【软件名称】： Dope2112.2.exe

【软件大小】： 12.0 KB

【下载地址】： 自行搜索下载

【加壳方式】： 无壳

【保护方式】： Keyfile

【编译语言】： MASM

【调试环境】： W7 32

【使用工具】: OD

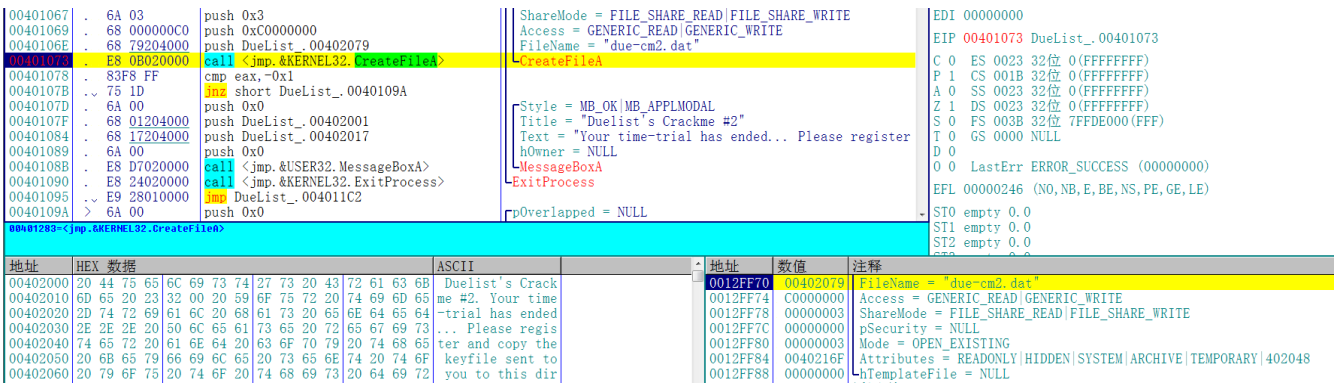
【破解日期】： 2019-6-15

【破解目的】： 纯属兴趣

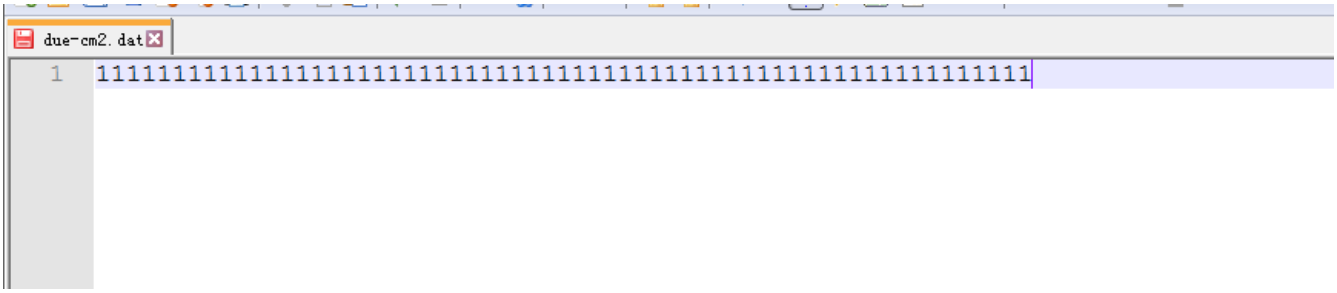
校验步骤

条件一

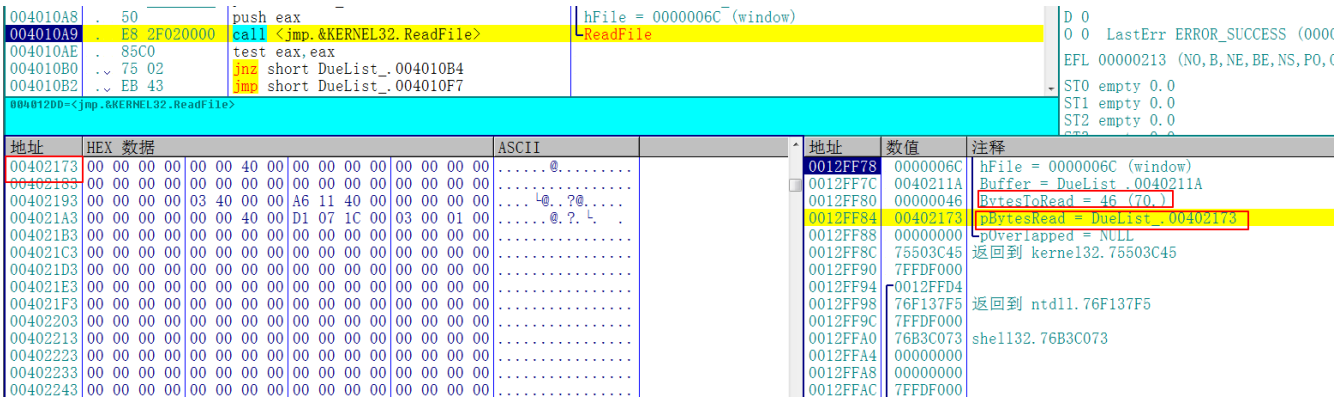
用OD载入后直接往下拉就能看到CreateFile函数，我们在这下个断点



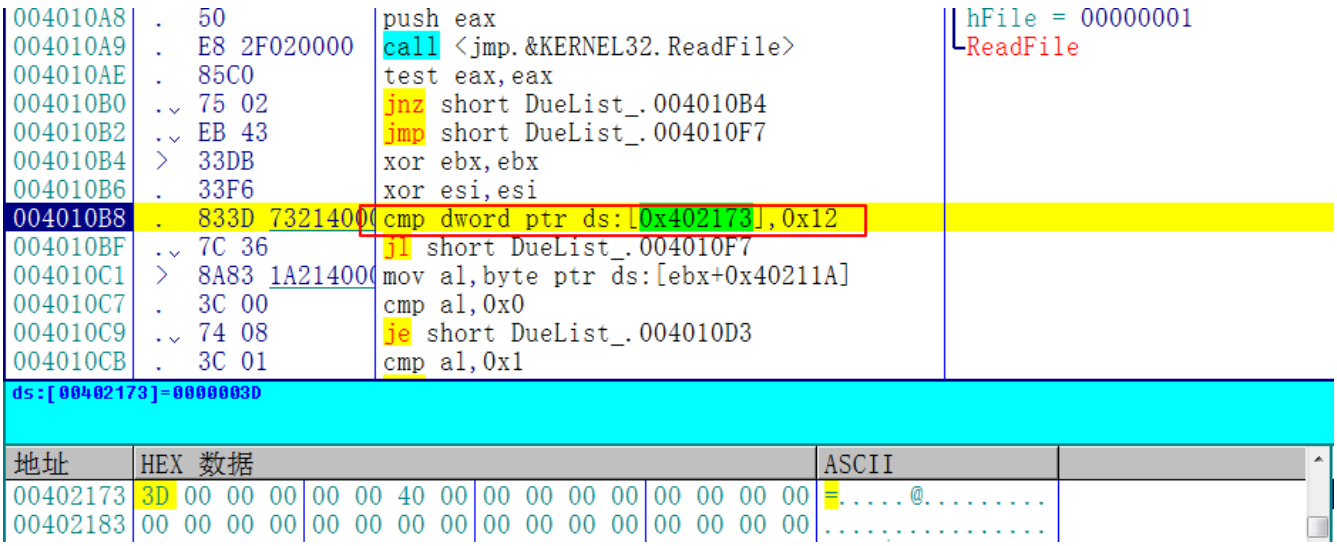
该函数以读写的方式打开due-cm2.dat文件，为了通过校验，我们需要在同路径下创建一个名为due-cm2.dat的文件，并在文件内填充任意内容



接着读取0x46个字节的文件内容到缓冲区



这里重点关注pBytesRead实际读取到的字节数



然后会比较[0x402173]的位置的值是否小于0x12，这个地址就是实际读取的字节数，所以我们得出

条件1：due-cm2.dat文件内容不能小于0x12个字节

条件二

```
004010BF  .v 7C 36        jl short DueList_.004010F7
004010C1  >  8A83 1A214000 mov al,byte ptr ds:[ebx+0x40211A]   循环读取文件内容到al
004010C7  .  3C 00         cmp al,0x0                          比较al是否为0 这里是在判断是否到了文件末尾
004010C9  .v 74 08         je short DueList_.004010D3
004010CB  .  3C 01         cmp al,0x1                          比较al是否为1
004010CD  .v 75 01         jnz short DueList_.004010D0
004010CF  .  46            inc esi                             文件内容为1 则esi++
004010D0  >  43            inc ebx                             ebx++
004010D1  .^ EB EE         jmp short DueList_.004010C1         跳转到循环开始处
004010D3  >  83FE 02       cmp esi,0x2
004010D6  .v 7C 1F         jl short DueList_.004010F7          跳转提示错误
004010D8  .  33F6          xor esi,esi
004010DA  .  33DB          xor ebx,ebx
004010DC  >  8A83 1A214000 mov al,byte ptr ds:[ebx+0x40211A]
004010E2  .  3C 00         cmp al,0x0
跳转未实现
004010F7=DueList_.004010F7
```

