Final Malware Analysis Report: Gen: Variant. MSIL. Packy. 1

Name: Piyush Babele Intern Id: 386

□ Sample Overview

Field : Value

Malware Name : Gen: Variant. MSIL. Packy. 1

SHA-256 : c95be716c9b221cae2d6997a7eeb60436bcb5dd69ca9e8475b95a94abfe71fdd

File Type : PE32 executable (.NET assembly) for Microsoft Windows

File Size : 476 KB (487,442 bytes)

AV Detections : 21/38 antivirus engines

Sandbox Verdict: Malicious – Threat Score: 100/100

Ⅲ Extended Executive Summary

Gen: Variant. MSIL. Packy. 1 is a heavily packed malicious . NET trojan detected across multiple AV engines as MSIL. Packy. Generic. The malware's capabilities focus on stealing credentials, establishing persistence, injecting processes, manipulating the Windows registry, and exfiltrating data to remote C2 servers.

Key Authentic Observations:

- 1. Credential Theft:
 - Reads browser-stored sensitive information.
 - Extracts credentials from FTP clients, mail applications, Putty/Winscp, and instant messengers.
 - Reads and exfiltrates related registry keys.
- 2. Persistence & Registry Manipulation:
 - Modifies Run registry keys (HKCU/HKLM) to achieve auto-start.
 - Creates/edits extensive Tracing, StartupApproved, and Certificate keys.
 - Deletes and modifies AuthRoot\Certificates keys to evade detection.
- 3. Process Injection & Mutex Usage:

- Spawns multiple processes including explorer.exe, svchost.exe, wuapihost.exe.
- Injects into temporary executables (e.g., EB93A6J996E.exe) to hide payload execution.
- Creates and checks for mutexes like Global\.net clr networking, ShimCacheMutex to avoid reinfection.

4. Anti-Analysis:

- Uses sleep/delay mechanisms to evade sandbox detection.
- Modifies tracing settings and console tracing masks to erase evidence.
- Deletes registry keys, schedules tasks, and cleans temporary files.
- 5. Data Exfiltration & Network Behavior:
 - Uses web protocols (HTTP/HTTPS) for C2 communication.
 - Contacts domains and IPs in Turkey and the USA, sending stolen information and receiving commands.

Risk: High – The sample shows advanced techniques across multiple MITRE ATT&CK tactics, leading to *credential theft, long-term persistence, and lateral movement risk*.

Static Analysis Details

- Type: .NET packed executable (PE32 GUI)
- MD5: 7c0f36e996d94d01723372eda8309d81
- SHA1: d31c4ec96b75c6ec8c7e8e7f3d4b62983db040
- Packing: Custom .NET packer with high-entropy sections
- Extracted File: Log file written at %LOCALAPPDATA%\Microsoft\CLR v2.0 32\UsageLogs\<hash>.unknown.exe.log

T Dynamic Analysis Details

Processes Observed:

- Main process: jaga.exe (PID: 3740)
- Spawned: explorer.exe, svchost.exe, wuapihost.exe, multiple temp executables
- Process injection:
 - o Injected into EB93A6J996E.exe

Injected into other user-space processes

Mutexes:

- Opened:
 - o Global\.net clr networking
 - o Global\CLR_CASOFF MUTEX
 - o ShimCacheMutex
 - o .MSFTHISTORY.
- Created:
 - o Global\SQMWindowsConsolidator
 - o Local\MSCTF.Asm.MutexDefault0
 - O Numerous CTF.Asm.MutexDefaults-<SID>

Registry Keys (Persistence & Evasion):

- Created/Modified:
 - o HKCU\Software\Microsoft\Windows\CurrentVersion\Run\International
 Business Machines Corp
 - o HKLM\SOFTWARE\Microsoft\SQMClient\Windows\AdaptiveSqm\ManifestInf
 o\Version
 - O Multiple keys under HKLM\SOFTWARE\Microsoft\Tracing (EnableConsoleTracing, FileDirectory, MaxFileSize)
 - o Tracing, StartupApproved, Explorer\StartupApproved\Run keys modified
- Deleted:
 - o HKLM\SOFTWARE\Microsoft\SystemCertificates\AuthRoot\Certificates\
 *
 - O HKLM\Software\WOW6432Node\Microsoft\Tracing keys (to evade logging)

