Threat actors attempt to capitalize on coronavirus outbreak

blog.talosintelligence.com/2020/02/coronavirus-themed-malware.html

- Coronavirus is dominating the news and threat actors are taking advantage.
- Cisco Talos has found multiple malware families being distributed with Coronavirus lures and themes. This includes emotet and several RAT variants.

Executive Summary

Using the news to try and increase clicks and drive traffic is nothing new for malicious actors. We commonly see actors leveraging current news stories or events to try and increase the likelihood of infection. The biggest news currently is focused on the new virus affecting the world, with a focus on China: the coronavirus. There are countless news articles and email-based marketing campaigns going at full throttle right now, as such, we wanted to take a deeper look at how this is manifesting itself on the threat landscape.

Our investigation had several phases, first looking at the email based campaigns then pivoting into open-source intelligence sources for additional samples. These investigations uncovered a series of campaigns from the adversaries behind Emotet, along with a series of other commodity malware families using these same topics as lures, and a couple of odd documents and applications along the way. What was also striking was the amount of legitimate emails containing things like Microsoft Word documents and Excel spreadsheets related to the coronavirus. This really underscores why using these as lures is so attractive to adversaries and why organizations and individuals need to be vigilant when opening mail attachments, regardless of its origins.

What's new? Malware authors and distributors will go through any means necessary to achieve success and generate revenue and this is just the latest example. These lures tied to coronavirus are likely to only increase in volume and variety as the virus continues to spread and dominate the headlines.

How did it work? The majority of these campaigns were driven through email and malspam specifically. These actors would send coronavirus themed emails to potential victims and, in some cases, use filenames related to coronavirus as well, enticing victims to click attachments. One of the reasons this was so effective was the large amount of legitimate email related to coronavirus that also included attachments.

So What?

- Organizations need to realize that attackers are going to use current events to try and get victims to open attachments or click links. You should be prepared and vigilant in identifying these emails and ensuring they don't make it to your users inboxes.
- There is a wide variety of threats represented here so there isn't one single threat to be concerned with, just realize there will likely be a lot more.
- It's not just malicious content, there are a lot of weird executables and other files floating around that are coronavirus-themed and are unwanted, albeit not inherently malicious.

Malspam campaigns

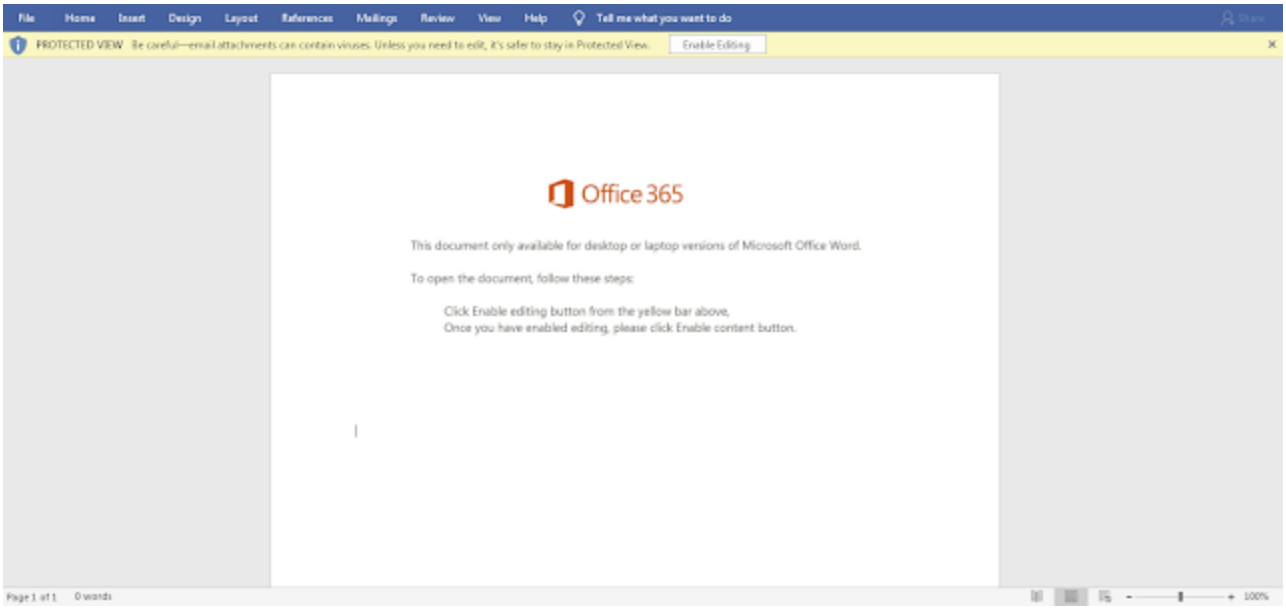
During our analysis of email telemetry, we identified several malicious spam campaigns leveraging news related to coronavirus to entice potential victims to open attachments and initiate various malware infections. Several malware families are currently being distributed via these malspam campaigns including Emotet, Nanocore RAT, and various trojans.

