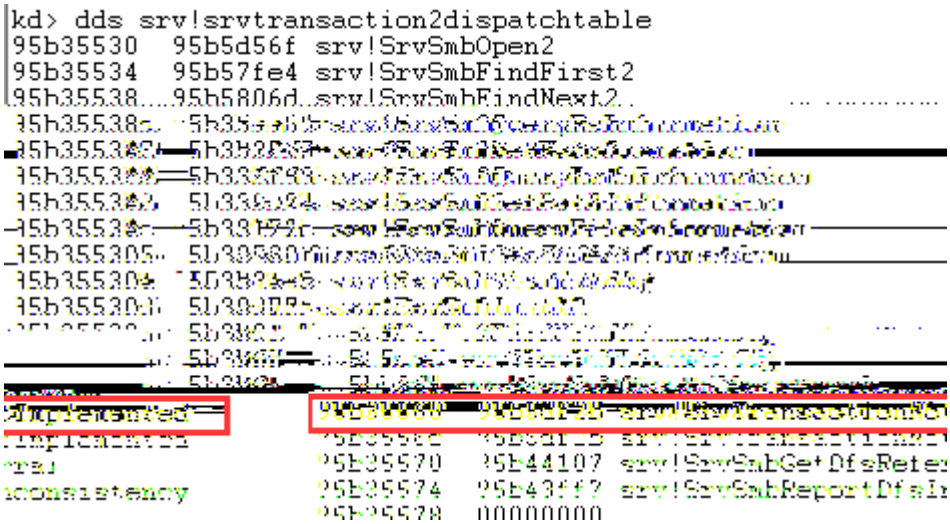
Shadow Brokers NSA DoublePulsar
DoublePulsar

SMB RDP
EternalBlue EternalRomance srv.sys
SrvTransaction2DispatchTable 14 srv.sys
SrvTransaction2DispatchTable 14
SrvTransactionNotImplemented SMB SMB_COM_TRANSACTION2
DoublePulsar
SMB_COM_TRANSACTION2

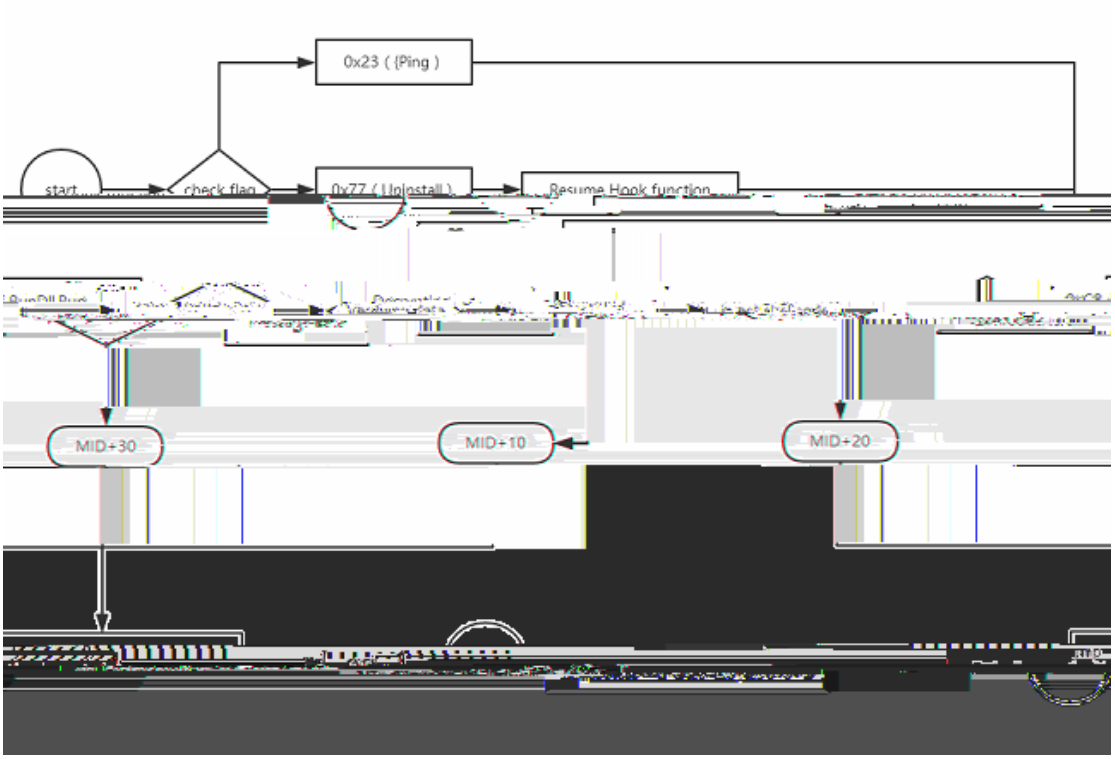
1. SrvTransaction2DispatchTable 14
SrvTransactionNotImplemented



