Step by step manual to install Intel® FORTRAN Compiler 9.0 and to compile MOHID Water

September 2005

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Installing Intel® FORTRAN Compiler 9.0

18 Steps to install the compiler.

1) To proceed with the installation you need to have Microsoft Visual Studio .NET 2003 in your computer. To install it get the installation DVD's.
2) Copy entire content of folder \\Luis\Software\Programming\Compilers\Intel Fortran\Intel Fortran (Figure 1), to a directory in your hard drive.

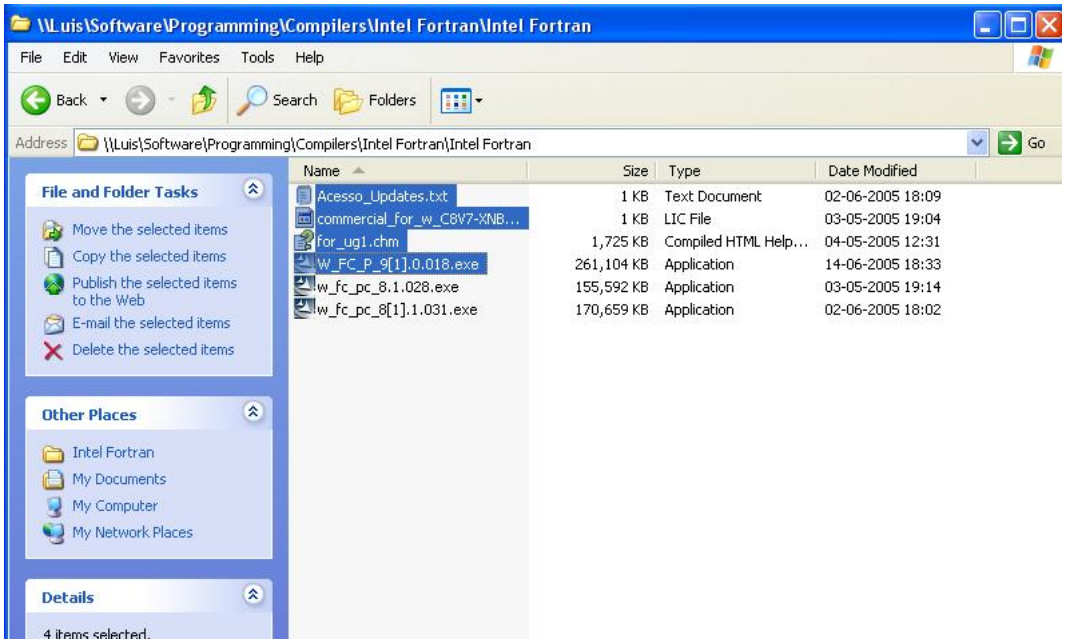

Figure 1 - Files for installation

3) Run the executable file that you copied. It will show up the introducing window: click [*Next*].
4) Next window showing up is the one in Figure 2. It has the path for the installation files. Click [*Next*].

Figure 2 – Installation path

5) Wait (Figure 3).

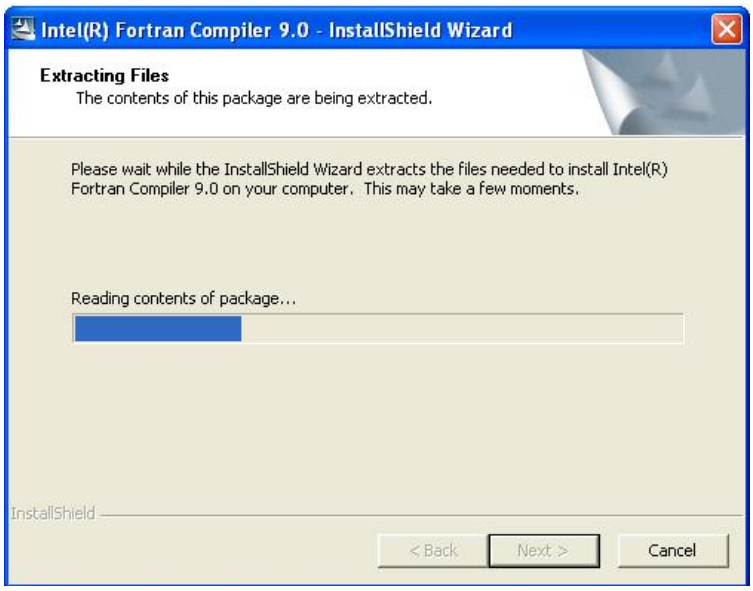

Figure 3 - Wait....installing

6) In this window click [*Next*] (Figure 4).