地址	HEX 数据	ASCII
0040211A	31 31 31 31 31 31 31 31 31 31 31 31 31 31 31 31	1111111111111111
0040212A	31 31 31 31 31 31 31 31 31 31 31 31 31 31 31 31	1111111111111111
0040213A	31 31 31 31 31 31 31 31 31 31 31 31 31 31 31 31	1111111111111111
0040214A	31 31 31 31 31 31 31 31 31 31 31 31 31 00 00 00	1111111111111...
0040215A	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	....
0040216A	00 00 00 00 00 80 00 00 00 3D 00 00 00 00 00 40	.....€...=.....@
0040217A	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	....
0040218A	00 00 00 00 00 00 00 00 00 00 00 00 00 03 40 00	..............└@.
0040219A	00 A6 11 40 00 00 00 00 00 00 00 00 00 00 00 40	.?@...........@
004021AA	00 D1 07 1C 00 03 00 01 00 00 00 00 00 00 00 00	.?.└. ....
004021BA	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	....
004021CA	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	....
004021DA	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	....
004021EA	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	....
004021FA	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	....
0040220A	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	....
0040221A	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	....
0040222A	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	....

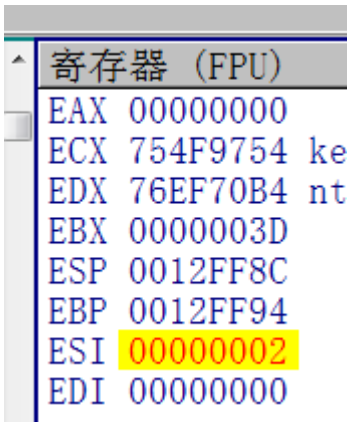
地址	数值	注释
0012FF8C	75503C45	返回至
0012FF90	7FFDF000	
0012FF94	0012FFD4	
0012FF98	76F137F5	返回至
0012FF9C	7FFDF000	
0012FFA0	76B3C073	shell
0012FFA4	00000000	
0012FFA8	00000000	
0012FFAC	7FFDF000	
0012FFB0	00000000	
0012FFB4	00000000	
0012FFB8	00000000	
0012FFBC	0012FFA0	ASCII
0012FFC0	00000000	
0012FFC4	FFFFFFFF	SEH 链
0012FFC8	76ECE0ED	SE处理
0012FFCC	00512DDF	
0012FFD0	00000000	

接着到了一个循环，这个循环会读取文件的每一个字节，并且和1比较，如果内容为1，则esi++。然后再循环结束之后，会比较esi是否小于2。所以我们得出：

条件二：文件内容的ASCII必须有至少两个0x1

条件三

继续往下，我们暂时先将esi的值修改为2



```
004010D8  .   33F6          xor esi,esi                          esi清零
004010DA  .   33DB          xor ebx,ebx                          ebx清零
004010DC  >   8A83 1A214000 mov al,byte ptr ds:[ebx+0x40211A]    循环读取文件内容到al
004010E2  .   3C 00         cmp al,0x0                           比较al是否为0 这里是在判断是否到了文件末尾
004010E4  .v  74 09         je short DueList_.004010EF           跳转到循环结束
004010E6  .   3C 01         cmp al,0x1                           比较al是否为1
004010E8  .v  74 05         je short DueList_.004010EF
004010EA  .   03F0          add esi,eax                          将文件内容的ASCII值和esi相加
004010EC  .   43            inc ebx                              ebx++
004010ED  .^  EB ED         jmp short DueList_.004010DC
004010EF  >   81FE D5010000 cmp esi,0x1D5                        如果al为1则比较esi是否为0x1D5
004010F5  .v  74 1D         je short DueList_.00401114           如果相等则跳过错误提示
004010F7  >   6A 00         push 0x0                             Style = MB_OK|MB_APPLMODAL
004010F9  .   68 01204000   push DueList_.00402001               Title = "Duelist's Crackme #2"
004010FE  .   68 86204000   push DueList_.00402086               Text = "Your current keyfile is invalid... Please obt
00401103  .   6A 00         push 0x0                             hOwner = NULL
00401105  .   E8 5D020000   call <jmp.&USER32.MessageBoxA>       MessageBoxA
0040110A  .   E8 AA010000   call <jmp.&KERNEL32.ExitProcess>     ExitProcess
0040110F  .v  E9 AE000000   jmp DueList_.004011C2
00401114  >   33F6          xor esi,esi
00401116  >   43            inc ebx
```

