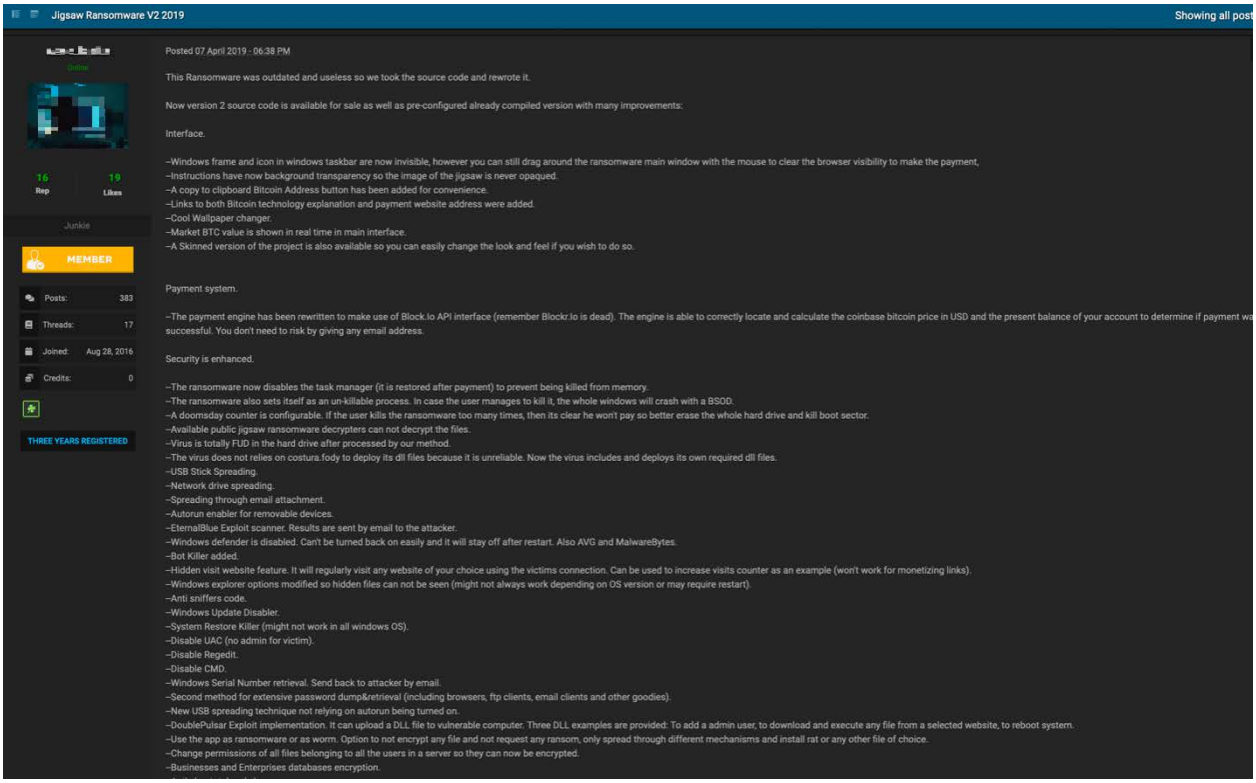


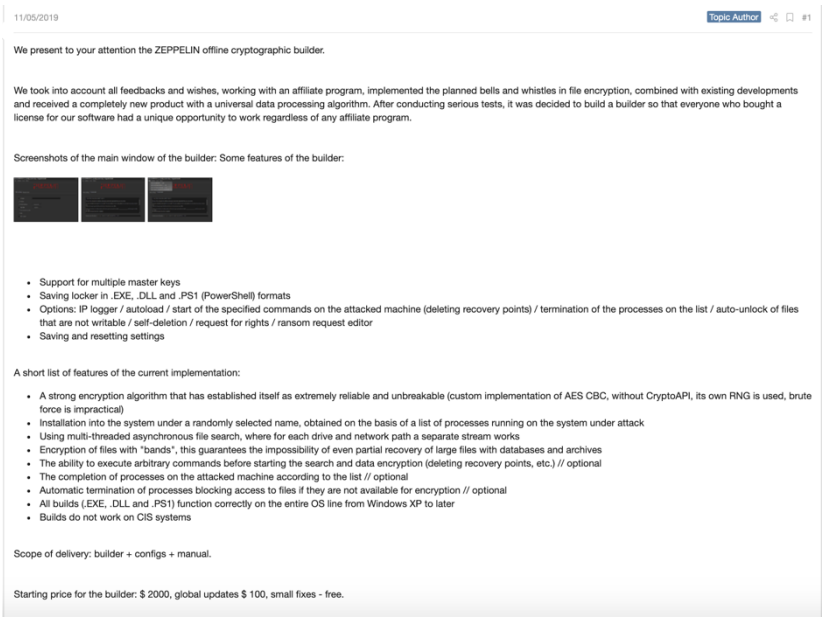
Figure 12. Jigsaw ransomware offered in an English language forum for US$3,000

Ransomware prices	
Generic ransomware build	US$5 and up
Ranion ransomware	US$900 a year
Cryptolocker binary	US$100-400
Cryptolocker source code	US$3,000
Jigsaw ransomware source code	US$3,000
Dharma binary	US$100
Ryuk ransomware as a service	US$395-1,200 a month
Zeppelin builder	US$2,000

Crypting Services

Our research paper on the North American Underground in 2015[8] found that monthly crypting services were being sold for up to US$1,000 a month. The prices for these services have since become significantly lower. The average cost for crypting is around US$100 a month, but some services can be found for as low as US$20.

In the Russian underground, basic prices remain at around US$20, the same as in 2015. More sophisticated crypters found in Russian language forums can sell for up to US$2,000.



11/05/2019 Topic Author #1

We present to your attention the ZEPPELIN offline cryptographic builder.

We took into account all feedbacks and wishes, working with an affiliate program, implemented the planned bells and whistles in file encryption, combined with existing developments and received a completely new product with a universal data processing algorithm. After conducting serious tests, it was decided to build a builder so that everyone who bought a license for our software had a unique opportunity to work regardless of any affiliate program.

Screenshots of the main window of the builder: Some features of the builder:

- Support for multiple master keys
- Saving locker in .EXE, .DLL and .PS1 (PowerShell) formats
- Options: IP logger / autoload / start of the specified commands on the attacked machine (deleting recovery points) / termination of the processes on the list / auto-unlock of files that are not writable / self-deletion / request for rights / ransom request editor
- Saving and resetting settings

A short list of features of the current implementation:

- A strong encryption algorithm that has established itself as extremely reliable and unbreakable (custom implementation of AES CBC, without CryptoAPI, its own RNG is used, brute force is impractical)
- Installation into the system under a randomly selected name, obtained on the basis of a list of processes running on the system under attack
- Using multi-threaded asynchronous file search, where for each drive and network path a separate stream works
- Encryption of files with "bands", this guarantees the impossibility of even partial recovery of large files with databases and archives
- The ability to execute arbitrary commands before starting the search and data encryption (deleting recovery points, etc.) // optional
- The completion of processes on the attacked machine according to the list // optional
- Automatic termination of processes blocking access to files if they are not available for encryption // optional
- All builds (.EXE, .DLL and .PS1) function correctly on the entire OS line from Windows XP to later
- Builds do not work on CIS systems

Scope of delivery: builder + configs + manual.

Starting price for the builder: $ 2000, global updates $ 100, small fixes - free.

Figure 13. Zeppelin crypto builder offered at US$2,000 in a Russian language forum

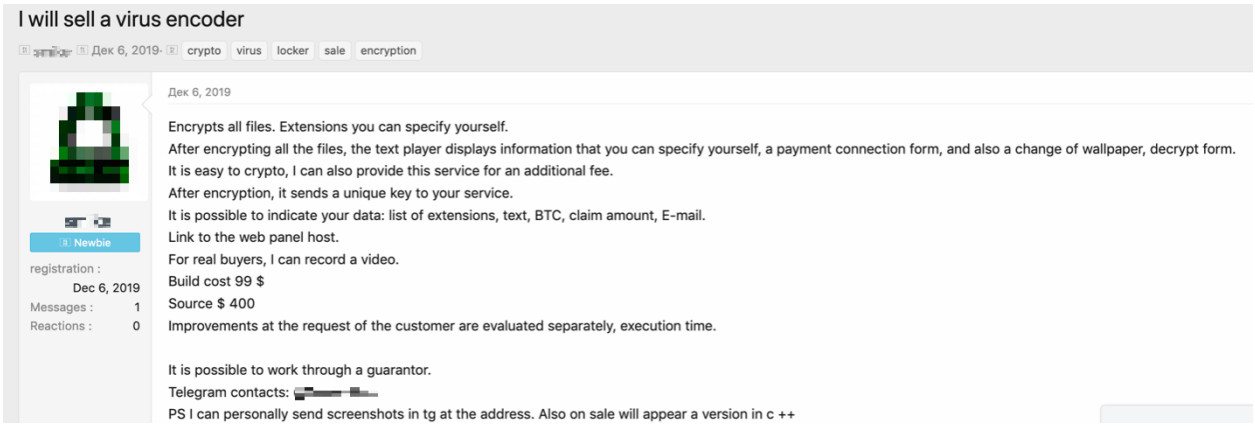


Figure 14. A crypter source code offered for US$400 in a Russian language forum

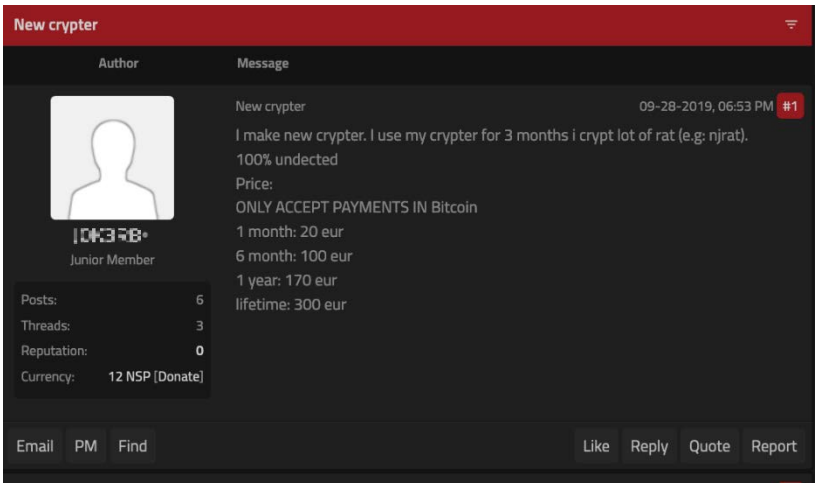


Figure 15. Crypter service from US$25 a month in an English language forum

Crypter prices	
Generic crypter builders	US$99 and up
Crypter as a service	US$20 and up

Banking Malware

We have been observing the banking malware landscape for years, independently and in collaboration with Europol's European Cybercrime Centre (EC3). Our most recent report, Crimeware for Sale: The Commoditization of ATM Malware in the Cybercriminal Underground[9] was released in June 2019. Observing the landscape throughout 2019, we noted that the Cutlet Maker, Hello World, and WinPot banking malware variants continue to be found on Russian-speaking underground markets, priced at around US$2,000.

The Kronos banking trojan, which first appeared in 2014 in Russian language forums, evolved into Osiris and offered for US$3,000 in 2019. Android banking trojans continue to be popular in the underground for US$300 and up. And even though multiple GozNym cybercriminals were arrested in mid-2019,[10] the malware itself is still highly valued. GozNym continues to be sold in the underground at US$750.

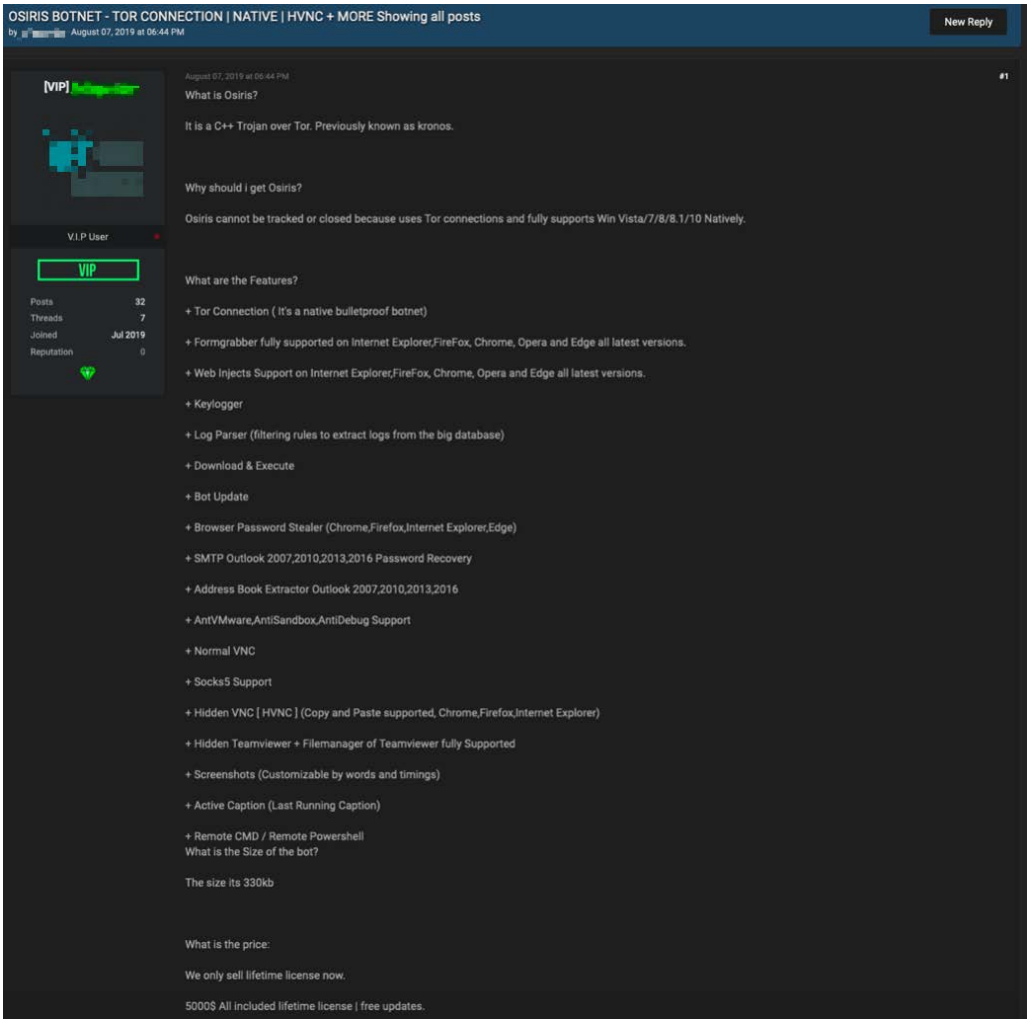
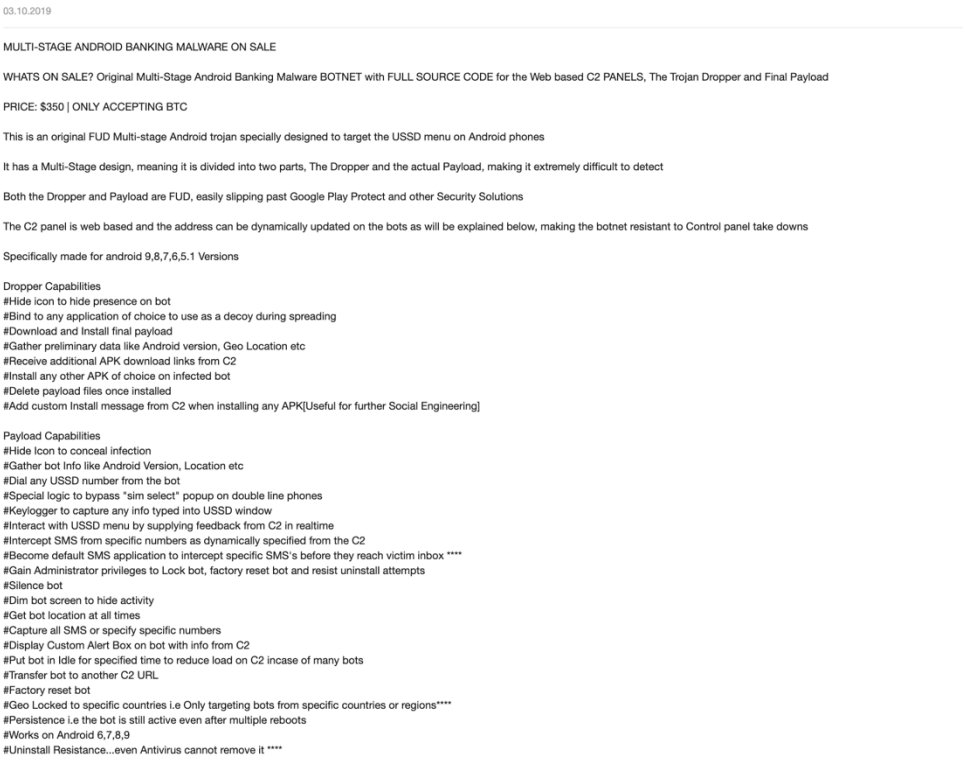


Figure 16. Osiris, a Kronos banking variant, was offered for US$5,000 in the summer of 2019 and then for US$3,000 in an English language forum later in the year



03.10.2019

MULTI-STAGE ANDROID BANKING MALWARE ON SALE

WHATS ON SALE? Original Multi-Stage Android Banking Malware BOTNET with FULL SOURCE CODE for the Web based C2 PANELS, The Trojan Dropper and Final Payload

PRICE: $350 | ONLY ACCEPTING BTC

This is an original FUD Multi-stage Android trojan specially designed to target the USSD menu on Android phones

It has a Multi-Stage design, meaning it is divided into two parts, The Dropper and the actual Payload, making it extremely difficult to detect

Both the Dropper and Payload are FUD, easily slipping past Google Play Protect and other Security Solutions

The C2 panel is web based and the address can be dynamically updated on the bots as will be explained below, making the botnet resistant to Control panel take downs

Specifically made for android 9,8,7,6,5.1 Versions

Dropper Capabilities
#Hide icon to hide presence on bot
#Bind to any application of choice to use as a decoy during spreading
#Download and Install final payload
#Gather preliminary data like Android version, Geo Location etc
#Receive additional APK download links from C2
#Install any other APK of choice on infected bot
#Delete payload files once installed
#Add custom Install message from C2 when installing any APK[Useful for further Social Engineering]

Payload Capabilities
#Hide Icon to conceal infection
#Gather bot Info like Android Version, Location etc
#Dial any USSD number from the bot
#Special logic to bypass "sim select" popup on double line phones
#Keylogger to capture any info typed into USSD window
#Interact with USSD menu by supplying feedback from C2 in realtime
#Intercept SMS from specific numbers as dynamically specified from the C2
#Become default SMS application to intercept specific SMS's before they reach victim inbox ****
#Gain Administrator privileges to Lock bot, factory reset bot and resist uninstall attempts
#Silence bot
#Dim bot screen to hide activity
#Get bot location at all times
#Capture all SMS or specify specific numbers
#Display Custom Alert Box on bot with info from C2
#Put bot in Idle for specified time to reduce load on C2 incase of many bots
#Transfer bot to another C2 URL
#Factory reset bot
#Geo Locked to specific countries i.e Only targeting bots from specific countries or regions****
#Persistence i.e the bot is still active even after multiple reboots
#Works on Android 6,7,8,9
#Uninstall Resistance...even Antivirus cannot remove it ****

Figure 17. Android banking malware bot offered for US$350 in a Russian language

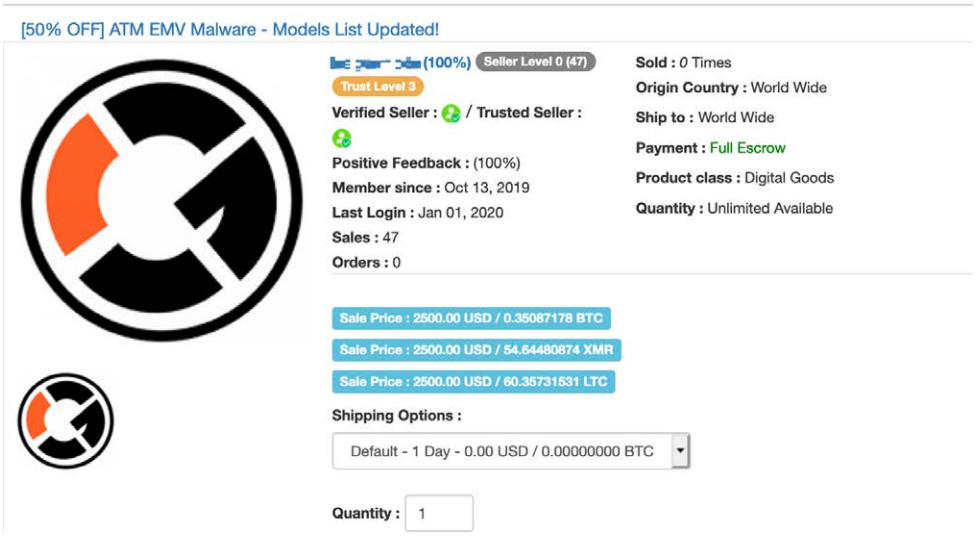


Figure 18. ATM malware offered at US$2,500 in a dark web marketplace

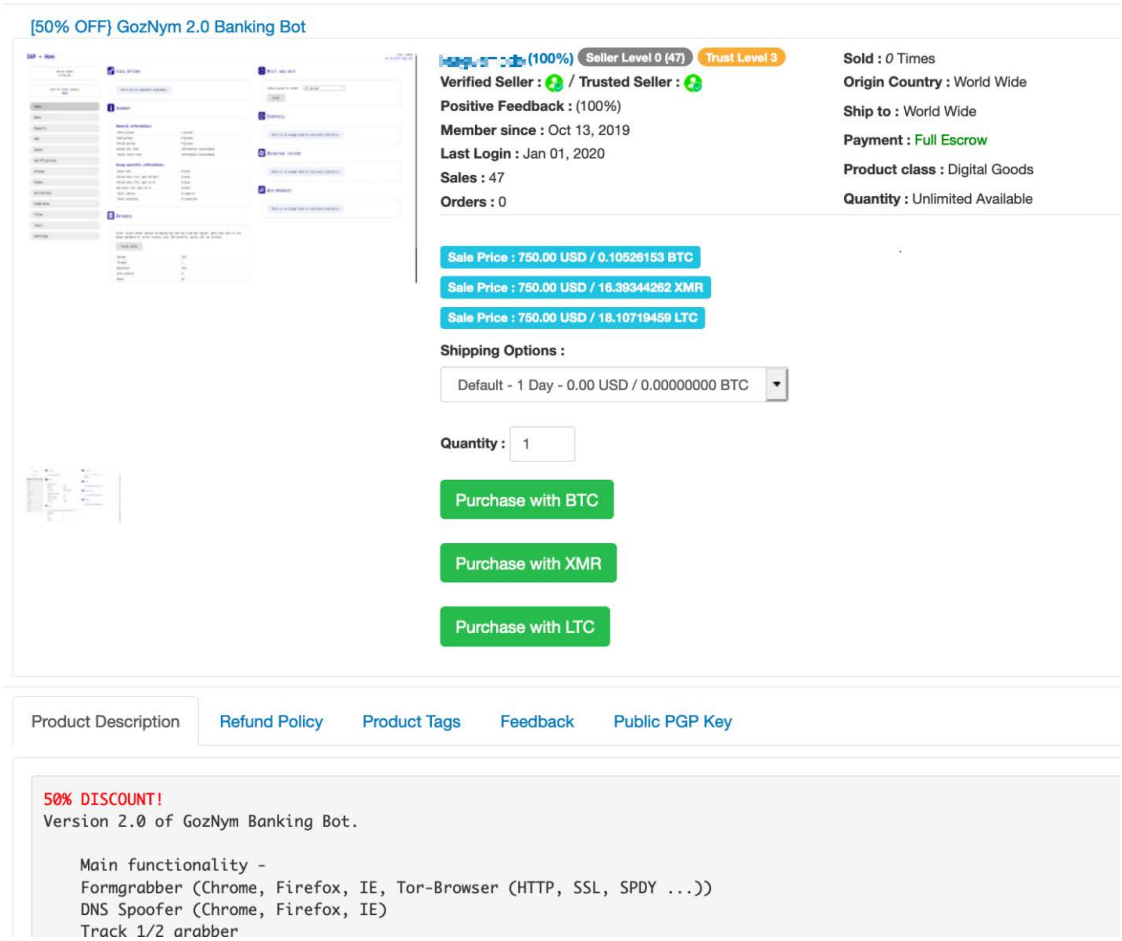


Figure 19. GozNym banking botnet sold in a dark web marketplace for US$750

Banking malware prices	
Kronos based malware	US$3,000 and up
Generic Android banking malware	US$100 and up
ATM malware	US$2,000 and up
GozNym	US$750

Spamming Services

The price for spam distribution tools has not changed significantly since 2015. Typical spam services can be found from US$20 and up. We have observed more spam offerings geared toward SMS messages than email. The price of bulk mailer programs averages around US$50.