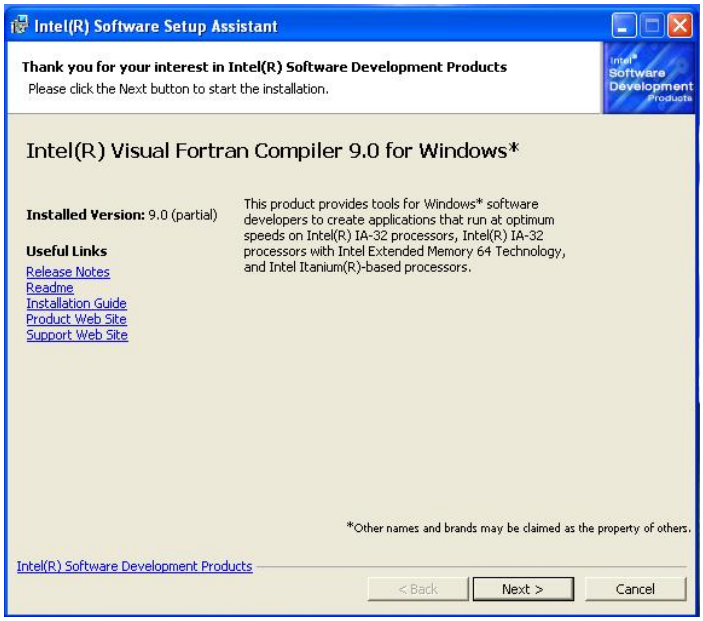

Figure 4 – Another window

7) A license is needed to install the compiler. In the window represented by figure 5 click [*More Options>>>*] and select [*provide a licence file*] (Figure 5). This file is "*commercial_for_w_C8V7-XNB8RJ9P.lic*", is located near the installation executable file.

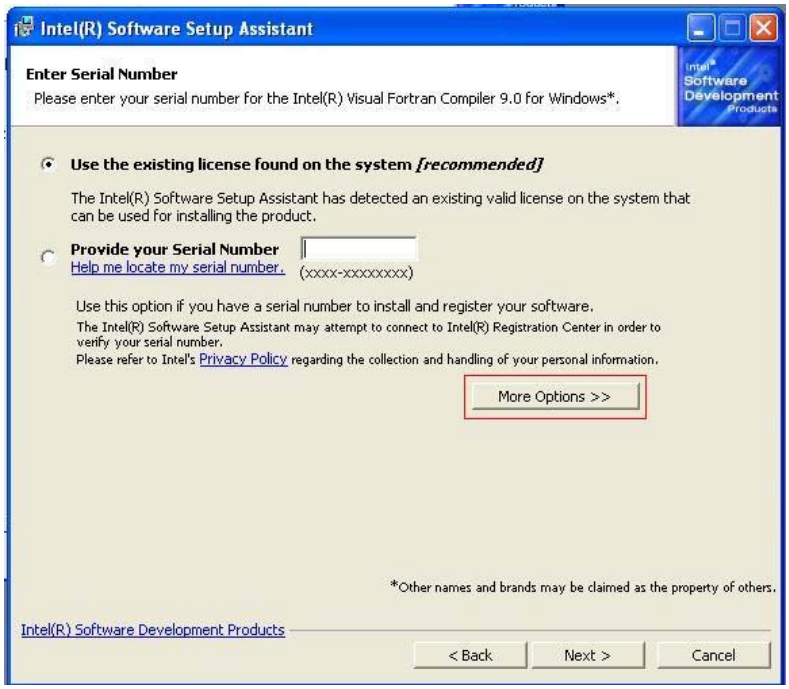

Figure 5 – License

8) Browse for the file (Figure 6)

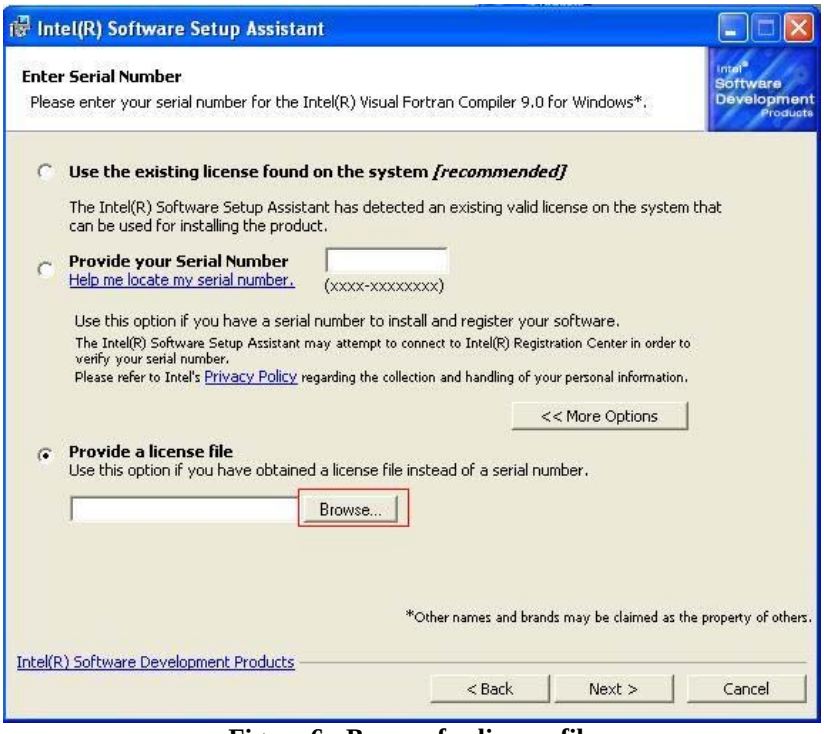

Figure 6 - Browse for license file

9) Browse for the file (Figure 7)

