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APTs

New AgentTesla variant steals WiFi credentials

Posted: April 16, 2020 by Hossein Jazi

AgentTesla is a .Net-based infostealer that has the capability to steal data from different applications on victim machines, such as browsers, FTP clients, and file downloaders. The actor behind this malware is constantly maintaining it by adding new modules. One of the new modules that has been added to this malware is the capability to steal WiFi profiles.

AgentTesla was first seen in 2014, and has been frequently used by cybercriminals in various malicious campaigns since. During the months of March and April 2020, it was actively distributed through spam campaigns in different formats, such as ZIP, CAB, MSI, IMG files, and Office documents.

Newer variants of AgentTesla seen in the wild have the capability to collect information about a victim's WiFi profile, possibly to use it as a way to spread onto other machines. In this blog, we review how this new feature works.

Technical analysis

The variant we analyzed was written in .Net. It has an executable embedded as an image resource, which is extracted and executed at run-time (Figure 1).

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Tout refuser

It has been automatically quarantined and is no longer a threat to your computer.

Type: Malware
Name: Spyware.AgentTesla
Path: C:\Users\ \Deskto...9d2a1295424c07b.exe

View Quarantine Close

Indicators of compromise

AgentTesla samples:

91b711812867b39537a2cd81bb1ab10315ac321a1c68e316bf4fa84badbc09bdd4a43b0b8a68db65b00fad99519539e2a05a3892f03b869d58ee15fdf5aa04427939b70928b285655c863fa26efded96bface9db46f35ba39d2a1295424c07b

First payload:

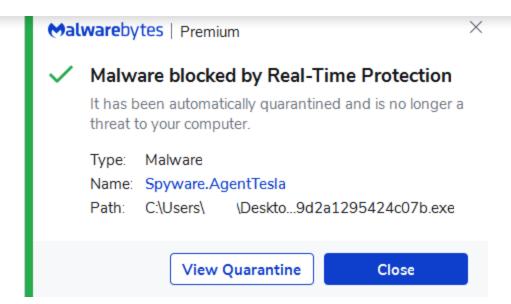
249a503263717051d62a6d65a5040cf408517dd22f9021e5f8978a819b18063b

Second payload:

63393b114ebe2e18d888d982c5ee11563a193d9da3083d84a611384bc748b1b0



Popular stealer looking to expand



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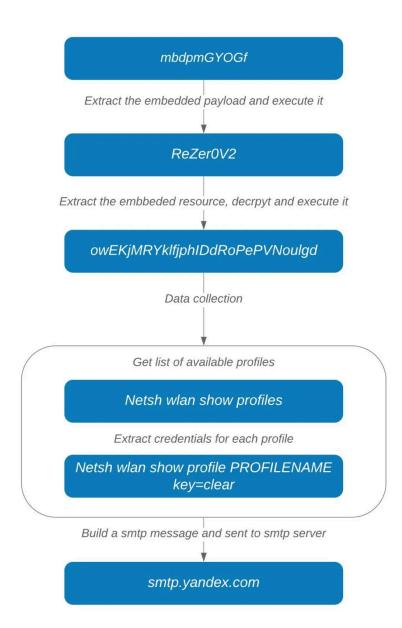
Second payload:

\r\n

63393b114ebe2e18d888d982c5ee11563a193d9da3083d84a611384bc748b1b0

Time: 04/11/2020 13:23:36 User Name: Computer Name: DESKTOP-2C3IQHO OSFullName: Microsoft Windows 10 Pro CPU: Intel(R) Core(TM) i7-4710MQ CPU @ 2.50GHz RAM: 2047.49 MB URL:MicrosoftAccount:target=SSO_POP_Device \r\nUsername: \r\nPassword: \r\nApplication:IE/Edge \r\n \r\nURL: Guest \r\nUsername: \r\nPassword: \r\nApplication:Wi-Fi \r\n $\r\nURL$: -Wireless \r\nUsername: \r\nPassword: \r\nApplication:Wi-Fi

The following diagram shows the whole process explained above from extraction of first payload from the image resource to exfiltration of the stolen information over SMTP:



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Since AgentTesla added the WiFi-stealing feature, we believe the threat actors may be considering using WiFi as a mechanism for spread, similar to what was observed with Emotet. Another possibility is using the WiFi profile to set the stage for future attacks.

