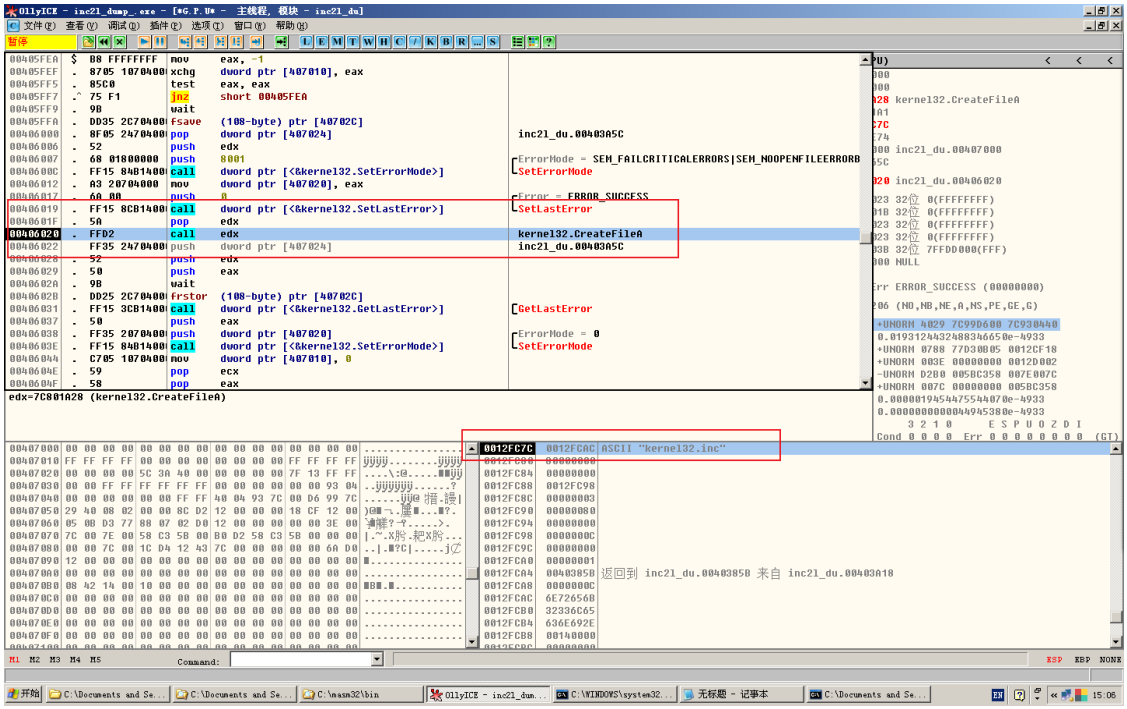
inc2l程序分析

此程序将`inc`文件转换为`obj`文件，根据前提测试，会调用`ml`和`link`两个子程序来进行编译链接的工作。所以关键函数为`CreateProcess`，同时依据`inc`文件进行生成，那么肯定依赖`CreateFile`、`ReadFile`和`WriteFile`等函数

