

Installing Photran with Eclipse (MinGW or Cygwin)

Photran is an integrated development environment (IDE) and refactoring tool for Fortran. Photran is a component of Eclipse, an open-source development platform for building, deploying and managing software. Together, they provide a free interface for creating and compiling Fortran projects.

This document provides instructions for installing Photran and Eclipse on the Microsoft Windows operating system.

The sections of this document include:

- [Installing Java](#)
- [Installing the compiler](#)
- [Updating the “PATH” system variable](#)
- [Installing Photran and Eclipse](#)
- [Running Eclipse for the first time](#)
- [Updating Photran and Eclipse](#)

Notes:

- These steps were performed on a 64-bit machine, although 32-bit versions of the software and compiler were used with the intent to compile a 32-bit binary of standalone MESH.
- An internet connection is required to download and install the software and compiler.
- An account with administrative privileges is required to install the software and compiler.

Installing Java

Java is required to install Eclipse.

- Run the ‘Windows Offline (32-bit)’ installation file:
 - Java Downloads for All Operating Systems: <http://java.com/en/download/manual.jsp>
 - The installation file has a “*.com” extension, but can still be run from Internet Explorer.
 - “jre-7u51-windows-i586.com” (32-bit, approx. 28MB) was the name of the installation file for ‘Java Version 7, Update 51’ at the time of writing.

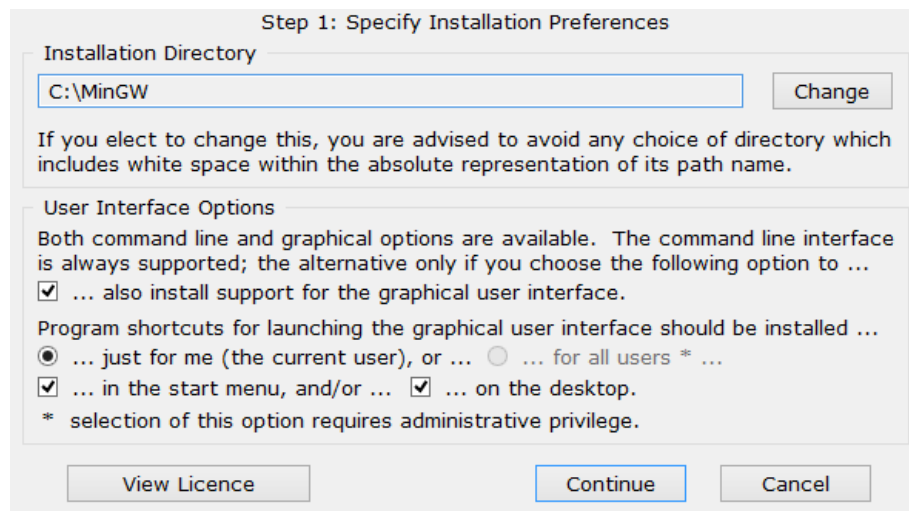
Installing the compiler

The GNU gfortran compiler is used to compile Fortran projects. Two distributions of the compiler exist: MinGW and Cygwin; only ONE of the two distributions has to be installed.

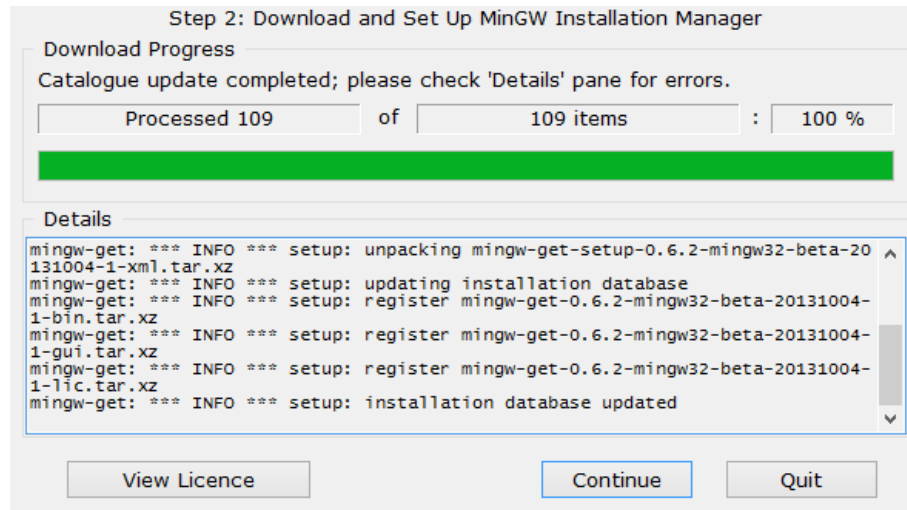
- **Do not install MinGW if you intend to install Cygwin. Likewise, do not install Cygwin if you intend to install MinGW.**