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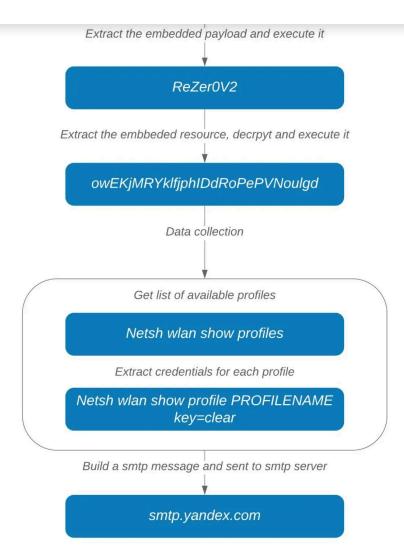
63393b114ebe2e18d888d982c5ee11563a193d9da3083d84a611384bc748b1b0

Collected information forms the body section of a SMTP message in html format (Figure 8):

Computer Name. DESKTOF-2CSIQHO OSFullName: Microsoft Windows 10 Pro CPU: Intel(R) Core(TM) i7-4710MQ CPU @ 2.50GHz RAM: 2047.49 MB URL:MicrosoftAccount:target=SSO_POP_Device \r\nUsername: \r\nPassword: \r\nApplication:IE/Edge \r\n \r\nURL: Guest \r\nUsername: \r\nPassword: \r\nApplication:Wi-Fi \r\n $\r\nURL$: -Wireless \r\nUsername: \r\nPassword: \r\nApplication:Wi-Fi \r\n

Note: If the final list has less than three elements, it won't generate a SMTP message. If everything checks out, a message is finally sent via smtp.yandex.com, with SSL enabled (Figure 9):

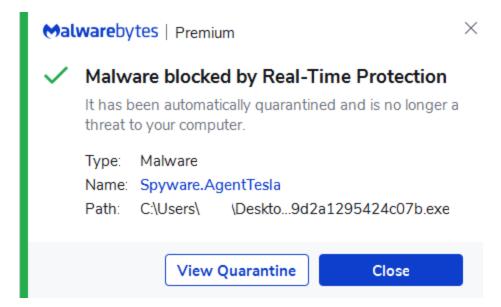
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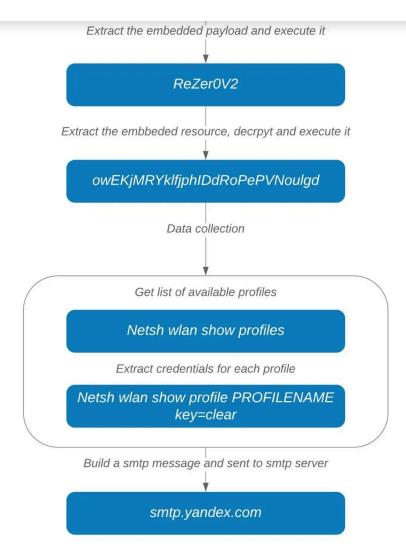
Firet navload

Malware bytes LABS
For example, in Figure 5, "119216" is decrypted into "wlan show profile name=" and "119196" is decrypted into "key=clear".
In addition to WiFi profiles, the executable collects extensive information about the system, including FTP clients, browsers, file downloaders, and machine info (username, computer name, OS name, CPU architecture, RAM) and adds them to a
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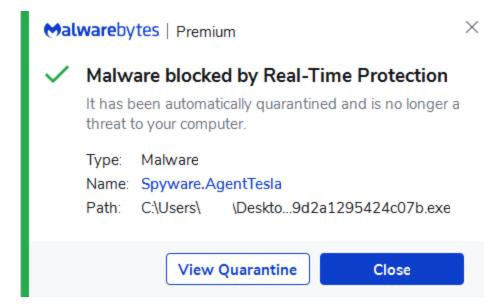
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Firet navload



String encryption

All the strings used by the malware are encrypted and are decrypted by Rijndael symmetric encryption algorithm in the ".u200E" function. This function receives a number as an input and generates three byte arrays containing input to be decrypted, key and IV (Figure 6).

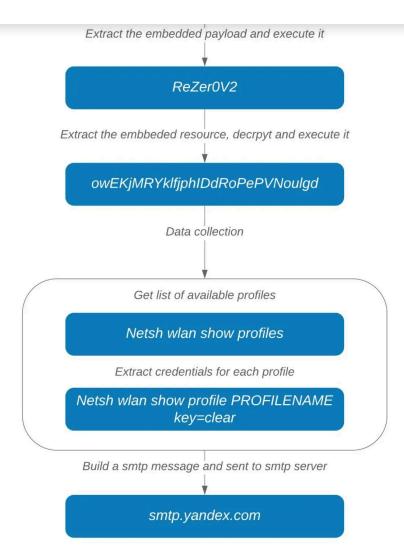
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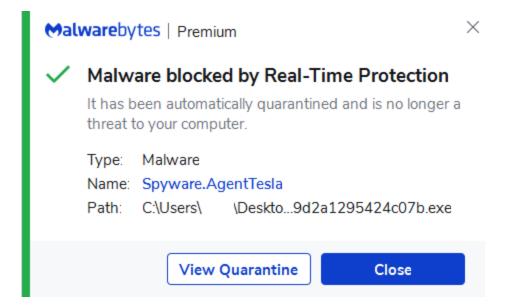
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Firet navload



In the next step for each wireless profile, the following command is executed to extract the profile's credential: "netsh wlan show profile PRPFILENAME key=clear" (Figure 5).