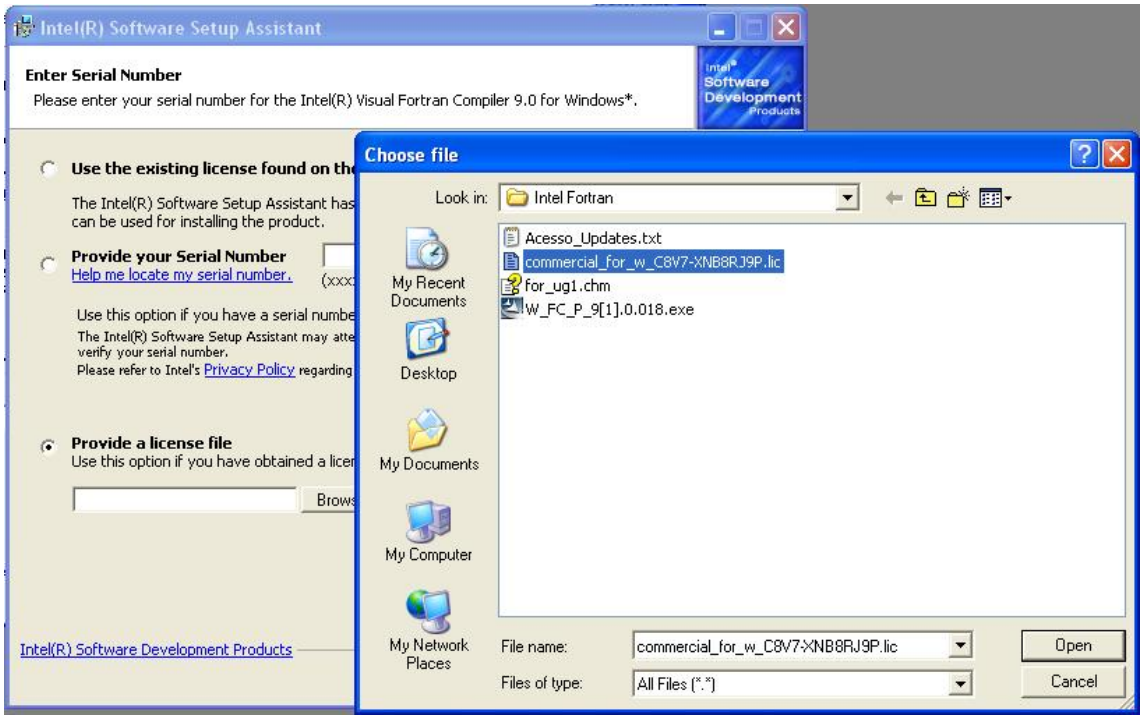

Figure 7 - Browse for license file

10) When Figure 8 appears you must install in this order the following components: **(i)** Visual Fortran Compiler for 32 bit (1st on the list); **(ii)** Debugger (4th on the list); **(iii)** Visual Fortran Compiler Integrations in Microsoft Visual Studio (5th on the list); **(iv)** Array Visualizer (6th on the list); The components will be installed one at a time, so this window will remain in background each time a component is installed.

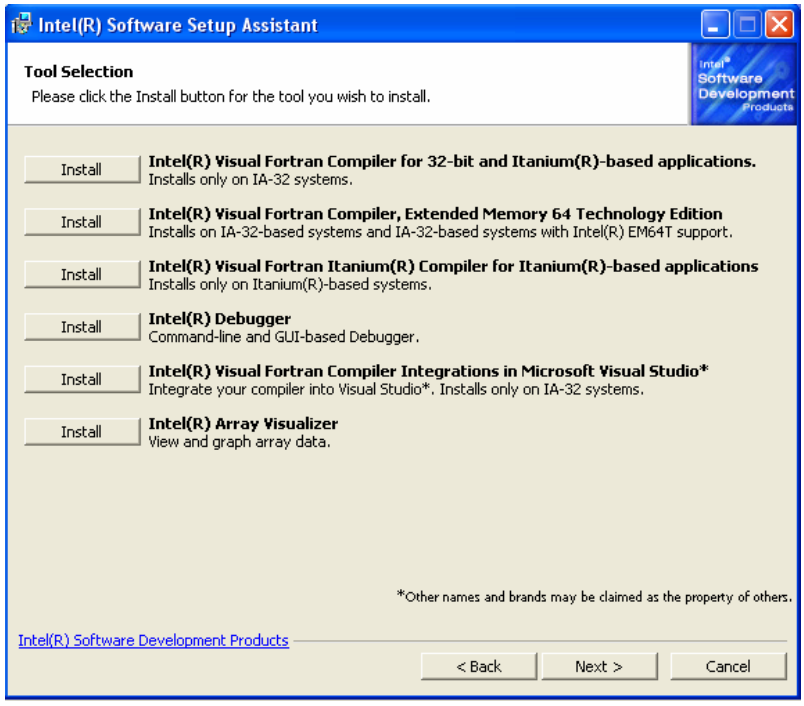

Figure 8 - Installation window

11) In every component, just click “Next” and leave all default options. When asked, install compiler for all users in the computer, and perform a complete installation. When a window like in Figure 9 appears, please select the **“Automatically update environment variables”** option.