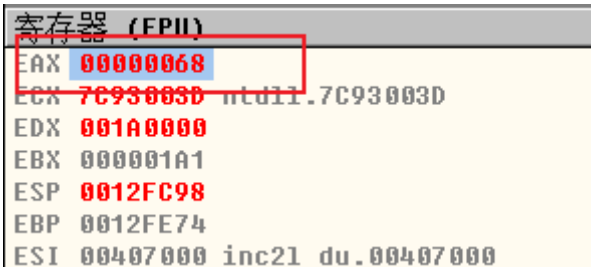
在这大前提下，对这两个函数下断点分析

分析

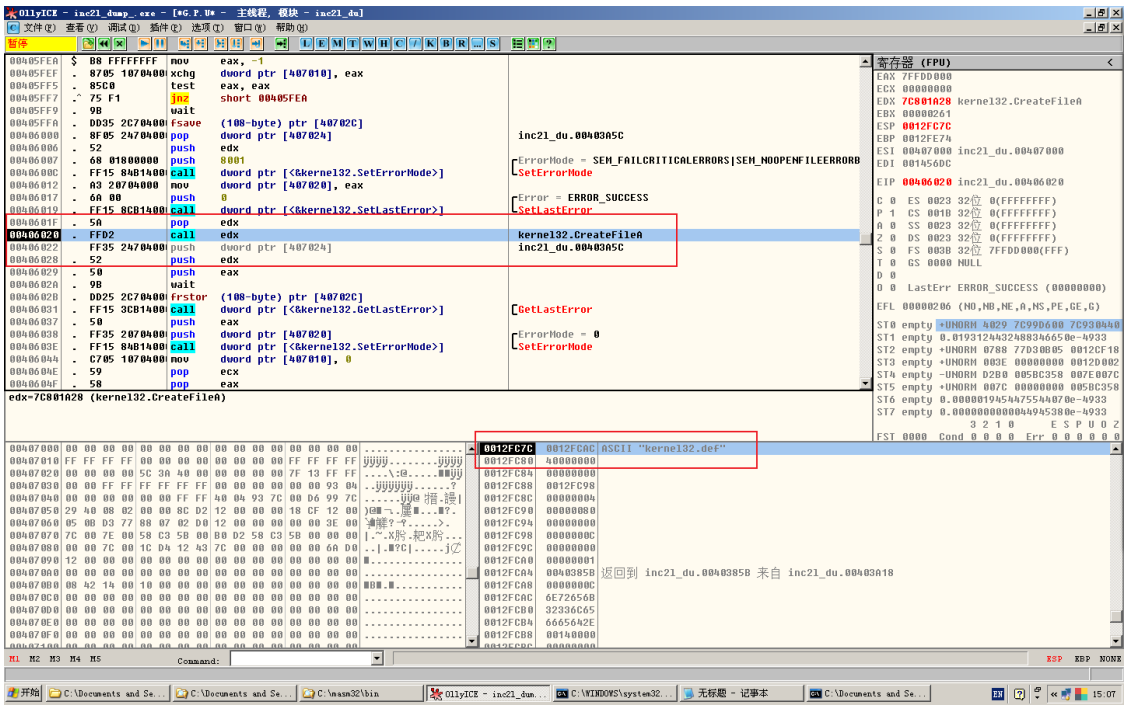
1. 打开`inc`文件



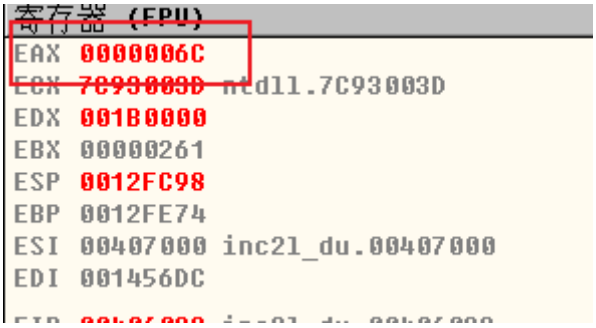