2. SrvTransaction2DispatchTable 14

3.DoublePulsar

OutputInstall	shellcode RunShellcode
Ping	DoublePulsar
RunDLL RunShellcode	shellcode Dll



(1)CheckFlag

SMB_COM_TRANSACTION2

Timeout flag

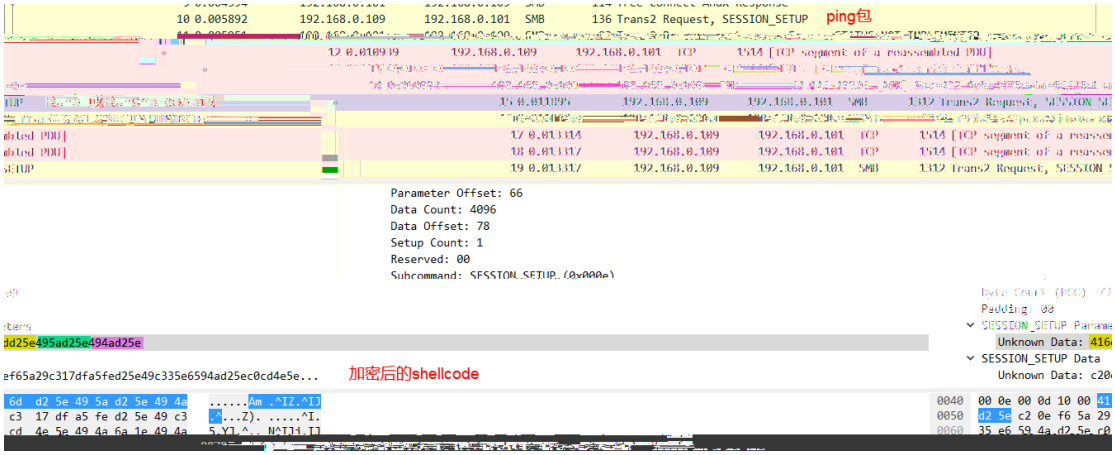
```
seg000:86847194 sub_86847194    proc near               ; CODE XREF: start+30↑p
seg000:86847194                 xor     eax, eax
seg000:86847196                 mov     al, cl
seg000:86847198                 shr     ecx, 8
seg000:8684719B                 add     al, cl
seg000:8684719D                 shr     ecx, 8
seg000:86847100                 add     al, cl
```

timeout 0x23

```
10 0.005892   192.168.0.109   192.168.0.101   SMB   445   136 Trans2 Request, SESSION_SETUP
11 0.005951   192.168.0.101   192.168.0.109   SMB   445   93 Trans2 Response<unknown>, Error: STATUS_NOT_IMPLEMENTED
15 0.011895   192.168.0.109   192.168.0.101   SMB   445   1312 Trans2 Request, SESSION_SETUP
16 0.011968   192.168.0.101   192.168.0.109   SMB   49805   93 Trans2 Response<unknown>, Error: STATUS_NOT_IMPLEMENTED
19 0.013317   192.168.0.109   192.168.0.101   SMB   445   1312 Trans2 Request, SESSION_SETUP
21 0.013726   192.168.0.101   192.168.0.109   SMB   49805   93 Trans2 Response<unknown>, Error: STATUS_NOT_IMPLEMENTED
Max Parameter Count: 1
Max Data Count: 0
Max Setup Count: 0
Reserved: 00
Flags: 0x0000
Timeout: 2 hours, 50 minutes, 33.186 seconds
Reserved: 0000
Parameter Count: 12
Parameter Offset: 66
Data Count: 0
Data Offset: 78
Setup Count: 1
Reserved: 00
0030  3f c9 96 39 00 00 00 00  00 4e ff 53 4d 42 32 00   ?..9.... .N.SMB2.
0040  00 00 00 18 07 c0 00 00  00 00 00 00 00 00 00 00   ........
0050  00 00 00 08 ff fe 00 08  41 00 0f 0c 00 00 00 01   ........ A.......
0060  00 00 00 00 00 00 00 62  25 9c 00 00 00 0c 00 42   .......b %.....B
0070  00 00 00 4e 00 01 00 0e  00 0d 00 00 00 00 00 00   ...N.... ........
0080  00 00 00 00 00 00 00 00
```