Emotet

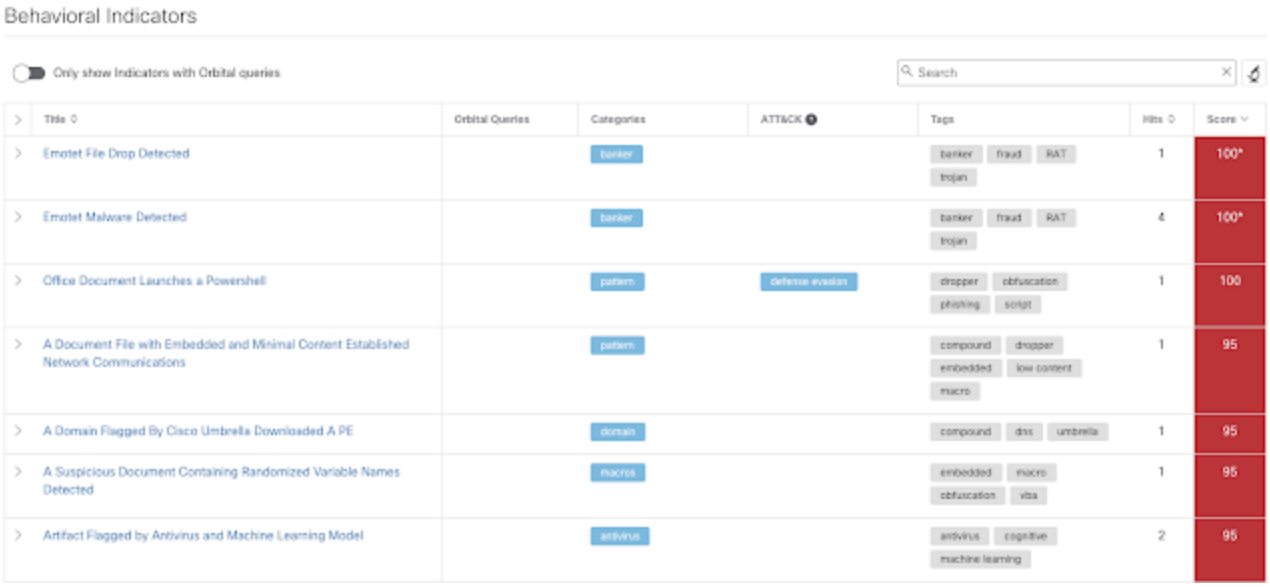
Emotet is one of the most prevalent malware families being actively distributed. We have previously analyzed this threat in various posts, notably here and here. Emotet distribution campaigns are commonly observed attempting to integrate current news topics of interest in their distribution campaigns and the current interest in CoronaVirus is no different. It has been previously reported that Emotet has been making use of this theme in various email distribution campaigns, which we have also observed. As previously described, these emails typically contain malicious Microsoft Word documents that function as downloaders for the Emotet malware.

