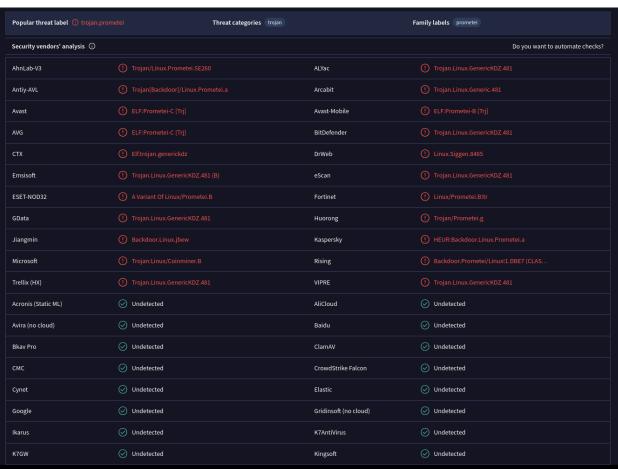
Identify and Analyze Cyber Threats

Malware Analysis

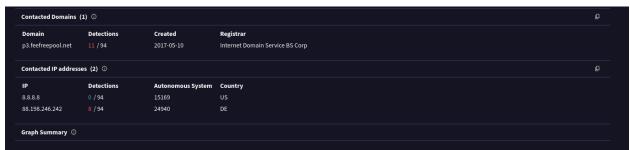
Sample Link

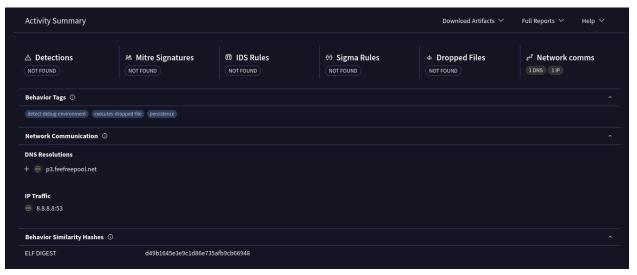
Analysis Link





Basic properties ①	
MD5	99ba8fd508563a946e811d80be35002e
SHA-1	e3938ac112daa883ba5dc72a2fa114b1acb77fd2
SHA-256	76aad0a8f0aaffe57f8ced5ad25e0a3133000f93aa5fff45153e4730d048efe8
Vhash	b3a5fcda1befb53a724715687a591d0b
SSDEEP	12288:qb14350q+8eX51/f2Wc3slC3yjTjMv+9X5JhBXEsV3b9gh4J8zMSv7MzOup8Mplb:qmShf4OTjMgXSJhBXEsVrmz9MOup1Khk
TLSH	T144155B653700EF5EF39DE27108F287E046D125F31AD24296A278C71C6EE161D28AFDE9
File type	ELF executable linux elf
Magic	ELF 32-bit MSB executable, MIPS, MIPS32 rel2 version 1 (SYSV), statically linked, for GNU/Linux 3.2.0, BuildID[sha1]=bc565f9f2dafc5618defa8eccf705f85712c87da, stripped
TrID	ELF Executable and Linkable format (generic) (100%)
DetectItEasy	ELF32 Operation system: Unix [EXEC MIPS-32] Compiler: gcc ((Ubuntu 7.5.0-3ubuntu1~18.04) 7.5.0) [EXEC MIPS-32]
Magika	ELF
File size	898.99 KB (920568 bytes)
History ①	
First Seen In The Wild	2025-01-20 15:01:32 UTC
First Submission	2025-01-20 14:44:45 UTC
Last Submission	2025-01-20 14:44:45 UTC
Last Analysis	2025-01-20 14:44:45 UTC
<u> </u>	







Detection Rate: 34% (22 out of 63 vendors have identified this)

<u>Malware Family</u>: Trojan <u>File Information</u>: ELF, exe

Network Indicators: p3.feefreepool.net

IP Traffic: 8.8.8.8:53

<u>Behavior Indicators / Indicators of Compromise:</u> Detects debug environments; executes

dropped files; persistence

System Impact/ Potential Damage Assessment: Opens, writes, and delete files;