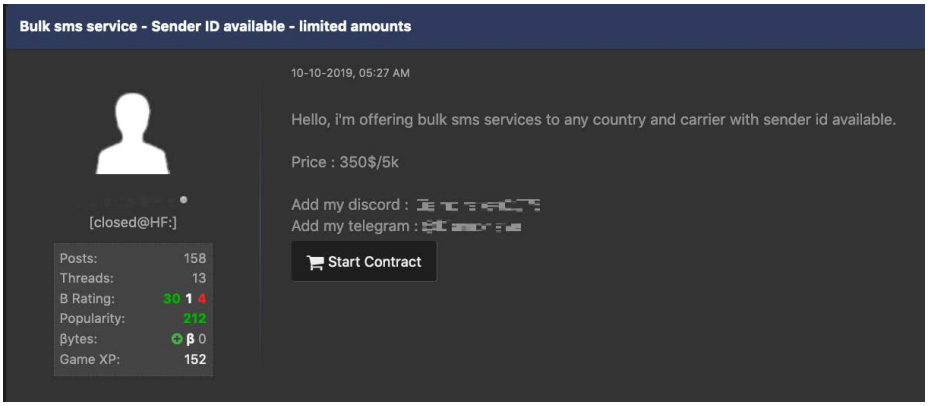


Figure 20. Bulk SMS service starting at US$350 for 5,000 messages, advertised on an English language forum

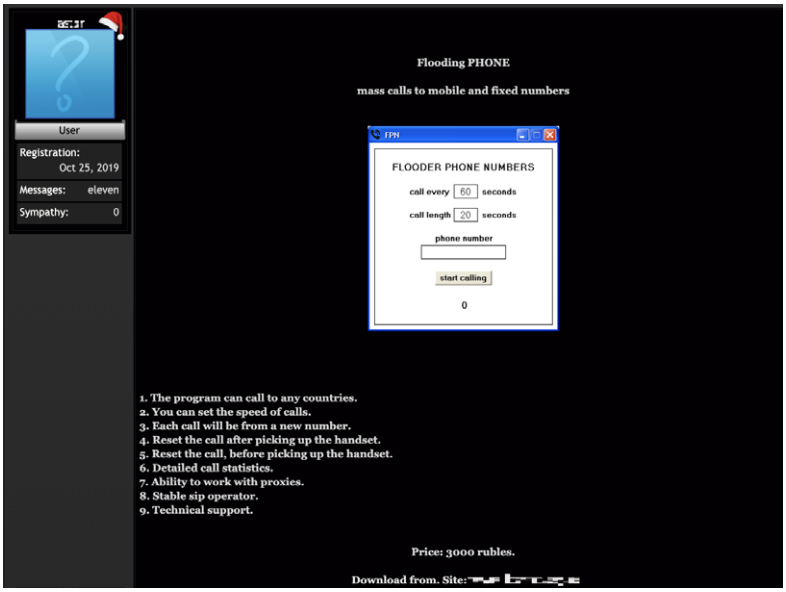


Figure 21. Phone Flooder program sold for US$50

SMS SENDER V3 [Bulk Call]

SMS SENDER V3 [Bulk SMS + Bulk Call]

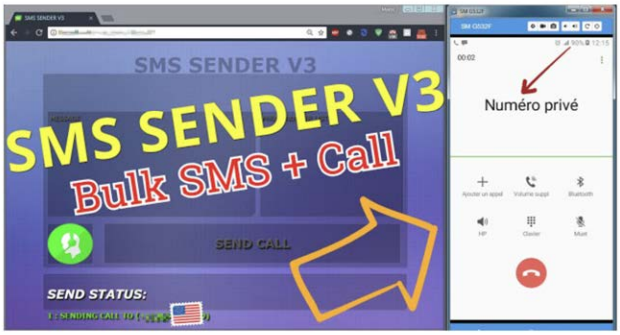


Figure 22. SMS Sender offered in an Arabic Forum for US$499

Spamming Prices	
Phone flooder	US$50 and up
SMS bulk sender	US$25 to US$500
SMS sender monthly	US$2 and up

Online Account Credentials

Online account credentials for different services such as banking, food delivery, entertainment, and more, continue to be sold for low prices. Users can find available credentials for popular media services such as Netflix, Amazon, Hulu, and Spotify. The market is actually oversaturated—stolen accounts make up 32% of all underground offerings. Most accounts start from US$1, with only a few high tier accounts demanding premium prices. Disney only launched their new streaming platform, Disney+, in November 2019, but available account credentials have already flooded the market.

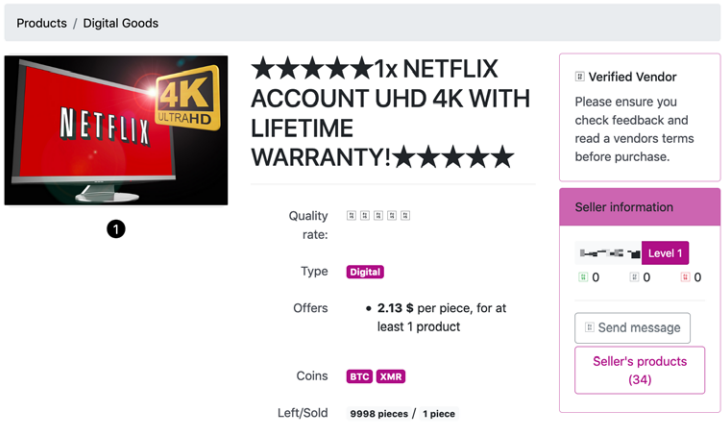


Figure 23. Netflix account sold in a dark web marketplace

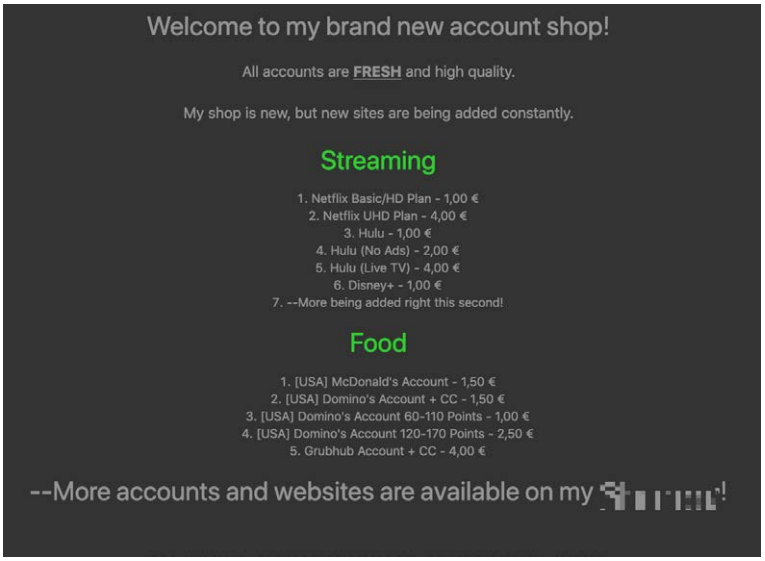


Figure 24. Streaming and food service account credentials for sale

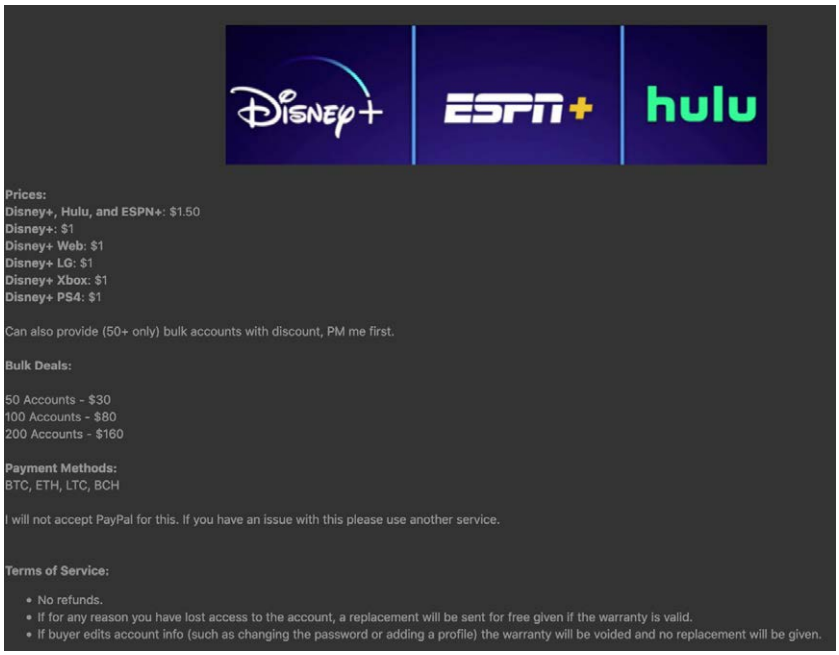


Figure 25. Disney+ account packages starting at US$1

Name	Included	Last Upload	Refund	Price
Bankofamerica.com	Login:Password only +1	2019-12-30 15:08:37	15 min.	5$
Bankofamerica.com	Login:Password only +1	2019-12-30 15:03:32	15 min.	5$
Bankofamerica.com	Login:Password only +1	2019-12-28 23:59:03	15 min.	5$
Bankofamerica.com	Login:Password only +1	2019-12-20 20:17:22	15 min.	5$

Figure 26. Banking credentials sold in a carding shop

Online accounts credentials prices	
Netflix	US$2 and up
Online banking accounts	US$5 and up
Spotify	US$3 and up
Disney +	US$1 and up
McDonalds	US$1 and up
Domino's	US$1 and up
Grubhub	US$3 and up

Credit Card Credentials

The price of stolen credit card numbers, clones, or copies of credit card statements have dropped significantly. This is likely because the underground market has been flooded with these services. Prices for stolen credit card numbers in 2015 started from US$20 for U.S.-issued cards, but in 2020, most credit cards cost only US$1. The majority of credit card services are sold in bulk. Premium credit cards that allow large purchases (above US$5,000) and have been verified to work can cost as much as US$500 per card.

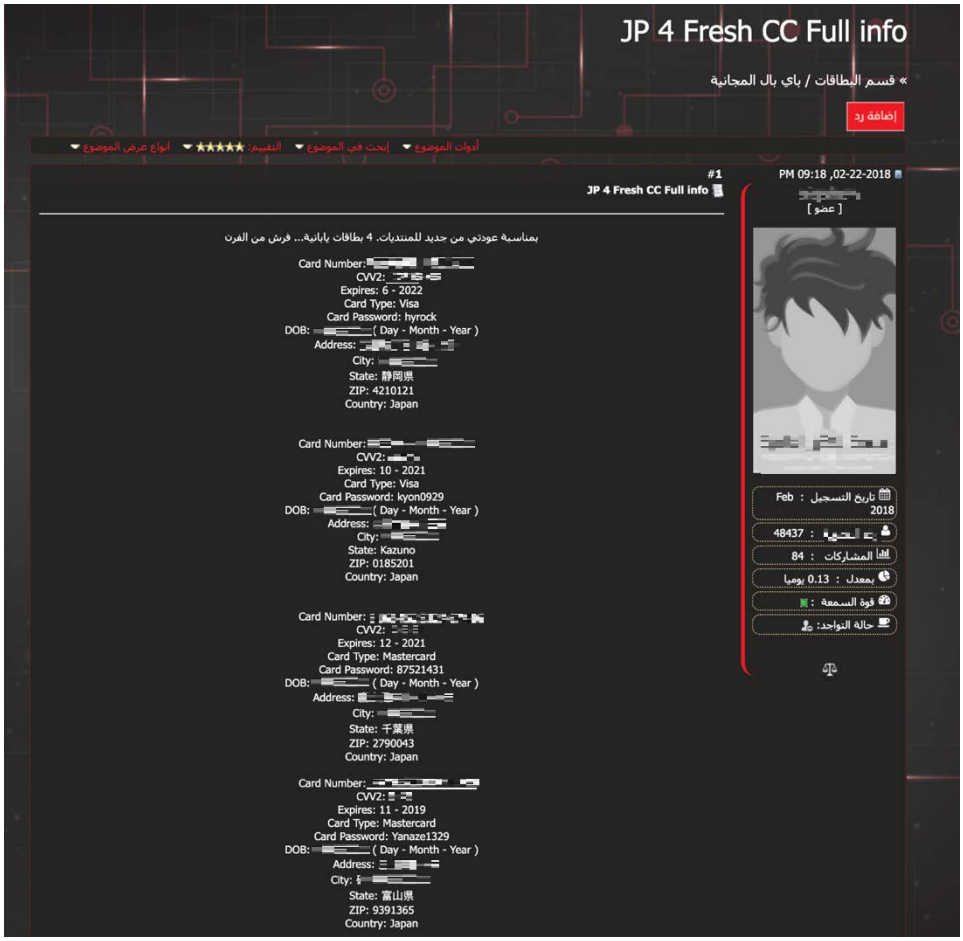


Figure 27. Japanese credit cards offered in an Arabic language forum

Name	Included	Country	Credit card	Last Upload	Refund	Price
Walmart.com	Online +1	Country: US	Credit card: VISA ||	2019-12-03 16:06:51	15 min.	3$
Walmart.com	Online +1	Country: US	Credit card:	2019-12-03 16:06:51	15 min.	1.5$
Walmart.com	Online +1	Country: US	Credit card: MASTERCARD ||	2019-12-03 16:06:51	15 min.	3$
Walmart.com	Online +1	Country: US	Credit card:	2019-12-03 16:06:50	15 min.	1.5$
Walmart.com	Online +1	Country: US	Credit card:	2019-12-03 16:06:50	15 min.	1.5$
Walmart.com	Online +1	Country: US	Credit card:	2019-12-03 16:06:50	15 min.	1.5$
Walmart.com	Online +1	Country: US	Credit card: VISA ||	2019-12-03 16:06:50	15 min.	3$
Walmart.com	Online +1	Country: US	Credit card: VISA ||	2019-12-03 16:06:50	15 min.	3$
Walmart.com	Online +1	Country: US	Credit card:	2019-12-03 16:06:50	15 min.	1.5$
Walmart.com	Online +1	Country: US	Credit card:	2019-12-03 16:06:49	15 min.	1.5$
Walmart.com	Online +1	Country: US	Credit card:	2019-12-03 16:06:49	15 min.	1.5$
Walmart.com	Online +1	Country: US	Credit card:	2019-12-03 16:06:49	15 min.	1.5$
Walmart.com	Online +1	Country: US	Credit card:	2019-12-03 16:06:49	15 min.	1.5$

Figure 28. Walmart credentials with credit card numbers for sale starting at US$1.50 per account

==========SELLING FRESH VALID WITH GOOD HIGHLY BALANCE CREDIT CARD ALL COUNTRY======

- I'm looking for a good customer to buy CREDIT CARD everyday and long-term
- I will discount or bonus if you order bulk
- My CVV is good and fresh live 100%
- All my CREDIT CARD are inspected before sale... i will replace if CREDIT CARD DIE !

CREDIT CARD Us :
Us (visa/master) = $10
Us (amex/disco) = $12
Us (fullz info) = $30

CREDIT CARD Uk :
Uk (visa/master) = $252
Uk (bin/dob) = $30
Uk (fullz info) = $35

CREDIT CARD Ca :
Ca (visa/master) = $15
Ca (bin/dob) = $22
Ca (fullz info) = $35

CREDIT CARD Au :
Au (visa/master) = $15
Au (bin/dob) = $25
Au (fullz info) = $35

CREDIT CARD Eu...
France = $20 (fullz info = $40)
Germany = $20 (fullz info = $40)
Italy = $20 (fullz info = $40)
Sweden = $20 (fullz info = $40)
Spain = $20 (fullz info = $40)
Denmark = $25 (fullz info = $40)
Ireland = $20 (fullz info = $40)
Mexico = $15 (fullz info = $35)
Asia = $15 (fullz info = $35)

* And many countries other in stock 95% valid rate and high balance...
* Let me know if have i will sell for you

Figure 29. Worldwide credit cards from US$10 each

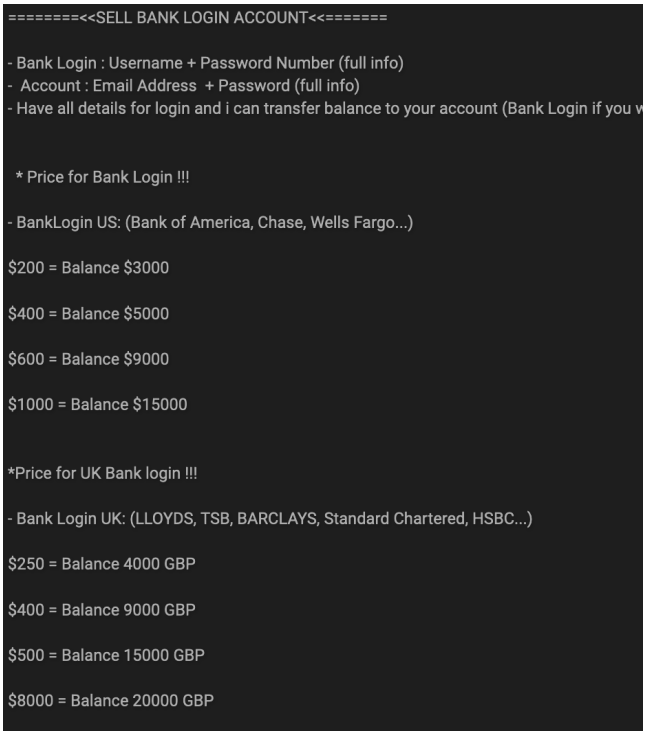


Figure 30. High balance credit cards offered from US$200 and up

Credit card credential prices	
Store credentials with credit cards	US$1.50 and up
High balance credit cards	US$100
Bulk credit cards	US$1 each
Verified credit cards	US$10 and up

Identity and Document Services

Undocumented immigrants and criminals flock to underground forums in search of identity and document services. These include documents for supporting citizenship claims or other applications, obtaining lines of credit to put up a business, opening untraceable bank accounts, proving residence status, committing insurance fraud, purchasing illicit items, and others.

There have been no significant changes in pricing since 2015; scanned document services such as copies of driver licenses, passports, and bill statements continue to sell for US$5 and up. Registered passport services cost around US$2,500. Legitimate-looking counterfeit passports were popular in 2015, but the increase in the number of global immigrants[11] and the adoption of e-passports[12] have since affected the type of goods in demand. Underground services shifted to create “legal or registered” passports that can pass a series of authentication tests.

The U.S. opioid crisis has also had an effect on underground goods and services. Opioid prescription has gone down,[13] thus making the drugs more difficult to obtain. This resulted in an increased demand for forged prescriptions pads. Medical professionals have also started to move to e-prescriptions, which may impact the market further.[14] Forged prescription labels continue to be found in dark web marketplaces for around US$60.

