

Programming Help in Clarion

DevCon 2017

Clarion CHM Help Support

1995 - 1.0 - WinHelp in RTL

2000 - 5.5 - HtmlHelp via Template *

2013 - 8.0 - HtmlHelp in RTL

* CwHH gens code into every procedure

2005 - Chm4Clarion - RTL CHM 2.0 - 7.2

Help in Clarion as Easy as 1,2,...

HELP('FileN.Chm') sets help file name

HLP('~Topic.Htm') sets help topic

F1 opens help, no Alert code needed

```
Window WINDOW('Login'), HLP('~Logon.Htm')
                        BUTTON('Help'),STD(STD:Help)

END
CODE
HELP('MyHelp.CHM') !<-- Once in EXE
OPEN(Window)
```

3... Help(<no file>, HelpID)

Command to Open Help Topic

ReShowMsg:

```
CASE MESSAGE('Please start Debugger!', |
    'Error', , Button:OK + Button:Help)
OF BUTTON:Help
    HELP(, '~StartingTheDebugger.htm')
GOTO ReShowMsg:
END
```

HLP('~Context') or ('Keyword')

Tilde denotes a “~Context String”

A Unique ID of a Help Topic

CHM e.g. HLP('~Invoice_Entry.Htm')

HLP('NoTilde') is a Keyword search

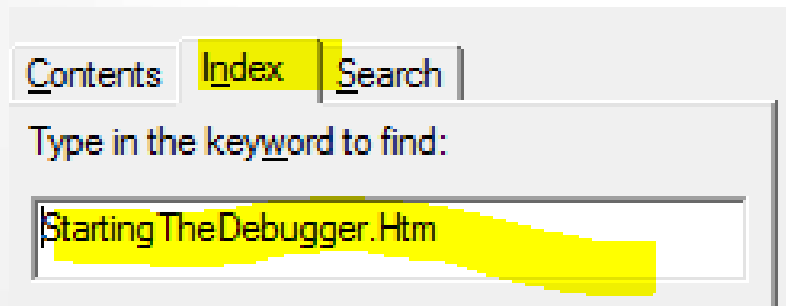
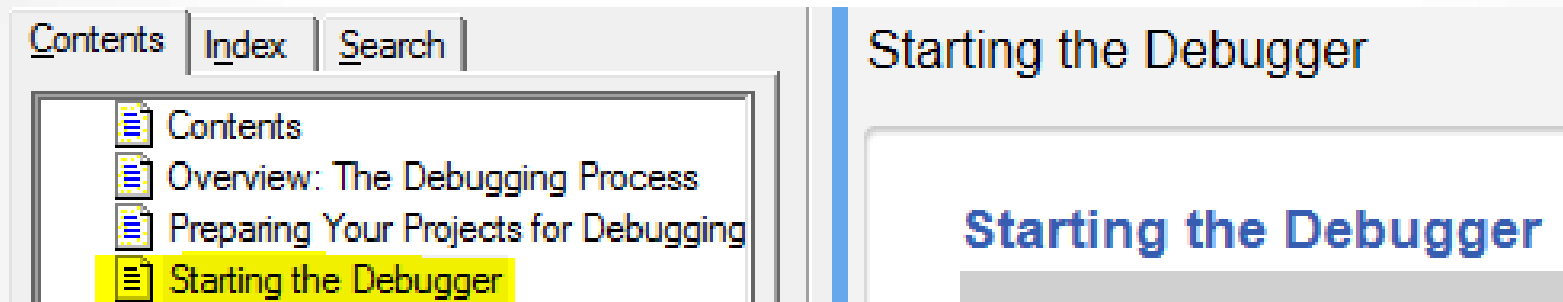
Opens to Index tab

Always a mistake for me

HelpEngine hook can extend syntax

HLP('~Context') or ('Keyword')

HLP('~StartingTheDebugger.Htm')



Without Tilde Prefix~

Multiple Help Files

Help(File) changes file for all threads

How to restore to your original help?

There is no **SYSTEM{Prop:Help}** *

Global variable: Glo:MyHelpFile

Third Party might use APP %HelpFile

* RTL has undocumented export ...