文件句柄`0x68`



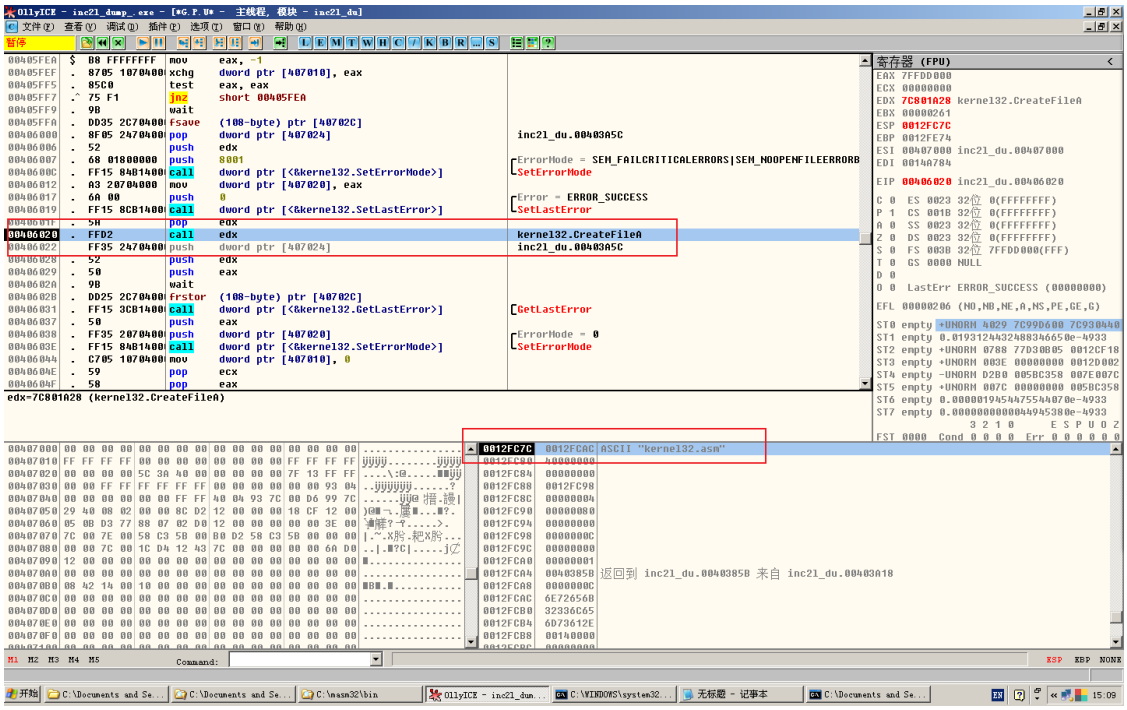
2. 创建`def`文件



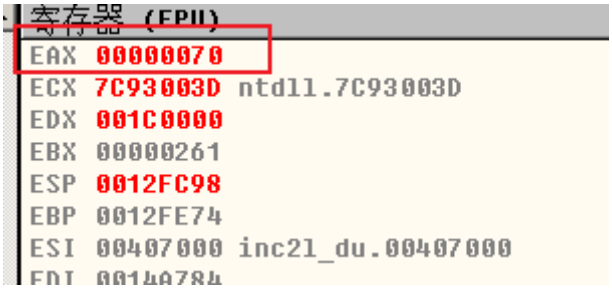
文件句柄 0x6c



