

Compilation Instruction for DelPhi

on Linux/Mac OSX (10.6 or up)/Windows

If there is any question, please go to:
<http://compbio.clemson.edu/forum/>
or e-mail to delphi@g.clemson.edu

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Before compilation:

Besides the source code, we provide executable files for Linux, Windows and Mac Versions of DelPhi. The source code and executable files can be downloaded from DelPhi website:
<http://compbio.clemson.edu/delphi.php>

Most of the users can use the executable files without compilation.

If the executable files cannot be executed on some users' systems, or some advanced DelPhi users need to modify the source code, please see the **DelPhi compilation** section below:

DelPhi compilation:

DelPhi C++ version:

Linux Version:

1. Updating gcc (optional):

On Linux systems, please check the GCC version. Users can use command:

```
gcc -v
```

to check the version. If the gcc version is lower than 4.4, please update it.

2. Install boost C++ library:

Boost C++ library can be installed in different ways on different Linux distributions. Here we provide one of the most general ways:

Download library from: http://www.boost.org/users/history/version_1_55_0.html

Unpack the [boost_1_55_0.tar.gz](#) and you will see folders such as boost, doc, libs, more, status... Copy the "boost" folder to /lib/include/

3. Compilation:

When C++ compiler and boost libraries are ready, you can compile the distribution of DelPhi with or without openMP. If you don't need openMP parallelized DelPhi, go to "Release" folder, then type:

```
make
```

Then press enter key. The executable file of DelPhi will be generated.

For compiling openMP parallelized DelPhi, first turn on the openMP flag on by editing the file `./src/interface/environment.h`. There is a line

```
///#define PARALLEL_OMP
```

Delete the `//////` and save the file. Go to the folder `"Release_omp"`, then type:

```
make
```

Then press enter key. The executable file for openMP parallelized DelPhi will be generated.

Windows Version:

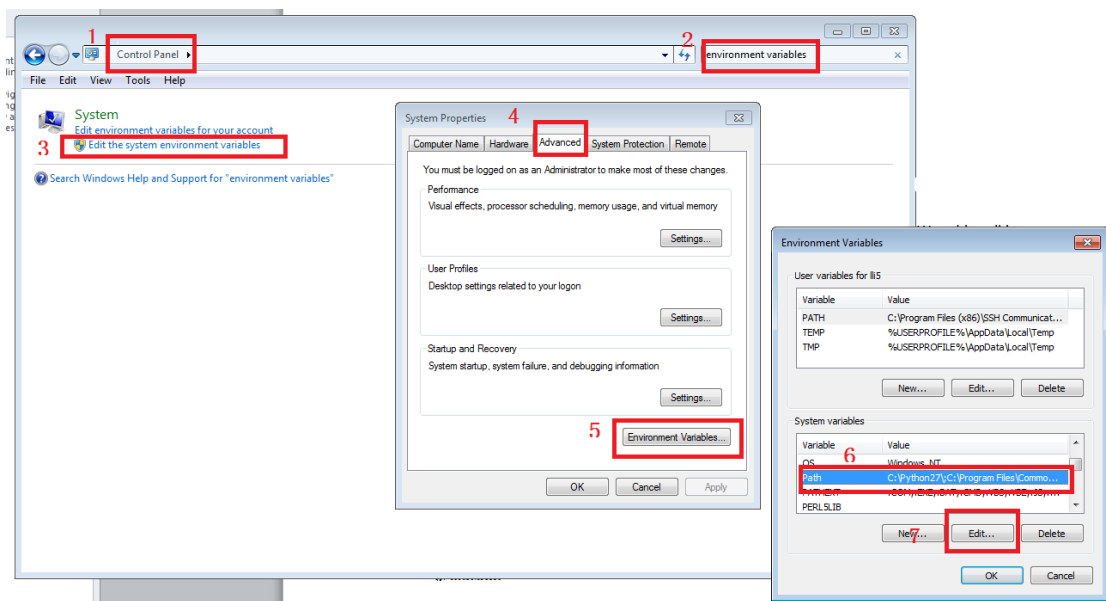
1. Installation of gcc:

There are several tools to install gcc compiler on Windows. Here we take MinGW as an example to install gcc compiler and compile DelPhi on Windows.

Go to MinGW's website (<http://www.mingw.org/>) to download the MinGW and install it on your computer. The default installation directory is `"C:\MinGW\"`.

