



# IDAWinHelpViewer

Version 1.0

Windows WinHelp File Viewer for HexRays IDA Pro

**Fabio Fornaro © 2010**  
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## DISCLAIMER

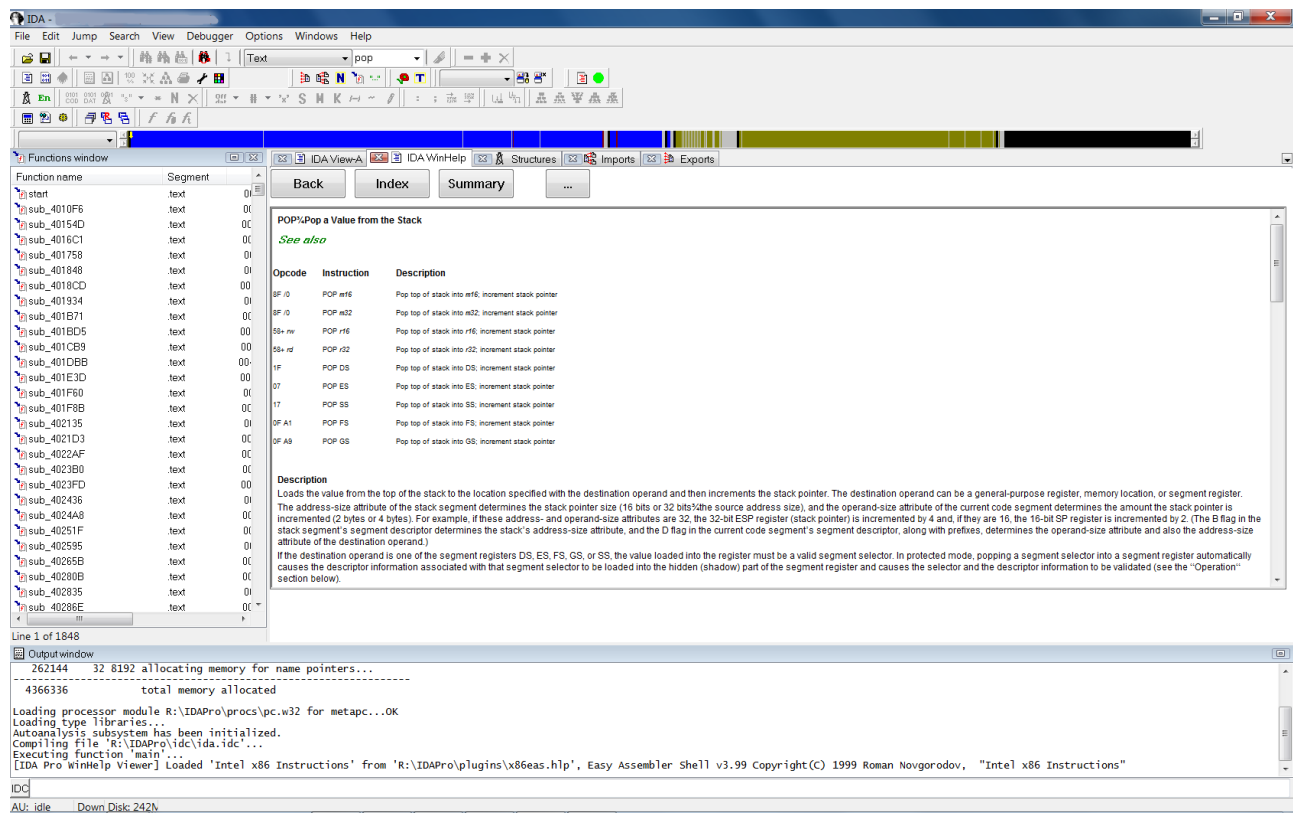
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# IDAWinHelpViewer v1.0



## PREFACE

The IDAWinHelpViewer plugin started as rework of another very simple IDA plugin, never published, that loaded the original WinHelp file through the usual WinHelp API and thus visualizing the selected opcode in the classic WinHelp client. I wasn't exactly happy with that, because the plugin itself was nothing more than a wrapper to the external WinHelp application.

I started gathering information on the WinHelp format (RTF, compression, etc.) but then I asked myself if this had been done before by someone else. The [Wine](#) project came in mind automatically. Those great people made something to replicate the winhelp functionality. Good. Some time saved.

I got the sources at version 1.1.33, isolated the winhelp subproject, organized the sources, recompiled with Visual C++ 2008 and executed the result. It worked like a charm.

The next steps were pretty straightforward: Set up the IDA Plugin Visual C++ project, integrated the winhelp-wine sources, adapted them to comply to IDA SDK safe code rules, modified them to actually not be a standalone client itself but executing as an IDA Plugin.

