Unpacking Clop

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Published: 2019-12-02 · Archived: 2026-04-06 01:04:01 UTC

2 min read

Dec 2, 2019

On twitter, a good analysis of the ransomware Clop has done. But nothing on the unpacking.

The packer has three stages.

The first stage is an allocation and dexoring of the overlay in the function FUN_00401000

*local_c = (code *)VirtualAllocEx((HANDLE)0xffffffff,(LPVOID)0x0,0x1c20,DAT_0043f0dc,0x40)*

while (local_40 < 900) {
local_80 = DAT_00426260;
*uVar1 = *(int *)(&DAT_00426264 + local_40 * 4) - local_40 ^ DAT_00426260;*
local_24 = local_24 + -0x438;
local_84 = (uVar1 << 7 | uVar1 >> 0x19) ^ DAT_00426260;
*(uint *)(local_c + local_40 * 4) = local_84;*
local_40 = local_40 + 1;
}

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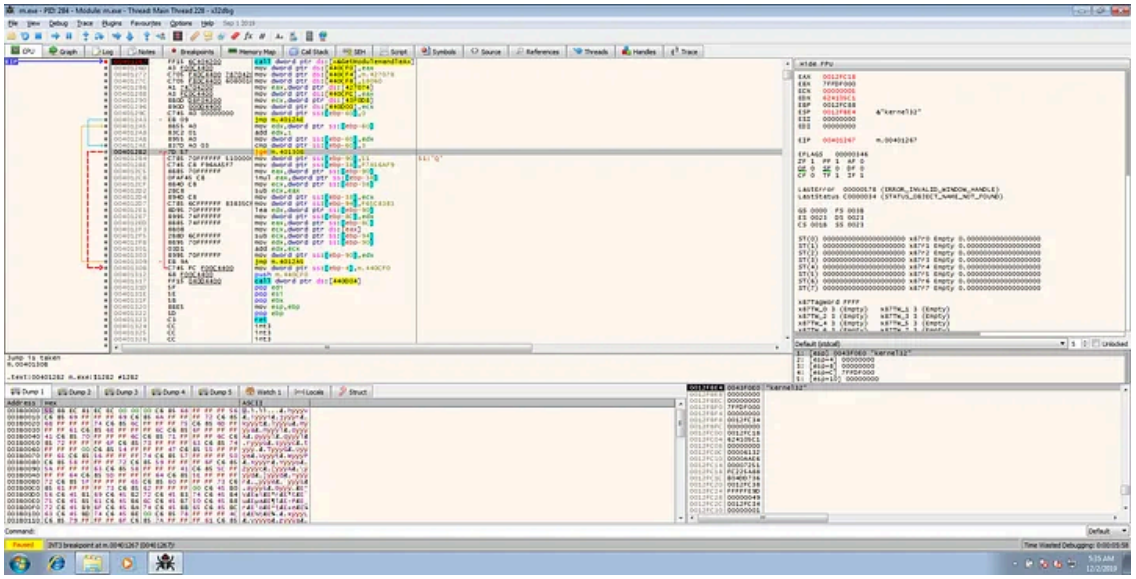

the dropper jump in the shellcode with:

00401317 call dword ptr ds:[440D04]

the second stage is the execution of the shell code in six steps:

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The first step is to allocate a new page with Virtualloc.