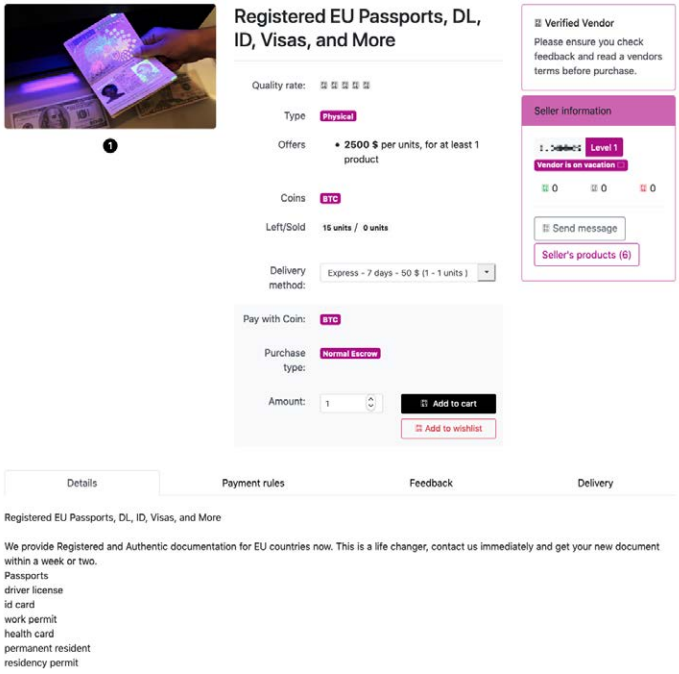


Figure 31. Service that offer registered pasports sold in a dark web marketplace

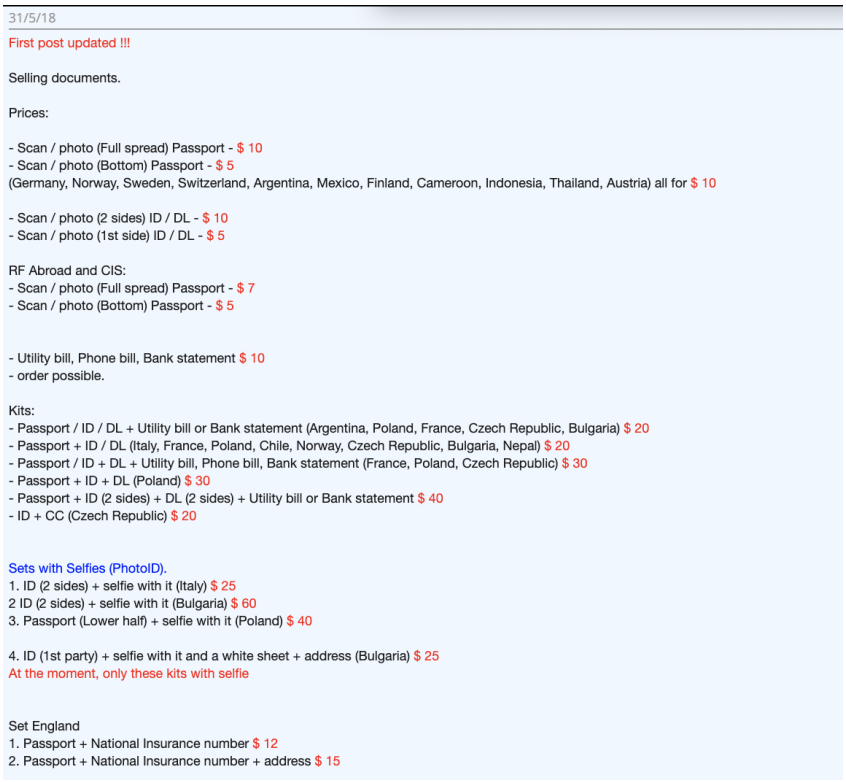


Figure 32. Russian-based forum selling identity kits

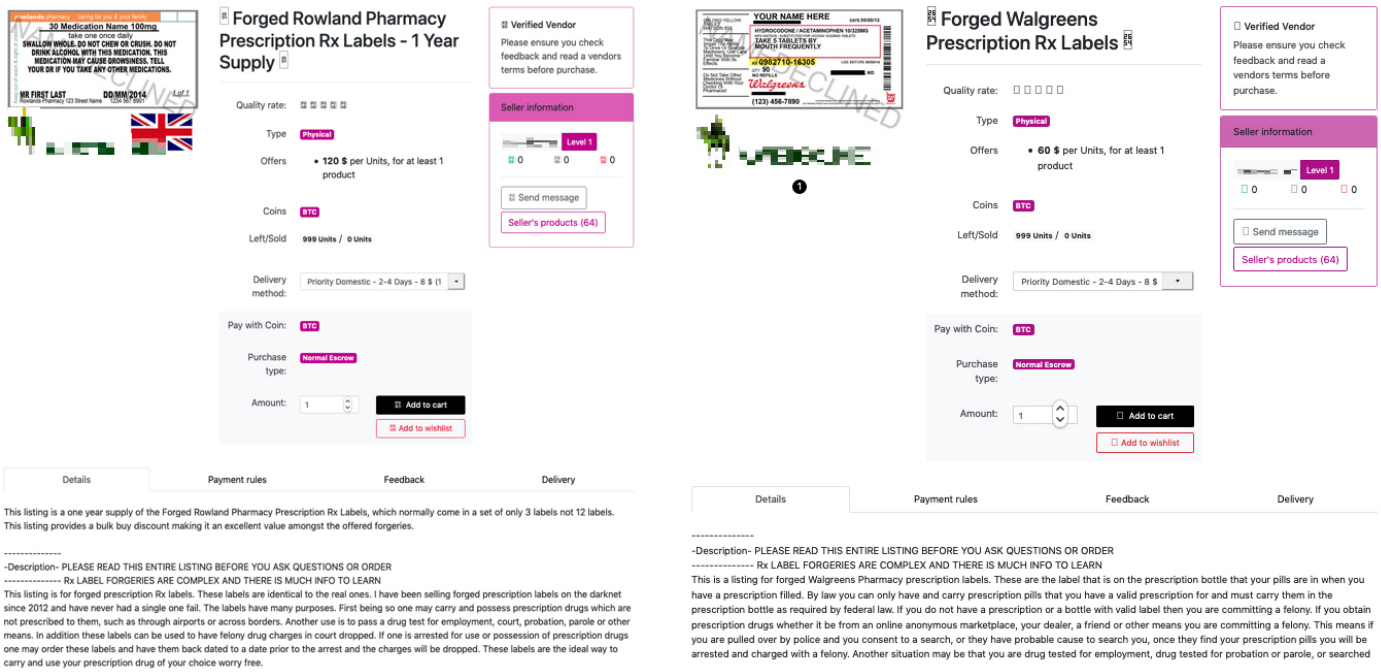


Figure 33. Forged U.S. and U.K. Pharmacy prescription Rx labels offered in a dark web marketplace

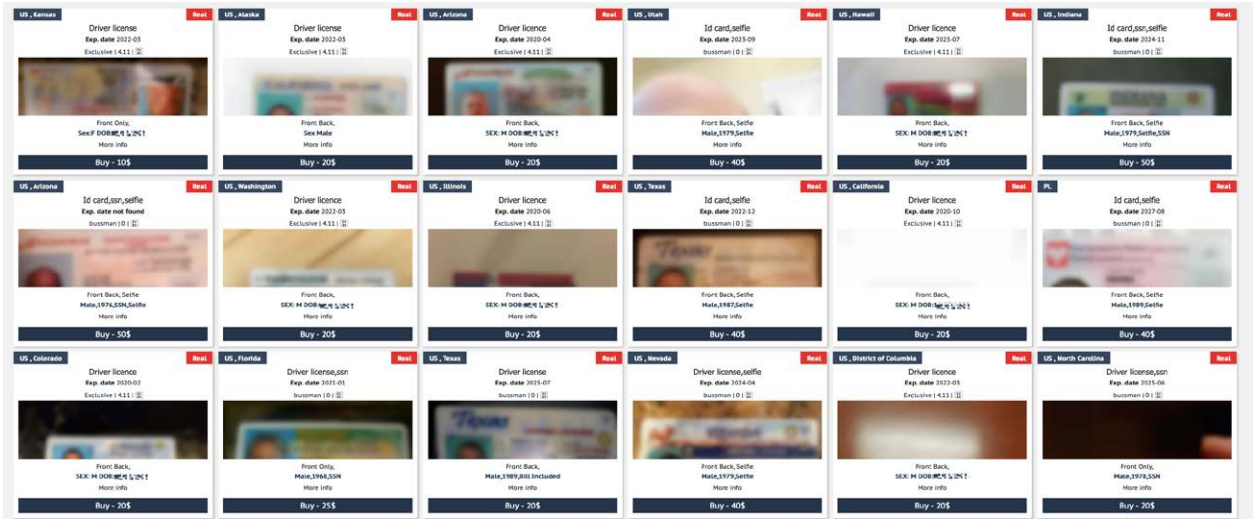


Figure 34. A dark web marketplace selling U.S. driver's license pictures from US$10 and up

Fake Documents prices	
Fake credit card statement	US$25
Registered passport service	US$2,500
Scanned copies of real passports	US$1 and up per copy
Forged pharmacy Rx labels	US$60 and up
Identity kits	US$20 and up
Driver's license scans	US$10 and up

The Present State of Underground Forums and Marketplaces

Migration of Cybercrime E-commerce to Surface Web Platforms

Over the past 18 months, we noticed that cybercriminals are increasingly using surface e-commerce shopping platforms. Sellers on underground forums post links to their online digital goods stores. One platform in particular has online stores selling malicious digital tools from Arabic, Russian, and English language-based forums. Spanish and Brazilian language-based forums have not adopted this trend.

The specific online platform involved is an all-in-one payment processing and e-commerce solution registered to a company located in the Middle East. Anyone can sign up for an account to sell digital goods on the site. Also, the interface is easy to navigate and use fees are low. In December 2019, the site was ranked in the top 15,000 sites worldwide and 5,000 in the U.S., according to Alexa analytics. Alexa also showed that over half of traffic to the site came from cracked[.]to, a cybercriminal underground forum. The traffic data also showed a significant audience overlap with Nulled[.]to (another forum). This is unsurprising since the About information for Nulled[.]to refers users to the site, claiming that it is connected to one of the forum's administrators.

The e-commerce site's terms and agreements state that it should only be used for lawful purposes. This implies that stores hosted on the site should be banned from selling illegal material. However, when we checked underground forum posts that linked to stores on the site offering illegal goods and services, they were up and running. The fact that the owner participates in underground forums may signal to others in the underground that this particular e-commerce platform can be trusted more than its competitors, and it is likely the reason why bans are uncommon.

Forum users have mentioned being banned from e-commerce platforms for Digital Millennium Copyright Act issues brought on by major companies like Riot and Disney. Other notable e-commerce platforms are also used for cybercriminal transactions. While these platforms are legitimately registered businesses, cybercriminals also heavily use them.

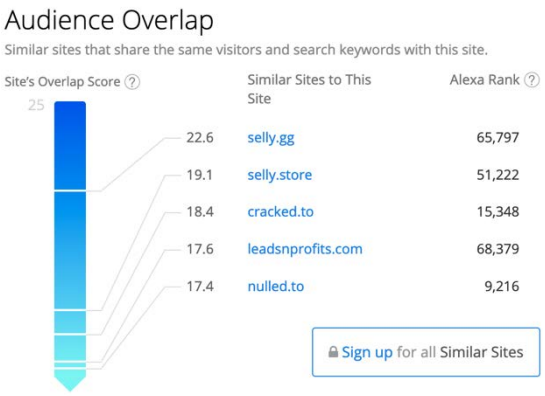


Figure 35. Overlap of visitors to the e-commerce site with two cybercriminal forums, Cracked[.]to and Nulled[.]to

The platform allows users to accept payments through PayPal or in digital currencies like Bitcoin, Ethereum, Stripe, and Litecoin. It offers two options for digital sellers: pay as you go without a monthly fee, or pay for an enterprise account. Items sold on the site are similar to goods and services offered in popular cybercriminal underground forums. However, the e-commerce platform is significantly more convenient for criminals because the seller can showcase various goods or services in one place instead of having to create multiple threads for each individual offering in an underground forum.

Our research found that stores on the site offered stolen accounts, databases, streaming services, carding, VPNs, crypters, banking malware, ransomware, and Mirai variants. The most expensive item we observed was a banking malware sold for US$2,000. We also found rare limited edition Fortnite skin accounts being sold for US$999.99.[15] Similar to underground forums, Mirai botnet setups on this platform start at US$10. Online streaming accounts such as Hulu, HBO, Netflix can also be bought from US$3 and up. Prices for Android-based RATs start at around US$50.

