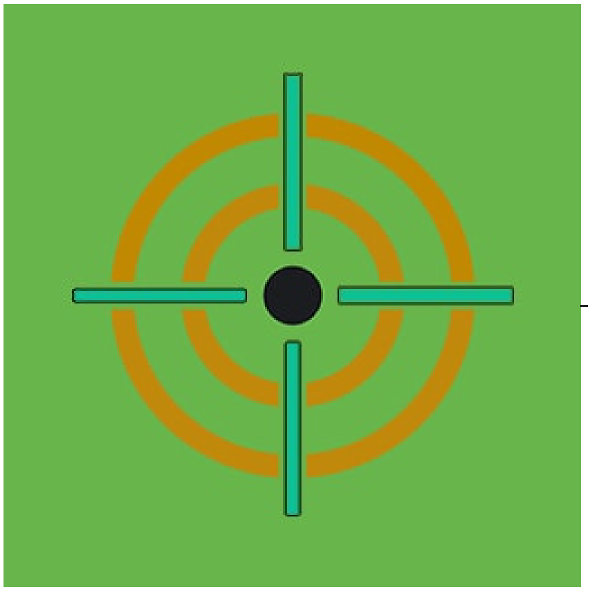
Clop Ransomware Detection: Threat Research Release, April 2021

splunk.com/en_us/blog/security/clop-ransomware-detection-threat-research-release-april-2021.html

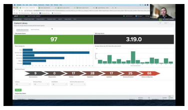
May 3, 2021

SECURITY



By Splunk Threat Research Team May 03, 2021

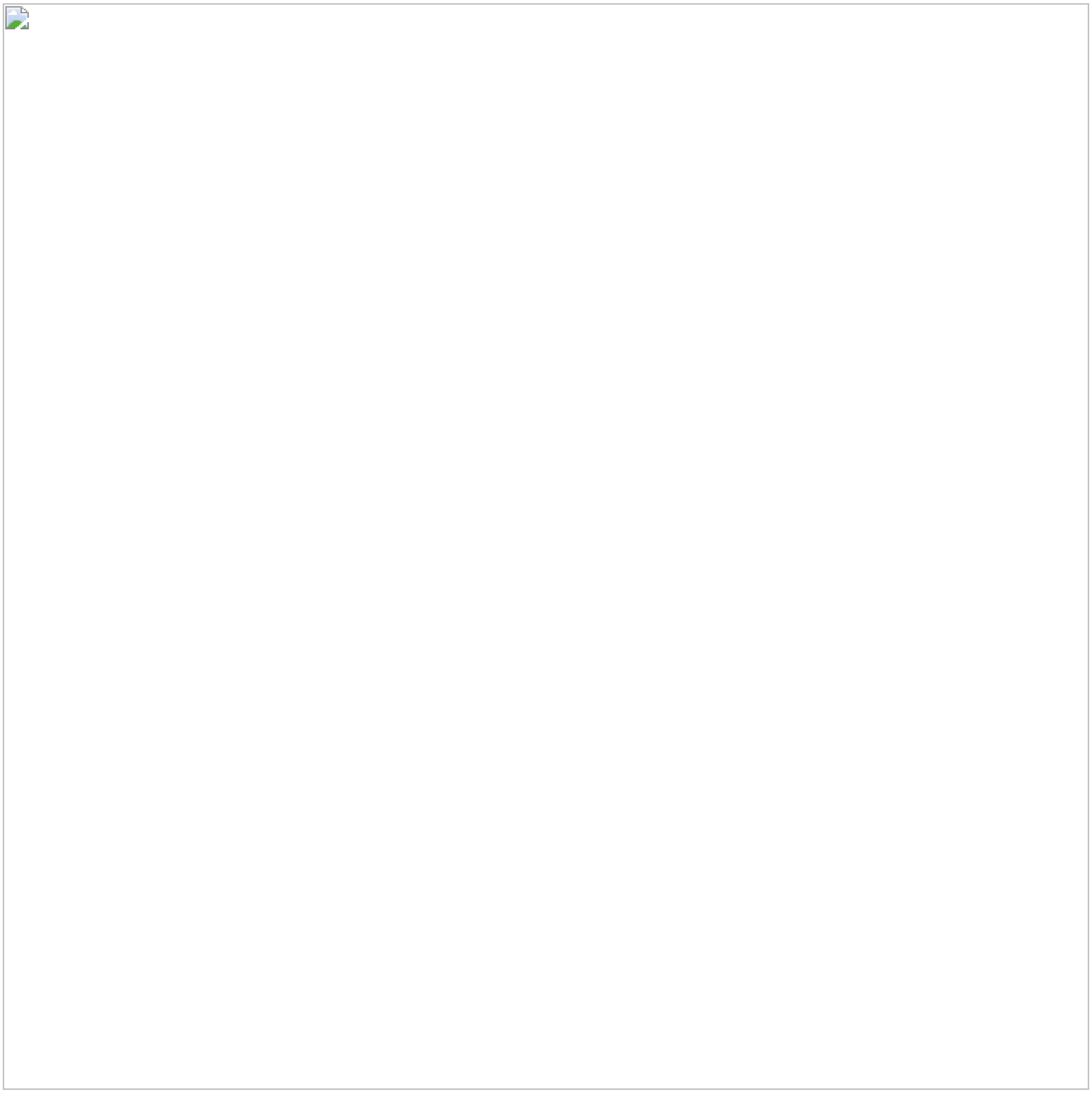
Clop Ransomware has been active since 2019 and has been mostly associated with financially-driven criminal groups. However, lately this ransomware payload has been observed in campaigns against universities and other institutions in the education vertical. Most recently, Clop Ransomware has been used in a cyberattack that demanded one of the highest ransom amounts in recorded history ($20 million), and one of the particular items associated with the actors behind the Clop Ransomware is blackmailing their victims through threatening to publish sensitive information exfiltrated from victims' networks. Within this past month in April, we saw that Clop Ransomware-related threats were persistent throughout the distinct variants used by several groups of organized criminals and decided to focus our research efforts on Clop Ransomware detections. We hope that these detections will help organizations detect abnormal behavior faster before it becomes detrimental. Watch this video to learn more.