0x23	Ping
0x77	
0xc8	shellcode

(



SESSION_SETUP Data shellcode

a. shellcode

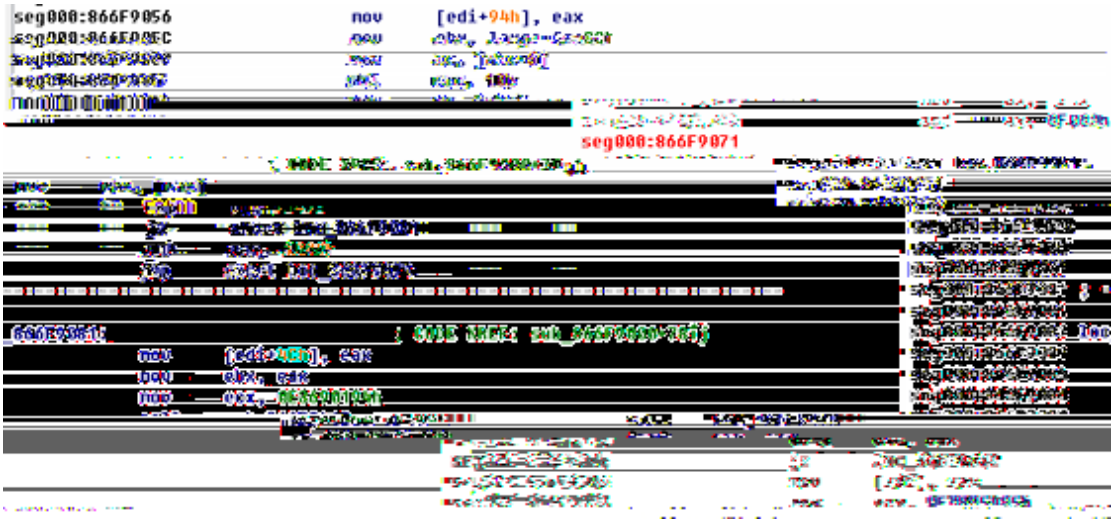
```
seg000:868470B1        mov     esi, [eax]      ; shellcode size
seg000:868470B3        xor     esi, [ebp+28h]  ; key
seg000:868470B6        mov     edi, [eax+8]
seg000:868470B9        xor     edi, [ebp+28h]
seg000:868470BC        mov     eax, [eax+4]
seg000:868470BF        xor     eax, [ebp+28h]
```