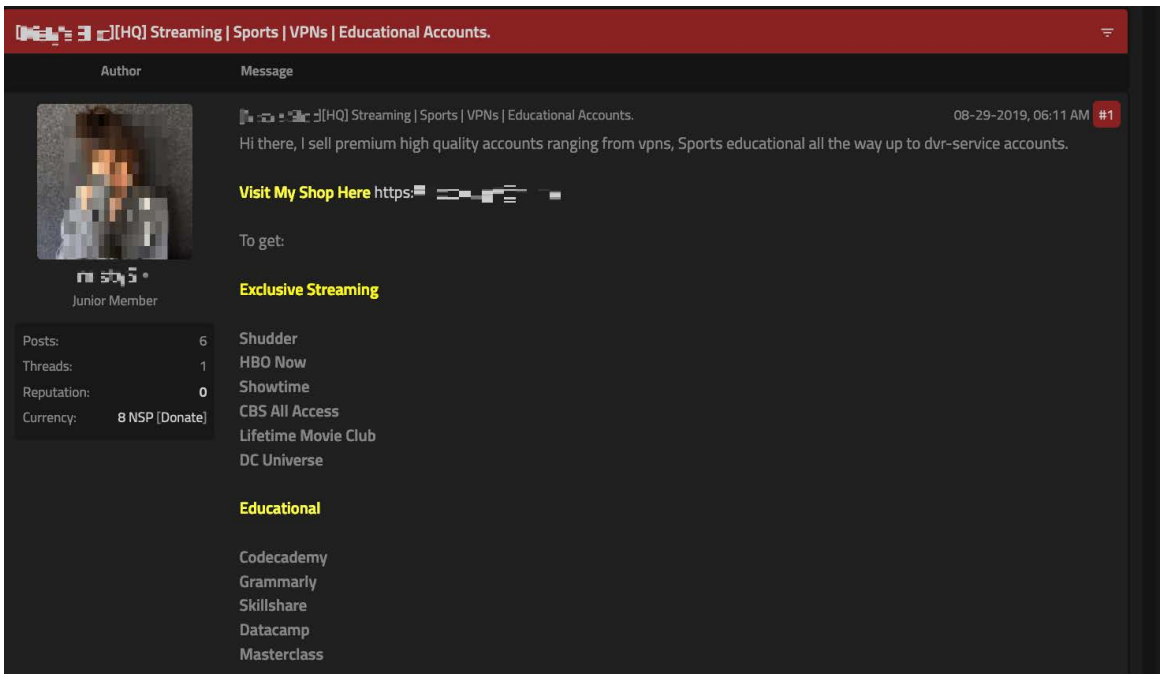


Figure 36. Forum post advertising a store for video streaming services

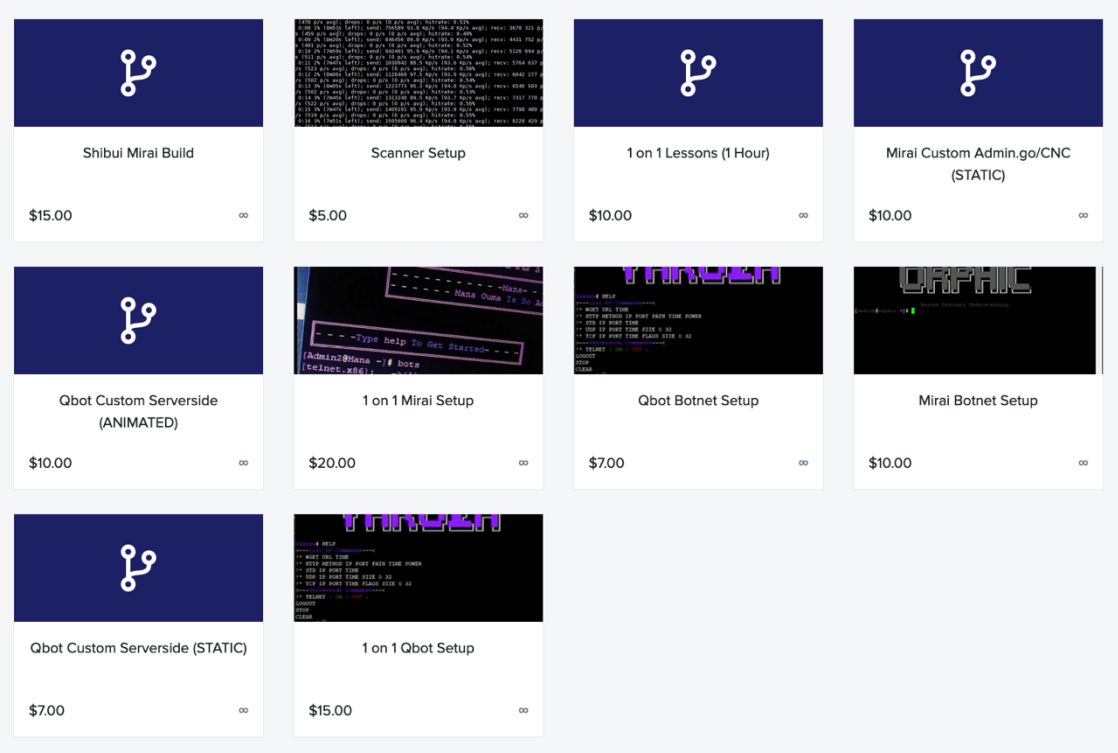


Figure 37. A store on the platform offering services for Qbot and Mirai variants

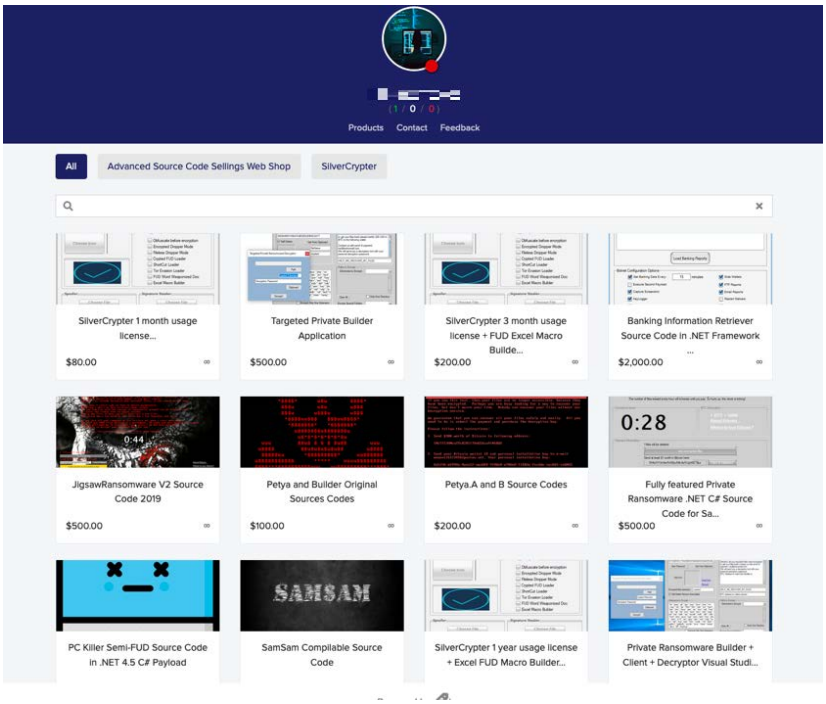


Figure 38. A store offering crypters and ransomware

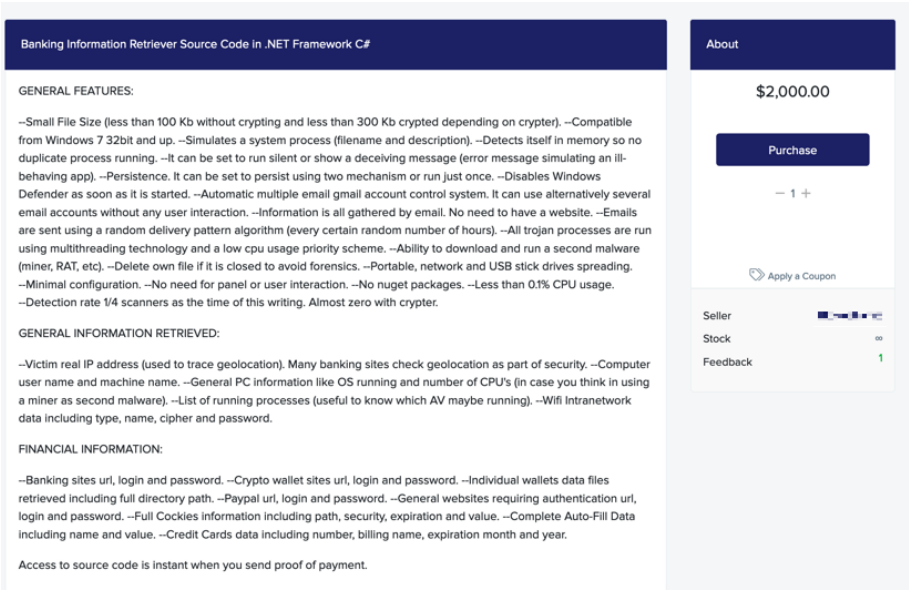


Figure 39. A store offering a banking trojan for US$2,000

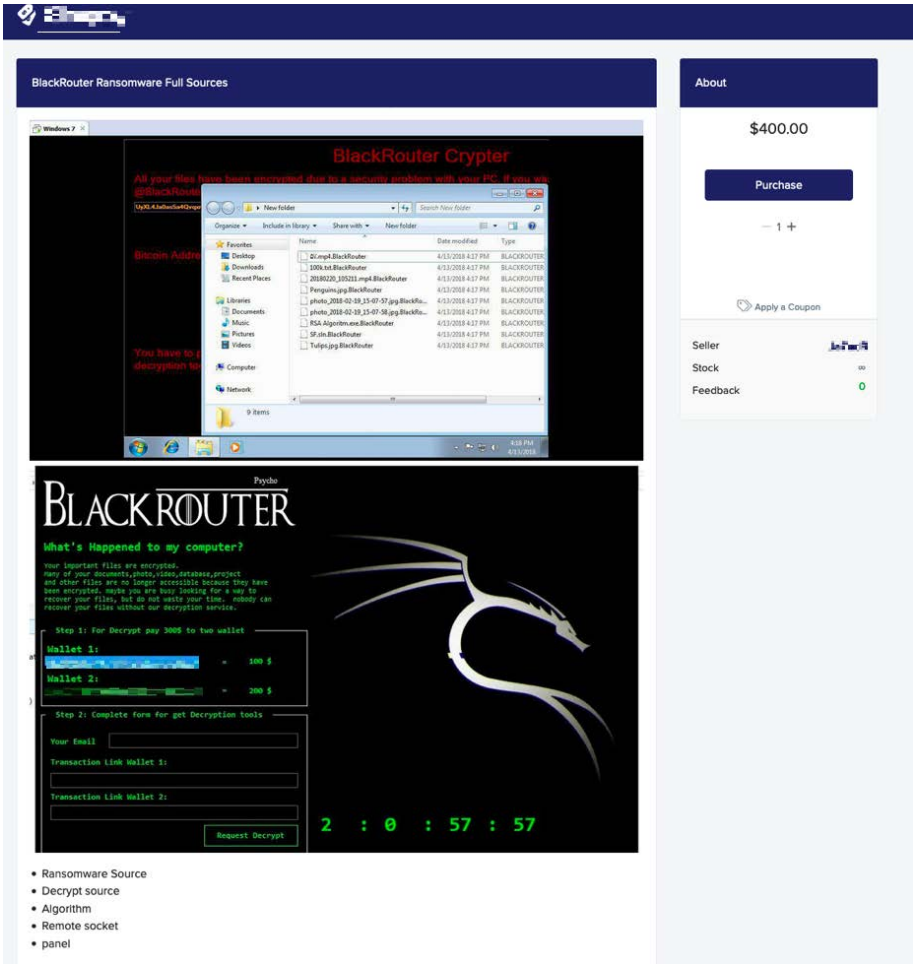


Figure 40. A store offering the ransomware BlackRouter

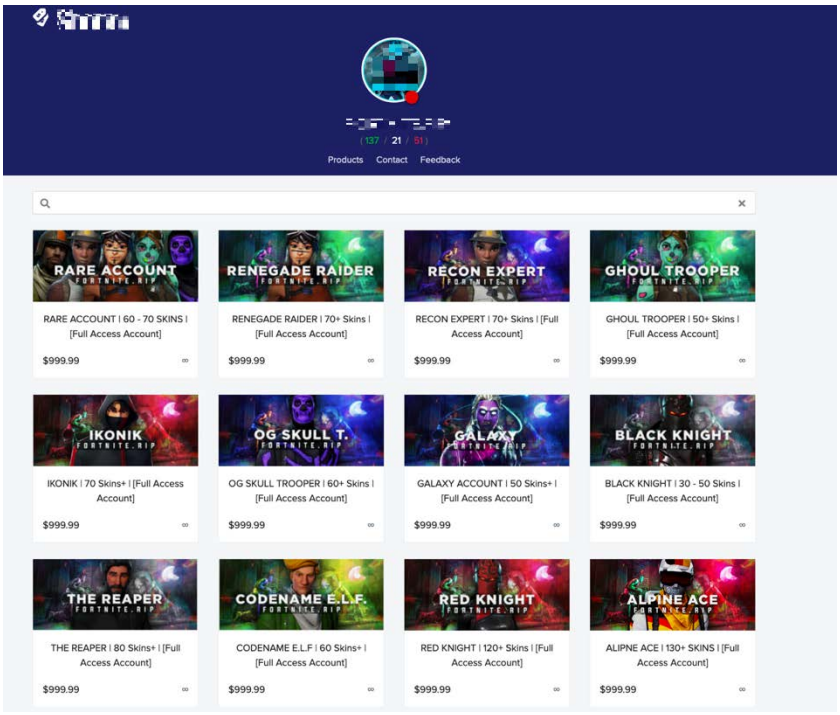


Figure 41. A store of rare Fortnite gaming accounts sold for US$999.99 each

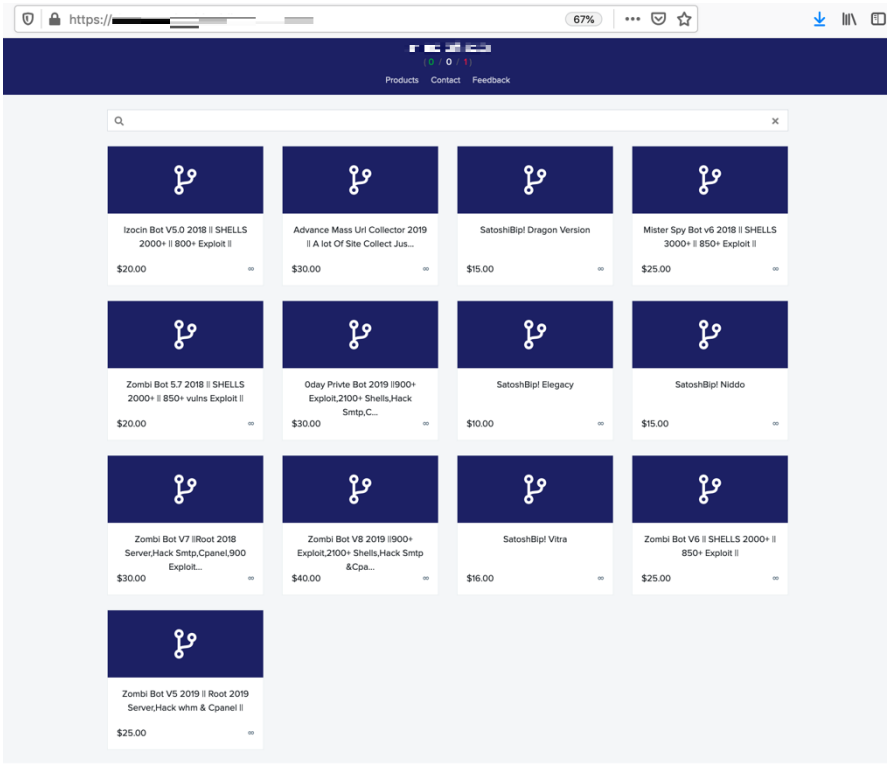


Figure 42. A botnet store

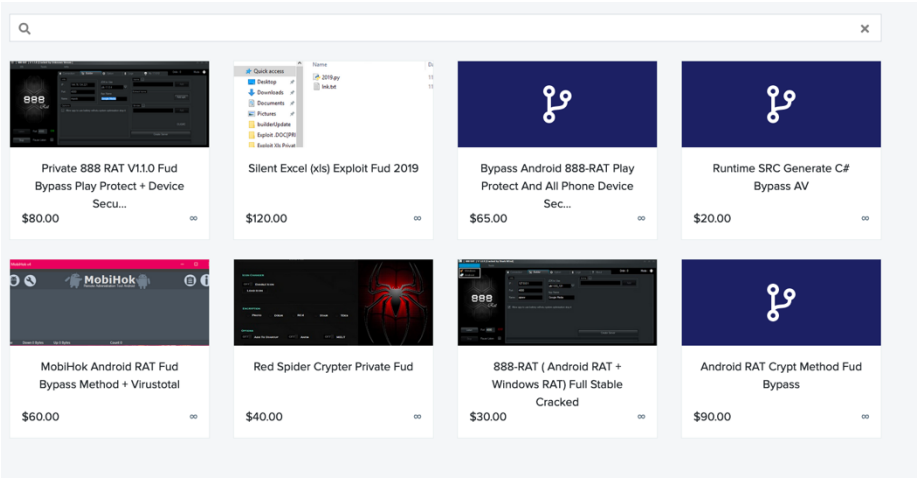


Figure 43. A store that specializes in RATs

Average Store Prices	
Service	**Price**
Mirai botnet build	US$10
Ransomware	US$400 and up
Custom bank trojan	US$2000 and up
Crypters	US$50
RATs	US$30
Android-based RAT	US$50
Rare Fortnite gaming accounts	US$999
Botnet rentals	US$10 and up
Hulu Premium	US$3
Netflix	US$5
NordVPN/TunnelBear	US$3
Grammarly	US$3
Spotify Family	US$3
U.S. VISA/AMEX/Mastercard	US$10
Japan VISA/AMEX/Mastercard	US$15

Fake News and Cyber Propaganda Tools Gain Popularity

In our 2017 paper, Fake News and Cyber Propaganda: The Use and Abuse of Social Media,[16] we discussed services that threat actors used to spread fake news and steer public opinion. These manipulations served various motives, ranging from personal and financial to political. In 2019, these services became more prominent in cybercriminal underground forums. They offer a cost-effective alternative to traditional advertising and promotional efforts, often by manipulating social networks.

Social media-related services, such as large scale social media promotions, the creation of fake comments, and crafting YouTube likes, are sold at very reasonable prices. For these manipulations, cybercriminals generally use autonomous bots, real people, or crowdsourcing programs. Prices start as low as US$1 for 10,000 likes. The Russian underground maintains the lowest-priced fake news services among the other forums, and prices have remained steady since 2017.

In the era of fake news and cyber propaganda, outdated voter databases are often shared for free while more current databases are available for buyers. We noted an individual U.S. state database going for US$9.99, while a 2019 Turkish voter database costs US$400. One underground forum had over 300 database links containing 5 billion entries with information such as PII, credit card information, social security numbers, emails, and passwords. All this information came from data breaches that occurred between 2015 and 2019. Compromised voter databases combined with other data available in underground forums can help malicious actors create very effective cyber propaganda campaigns. For example, key data points can be used to create a target profile for a specific country's electorate.

Voter information is collected through various means, from outright hacking and stolen or lost devices, to unprotected or misconfigured servers, among others. The collected information is usually put up for sale in underground forums.

Several breaches have affected voters across the globe over the past few years. In 2017, an exposed and unsecured Amazon S3 storage server owned by the data analytics firm Deep Root Analytics was discovered by the security firm UpGuard. It contained 1.1 terabytes of data (birthdates, home addresses, telephone numbers, and political views) of nearly 62% of the entire U.S. population.[17] In March 2016, the Anonymous Philippines hacker collective and LulzSecPilipinas compromised the Philippines Commission on Elections (Comelec) database containing the information of 54.36 million registered voters for the 2016 elections. The compromised Philippine Comelec information and exposed Turkish 2016 voter databases are commonly found in cybercriminal underground forums.[18]

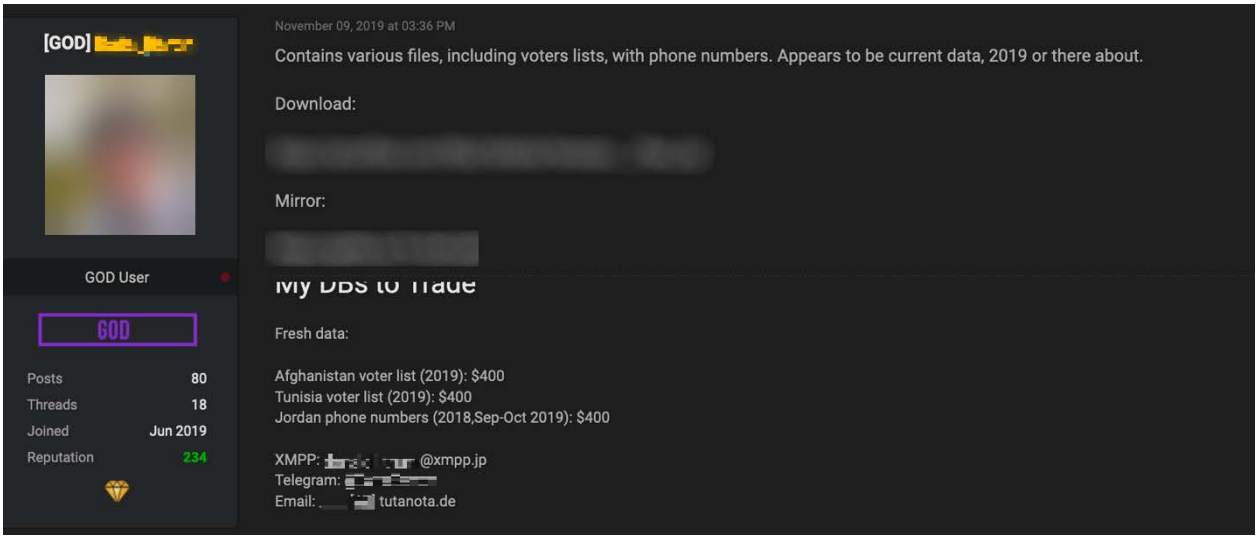


Figure 44. An English language forum selling voter databases for Afghanistan and Tunisia at US$400 each

Figure 45. A dark web marketplace offering voter databases for US$9.99 each (as of Nov 12, 2019) from a seller with 100% feedback

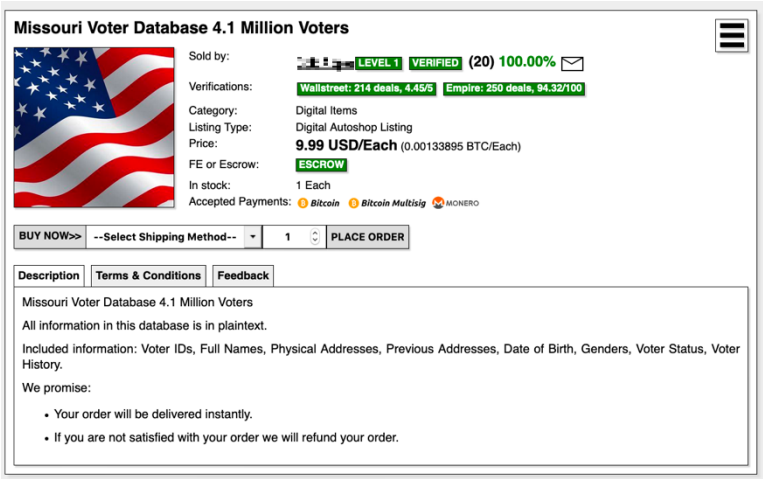


Figure 46. Details of the voter database contents, which includes dates of birth, voter history, addresses, and voter IDs

Services for increasing social media likes are common in the underground, across all languages. Some of these services guarantee the quality of these manipulations and also specify the use of automated bots or humans. Most of these types of tools are used to drive political agendas, but they can also be used for social engineering.

We saw services that offer 1,000 Instagram likes for as low as 15 cents. We also saw offers for Facebook and Instagram likes that cost US$3 for 1,000. Twitch likes start from 50 cents for 50 likes. Bot tools for increasing likes or visitors cost US$25. In Arabic language-based forums, Russian actors occasionally post offerings for VkTarget projects. VkTarget is a service for people who want to make money through crowdsourcing. Users can advertise small tasks (like creating traffic for sites and liking social media accounts) for others to complete.

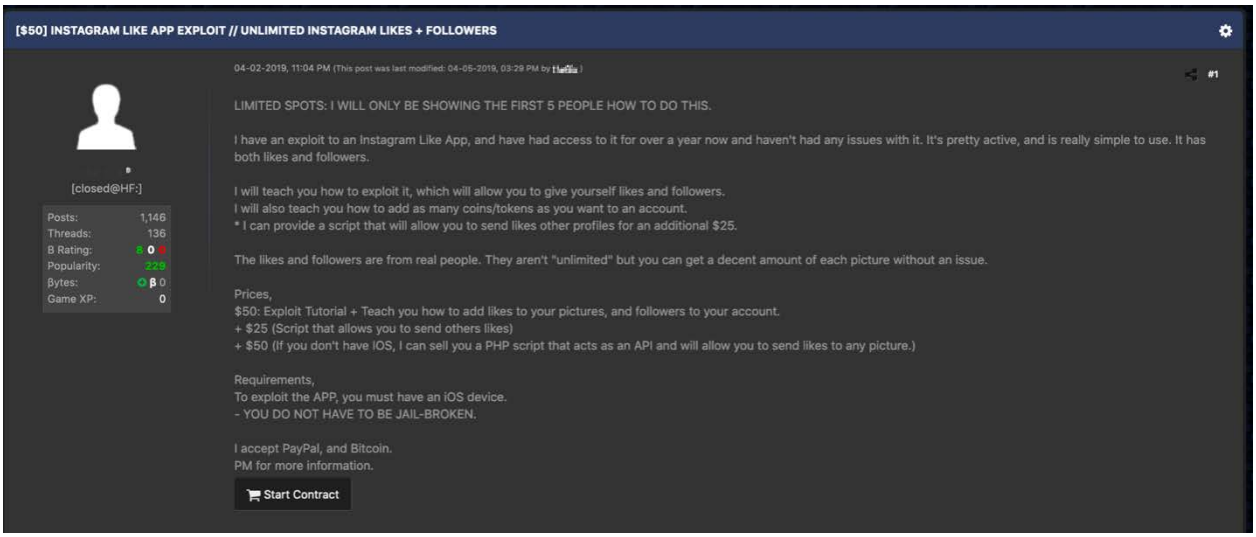


Figure 47.Underground forum post advertising an exploit to increase Instagram likes

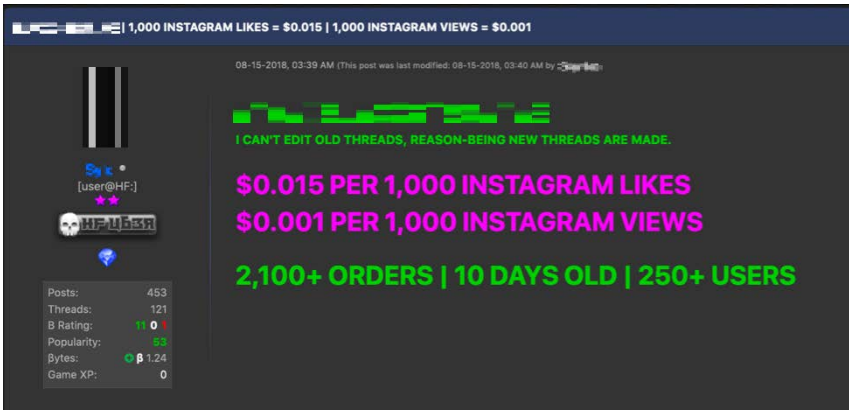


Figure 48. Advertisement selling Instagram likes

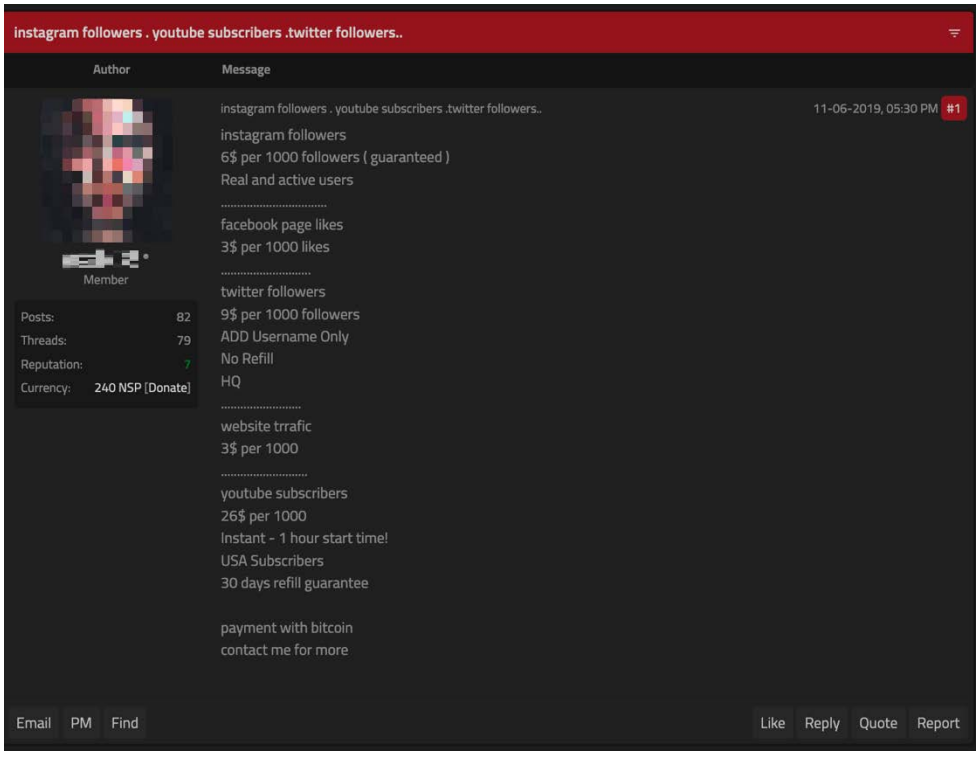


Figure 49. A forum post offering to purchase social media followers

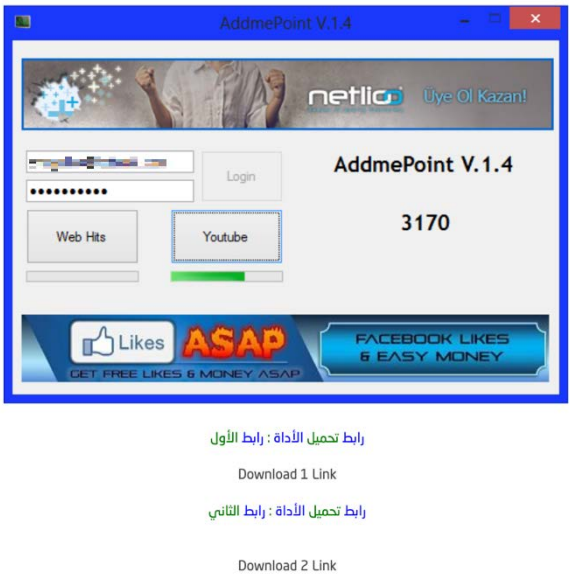


Figure 50. Free bot tool for adding likes to YouTube, Instagram, Twitter, and Facebook offered in an Arabic language forum

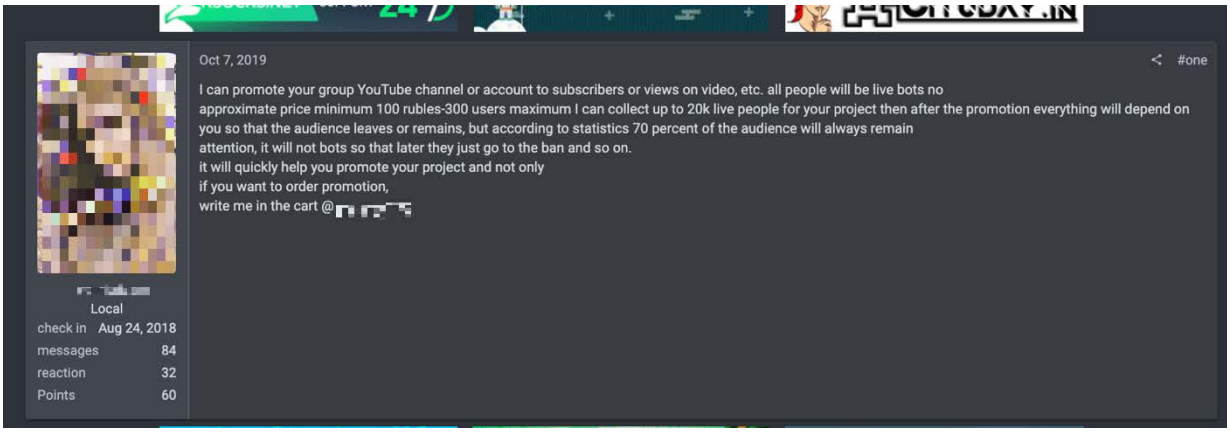


Figure 51. A Russian language forum post offering YouTube likes

Fake news and cyber propaganda prices	
Service	**Price**
United States voter databases	Free to US$9.99
Non U.S.voter databases	US$9.99-US$400
1,000 Facebook likes	US$3 and up
1,000 Instagram likes	US$0.15 and up
50 Twitch likes	US$0.50 and up
Social media bot	US$25 and up

Fake news and cyber propaganda prices	
Service	**Price**
1,000 YouTube likes	US$26 and up
20,000 New visitor hits	US$5 and up

Interest in Deepfake Scams Increase

Deepfake technology is an AI-generated technology that creates fake videos, images, or audio recordings that look and sound genuine. Users in underground forums have expressed interest in finding ways to monetize this technology. Deepfake services already exist in underground forums, but most posts involve inquires and exchanges of information. Forum users often discuss how AI technology can be used for "eWhoring," also known as sextortion, and for bypassing photo verification requirements on dating sites.

In the past, sextortion was mostly about social engineering and reputation attacks.[19] Criminals would send emails threatening to expose a damaging or embarrassing recording to friends or family and demanding money in exchange for keeping quiet.

People would be more likely to pay the extortion amount if cybercriminals started attaching or sending links of realistic Deepfake images of their victim. A real image or video would be unnecessary. Virtually blackmailing individuals is more efficient because cybercriminals wouldn't need to socially engineer someone into a compromising position. Deepfake videos can also be used to undermine the reputation of a political candidate or senior executive.

A new emerging threat we expect to take off is the use of Deepfakes for extortion-based ransomware. Here is a likely scenario: The attacker starts with an incriminating Deepfake video, created from videos of the victim's face and samples of their voice collected from social media accounts or publicly available websites. To further pressure the victim, the attacker could start a countdown clock (24-48 hours is common for ransomware) and include a link to a fake video. They would also likely include a Bitcoin address to receive payment. If the victim does not pay before the deadline, all contacts in their address books will receive the link. Although we have not seen this type of attack, it seems like a likely threat given the direction of Deepfake queries in underground forums.