接着又是一轮循环，这一次将上轮循环的esi和ebx清零之后，依旧是循环读取文件内容到al，如果al的值为1则比较esi是否为0x1D5，接着会根据比较的结果决定是否跳转。所以我们得出：

条件三：在第一个0x1之前的文件内容的ASCII值之和必须为0x1D5

条件四

继续跟踪，这里先暂时通过修改零标志位让程序通过条件三的验证

```
0040110F  .v  E9 AE000000   jmp DueList_.004011C2
00401114  >   33F6          xor esi,esi                          esi清零
00401116  >   43            inc ebx                              ebx++
00401117  .   8A83 1A214000 mov al,byte ptr ds:[ebx+0x40211A]    循环读取文件内容到al
0040111D  .   3C 00         cmp al,0x0                           比较al是否为0 这里是在判断是否到了文件末尾
0040111F  .v  74 18         je short DueList_.00401139           跳转到循环结束
00401121  .   3C 01         cmp al,0x1                           比较al是否为1
00401123  .v  74 14         je short DueList_.00401139
00401125  .   83FE 0F       cmp esi,0xF                          if(esi==0xF)
00401128  .v  73 0F         jnb short DueList_.00401139          不小于则跳转到循环结束位置
0040112A  .   3286 1A214000 xor al,byte ptr ds:[esi+0x40211A]    进行异或
00401130  .   8986 60214000 mov dword ptr ds:[esi+0x402160],eax  保存异或结果
00401136  .   46            inc esi                              esi++
00401137  .^  EB DD         jmp short DueList_.00401116          跳到循环开始处
```

这里还是循环读取文件内容，不同的是这一次ebx的值没有被清零，ebx的值是条件三的循环次数。这里将进行循环异或然后将异或的结果保存，保存的结果最终将显示为成功注册的用户名

条件五

```
地址      HEX 数据    反汇编                                    注释
0040113A  .   33F6          xor esi,esi                          esi清零
0040113C  >   8A83 1A214000 mov al,byte ptr ds:[ebx+0x40211A]    循环读取文件内容到al
00401142  .   3C 00         cmp al,0x0                           比较al是否为0 这里是在判断是否到了文件末尾
00401144  .v  74 09         je short DueList_.0040114F           跳转到循环结束
00401146  .   3C 01         cmp al,0x1                           比较al是否为1
00401148  .^  74 F2         je short DueList_.0040113C           如果al为1则跳过此次循环
0040114A  .   03F0          add esi,eax                          将文件内容和esi相加
0040114C  .   43            inc ebx                              ebx++
0040114D  .^  EB ED         jmp short DueList_.0040113C
0040114F  >   81FE B2010000 cmp esi,0x1B2
00401155  .^  75 A0         jnz short DueList_.004010F7
00401157  .   6A 00         push 0x0                             lParam = NULL
00401159  .   68 C9114000   push DueList_.004011C9               DlgProc = DueList_.004011C9
0040115E  .   6A 00         push 0x0                             hOwner = NULL
00401160  .   6A 05         push 0x5                             pTemplate = 0x5
00401162  .   FF35 77214000 push dword ptr ds:[0x402177]         hInst = 00400000
00401168  .   E8 42020000   call <jmp.&USER32.DialogBoxParamA>   DialogBoxParamA
0040116D  .v  EB 53         jmp short DueList_.004011C2
0040116F  >   6A 00         push 0x0                             MsgFilterMax = 0x0
00401171  .   6A 00         push 0x0                             MsgFilterMin = 0x0
00401173  .   6A 00         push 0x0                             hWnd = NULL
```

这里同样没有把ebx清零，也是读取文件内容，将文件内容的ASCII值累加到esi，如果遇到文件内容为1则跳过循环。最后循环结束之后比较esi的值是否为0x1B2，如果相等则校验通过，所以我们得出

