

Boogeyman 3 – Capstone Project

Due to the previous attacks of Boogeyman, Quick Logistics LLC hired a managed security service provider to handle its Security Operations Center. Little did they know, the Boogeyman was still lurking and waiting for the right moment to return.

Lurking in the Dark

Without tripping any security defenses of Quick Logistics LLC, the Boogeyman was able to compromise one of the employees and stayed in the dark, waiting for the right moment to continue the attack. Using this initial email access, the threat actors attempted to expand the impact by targeting the CEO, Evan Hutchinson.

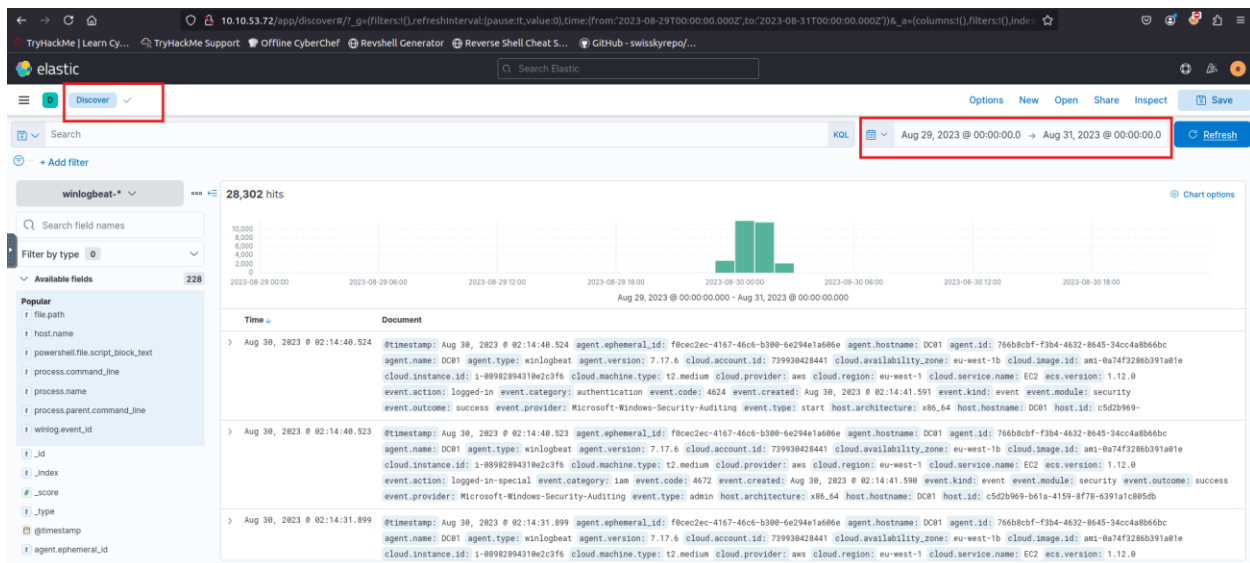
The email appeared questionable, but Evan still opened the attachment despite the skepticism. After opening the attached document and seeing that nothing happened, Evan reported the phishing email to the security team.

Initial Investigation

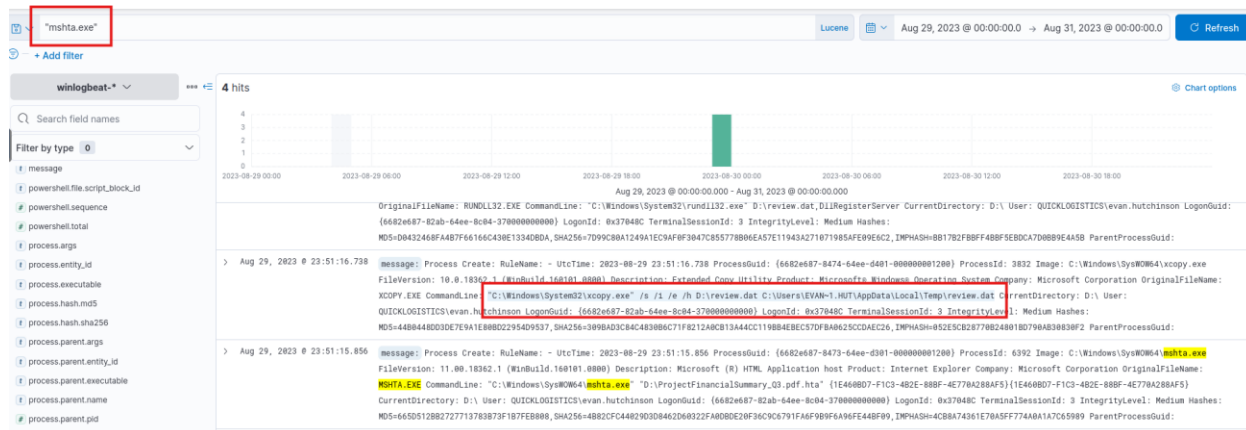
Upon receiving the phishing email report, the security team investigated the workstation of the CEO. During this activity, the team discovered the email attachment in the downloads folder of the victim.

