Visagesoft Visual Protect

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Keywords

Visual Protect, OllyDbg, HexWorkshop, PEiD

1. Brief Introduction

Visual Protect is a software based protection, e-commerce, and license management tools. With it you can protect any Windows 95/98/NT 32-bit executable from piracy, illegal distribution, and hacking. Protection of your application with Visual Protect requires no source code editing. It allows potential customers to try your complete product before buying, using a simple, smart and user-friendly interface. In addition, thru Visual Protect you can distribute license files to your registered customers as it incorporates a mechanism to manually or automatically generate and send by E-Mail the required registration files.

Visual Protect virtual packaging

Visual Protect Wizard allows you to create a graphical, electronic version of your software packaging. You can easily add graphics, messaging, and Web site links providing the level of detail prospective customers require.

Applying Visual Protect is easy

Once you have completed a software product, you can create a Protection in less than 30 seconds. The Visual Protect Wizard will lead you through a series of steps to include bitmaps, trial parameters, company information and Web site links to automatically create a Protection without changing your source code. Once created, your Protection does not require any modifications for on-line distribution.

Controlled distribution in any format, anywhere

Visual Protect allows you to increase your Web sales and more.
You can electronically distribute Protect-packaged software as trial programs, limited usage offerings and beta tests. Trial periods can be specified to expire on a specific date, after number of uses, or after the expiration of a time period.
Create storefronts and catalogs through the Internet, DVD, CD-ROM or any other digital medium.

Find out more at:
http://www.visagesoft.com/products/vp/index.php

2. Things needed to get started

The tools:

Required Tools
» OllyDbg » PEiD 0.94 » HexWorkshop (or other hex viewer/editor)

…and the target:

Target Applications & Protection	
» Visual Protect	http://www.visagesoft.com/products/vp/downloads.php

3. Getting a valid license for VisualProtect

Download the program and install it. The first step is to open it in PEiD. Notice that it's protected with itself (Visual Protect » Visage), meaning that the developers of Visual Protect have great confidence in their product… I can't see why… ☺

If you run the target you will see that it's restricted to 15 days and that some options are disabled. As a side note, for those who want to dwelve more in this protection I will briefly explain how to reach the OEP, even if we will not need this in our approach.

Fire up Olly and we are here:

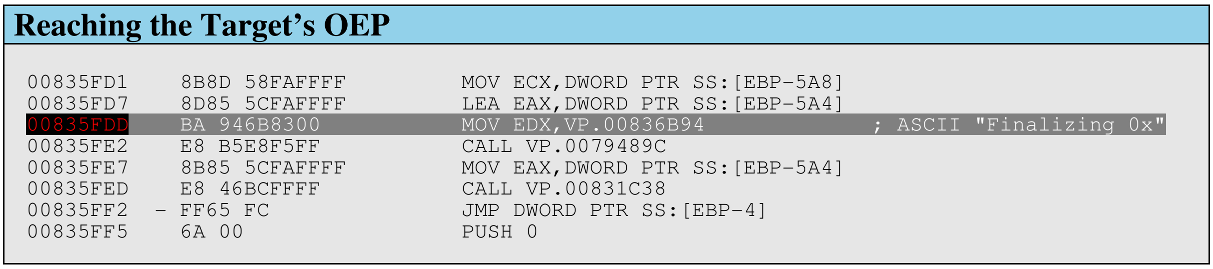
Unpacking Visual Protect with Olly

```
006BCF90 >  55                        PUSH EBP
006BCF91    8BEC                      MOV EBP,ESP
006BCF93    51                        PUSH ECX
006BCF94    53                        PUSH EBX
006BCF95    56                        PUSH ESI
006BCF96    57                        PUSH EDI
006BCF97    C705 B03E6C00 00000000    MOV DWORD PTR DS:[6C3EB0],0
006BCFA1    68 48206C00               PUSH VisualPr.006C2048
```

Press Alt+E (Executable Modules) and double-click on VP.dll. Now, right-click and select Search for » All referenced text strings.

Press Ctrl+L and in the search box enter "finalizing" (without the quotes) and make sure that Case sensitive is unchecked and Entire Scope is checked. There will be 2 occurences of the string, we will double-click on the first.