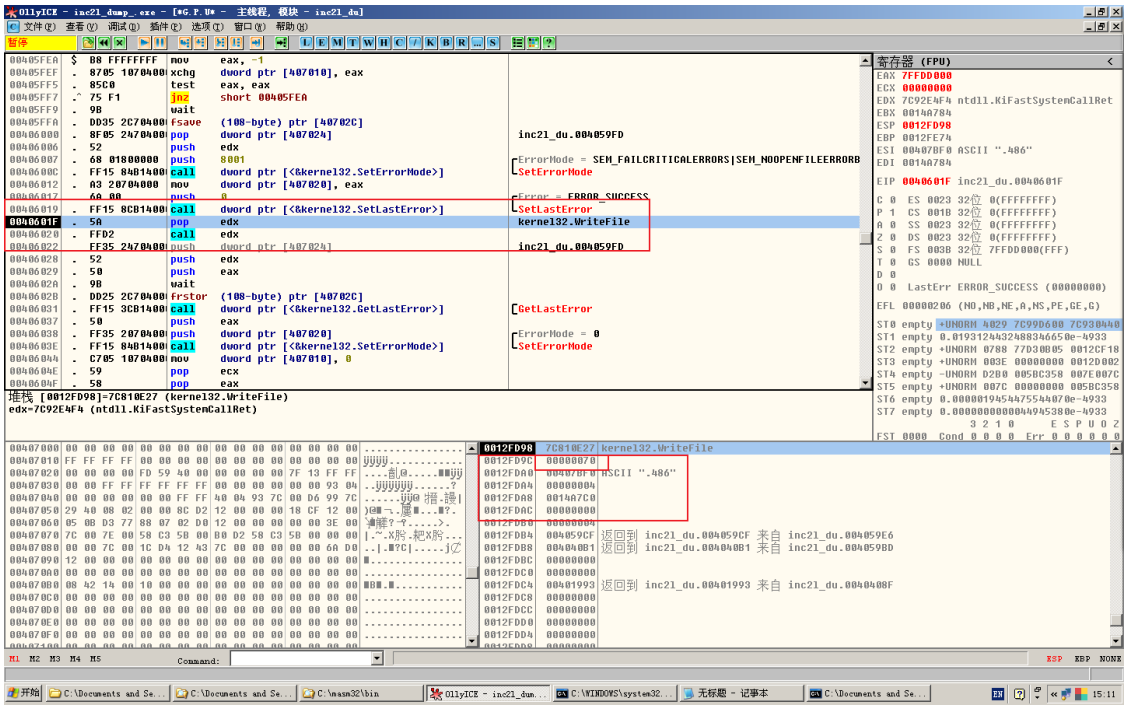
3. 创建 asm



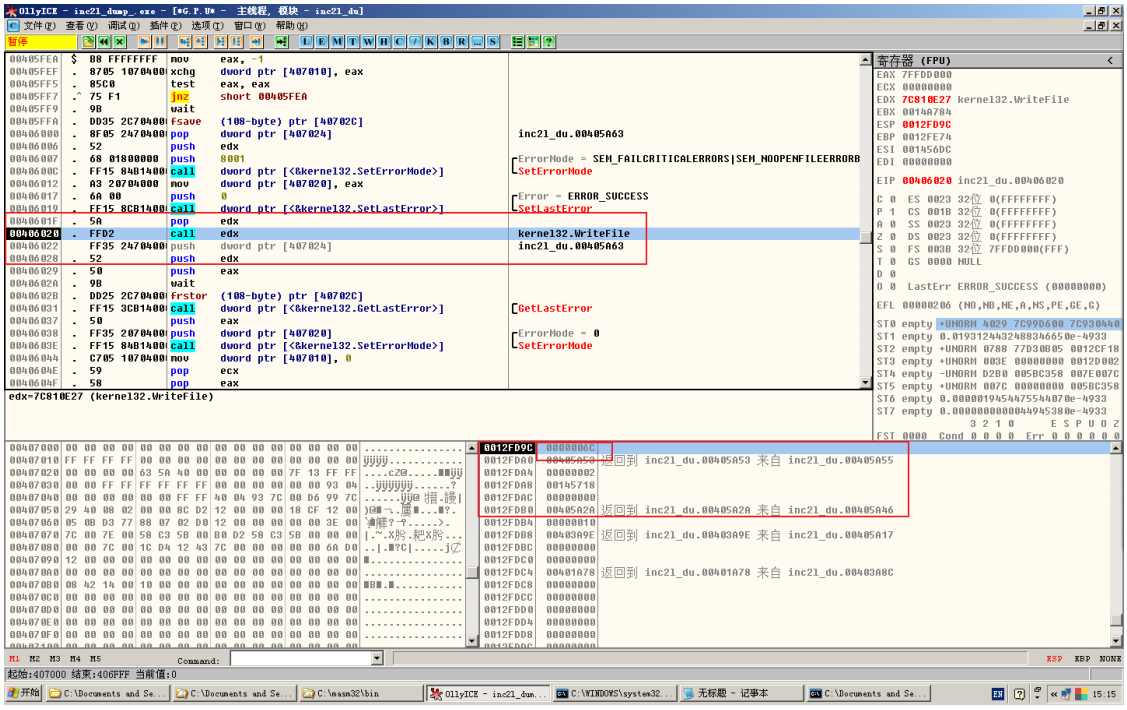
文件句柄 0x70



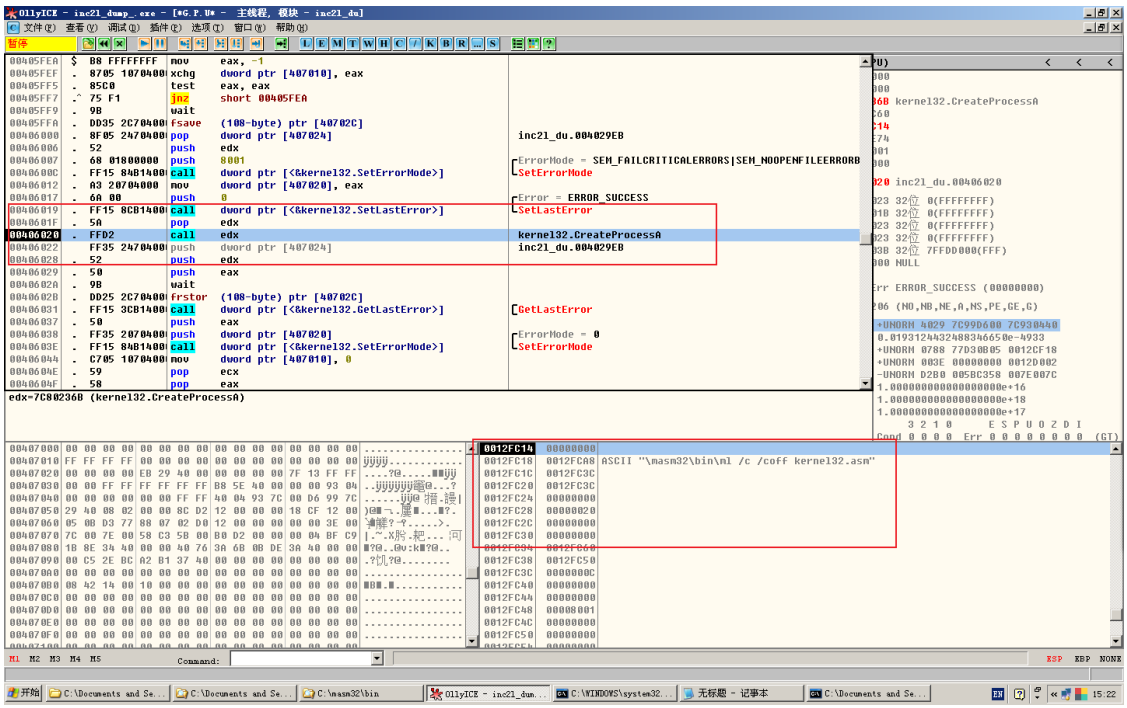
4. 多次向 `asm` 文件中写数据