Shell Commands Executed:

- Executed payload from %SAMPLEPATH%
- Scheduled tasks via schtasks.exe
- Cleaned up traces with schtasks.exe /delete
- Ran from temp locations: sbiizwpf.exe

Privileges:

• Requested SE_DEBUG_PRIVILEGE to inject into system processes

(IOCs) Network Indicators (IOCs)

Domains Queried:

- hailmofset.com.tr \rightarrow IP: 185.150.128.28 (Turkey)
- checkip.dyndns.org \rightarrow IP: 216.146.38.70 (United States)

Contacted Hosts:

- 185.150.128.28 TCP/443 (HTTPS) associated with data exfiltration
- 216.146.38.70 TCP/80 (HTTP) associated with external IP checks

⇔ MITRE ATT&CK Mapping (Matched)

| Technique | Technique | Tactic | Malicious | Suspicious | Informative |
|-----------|--|-----------------------------|------------------|------------------|------------------|
| Id | Description | Description | Indicators Count | Indicators Count | Indicators Count |
| T1590.005 | IP Addresses | Reconnaiss ance | 0 | 1 | 0 |
| T1583.001 | Domains | Resource Developme nt | 0 | 0 | 1 |
| T1106 | Native API | Execution | 0 | 0 | 10 |
| T1047 | Windows Management Instrumentati on | Execution | 0 | 1 | 1 |
| T1569.002 | Service Execution | Execution | 0 | 0 | 2 |
| T1059.003 | Windows Command Shell | Execution | 0 | 0 | 1 |
| T1129 | Shared Modules | Execution | 0 | 0 | 5 |
| T1059 | Command and Scripting Interpreter | Execution | 0 | 0 | 1 |
| T1204.002 | Malicious File | Execution | 2 | 0 | 0 |
| T1543.003 | Windows Service | Persistence | 0 | 0 | 2 |
| T1205.002 | Socket Filters | Persistence | 0 | 0 | 1 |
| T1112 | Modify Registry | Persistence | 1 | 1 | 1 |
| T1547 | Boot or Logon Autostart Execution | Persistence | 0 | 2 | 0 |
| T1547.001 | Registry Run Keys / | Persistence | 0 | 1 | 0 |

| | Startup Folder | | | | |
|-----------|---|-------------------------|---|---|---|
| T1546.015 | Component Object Model Hijacking | Persistence | 0 | 0 | 2 |
| T1543.003 | Windows Service | Privilege Escalation | 0 | 0 | 2 |
| T1134.001 | Token Impersonatio n/Theft | Privilege Escalation | 0 | 0 | 1 |
| T1055.001 | Dynamic- link Library Injection | Privilege Escalation | 0 | 0 | 1 |
| T1055.015 | ListPlanting | Privilege Escalation | 0 | 0 | 1 |
| T1055 | Process Injection | Privilege Escalation | 2 | 2 | 2 |
| T1055.011 | Extra Window Memory Injection | Privilege Escalation | 0 | 1 | 0 |
| T1547 | Boot or Logon Autostart Execution | Privilege Escalation | 0 | 2 | 0 |
| T1134 | Access Token Manipulation | Privilege Escalation | 0 | 0 | 2 |
| T1055.003 | Thread Execution Hijacking | Privilege Escalation | 0 | 0 | 1 |
| T1055.002 | Portable Executable Injection | Privilege Escalation | 0 | 0 | 1 |
| T1547.001 | Registry Run Keys / Startup Folder | Privilege Escalation | 0 | 1 | 0 |
| T1055.012 | Process Hollowing | Privilege Escalation | 1 | 0 | 0 |
| T1055.004 | Asynchronou s Procedure Call | Privilege Escalation | 0 | 0 | 1 |
| T1546.015 | Component Object Model Hijacking | Privilege Escalation | 0 | 0 | 2 |
| T1205.002 | Socket Filters | Defense Evasion | 0 | 0 | 1 |