To install MinGW:

- Run the ‘MinGW Installation Manager’:
 - MinGW – Minimalist GNU for Windows:
<http://sourceforge.net/projects/mingw/files/Installer/>
 - “mingw-get-setup.exe” (32-bit, less than 1MB) was the name of the installation file for ‘mingw-get version 0.6.2-beta-20131004-1’ at the time of writing.
- Click “**Install**”.
- Leave “C:\MinGW” as the “**Installation Directory**”.
- Click “**Continue**”.

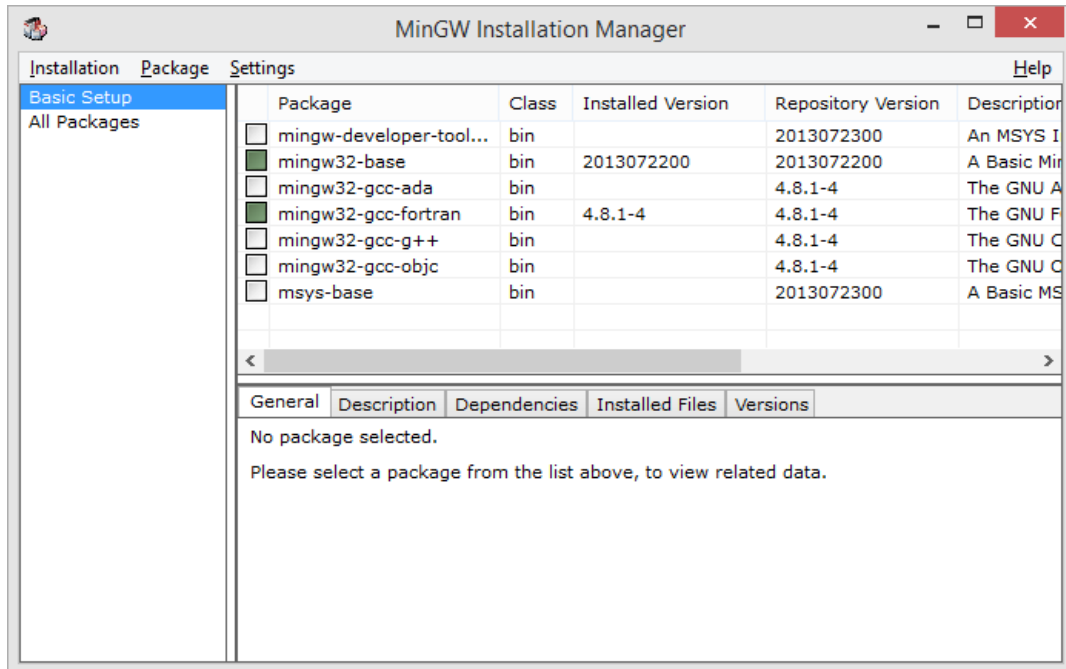


- The installation will download a number of files. Click “**Continue**” after the process has completed.