Lastly, it was presumed by the security team that the incident occurred between August 29 and August 30, 2023.

Given the initial findings, you are tasked to analyze and assess the impact of the compromise.



I filtered for “mshta.exe” which is the executable from the malicious file. I followed the trail, and it found this 1 second later after the execution of the file:



The implanted file was eventually used and executed by the stage 1 payload. What is the full command-line value of this execution?

Answer: "C:\Windows\System32\rundll32.exe" D:\review.dat,DllRegisterServer

Within the same second, we see in a different hit that shows the implanted file being executed:

```
> Aug 29, 2023 @ 23:51:16.771 message: Process Create: RuleName: - UtcTime: 2023-08-29 23:51:16.771 ProcessGuid: {6682e687-8474-64ee-d01-000000001200} ProcessId: 3680 Image: C:\Windows\SysWOW64\rundll32.exe
FileVersion: 10.0.18362.1 (WinBuild.160101.0800) Description: Windows host process (Rundll32) Product: Microsoft Windows® Operating System Company: Microsoft Corporation OriginalFileName: Rundll32.EXE CommandLine: "C:\Windows\System32\rundll32.exe" D:\review.dat,DllRegisterServer CurrentDirectory: D:\ User: QUICKLOGISTICS\evan.hutchinson LogonGuid: {6682e687-82ab-64ee-8c04-370000000000} LogonId: 0x37048C TerminalSessionId: 3 IntegrityLevel: Medium Hashes: MD5=D0432468FA87F66166C430E13340BDA, SHA256=D99C80A1249A1EC9AF0F3047C85578B06EA57E11943A271071985AFE09E6C2, IMPHASH=BB1782FB8FF48BF5EBCDA7D08B9E4A5B ParentProcessGuid:
MDS=D0432468FA87F66166C430E13340BDA, SHA256=D99C80A1249A1EC9AF0F3047C85578B06EA57E11943A271071985AFE09E6C2, IMPHASH=BB1782FB8FF48BF5EBCDA7D08B9E4A5B ParentProcessGuid:
```

The stage 1 payload established a persistence mechanism. What is the name of the scheduled task created by the malicious script?

Answer: Review

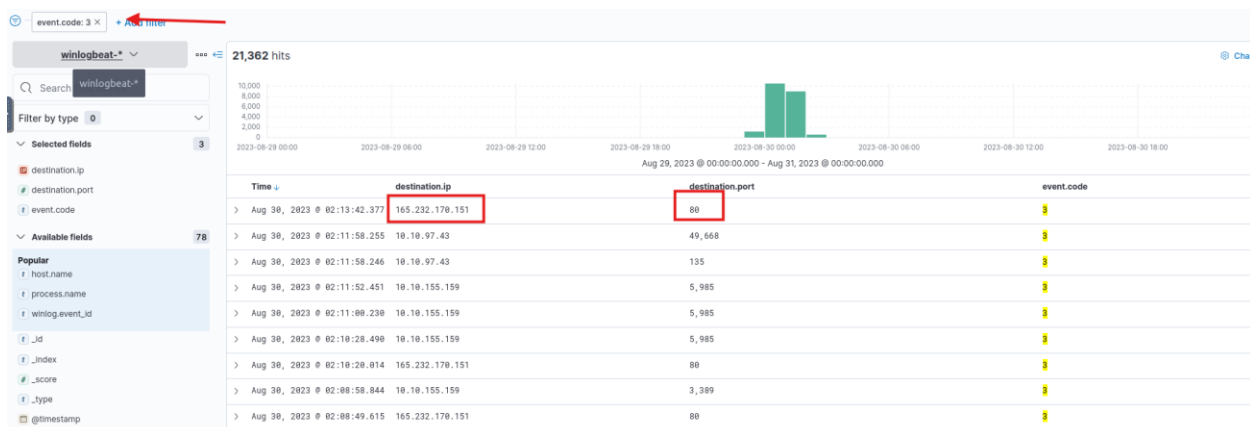
Following the trail, we see that a scheduled task was created:

```
> Aug 29, 2023 @ 23:51:16.809 message: Process Create: RuleName: - UtcTime: 2023-08-29 23:51:16.809 ProcessGuid: {6682e687-8474-64ee-d701-000000001200} ProcessId: 6204 Image: C:\Windows\SysWOW64\WindowsPowerShell\v1.0\powershell.exe FileVersion: 10.0.18362.1 (WinBuild.160101.0800) Description: Windows PowerShell Product: Microsoft Windows® Operating System Company: Microsoft Corporation OriginalFileName: PowerShell.EXE CommandLine: "C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe" $A = New-ScheduledTaskAction -Execute 'rundll32.exe' -Argument 'C:\Users\EVAN-1.HUT\AppData\Local\Temp\review.dat,DllRegisterServer'; $T = New-ScheduledTaskTrigger -Daily -At 06:00; $S = New-ScheduledTaskSettingsSet; $P = New-ScheduledTaskPrincipal $env:username; $D = New-ScheduledTask -Action $A -Trigger $T -Principal $P -Settings $S; Register-ScheduledTask Review -InputObject $D -Force;
```

