

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

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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

▣ 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`

Dynamic Analysis Details

Processes Observed:

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

- Injected into other user-space processes

Mutexes:

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

Registry Keys (Persistence & Evasion):

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

Domains Queried:

- hailmofset.com.tr → IP: 185.150.128.28 (Turkey)
- checkip.dyndns.org → 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 Id	Technique Description	Tactic Description	Malicious Indicators Count	Suspicious Indicators Count	Informative Indicators Count
T1590.005	IP Addresses	Reconnaissance	0	1	0
T1583.001	Domains	Resource Development	0	0	1
T1106	Native API	Execution	0	0	10
T1047	Windows Management Instrumentation	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 Impersonation/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	Asynchronous 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 Files or Information	Defense Evasion	0	2	9
T1070.006	Timestomp	Defense Evasion	0	1	1
T1620	Reflective Code Loading	Defense Evasion	0	0	1
T1134.001	Token Impersonation/Theft	Defense Evasion	0	0	1
T1055.001	Dynamic-link Library Injection	Defense Evasion	0	0	1
T1112	Modify Registry	Defense Evasion	1	1	1
T1055.015	ListPlanting	Defense Evasion	0	0	1
T1562.001	Disable or Modify Tools	Defense Evasion	0	1	3
T1497.001	System Checks	Defense Evasion	0	0	1
T1497.002	User Activity Based Checks	Defense Evasion	0	0	2
T1055	Process Injection	Defense Evasion	2	2	2
T1140	Deobfuscate/Decode Files or Information	Defense Evasion	0	1	3
T1497	Virtualization/Sandbox Evasion	Defense Evasion	0	1	2
T1564.003	Hidden Window	Defense Evasion	0	0	1
T1070.004	File Deletion	Defense Evasion	1	1	1
T1564	Hide Artifacts	Defense Evasion	0	0	1
T1055.011	Extra Window Memory Injection	Defense Evasion	0	1	0
T1134	Access Token Manipulation	Defense Evasion	0	0	2