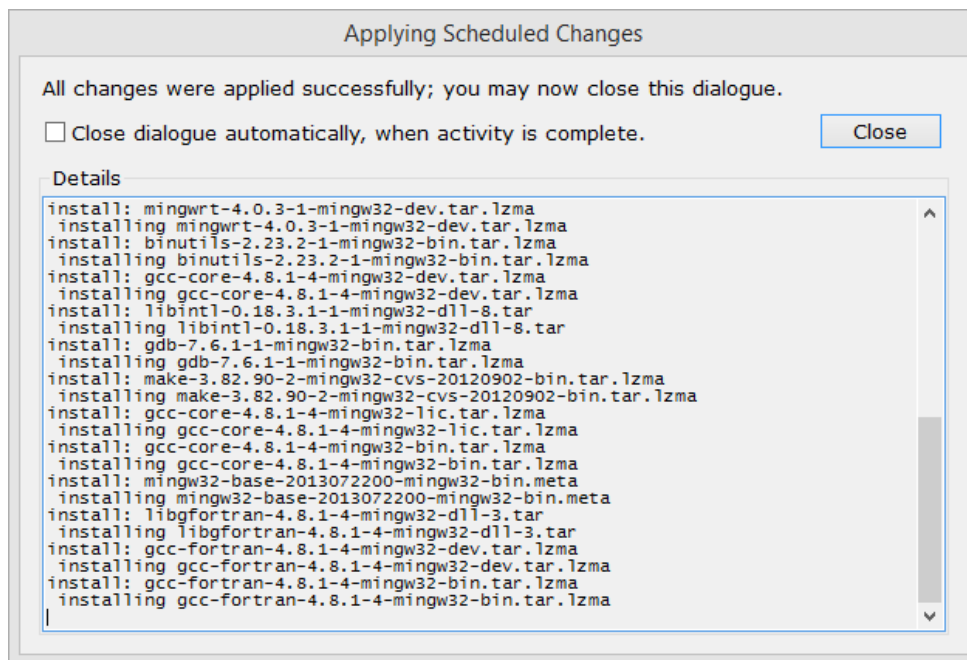
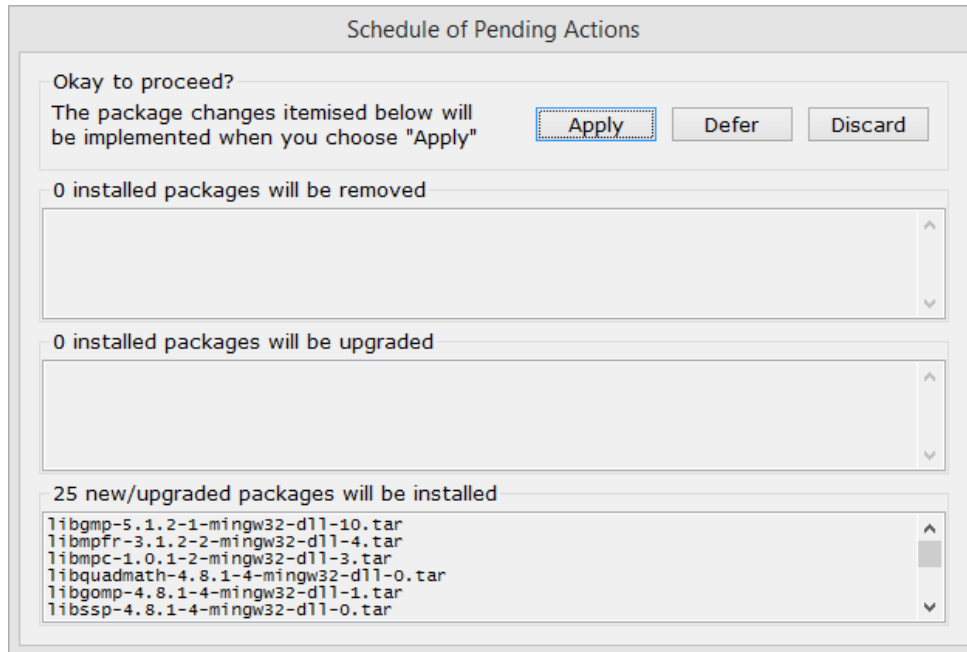


- The setup program will launch the “**MinGW Installation Manager**”.
 - Alternatively, launch the program from the Desktop or Start menu.