WslHelp\$GetHelpFile

```
MODULE( 'CLARUN' ) !C7+
```

```
GetHelpFileRTL(*CSTRING HelpFN), |  
    NAME( '_WslHelp$GetHelpFile@FiPc' )
```

```
GetHelpFile FUNCTION(), STRING
```

```
CHelpFN          CSTRING(261)
```

```
CODE
```

```
GetHelpFileRTL(CHelpFN)
```

```
RETURN CHelpFN
```


CwHH Template for CHM Help

Added to Clarion 5.5 in 2002

Works by hooking F1 key via Alias and Alert Template in every Application

Also in every Procedure, 90%+ automatic

Does not handle Parent HLP() e.g. TAB

Does not handle Source Window Procs

Alias(F1Key) prevents all other F1 Help

CwHH TPL Generated Code

```
oHH          &tagHTMLHelp
!--Prepare Window -- ThisWindow.Init
oHH &= NEW tagHTMLHelp
oHH.Init('DevCon17.CHM',F12Key )
oHH.SetTopic('Topic.htm')
oHH.SetTopic(?Tab2,'Topic.htm#Tab2') !Tab ~Work
?HelpBtn{PROP:STD} = ''

CASE ACCEPTED()
OF ?HelpBtn ; oHH.ShowTopic()''

!--Procedure Return -- ThisWindow.Kill
IF ~oHH &= NULL
    oHH.Kill()
    DISPOSE( oHH )
END
```

New Help Engine

Clarion 8.0 Read Me

RTL support for HTML Help, with future support to integrate additional help systems of other formats

New SYSTEM property to get or set the Help Engine

New file **LibSrc\win\CWHelp.INT**

New equate in **Property.CLW**

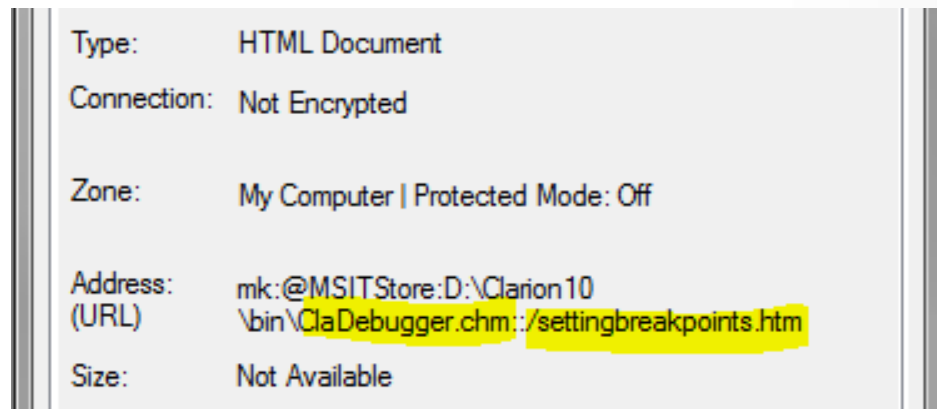
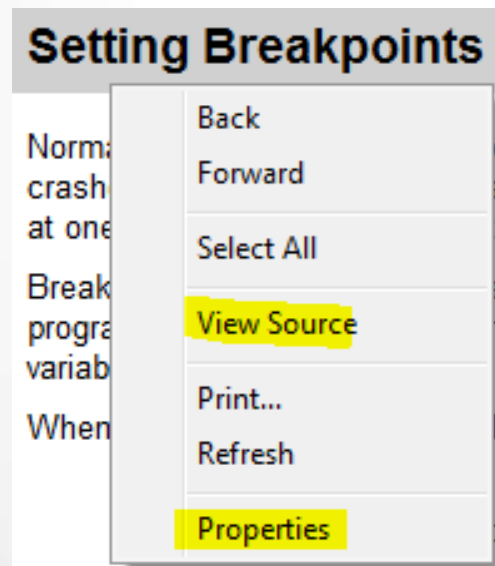
PROP:HelpEngine **EQUATE**(7D40H) !array[integer]

CHM Viewer - Page Name?