In March 2019, an executive of an unnamed U.K.-based energy company conversed with on the phone with someone he thought was his boss (the CEO of the organization's parent company). This person asked him to urgently transfer €220,000 (US$243,000) to a Hungarian supplier. It turned out that the executive was talking to a scammer that used Deepfake voice technology to impersonate his boss.[20]

Aquí van 7 tecnologías emergentes que representan amenazas para la ciberseguridad moderna.

Los audios y vídeos "deepfake" generados mediante IA pueden ayudar a los piratas informáticos a estafar a las personas.

La tecnología "deepfake", que permite a la gente manipular vídeos y audio haciendo que el resultado sea muy real, ha dado pasos agigantados en los últimos años. De hecho, cualquiera que esté familiarizado con los filtros de intercambio de caras en Snapchat o Instagram ha sido testigo de primera mano de una versión rudimentaria de la tecnología deepfake.

A medida que los deepfakes son cada vez más sofisticados y difíciles de distinguir de la realidad, los expertos en ciberseguridad temen que los hackers puedan utilizar la tecnología para estafas en las que les sea fácil hacerse pasar por otra persona y conseguir así que las víctimas entreguen información privada.

Algunas empresas están trabajando en crear un software basado en IA que detecte los deepfakes pero, por el momento, estos avances se encuentran aún en las primeras fases de desarrollo.

Figure 52. A Spanish underground forum discussing seven emerging threats in 2019 that includes a section on Deepfakes

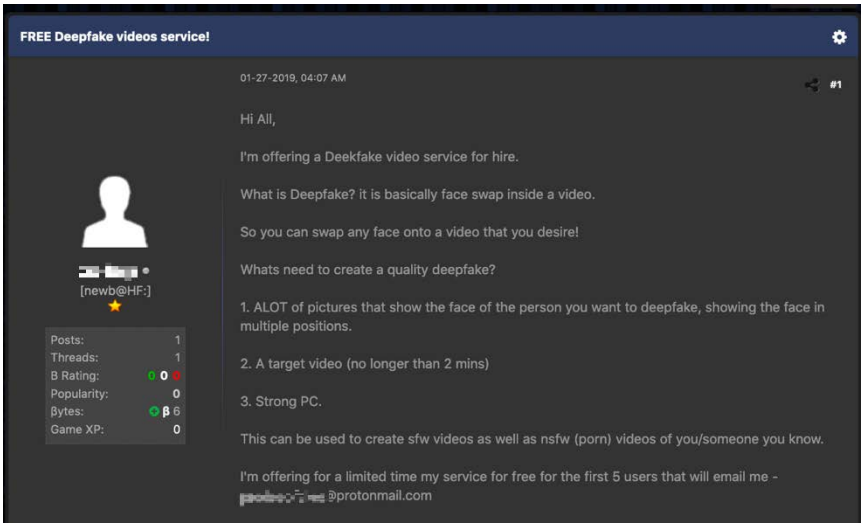


Figure 53. Seller offering five users free Deepfake video services to start their business

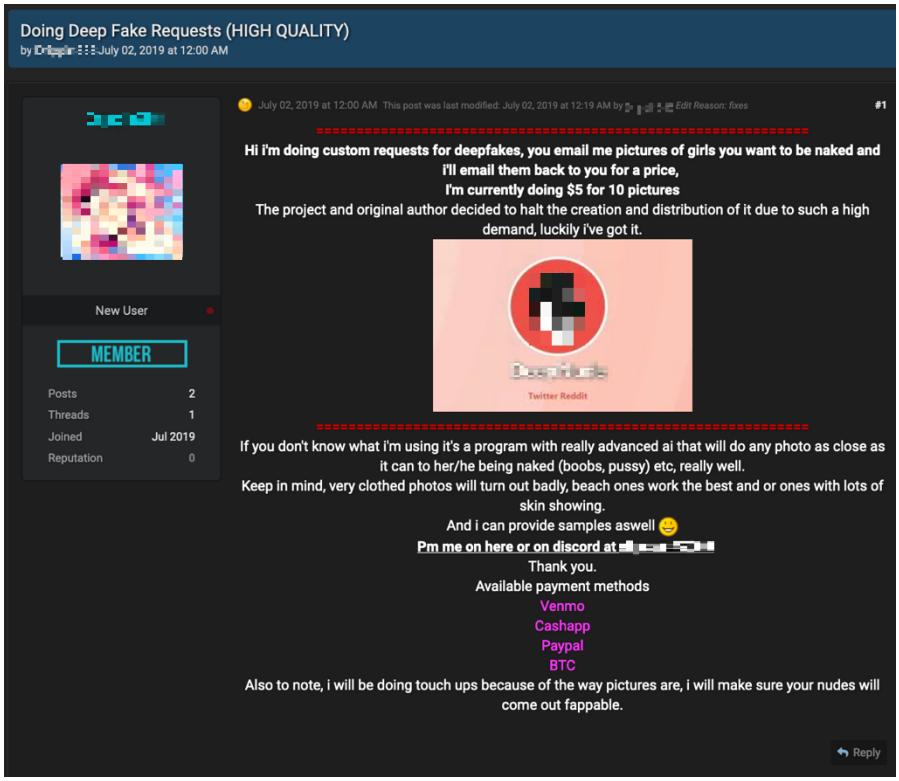


Figure 54. A Deepfake still image service

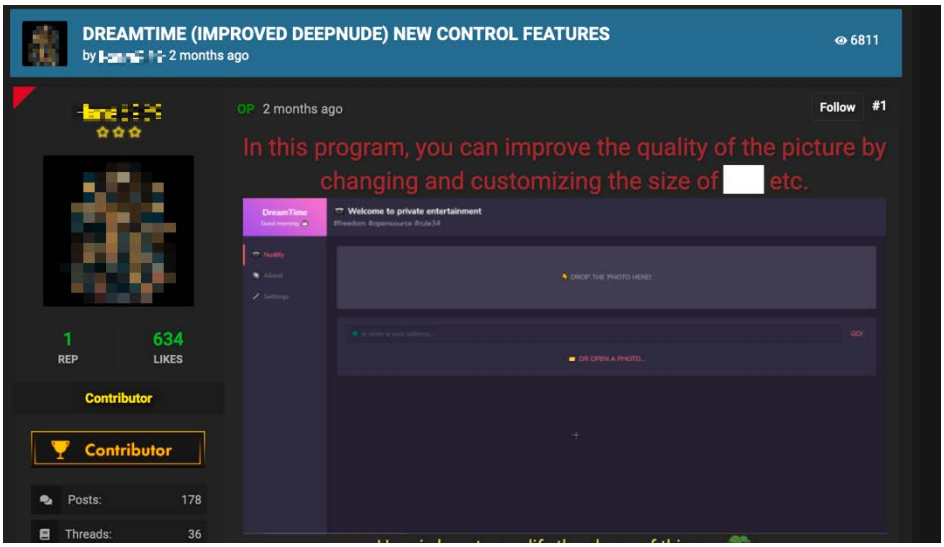


Figure 55. Software to create nude Deepfake images by customizing the person's measurements and features

Figure 56. Deepfake services for nude pictures and videos offered through Dread

Deepfake prices	
Service	**Price**
Deepfake videos	From US$50
Deepfake still images	From US$2.50 each
Software to create deepfakes	From US$25

Exploring Advanced AI and Using Current Services for Gambling

As AI capabilities become more powerful, we expect cybercriminals to use AI technology to increase targeting and improve malware infection rates in the future. However, the underground market discussions currently revolve around information and inquiries about the AI technology itself rather than actual criminal services. We found multiple listings of AI college books offered for sale and sometimes shared for free.

Most goods or services we encountered were related to the gambling sector. Advertisements for gambling bot services mentioned the use of "advanced AI engines" and start at around US$80 for a basic one-month subscription. One gambling bot, called Luckybot, uses AI to predict dice roll patterns. Another advertisement we observed was the use of AI to solve complex Roblox CAPTCHA.

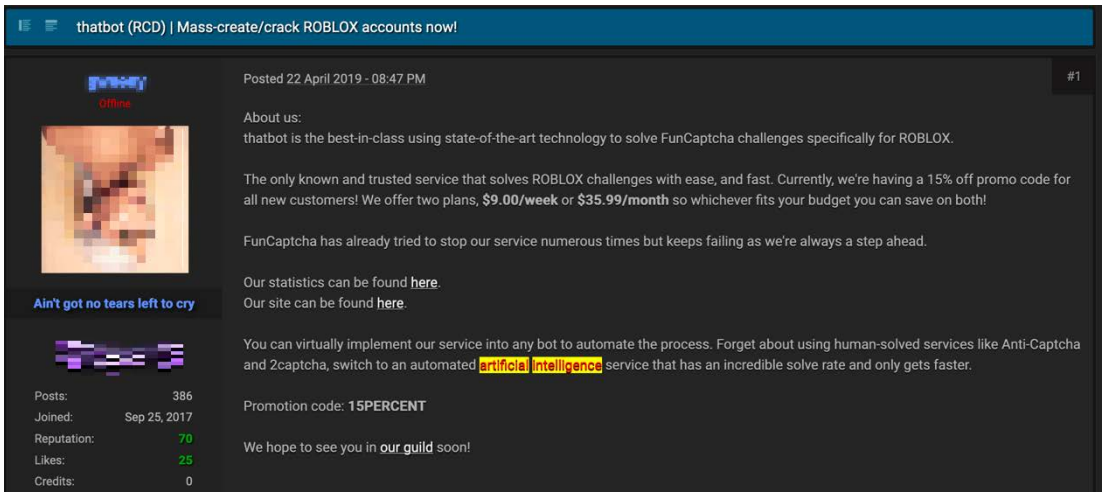


Figure 57. AI-enabled bot for solving Roblox captchas

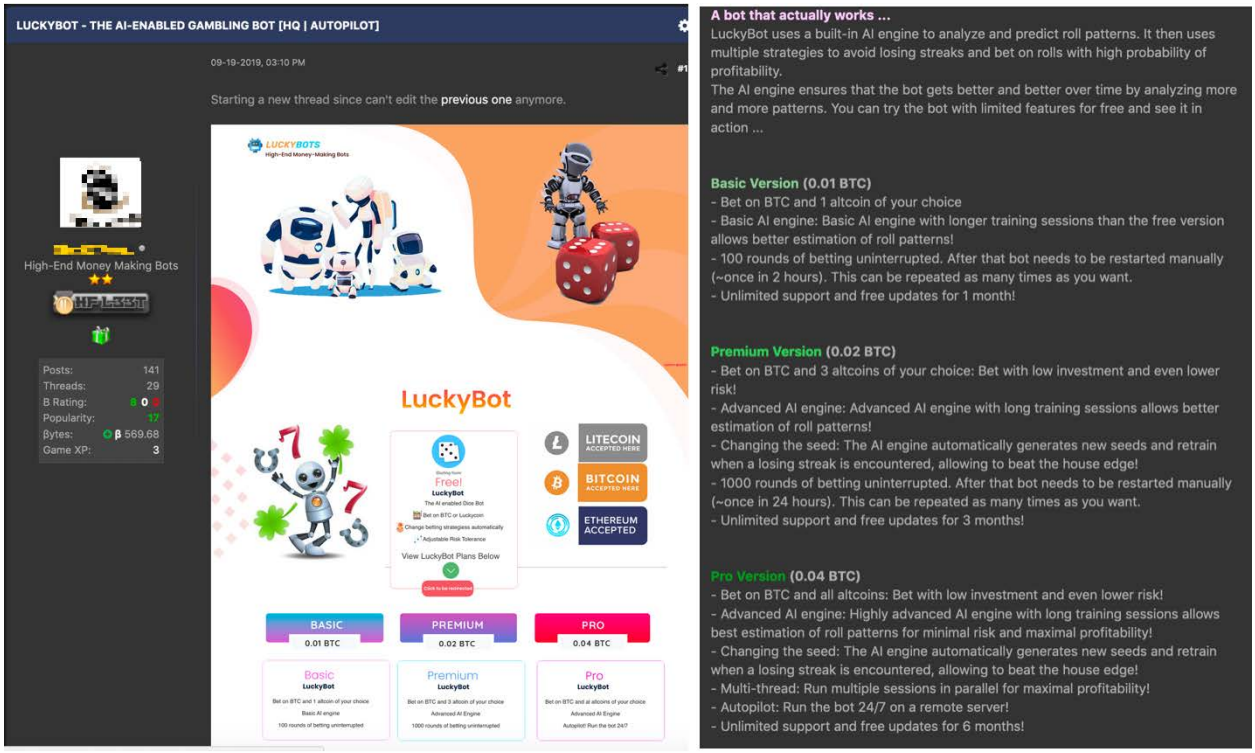


Figure 58. AI-enabled gambling tool for predicting dice roll patterns

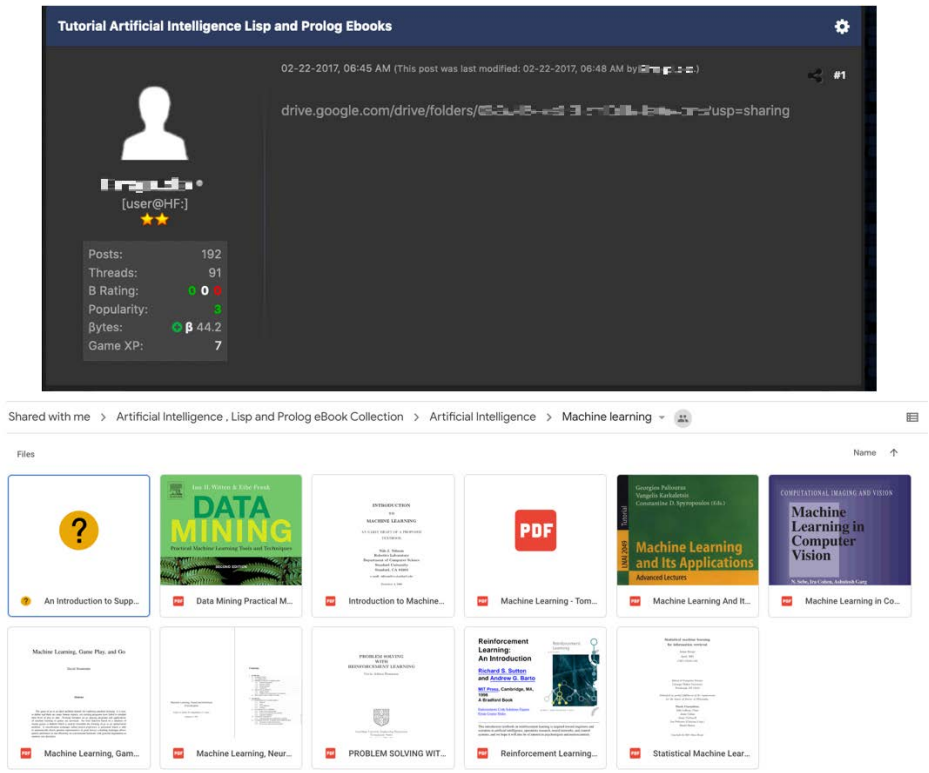


Figure 59. Free AI books shared in an English language forum

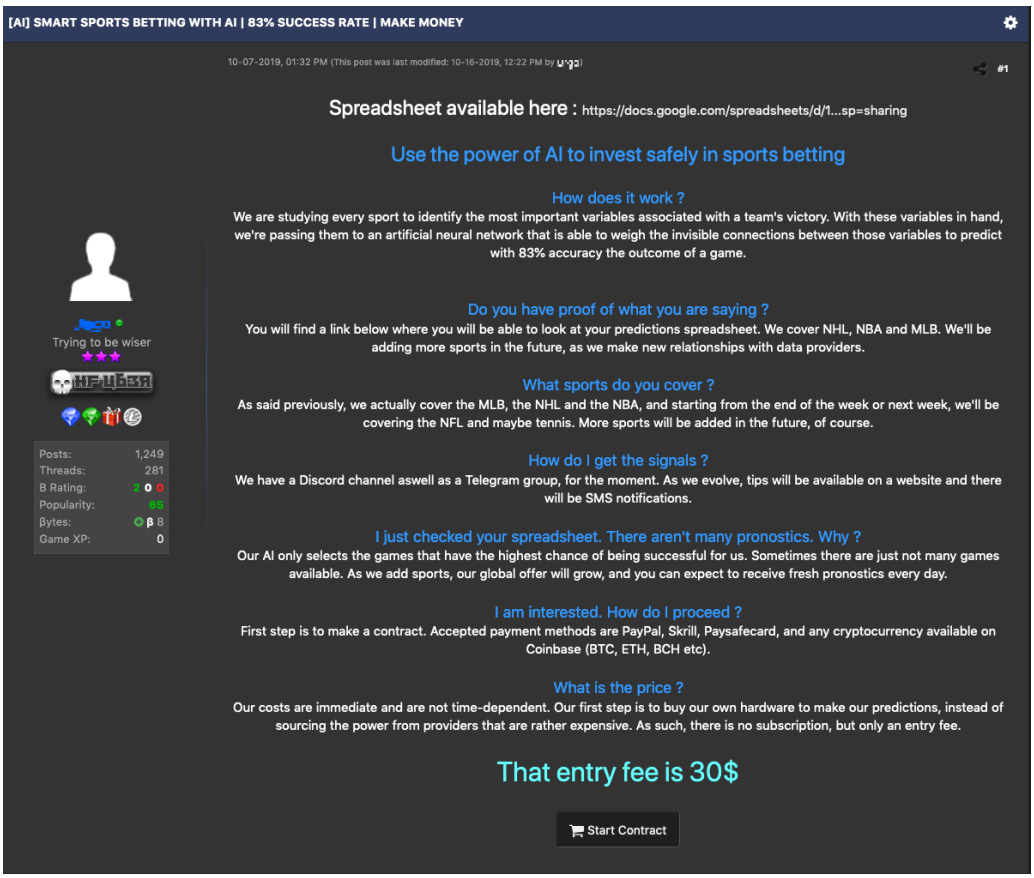


Figure 60. Sports betting service using AI

AI prices	
Service	**Price**
Roblox	From US$36
Gambling Bot	From US$75
Sports Betting AI	From US$30

Access-as-a-Service Becomes Popular

Access-as-a-service has evolved from remote desktop protocol (RDP) offerings to selling access to hacked devices and corporate networks. While it has been around for years, there was an increase in offerings in the last year. Access to different organizations and companies were obtained through ransomware, credential-stealing malware, and botnets. We found multiple levels of access sold: executive-level credentials, remote desktop access, administrative panels, cloud storage, email accounts, and even full company network access.

Many of these offerings are found on the Russian forum Exploit[.]in. One actor was selling access to an American insurance company for US$1,999, and a European software company for US$2,999. Prices for Fortune 500 companies can reach up to US$10,000. Some offerings include access with read and write privileges.