2. Adding "C:\MinGW\bin" to the PATH environment variable.

Control Panel -> search "environment variables" -> click Edit the system environment variables -> click "Advanced" -> click "Environment Variables" -> select "Path" -> click "Edit" -> add `"C:\MinGW\bin"` to the PATH environment variable, use `","` to separate `"C:\MinGW\bin"` and other existing paths.



3. Download boost C++ library:

DelPhi compilation needs boost C++ library, which can be downloaded from:

http://sourceforge.net/projects/boost/files/boost/1.55.0/boost_1_55_0.zip/download

After download, unzip the boost_1_55_0.zip and you will see folders such as boost, doc, libs, more, status... Copy the "boost" folder to C:\MinGW\include

4. Compilation:

Open a command window, Go to the "delphicpp/Release" folder then type command:

```
mingw32-make.exe
```

The executable file will be generated after a few minutes.

Mac Version:

To compile DelPhi C++, you will need:

1. Xcode Command Line Tools
2. Homebrew (Optional)
3. GNU C++ Compiler (4.4 or up) with OpenMP supported.
4. Boost C++ Libraries (1.47 or up).

With XCode 4 or 5 you will need to download the command-line tools as an additional step. You will find the option to download the command-line tools in XCode's Preferences. On 10.9 Mavericks, you can get the command-line tools by simply typing

```
xcode-select --install
```

If you want to use homebrew to install gcc and boost library, make sure you have homebrew installed. If not, please refer to its website for installation: <http://brew.sh>

To install GNU C++ compiler on OSX, use Mac homebrew to install as shown below:

```
brew install gcc
```

Or alternatively, please refer to the HPC Mac OSX website: <http://hpc.sourceforge.net> and download the preferred version to install.

The GNU C++ compiler will be installed in /usr/local/bin folder and you may need to rename the symbolic g++-4.9 to g++ (this step is for homebrew installed gcc). And export the PATH in your ~/.bash_profile:

```
export PATH=/usr/local/bin:$PATH
```

To install Boost C++ Libraries on OSX, use Mac homebrew as shown below:

```
brew install boost
```

Or alternatively, please refer to the detailed installation instruction provided on the official boost C++ libraries website: http://www.boost.org/doc/libs/1_47_0/doc/html/quickbook/install.html. The Boost C++ libraries will be installed in /usr/local/include folder.

When C++ compiler and boost libraries are ready, you can compile the distribution of DelPhi with or without openMP. If you don't need openMP parallelized DelPhi, go to "Release" folder, then type:

```
make
```

Then press enter key. The executable file of DelPhi will be generated.

For compiling openMP parallelized DelPhi, first turn on the openMP flag on by editing the file ".\src/interface/environment.h". There is a line

```
//#define PARALLEL_OMP
```

Delete the "//" and save the file. Go to the folder "Release_omp", then type:

```
make
```

Then press enter key. The executable file for openMP parallelized DelPhi will be generated.

DelPhi Fortran version:

Linux Version:

1. Updating gcc (optional):

On Linux systems, please check the GCC version. Users can use command:

```
gcc -v
```

to check the version. If the gcc version is lower than 4.4.0, please update it.

2. Compilation:

Go to the directory which contains "src" folder and the "makefile" file and then type the command:

```
make
```

The executable file will be generated after a few minutes.

Windows Version:

1. Installation of gcc:

There are several tools to install gcc compiler on Windows. Here we take MinGW as an example to install gcc compiler and compile DelPhi on Windows.

Go to MinGW's website (<http://www.mingw.org/>) to download the MinGW and install it on your computer. The default installation directory is "C:\MinGW". Add "C:\MinGW\bin" to the PATH environment variable.

2. Compilation:

Open a command window, go to the directory which contains "src" folder and the "makefile" file, then type the command:

```
mingw32-make.exe
```

The executable file will be generated after a few minutes.

Mac Version:

Make sure that the gcc and gfortran compilers are installed on your system.

1. Updating gcc and gfortran (optional):

The compilation has been tested on osx 10.6 and 10.7, with gcc/gfortran 4.6 or higher version.

Make sure downloading the correct gcc version, users can download the gcc/gfortran from the link: <http://hpc.sourceforge.net/>

2. Compilation

Go to the directory which contains "src" folder and the "makefile" file, then type the command:

```
make
```

The executable file will be generated after a few minutes.