STATIC MALWARE ANALYSIS: IDA PRO

S11 - L2

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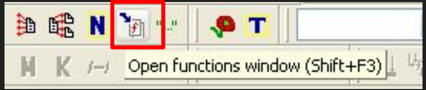

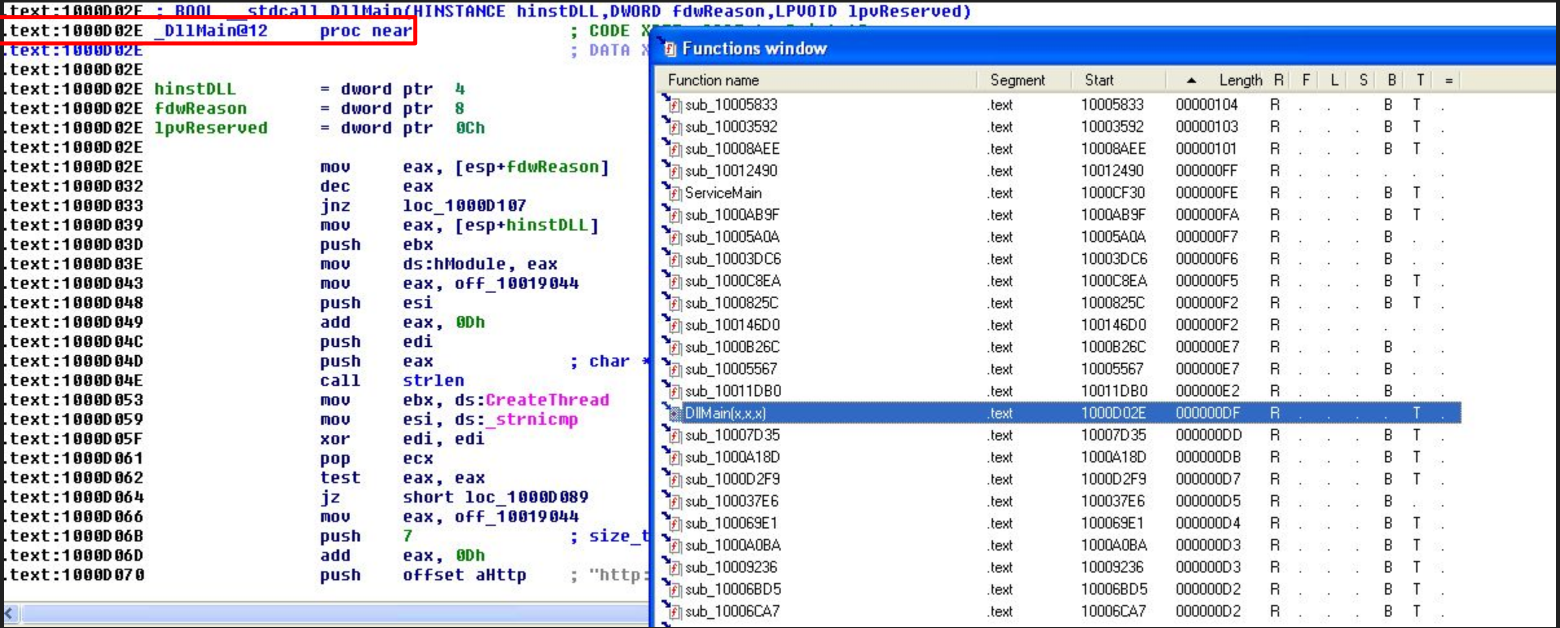

```
.text:1000D02E ; BOOL __stdcall DllMain(HINSTANCE hinstDLL,DWORD fdwReason,LPVOID lpReserved)
.text:1000D02E _DllMain@12     proc near               ; CODE X
.text:1000D02E                                         ; DATA X
.text:1000D02E
.text:1000D02E hinstDLL        = dword ptr  4
.text:1000D02E fdwReason       = dword ptr  8
.text:1000D02E lpvReserved     = dword ptr  0Ch
.text:1000D02E
.text:1000D02E                 mov     eax, [esp+fdwReason]
.text:1000D032                 dec     eax
.text:1000D033                 jnz     loc_1000D107
.text:1000D039                 mov     eax, [esp+hinstDLL]
.text:1000D03D                 push    ebx
.text:1000D03E                 mov     ds:hModule, eax
.text:1000D043                 mov     eax, off_10019044
.text:1000D048                 push    esi
.text:1000D049                 add     eax, 0Dh
.text:1000D04C                 push    edi
.text:1000D04D                 push    eax             ; char *
.text:1000D04E                 call    strlen
.text:1000D053                 mov     ebx, ds:CreateThread
.text:1000D059                 mov     esi, ds:_strnicmp
.text:1000D05F                 xor     edi, edi
.text:1000D061                 pop     ecx
.text:1000D062                 test    eax, eax
.text:1000D064                 jz      short loc_1000D089
.text:1000D066                 mov     eax, off_10019044
.text:1000D06B                 push    7               ; size_t
.text:1000D06D                 add     eax, 0Dh
.text:1000D070                 push    offset aHttp    ; "http:
```