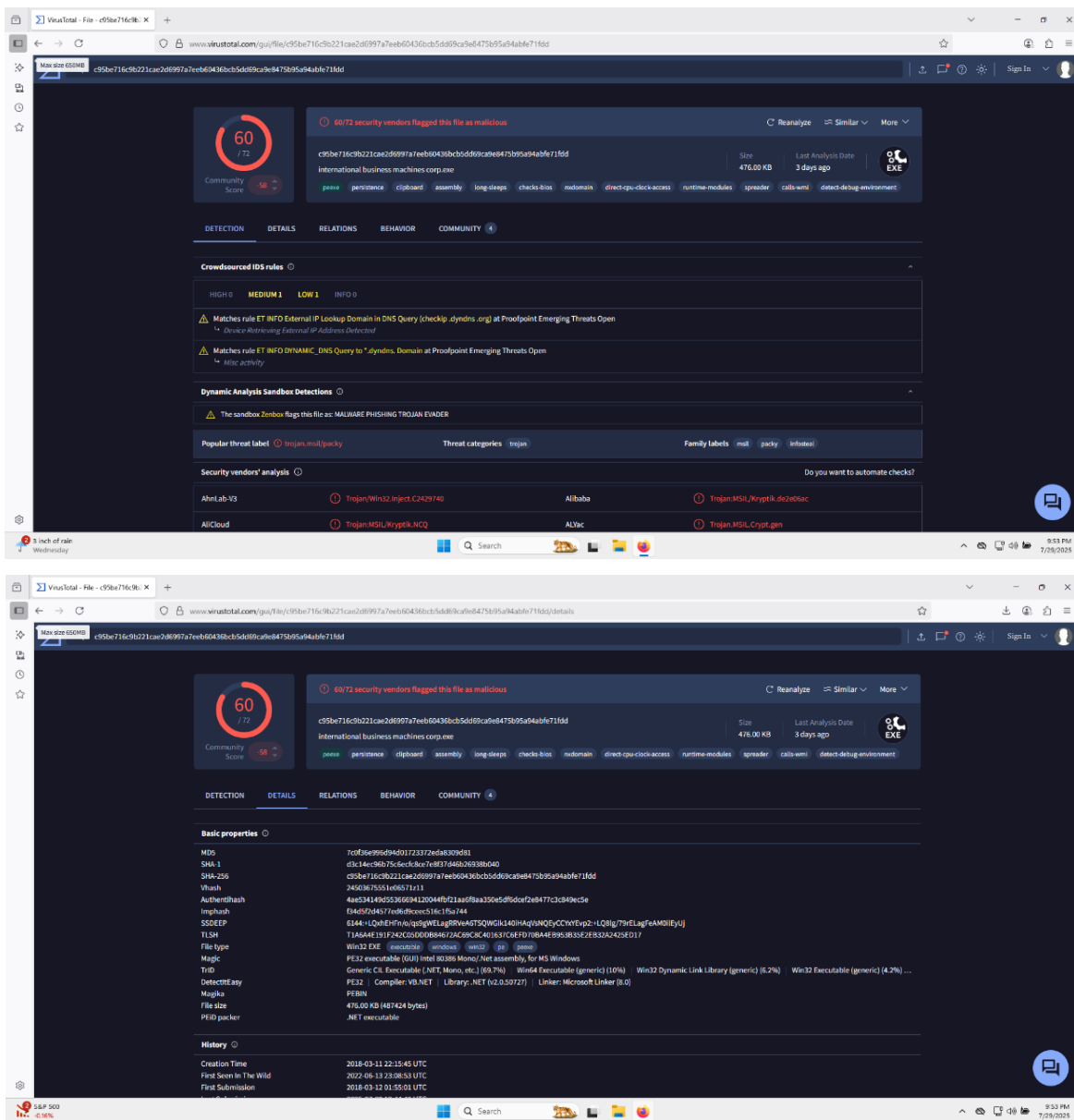
T1055.003	Thread Execution Hijacking	Defense Evasion	0	0	1
T1055.002	Portable Executable Injection	Defense Evasion	0	0	1
T1497.003	Time Based Evasion	Defense Evasion	0	1	1
T1480	Execution Guardrails	Defense Evasion	0	0	2
T1055.012	Process Hollowing	Defense Evasion	1	0	0
T1055.004	Asynchronous Procedure Call	Defense Evasion	0	0	1
T1622	Debugger Evasion	Defense Evasion	0	1	0
T1553.002	Code Signing	Defense Evasion	0	0	1
T1027.002	Software Packing	Defense Evasion	0	1	1
T1027.009	Embedded Payloads	Defense Evasion	0	1	1
T1036.008	Masquerade File Type	Defense Evasion	0	1	0
T1027.005	Indicator Removal from Tools	Defense Evasion	0	0	1
T1036	Masquerading	Defense Evasion	0	0	1
T1056.001	Keylogging	Credential Access	0	1	2
T1003	OS Credential Dumping	Credential Access	0	0	1
T1558	Steal or Forge Kerberos Tickets	Credential Access	0	0	1
T1555	Credentials from Password Stores	Credential Access	0	0	2
T1555.003	Credentials from Web Browsers	Credential Access	1	0	0
T1552.002	Credentials in Registry	Credential Access	2	0	0

T1082	System Information Discovery	Discovery	1	2	20
T1083	File and Directory Discovery	Discovery	0	1	10
T1010	Application Window Discovery	Discovery	0	0	3
T1057	Process Discovery	Discovery	1	2	9
T1016	System Network Configuration Discovery	Discovery	2	0	1
T1497.001	System Checks	Discovery	0	0	1
T1012	Query Registry	Discovery	1	1	6
T1497.002	User Activity Based Checks	Discovery	0	0	2
T1497	Virtualization/Sandbox Evasion	Discovery	0	1	2
T1614.001	System Language Discovery	Discovery	0	0	2
T1124	System Time Discovery	Discovery	0	0	1
T1007	System Service Discovery	Discovery	0	0	2
T1614	System Location Discovery	Discovery	0	0	1
T1497.003	Time Based Evasion	Discovery	0	1	1
T1622	Debugger Evasion	Discovery	0	1	0
T1033	System Owner/User Discovery	Discovery	0	0	1
T1518	Software Discovery	Discovery	0	0	1
T1570	Lateral Tool Transfer	Lateral Movement	0	0	1
T1074.001	Local Data Staging	Collection	0	0	4

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 Cryptography	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 Cryptography	Command and Control	0	0	1

T1029	Scheduled Transfer	Exfiltration	0	0	1
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

VirusTotal Summary



The image shows two screenshots of the VirusTotal web interface. The top screenshot displays the main summary page for a file with ID `c95be716c9b221cae2d0997a7eeb60436cb5d69c9e8475b95a94bfe71fdd`. The file is identified as `international.business.machines.corp.exe` and has a size of 476.00 KB. It was last analyzed 3 days ago. The community score is 60/72, with 60/72 security vendors flagging it as malicious. The file is categorized as a trojan, specifically `trojan.mal/pack`. The detection section shows several rules, including `ET-INFO-External-IP-Lookup-Domain-In-DNS-Query` and `ET-DYNAMIC-DNS-Query-to-jyndns`. The dynamic analysis sandbox detection shows the file as `MALWARE-PHISHING-TROJAN-EVADER`. The security vendors' analysis section lists detections from AhnLab-V3, AliCloud, Alibaba, and ALYac.