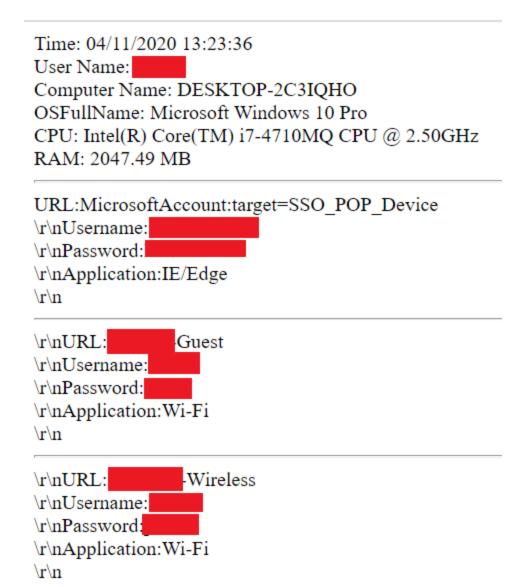
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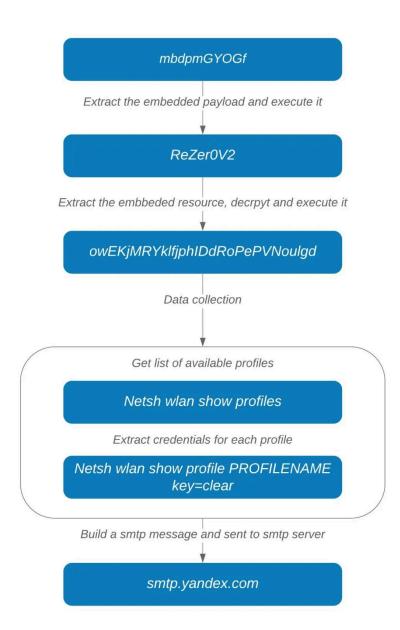


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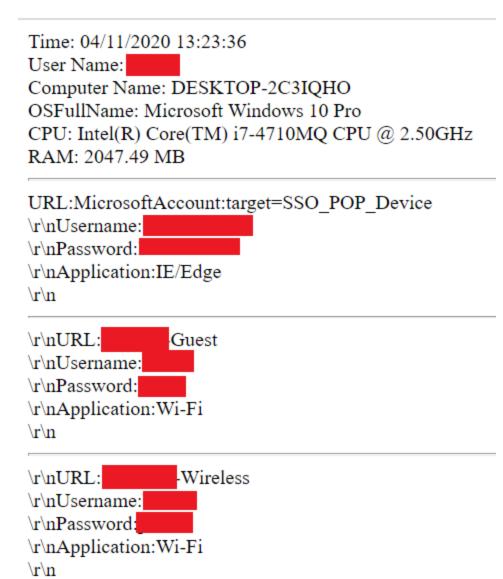
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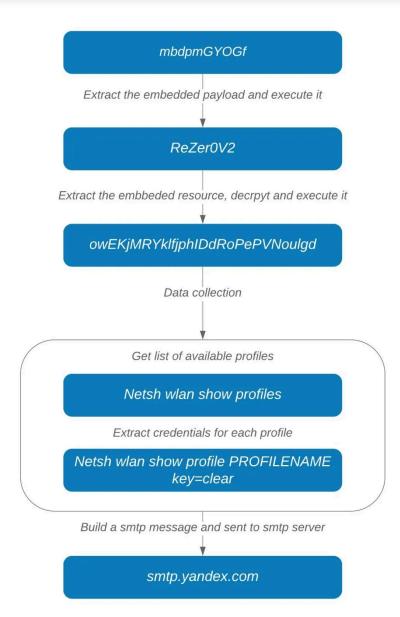
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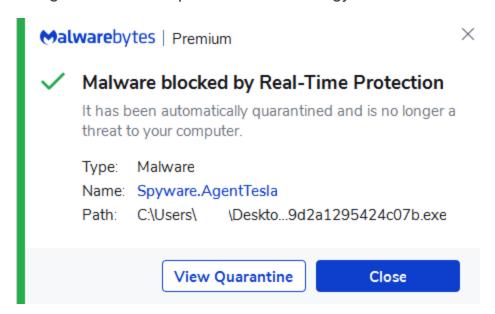
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The second payload (owEKjMRYkIfjPazjphIDdRoPePVNoulgd) is the main component of AgentTesla that steals credentials from browsers, FTP clients, wireless profiles, and more (Figure 3). The sample is heavily obfuscated to make the analysis more difficult for researchers.