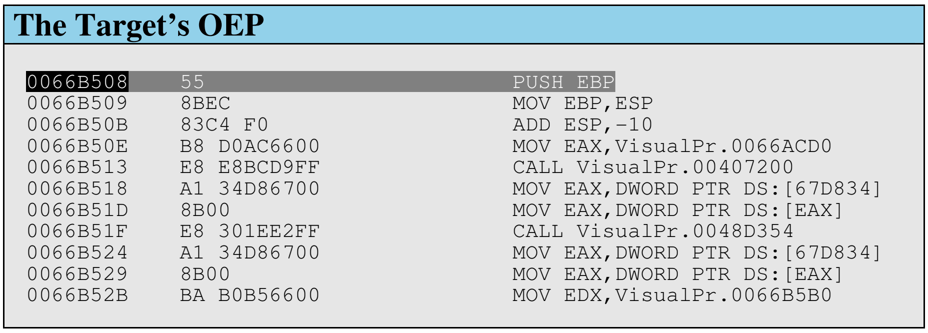
We arrive here:



Reaching the Target's OEP

```
00835FD1    8B8D 58FAFFFF        MOV ECX,DWORD PTR SS:[EBP-5A8]
00835FD7    8D85 5CFAFFFF        LEA EAX,DWORD PTR SS:[EBP-5A4]
00835FDD    BA 946B8300          MOV EDX,VP.00836B94               ; ASCII "Finalizing 0x"
00835FE2    E8 B5E8F5FF          CALL VP.0079489C
00835FE7    8B85 5CFAFFFF        MOV EAX,DWORD PTR SS:[EBP-5A4]
00835FED    E8 46BCFFFF          CALL VP.00831C38
00835FF2  - FF65 FC              JMP DWORD PTR SS:[EBP-4]
00835FF5    6A 00                PUSH 0
```

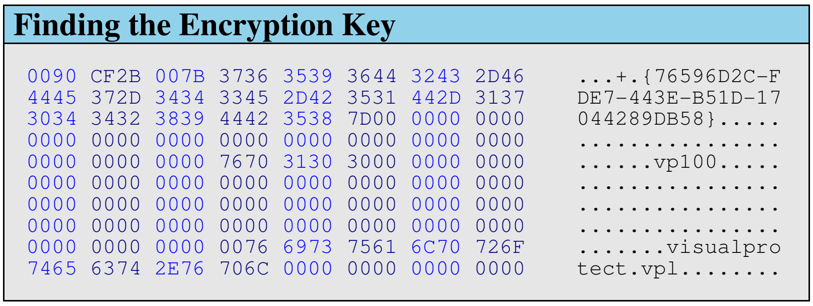
Set a breakpoint at 835FDD and hit F9 to run the program. When the nag-screen appears, press the Try button and break in Olly. As you can see ECX holds our OEP. Press F8 a few times, just pass the JMP at 835FF2 and land at the OEP (typical Delphi app):



The Target's OEP

```
0066B508    55               PUSH EBP
0066B509    8BEC             MOV EBP,ESP
0066B50B    83C4 F0          ADD ESP,-10
0066B50E    B8 D0AC6600      MOV EAX,VisualPr.0066ACD0
0066B513    E8 E8BCD9FF      CALL VisualPr.00407200
0066B518    A1 34D86700      MOV EAX,DWORD PTR DS:[67D834]
0066B51D    8B00             MOV EAX,DWORD PTR DS:[EAX]
0066B51F    E8 301EE2FF      CALL VisualPr.0048D354
0066B524    A1 34D86700      MOV EAX,DWORD PTR DS:[67D834]
0066B529    8B00             MOV EAX,DWORD PTR DS:[EAX]
0066B52B    BA B0B56600      MOV EDX,VisualPr.0066B5B0
```

Anyway, a full dump with LordPE is more than enough… Now we need to find the Encryption Key. After dumping, open the file in HexWorkshop and search for the string "visualprotect.vpl", which is the name of the license file:



Finding the Encryption Key

```
0090 CF2B 007B 3736 3539 3644 3243 2D46   ...+.{76596D2C-F
4445 372D 3434 3345 2D42 3531 442D 3137   DE7-443E-B51D-17
3034 3432 3839 4442 3538 7D00 0000 0000   044289DB58}.....
0000 0000 0000 0000 0000 0000 0000 0000   ................
0000 0000 0000 7670 3130 3000 0000 0000   ......vp100.....
0000 0000 0000 0000 0000 0000 0000 0000   ................
0000 0000 0000 0000 0000 0000 0000 0000   ................
0000 0000 0000 0000 0000 0000 0000 0000   ................
0000 0000 0000 0076 6973 7561 6C70 726F   .......visualpro
7465 6374 2E76 706C 0000 0000 0000 0000   tect.vpl........
```

The Encryption Key is just above the license file name, so we got it – it's "vp100". Now we have everything we need to generate a license. Launch Visual Protect and select Create a new project. Clicn Next and set the Expiration date to "01.01.2050". In the Encryption Key field enter "vp100" (case sensitive) and click Next twice. Under the Protection tab click on Select 32-Bit executable(s) and then add any executable to the list (make sure that the executable you add is not packed or protected; also rename the executable to “VisualProtect.exe”). Now click on Apply and save the project as “VisualProtect.vpj”. After the program finishes the job, you can close it.