Functions window

Function name	Segment	Start	Length	R	F	L	S	B	T	=
sub_10005833	.text	10005833	00000104	R	.	.	.	B	T	.
sub_10003592	.text	10003592	00000103	R	.	.	.	B	T	.
sub_10008AEE	.text	10008AEE	00000101	R	.	.	.	B	T	.
sub_10012490	.text	10012490	000000FF	R	.	.	.	.	.	.
ServiceMain	.text	1000CF30	000000FE	R	.	.	.	B	T	.
sub_1000AB9F	.text	1000AB9F	000000FA	R	.	.	.	B	T	.
sub_10005A0A	.text	10005A0A	000000F7	R	.	.	.	B	.	.
sub_10003DC6	.text	10003DC6	000000F6	R	.	.	.	B	.	.
sub_1000C8EA	.text	1000C8EA	000000F5	R	.	.	.	B	T	.
sub_1000825C	.text	1000825C	000000F2	R	.	.	.	B	T	.
sub_100146D0	.text	100146D0	000000F2	R	.	.	.	.	.	.
sub_1000B26C	.text	1000B26C	000000E7	R	.	.	.	B	.	.
sub_10005567	.text	10005567	000000E7	R	.	.	.	B	.	.
sub_10011DB0	.text	10011DB0	000000E2	R	.	.	.	B	.	.
DllMain(x,x,x)	.text	1000D02E	000000DF	R	.	.	.	.	T	.
sub_10007D35	.text	10007D35	000000DD	R	.	.	.	B	T	.
sub_1000A18D	.text	1000A18D	000000DB	R	.	.	.	B	T	.
sub_1000D2F9	.text	1000D2F9	000000D7	R	.	.	.	B	T	.
sub_100037E6	.text	100037E6	000000D5	R	.	.	.	B	.	.
sub_100069E1	.text	100069E1	000000D4	R	.	.	.	B	T	.
sub_1000A0BA	.text	1000A0BA	000000D3	R	.	.	.	B	T	.
sub_10009236	.text	10009236	000000D3	R	.	.	.	B	T	.
sub_10006BD5	.text	10006BD5	000000D2	R	.	.	.	B	T	.
sub_10006CA7	.text	10006CA7	000000D2	R	.	.	.	B	T	.

Attraverso la GUI possiamo aprire la "Functions Window" che contiene tutte le funzioni utilizzate nel codice. Cercandolo possiamo trovare la funzione DLLMain all'indirizzo 1000D0E.

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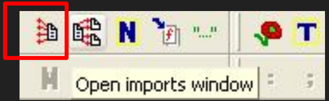