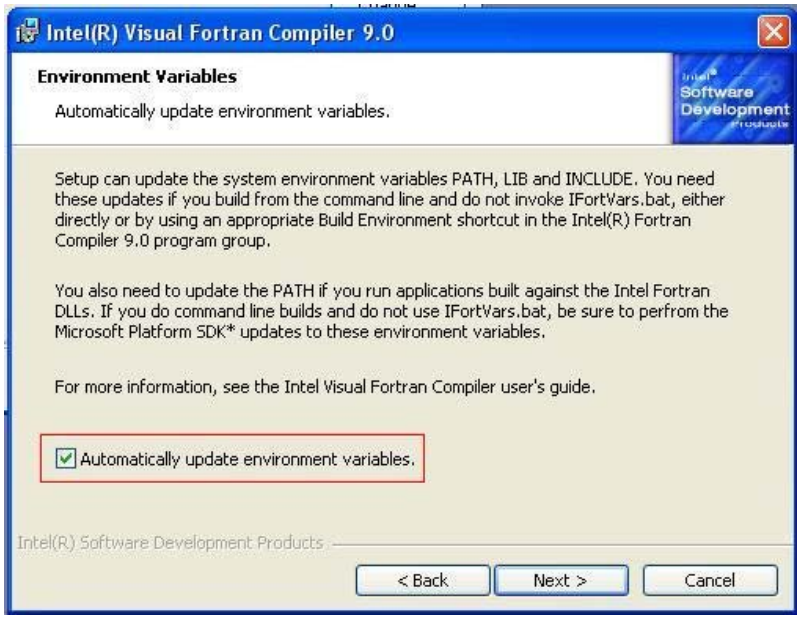

Figure 9 - Enviroment variables

12) Just click “Next” to continue installation.

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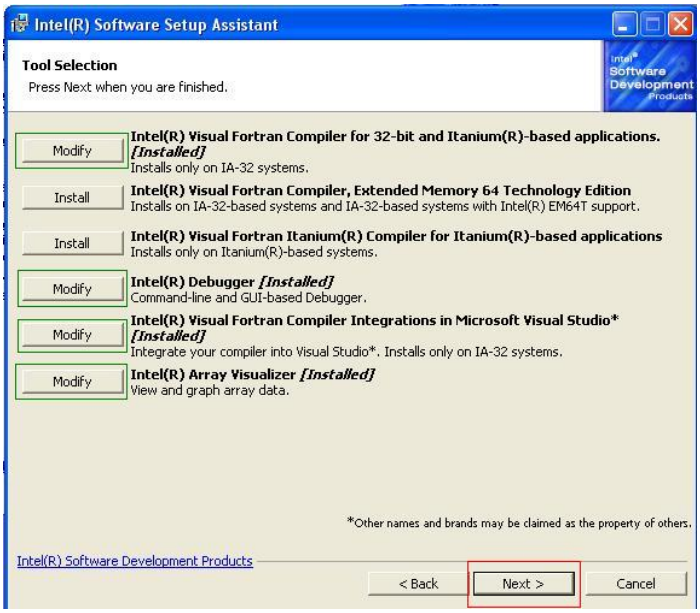

Figure 10 - Just after installing 4 components

13) After installing the 4 components, just click Next to finish (Figure 10). In the following window (Figure 11), click Finish.

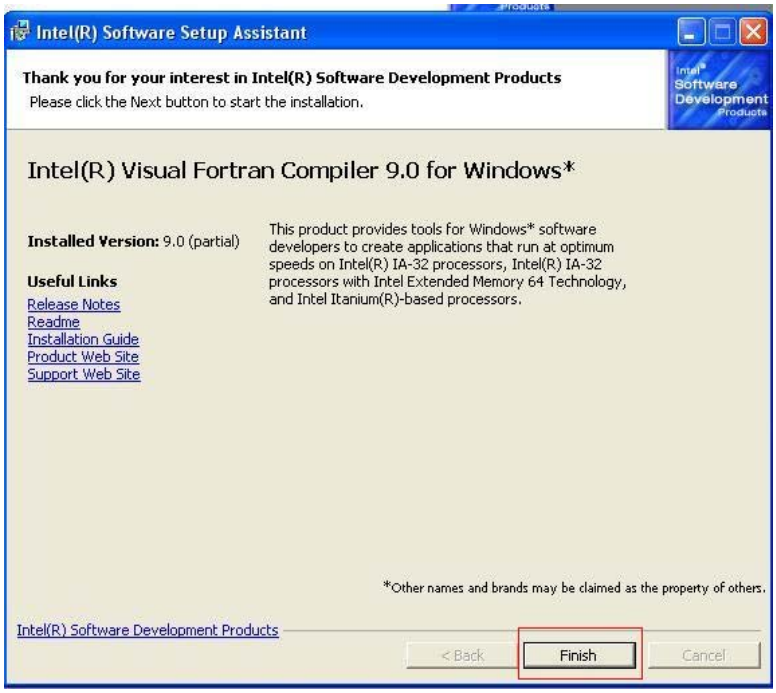

Figure 11 - Last window

Compile Mohid Water with Intel FORTRAN Compiler 9.0

1) Please follow these instructions step by step and until the end.
2) Make sure you have installed in your computer the following software:
    a. Microsoft Visual Studio .NET 2003
    b. Intel Fortran Compiler 9.0
3) If you don't have both installed, please install them
4) Open Microsoft Visual Studio .NET 2003.
5) Select "New Project".
6) Select Intel® FORTRAN Projects and then "Console Application" (Figure 12). Call the project, for example, "MohidWater". Click OK.