The bottom screenshot shows the 'Basic properties' section of the same file. It lists various hashes (MD5, SHA-1, SHA-256, Vhash, AuthentiHash, Imphash, SSDEEP, TLSH) and file type information (Win32 EXE, PE32 executable, Generic CIL Executable). It also provides details about the file's creation time (2016-03-11 22:16:05 UTC), first seen in the wild (2017-06-13 22:06:53 UTC), and first submission (2018-03-12 01:55:01 UTC). The file size is 476.00 KB (487424 bytes) and it is a .NET executable.

60/72 security vendors flagged this file as malicious

60/72
Community Score

Size: 476.00 KB
Last Analysis Date: 3 days ago

prose persistence clipboard assembly lang-drops checks-box maldomain direct-calls-to-execute runtime-modules spreader calls-win detect-debug-environment

DETECTION DETAILS RELATIONS BEHAVIOR COMMUNITY

Contacted Domains (4)

Domain	Detections	Created	Registrar
checkio-dynidns.org	1 / 94	1998-11-22	MarkMonitor Inc.
tehnofast.com.tr	11 / 94	-	-
mc-public-onecloud-static-microsoft	1 / 94	2023-05-05	MarkMonitor Inc.
smh.com	1 / 94	1994-12-19	CSC CORPORATE DOMAINS, INC.

Contacted IP addresses (12)

IP	Detections	Autonomous System	Country
114.114.114.114	1 / 94	21859	CN
192.168.0.161	1 / 94	-	-
192.229.211.108	1 / 94	15153	US
20.99.184.37	1 / 94	8075	US
20.99.186.246	1 / 94	8075	US
216.146.38.10	1 / 94	-	US
217.20.54.35	1 / 94	20253	US
218.85.157.99	1 / 94	4134	CN
23.221.315.220	1 / 94	16625	US

Activity Summary

4 Detections 4 Mitre Signatures 1 IDS Rules 0 Sigma Rules 0 Dropped Files 0 Network comms

Behavior Tags

Dynamic Analysis Sandbox Detections

MITRE ATT&CK Tactics and Techniques

Malware Behavior Catalog Tree

Capabilities

Activity Summary

Shell Commands

- "%SAMPLEPATH%\TCF36E960940D172317ED48309D61.exe"
- "%SAMPLEPATH%\c6be716c9b221cae2d6997a7eeb60436cb5dd69cae8473b95a94abfe716dd.exe"
- "C:\Windows\System32\wuapihost.exe -Embedding"
- "C:\Users\USER\AppData\Local\Temp\ubizwxf.exe"
- "C:\Users\USER\AppData\Local\Temp\ubizwxf.exe"
- "C:\Windows\Explorer.EXE"
- "C:\Windows\System32\cmd.exe /c "C:\Users\USER\AppData\Local\Temp\ubizwxf.exe"
- "C:\Windows\System32\userinit.exe"
- "\Device\HarddiskVolume1\Windows\System32\winlogon.exe"
- "C:\Windows\System32\wuapihost.exe"
- "C:\Windows\System32\wuapihost.exe /delete /f /TN "Microsoft\Windows\Customer Experience Improvement Program\Uploader"
- "\?C:\Windows\system32\conhost.exe"
- "C:\Documents and Settings\Administrator\Local Settings\Temp\EB93A6\996E.exe"

Processes Injected

- "C:\Documents and Settings\Administrator\Local Settings\Temp\EB93A6\996E.exe"

Processes Terminated

- "C:\Windows\System32\wuapihost.exe"
- "C:\Users\USER\AppData\Local\Temp\ubizwxf.exe"
- "C:\Documents and Settings\Administrator\Local Settings\Temp\EB93A6\996E.exe"
- "C:\Users\USER\Downloads\c9be716c9b221cae2d6997a7eeb60436cb5dd69cae8473b95a94abfe716dd.exe"
- "1812 - "C:\Users\admin\Downloads\c9be716c9b221cae2d6997a7eeb60436cb5dd69cae8473b95a94abfe716dd.exe"
- "2940 - "C:\Users\admin\Downloads\c9be716c9b221cae2d6997a7eeb60436cb5dd69cae8473b95a94abfe716dd.exe"