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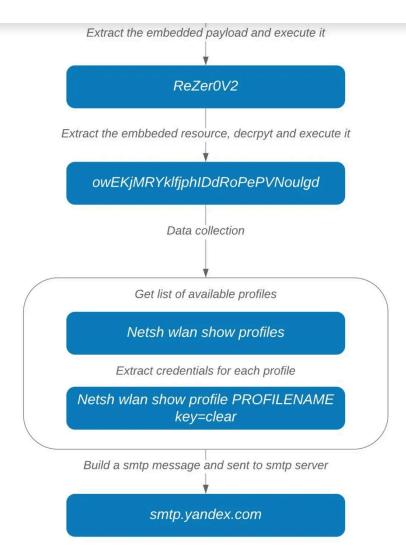
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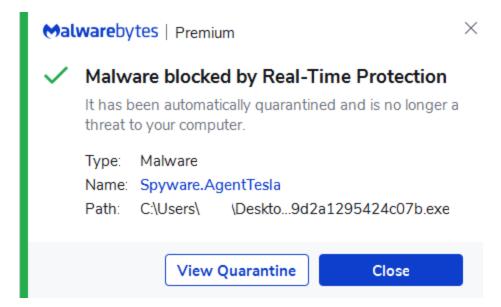
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Firet navload

This executable (ReZer0V2) also has a resource that is encrypted. After doing several anti-debugging, anti-sandboxing, and anti-virtualization checks, the executable decrypts and injects the content of the resource into itself (Figure 2).

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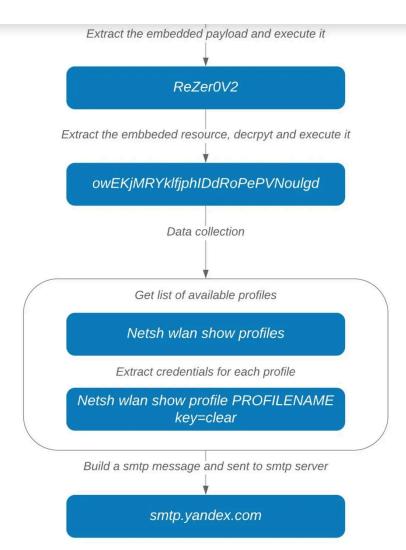
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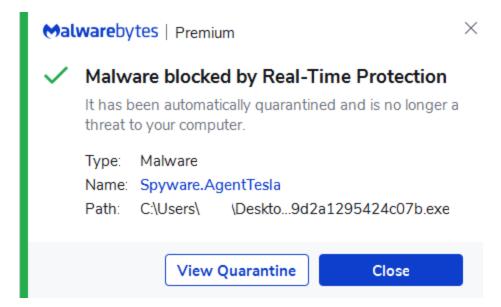
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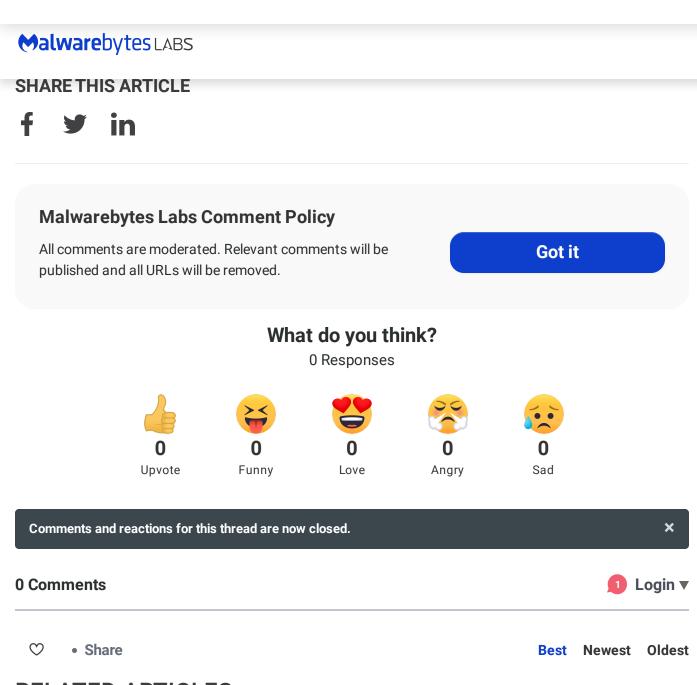


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