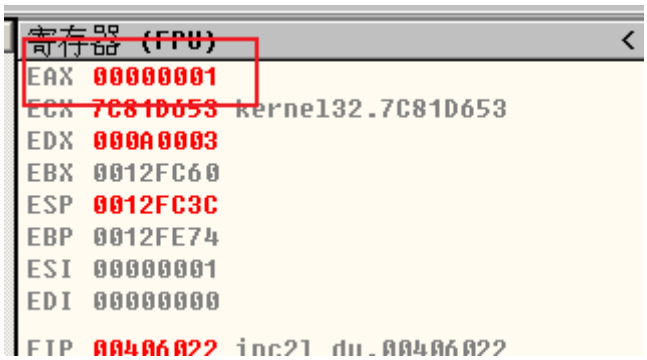
5. 多次向 `def` 文件中写数据



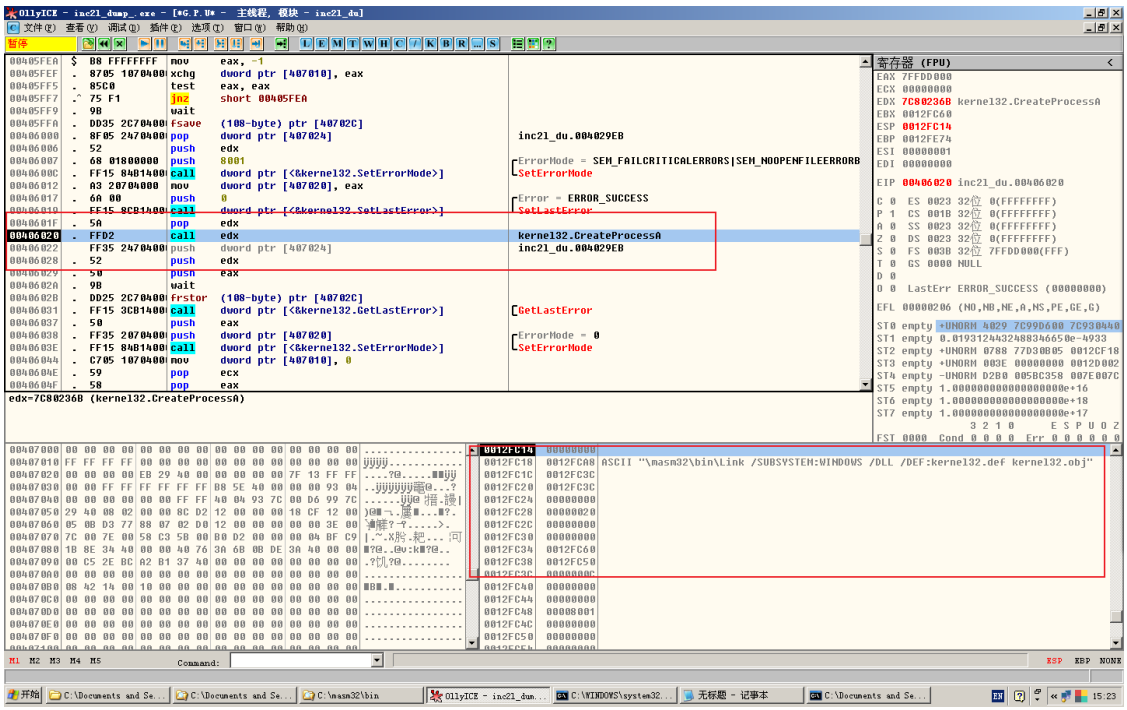
6. 创建进程 `\masm32\bin\ml /c /coff kernel32.asm`