Right click, select Properties

Can select URL text and copy

View Source to see <A> #bookmarks

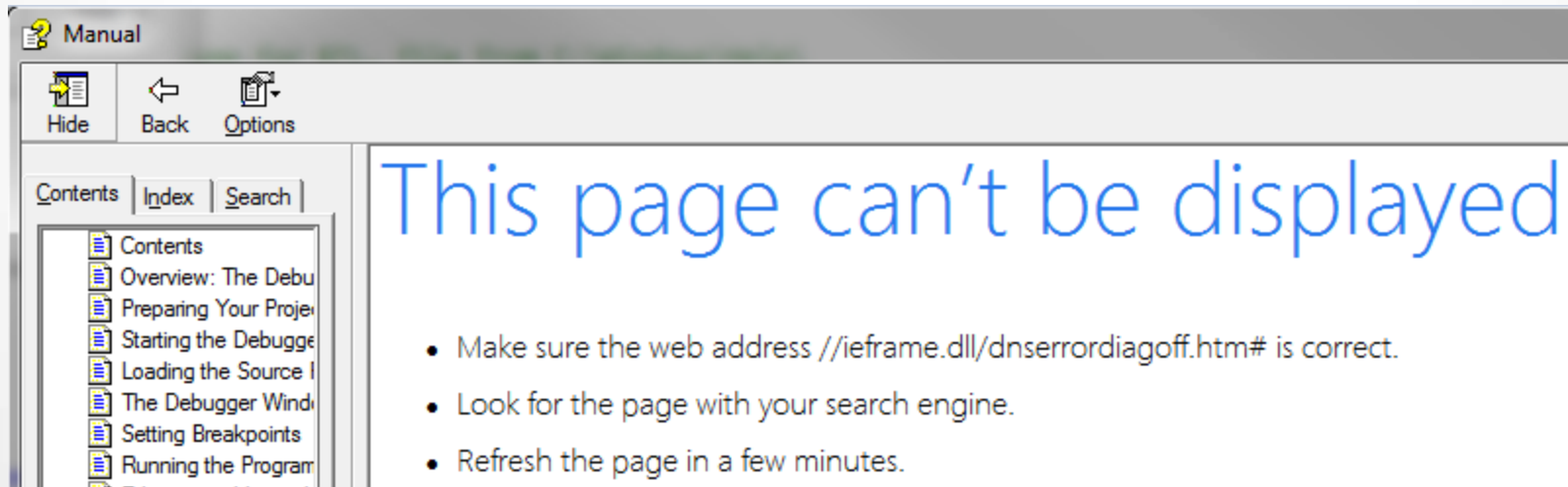


Help Engine Hook Example

What if HLP(~context) does not open?

Dig into Code and/or ask Help Author?

Can a Hook show HLP() in Debug View?



CWHelp.INT - Just 2 Methods

HelpEngine INTERFACE

! Parameter: - Extension of the help file's name

Match **PROCEDURE**(*CSTRING FileExt),**BOOL**

! Parameters:

! - Window Handle for a WINDOW

! - Name of Help file

! - Help command (HCMD_xxx or extended command code)

! - Additional parameter dependent from the command

HelpCmd

PROCEDURE(**UNSIGNED**, <*CSTRING>, **UNSIGNED**, **LONG=0**), **BOOL**

END

HCMD_SHOWTOPIC **EQUATE**(1) ...

CWHelp.INT - Just 6 Equates

HCMD_Close	EQUATE(0)	<= Program Closes
HCMD_ShowTopic	EQUATE(1)	<= STD:Help or F1
HCMD_ShowIndex	EQUATE(2)	<= STD:HelpIndex
HCMD_ShowTOC	EQUATE(3)	<= New for CHM
HCMD_ShowSearch	EQUATE(4)	<= STD:HelpSearch
HCMD_HelpOnHelp	EQUATE(5)	<= STD:HelpOnHelp ~CHM

!-Help command (HCMD_xxx or extended command code)

!-Additional parameter dependent from the command

HelpCmd PROCEDURE(,, UNSIGNED HCmd, LONG Data=0)

CW HelpCmd() = API HtmlHelp()

HelpCmd() signature matches API HtmlHelp()

HelpCmd() gets called instead of HtmlHelp()

CWHelp.INT HelpCmd() Method can be understood reading MSDN on HtmlHelp()

```
HWND WINAPI HtmlHelpA(HWND hwndCaller,  
LPCSTR pszFile,UINT uCmd,DWORD_PTR dwData)
```

```
HelpCmd PROCEDURE(UNSIGNED HWnd, <CONST  
*CSTRING HlpFile>,UNSIGNED HCmd,LONG Data=0)
```


How to Hook HelpEngine

Its an Interface ...

```
INCLUDE( 'CWHELP.INT' ), ONCE
```

```
WebHlp CLASS, IMPLEMENTS( HelpEngine )  
END
```

CODE

```
SYSTEM{PROP: HelpEngine} = |  
    Address( WebHlp.HelpEngine )  
HELP( 'Xxxx.WWW' )
```

Code the Interface Methods

Help('File.www') calls .Match('www')
Return True and F1 calls your .HelpCmd()

WebHlp.HelpEngine.Match

```
PROCEDURE(CONST *CSTRING FileExt),BOOL
```

```
CODE
```

```
IF 'WWW'=UPPER(FileExt) THEN RETURN True.
```

```
RETURN False
```

WebHlp.HelpEngine.HelpCmd

```
PROCEDURE(HWnd,cFile, HCmd, dwData)
```

```
CODE
```

```
RETURN SELF.HelpCmd(HWnd,cFile,HCmd,dwData)
```

