

**TREX Set-Up Guide:**  
**Creating a TREX Executable File for Windows**

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## Creating a TREX Executable File for Windows

### Overview

Any C compiler that works with the Microsoft Windows Operating System (OS) can be used to create a TREX executable (.exe) file for Windows. The following is a description of how users can create a TREX executable using the Microsoft Visual Studio C (C++) compiler.

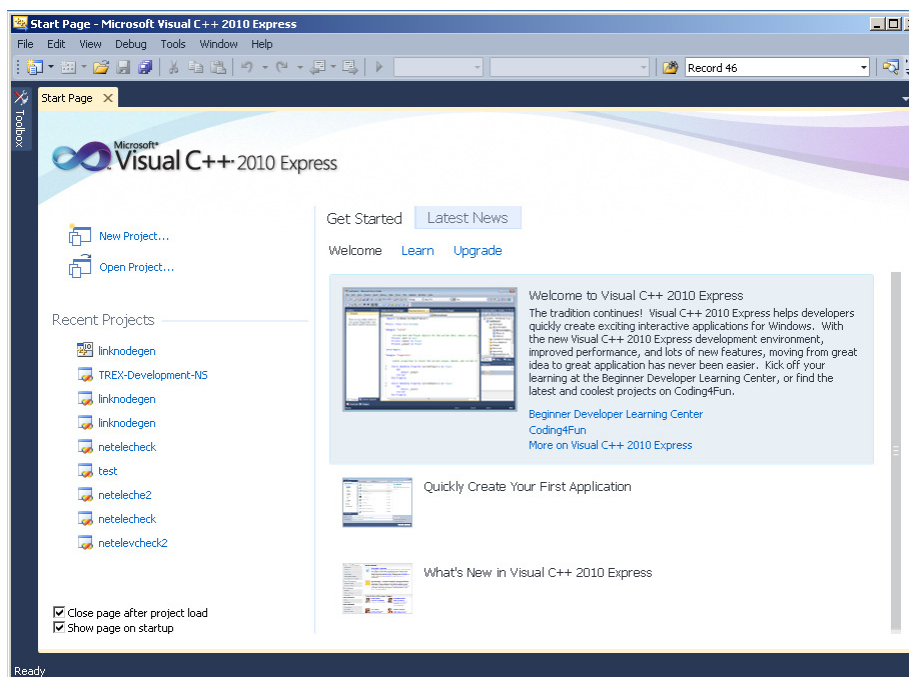
As of July 2010, Visual Studio C++ can be downloaded from the Microsoft web site at the following URL: <http://www.microsoft.com/express/Downloads/#2010-Visual-CPP>. The instructions that follow have been used with Visual Studio .Net 2003, Visual Studio Express Edition 2008, and Visual Studio Express Edition 2010.

*Note: Menu items or dialog boxes described in these instructions may differ because small differences exist between versions of the Visual Studio software. Nonetheless, menus items and dialog boxes in each version of the software will be very similar even if not identical.*

### 1. Launch the Visual Studio (.Net or Express) application.

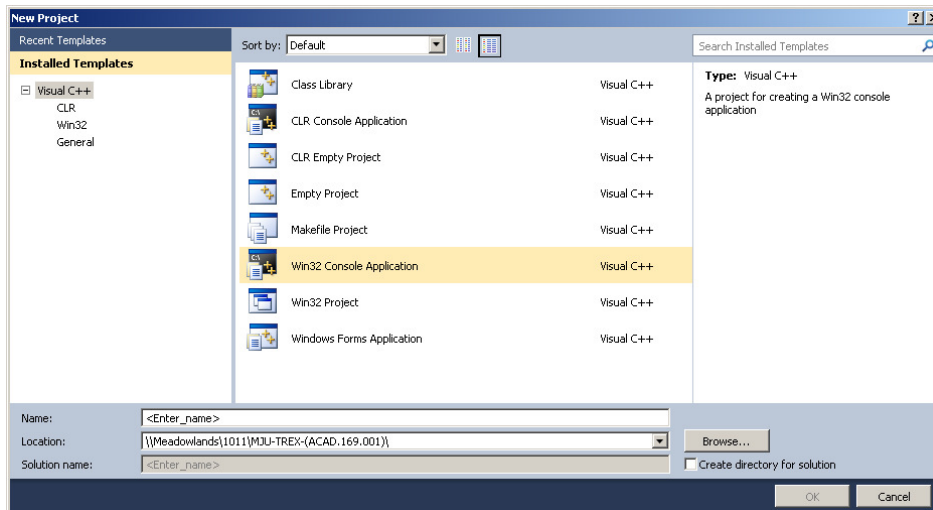
### 2. Create a new project.