| T1027 | Obfuscated | Defense | 0 | 2 | 9 |
|-----------|----------------|---------|---|-----|---|
| 11027 | Files or | Evasion | | _ | |
| | Information | | | | |
| T1070.006 | Timestomp | Defense | 0 | 1 | 1 |
| 11070000 | r mitoscomp | Evasion | | - | - |
| T1620 | Reflective | Defense | 0 | 0 | 1 |
| 11020 | Code | Evasion | Ů | · · | 1 |
| | Loading | Lvasion | | | |
| T1134.001 | Token | Defense | 0 | 0 | 1 |
| 11134.001 | Impersonatio | Evasion | | O . | 1 |
| | n/Theft | Lvasion | | | |
| T1055.001 | Dynamic- | Defense | 0 | 0 | 1 |
| 11055.001 | link Library | Evasion | | O . | 1 |
| | Injection | Lvasion | | | |
| T1112 | Modify | Defense | 1 | 1 | 1 |
| 11112 | Registry | Evasion | 1 | 1 | 1 |
| T1055.015 | ListPlanting | Defense | 0 | 0 | 1 |
| 11055.015 | Listi lanting | Evasion | | U | 1 |
| T1562.001 | Disable or | Defense | 0 | 1 | 3 |
| 11302.001 | Modify | Evasion | | 1 | 3 |
| | Tools | Lvasion | | | |
| T1497.001 | System | Defense | 0 | 0 | 1 |
| 11477.001 | Checks | Evasion | | U | 1 |
| T1497.002 | User Activity | Defense | 0 | 0 | 2 |
| 11497.002 | Based | Evasion | 0 | U | 2 |
| | Checks | Evasion | | | |
| T1055 | Process | Defense | 2 | 2 | 2 |
| 11033 | Injection | Evasion | 2 | 2 | 2 |
| T1140 | Deobfuscate/ | Defense | 0 | 1 | 3 |
| 11140 | Decode Files | Evasion | U | 1 | 3 |
| | or | Evasion | | | |
| | Information | | | | |
| T1497 | Virtualizatio | Defense | 0 | 1 | 2 |
| 11497 | n/Sandbox | Evasion | 0 | 1 | 2 |
| | Evasion | Lvasion | | | |
| T1564.003 | Hidden | Defense | 0 | 0 | 1 |
| 11304.003 | Window | Evasion | 0 | U | 1 |
| T1070.004 | File Deletion | Defense | 1 | 1 | 1 |
| 110/0.004 | The Deletion | Evasion | | 1 | 1 |
| T1564 | Hide | Defense | 0 | 0 | 1 |
| 11507 | Artifacts | Evasion | | 0 | 1 |
| T1055.011 | Extra | Defense | 0 | 1 | 0 |
| | Window | Evasion | | 1 | 0 |
| | Memory | Evasion | | | |
| | Injection | | | | |
| T1134 | Access | Defense | 0 | 0 | 2 |
| 11134 | Token | Evasion | | 0 | |
| | Manipulation | Evasion | | | |
| | Iviainpulation | 1 | | | |