- Select “**Basic Setup**” in the package list.
- Mark “mingw32-base” and “mingw32-fortran” for installation.
 - Click the box in the column next to the package name.
 - Click “**Mark for Installation**”.
- Click “**Installation**” in the window menu.
- Click “**Apply Changes**”.



- Click “**Apply**”. The manager will download and extract files to the MinGW root directory.
 - This process will take a few moments.

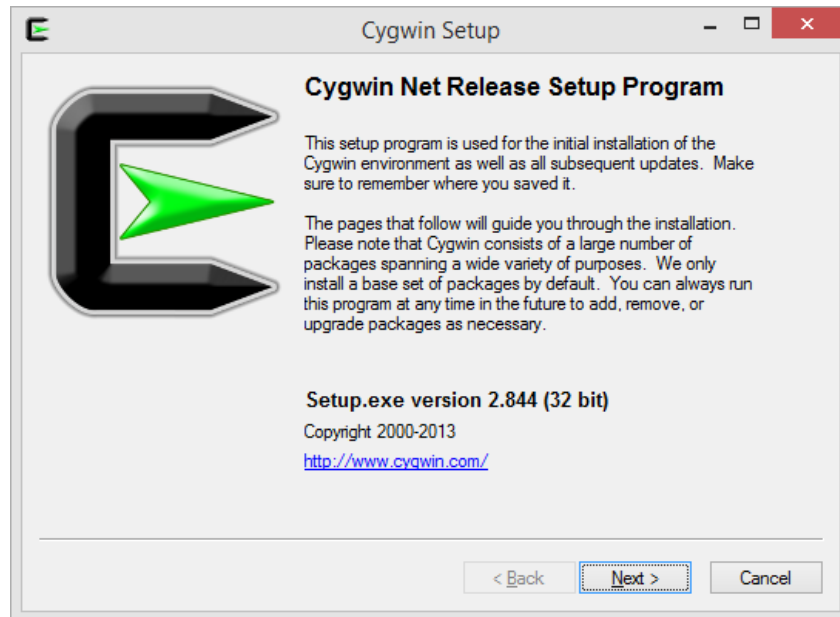


- Click “**Close**” after the process has completed.
- Click “**Installation**” in the window menu.
- Click “**Quit**” to close the installation manager.

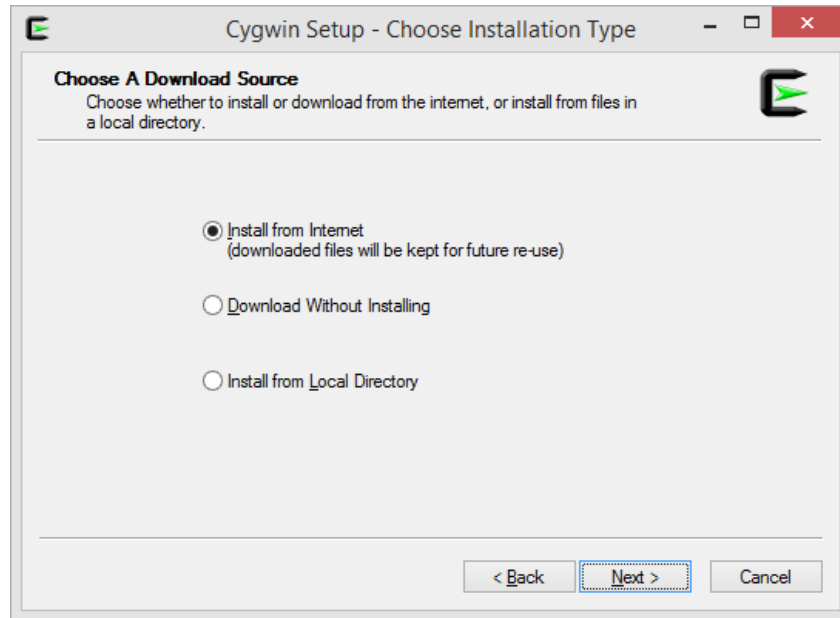
Do not install Cygwin if MinGW was just installed.