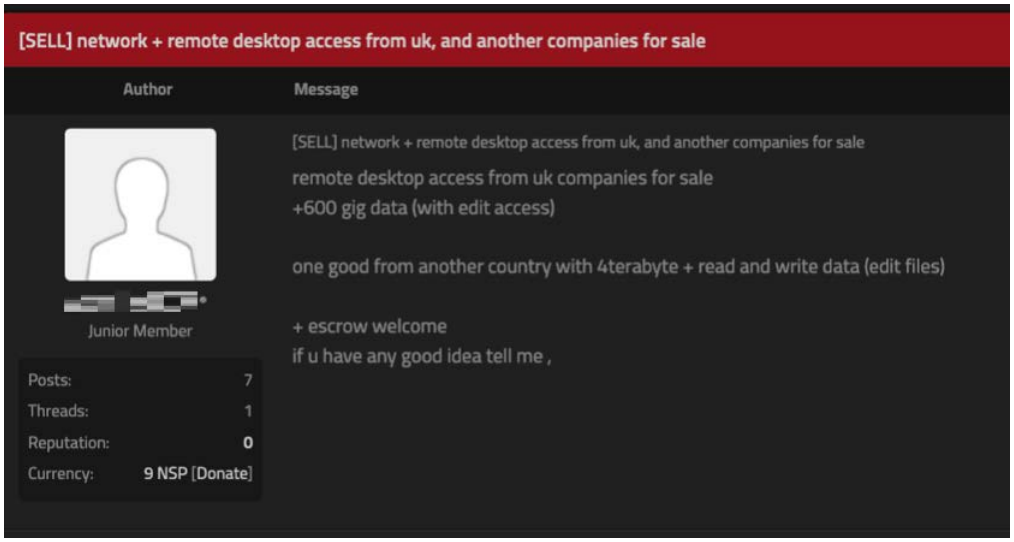


Figure 61. Network access to a U.K. company

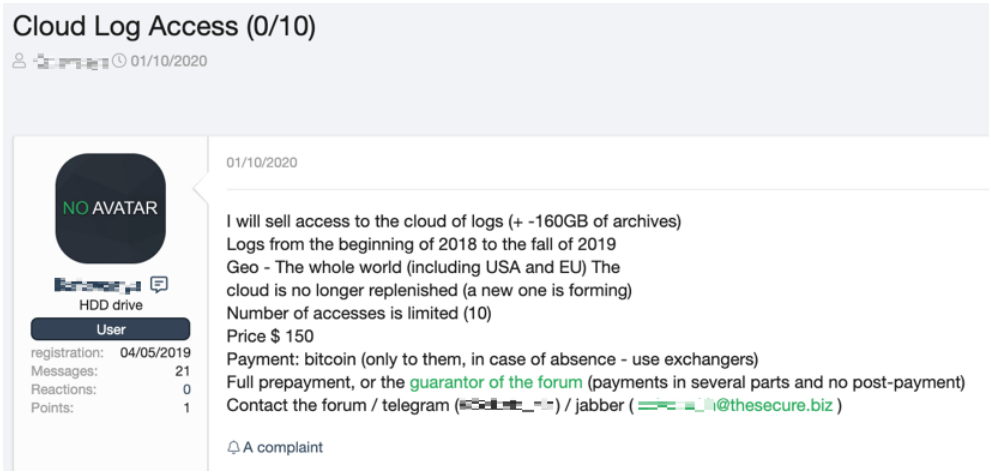


Figure 62. Actor selling access to cloud logs

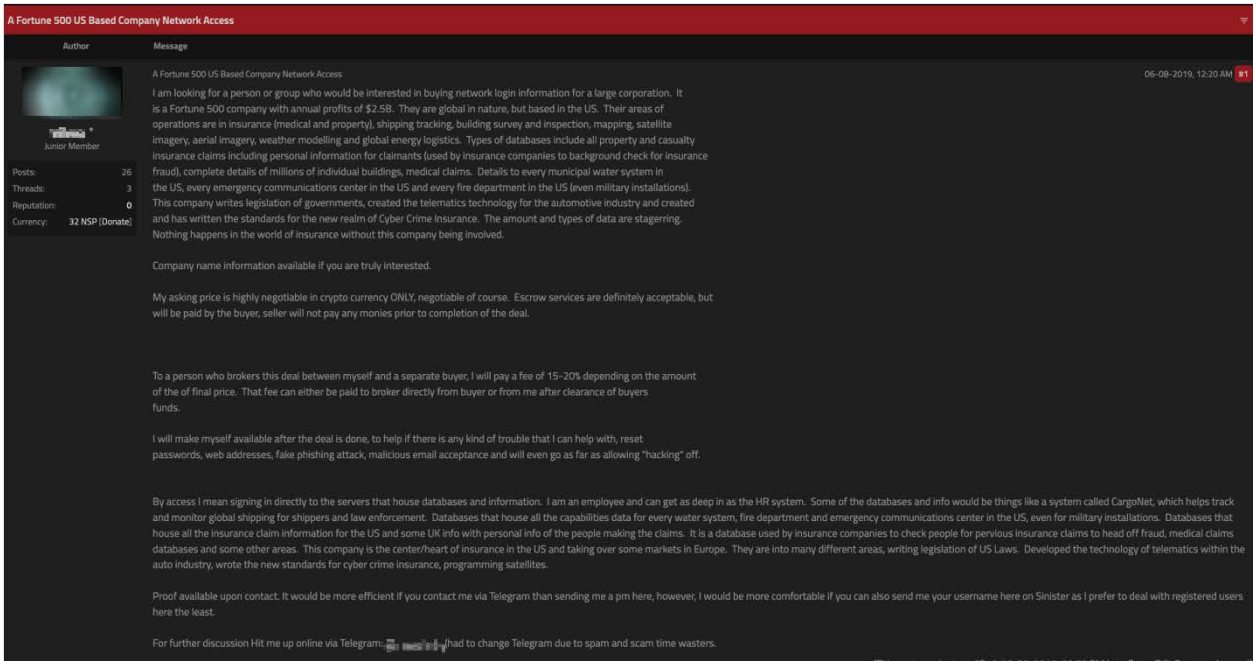


Figure 63. Selling Fortune 500 network access

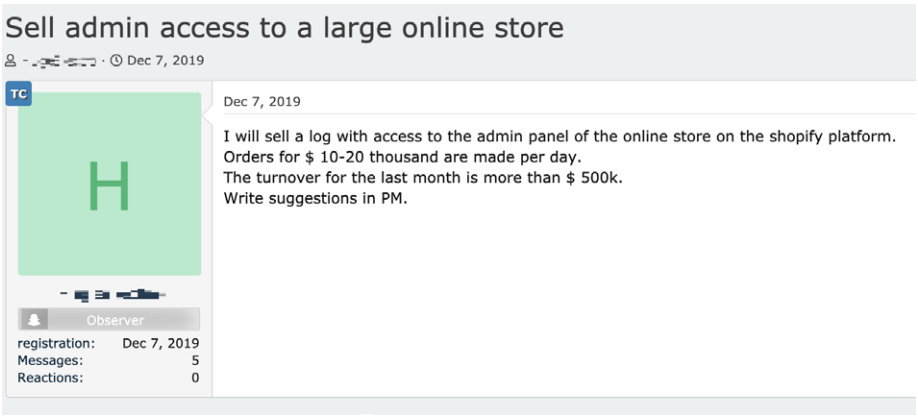


Figure 64. Advertisement for admin access to a profitable online store

Wearable Trackers Targeted

In multiple English language-based forums, we found numerous advertisements for Fitbit user accounts and for the actual wearable device itself. Fitbits are priced in the U.S. between US$69.95 to US$279 and include a one-year warranty. Users can purchase an additional year of warranty for a fee. Fitbits sold in the EU can range from €79.97 to €299.95[21] and include a two-year warranty.[22] Underground prices for account information such as usernames and passwords are frequently available, but we have also found advertisements selling the devices' captured data such as steps and GPS locations.

Cybercriminals who purchase Fitbit user accounts are usually running a warranty scam, where they modify the email and address and then request a replacement device under the one or two-year warranty. These Fitbits are then sold in underground forums for a large discount. The Fitbit Iconic goes for US$249 in the U.S., but it can be purchased in the underground for US$40. We cannot confirm what cybercriminals are using the captured step data for, but we speculate it may be used to receive the special offers and discounts given after a certain amount of step activity. We even found an advertisement offering a class on how to social engineer customer service to obtain a replacement Fitbit for US$100 on an English language-based forum.

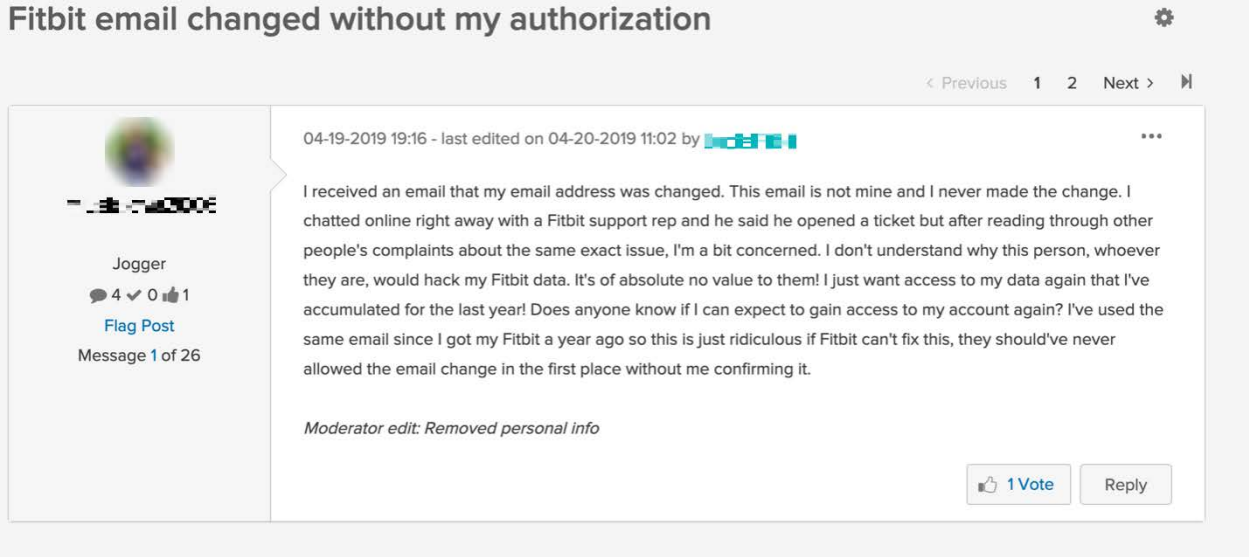


Figure 65. A Fitbit user complaining their account information was changed

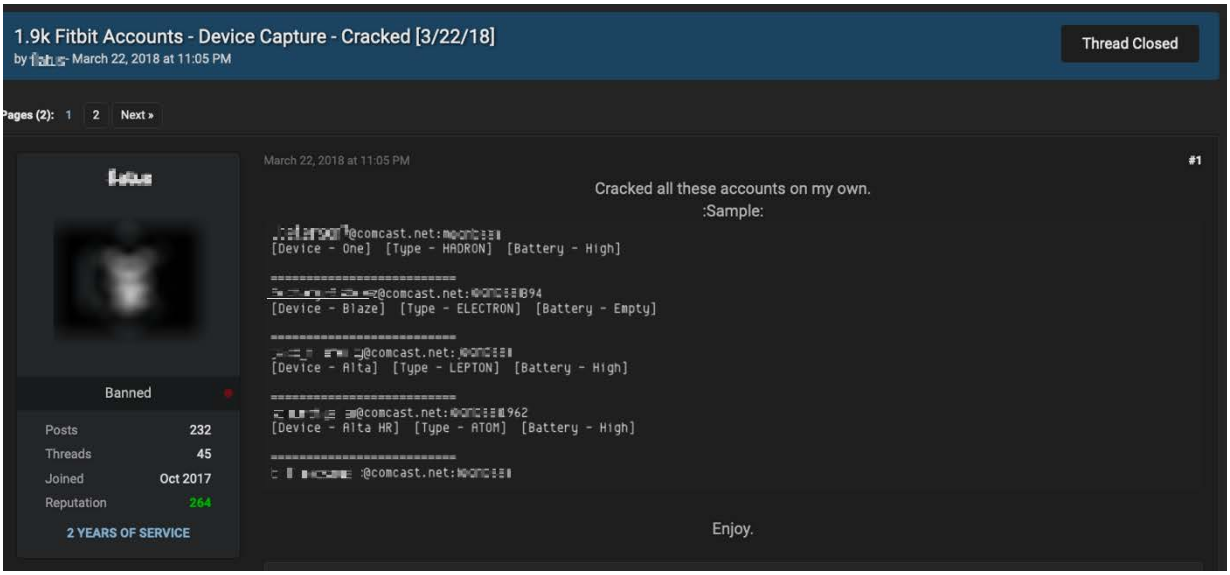


Figure 66. Fitbit captured accounts for sale

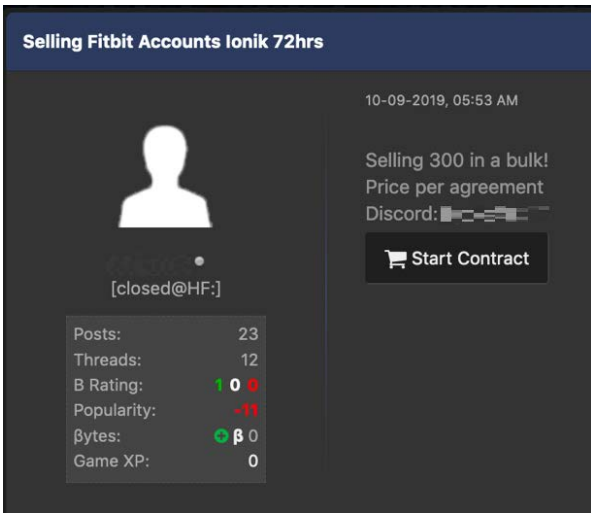


Figure 67. Fitbits sold in bulk

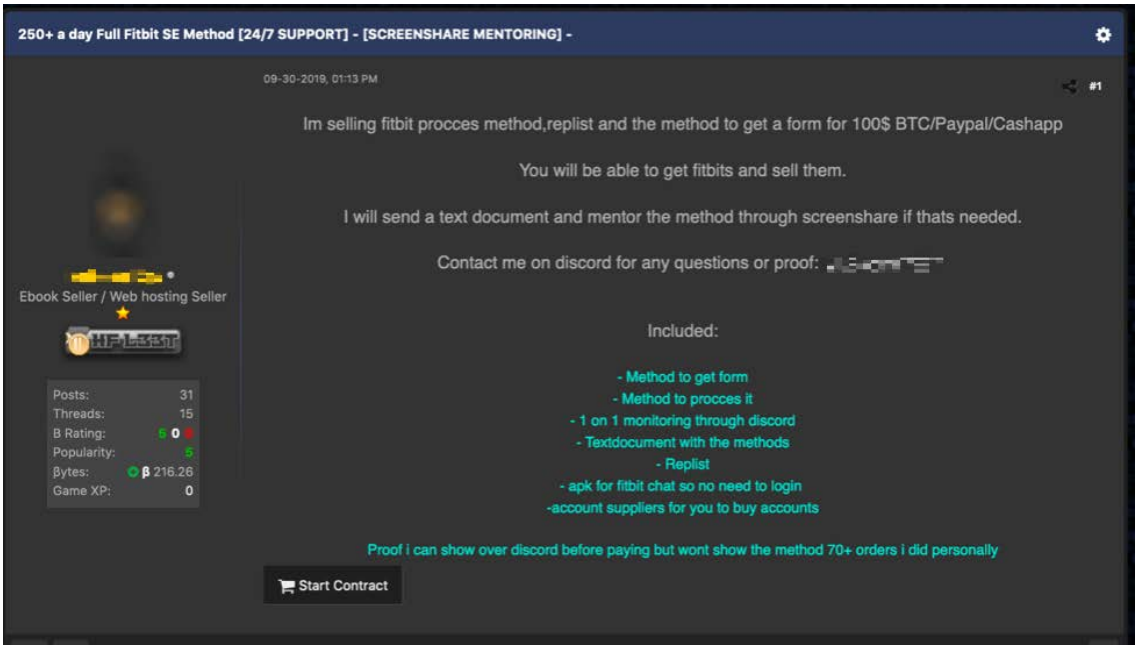


Figure 68. A class on social engineering, teaching others how to obtain Fitbits and sell them

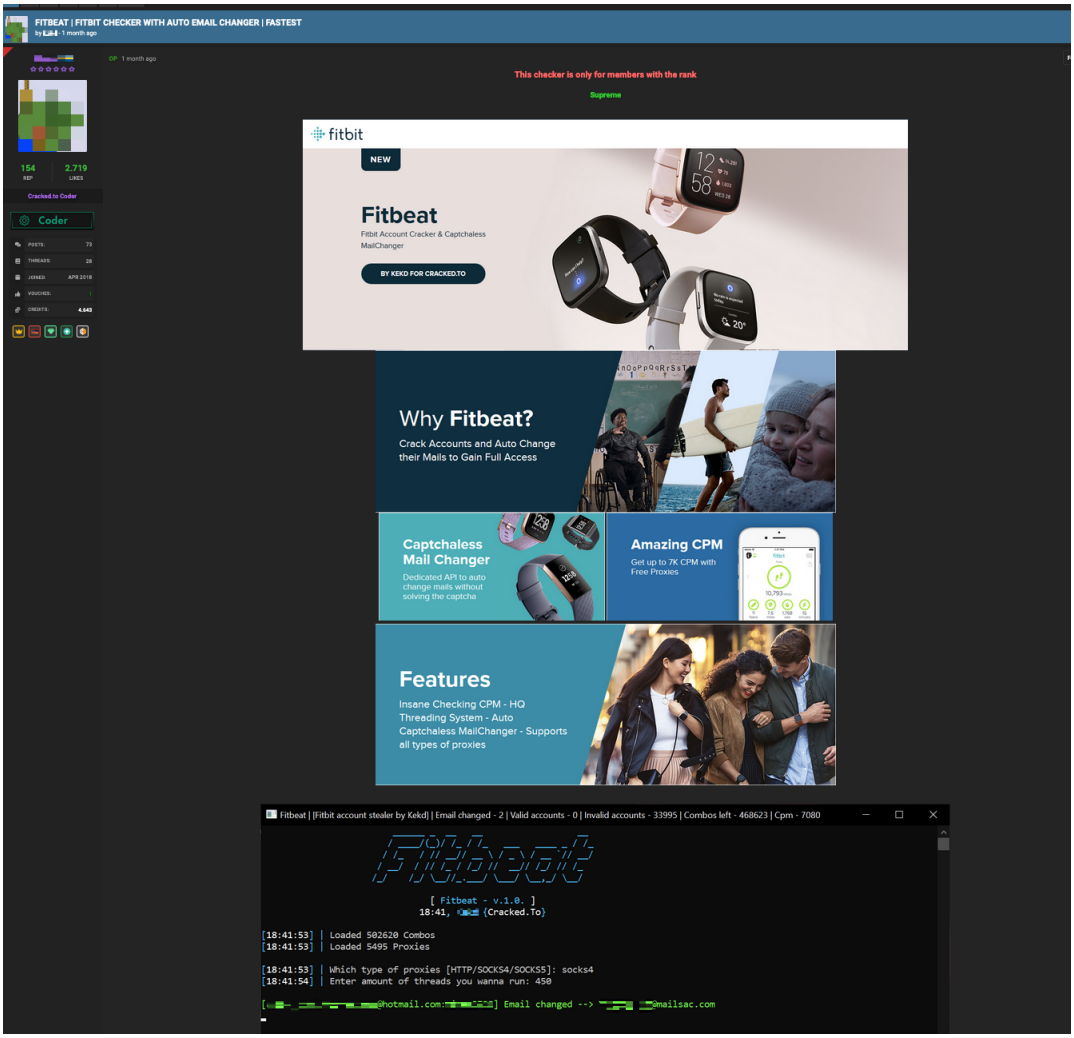


Figure 69. An advertisement for a Fitbit account validation service

Fitbit prices	
Service	**Price**
Fitbit social engineering course	From US$100
Fitbit Ionic	From US$40
Fitbit Versa	From US$35

IoT Botnets are the New Norm

IoT botnets are now commonly found across underground forums. As IoT device use becomes commonplace in households, enterprises, and the public sphere, Mirai and its variants continue to evolve and adapt. They remain the dominant IoT threat, particularly because of landscape changes like the adoption of 5G. Our recent IoT paper, The Internet of Things in the Criminal Underground,[23] covered data and active monetization schemes focused on consumer devices.

Most IoT botnets found in underground forums are either based on the same leaked source code from the Mirai malware, other similarly behaving malware, or a variant. We found multiple forum users asking for links to the original Mirai source code or information on how to troubleshoot their own Mirai code. Older Mirai variants are commonly shared for free. Newer undetected variants can go for up to US$5,000 when first released.

Mirai botnet rentals start at just US$10. Low-cost rentals mean that this type of botnet is readily available to all levels of cybercriminals, even those that may not have the skills to build and run their own botnets. We also noticed that some of these Mirai botnet rentals come with bulletproof hosting as part of the service. The predominant model for earning with these botnets is still distributed denial of service (DDOS), however, we do expect criminals to innovate more over time.

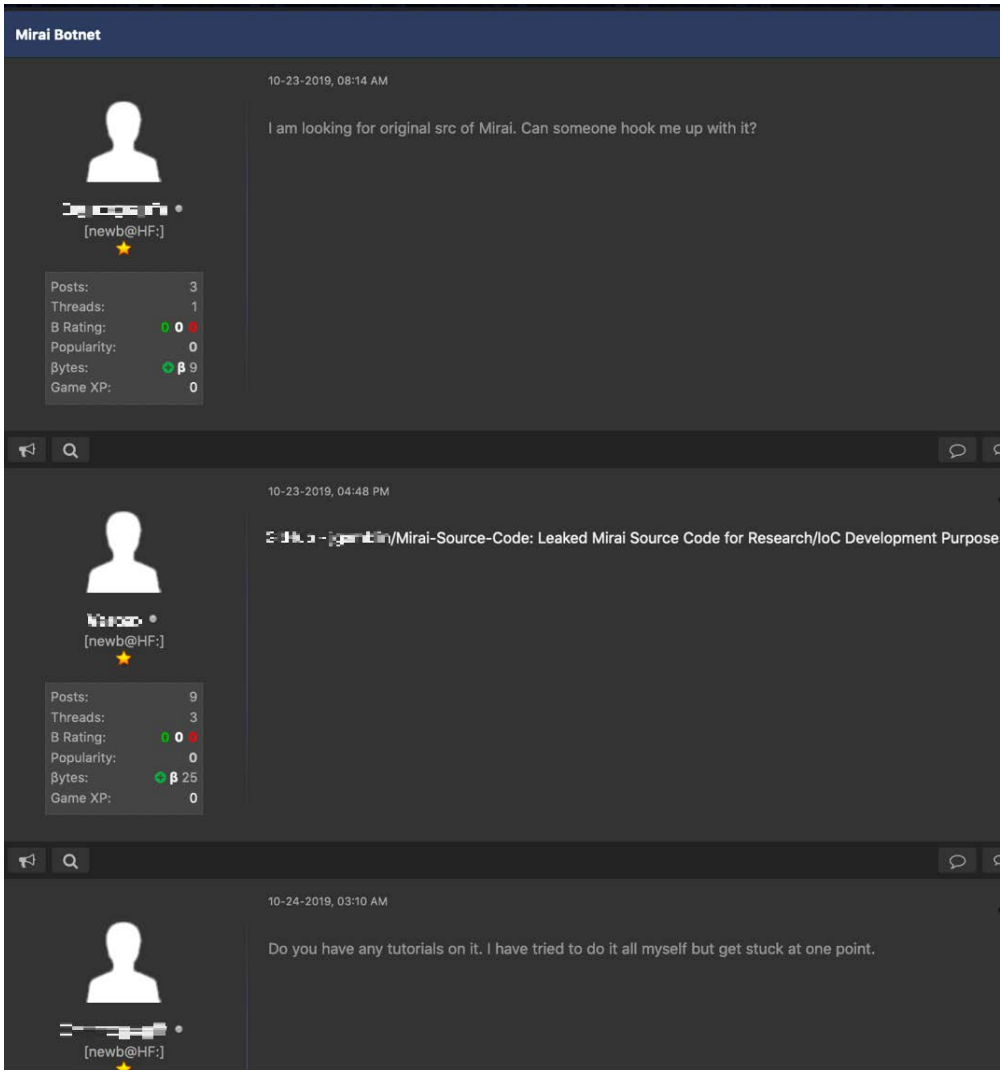


Figure 70. Forum user asking for the Mirai source code

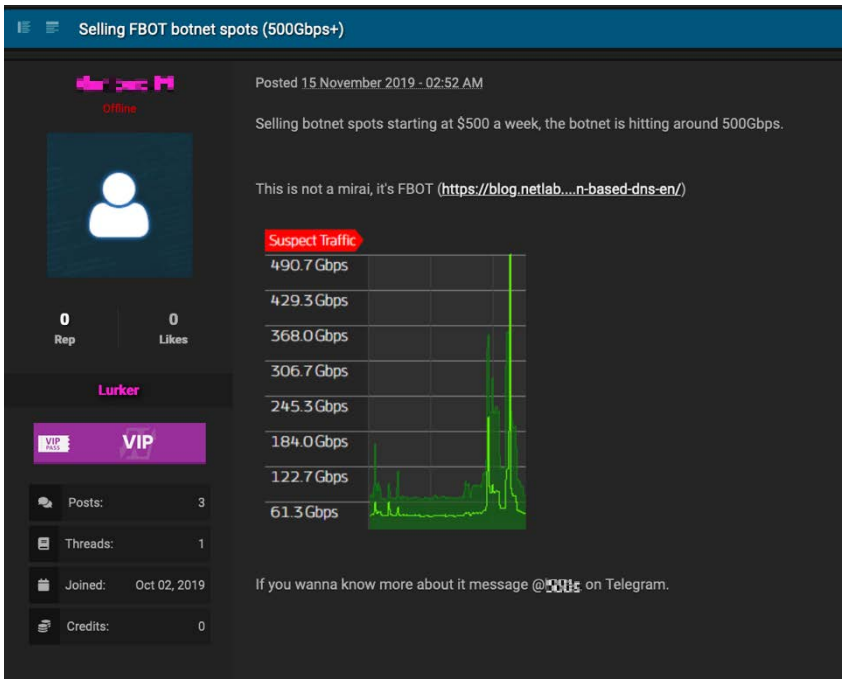


Figure 71. Fbot botnet spots for sale using Satori, a Mirai variant[24]