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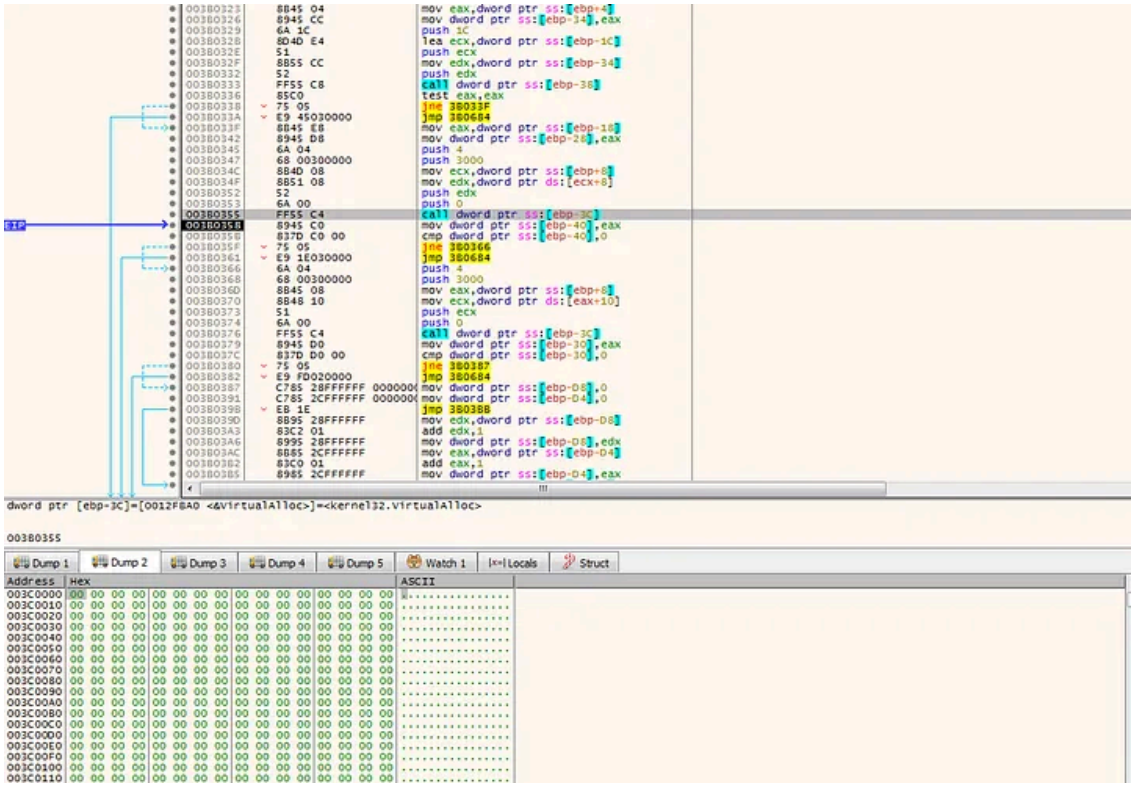

The second step is decoded an compressed PE.

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The third step is a decompression of the payload without import table in 3B010.

The fourth step is reconstruction of the import table in 3B0910.

The fifth step is the wipe of the loader in memory.

