1.A) User Execution, Masquerading, Uncommonly Used Port #1

New issue

Open **Cyb3rWard0g** opened this issue on May 2, 2020 · 16 comments

Cyb3rWard0g commented on May 2, 2020 Contributor

Description

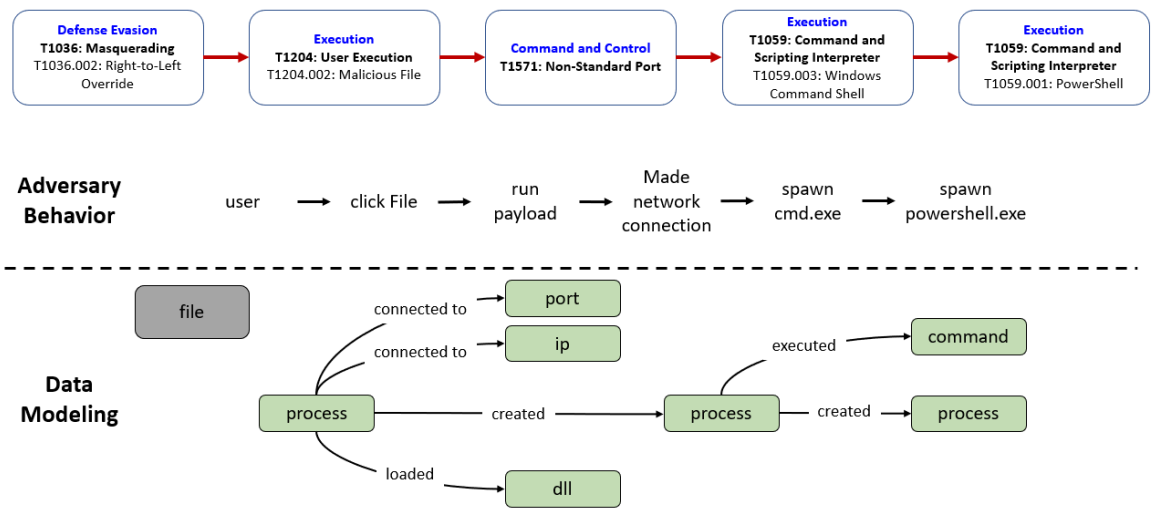
The scenario begins with an initial breach, where a legitimate user clicks (T1204) an executable payload (screensaver executable) masquerading as a benign word document (T1036). Once executed, the payload creates a C2 connection over port 1234 (T1065) using the RC4 cryptographic cipher

Cyb3rWard0g changed the title ~~User Execution, Masquerading, Uncommonly Used Port~~ **1.A) User Execution, Masquerading, Uncommonly Used Port** on May 2, 2020

emiliedns commented on May 2, 2020

C:\ProgramData\victim\â€®cod.3aka3.scr uses Right To Left Override
rule idea: if it is possible, detect the use of unicode [U+202E] on non arabic machine for sysmon event 11 on executable files (exe, scr...)

Cyb3rPandaH commented on May 2, 2020 Collaborator



👍 2 💔 1

emiliedns commented on May 2, 2020 • edited

```
files = spark.sql(
'''
SELECT Image, TargetFilename
FROM apt29Table
WHERE Channel = "Microsoft-Windows-Sysmon/Operational"
AND EventID = 11 AND TargetFilename LIKE "%.scr%" ''')
files.show(40)
```

is not picking anything so I am probably missing out something there :)

Assignees
No one assigned

Labels
None yet

Projects
None yet

Milestone
No milestone

Development
No branches or pull requests

5 participants

I tried to look for alternate data stream (download evidence) without much luck

files = spark.sql(
'''
SELECT TargetFilename
FROM apt29Table
WHERE Channel = "Microsoft-Windows-Sysmon/Operational"
AND EventID = 15 AND TargetFilename LIKE "%.exe%" ''')
files.show(truncate = False, vertical = True)

Cyb3rPandaH commented on May 2, 2020 • edited — Collaborator

I think the record for event 11 that you are looking for is in capital letters LOL. I got one result when using SCR. In those cases you can use LOWER

```
In [21]: test = spark.sql(
             '''
         SELECT Image, TargetFilename
         FROM apt29Table
         WHERE Channel = "Microsoft-Windows-Sysmon/Operational"
             AND EventID = 11
             AND LOWER(TargetFilename) LIKE "%.scr%"
                                 ''')
         test.show(truncate = False, vertical = True)
         #    AND TargetFilename LIKE "%.scr%"
```

```
-RECORD 0-------------------------------------------------------------
 Image          | C:\windows\system32\svchost.exe
 TargetFilename | C:\Windows\Prefetch\Â€®COD.3AKA3.SCR-7BD94A72.pf
```

👍 1 😄 1

Cyb3rWard0g commented on May 2, 2020 — Contributor, Author

> files = spark.sql(
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> FROM apt29Table
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> I tried to look for alternate data stream (download evidence) without much luck
>
> files = spark.sql(
> '''
> SELECT TargetFilename
> FROM apt29Table
> WHERE Channel = "Microsoft-Windows-Sysmon/Operational"
> AND EventID = 15 AND TargetFilename LIKE "%.exe%" ''')
> files.show(truncate = False, vertical = True)