{PROP:HelpEngine,#} is an Array

16 Engines may be specified using Index
First Engine .Match() returns True is used
CHM and HLP handlers in RTL are last

```
WebHlp  CLASS, IMPLEMENTS(HelpEngine) !.WWW  
WikiHlp CLASS, IMPLEMENTS(HelpEngine) !.Wiki  
ePubHlp CLASS, IMPLEMENTS(HelpEngine) !.ePUB
```

```
SYSTEM{PROP:HelpEngine,1}=Address(WebHlp.H...)  
SYSTEM{PROP:HelpEngine,2}=Address(WikiHlp.H...)  
SYSTEM{PROP:HelpEngine,3}=Address(ePubHlp.H...)  
HELP(CHOOSE(HFmt,x.WWW,x.Wiki,x.ePub,x.CHM))
```

HelpEngine.HelpCmd()

HelpCmd called for F1, HELP('x') or STD:Help

HelpCmd (UNSIGNED,<*CSTRING>, UNSGN, LONG)

HelpCmd (HndWnd, HlpFileName, HCmd , Data)

HCMD_Close	EQUATE(0)	!Program Closes
HCMD_ShowTopic	EQUATE(1)	!F1, Data=HLP()
HCMD_ShowIndex	EQUATE(2)	!STD:HelpIndex
HCMD_ShowSearch	EQUATE(4)	!STD:HelpSearch
HCMD_HelpOnHelp	EQUATE(5)	!STD:HelpOnHelp

HelpCmd(,,,LONG Data=0)

HLP('x') sent in DATA as Address(CString)
Dereference it, should treat as CONST

```
...HelpCmd  PROCEDURE(,,,HCmd, LONG dwData=0)
CStrData   &CSTRING ! CONST
cBlank     CSTRING(2)
CODE
CStrData &= cBlank      !Avoid IF &=Null later
IF HCmd=HCmd_ShowTopic THEN !F1 opens HLP()
    IF dwData > 0FFFFh |      !<64Kb C0000005
    OR dwData < 0          THEN !LargeAddress>2GB
        CStrData &= (dwData)  !=HLP(~Page.htm)
END
END
```

Can Call the HelpEngine

Show HLP using Engine while CHM is active

```
WnHlpEng &HelpEngine !Saved RTL HLP Engine
```

```
cWinHlp CSTRING('ClaDb.HLP')
```

```
cHtmlHelp CSTRING('ClaDebugger.CHM')
```

CODE

```
HELP(cWinHlp) !#1 SYSTEM Engine now HLP
```

```
WnHlpEng &= ADDRESS(SYSTEM{PROP:HelpEngine,1})
```

```
HELP(cHtmlHelp) !#2 SYSTEM Engine now CHM
```

```
cTopic='~Starting_The_Debugger' !no .htm
```

```
WnHlpEng.HelpCmd(0,cWinHlp, HCMD_SHOWTOPIC,  
Address(cTopic))
```

Can Call the HelpEngine

Important Concept! Or no time to cover

Help(File.EXT) sets System{HelpEngine}

Sets to first Engine to Match(EXT) True

Save a Reference and use that Engine after
Help() changes to another

Trick: Must find right Index, just LOOP X=1
to 16 ; Eng &= System{PROP:HelpEngine,X}
; IF Eng.Match('EXT') THEN Got It

Help Check Hook Engine

Help Author names *TRopicPage.htm*

Developer codes `HLP('~TopicPage.htm')`

F1 show HLP() in Debug View the open

Author or Tester can see problem

Faster to change help file than ask
developer to find source code HLP()

Help Check Hook Engine

HELP('YourFile.CHM' & 'CHEK')

Check Engine matches on .CHMCHEK

Eng.HelpCmd sends to Debug View

Changes to HELP('YourFile.CHM')

Opens help using CHM Engine in RTL

WebHelp - Online Help

Mini Web site to show your Help

HTML with Frames and JS - HAT Specific

URL is API to open pages and features

HelpEngine Hook opens in IE / ShellEx

Finish, fix, enhance w/o user install

Size has no impact on your Setup.exe

Link to features: Chat, Forums, Wiki

CwHH Removal

Could delete CwHHGlobal extension in every APP

Might lose TPL settings/usage that bypassed Language

- SetTopic() instead of HLP()

- ShowTopic() instead of HELP(,)

Removal Templates and Instructions in Download

Generates comments to tell you what to fix

CwHH option added “.htm” will require fix
HLP(‘~Page’) to add .htm. Export to TXA.

Peek Under the API Covers

RTL calls WinHelpA() in User32.DLL

Runs WinHlp32.EXE the viewer so is out of process

RTL calls HtmlHelpA() in HHCtrl.OCX

Creates Thread and Window in your process

OCX uses IE Browser Control

HH.EXE out of process viewer can be RUN()
from your code

Finding CHM Topics

Help Viewer Right-Click menu ...

Properties window shows Page Name

View Source HTML , find <A> Bookmarks

Viewer HH.exe can extract Html

HH.EXE -Decompile DestFolder File.CHM

HH.exe command line can open to topic page