Activity Summary

Behavior Similarity Hashes

File system actions

Files Opened

- "c:\Users\USER\AppData\Roaming\International Business Machines Corp\International Business Machines Corp.exe"
- "c:\Users\USER\AppData\Roaming\International Business Machines Corp\International Business Machines Corp.exe\1336036129517"
- "C:\Users\Administrator\AppData\Roaming\International Business Machines Corp"

Activity Summary

2940 - "C:\Users\admin\Downloads\c95be716c9b221cae2d6997a7eeb60436bc5dd69ca9e8475b95a94abfe71fdd.exe"

Services Opened

- RASMAN

Processes Tree

- 2828 - %WINDIR%\explorer.exe
- 3984 - %SAMPLEPATH%\c95be716c9b221cae2d6997a7eeb60436bc5dd69ca9e8475b95a94abfe71fdd.exe
- 612 - C:\Windows\System32\svchost.exe
- 3548 - C:\Windows\System32\wuauclt.exe
- 184 - *****.exe
- 2052 - *****.exe
- 2308 - c95be716c9b221cae2d6997a7eeb60436bc5dd69ca9e8475b95a94abfe71fdd.exe
- 3024 - C:\Users\USER\Downloads\c95be716c9b221cae2d6997a7eeb60436bc5dd69ca9e8475b95a94abfe71fdd.exe
- 1812 - C:\Users\USER\Downloads\c95be716c9b221cae2d6997a7eeb60436bc5dd69ca9e8475b95a94abfe71fdd.exe
- 2940 - C:\Users\USER\Downloads\c95be716c9b221cae2d6997a7eeb60436bc5dd69ca9e8475b95a94abfe71fdd.exe
- 6420 - C:\Users\user\Desktop\program.exe
- 3840 - C:\Users\user\Desktop\program.exe
- 6080 - C:\Users\user\AppData\Roaming\International Business Machines Corp\International Business Machines Corp.exe
- 3212 - C:\Users\user\AppData\Roaming\International Business Machines Corp\International Business Machines Corp.exe
- 2912 - C:\Users\user\AppData\Roaming\International Business Machines Corp\International Business Machines Corp.exe
- 3040 - C:\Users\user\AppData\Roaming\International Business Machines Corp\International Business Machines Corp.exe
- 4968 - C:\Users\user\AppData\Roaming\International Business Machines Corp\International Business Machines Corp.exe

Activity Summary

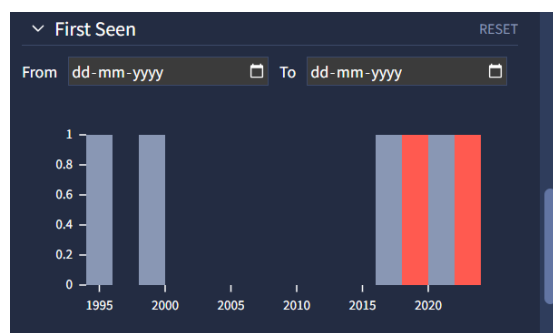
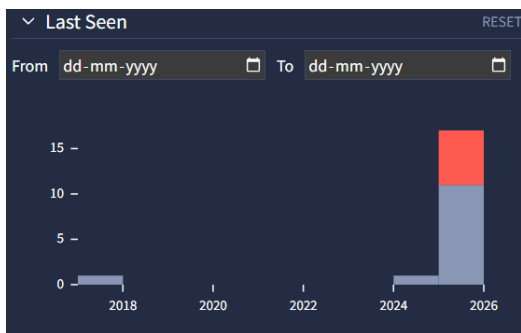
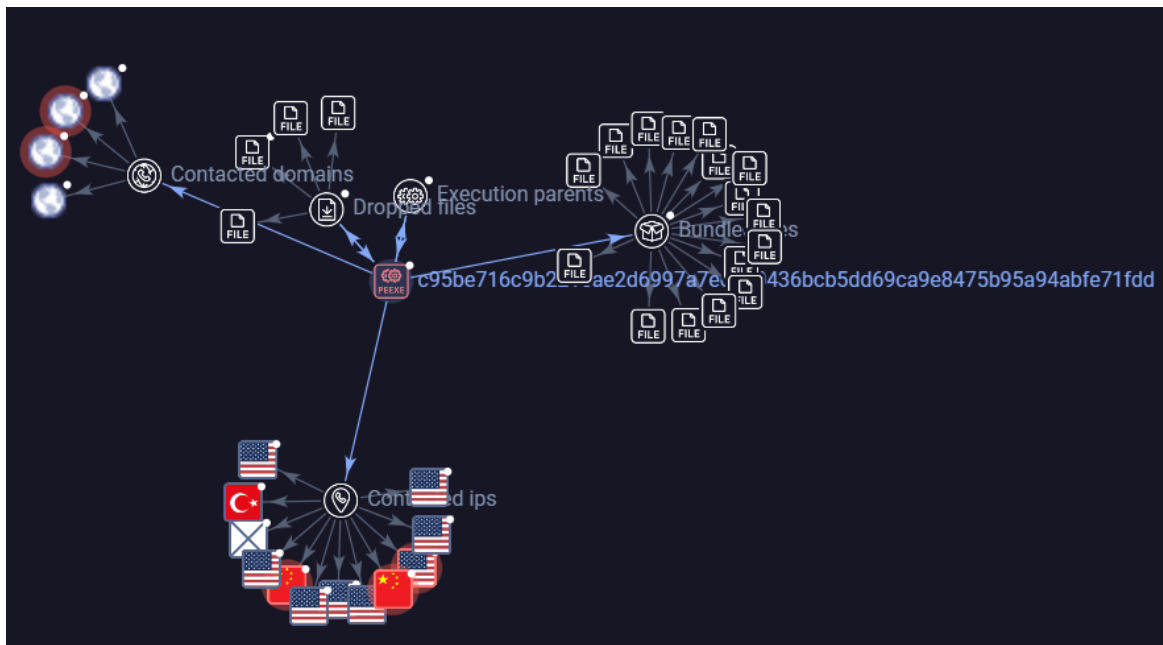
Synchronization mechanisms & Signals