In the end is another wrapper itself. But more integrated. And realizing it was really funny.



## WHY?

WinHelp is an old format, largely superseded by Compiled HTML and Combined Help Collections. Not to mention other more portable and flexible forms of documentation like PDFs.

So, What's the deal?

I have a large number of .HLP files coming from different sources: Win32SDK, x86 Opcode Reference and other Borland help files. I didn't want to have them lost nor useless. I wanted a new way of having them brought back to life into an alive and kicking application like IDA Pro.

In general, WinHelp is cheap, integrated in Windows version up to Windows XP (Vista, Seven and 2008 do not have it natively but it is available as a separate download); not that this plugin requires it: this plugin IS itself the client by leveraging the part of the WINE framework library.

WinHelp is lite, does not need GBs of installations, prerequisites and stuff.

I wanted to have my x86 Opcode Reference ready to fire because I always forget something about them.

At least, I enjoyed myself in creating this plugin.

## CURRENT LIMITATIONS

This version works by default with *Norman Novgorodov's x86 Instruction Set Reference* WinHelp file (x86eas.hlp). But can actually open any .HLP file by using the "Select File" button in the interface. Future versions will have a database storing information for different HLP files and a facility to select and display them.

Other (current) limitations:

- Search is not implemented in this version.
- Some features like Buttons and other embedded features are not supported in this version.
- Combined WinHelp Collections via TOC/CFG are not supported in this version.
- Images are not handled correctly (will fix soon).
- Encoding problems for some values (will fix soon).

## DEVELOPMENT ENVIRONMENT

The Development Environment used to develop, build and test the plugin is<sup>1</sup>:

- Microsoft Visual C++ 2008
- Microsoft Windows XP/Vista/Seven
- IDA Pro SDK 5.6

---

<sup>1</sup> Configurations other than the one indicated in the list have not been used nor tested, thus not supported.



## ARCHIVE CONTENTS

```
IDAWinHelpViewer.zip
|   LICENSE
|   README
+---bin
|       IDAWinHelpViewer.plw
|       x86eas.hlp
|
+---doc
|       IDAWinHelpViewer.pdf
\---src
    \---IDAWinHelpViewer
        |   IDAWinHelpViewer.sln
        |
        \---IDAWinHelpViewer
            AUTHORS
            callback.cpp
            helpfile.cpp
            helpfile.h
            IdaWinHelpViewer.cp
            IDAWinHelpViewer.h
            IDAWinHelpViewer.rc
            IDAWinHelpViewer.vc
            LICENSE
            macro.cpp
            macro.h
            macro.lex.l
            macro2.cpp
            Resource.h
            stdafx.cpp
            stdafx.h
            string.cpp
            targetver.h
            VERSION
            winhelp.cpp
            winhelp.h
            winhelp_res.h
            x86eas.hlp
```

## INSTALLATION & USAGE

In order to install and use correctly the IDAWinHelpViewer plugin, perform the following steps:

- Copy the contents of `bin\` directory to IDA's plugin directory
- Modify the `<IDADIR>\plugins\plugin.cfg` file by appending the following line to map an hotkey to the plugin (**default is: F2**):

```
IDAWinHelpVewer  iwhv          F2          0
```

In order to use the plugin: on the IDA Disassembly Window, position the cursor onto an opcode (or line) and press the hotkey (ie. F2) to display help for the opcode.

Once loaded, the plugin display some basic information about the .HLP file in the Log Window:

```
[IDA Pro WinHelp Viewer] Loaded 'Intel x86 Instructions' from 'R:\IDAPro\plugins\x86eas.hlp', Easy
Assembler Shell v3.99 Copyright (C) 1999 Roman Novgorodov, "Intel x86 Instructions"
```