An example of one of the malicious Word documents is below. As usual with these sort of attachments, users are prompted to Enable Editing and Enable Content, granting the

attacker the ability to execute code on the endpoint to facilitate the delivery and execution of Emotet, thus infecting the system.



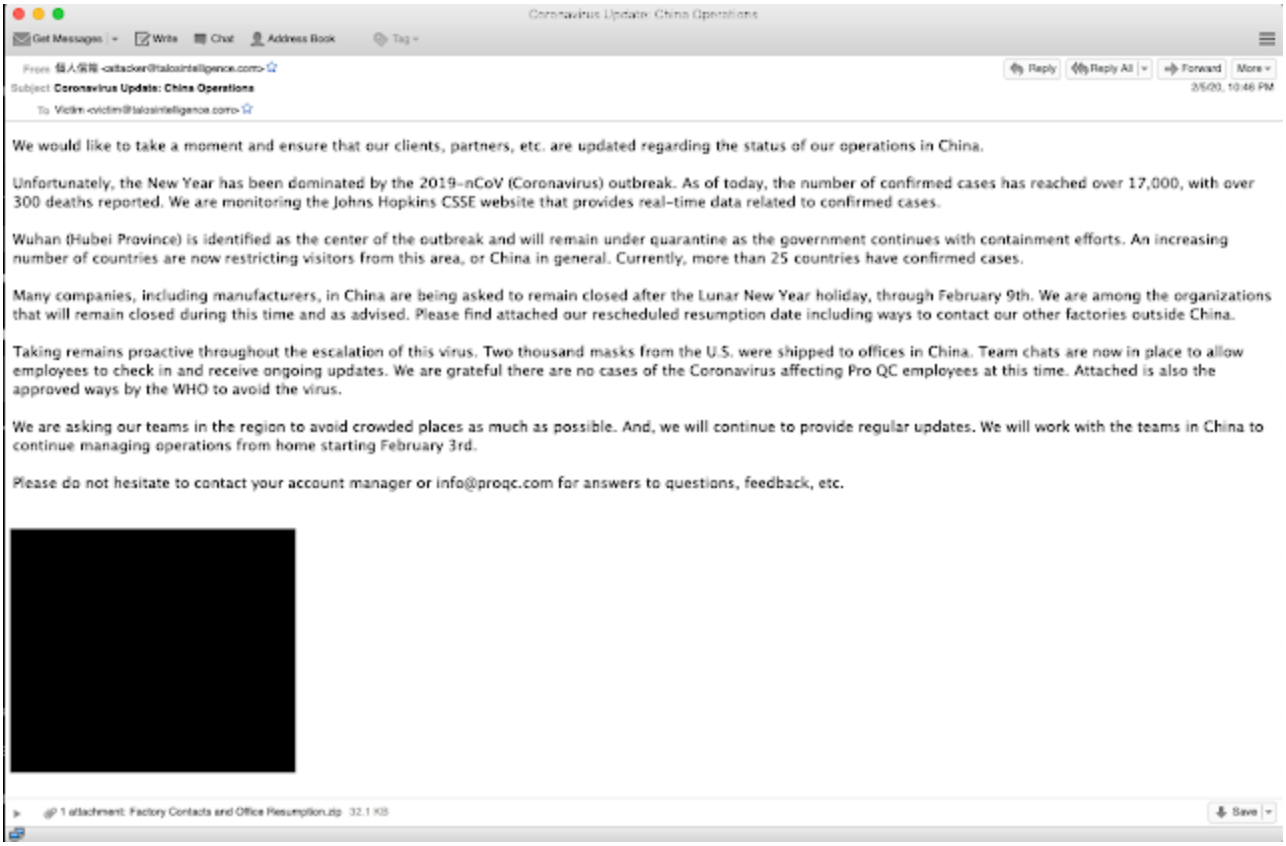
Over the course of the past few weeks, we have observed large quantities of messages featuring this and similar themes being used to spread Emotet to victims.