The execution of the implanted file inside the machine has initiated a potential C2 connection. What is the IP and port used by this connection?

Answer: 165.232.170.151:80

We know from some Sysmon knowledge that a process triggers a network connection to uses event ID 3. So, if we filter the logs to display event.code = 3 and select the fields we'd like to display we can see that there's an IP address that contains "powershell.exe" in its image.



The attacker has discovered that the current access is a local administrator. What is the name of the process used by the attacker to execute a UAC bypass?

Answer: fodhelper.exe

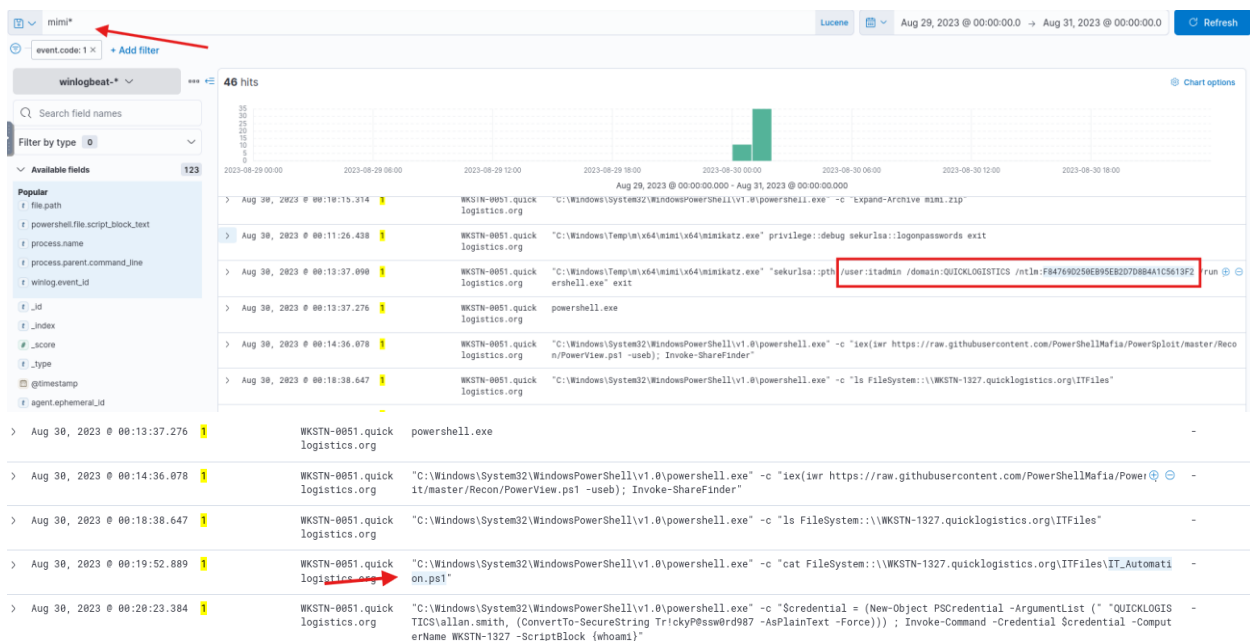
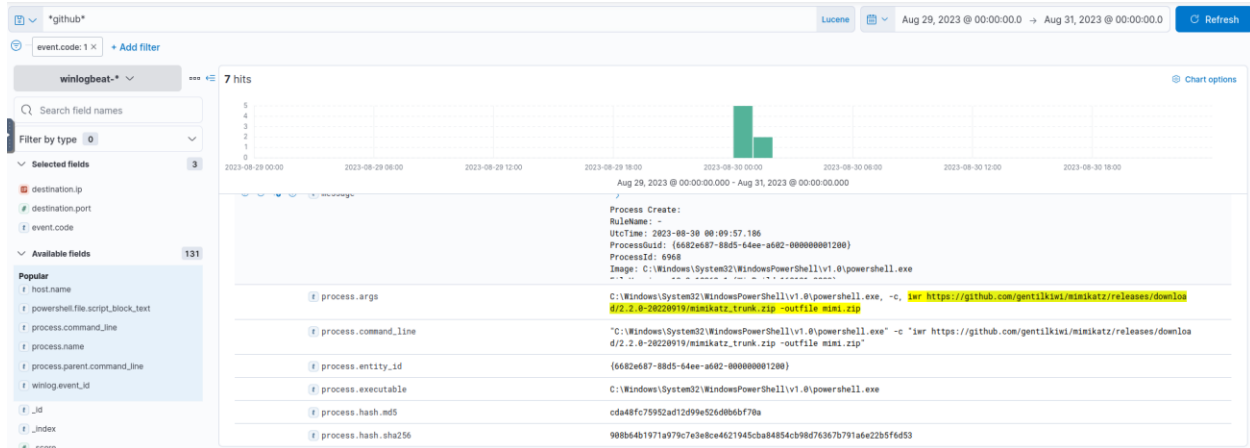
We can search “review.dat” then we can go through the timeline and check process creation. The one that was a known technique of UAC bypass was fodhelper.exe