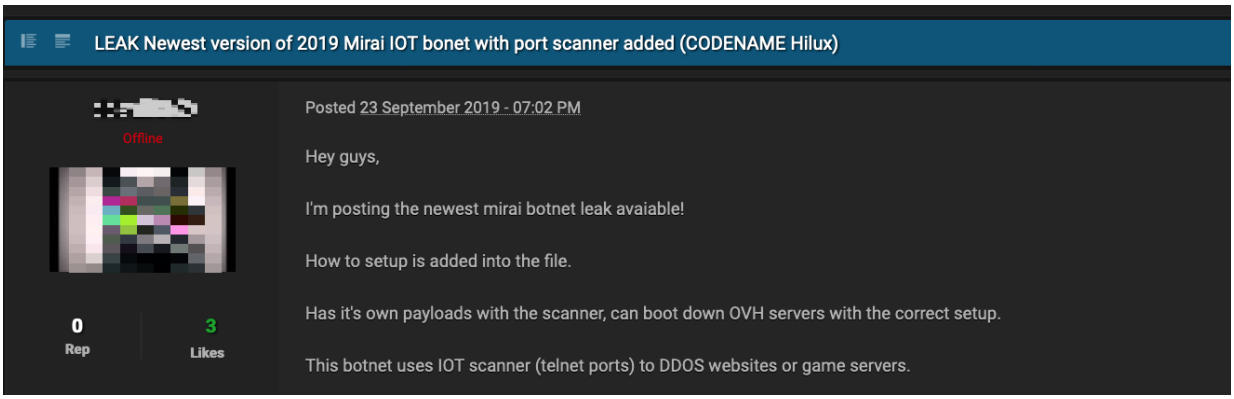


Figure 72. Free Hilux Mirai variant download

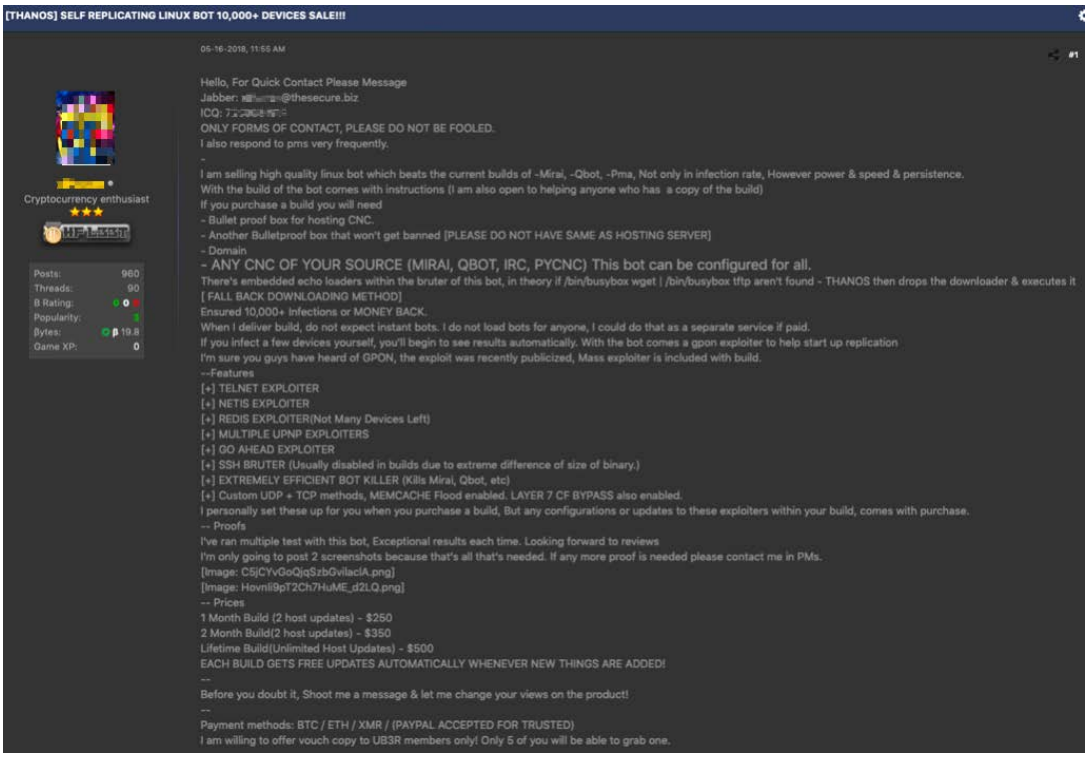


Figure 73. A Mirai botnet variant rental service starting at US$250 a month

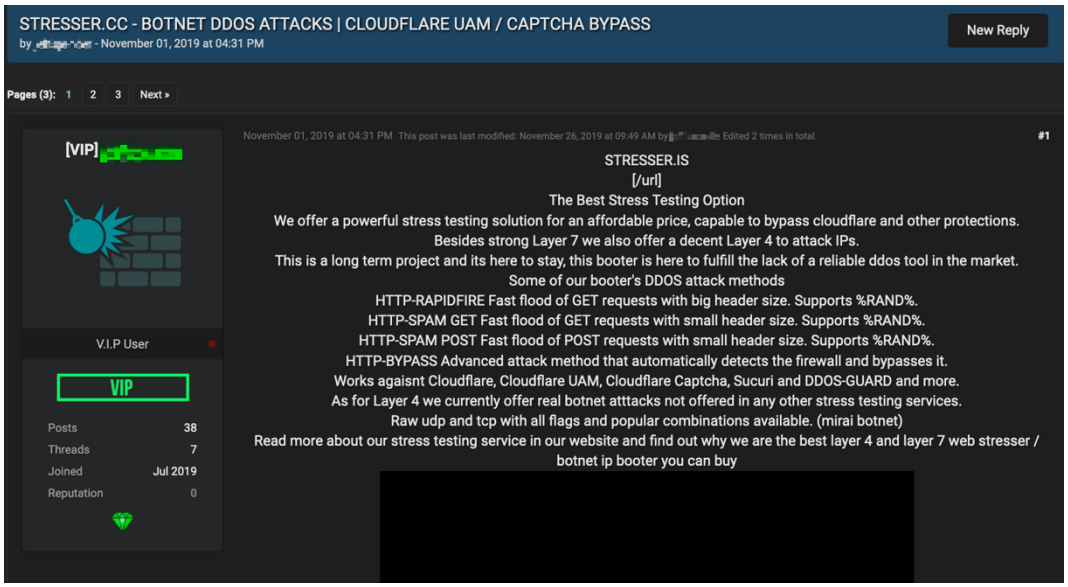


Figure 74. A Mirai botnet stressor service

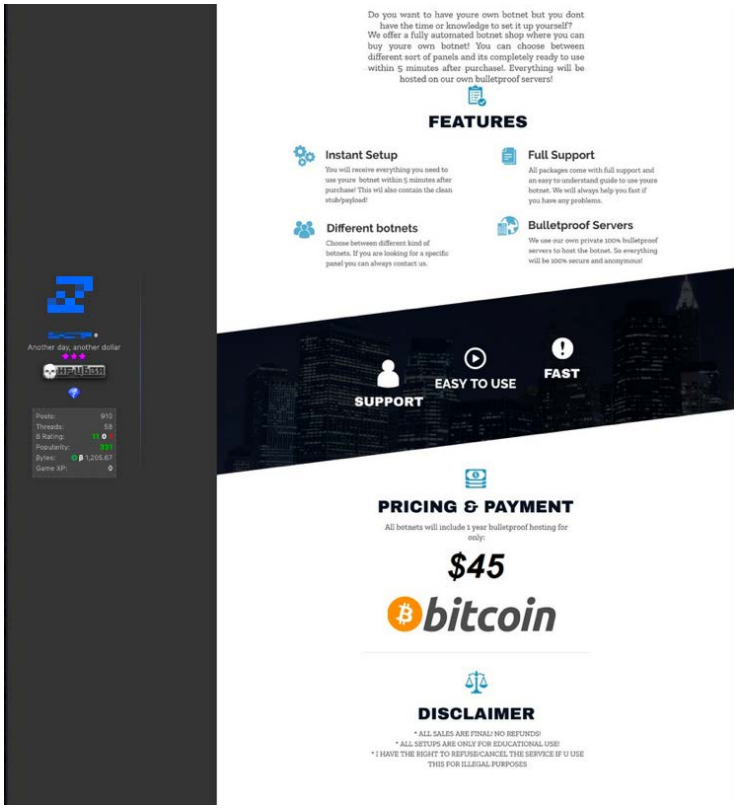


Figure 75. IoT botnet setup service with Bulletproof servers

IOT Botnet prices	
Service	**Price**
Mirai botnet rentals	US$10 and up
Original Mirai source code	Free
Mirai based stressor	US$20 and up
Fbot Mirai variant rental	US$500 a week

Dark Web Marketplace Users Lose Trust

In March 2019, the dark web marketplace Dream Market announced that it was shutting down in April to transfer its services to a partner company. Shortly after, Wall Street Market, Valhalla, and DeepDotweb became part of the long list of marketplaces that law enforcement took down in May 2019. Wall Street Market administrators were planning an exit scam using money held in escrow for current transactions when law enforcement arrested them.[25]

After a major marketplace shuts down, the dark web community usually migrates to other coexisting markets. However, because of current volatility within the landscape, there is no dominant and stable marketplace.

We observed multiple chats on Dread discussing slow sales after the May 2019 takedowns. Users frequently posted about fears of exit scams and law enforcement involvement. Sites like Empire, which became one of the top markets in the wake of the takedowns, are consistently battling login problems and DDoS attacks. Forum users on Torum and Dread regularly express frustration at marketplaces because of these issues (Torum is a crypto-driven, multi-functional, self-governing forum). The source of the DDoS activity is rumored to be law enforcement. In November 2019, it was reported that the Berlusconi Market was taken down by the Italian police, which discouraged dark web users even more.[26]

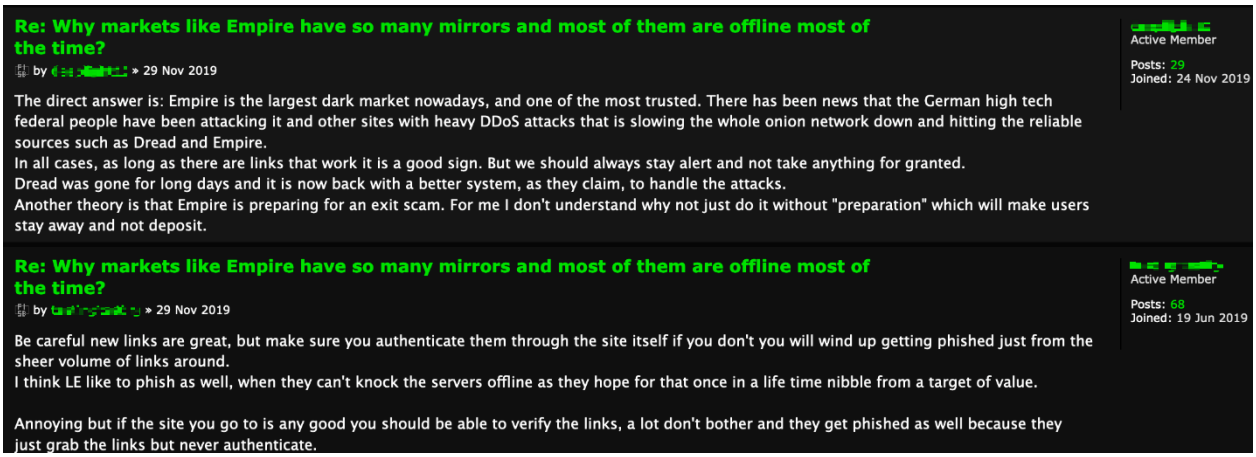


Figure 76.Torum post discussing why the Empire marketplace is frequently offline

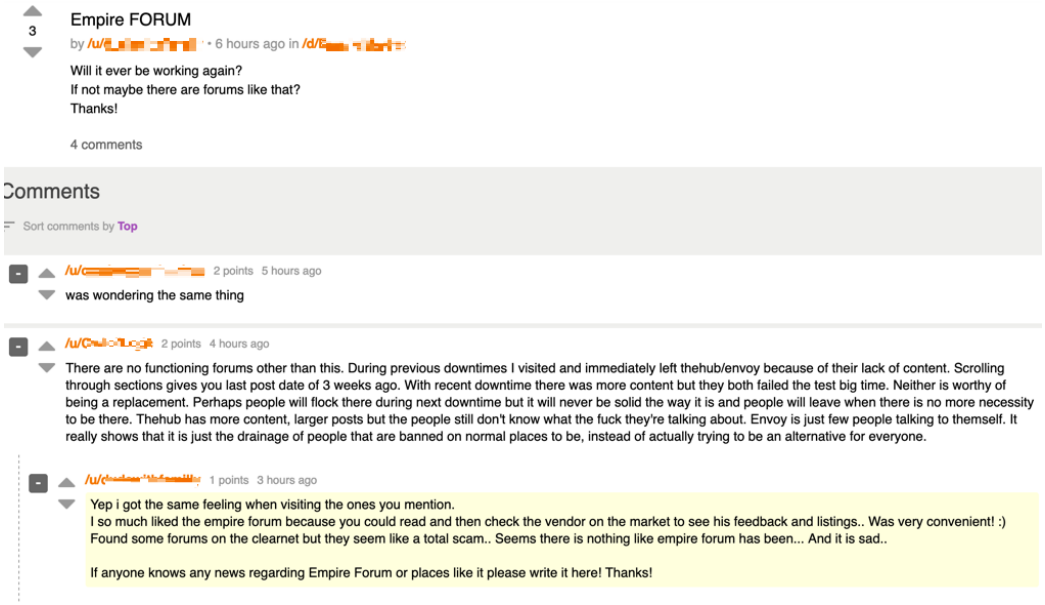


Figure 77. Empire users are worried an exit scam is inevitable

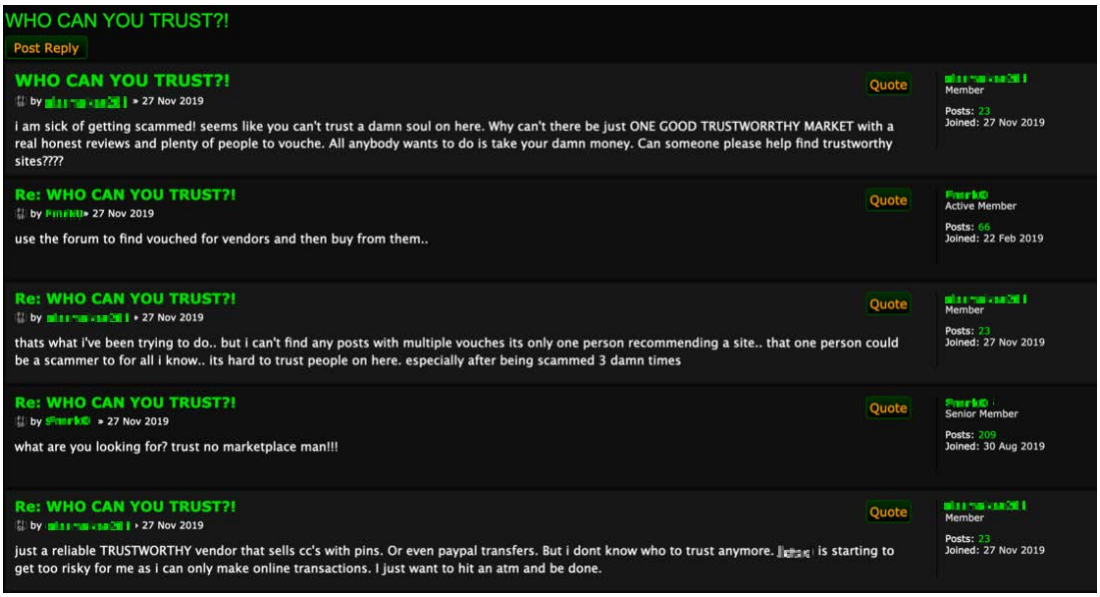


Figure 78.Torum post discussing distrust in the marketplace community

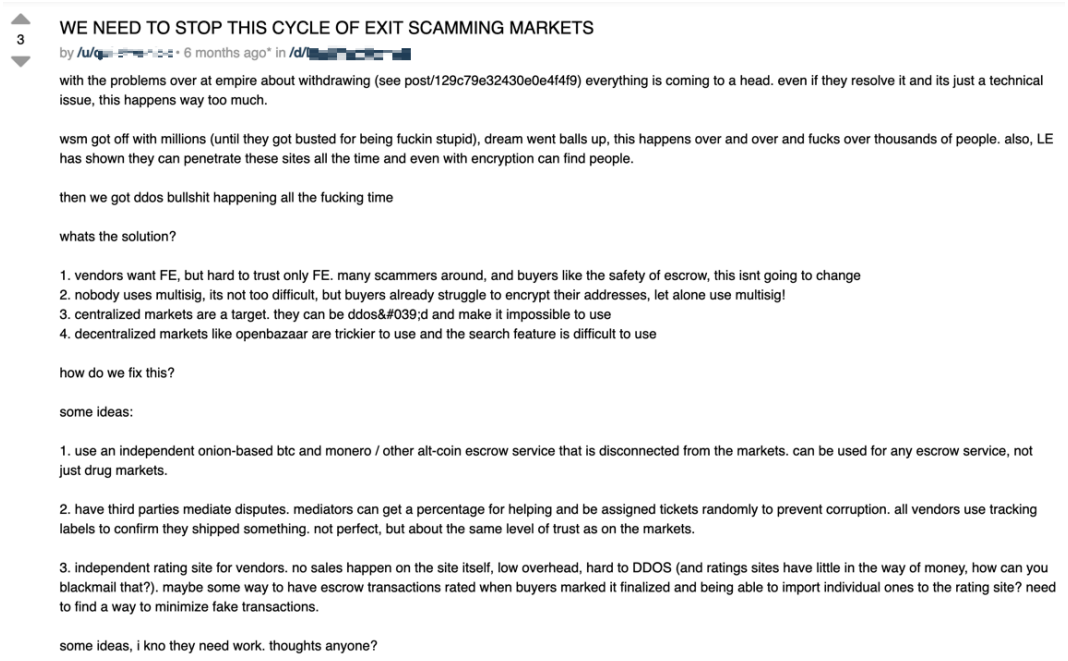


Figure 79. Dread discussion on exit scams

The marketplace community has been looking for ways to build trust. A new site called DarkNet Trust was created to verify vendors' reputations by searching through usernames and PGP fingerprints. DarkNet Trust searches over 10,000 profiles from Dream, Empire, Nightmare, Berlusconi, Tochka, Cryptonia, Apollon, Grey Market, and Agora.

New encrypted email services like Sonar and Elude have also suddenly appeared. Former favorite Protonmail was accused of helping law enforcement in the past, prompting dark web users to look for alternative email services.[27]

Administrators of new marketplaces are also adding new security features, for example: walletless markets, multisignatures on BTC and Monero, and no-javascript policies. Grey Market and BitBazaar are new walletless markets. Monopoly is a walletless market where payment is directly made between buyer to vendor, and the market gets a monthly commission as opposed to transaction fees. The Cryptonia marketplace uses multisignature wallets for transactions.

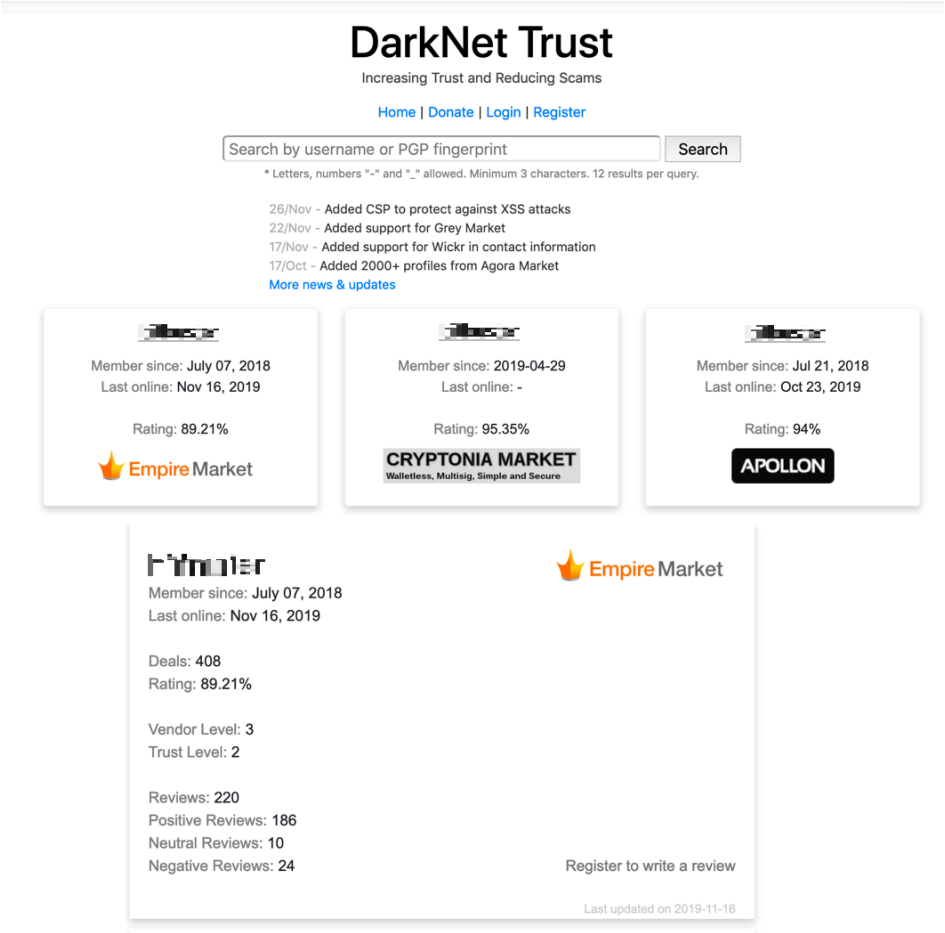
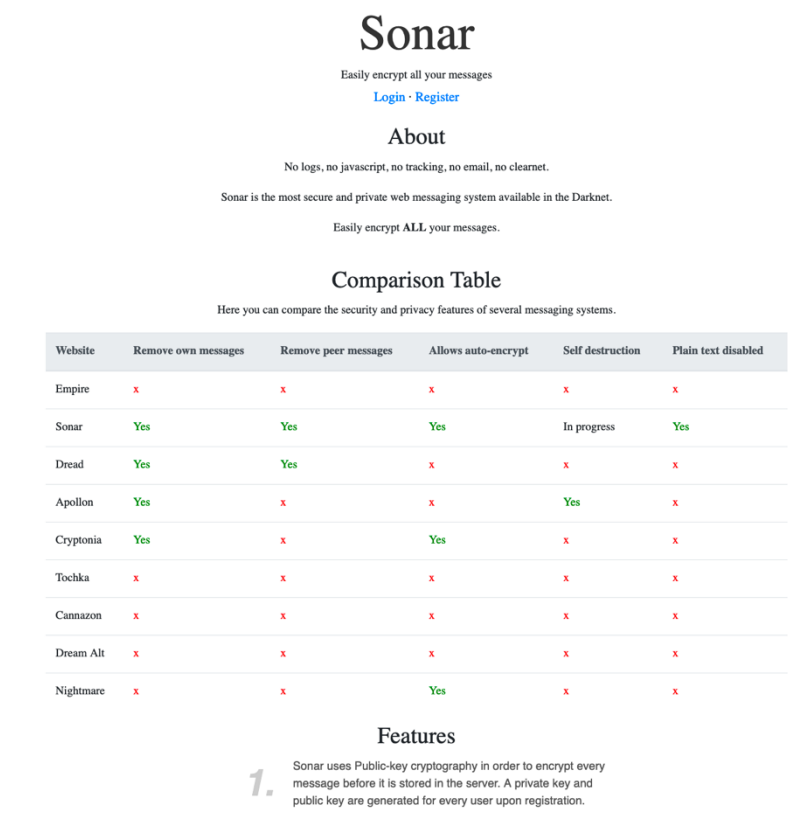


Figure 80. A DarkNet Trust search for a specific underground vendor



Sonar

Easily encrypt all your messages

Login · Register

About

No logs, no javascript, no tracking, no email, no clearnet.