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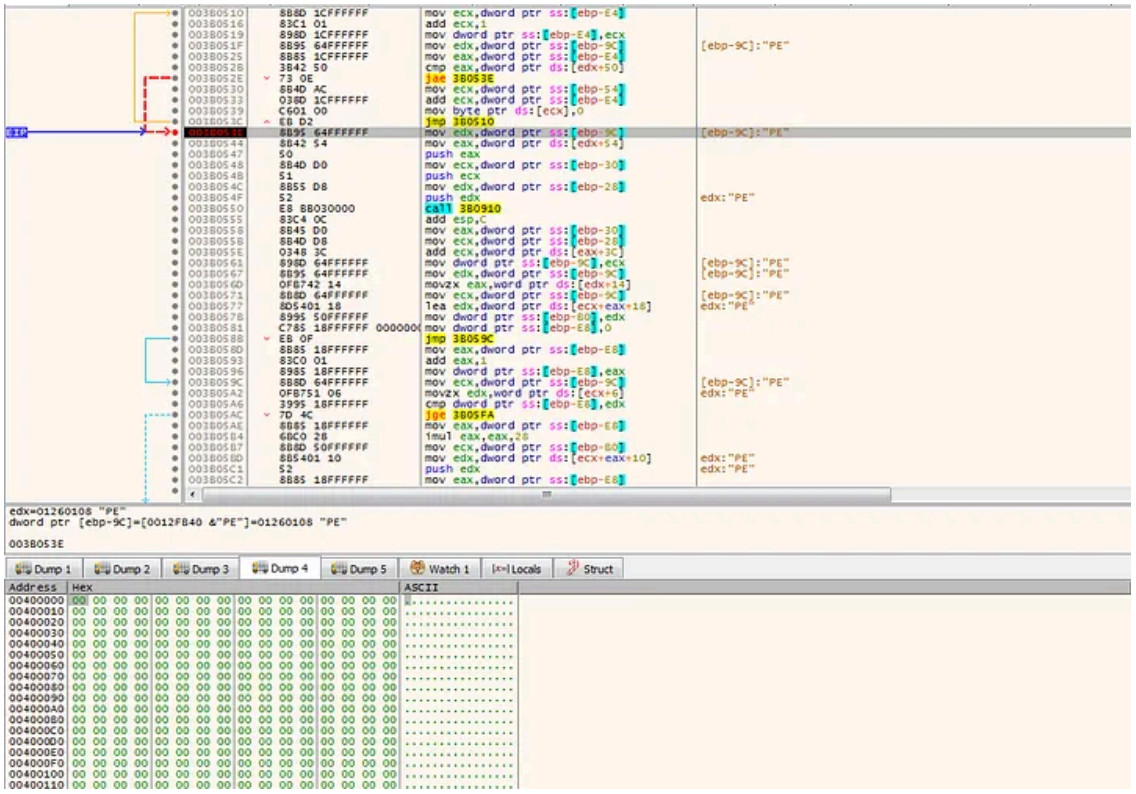

And the last stage is the copy of the real payload with the function 3B0910.

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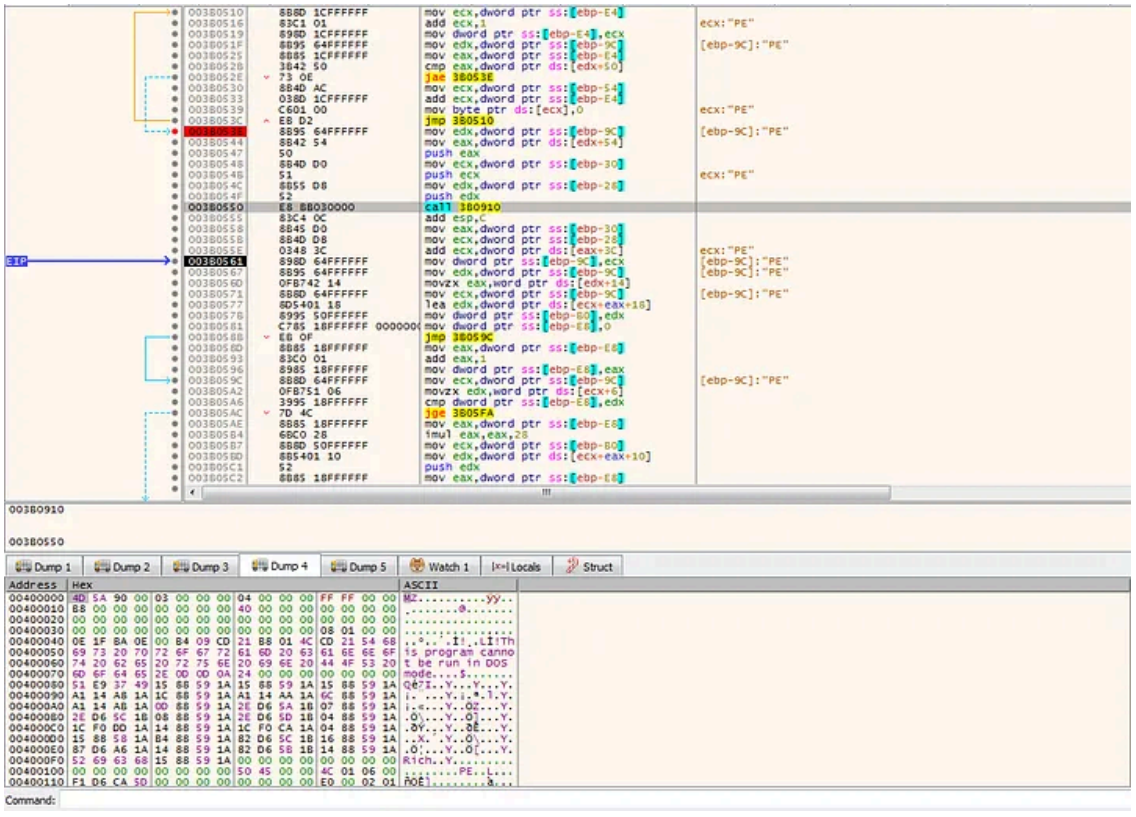