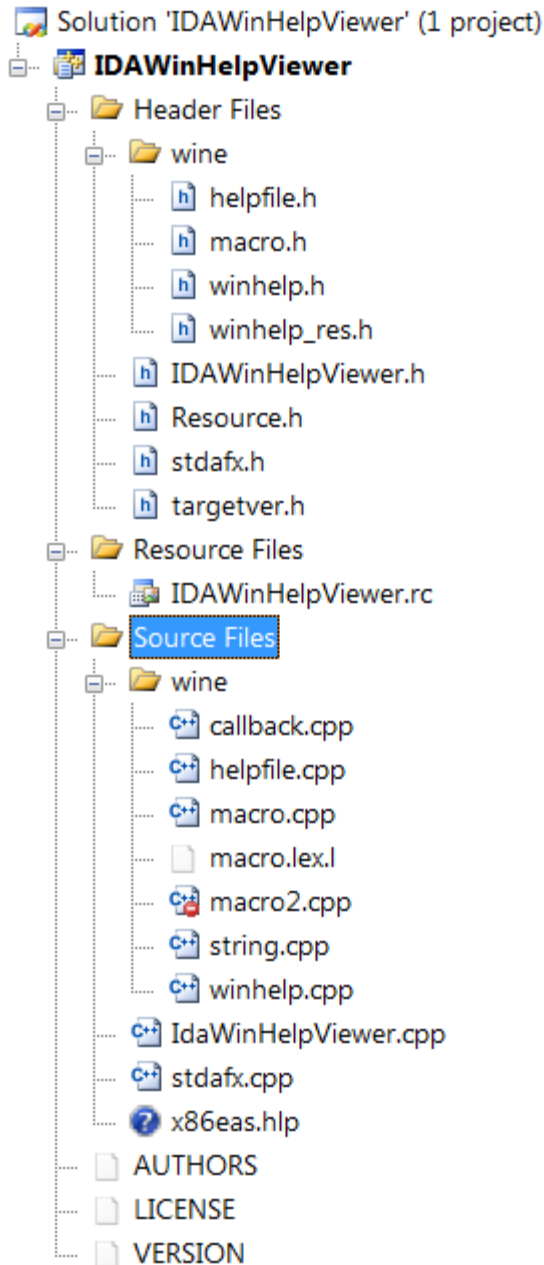
In case of Not Found/Illegal instruction, the Log Window will state:

```
[IDA Pro WinHelp Viewer] '<opcode>' Not Found.
```



## SOURCES

Source code is organized in a pretty straightforward simple way:



The “wine” virtual folders contain the modified Wine WinHelp sources and headers. IDAWinHelpViewer.cpp is actually the plugin source code.

Lex stuff is used to generate WinHelp Macro related functions. But it is not needed to run it, for Macros are already generated and part of the sources.



## PATH DEPENDENCIES

For obvious reasons the Visual C++ Project comes with some hard coded references for IDA Pro SDK Headers and Library references and for Post-Build Events actions.

Paths should be changed accordingly to the exiting ones on the development platform.

### SDK Headers

Additional Include Directories	<b>R:\IDAPro\idasdk56\include</b>
Resolve #using References	
Debug Information Format	<b>Program Database (/ZI)</b>
Suppress Startup Banner	Yes (/nologo)
Warning Level	<b>Level 3 (/W3)</b>
Detect 64-bit Portability Issues	<b>No</b>
Treat Warnings As Errors	No
Use UNICODE Response Files	Yes

### SDK Libray

Output File	<b>\$(OutDir)\\$(ProjectName).plw</b>
Show Progress	Not Set
Version	
Enable Incremental Linking	<b>Yes (/INCREMENTAL)</b>
Suppress Startup Banner	Yes (/NOLOGO)
Ignore Import Library	No
Register Output	No
Per-user Redirection	No
Additional Library Directories	<b>R:\IDAPro\idasdk56\lib\vc.w32</b>
Link Library Dependencies	Yes
Use Library Dependency Inputs	No
Use UNICODE Response Files	Yes

### Post Build Events

```
copy /y "$(OutDir)\$(ProjectName).plw" R:\IDAPro\plugins
```

```
copy /y "$(ProjectDir)\x86eas.hlp" R:\IDAPro\plugins
```



## WHAT'S COMING NEXT?

It would be nice to have a next release up with the new Wine framework that at the time of writing this document is at 1.1.40 (check [here](#) for more info) and some code review and cleanup.

More features to be added like:

- Search
- Better Image and embedded Features and functionalities support
- Multiple Help File handling
- More context help, like for instance, Win32s functions (->Win32sdk.hlp)

It would be nice to have a more solid yet integrated Help System for IDA, that is a really cool piece of software that unfortunately lacks for proper help facilities (tooltips and so on) other than the usual CHM file shipped with every version of IDA. One thing is true, by the way, Help stuff is reasonably at a lower priority in relation to the cool and complex features that are added from one release to the other.

Will this plugin somehow lead or open such a way ? Maybe something is already on development at HexRays...

In the end, it was funny.

## ABOUT THE AUTHOR

Fabio Fornaro lives and works in Italy as a developer on Microsoft Platform. Currently develops in C# and C/C++ but has developed also in Pascal, Java, Python and Basic.

His hobbies are Malware & Exploits Analysis, Reverse Engineering, Drawing and Guitars.

## FEEDBACK

Feedback is welcome, please write to [fabio.fornaro@gmail.com](mailto:fabio.fornaro@gmail.com)



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