Sonar is the most secure and private web messaging system available in the Darknet.

Easily encrypt **ALL** your messages.

Comparison Table

Here you can compare the security and privacy features of several messaging systems.

Website	Remove own messages	Remove peer messages	Allows auto-encrypt	Self destruction	Plain text disabled
Empire	x	x	x	x	x
Sonar	Yes	Yes	Yes	In progress	Yes
Dread	Yes	Yes	x	x	x
Apollon	Yes	x	x	Yes	x
Cryptonia	Yes	x	Yes	x	x
Tochka	x	x	x	x	x
Cannazon	x	x	x	x	x
Dream Alt	x	x	x	x	x
Nightmare	x	x	Yes	x	x

Features

1. Sonar uses Public-key cryptography in order to encrypt every message before it is stored in the server. A private key and public key are generated for every user upon registration.

Figure 81. Sonar, a new email encryption service

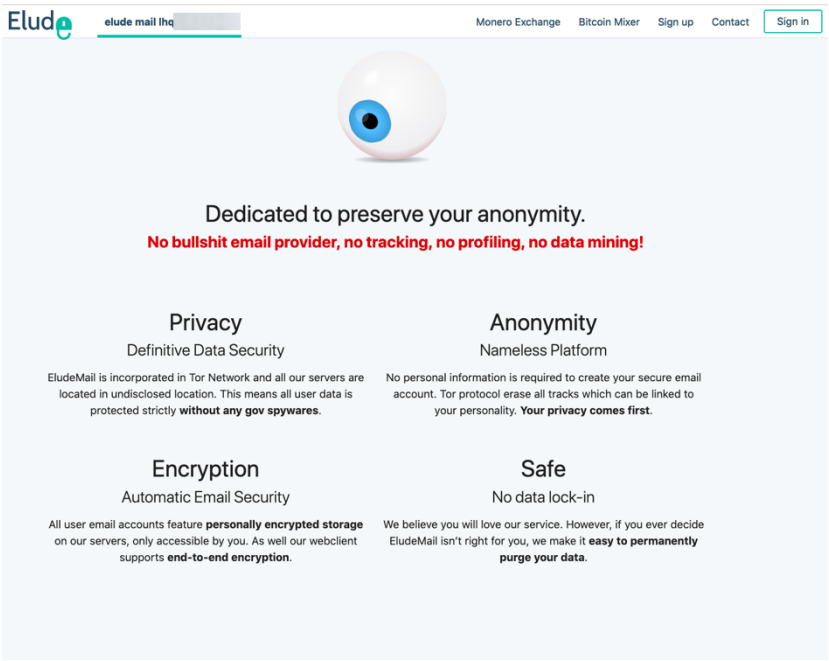


Figure 82. Elude, a secure email system

Users on dark web forums also suggested that blockchain technology could host decentralized marketplaces. Sites that are hosted on blockchain are perceived to be less susceptible to law enforcement takedowns and surveillance. One such decentralized blockchain DNS service is Blockchain-DNS, or BDNS, which can access domains such as .bit, .bazar, .coin, .emc, as well as other domain name extensions used by OpenNIC. (This echoes a prediction we made in 2013 that .bit domains are advantageous to cybercriminals and could eventually be used for malicious activity.[28]) However, the idea of using these types of markets hasn't particularly caught on. Some dark web forum users say decentralized markets are not easy to use, and it is harder to search for products.

So far, a few organizations have experimented with different structures and new features. We noted that a popular carding site, Jokers Stash, moved to a blockchain DNS to avoid law enforcement surveillance. OpenBazaar, an open-source, decentralized P2P market, has an Android and iOS app that allows users to chat privately. It has experienced steady growth over the last three years but has yet to become a top marketplace. Utopia is another new marketplace that was launched in late 2019. It is advertised as a marketplace that can bypass online censorship, firewalls, and surveillance with its built-in use of encrypted text, email, and messages.

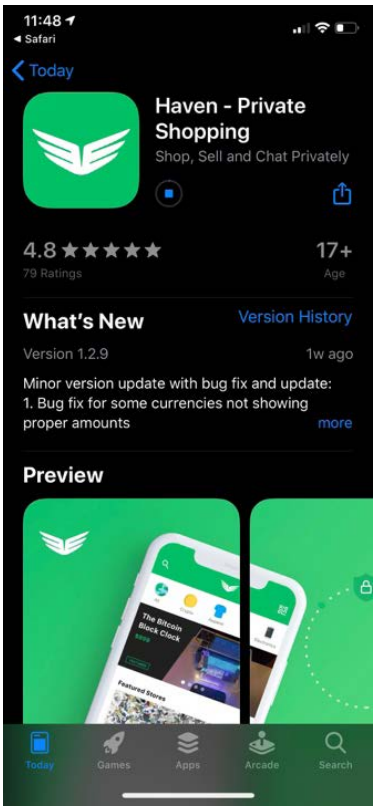


Figure 83. OpenBazaar iOS app

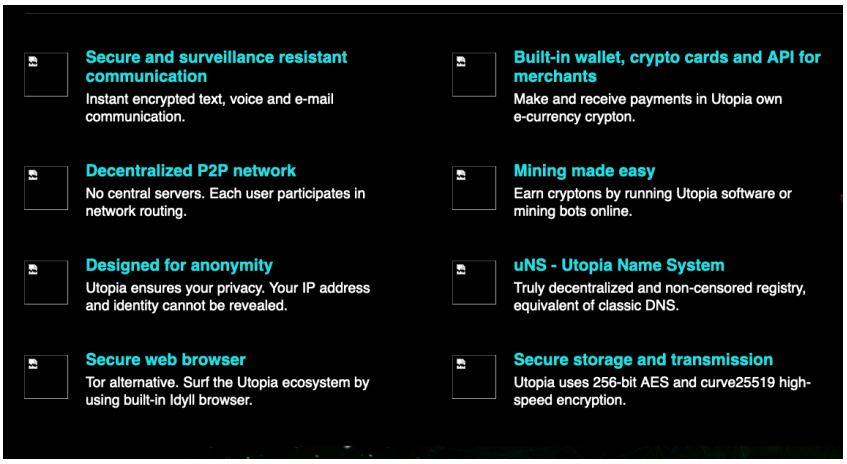


Figure 84. Utopia's security features for gaining the user's trust

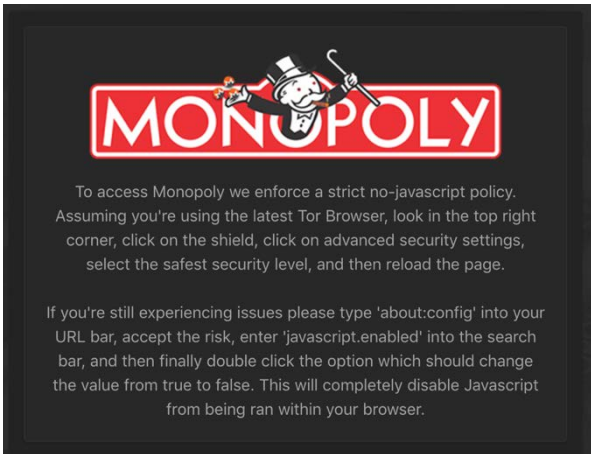


Figure 85. Monopoly's strict no javascript policy

Discord Used for Direct Messaging and Sales

Two years ago, we saw that many cybercriminals used the Telegram messaging app to facilitate their malicious activity. In 2019, cybercriminals moved to Discord, a popular communication platform with more than 250 million users as of May 2019. The platform is viewed as a safe place that allows users some degree of anonymity.

Underground forums and dark web marketplaces have created their own Discord servers. While these channels are not as busy as the forums themselves, we have observed the same goods and services being offered for the same prices.

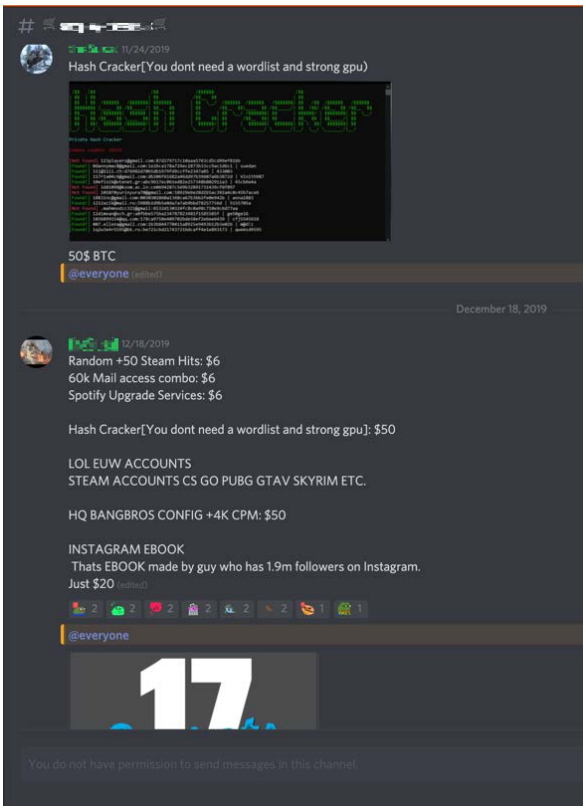


Figure 86. Discord group for sellers

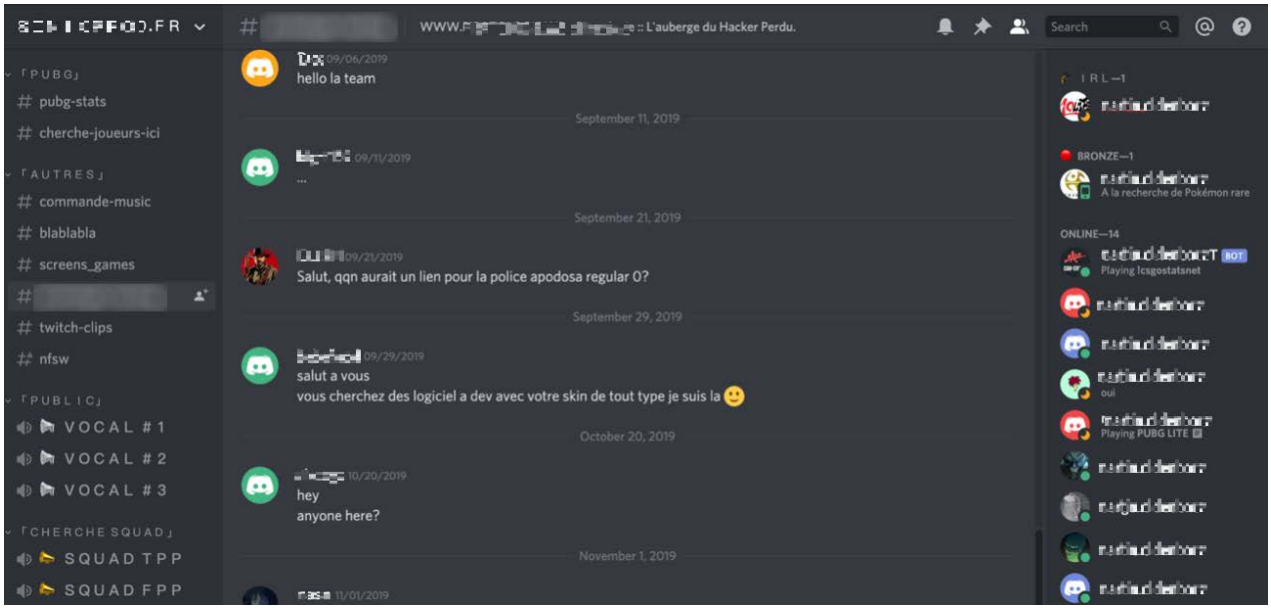


Figure 87. French underground forum Piratologie Discord channel

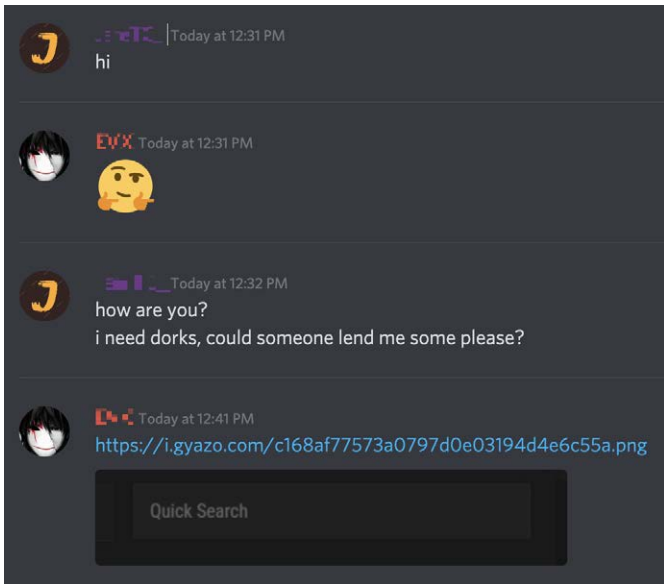


Figure 88. Discord channel for OG forum

African Cybercrime Increases

In our 2017 research paper on the West African underground market[29] we predicted that West African cybercriminals would shift to more elaborate crimes, complex operations, and business models. BEC and tax fraud are examples of such activities.

Internet and mobile users have increased in Africa over the last two years, and more people are using online banking, online bill payments, and social media accounts. This, of course, is a ripe environment for cybercriminals. Several hacking groups have already emerged. In 2017, members of the Forkbombo group were arrested for exploiting banking infrastructure loopholes to steal millions from Kenyan banks. SilentCards, a group that supposedly spawned from Forkumbo, reportedly continues to siphon ATMs and target banks.[30, 31] In West Africa, the group Silent Starling successfully infiltrated more than 500 organizations worldwide with BEC attacks in 2019. The group first started with romance scams.[32]

SIM Card Services Popular but Prices Remain Private

SIM swapping and SIM-jacking will be a growing threat that takes advantage of remote employees and everyday users. Since mobile devices are used for enterprise authentication, hijacked SIM cards can give hackers access to a user's enterprise email account as the hardware is "trusted." This means that they will be able to access all manner of corporate data covertly.[33]

Underground offerings vary from free tutorials to region-specific SIM card services. Many of the services are offered in Russian language forums. In forums of other languages, they were not so visible. Prices for these services are commonly unlisted and only available through private messages.

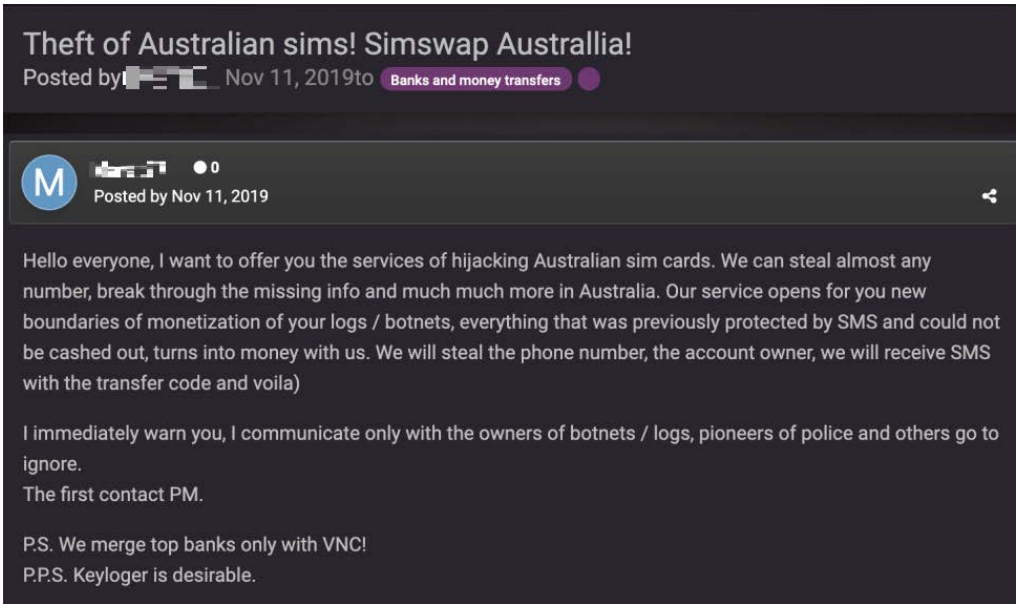


Figure 89. Russian language forum offering SIM swaps in Australia

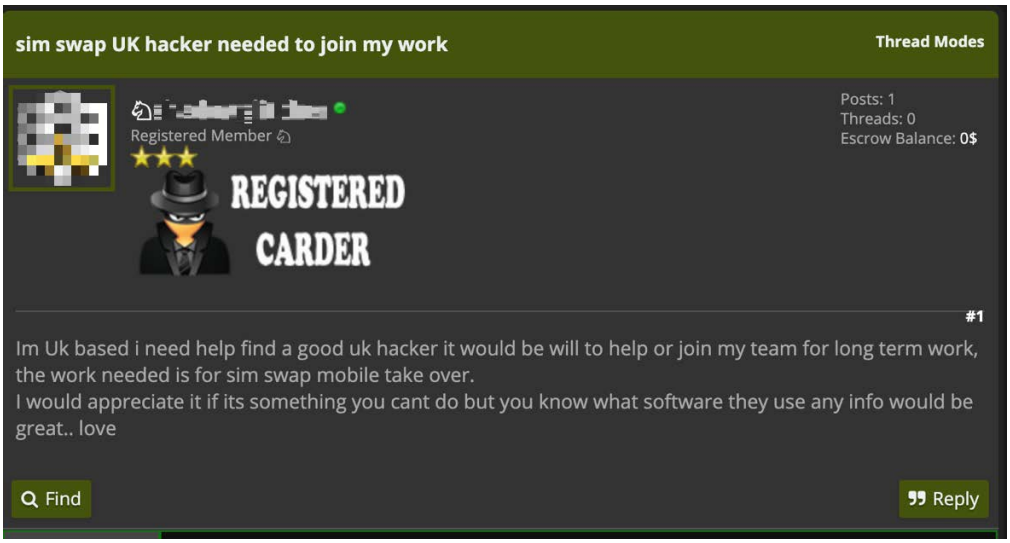


Figure 90. Russian language forum asking for SIM swap hackers

The Future of Seller Spaces

Predicting how underground markets and forums will evolve is complicated, but we can reasonably anticipate certain issues with sufficient data and insight. We have identified several scenarios we expect to see in the cybercriminal underground economy within the next three years.

Deepfake ransomware will be the evolution of sextortion. Deepfakes will move away from creating fake celebrity pornographic videos, and veer into manipulating company employees and teenagers. These tools will demand a higher price than non-sextortion ransomware builds.

More cybercrime will hit Africa in the next three to five years. As more citizens use online platforms for banking and transactions, cybercriminals will develop tools and schemes to take advantage of them. Established hacking groups are already attacking financial institutions, and we predict more will follow.

Cybercriminals will find a scalable business model that takes advantage of the IoT's wide attack surface. Cybercriminals will move away from simple DDoS to data interception or using the machines as long-term infected proxies to make botnets harder to map out. Cybercriminals will hone in on IoT devices for espionage and extortion.

We will see smart contracts in escrow offered in underground forums. Replacing escrow with a blockchain for trust could help guarantee that both parties get what they want out of the deal, without the need to establish trust through reputation.

SIM card hijacking will increase and target high-level executives. Underground forums currently offer services involving the use of social engineering on telecommunication companies to swap SIMs. Many offerings exist for SIM card swaps, usually from a company insider. Gaining access to your account allows hackers to pass 2-step verification process in various platforms.

Appendix of Prices

Past

Generic Android botnet	Up to US$1,500
Generic DDOS botnet	US$50 a day
Panel/builder for a form grabber botnet	US$100
Botnet rentals	US$5 and up
Generic botnet builds	Free and up
RevengeRAT/NjRAT	Free
Generic Android RATS	US$1 and up
Source code for a generic RAT	US$49 and up
Monthly RAT subscriptions	US$5 and US$25
Generic ransomware build	US$5 and up
Ranion ransomware	US$900 a year
Cryptolocker ransomware	US$100
Jigsaw ransomware	US$3,000
Dharma ransomware	US$100
Generic crypterbuilders	US$99 and up
Crypteras a service	US$20 and up
Kronos-based malware	US$3,000 and up
Generic Android banking malware	US$100 and up
ATM Malware	US$2,000 and up
GozNym malware	US$750
Phone Flooder	US$50 and up
SMS bulk sender	US$25 to US$500
SMS sender monthly	US$2 and up
Netflix accounts	US$2 and up
Banking credentials	US$5 and up
Spotify accounts	US$3 and up
Disney+ accounts	US$1 and up
McDonald's accounts	US$1 and up
Domino's accounts	US$1 and up
Grubhub accounts	US$3 and up
Store credentials with credit cards	US$1.50 and up
High balance credit cards	US$100
Bulk credit cards	US$1 each

Verified credit cards	US$10 and up
Fake credit card statement	US$25
Registered passport service	US$2,500
Scan copies of real passports	US$1 and up per copy
Forged Pharmacy Rx labels	US$60 and up
Identity kits	US$20 and up
Driver's license scans	US$10 and up

Present

United States Voter databases	Free to US$9.99
Non-U.S. Voter databases	US$9.99-US$400
1,000 Facebook likes	US$3 and up
1,000 Instagram likes	US$0.15 and up
50 Twitch likes	US$0.50 and up
Social media bot	US$25 and up
1,000 YouTube likes	US$26 and up
20,000 new visitor hits	US$5 and up
Deepfake videos	From US$50
Deepfake still images	From US$2.50 each
Software to create deepfakes	From US$25
Roblox	From US$36
Gambling bot	From US$75
Sports Betting AI	From US$30
Fitbit Social Engineering course	From US$100
Fitbit Ionic	From US$40
Fitbit Versa	From US$35
Mirai botnet rentals	US$10 and up
Original Mirai source code	Free
Mirai based stresser	US$20 and up
FbotMirai variant rental	US$500 a week

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