Unleashes a series of commands;

Phishing Template Creation

Select from the menu:

- 1) Social-Engineering Attacks
- Penetration Testing (Fast-Track)
- 3) Third Party Modules
- 4) Update the Social-Engineer Toolkit
- 5) Update SET configuration
- 6) Help, Credits, and About
- 99) Exit the Social-Engineer Toolkit

<u>set</u>> 1

Select from the menu:

- 1) Spear-Phishing Attack Vectors
- 2) Website Attack Vectors
- Infectious Media Generator
- 4) Create a Payload and Listener
- 5) Mass Mailer Attack
- 6) Arduino-Based Attack Vector
- 7) Wireless Access Point Attack Vector
- 8) ORCode Generator Attack Vector
- 9) Powershell Attack Vectors
- 10) Third Party Modules
- 99) Return back to the main menu.

<u>set</u>> 2

- 1) Java Applet Attack Method
- 2) Metasploit Browser Exploit Method
- 3) Credential Harvester Attack Method
- 4) Tabnabbing Attack Method
- 5) Web Jacking Attack Method
- 6) Multi-Attack Web Method
- 7) HTA Attack Method
- 99) Return to Main Menu

<u>set:webattack</u>>3

- 1) Web Templates
- Site Cloner
- 3) Custom Import
- 99) Return to Webattack Menu

set:webattack>1

- 1. Java Required
- 2. Google
- 3. Twitter

set:webattack> Select a template: 2

set:webattack> IP address for the POST back in Harvester/Tabnabbing [10.0.2.1
5]: clear

```
[*] Cloning the website: http://www.google.com
[*] This could take a little bit...

The best way to use this attack is if username and password form fields are a vailable. Regardless, this captures all POSTs on a website.
[*] The Social-Engineer Toolkit Credential Harvester Attack
[*] Credential Harvester is running on port 80
[*] Information will be displayed to you as it arrives below:
10.0.2.15 - - [20/Jan/2025 20:29:09] "GET / HTTP/1.1" 200 -
[*] WE GOT A HIT! Printing the output:
PARAM: GALX=SJLCkfgaqoM
PARAM: continue=https://accounts.google.com/o/oauth2/auth?zt=ChRsWFBwd2JmV1hI
cDhtUFdldzBENhIfWxxSTdNLW9MdThibW1TMFQzVUZFc1BBaURuWmlRSQ%E2%88%99APsBz4gAAA
AAUy4_qD7Hbfz38w8kxnaNouLcRiD3YTjX
PARAM: service=lso
PARAM: dsh=-7381887106725792428
PARAM: jutf8=â
PARAM: jutf8=â
PARAM: dnConn=
PARAM: checkedDomains=youtube
PARAM: checkedDomains=youtube
POSSIBLE USERNAME FIELD FOUND: Email=hello@gmail.com
PDSSIBLE USERNAME FIELD FOUND: Passwd=hellohello!
PARAM: signIn=Sign+in
PARAM: PersistentCookie=yes
```

Potential Impact:

- Credential leaks
- Changed passwords/credentials
- Loss of access
- Fraud/Unauthorized use

Prevention Methods:

- 2FA/ MFA
- Log-in attempts emailed
- Changing passwords frequently
- Use password manager

APT Campaign Analysis

APT28

Campaign Overview

Name: APT28 (Fancy Bear)

Target: Europe, United States, Nato allies

Industry Focus: Government, military, media

Active Date: Minimum since 2007

Primary Goals: Espionage, influence operations, data exfiltration

Tools: X-Agent, Sofacy, Zebrocy, Mimikatz

MITRE ATT&Ck Mapping

Initial Access

T1190 - Exploit Public-Facing Application

Exploited vulnerabilities in web applications to gain initial access, such as using vulnerabilities in Microsoft Exchange or web servers

T1566.001 - Spear Phishing Attachment

Delivered malicious email attachments to target individuals as part of phishing campaigns.