log.level	information
message	<pre> > Process Create: RuleName: - UtcTime: 2023-08-29 23:54:49.043 ProcessGuid: {6682e687-8549-64ee-fd01-000000001200} ProcessId: 5308 Image: C:\Windows\System32\fodhelper.exe FileHash: 165232178151 (Win-Pid 160101 0000) </pre>
process.args	C:\Windows\system32\fodhelper.exe
process.command_line	"C:\Windows\system32\fodhelper.exe"
process.entity.id	{6682e687-8549-64ee-fd01-000000001200}

Having a high privilege machine access, the attacker attempted to dump the credentials inside the machine. What is the GitHub link used by the attacker to download a tool for credential dumping?

Answer: hxxps[:]//github[.]com/[.....]/mimikatz_trunk.zip

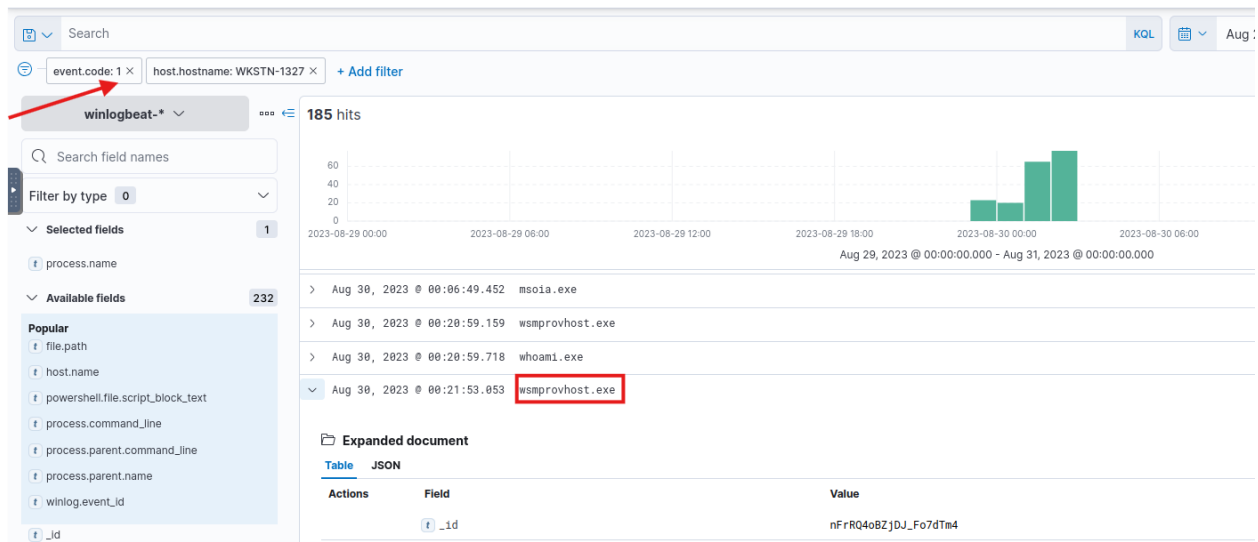
If we search *github* and filter event.code = 1 for process creation, we find 7 hits. If we go through them, we see that one of them show that a mimikatz file was downloaded and named mimi.zip