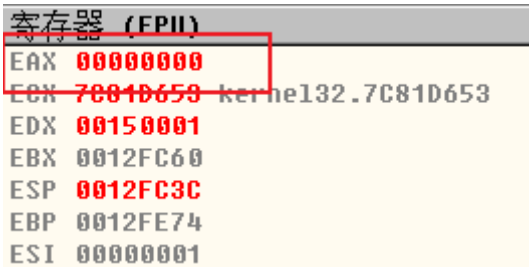
创建成功



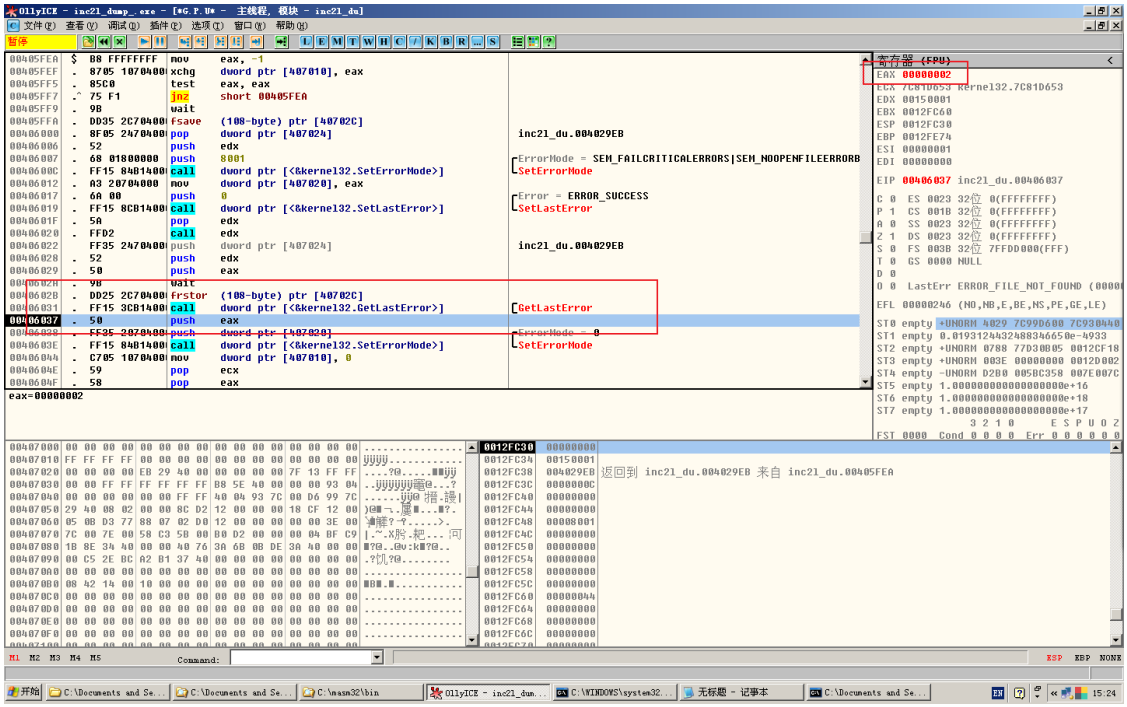
7. 创建进程`\masm32\bin\Link /SUBSYSTEM:WINDOWS /DLL /DEF:kernel32.def kernel32.obj`