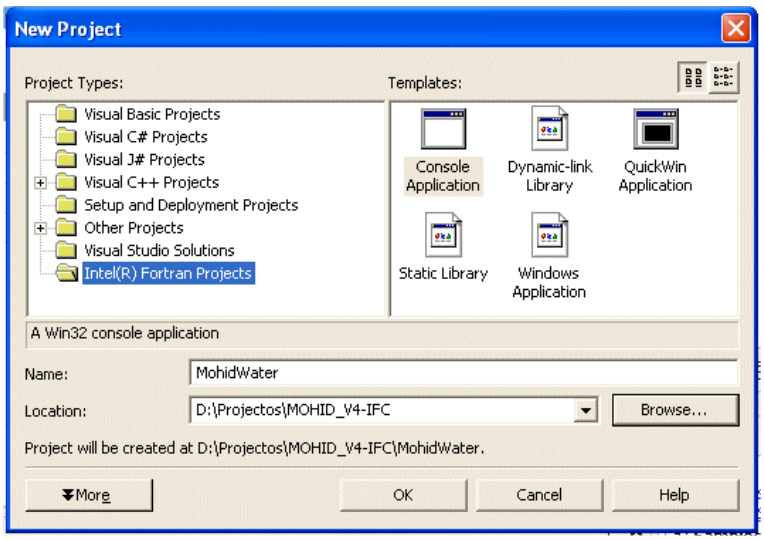

Figure 12 – Create a new FORTRAN project

7) A window appears (Figure 13). Select option "Empty project". Click OK.

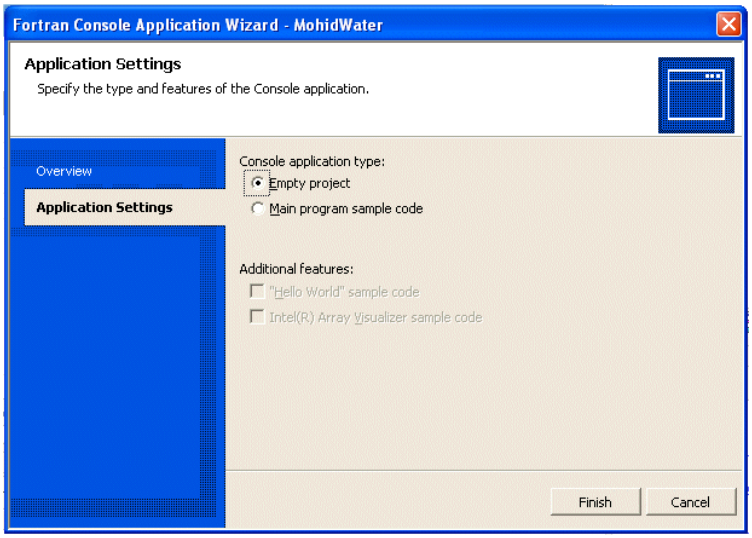

Figure 13 – New application settings

8) An empty project is created. Get all FORTRAN code files from SourceSafe and add them to the project (Figure 14). Right-click in the Source Files folder (in the project tree), and select "Add…Add New Item…"

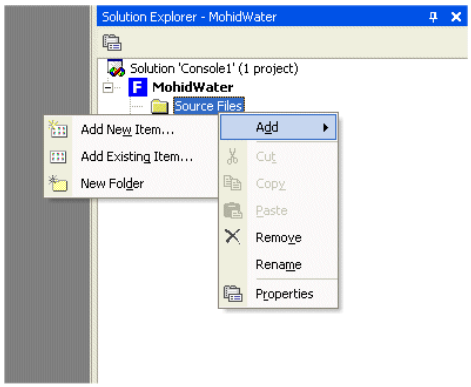

Figure 14 – Adding new items

9) You should by now have a project tree looking like Figure 15.

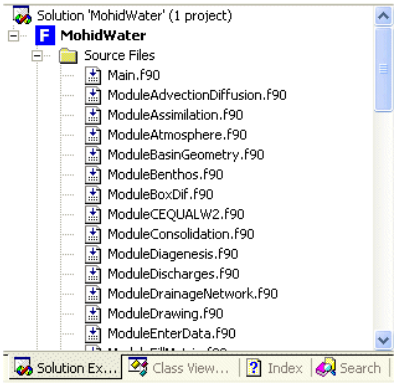

Figure 15 - Project tree

10) Now select "Project…Properties" and start editing your compilation settings. Please follow the figures below and set them EXACTLY as they are presented. Do not make additional changes in the settings unless you're testing some optimizations. Note that settings under "Debug" and "Release" configurations are slightly different. Please select "Release" configuration and apply this settings first.

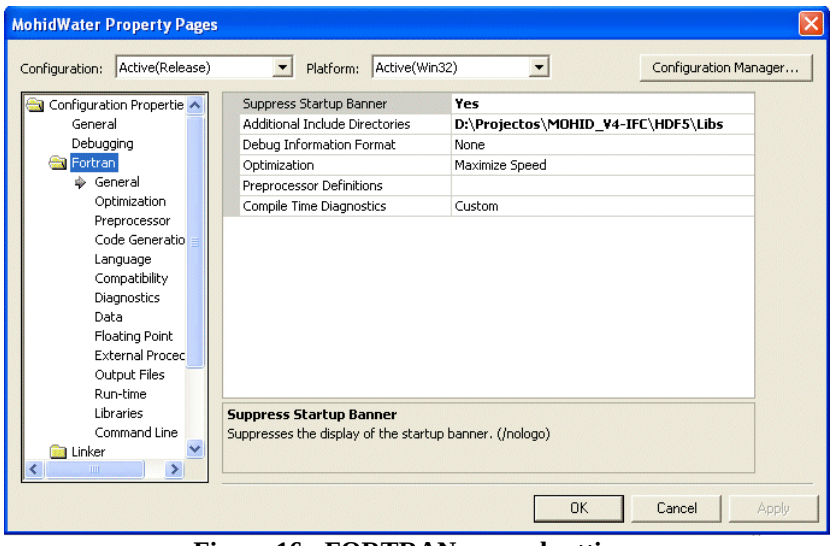

Figure 16 - FORTRAN general settings

11) In Figure 16, “Additional Include Directories“defines the path to the folder where the HDF5 libraries will be placed.

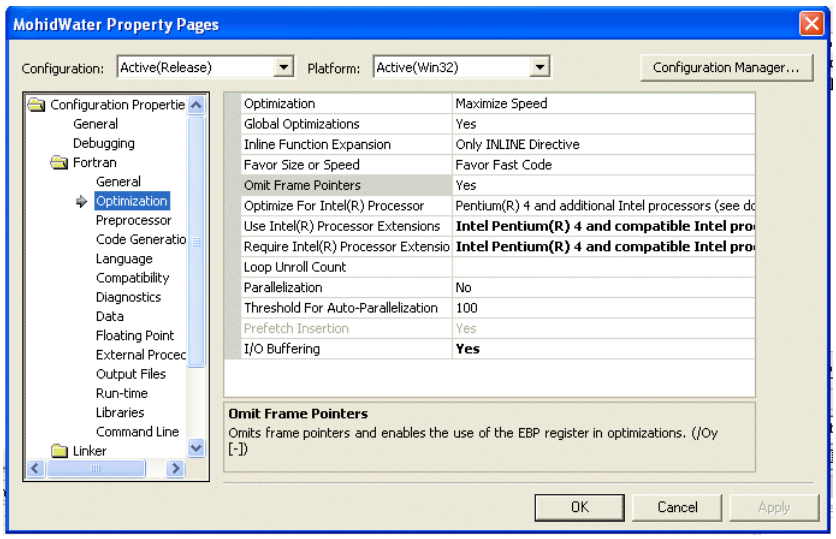

Figure 17 - Optimization settings

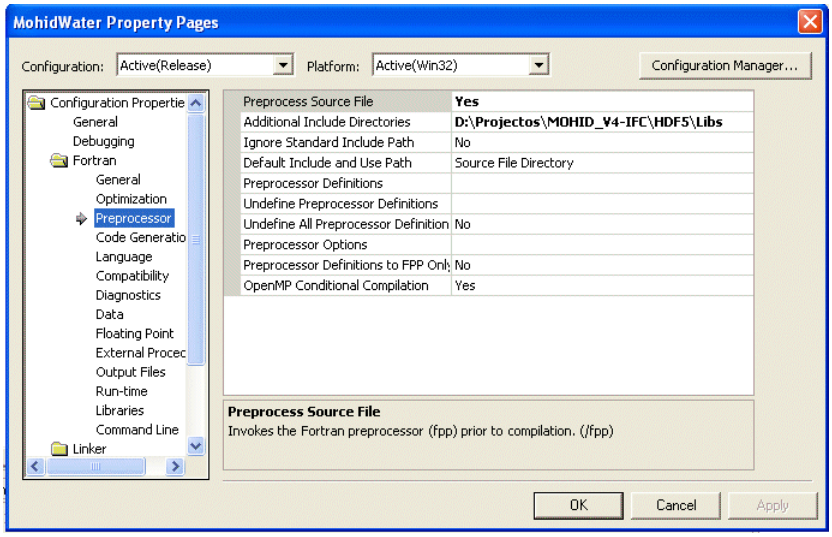

Figure 18 - Preprocessor settings

12) In Figure 18, “Additional Include Directories“defines the path to the folder where the HDF5 libraries will be placed.

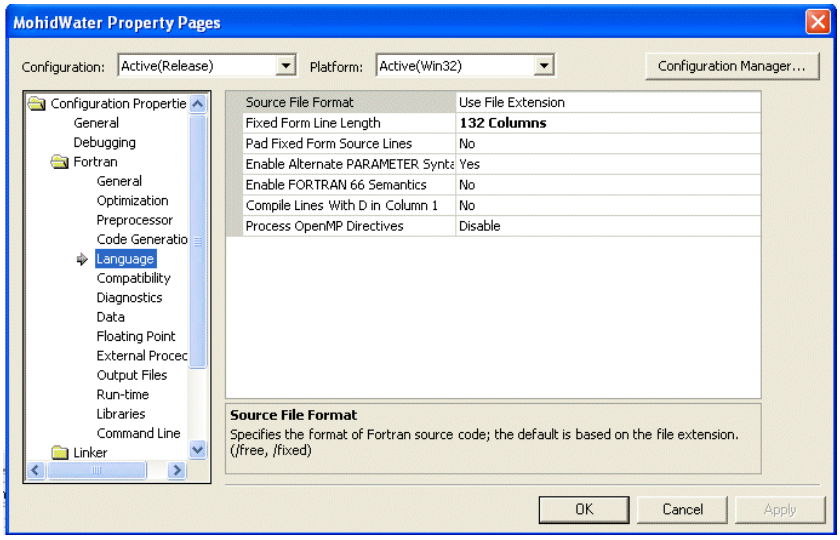

Figure 19 - Language settings

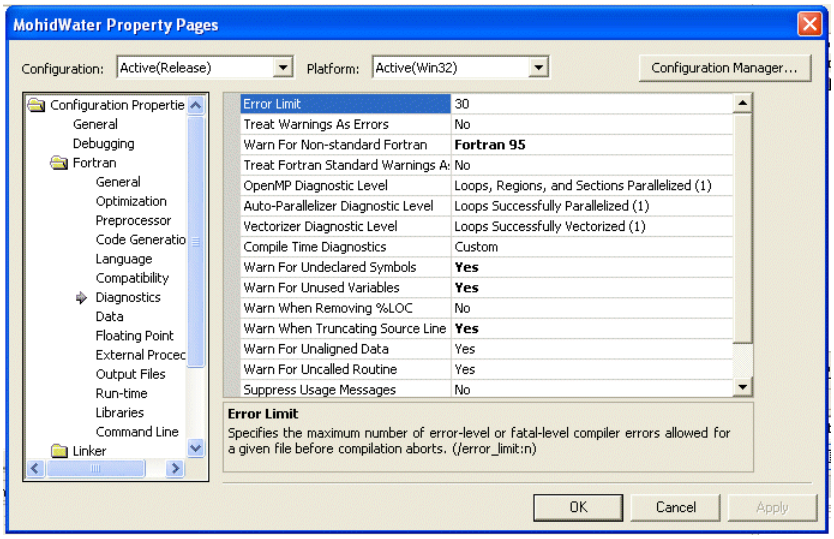

Figure 20 - Diagnostics settings

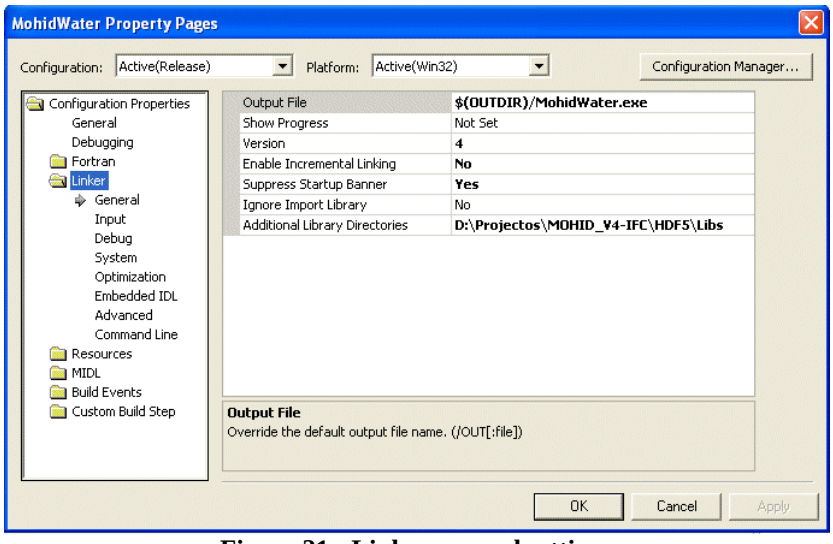

Figure 21 - Linker general settings

13) In Figure 21, “Additional Include Directories“defines the path to the folder where the HDF5 libraries will be placed.

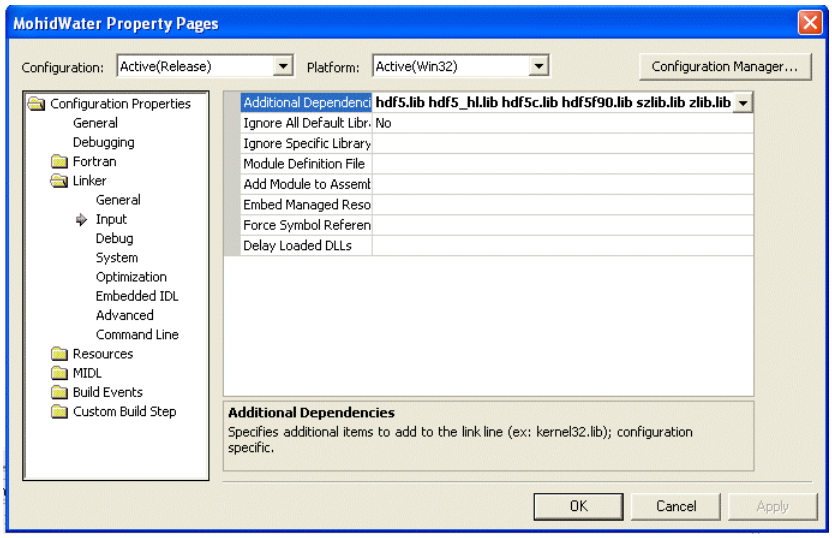

Figure 22 - Linker input settings

14) Get the HDF5 libraries from Source Safe, and place them in the folder you've specified previously. Write down the names of the libraries in the "Additional Dependencies" text box. The names are: "**hdf5.lib hdf5_hl.lib hdf5c.lib hdf5f90.lib szlib.lib zlib.lib**"