Yeah it doesn look like **@emiliedns** ..mm..

```
networkConnection8524 = spark.sql(

'''

SELECT TargetFilename

FROM apt29Table

WHERE Channel = "Microsoft-Windows-Sysmon/Operational"

AND EventID = 15

AND NOT TargetFilename LIKE "%.etl"

''')

networkConnection8524.show(truncate = False, vertical = True)
```

```
-RECORD 0-----------------------------------------------------------------------
 TargetFilename | C:\WindowsAzure\Logs\WaAppAgent_000002.etl:{4c8cc155-6c1e-11d1-
-RECORD 1-----------------------------------------------------------------------
 TargetFilename | C:\WindowsAzure\Logs\RuntimeEvents_000002.etl:{4c8cc155-6c1e-11
-RECORD 2-----------------------------------------------------------------------
 TargetFilename | C:\Windows\System32\Tasks\Microsoft\Windows\PLA\GAEvents
-RECORD 3-----------------------------------------------------------------------
 TargetFilename | C:\Windows\System32\Tasks\Microsoft\Windows\PLA\GAEvents
-RECORD 4-----------------------------------------------------------------------
 TargetFilename | C:\Windows\System32\Tasks\Microsoft\Windows\PLA\GAEvents
-RECORD 5-----------------------------------------------------------------------
 TargetFilename | C:\Windows\System32\Tasks\Microsoft\Windows\PLA\GAEvents:{4c8cc
-RECORD 6-----------------------------------------------------------------------
 TargetFilename | C:\Windows\System32\Tasks\Microsoft\Windows\PLA\RTEvents
-RECORD 7-----------------------------------------------------------------------
 TargetFilename | C:\Windows\System32\Tasks\Microsoft\Windows\PLA\RTEvents
-RECORD 8-----------------------------------------------------------------------
 TargetFilename | C:\Windows\System32\Tasks\Microsoft\Windows\PLA\RTEvents
-RECORD 9-----------------------------------------------------------------------
 TargetFilename | C:\Windows\System32\Tasks\Microsoft\Windows\PLA\RTEvents:{4c8cc
```

emiliedns commented on May 2, 2020

maybe because of the way the automation was done, the browser wasn't used, was it? that could explain

👍 2

Cyb3rWard0g commented on May 2, 2020 Contributor Author

Correct **@emiliedns** :) Good one! I didnt remember that one https://github.com/hunters-forge/OSSEM/blob/master/data_dictionaries/windows/sysmon/events/event-15.md

👍 1

gonzalomarcos commented on May 3, 2020 • edited

Right To Left Override files executed

```
SELECT `@timestamp`, NewProcessName, SubjectLogonId, CommandLine,
        ProcessId, ParentProcessName, NewProcessId, SUBSTRING_INDEX(NewProcessNam
FROM apt29Table
WHERE Channel = "Security"
    AND EventID = 4688
    AND SUBSTRING_INDEX(NewProcessName, '\\\\\', -1) LIKE "%.%.%"
```

Results

```
@timestamp        | 2020-05-02T02:55:57.748Z
 NewProcessName   | C:\ProgramData\victim\â€®cod.3aka3.scr
 SubjectLogonId   | 0x3731f3
 CommandLine      | "C:\ProgramData\victim\â€®cod.3aka3.scr" /S
 ProcessId        | 0x1158
 ParentProcessName | C:\Windows\explorer.exe
 NewProcessId     | 0x214c
 File             | â€®cod.3aka3.scr
```

🎉 1

Cyb3rWard0g commented on May 3, 2020 Contributor Author

I like this approach **@gonzalomarcos** ! Thank you for sharing. i wonder how something like that can be written in Sigma. **@thomaspatzke** is that something that can be done with Sigma?

🎉 1

neu5ron commented on May 4, 2020 Contributor •••

@Cyb3rWard0g I can't find the executable download anywhere if I should move this somewhere else let me know, but here is a sigma rule for that:

```
title: Executable from Webdav
status: experimental
date: 2020/05/01
description: Detects executable access via webdav6
author: 'Adam Swan'
references:
    - http://carnal0wnage.attackresearch.com/2012/06/webdav-server-to-download-cu
    - https://github.com/OTRF/detection-hackathon-apt29
tags:
    - attack.command_and_control
    - attack.T1043
logsource:
    category: proxy
detection:
    selection_webdav:
        - c-useragent: '*WebDAV*'
        - c-uri: '*webdav*'
    selection_executable:
        - resp_mime_types: '*dosexec*'
        - c-uri: '*.exe'
    condition: selection_webdav AND selection_executable
falsepositives:
    - unknown
level: medium
```

🚀 1

Cyb3rWard0g commented on May 4, 2020 Contributor Author •••

Hey @neu5ron , I believe that goes to this Issue right? #19 Let me know. . @patrickstjohn created one but to detect if it was a python application. So that query works there too! Thats awesome! Thank you Adam! If you can move the query there it would be awesome to track it! 👍