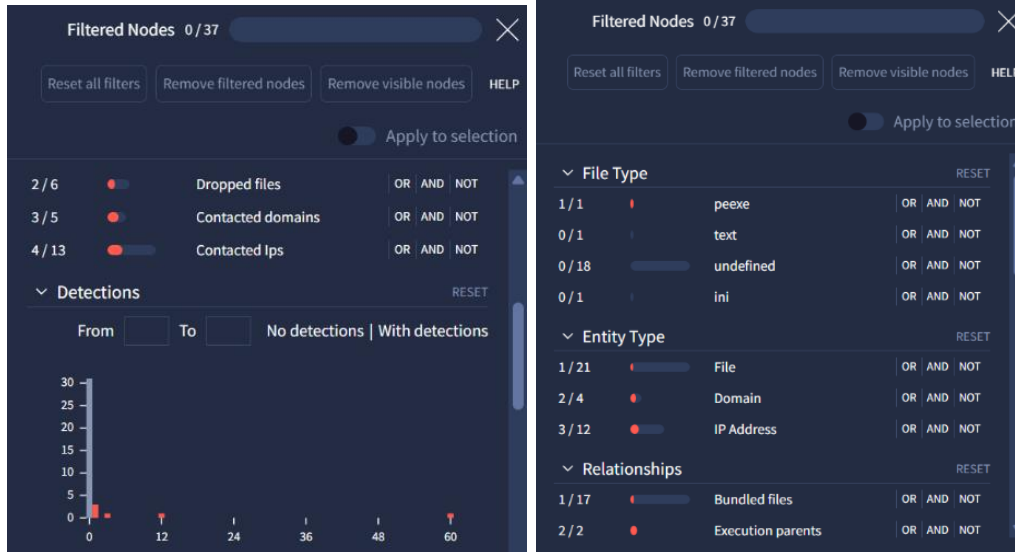
Mutexes Opened

- Global\inet_csr_networking
- Global\CLR_CASOFF_MUTEX
- RasPbFile
- ShimCacheMutex
- _IMSTHISTORYL
- cldocuments and settings\administrator\cookies\
- cldocuments and settings\administrator\local settings\history\history\
- cldocuments and settings\administrator\local settings\temporary internet files\content\ie\