Select the "File" Menu, click on "New" and choose "New Project".



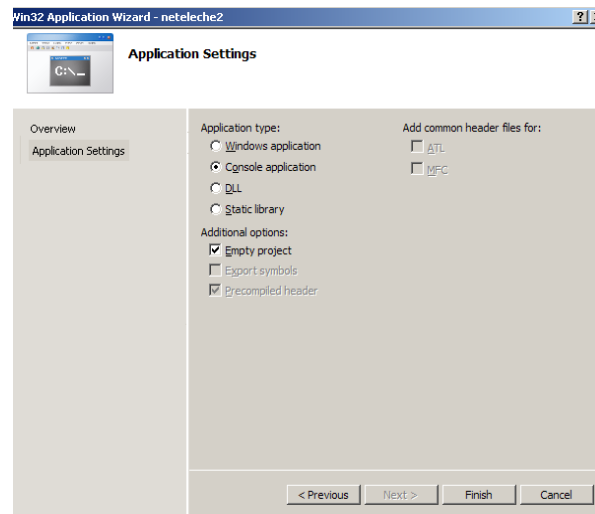
### 3. Choose a project type and template.

From the dialog box, choose Visual C++ project, select “Win32 Console Application” as the template, provide a name for the project such as TREX on the “Name” line, and specify the directory where you want the project to be created. Click OK.



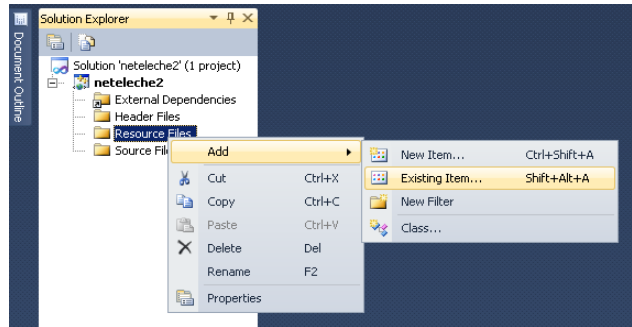
### 4. Select the project settings.

From the dialog box, click on “Application Settings” on the left hand side of the box, select “Empty project” from the list that appears on the right, and then click “Finish”. At this point, Visual Studio will create a folder that you can use for the project. For your convenience, it is helpful to copy the folder containing the TREX source code into the folder that you just created for the project or in a folder at the same directory level of your project folder.



## 5. Add source code files to the project.

Right click on the “Source Files” folder in the “Solution Explorer” pane of the Visual Studio Window and choose “Add” and then “Add Existing Item” from the context menu. When the dialog box opens up, browse/navigate your way to the folder containing the TREX source code, select each and every one of the .c files from the list, and then click the “Open” button. Note: you will need to delete either `trex-r4.c` or `trex-debugger-r4.c` from the source file list. See Step 8.