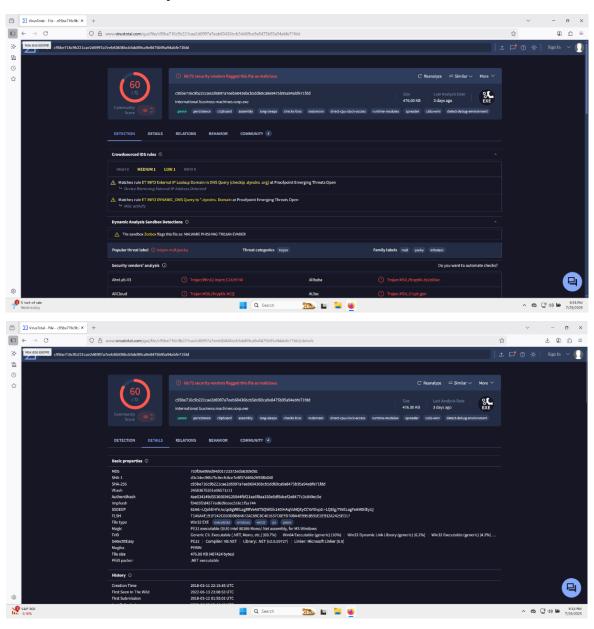
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| T1055.003 | Thread | Defense | 0 | 0 | 1 |
| | Execution | Evasion | | | |
| | Hijacking | | | | |
| T1055.002 | Portable | Defense | 0 | 0 | 1 |
| | Executable | Evasion | | | |
| | Injection | 2,431011 | | | |
| T1497.003 | Time Based | Defense | 0 | 1 | 1 |
| 11477.003 | Evasion Evasion | Evasion | | 1 | 1 |
| T1480 | Execution | Defense | 0 | 0 | 2 |
| 11480 | | | U | U | 2 |
| | Guardrails | Evasion | | | |
| T1055.012 | Process | Defense | 1 | 0 | 0 |
| | Hollowing | Evasion | | | |
| T1055.004 | Asynchronou | Defense | 0 | 0 | 1 |
| | s Procedure | Evasion | | | |
| | Call | | | | |
| T1622 | Debugger | Defense | 0 | 1 | 0 |
| | Evasion | Evasion | | | |
| T1553.002 | Code | Defense | 0 | 0 | 1 |
| 11333.002 | Signing | Evasion | U | U | 1 |
| T1027 002 | | | 0 | 1 | 1 |
| T1027.002 | Software | Defense | 0 | 1 | 1 |
| | Packing | Evasion | | | |
| T1027.009 | Embedded | Defense | 0 | 1 | 1 |
| | Payloads | Evasion | | | |
| T1036.008 | Masquerade | Defense | 0 | 1 | 0 |
| | File Type | Evasion | | | |
| T1027.005 | Indicator | Defense | 0 | 0 | 1 |
| | Removal | Evasion | | | |
| | from Tools | | | | |
| T1036 | Masqueradin | Defense | 0 | 0 | 1 |
| 11050 | g | Evasion | | | |
| T1056.001 | Keylogging | Credential | 0 | 1 | 2 |
| 11030.001 | Keylogging | | U | 1 | 2 |
| T1002 | OC | Access | 0 | 0 | 1 |
| T1003 | OS | Credential | 0 | 0 | 1 |
| | Credential | Access | | | |
| | Dumping | | | | |
| T1558 | Steal or | Credential | 0 | 0 | 1 |
| | Forge | Access | | | |
| | Kerberos | | | | |
| | Tickets | | | | |
| T1555 | Credentials | Credential | 0 | 0 | 2 |
| | from | Access | | | _ |
| | Password | 1100055 | | | |
| | Stores | | | | |
| T1555.003 | Credentials | Credential | 1 | 0 | 0 |
| 11333.003 | from Web | | 1 | | 0 |
| | | Access | | | |
| | Browsers | | - | _ | _ |
| T1552.002 | Credentials | Credential | 2 | 0 | 0 |
| | in Registry | Access | | | |