Mutexes Created

- Global\SQLMWindowsConsolidator
- Local\MSCTFAsm.MutexDefault\0
- Global\inet_csr_networking
- RasPbFile
- CTF.Asm.MutexDefault\5-1-5-21-1482476501-1645522239-1417001333-500
- CTF.Compart.MutexDefault\5-1-5-21-1482476501-1645522239-1417001333-500
- CTF.LBES.MutexDefault\5-1-5-21-1482476501-1645522239-1417001333-500
- CTF.Layouts.MutexDefault\5-1-5-21-1482476501-1645522239-1417001333-500
- CTF.TMD.MutexDefault\5-1-5-21-1482476501-1645522239-1417001333-500
- CTF.TimListCache.FMPDefault\5-1-5-21-1482476501-1645522239-1417001333-500\MUTEX.Default\5-1-5-21-1482476501-1645522239-1417001333-500
- \Sessions\1\BaseNamedObjects\Global\inet_csr_networking
- \Sessions\1\BaseNamedObjects\Global\RasPbFile





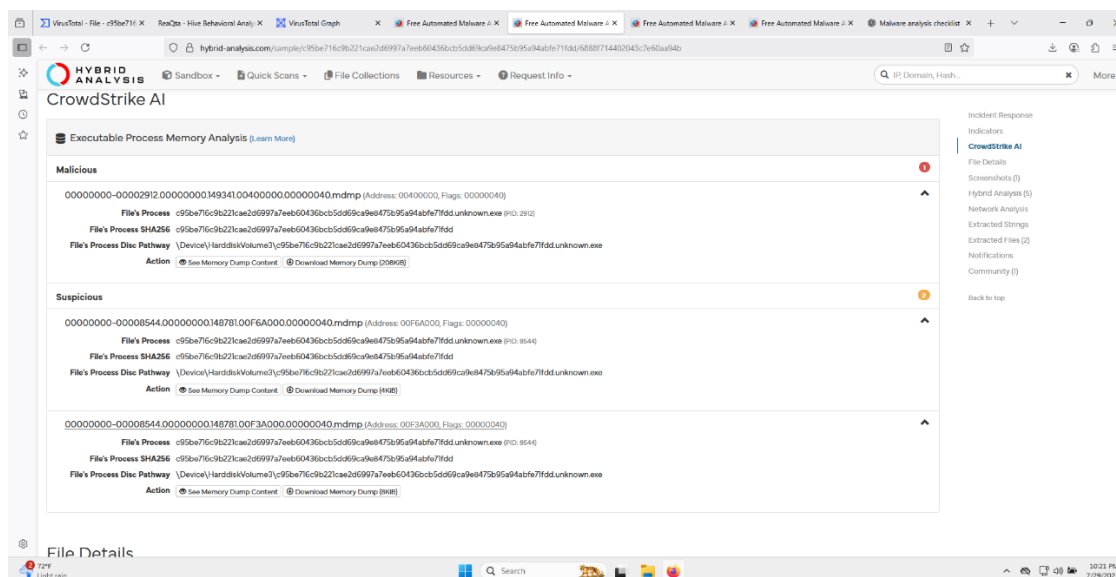
VirusTotal Analysis with Graphs

- 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

The screenshot shows the Hybrid Analysis (Falcon Sandbox) report for a sample. The report includes a 'Risk Assessment' section with the following categories and actions:

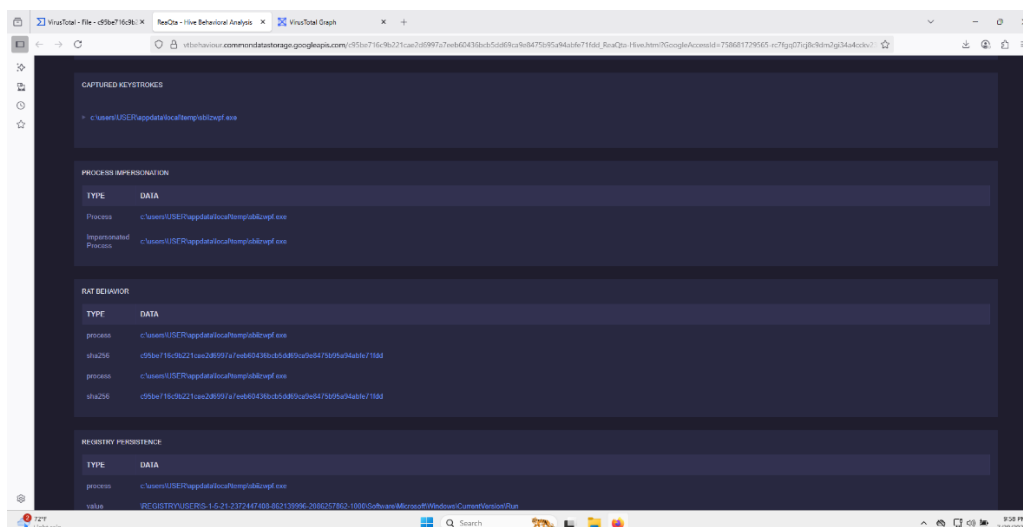
- Spyware:** Found a string that may be used as part of an injection method. Tries to steal browser sensitive information (file access).
- Stealer/Phishing:** Reads FTP client related files. Reads FTP client related registry keys. Touched instant messenger related registry keys. Tries to steal Mail credentials from registry. Tries to steal Putty/Winscp sessions from registry.
- Persistence:** Modifies auto-execute functionality by setting/creating a value in the registry. Spawns a lot of processes.
- Fingerprint:** Writes data to a remote process. Attempts to identify external IP addresses. Queries kernel debugger information. Queries process information. Reads the windows product ID.
- Evasive:** Modifies file/console tracing settings (often used to hide footprints on system). Possibly tries to evade analysis by sleeping many times. Tries to hide tracks of having downloaded a file from the internet.
- Network Behavior:** Contacts 3 domains and 2 hosts.