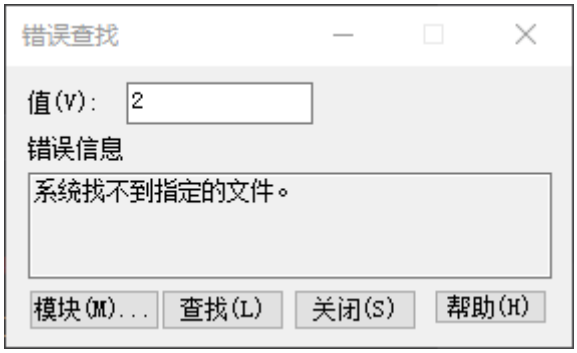


创建失败



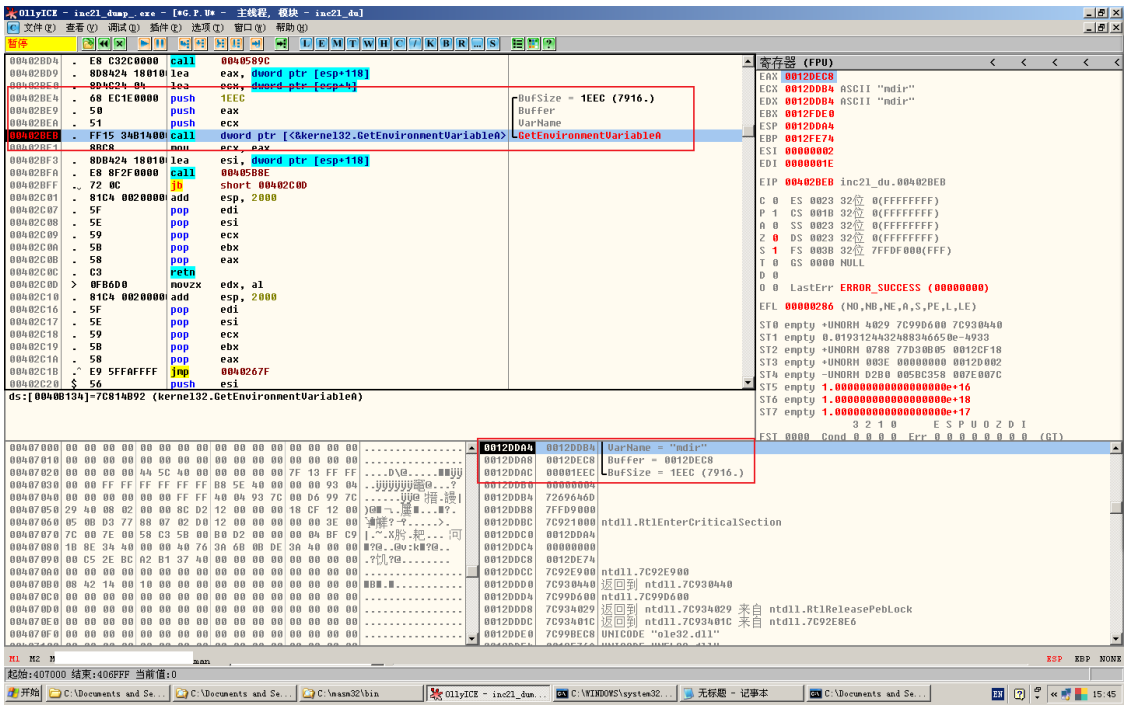
错误码为2





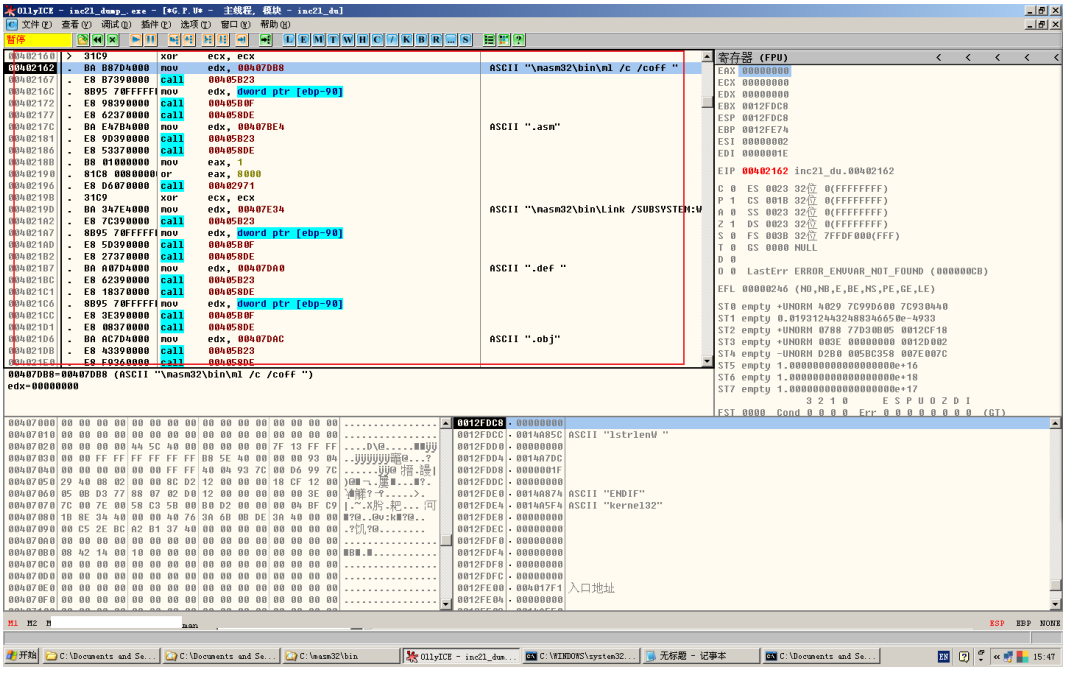
从这里就可以看出，创建进程的时候并没有指定盘符，猜测跟环境变量有关，于是断点于`GetEnvrionmentStrings`上再次执行