Detection Searches for Clop Ransomware

As we state in our blog, "Detecting Clop Ransomware," the actors behind this crimeware send the malicious payloads via different methods, such as phishing emails, then proceed to spread ransomware payload post-exploitation by pivoting to exposed or related vulnerable systems. Although the actual developers of this crimeware have not been identified yet, they have been tied to several financially-driven threat actors. They are also known for leveraging public available vulnerabilities as entry and post-exploitation vectors.

The most common method behind this crimeware is as follows: once they have infiltrated their targets, they then present instructions on how to pay ransom and communicate further threats of exposure by publishing the sensitive information they obtained on a publicly accessible website.



Source *

Although this may appear as a new modality, in reality ransomware is usually the cherry on top of the cake, as malicious actors usually dwell, exfiltrate and qualify exfiltrated data, which eventually lands on dark web public forums, dark markets or private crime intelligence brokers where qualified financial, business and kompromat information is then priced and sold to the highest bidder.

We used our attack range tool to demonstrate and research how this malware payload infects and spreads once executed. A number of new searches has been created to address this threat:

Name	Technique ID	Tactic(s)	Note

Suspicious Wevtutil Usage	T1070.001	Defense Evasion	This search wevtutil.exe with parameters for clearing the application, security, setup,or system event logs.
Windows Event Log Cleared	T1070.001	Defense Evasion	This search looks for windows events that indicate one of the windows event logs has been purged
Common Ransomware Notes		Impact	This search looks for files created with names matching those typically used in ransomware notes
Deleting Shadow Copies	T1490	Impact	This search looks for vssadmin.exe used to delete shadow copies
Common Ransomware Extensions (New)	T1485	Impact	This search looks for file modifications with extensions commonly used by Ransomware
High Frequency of File Deletion (New)	T1485	Impact	Detects high frequency of file deletion relative to process name and id.
Clop Common Exec Parameter (New)	T1204	Execution	Detects Clop ransomware variant via execution arguments.
Process Deleting Its Process File Path (New)	T1070.001	Defense Evasion	Detects suspicious process attempting to delete file path related to its process
Resize ShadowStorage Volume (New)	T1490	Impact	Detects the resizing of shadowstorage
Clop Ransomware Known Service Name (New)	T1543	Persistence, Privilege Escalation	Identifies common service name created by Clop ransomware
Suspicious Service File Path Creation (New)	T1569	Execution	Detects creation of “user mode service” where path is located in an uncommon service folder.
Clop High Frequency Process Termination (New)	T1486	Impact	Identifies high frequency of process termination.