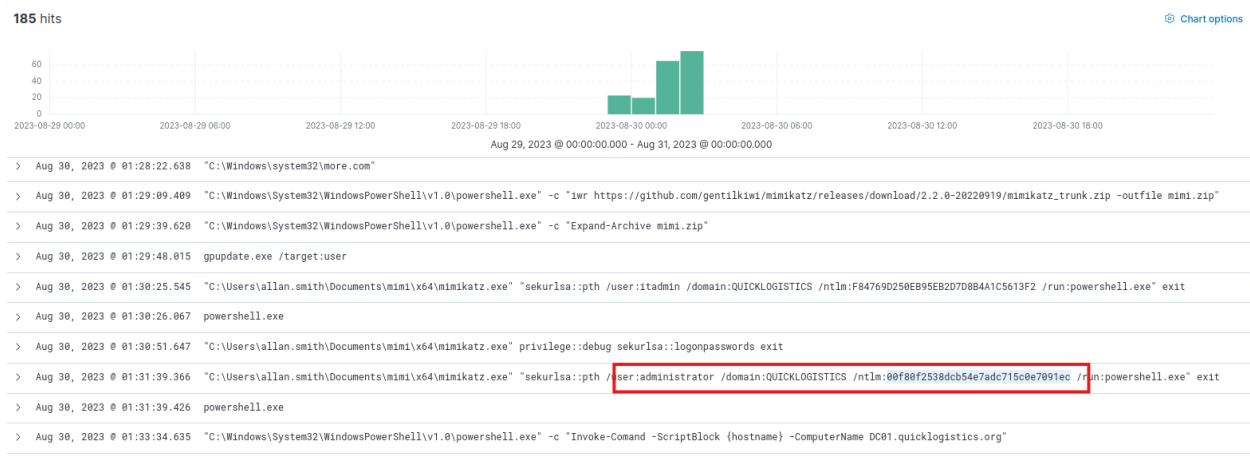
If we scroll down just a bit, we see a set of credentials with a password in plaintext and the computer name:

```
"C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe" -c "$credential = (New-Object PSObject -ArgumentList (" "QUICKLOGIS TICS\allan.smith, (ConvertTo-SecureString TrickyP@ssw@rd987 -AsPlainText -Force))); Invoke-Command -Credential $credential -Comput erName WKSTN-1327 -ScriptBlock {whoami}"
```

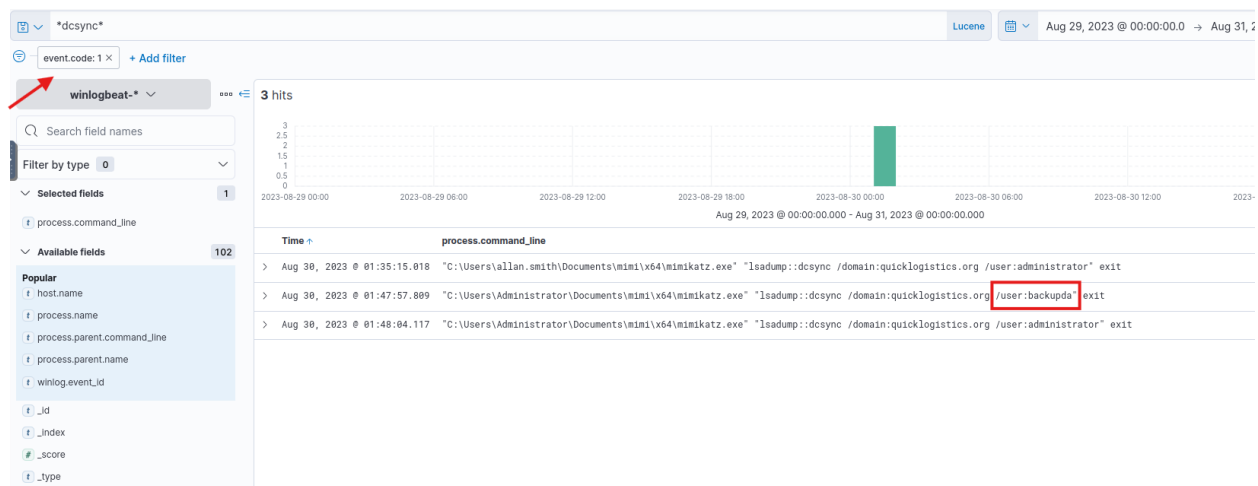
We can add the name of the computer as a filter:



If we continue through the timeline (scroll down), we can see that another set of credentials was harvested:



We need to remove the hostname filter and search *dcsync* to find that another account was under the dcsync attack.



We need to lookup hostname DC01 (domain controller) and scroll down to the instant where a ransomware was downloaded:

