Installation of on-line help including a browser popup window in OpenCalphad on Windows, Linux and Mac OS.

Bo Sundman, August 25, 2019

The information here is relevant for OC 5.049 and later.

It gives a basic explanation of the online help system and how to install it.

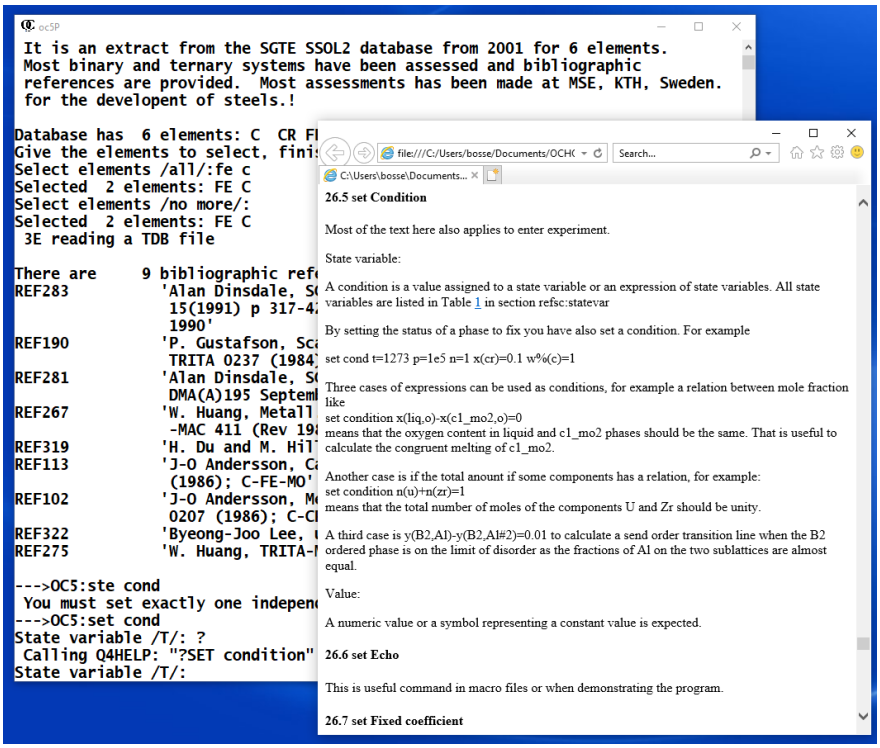
1 The help facility in OC

Help in OC can be obtained by typing a ? or ?? whenever OC asks you a question you do not understand or when you want to know to possible answers to a command. For example to obtain a menu:

```
--->OC5:?
 ABOUT              EXIT               MAP                SELECT
 AMEND              FIN                NEW                SET
 BACK               HELP               OPTIMIZE           SHOW
 CALCULATE          HPCALC             PLOT               STEP
 DEBUG              INFORMATION        QUIT
 DELETE             LIST               READ
 ENTER              MACRO              SAVE
--->OC5:
```

After displaying the help text, here just the menu, the same question is asked again.

When OC asks for a more specific answer like a state variable or a value and you need some explanation typing a ? the help text will be more elaborate:



When the user types ? at a question the help system opens a browser window and displays a text from the User Guide that should be relevant for the question asked. On the command level a single ? just displays the menu and two ?? are needed to open the browser window.

Writing a User Guide is a significant effort but few users bother reading such a guide. However, making the user guide available when the user asks for help for a particular question, starting with a text that should be most relevant for the question, makes the effort of writing the guide more worth while. Beacuse the user can in the browser windows scroll the text and search for related information in other parts of the user guide.

1.1 How OC can find the relevant help text

The online help system in OC makes use of the "\hypertarget{anchor}" feature in HTML files which makes it possible to position this file at the text following "anchor" when opening the HTML file.

At each place in the source code where user input is requested there is an "anchor" and this is activated when the user answers by a "?". The ? will open the popup window and position the html file at the line containing the "anchor" at the top of the screen. If this help text is not sufficient you can search the whole user guide inside this browser window.

As very few read the User Guide it is interesting to make it useful and easily available in particular for the person spending several weeks or months writing it.

Converting the LaTeX file to an HTML file (using a utility called htlatex) these "anchors" become searchable inside the html file.

1.2 How OC can display the relevant help text

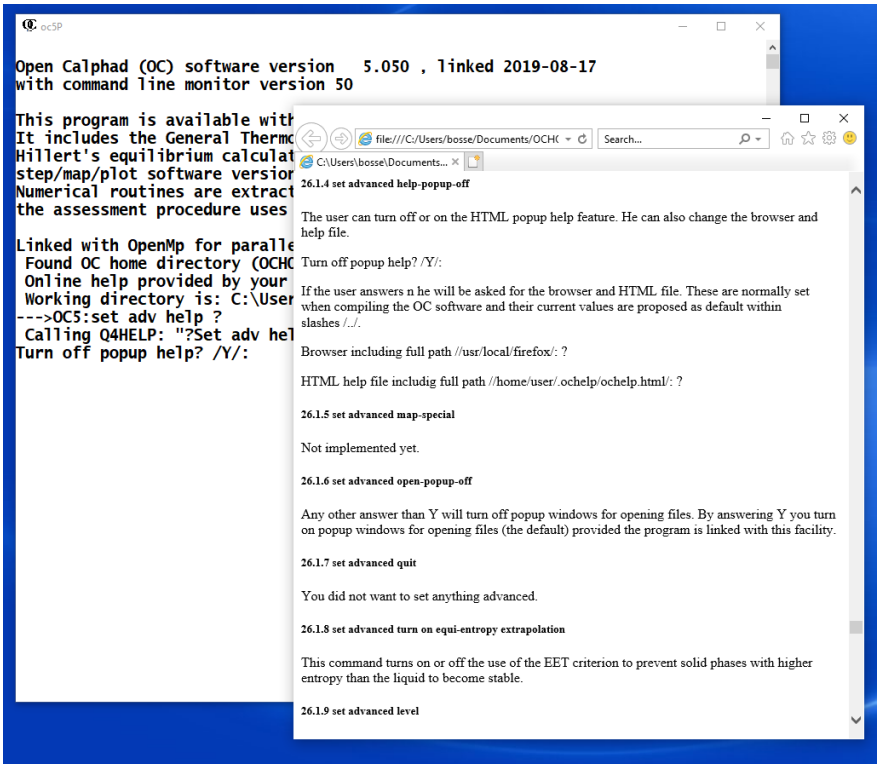
As can be seen in the snapshot the "anchor" is shown in the line "Calling Q4HELP:" . This is for debugging the code while implementing relevant anchors in both the source code and the LaTeX source of the User Guide.

In the source code the Q4HELP routine uses the Fortran intrinsic "execute_command_line" to start a browser window providing the help file and the value of the "anchor", using the command line:

browser//' "file:'//'htmlfile'//'#'//anchor//'" &'

The "anchor" is the position to search in the HTML file and the variables "browser" and "htmlfile" are set when at compiling the pmon6.F90 file of the OC software as explained below.

The browser and path to the ochelp file can also be set using the command **set advanced help**.



2 Windows installation of help files

Before installing OC you should

- create a dirctory for OC help files and other utilities, preferably at your home directory.
- create an environment variable OCHOME pointing to this directory. How to do that is explained below.

When you have downloaded OC there is a directory "manual/" with three files:

- ochelp.tex is the source LaTeX file for the user guide needed to search for the help text.
- ochelp.pdf is a printable PDF of the user guide created by the pdflatex program.
- ochelp.html is the browser version of the user guide that can be used by a browser like firefox or internet explorer.

The HTML file should be copied to the OCHOME directory in order for OC to find it.

The file changes.tex on the downloaded OC directory should also be copied to the OCHOME directory.

Whenever you download a new version of OC move the new ochelp.htnl file to the OCHOME. However, the ochelp.html is not updated very frequently.

On Windows the internet explorer is used as browser. It is set using the -Dwinhlp compiler directive when compiling the pmon6.F90 file.

2.1 Create environment variable

Each user of OC should create an *enviroment variable* called OCHOME which points to a directory with some common files used by OC. On Windows 10 you can create such an environment variable using the steps described below (if you have never done this please ask a local guru for help):

1. Click at the Windows symbol at the lower left corner. On the menu that pops up click on the "cogweel/gear" symbol (called settings).
2. This will open a popup window called **Settings**. At the top of this there is frame asking *Find a setting* (in your prefered language). In this window type "environment" (in your prefered language). Below the frame where you are typing some alternatives will be shown and click on *Edit environment variables for your account* (in your prefered language).

3. In a new popup window called *Environment Variables* you will have two framed lists, one called User variables and another called System variables. Below each there are 3 buttons: "New..", "Edit..." and Delete.

   You are adding a User variable so click on "New..." under the top frame. If you want to correct or delete an environment variable click first on the variable and then on the appropriate button.

4. When you click on "New..." there will be yet another popup window (you reallize now why this is called the Windows operating system?). In this there are two framed input lines. In the first you enter the variable name, in this case OCHOME and in the second you should enter the whole path for this directory.

   To help you with the latter you can use the button "browse Directory" to search all your directories to find where you created OCHOME. In fact you can create the directory in this process if you have not already done that.

5. When you entered the variable name and value click on the OK button in this window and it will disappear.

6. Click on the OK button in the window called *Environment Variables*. and this will also disappear.

7. Close the "settings" window.

8. Open a new terminal window and type **SET**. This will display all environment variables and you should see the one you just entered.

9. Congratulations, you have created a new environment variable !

Next time you start OC it will find the help files on the OCHOME directory.

3 Linux installation of popup help

Before installing OC you should

- create a dirctory for OC help files and other utilities, preferably at your home directory.
- create an environment variable OCHOME pointing to this directory. How to do that is explained below.

When you have downloaded OC there is a directory "manual/" with three files:

- ochelp.tex is the source LaTeX file for the user guide needed to search for the help text.
- ochelp.pdf is a printable PDF of the user guide created using the pdflatex program.
- ochelp.html is the browser version of the user guide that can be used by a browser like Firefox or internet Explorer.

The HTML file should be copied to the OCHOME directory in order for OC to find it.

The file changes.tex on the downloaded OC directory should also be copied to the OCHOME directory.

Whenever you download a new version of OC move the new ochelp.htnl file to the OCHOME. However, the ochelp.html is not updated very frequently.

The compiler directive -Dlixhlp for the metlib4.F90 code specifies the path to the help file for Linux and Mac OS.

Select the compiler directive -Dlixhlp for pmon6.F90 code to use the firefox browser for Linux and the directive -Dmachlp to use firefox for Mac OS.

3.1 Create environment variable

If your OCHOME directory is at your login directory and is called ".ochome" you can create the environment variable by a line

export OCHOME=$HOME/.ochome

in your ".bashrc" file (or equivalent file) which contain commands run each time you login or open a terminal window.

Have fun and help make OC useful!