b. shellcode shellcode

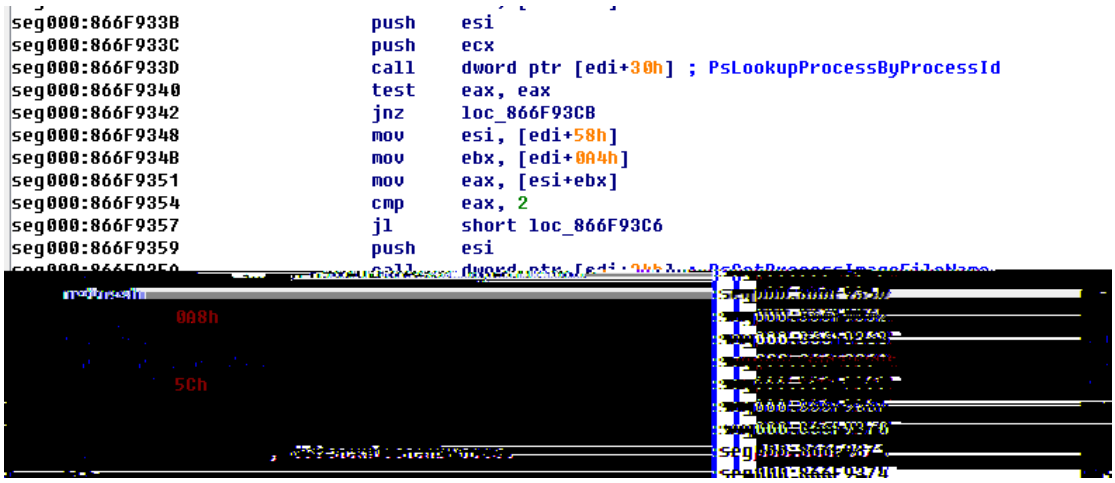
shellcode



c. Rundll shellcode IDT ntoskrnl.exe
IDT ntoskrnl.exe PE



d. PID lsass.exe



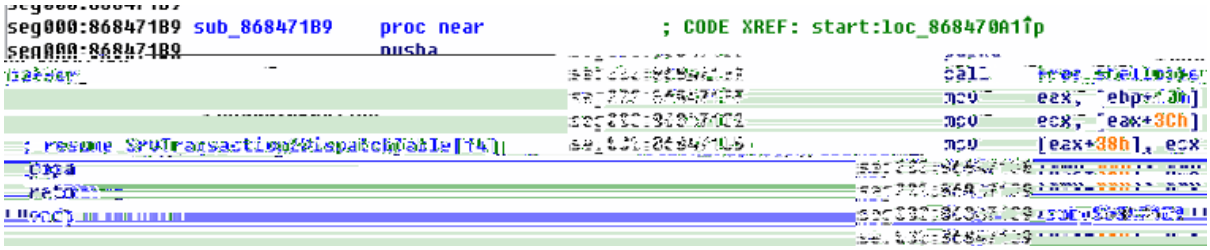
e. APC



(4)Uninstall

0x77

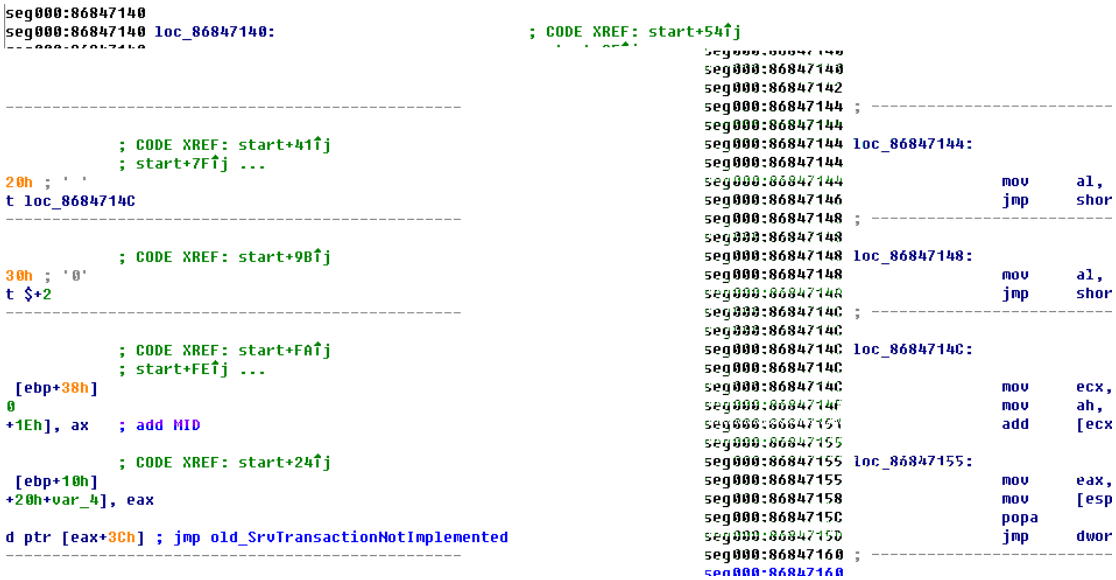
SrvTransaction2DispatchTable



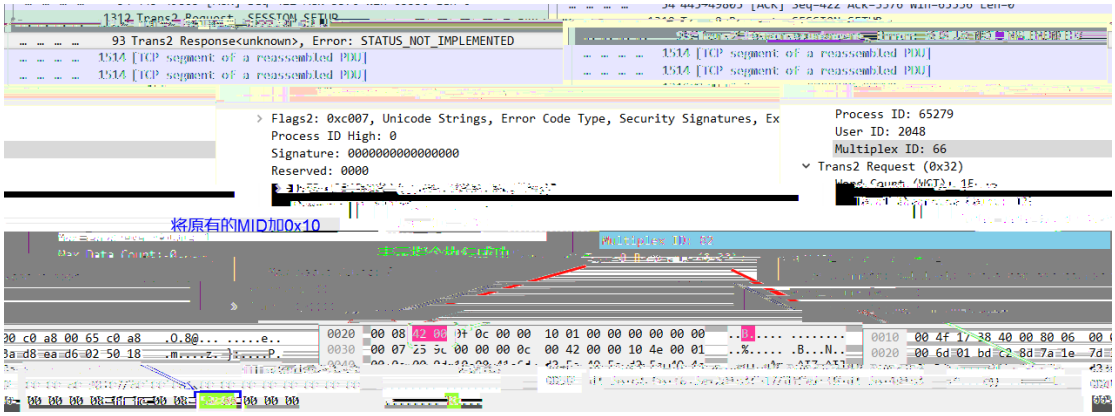
(5)

SrvTransactionNotImplemented

MID



MID+0x10	
MID+0x20	
MID+0x30	



VenusEye

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Hedwig Locky

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Sage 2.0

Office 0day 2016