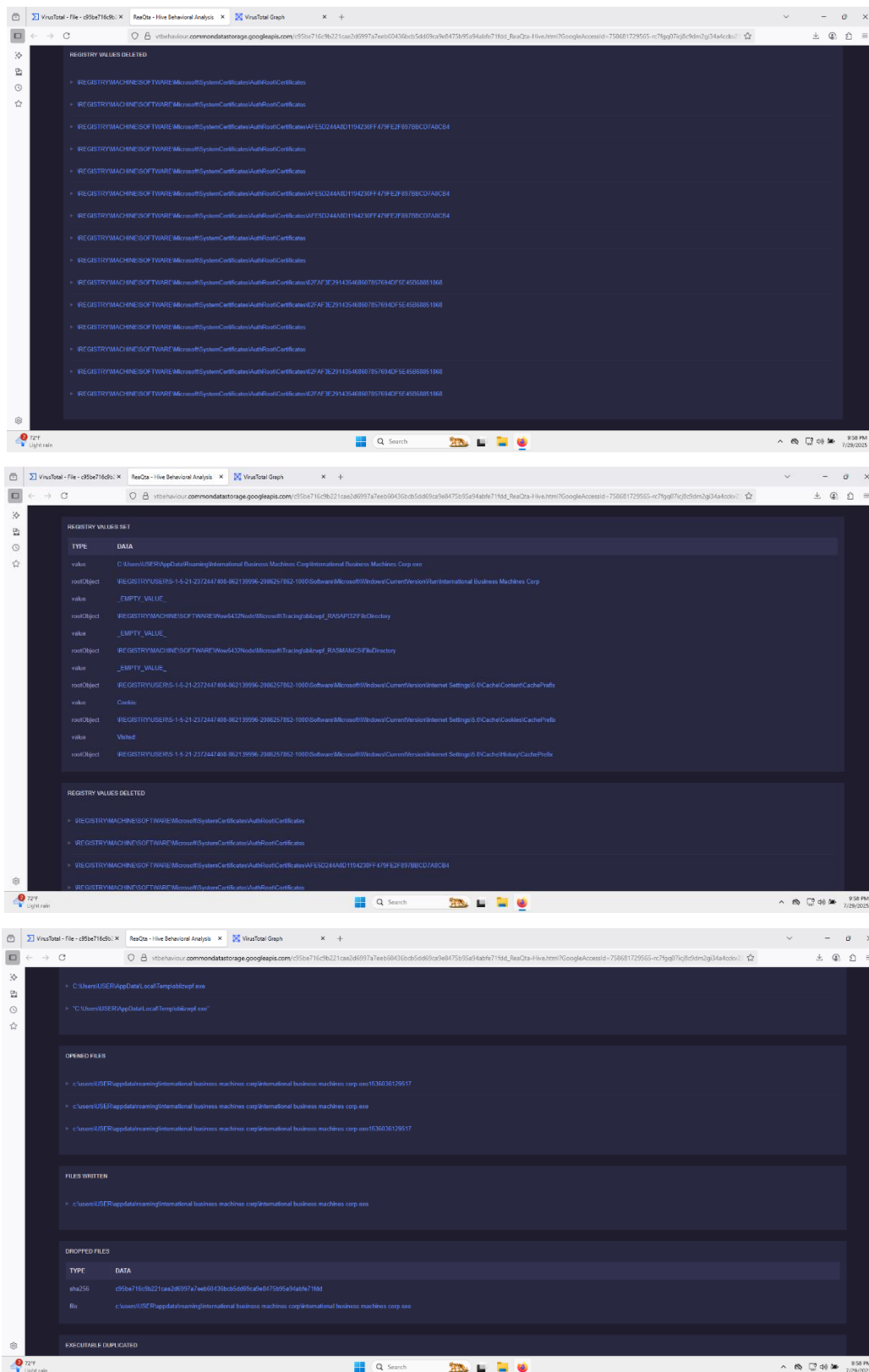


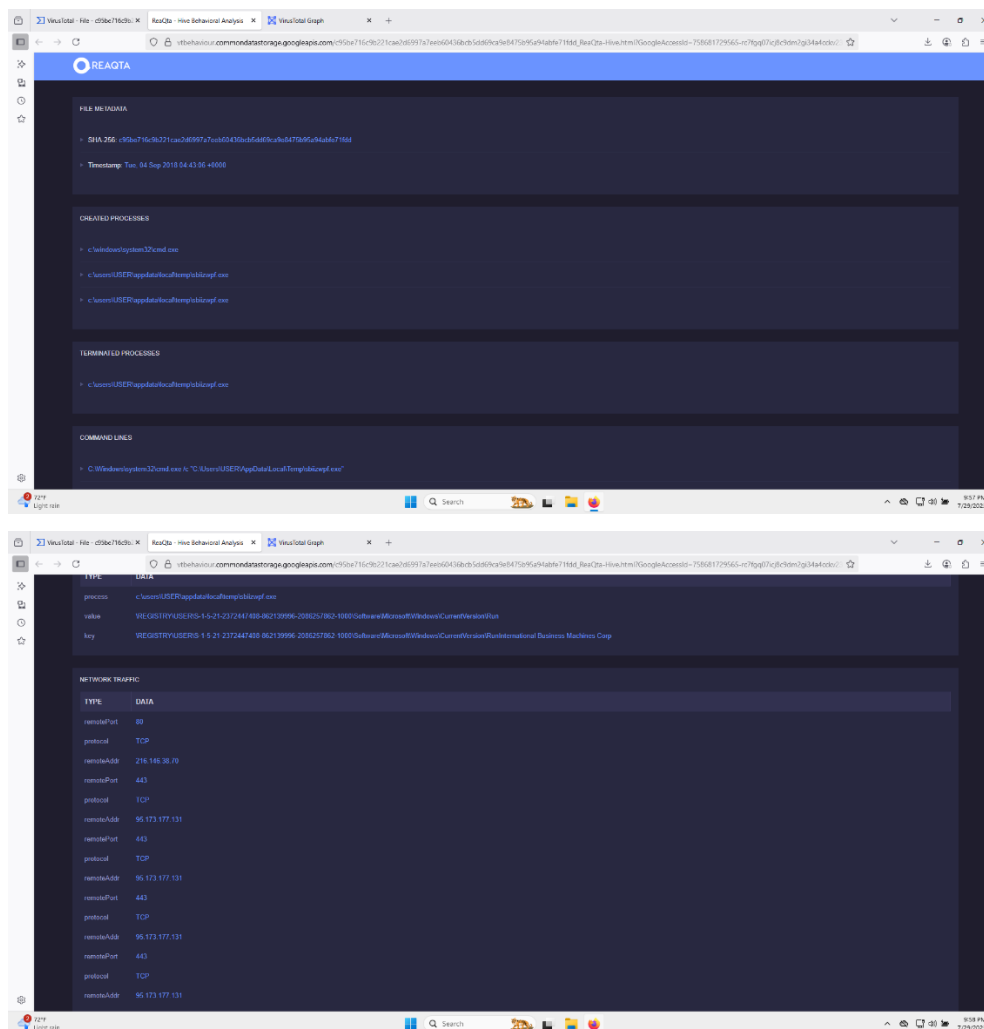
Hybrid Analysis Results

- 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.

Risk & Impact

- Primary Impact:
 - Credential theft (browsers, FTP, mail, SSH tools)
 - System compromise with persistent backdoor access
- Secondary Impact:
 - 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
 - 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:
 - Review registry for persistence keys
 - Restore deleted certificates and tracing keys if possible
 - Check for mutexes to confirm infection
- Long-term:
 - Deploy endpoint detection (EDR) capable of catching packed .NET binaries
 - Monitor outbound HTTPS traffic anomalies
 - Train users against malicious attachments and links

📖 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.