We don’t need the packed exe anymore, just keep the new “VisualProtect.vpl” file. Now open the VP help file and click on Licensing » Command Line.

We need to following options:

Command Line Options

```
Action    a    "G" or "Generate"
Project   p    Project file name
Register  r    Customer that your product is registered to
Expires   x    Expiration date of registered license (MM.DD.YYYY)
```

So, fire up Notepad and write the following command:

Batch File for License Generation

```
GLCmd.exe -a g -p visualprotect -r anorganix -x 01.01.2050

    ^      ^ ^  ^       ^        ^     ^      ^      ^
    |      | |  |       |        |     |      |      |
    |      | |  |       |        |     |      |      |
    |      | |  |       |        |     |      |      +- Expiration date
    |      | |  |       |        |     |      |
    |      | |  |       |        |     |      +- Expiration Parameter
    |      | |  |       |        |     |
    |      | |  |       |        |     +- Desired Username for Registration
    |      | |  |       |        |
    |      | |  |       |        +- Registration Parameter
    |      | |  |       |
    |      | |  |       +- Project Name
    |      | |  |
    |      | |  +- Project Parameter
    |      | |
    |      | +- Generate Parameter
    |      |
    |      +- Action Parameter
    |
    +- Command Line Program
```

Save the file as “Generate.bat” in the Visual Protect installation folder and launch it. A new license file (called “VisualProtect.vpl”) will be created in the same folder as the exe you protected earlier, thus overwriting the old one. Now replace the “VisualProtect.vpl” (from the VP install folder) with the new one and start the program. Success! The nag is gone and the program is registered…

4. Licensing a VP protected Program

I have included a sample program (protected with VP) in this release. To get a license for it we follow the steps above. Run the program and make a full dump with LordPE. Fire up HexWorkshop and lets look for the Encryption Key. We have to search for “XM.vpl” which is the name of the license file. And we look just above – our Encryption Key is “anorganix@gmail.com”.

Finding the Encryption Key

```
0090 0F0D 007B 3433 3846 3642 4542 2D37    .....{438F6BEB-7
3546 412D 3444 3043 2D39 4544 352D 4335    5FA-4D0C-9ED5-C5
3532 4338 3230 3931 3235 7D00 0000 0000    52C8209125}.....
0000 0000 0000 0000 0000 0000 0000 0000    ................
0000 0000 0000 616E 6F72 6761 6E69 7840    ......anorganix@
676D 6169 6C2E 636F 6D00 0000 0000 0000    gmail.com.......
0000 0000 0000 0000 0000 0000 0000 0000    ................
0000 0000 0000 0000 0000 0000 0000 0000    ................
0000 0000 0000 0058 4D2E 7670 6C00 0000    .......XM.vpl...
```

OK, now to generate a new license for this program. Open Visual Protect and create a new project with Expiration date set to 01.01.2050 (or whatever date you want, but it must be the same as the one in the “Generate.bat” file). Set the Encryption Key and choose any exe for protection. Now edit your batch file and make it look like this:

Batch File for License Generation

```
GLCmd.exe -a g -p XM -r anorganix -x 01.01.2050
```

Launch the batch file and it will generate a new “XM.vpl” file. Overwrite the old one with this new one and start the program. No more nag and no more trial!

5. Making loader for VP and VP protected applications

In some cases, it’s good to know how to bypass this protection scheme with a loader. After studying VP a little I managed to find a place (in every VP protected program) where one instruction patch can make the program registered. Shortly, load the program in Olly and set a breakpoint on the GetSystemDirectoryA API. Press F9, and when Olly breaks hit Ctrl+F9 to execut till return. Then press F8 and you will be back in VP code. Scroll down a little until you can see something like:

Olly View

```
005553DC    A1 FCBA5500           MOV EAX,DWORD PTR DS:[55BAFC]
005553E1    E8 3ED2FFFF           CALL VP.00552624
005553E6    833D F8BA5500 FF      CMP DWORD PTR DS:[55BAF8],-1
005553ED    0F84 BF000000         JE VP.005554B2
005553F3    33C9                  XOR ECX,ECX
005553F5    8B15 FCBA5500         MOV EDX,DWORD PTR DS:[55BAFC]
005553FB    A1 08BB5500           MOV EAX,DWORD PTR DS:[55BB08]
00555400    E8 7FB9FEFF           CALL VP.00540D84
00555405    8BD8                  MOV EBX,EAX
00555407    33C9                  XOR ECX,ECX
00555409    8B15 00BB5500         MOV EDX,DWORD PTR DS:[55BB00]
0055540F    A1 08BB5500           MOV EAX,DWORD PTR DS:[55BB08]
```

So, simply NOP the JE at 5553ED and you’re all set. I recommend using loaders for such a job, because in my oppinion it’s the “cleanest” way…