Execution Method

T1203 - Exploitation for Client Execution

Leveraged vulnerabilities in Microsoft Office documents with macros or embedded scripts to execute payloads

T1059.003 - Command and Scripting Interpreter: Windows Command Shell

Utilized Windows commands for initial payload execution and post-compromise activity

Persistence Mechanisms

T1547.001 - Boot or Logon Autostart Execution: Registry Run Keys/Startup Folder

Modifies registry keys to maintain persistence on compromised systems

T1053.005 - Scheduled Task/Job

Used scheduled tasks to execute malware at regular intervals

Command and Control

T1068 - Exploitation for Privilege Escalation

Exploited known vulnerabilities to escalate privileges on target systems, such as CVE-2017-0263

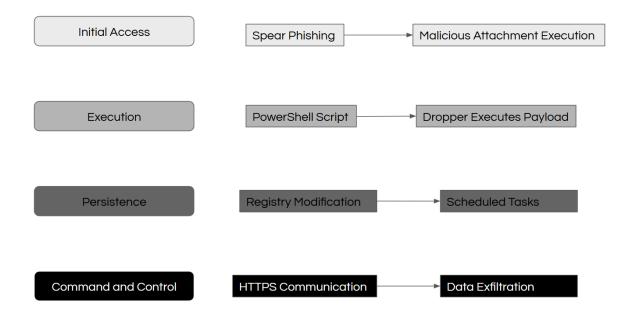
T1027 - Obfuscated Files or Information

Used obfuscation techniques in scripts and malware to evade detection

T1070.004 - Indicator Removal on Host: File Deletion

Deleted artifacts from infected systems to avoid forensic analysis

Attack Flow Diagram



Impact Analysis

Operational Impact

- Disruption of government communications.
- Theft of classified data.

Reputational Impact

• Compromised trust in targeted organizations.

Economic Impact

• Cost of incident response and remediation.

Geopolitical Impact

Influence on elections and political decisions.

Apply Vulnerability Assessment Techniques

Part 1: Asset Discovery Scan

Initial Network Mapping

Ifconfia

sudo nmap -sn [target ip]

```
·(test® test)-[~]
 -$ ifconfig
eth0: flags=4163<UP, BROADCAST, RUNNING, MULTICAST> mtu 1500
        inet 192.168.8.105 netmask 255.255.255.0 broadcast 192.168.8.255
        inet6 fe80::a00:27ff:fe5d:d4d7 prefixlen 64 scopeid 0×20<link>
        ether 08:00:27:5d:d4:d7 txqueuelen 1000 (Ethernet)
        RX packets 954 bytes 59579 (58.1 KiB)
        RX errors 0 dropped 0 overruns 0 frame 0
        TX packets 1515 bytes 93602 (91.4 KiB)
        TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
        inet 127.0.0.1 netmask 255.0.0.0
        inet6 ::1 prefixlen 128 scopeid 0×10<host>
        loop txqueuelen 1000 (Local Loopback)
        RX packets 8 bytes 480 (480.0 B)
        RX errors 0 dropped 0 overruns 0 frame 0
        TX packets 8 bytes 480 (480.0 B)
        TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
 <u>sudo</u> nmap -sn 192.168.8.105/24
Starting Nmap 7.94SVN ( https://nmap.org ) at 2025-01-21 18:45 EST
Nmap scan report for Pixel-6.lan (192.168.8.133)
Host is up (0.18s latency).
Nmap scan report for console.gl-inet.com (192.168.8.1)
```

Host is up (0.0019s latency).

```
Nmap scan report for test.lan (192.168.8.105)
Host is up.
Nmap done: 256 IP addresses (4 hosts up) scanned in 2.71 seconds
```

Number of Responsive Hosts: 3

Found IP Addresses:

- 192.168.8.133
- 192.168.8.1
- 192.168.8.105 (VM)

Host Names:

- console.gl-inet.com
- Pixel-6.
- test (VM)

Service Enumeration

(Only will scan the host "Pixel-6" for this portion; "console.gl-inet.com" is a network router; "test" is the VM itself) sudo nmap -sV -p- [discovered_host_ip]