Ransomware Notes Bulk Creation (New)	T1486	Impact	Identifies creation of large number of ransomware notes

Please see our blog "Detecting Clop Ransomware" for specific information about the events and SPL code involved in these detections. We also provide information about a Splunk Phantom playbook that can be used to defend against this threat.

Why Should You Care?

Having the paid ransom amounts in recorded history ($20 million) and the fact that the Clop Ransomware actors are extremely opportunistic makes this a specially worrisome actor. The actors behind this crimeware are constantly looking for vulnerable targets, and once they are able to infiltrate victims, they are driven by obtaining sensitive information which most likely will end up sold in a dark market.

Ransomware campaigns involving this payload will continue, as this group continuously targets different verticals it is important to prepare and understand the workings of these malicious payloads and prepare your environment in order to defend and be resilient against a ransomware attack. You can use our pre-packaged detections to help your organization stay safe against these types of attacks.

For a full list of security content, check out the release notes on Splunk Docs:

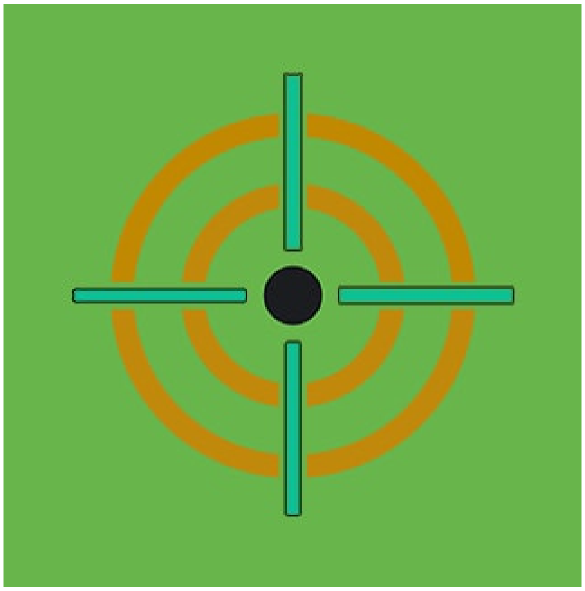
- 3.18.0 (Clop Story)
- 3.19.0

Learn More

You can find the latest content about security analytic stories on GitHub and in Splunkbase. All of these detections are also now available via push update in Splunk Security Essentials.

Feedback

Any feedback or requests? Feel free to submitput in an i Issue on Github and we’ll follow up. You can also join us on the Slack channel **#security-research**. Follow these instructions If you need an invitation to our Splunk user groups on Slack.



Posted by

Splunk Threat Research Team

The Splunk Threat Research Team is an active part of a customer’s overall defense strategy by enhancing Splunk security offerings with verified research and security content such as use cases, detection searches, and playbooks. We help security teams around the globe strengthen operations by providing tactical guidance and insights to detect, investigate and respond against the latest threats. The Splunk Threat Research Team focuses on understanding how threats, actors, and vulnerabilities work, and the team replicates attacks which are stored as datasets in the Attack Data repository.

Our goal is to provide security teams with research they can leverage in their day to day operations and to become the industry standard for SIEM detections. We are a team of industry-recognized experts who are encouraged to improve the security industry by sharing our work with the community via conference talks, open-sourcing projects, and writing white papers or blogs. You will also find us presenting our research at conferences such as Defcon, Blackhat, RSA, and many more.

Read more Splunk Security Content.

Join the Discussion