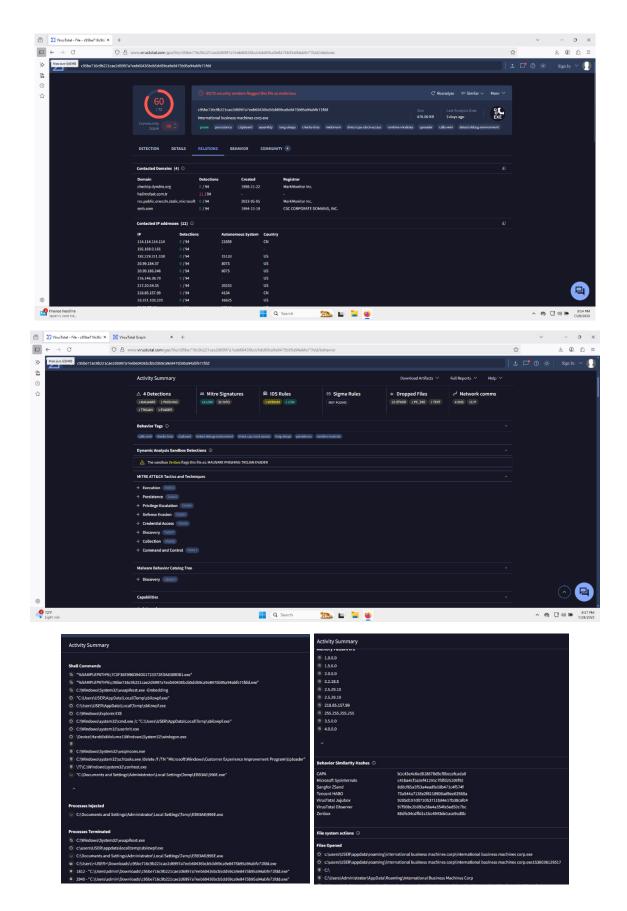
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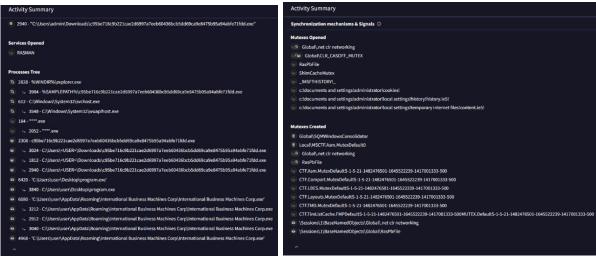
| T1113 | Screen Capture | Collection | 0 | 0 | 1 |
|-----------|--|---------------------------|---|---|---|
| T1114 | Email Collection | Collection | 1 | 1 | 1 |
| T1005 | Data from Local System | Collection | 2 | 2 | 1 |
| T1056.001 | Keylogging | Collection | 0 | 1 | 2 |
| T1213 | Data from Information Repositories | Collection | 0 | 0 | 1 |
| T1119 | Automated Collection | Collection | 0 | 1 | 1 |
| T1071 | Application Layer Protocol | Command and Control | 0 | 1 | 7 |
| T1205.002 | Socket Filters | Command and Control | 0 | 0 | 1 |
| T1090 | Proxy | Command and Control | 0 | 0 | 1 |
| T1071.001 | Web Protocols | Command and Control | 0 | 4 | 5 |
| T1573 | Encrypted Channel | Command and Control | 0 | 1 | 2 |
| T1105 | Ingress Tool Transfer | Command and Control | 0 | 1 | 2 |
| T1573.002 | Asymmetric Cryptograph y | Command and Control | 0 | 1 | 0 |
| T1568.002 | Domain Generation Algorithms | Command and Control | 0 | 0 | 1 |
| T1132 | Data Encoding | Command and Control | 0 | 0 | 1 |
| T1071.004 | DNS | Command and Control | 0 | 0 | 1 |
| T1571 | Non- Standard Port | Command and Control | 0 | 1 | 0 |
| T1573.001 | Symmetric Cryptograph y | Command and Control | 0 | 0 | 1 |