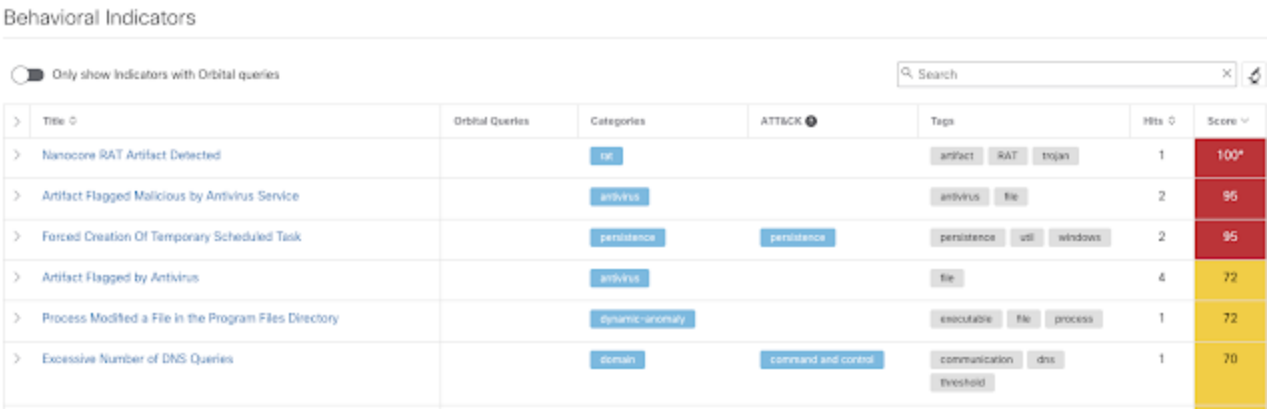
Nanocore RAT

It is important to note that Emotet is not the only malware family currently being distributed using coronavirus-themed malspam campaigns. We have also observed Nanocore RAT being distributed using similar types of email-based malware distribution campaigns. Nanocore RAT is a remote access trojan (RAT) that is commonly distributed by various threat actors. RATs are one of the more common threats we see delivered on the threat landscape. These malware families typically provide the attacker with remote access into the system and the ability to grab things like keystrokes, files, webcam feeds, and download and execute files. During our investigation we did find a campaign delivering Nanocore, one of

these RATs. The campaign was a notification to customers around the status of the coronavirus and the steps they are taking as an organization, as is shown below.