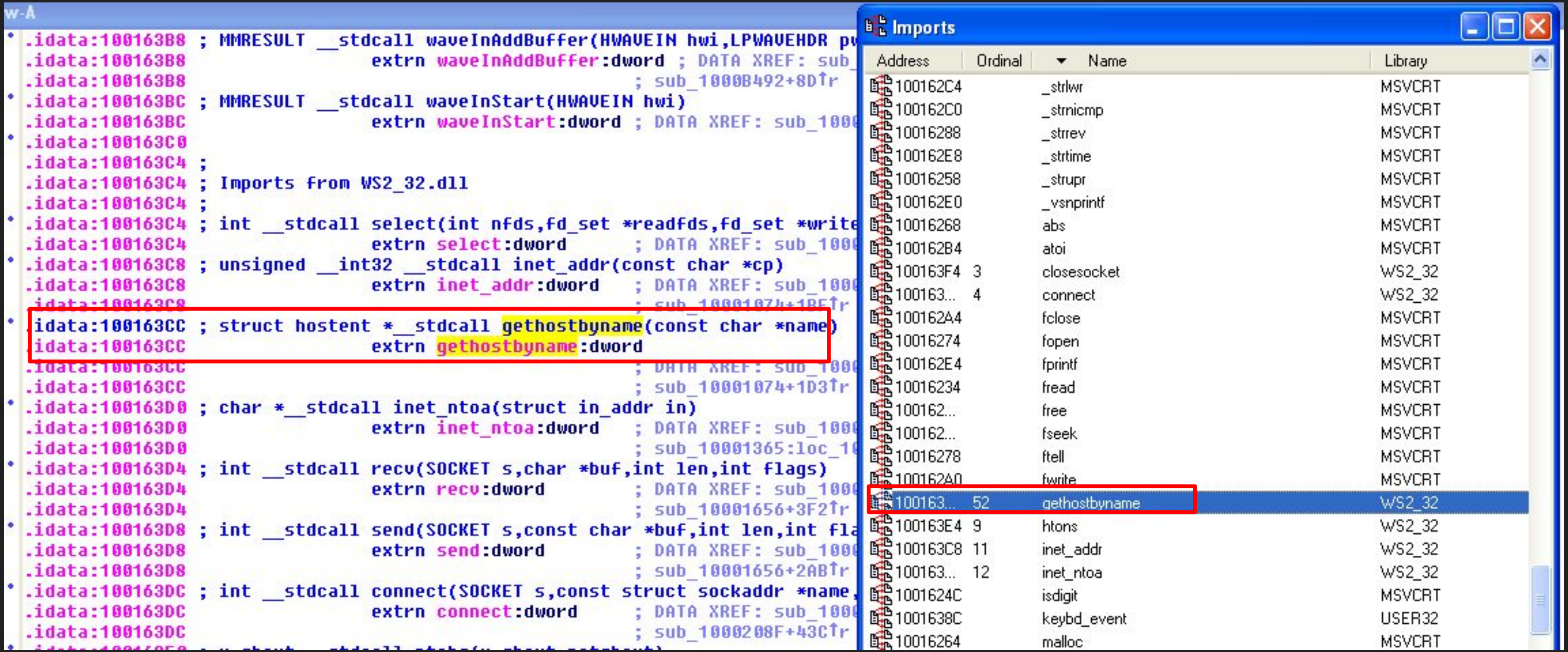

```
.idata:100163B8 ; MMRESULT __stdcall waveInAddBuffer(HWAVEIN hwi,LPWAVEHDR pw
.idata:100163B8                 extrn waveInAddBuffer:dword ; DATA XREF: sub_
.idata:100163B8                                         ; sub_1000B492+8D↑r
.idata:100163BC ; MMRESULT __stdcall waveInStart(HWAVEIN hwi)
.idata:100163BC                 extrn waveInStart:dword ; DATA XREF: sub_1000
.idata:100163C0
.idata:100163C4 ;
.idata:100163C4 ; Imports from WS2_32.dll
.idata:100163C4 ;
.idata:100163C4 ; int __stdcall select(int nfds,fd_set *readfds,fd_set *write
.idata:100163C4                 extrn select:dword      ; DATA XREF: sub_1000
.idata:100163C8 ; unsigned __int32 __stdcall inet_addr(const char *cp)
.idata:100163C8                 extrn inet_addr:dword   ; DATA XREF: sub_1000
.idata:100163C8                                         ; sub_10001074+1BF↑r
.idata:100163CC ; struct hostent *__stdcall gethostbyname(const char *name)
.idata:100163CC                 extrn gethostbyname:dword
.idata:100163CC                                         ; DATA XREF: sub_1000
.idata:100163CC                                         ; sub_10001074+1D3↑r
.idata:100163D0 ; char *__stdcall inet_ntoa(struct in_addr in)
.idata:100163D0                 extrn inet_ntoa:dword   ; DATA XREF: sub_1000
.idata:100163D0                                         ; sub_10001365:loc_1
.idata:100163D4 ; int __stdcall recv(SOCKET s,char *buf,int len,int flags)
.idata:100163D4                 extrn recv:dword        ; DATA XREF: sub_1000
.idata:100163D4                                         ; sub_10001656+3F2↑r
.idata:100163D8 ; int __stdcall send(SOCKET s,const char *buf,int len,int fla
.idata:100163D8                 extrn send:dword        ; DATA XREF: sub_1000
.idata:100163D8                                         ; sub_10001656+2AB↑r
.idata:100163DC ; int __stdcall connect(SOCKET s,const struct sockaddr *name,
.idata:100163DC                 extrn connect:dword     ; DATA XREF: sub_1000
.idata:100163DC                                         ; sub_1000208F+43C↑r
```

Imports

Address	Ordinal	Name	Library
100162C4		_strlwr	MSVCRT
100162C0		_strnicmp	MSVCRT
10016288		_strrev	MSVCRT
100162E8		_strtime	MSVCRT
10016258		_strupr	MSVCRT
100162E0		_vsnprintf	MSVCRT
10016268		abs	MSVCRT
100162B4		atoi	MSVCRT
100163F4	3	closesocket	WS2_32
100163...	4	connect	WS2_32
100162A4		fclose	MSVCRT
10016274		fopen	MSVCRT
100162E4		fprintf	MSVCRT
10016234		fread	MSVCRT
100162...		free	MSVCRT
100162...		fseek	MSVCRT
10016278		ftell	MSVCRT
100162A0		fwrite	MSVCRT
100163...	52	gethostbyname	WS2_32
100163E4	9	htons	WS2_32
100163C8	11	inet_addr	WS2_32
100163...	12	inet_ntoa	WS2_32
1001624C		isdigit	MSVCRT
1001638C		keybd_event	USER32
10016264		malloc	MSVCRT

Attraverso la GUI possiamo aprire la "Imports Window" che contiene tutte le funzioni importate nel codice. Cercandola possiamo trovare la funzione gethostbyname all'indirizzo 100163CC.