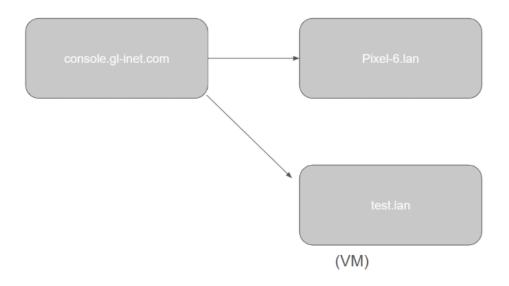
Pixel 6

```
(test@test)-[~]
$ nmap -sV -p- 192.168.8.133
Starting Nmap 7.94SVN ( https://nmap.org ) at 2025-01-21 19:00 EST
Nmap scan report for Pixel-6.lan (192.168.8.133)
Host is up (0.013s latency).
All 65535 scanned ports on Pixel-6.lan (192.168.8.133) are in ignored states.
Not shown: 65535 closed tcp ports (reset)
```

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ . Nmap done: 1 IP address (1 host up) scanned in 23.54 seconds

Open Ports: No open ports exist Running Services: Cannot be found Service Version: Cannot be found

Network Map



Critical Assets: Pixel 6, VM, Router

Initial Risk Assessment:

Low, all IPs listed start with 192.168 which is only for internal use within networks. Therefore, attackers can not easily intrude into systems.

Part 2: Vulnerability Scan

Perform Vulnerability Scan:

sudo nmap -sV --script vuln [target_ip]

```
| Case |
```

```
NSE: [http-enum 192.168.8.1:80] HTTP: Page didn't match the 404 response (400 Bad Request) (?feed=rss2)
NSE: [http-enum 192.168.8.1:80] HTTP: Page didn't match the 404 response (400 Bad Request) (?feed=atom)
NSE: [http-enum 192.168.8.1:80] HTTP: Page was '200 OK', it exists! (/)
NSE: [http-enum 192.168.8.1:80] HTTP: Page was '200 OK', it exists! (/)
NSE: [http-enum 192.168.8.1:80] HTTP: Page was '200 OK', it exists! (/)
NSE: [http-enum 192.168.8.1:80] HTTP: Page was '200 OK', it exists! (/)
NSE: [http-enum 192.168.8.1:80] HTTP: Page was '200 OK', it exists! (/)
NSE: [http-enum 192.168.8.1:80] HTTP: Page didn't match the 404 response (403 Forbidden) (/cgi-bin/)
NSE: [http-enum 192.168.8.1:80] HTTP: Page didn't match the 404 response (403 Forbidden) (/il8n/)
NSE: [http-enum 192.168.8.1:80] HTTP: Page didn't match the 404 response (403 Forbidden) (/js/)
NSE: [http-enum against 192.168.8.1:80] HTTP: Page didn't match the 404 response (403 Forbidden) (/js/)
NSE: [http-enum against 192.168.8.1:80] HTTP: Page didn't match the 404 response (403 Forbidden) (/js/)
NSE: [http-enum against 192.168.8.1:80] HTTP: Page didn't match the 404 response (403 Forbidden) (/js/)
  NSE: Finished http-enum against 192.168.8.1:80.
  NSE: Starting runlevel 2 (of 2) scan.
NSE: [ssl-cert-intaddr 192.168.8.1:22] 192.168.8.1 is a private address - skipping.
  NSE: Starting http-cookie-flags against 192.168.8.1:80.
NSE: [http-cookie-flags 192.168.8.1:80] start check of /
NSE: [http-cookie-flags 192.168.8.1:80] end check of /: 0 issues found
  NSE: Finished http-cookie-flags against 192.168.8.1:80.
  NSE: Starting ssl-known-key against 192.168.8.1:443.
NSE: Finished ssl-known-key against 192.168.8.1:443.
NSE: Starting ssl-ccs-injection against 192.168.8.1:443.
   NSE: Starting http-cookie-flags against 192.168.8.1:443.
 NSE: [http-cookie-flags 192.168.8.1:443] start check of /
NSE: [http-cookie-flags 192.168.8.1:443] end check of /: 0 issues found
NSE: Finished http-cookie-flags against 192.168.8.1:443.
NSE: Starting http-server-header against 192.168.8.1:443.
  NSE: Starting tls-ticketbleed against 192.168.8.1:443.
  NSE: Starting ssl-dh-params against 192.168.8.1:443.
  NSE: Starting ssl-poodle against 192.168.8.1:443.
NSE: Starting ssl-poodle against 192.168.8.1:443.

NSE: Starting http-server-header against 192.168.8.1:80.

NSE: [ssl-cert-intaddr 192.168.8.1:80] 192.168.8.1 is a private address - skipping.

NSE: [ssl-cert-intaddr 192.168.8.1:53] 192.168.8.1 is a private address - skipping.

NSE: Starting ssl-heartbleed against 192.168.8.1:443.

NSE: [ssl-cert-intaddr 192.168.8.1:443] 192.168.8.1 is a private address - skipping.

NSE: [ssl-ces-injection 192.168.8.1:443] Handshake completed (TLSv1.2)

NSE: Finished ssl-ccs-injection against 192.168.8.1:443.

NSE: [tls-ticketbleed 192.168.8.1:443] Captured server_hello record.

NSE: [tls-ticketbleed 192.168.8.1:443] Captured certificate record.

NSE: [tls-ticketbleed 192.168.8.1:443] Captured server_key_exchange record.

NSE: [tls-ticketbleed 192.168.8.1:443] Captured server_hello_done record.

NSE: [tls-ticketbleed 192.168.8.1:443] Unknown message type: change_cipher_spec

NSE: [tls-ticketbleed 192.168.8.1:443] Server did not send a NewSessionTicket record.

NSE: Finished http-server-header against 192.168.8.1:443.
  NSE: Finished http-server-header against 192.168.8.1:443.
  NSE: [ssl-heartbleed 192.168.8.1:443] we're done!
NSE: [ssl-heartbleed 192.168.8.1:443] Server does not support TLS Heartbeat Requests.
NSE: [ssl-heartbleed 192.168.8.1:443] Server does not support TLS Heartbeat Requests.
NSE: Finished http-server-header against 192.168.8.1:80.
NSE: [tls-ticketbleed 192.168.8.1:443] Captured server_hello record.
NSE: [tls-ticketbleed 192.168.8.1:443] Captured certificate record.
NSE: [tls-ticketbleed 192.168.8.1:443] Captured server_key_exchange record.
NSE: [tls-ticketbleed 192.168.8.1:443] Captured server_hello_done record.
NSE: [tls-ticketbleed 192.168.8.1:443] Unknown message type: change_cipher_spec
NSE: [tls-ticketbleed 192.168.8.1:443] Server did not send a NewSessionTicket record.
NSE: [ssl-heartbleed 192.168.8.1:443] we're done!
NSE: [ssl-heartbleed 192.168.8.1:443] server does not support TLS Heartbeat Requests.
NSE: [ssl-heartbleed 192.168.8.1:443] Server does not support TLS Heartbeat Requests.
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NSE: [ssl-heartbleed 192.168.8.1:443] Server does not support TLS Heartbeat Requests.
NSE: [ssl-heartbleed sgainst 192.168.8.1:443]
NSE: [ssl-heartbleed 192.168.8.1:443] Server does not support ILS Heartbleac kequing NSE: Finished ssl-heartbleed against 192.168.8.1:443. NSE: [tls-ticketbleed 192.168.8.1:443] Captured server_hello record. NSE: [tls-ticketbleed 192.168.8.1:443] Captured certificate record. NSE: [tls-ticketbleed 192.168.8.1:443] Captured server_key_exchange record. NSE: [tls-ticketbleed 192.168.8.1:443] Captured server_hello_done record. NSE: [tls-ticketbleed 192.168.8.1:443] Unknown message type: change_cipher_spec
```

```
NSE: [tla-ticketbleed 192.168.8.1:443] server did not send a NewGessionTicket record.

NSE: [ssl-heartbleed 192.168.8.1:443] server does not support TLS Heartbeat Requests.

NSE: [ssl-heartbleed 192.168.8.1:443] server does not support TLS Heartbeat Requests.

NSE: [ssl-heartbleed 192.168.8.1:443] server does not support TLS Heartbeat Requests.

NSE: [ssl-heartbleed 192.168.8.1:443] server does not support TLS Heartbeat Requests.

NSE: [ssl-heartbleed 192.168.8.1:443] server does not support TLS Heartbeat Requests.

NSE: [ssl-heartbleed 192.168.8.1:443] captured server pello record.

NSE: [ssl-heartbleed 192.168.8.1:443] captured server pello record.

NSE: [ssl-heartbleed 192.168.8.1:443] captured server pello gene record.

NSE: [ssl-heartbleed 192.168.8.1:443] belong the server of server server
```