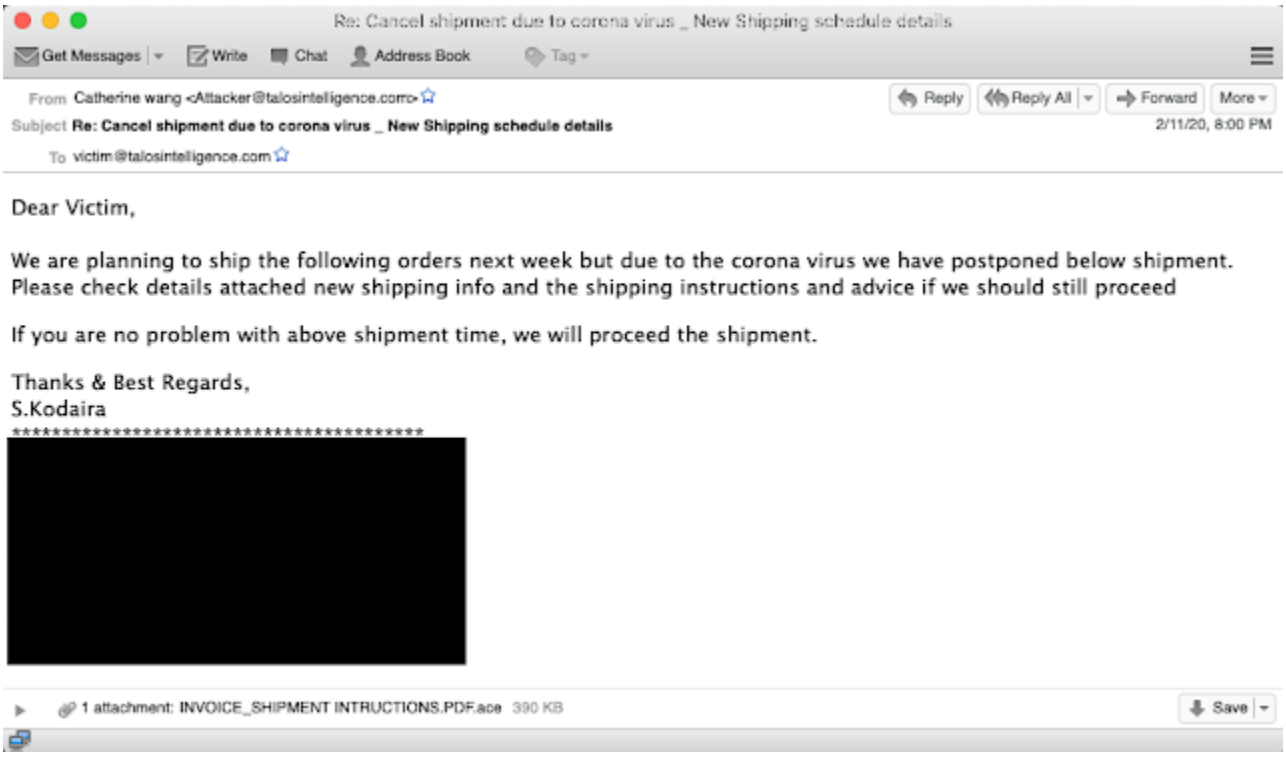


As you can see, the email came with a ZIP file attached, which contained a PIF executable. Once the victim executed the file, Nanocore RAT was installed on the system, giving the adversaries remote access.



Other campaigns

We did find at least one other campaign that was ongoing, but at the time of discovery the command and control (C2) servers were down and final payload retrieval wasn't possible, but the malicious intent was clear. This started like many of the other campaigns with a coronavirus theme.



This particular email was notifying customers of a delay in shipping due to coronavirus and attached a .pdf.ace invoice file. Inside the compressed archive was an executable purporting to be a signed order confirmation. Upon execution, additional data was attempted to be retrieved but due to the server being down, it is not possible to identify the final payload as of the time of publishing.

Additional malware campaigns

In addition to email campaigns leveraging coronavirus, we also analyzed various open-source malware repositories in an attempt to identify additional malware making use of the disease. We discovered several examples of malware that had been submitted to the repositories including adware, wipers, and other various trojans.