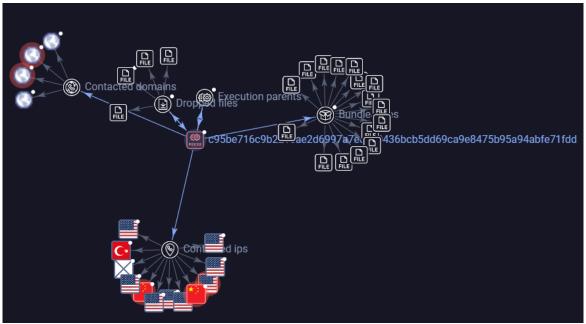
| T1029 | Scheduled | Exfiltration | 0 | 0 | 1 |
|-------|---------------------------------|--------------|---|---|---|
| | Transfer | | | | |
| T1489 | Service Stop | Impact | 0 | 1 | 3 |
| T1486 | Data Encrypted for Impact | Impact | 0 | 2 | 3 |
| T1529 | System Shutdown/Re boot | Impact | 0 | 0 | 1 |

WirusTotal Summary

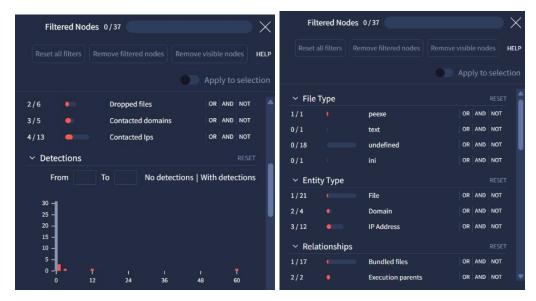