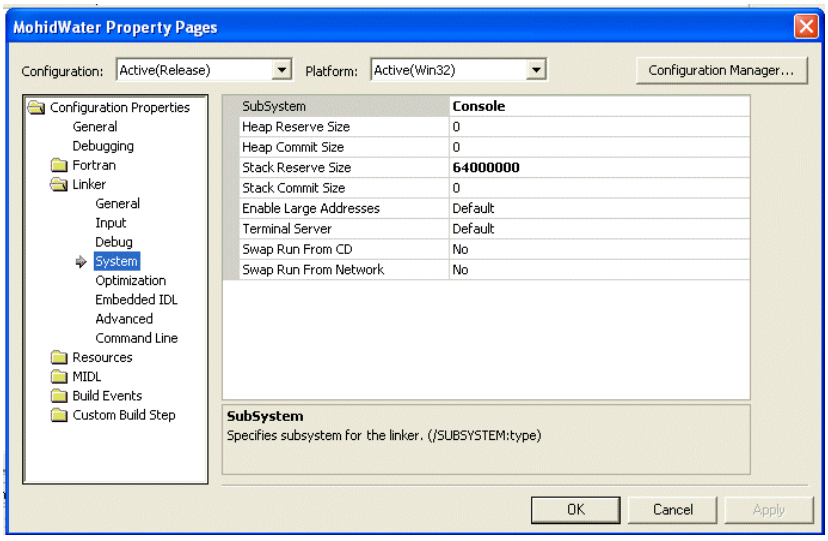

Figure 23 - Linker system settings

15) Now, select the "Debug" configuration and apply the same settings except in the following figures (Figure 24, Figure 25)

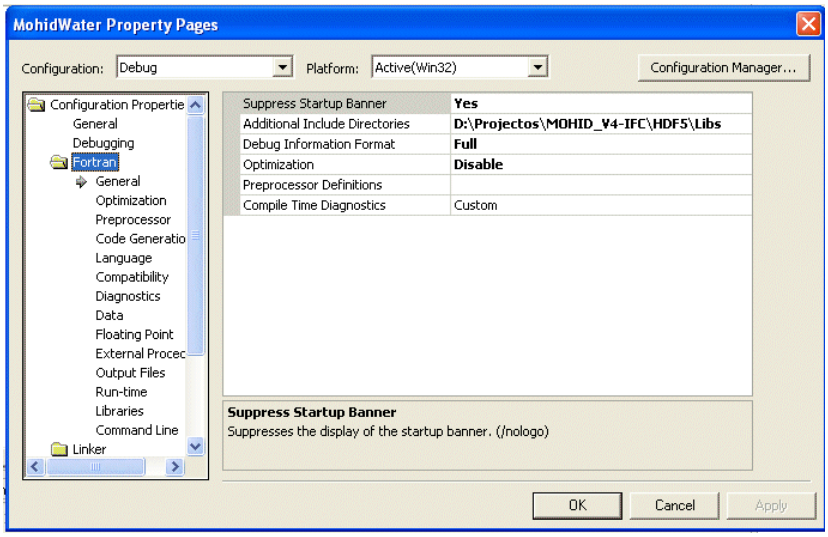

Figure 24 - FORTRAN general settings (Debug)

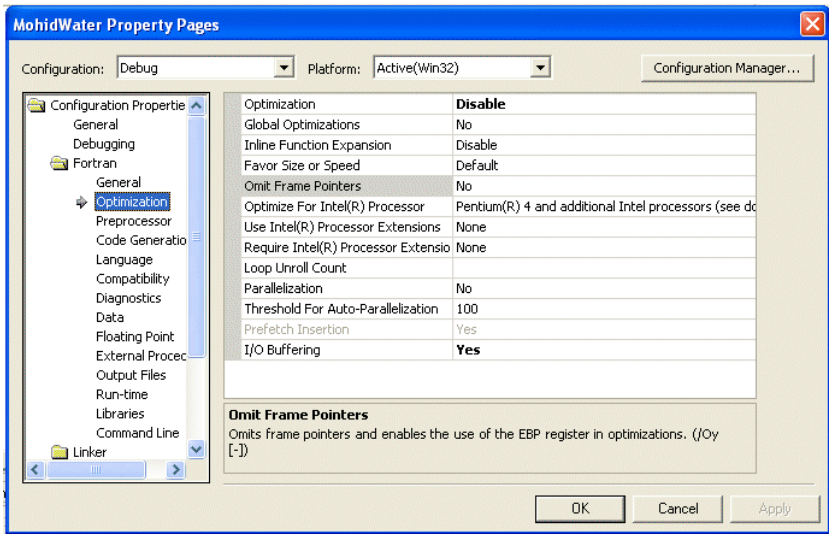

Figure 25 - FORTRAN Optimization settings (Debug)

16) Select “Build Solution”.
17) To perform optional compilation, just add the compilation pre-processor keywords in “Properties…Fortran…PreProcessor”, in the “Preprocessor Definitions” text box. See keywords in table below.

LAGRANGIAN	**excludes Modules Lagrangian + Jet + Oil**
AIR	**excludes Modules InterfaceWaterAir + Atmosphere**
WAVES	**excludes Module Waves**
SEDIMENT	**Modules SedimentProperties + Consolidation**

18) **IMPORTANT NOTE: you must copy “zlib1.dll” which is in the Source Safe folder “IntelLibs”, to “C:\Windows\system\” in order for the model to run. This is annoying but necessary, for now, until another solution is found.**