8. 获取环境变量`mdir`

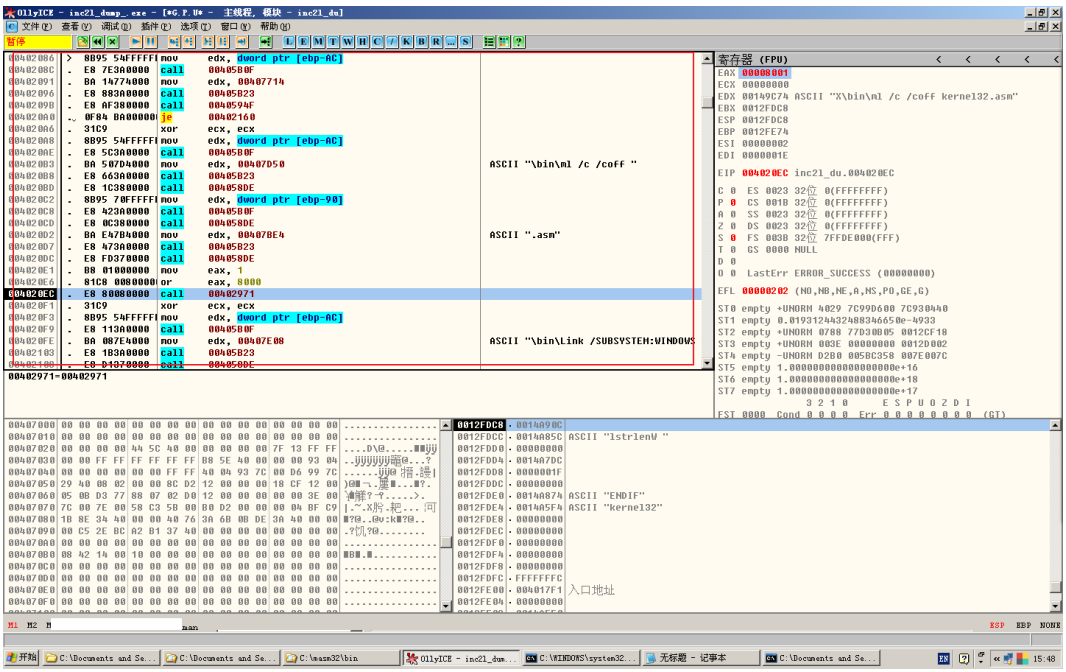


此时如果`mdir`存在，则以此拼接路径，不存在则使用默认路径即`\masm32\xxx`

- `mdir`不存在的情况



- 修改`GetEnvrionmentStrings`的返回值，因为`mdir`不存在，所以拼接之后只有后面的部分



修复方案

方案一：修改默认路径的字符串

方案二：添加环境变量`mdir`