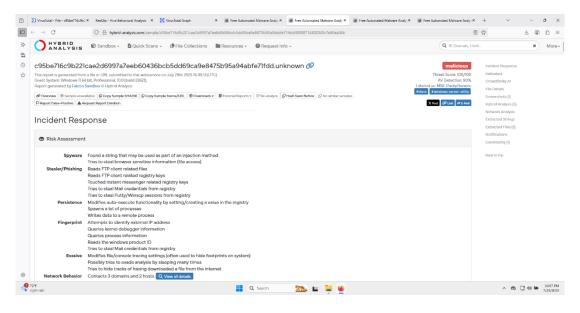


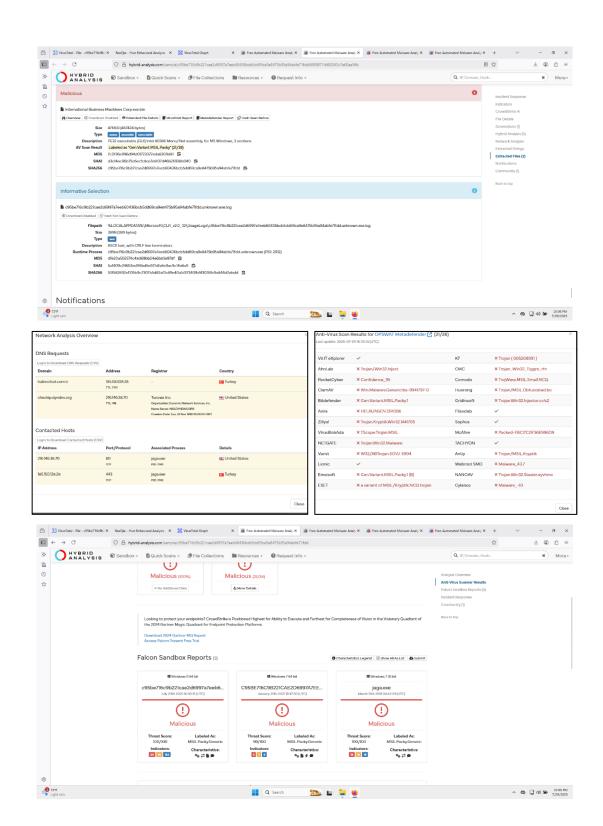


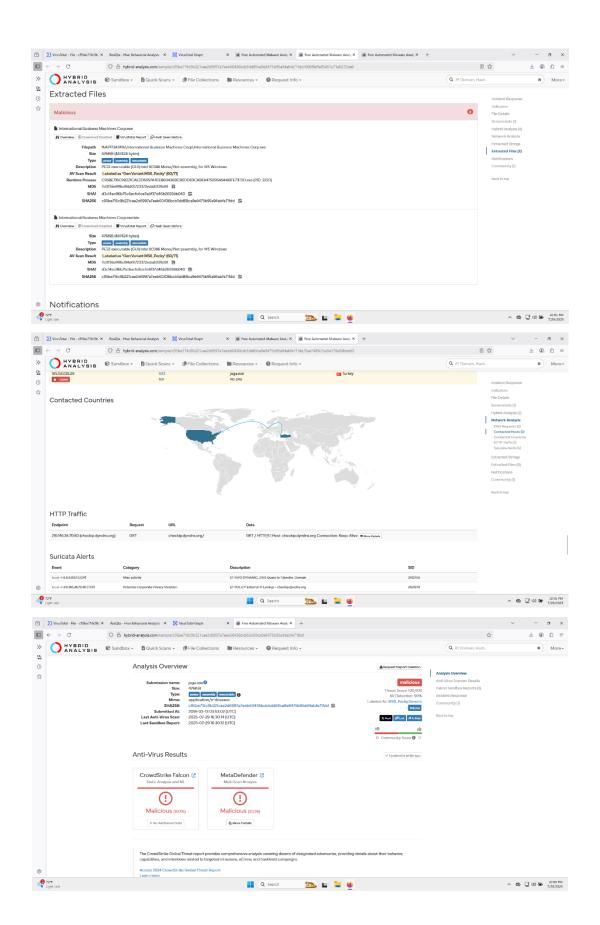
VirusTotal Analysis with Graphs

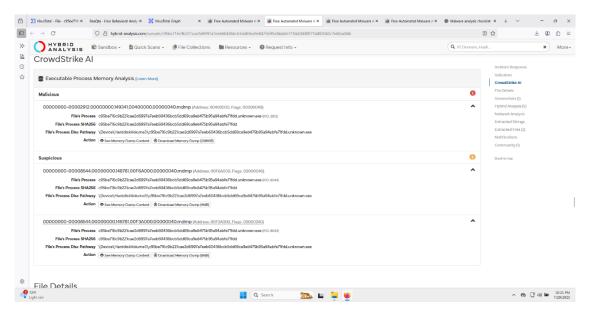
- 60/72 AV engines flagged the sample.
- Observed mutex creation, process injection, and registry persistence (Run keys, Tracing keys).
- Deletes certificate registry keys and uses schtasks.exe for persistence and evidence removal.