And jump in the new entrypoint in dword ptr [ebp-58]=[0012FB84]=m.00407BB3

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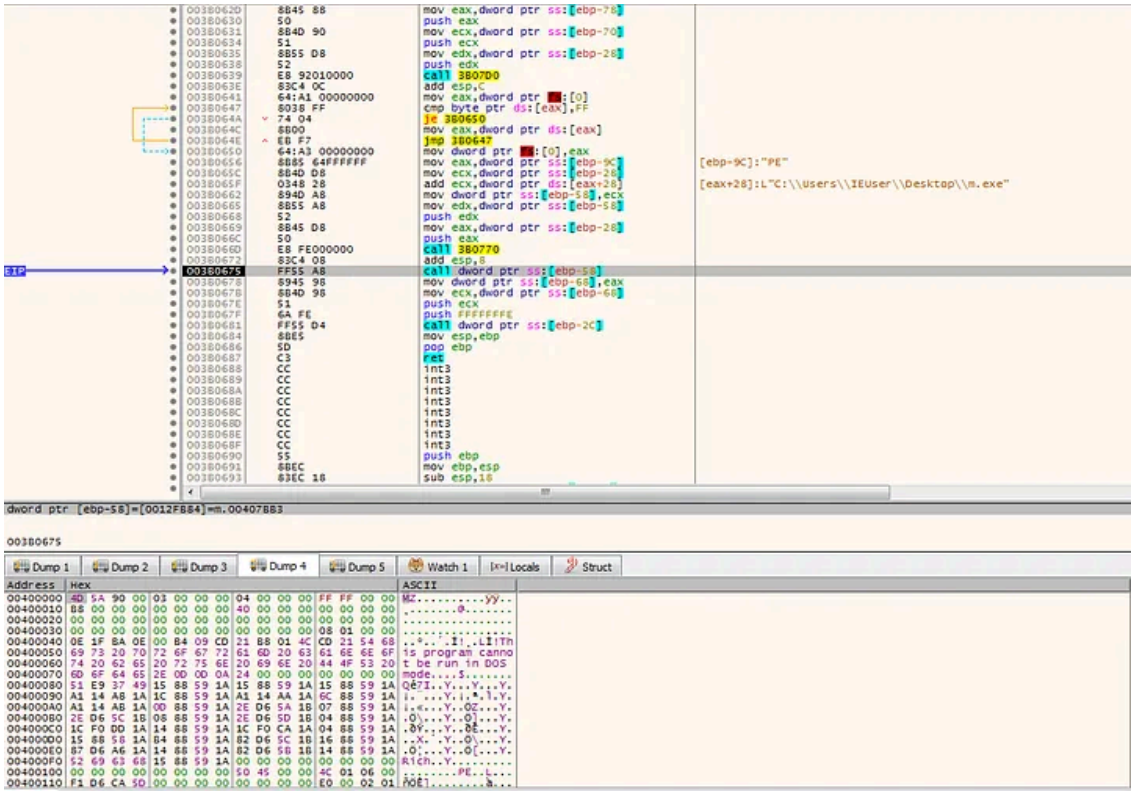

Now you have the real malware clop for following the analysis of [Minhee Lee]

Source: https://medium.com/@Sebdraven/unpacking-clop-416b83718e0f