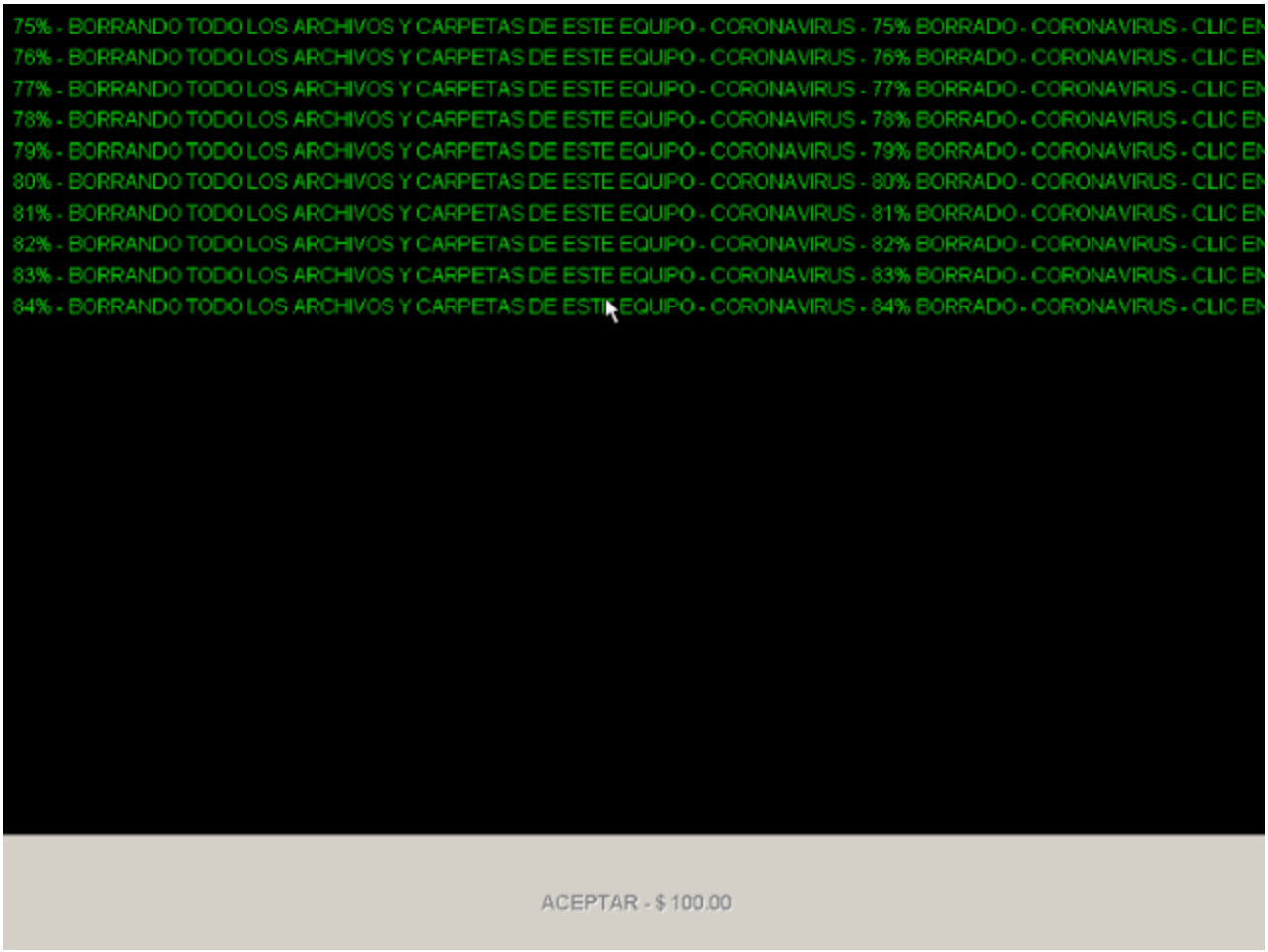
Parallax RAT

During our open-source investigation, we came across a sample aptly named "new infected CORONAVIRUS sky 03.02.2020.pif." This file was likely delivered as an attachment to an email in some sort of compressed archive. Upon execution, the RAT is installed and persistence is achieved by creating links in the user's startup folder, as well as the creation of several scheduled tasks, and establishing command and control communications with a dynamic DNS provider domain, which is fairly common with RAT distribution.

Parallax is another RAT not much different from the nanocore campaign we found above. It has the same basic functionality and allows the attacker the ability to upload and download files as well as grab things like keystrokes and screen captures.