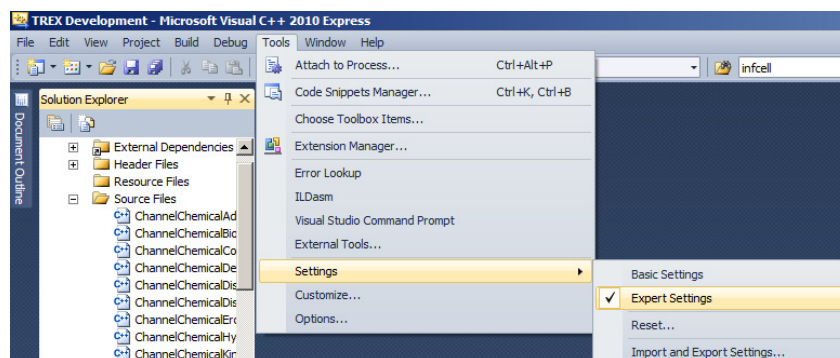


## 6. Add header files to the project.

Right click on the “Header Files” folder in the “Solution Explorer” pane of the Visual Studio Window and choose “Add” and then “Add Existing Item” from the context menu. When the dialog box opens up, browse/navigate your way to the folder containing the TREX source code, select each and every one of the .h files from the list, and then click the “Open” button.

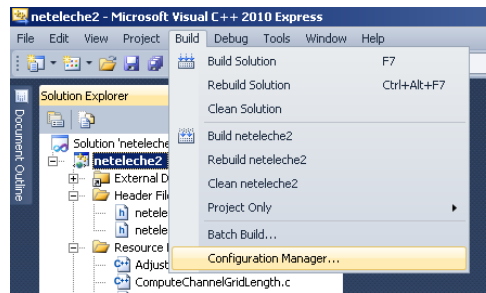
## 7. Select the user configuration.

Click on the “Tools” menu and move the cursor to “Settings” from near the bottom of the list and choose “Expert Settings” from the sub-menu that appears.



## 8. Select the project configuration.

Single click on the “TREX” solution name in the “Solution Explorer” pane of the Visual Studio Window to highlight it. Click on the “Build” menu and choose “Configuration Manager” from near the bottom of the list. From the “Configuration Manager” dialog box, choose an “Active Configuration” from the drop-down menu. The choices are either “Release” or “Debug”. A “Debug” version allows you to trace code operation one line at a time but is slower to run. A “Release” will run faster but may not provide line-by-line information regarding the internal details of code operation. When developing new code or tracing program operation, it is better to use a “Debug” version. When performing full model simulations, it is better to use a “Release” version. Click “Close” when done.



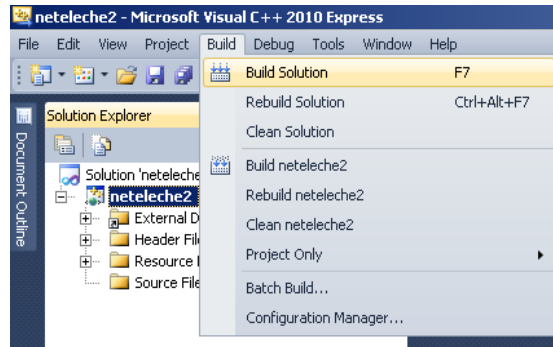
## 9. Delete one of the trex-\*.c files from the list of source files

The source files are located in the "Solution Explorer" pane of the Visual Studio Window. The file you need to delete will depend on whether you are creating a “Debug” or “release” version of the executable file. If you chose “Release”, single click on the file “trex-debugger-r4.c” and delete it from the source file list. If you chose “Debug”, single click on the file “trex-r4.c” and delete it from the list.

## 10. Build an executable.

Click on the “Build” menu and select “Build Solution” from the top of the list. This starts the build process. It may take a couple of minutes for the process to complete. The TREX executable file will be located within your project folder in the “Release” or “Debug” sub-folder (depending on what you chose for an active configuration. This file can also be copied to a place where you want to run TREX. Specifically, TREX can be run from the Windows command prompt (Start/Program Files/Accessories/Command Prompt).

*Note: while code is compiling, warning messages may appear depending on which version of Visual Studio you use. These warnings represent differences in how C programming language standards are implemented in different versions of Visual Studio and can be safely ignored.*



## 11. Set the working directory for program operation within Visual Studio

Right click on the project folder in the “Solution Explorer” pane of the Visual Studio Window and choose “Properties” from the context menu. Under “Configuration Properties” select “Debugging” and specify Working Directory and Command Arguments. Working Directory will contain directories for input and output files and Command Arguments will be the specified input file (as well as any desired simulation restart conditions).