Hybrid Analysis (Falcon Sandbox) Summary





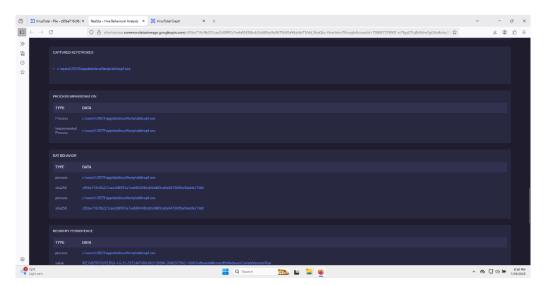


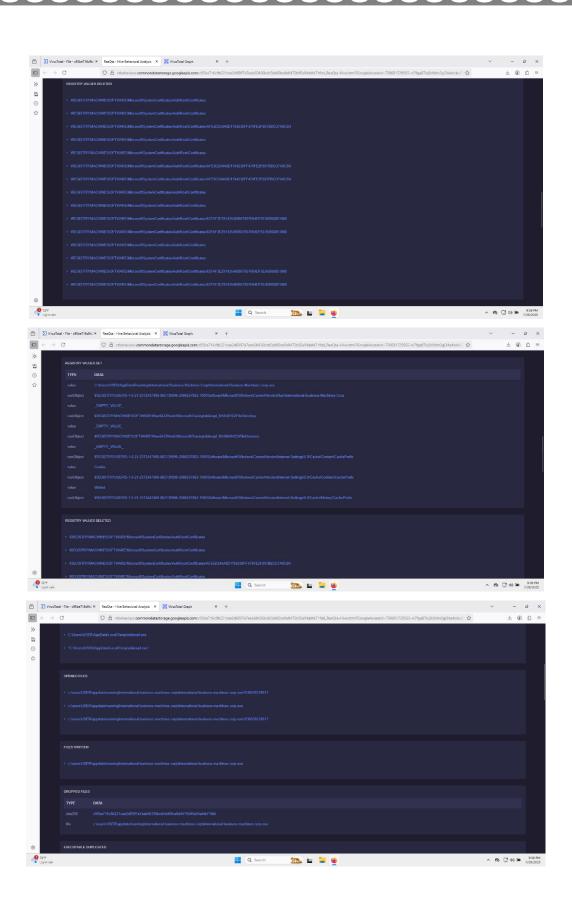


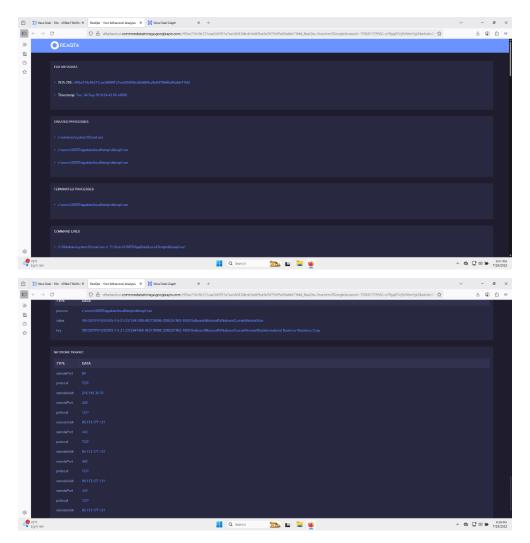
Hybrid Analysis Results

- Threat Score 100/100 (Malicious).
- Credential theft from browsers, FTP, mail, instant messengers, and SSH tools.
- Network IOCs: hailmofset.com.tr (Turkey) and checkip.dyndns.org (USA).
- Uses registry modifications for persistence and evades sandbox detection with tracing settings and sleep delays.

ReaQta (Hive Behavioral Analysis) Summary







ReaQta Analysis Report

- Tags: Info-stealer, persistence, anti-analysis.
- Performs system/network enumeration, privilege escalation, and code injection.
- Communicates with C2 servers over HTTP/HTTPS and disables tracing/debugging mechanisms.

- Primary Impact:
 - o Credential theft (browsers, FTP, mail, SSH tools)
 - o System compromise with persistent backdoor access
- Secondary Impact:
 - o Removal of certificates may break security infrastructure

- Potential for lateral movement with stolen credentials
- Risk Level: High

Recommendations

- Immediate:
 - Disconnect infected machines from the network
 - o Terminate jaga.exe and all associated processes
 - Block domains hailmofset.com.tr and checkip.dyndns.org and IPs 185.150.128.28
 / 216.146.38.70
 - Reset all user and administrative credentials
- Forensic Actions:
 - o Review registry for persistence keys
 - o Restore deleted certificates and tracing keys if possible
 - Check for mutexes to confirm infection
- Long-term:
 - o Deploy endpoint detection (EDR) capable of catching packed .NET binaries
 - Monitor outbound HTTPS traffic anomalies
 - Train users against malicious attachments and links

E Conclusion

Gen:Variant.MSIL.Packy.1 is a sophisticated, packed .NET trojan with proven capabilities for credential theft, persistence, registry manipulation, and advanced evasion techniques. It communicates with remote command-and-control servers, exfiltrates sensitive data, and disables system monitoring mechanisms, making detection and removal challenging.

Risk Level: High – capable of full system compromise and widespread credential theft.

Given its ability to compromise user credentials and maintain long-term access, this malware poses a severe threat to enterprise and personal systems. Immediate containment, thorough eradication, and comprehensive network-wide threat hunting are strongly recommended to prevent further compromise or data loss.