条件四：文件内容的ASCII值(除去0x1)累加必须等于0x1B2

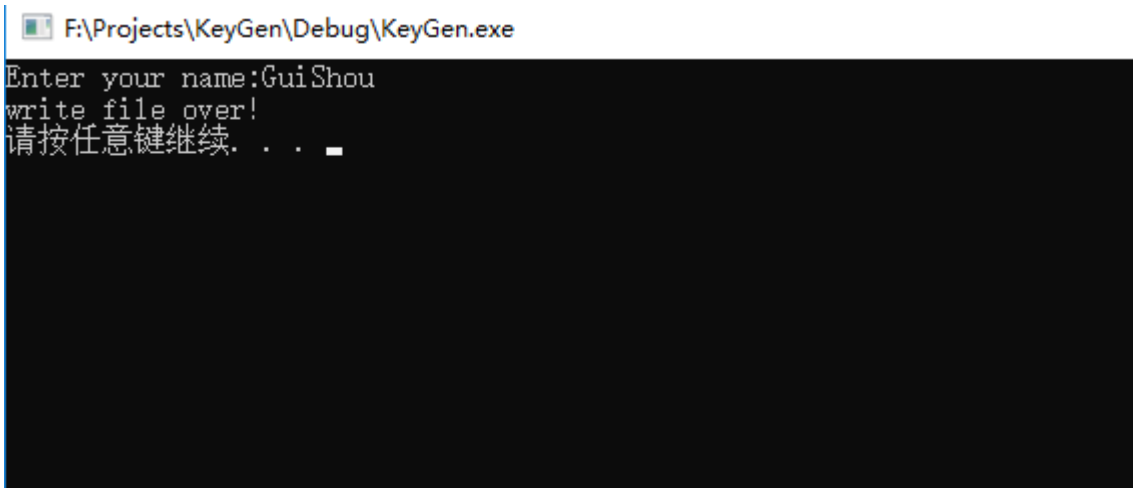
注册机的编写

看到这么繁琐的校验我就脑阔疼。这个程序分析出了注册条件还得自己去推注册机！直接从吾爱拷了一个过来。。。。代码如下：

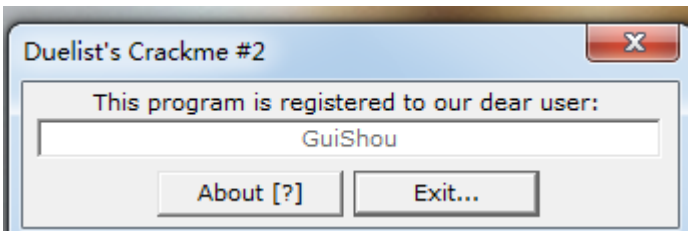
```
#define _CRT_SECURE_NO_WARNINGS
#include<iostream>
#include <windows.h>
using namespace std;
int main()
{
    const char * path = "E:\\due-cm2.dat";
    FILE * keyfile;
    char * youkey = new char[40];          //输入用户名
    memset(youkey, 0, 40);
    unsigned char * writekey = new unsigned char[40];
    memset(writekey, 0, 40);              //存入文件的内容
    cout << "Enter your name:";
    scanf_s("%s",youkey,40);
    if (strlen(youkey) >= 8)
        cout << "用户名最多支持13位，其余部分将被截断!" << endl;
    int now = 0;

    writekey[0] = 0xEA;
    writekey[1] = 0xEB;
    writekey[2] = 0x01;
    for (unsigned int x = 0; x < 13 && x < strlen(youkey); x++)
    {
        writekey[x + 3] = youkey[x] ^ writekey[x];
    }
    if (strlen(youkey) >= 13)
        now = 16;
    else
        now = strlen(youkey) + 3;

    writekey[now] = 0x01;
    writekey[now + 1] = 0xD9;
    writekey[now + 2] = 0xD9;
    errno_t err = fopen_s(&keyfile, path, "w+b");
    if (err != 0)
    {
        cout << "file open or create failed!" << endl;
        system("pause");
        return -1;
    }
    rewind(keyfile);
    fwrite(writekey, sizeof(byte), 40, keyfile);
    fclose(keyfile);
    cout << "write file over!" << endl;
    delete[] youkey;
```

```
    delete[] writekey;
    system("pause");
    return 1;
}
```

设置好文件路径，然后输入用户名



就会将用户名和密码写入到文件，然后再次打开程序



显示注册成功 KO!

需要相关文件的可以到我的Github下载：https://github.com/TonyChen56/160-Crackme