Other samples found

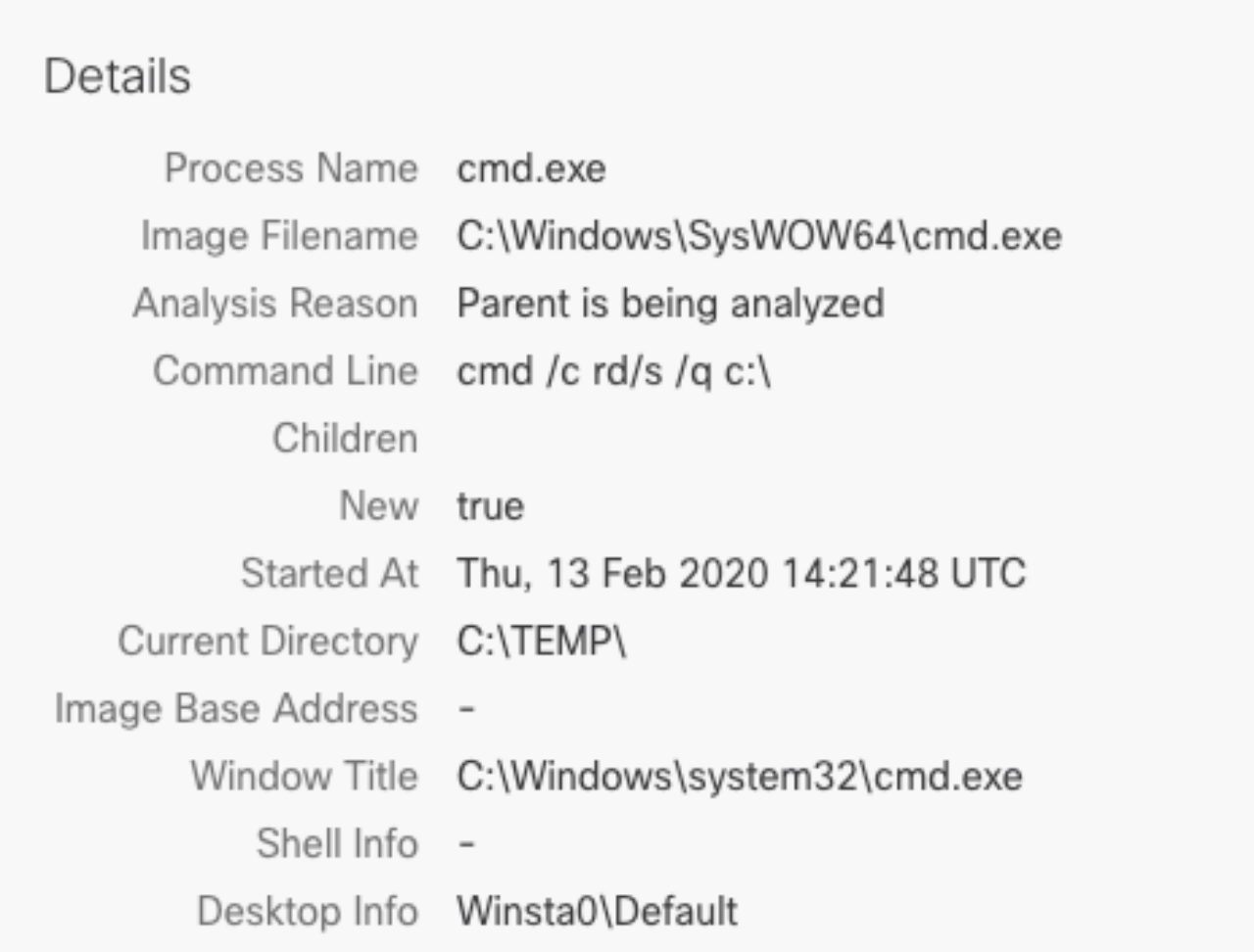
During the course of the investigation, we came across several samples that appeared to be malicious and were tagged as malicious in various engines but were, in fact, odd jokes or non-malicious content, including a fake wiper. This file was found with the suspicious filename of "CoronaVirus.exe" of which there were many. This particular one immediately appeared to lock the screen upon execution.