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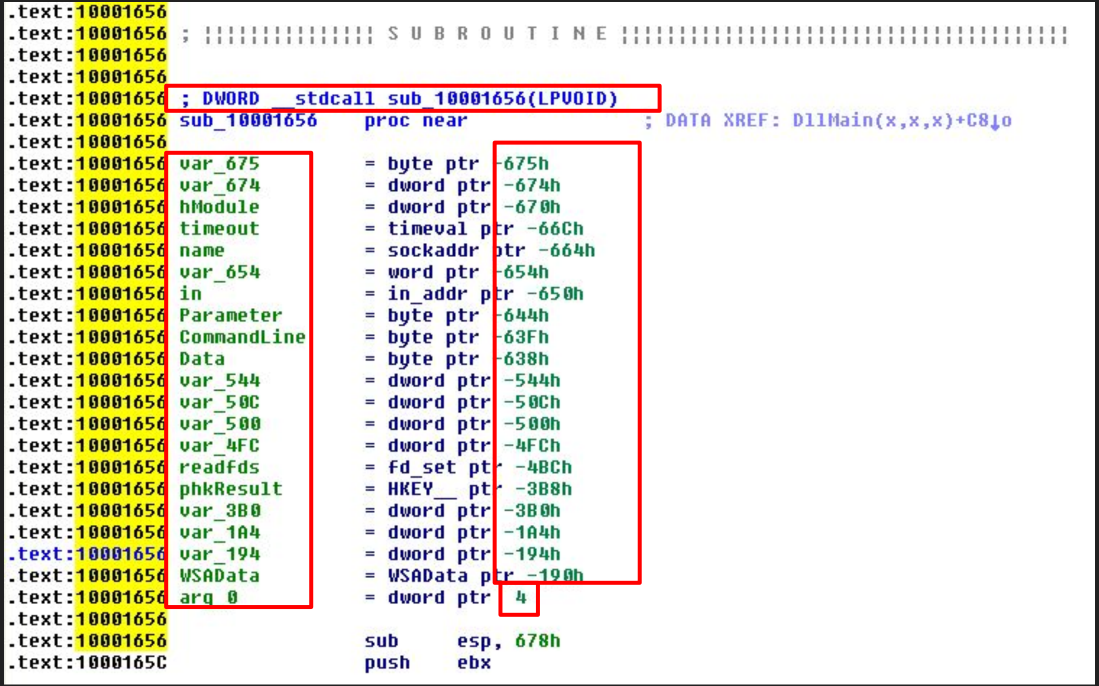

```
.text:10001656
.text:10001656 ; ¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦ S U B R O U T I N E ¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦¦
.text:10001656
.text:10001656
.text:10001656 ; DWORD __stdcall sub_10001656(LPVOID)
.text:10001656 sub_10001656    proc near               ; DATA XREF: DllMain(x,x,x)+C8↓o
.text:10001656
.text:10001656 var_675         = byte ptr -675h
.text:10001656 var_674         = dword ptr -674h
.text:10001656 hModule         = dword ptr -670h
.text:10001656 timeout         = timeval ptr -66Ch
.text:10001656 name            = sockaddr ptr -664h
.text:10001656 var_654         = word ptr -654h
.text:10001656 in              = in_addr ptr -650h
.text:10001656 Parameter       = byte ptr -644h
.text:10001656 CommandLine     = byte ptr -63Fh
.text:10001656 Data            = byte ptr -638h
.text:10001656 var_544         = dword ptr -544h
.text:10001656 var_50C         = dword ptr -50Ch
.text:10001656 var_500         = dword ptr -500h
.text:10001656 var_4FC         = dword ptr -4FCh
.text:10001656 readfds         = fd_set ptr -4BCh
.text:10001656 phkResult       = HKEY__ ptr -3B8h
.text:10001656 var_3B0         = dword ptr -3B0h
.text:10001656 var_1A4         = dword ptr -1A4h
.text:10001656 var_194         = dword ptr -194h
.text:10001656 WSAData         = WSAData ptr -190h
.text:10001656 arg_0           = dword ptr  4
.text:10001656
.text:10001656                 sub     esp, 678h
.text:1000165C                 push    ebx
```

All'indirizzo 10001656 possiamo trovare una funzione che contiene variabili e parametri. Per differenziare le funzioni dai parametri basta vedere come si riferiscono al puntatore base EBP, le funzioni sono indicate con valori negativi, mentre i parametri sono indicati con valori positivi, questo significa che ci sono 20 funzioni, e una solo 1 argomento.