Cyb3rWard0g commented on May 11, 2020 Contributor Author •••

I wonder how noisy the SeProfileSingleProcessPrivilege user privileges requested is for non SYSTEM

```
rtlo = spark.sql(
'''
SELECT PrivilegeList, SubjectUserName, ObjectServer, ProcessName
FROM apt29Table
WHERE EventID = 4673 AND LOWER(Message) LIKE "%3aka3%"
'''
)
rtlo.show(2,truncate = False, vertical = True)
```

Results:

```
-RECORD 0-----------------------------------------------
 PrivilegeList   | SeProfileSingleProcessPrivilege
 SubjectUserName | pbeesly
 ObjectServer    | Security
 ProcessName     | C:\ProgramData\victim\â€®cod.3aka3.scr
```

Cyb3rWard0g commented on May 11, 2020 Contributor Author •••

I liked this query **@cyb3rpanda** from the Initial Exploratory analysis notebook:

```
networkConnection8524 = spark.sql(
    '''
SELECT o.`@timestamp`, o.ProcessId, a.ParentImage, o.Image, o.SourceIp, o.Destina
FROM apt29Table o
INNER JOIN (
    SELECT Description, CommandLine, CurrentDirectory, ProcessGuid, ParentImage
    FROM apt29Table
    WHERE Channel = "Microsoft-Windows-Sysmon/Operational"
        AND EventID = 1
        AND ParentImage LIKE "%explorer%"
    ) a
ON o.ProcessGuid = a.ProcessGuid
WHERE Channel = "Microsoft-Windows-Sysmon/Operational"
        AND EventID = 3
                        ''')
networkConnection8524.show(truncate = False, vertical = True)
```

I was going over the APT29 Evals results and some EDR solutions also look for that combination.
`Execution of file from Explorer.exe with a network connection". Some just mention that the file is malicious while others actually say that it used the RTLO technique. I assume they somehow look for the Unicode string. However, that basic logic above seems to be considered by several detection rules (additional context)

Cyb3rWard0g commented on May 11, 2020 Contributor Author •••

Detection Categories

Main - Technique

(originally file during evams was executed from C:\users\ and not C:\programdata) However, the execution of the file was captured from C:\programdata\ and it would have been captured anyways from C:\users)

Process creation / Execution from users directory

```
SELECT Message
FROM apt29Table
WHERE Channel = "Microsoft-Windows-Sysmon/Operational"
AND EventID = 1 AND LOWER(CurrentDirectory) LIKE "c:_users_%"
```

Main - General

Information about new process running on endpoint leveraging registry modifications to `\Software\Microsoft\Windows NT\CurrentVersion\AppCompatFlags\Compatibility Assistant\Store\`

```
SELECT Message
FROM apt29Table
WHERE Channel = "Microsoft-Windows-Sysmon/Operational"
AND EventID = 13 AND LOWER(TargetObject) LIKE "%appcompatflags_compatibility_assi
```

Cyb3rWard0g commented on May 11, 2020 • edited Contributor Author •••

Main - Telemetry

Execution of payload was captured

```
SELECT Message
FROM apt29Table
WHERE Channel = "Microsoft-Windows-Sysmon/Operational"
```

```
    AND EventID = 1
    AND LOWER(ParentImage) LIKE "%explorer.exe"
    AND LOWER(Image) LIKE "%3aka3%"
```

Results:

```
-RECORD 0
 Message | Process Create:
RuleName: -
UtcTime: 2020-05-02 02:55:56.157
ProcessGuid: {47ab858c-e13c-5eac-a903-000000000400}
ProcessId: 8524
Image: C:\ProgramData\victim\â€®cod.3aka3.scr
FileVersion: -
Description: -
Product: -
Company: -
OriginalFileName: -
CommandLine: "C:\ProgramData\victim\â€®cod.3aka3.scr" /S
CurrentDirectory: C:\ProgramData\victim\
User: DMEVALS\pbeesly
LogonGuid: {47ab858c-dabe-5eac-f331-370000000000}
LogonId: 0x3731F3
TerminalSessionId: 2
IntegrityLevel: Medium
Hashes: SHA1=4B7FA56A4E85F88B98D11A6E018698AE3FBA5E62,MD5=9D1C5EF38E6073661C74660
ParentProcessGuid: {47ab858c-dac4-5eac-f202-000000000400}
ParentProcessId: 4440
ParentImage: C:\Windows\explorer.exe
ParentCommandLine: C:\windows\Explorer.EXE
```

Cyb3rWard0g commented on May 11, 2020 Contributor Author •••

1.A.4 Standard Cryptographic Protocol

Procedure: Used RC4 stream cipher to encrypt C2 (192.168.0.5) traffic
Criteria: Evidence that the network data sent over the C2 channel is encrypted

```
 rcs.3aka3.doc loading cryptographic libraries
```

```
SELECT Image, count(*) as count
FROM apt29Table
WHERE Channel = "Microsoft-Windows-Sysmon/Operational"
AND EventID = 7 AND LOWER(ImageLoaded) LIKE "%bcrypt.dll%"
GROUP BY Image
ORDER BY count DESC
```