The rough translation of the text displayed to the user is "Deleting all files and folders on this computer - Coronavirus." Upon completion of the counter, the button at the bottom became clickable, and when clicked, displayed the following message:

This says it is a joke and the user can press Alt + F12 to exit. If the user pushes these buttons, it drops you back at the desktop. Upon further analysis, it does not appear there were any other malicious actions taken. This is just one of several odd examples found in our research including another joke game written in VBS and an odd executable wrapper of a well-known outbreak map for coronavirus. None of these files were malicious but did take actions that could be viewed as malicious, as such, we have seen many antivirus vendors detect these as malicious executables. At the very least, they are unwanted applications, albeit not inherently malicious.

One additional malware sample we discovered was a wiper designed to destroy infected systems. It was initially submitted to various malware repositories with the filename "冠状病毒.exe" which translates to "coronavirus." The malware, when executed on systems, uses several techniques to delete data from both the file system and registry in an attempt to disrupt system operations. For example, we observed the malware invoking the Windows Command Processor and using the "rd" Windows command to iterate through the directory structure of the C:\, deleting the contents:



It is important to note that there is no prior attempt to copy, exfiltrate, or save a copy of the contents and the malware does not appear to make any attempt to extort victims or otherwise generate revenue for the malware author.

Conclusion

Malicious actors are always going to do whatever they can to increase infection rates and in turn increase revenue, this includes using the news and fear to achieve their goals. This is one of the cases where both news and fear can be used. In a world where threats like Emotet are stealing emails and replying in-line users need to be increasingly skeptical of all attachments regardless of source. These attacks can be seen in an email thread with a colleague or friend and, in some cases, may come directly from that colleague or friend. Additionally, anything news related should be treated with a little extra skepticism, go out and do your own research instead of just clicking links and opening documents that are sent your way.

Coverage

Ways our customers can detect and block this threat are listed below.

PRODUCT	PROTECTION
AMP	✔
CloudLock	N/A
CWS	✔
Email Security	✔
Network Security	✔
Threat Grid	✔
Umbrella	✔
WSA	✔

Advanced Malware Protection (AMP) is ideally suited to prevent the execution of the malware detailed in this post. Below is a screenshot showing how AMP can protect customers from this threat. Try AMP for free here.

Cisco Cloud Web Security (CWS) or Web Security Appliance (WSA) web scanning prevents access to malicious websites and detects malware used in these attacks.

Email Security can block malicious emails sent by threat actors as part of their campaign.

Network Security appliances such as Next-Generation Firewall (NGFW), Next-Generation Intrusion Prevention System (NGIPS), Cisco ISR, and Meraki MX can detect malicious activity associated with this threat.

Threat Grid helps identify malicious binaries and build protection into all Cisco Security products.

Umbrella, our secure internet gateway (SIG), blocks users from connecting to malicious domains, IPs, and URLs, whether users are on or off the corporate network.

Additional protections with context to your specific environment and threat data are available from the Firepower Management Center.

Open Source Snort Subscriber Rule Set customers can stay up to date by downloading the latest rule pack available for purchase on Snort.org.

Indicators of Compromise (IOC)

Hashes (SHA256)

345d8b4c0479d97440926471c2a8bed43162a3d75be12422c1c410f5ec90acd9 (Parallax RAT)
Adde95e8813ca27d88923bd091ca2166553a7b904173ef7a2c04bb3ddf8b14a9 (Wiper)
C57fa2a5d1a65a687f309f23ca3cfc6721d382b06cf894ee5cd01931bbc17a46 (Nanocore)

Emotet Maldocs (SHA256)

006dc4ebf2c47becdc584911627289901477 17a0d9dd76fefa9b7eb83937c60b
0a84308348fee6bbfe64a9ef23bb9c32cb319bcdf5cf78ddfda4a83dadea4b8e
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Domains

vahlallha[.]duckdns[.]org