sudo nmap -p80,443 --script "http-* and not http-brute*" [target_ip]

```
–( test⊛ test )-[~]
 <u>sudo</u> nmap -p80,443 --script "http-brute" 192.168.8.1
Starting Nmap 7.94SVN ( https://nmap.org ) at 2025-01-21 21:21 EST
Nmap scan report for console.gl-inet.com (192.168.8.1)
Host is up (0.0026s latency).
PORT
        STATE SERVICE
80/tcp open http
 | http-brute:
  Path "/" does not require authentication
443/tcp open https
 | http-brute:
   Path "/" does not require authentication
    -( test® test )-[~]
 <u>sudo</u> nmap -p445 --script "smb-vuln*" 192.168.8.1
Starting Nmap 7.94SVN ( https://nmap.org ) at 2025-01-21 21:23 EST
Nmap scan report for console.gl-inet.com (192.168.8.1)
Host is up (0.0029s latency).
 PORT
          STATE SERVICE
445/tcp closed microsoft-ds
 __$ nmap -p80,443 --script "http-* and not http-brute*" 192.168.8.133
Starting Nmap 7.94SVN ( https://nmap.org ) at 2025-01-22 06:07 EST
Pre-scan script results:
|_http-robtex-shared-ns: *TEMPORARILY DISABLED* due to changes in Robtex's API. See https://www.robtex.com/api/
Nmap scan report for Pixel-6.lan (192.168.8.133)
Host is up (0.20s latency).
PORT STATE SERVI
80/tcp filtered http
             SERVICE
443/tcp filtered https
MAC Address: C2:E6:ED:AD:48:3B (Unknown)
Nmap done: 1 IP address (1 host up) scanned in 4.77 seconds
sudo nmap -p445 --script "smb-vuln*" [target_ip]
   –(test⊛test)-[~]
  sudo nmap -p445 --script "smb-vuln*" 192.168.8.105
 Starting Nmap 7.94SVN ( https://nmap.org ) at 2025-01-22 06:08 EST
 Nmap scan report for test.lan (192.168.8.105)
 Host is up (0.000026s latency).
          STATE SERVICE
 445/tcp closed microsoft-ds
 Nmap done: 1 IP address (1 host up) scanned in 0.12 seconds
   –( test⊛ test )-[~]
 sudo nmap -p445 --script "smb-vuln*" 192.168.8.133
 Starting Nmap 7.94SVN ( https://nmap.org ) at 2025-01-22 06:09 EST
 Nmap scan report for Pixel-6.lan (192.168.8.133)
 Host is up (0.076s latency).
 PORT
          STATE SERVICE
 445/tcp closed microsoft-ds
```

No Vulnerabilities found on this network...

Overall Risk Assessment: Very low, all IPs stated/found on this network are private. As a side note, some IPs appear to show for devices that are down.

Methodology:

Tools used: Kali Linux, Nmap

Scan Configurations: Ping Scan (-sn), Version Detection Scan (-sV -p-), Vulnerability Script (-sV --script vuln), HTTP Script (-p80,443 --script "http-* and not http-brute*), SMB Vulnerability Scan (-p445 --script "smb-vuln*")

Assessment Approach: Brute Force

<u>Findings</u>

Assets Discovered: Pixel Phone, Router, VM

Vulnerabilities: None seen

Risk Assessment:

Extremely low, the environment is a closed network cased within a singular area.