To install Cygwin:

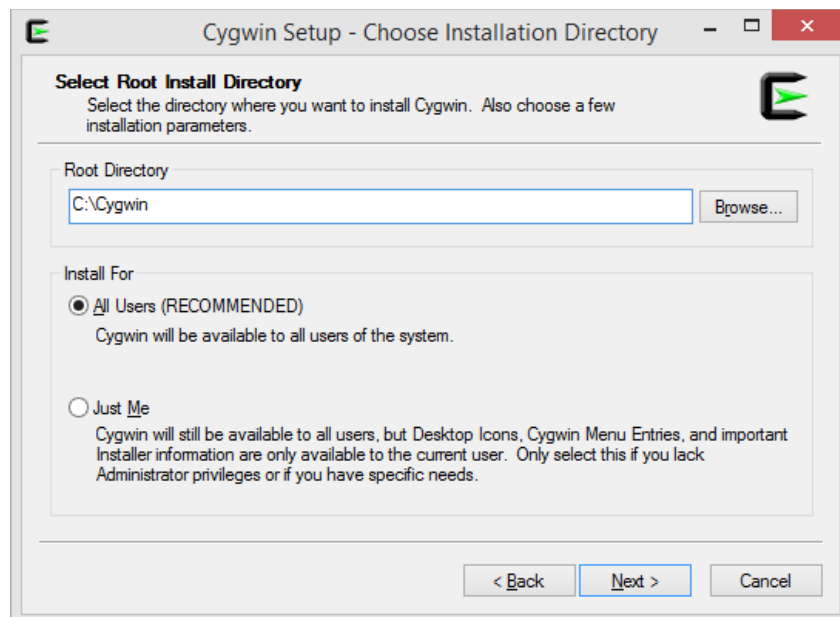
- Run ‘Cygwin Net Release Setup Program’:
 - Installing and Updating Cygwin Packages: <http://cygwin.com/install.html>
 - “setup-x86.exe” (32-bit, less than 1MB) was the name of the installation file for ‘Setup.exe version 2.844 (32 bit)’ at the time of writing.
- Click “**Next**”.



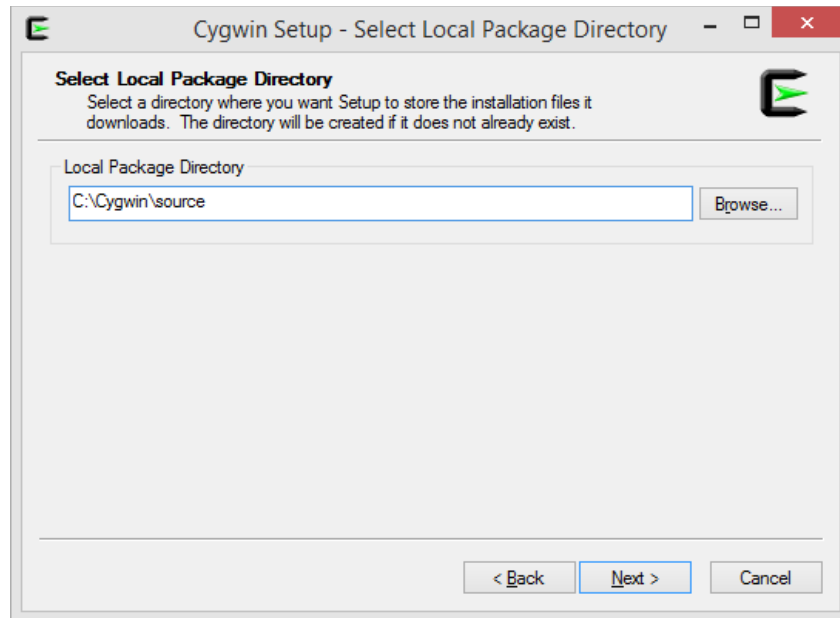
- Select “**Install from Internet**”.
- Click “**Next**”.



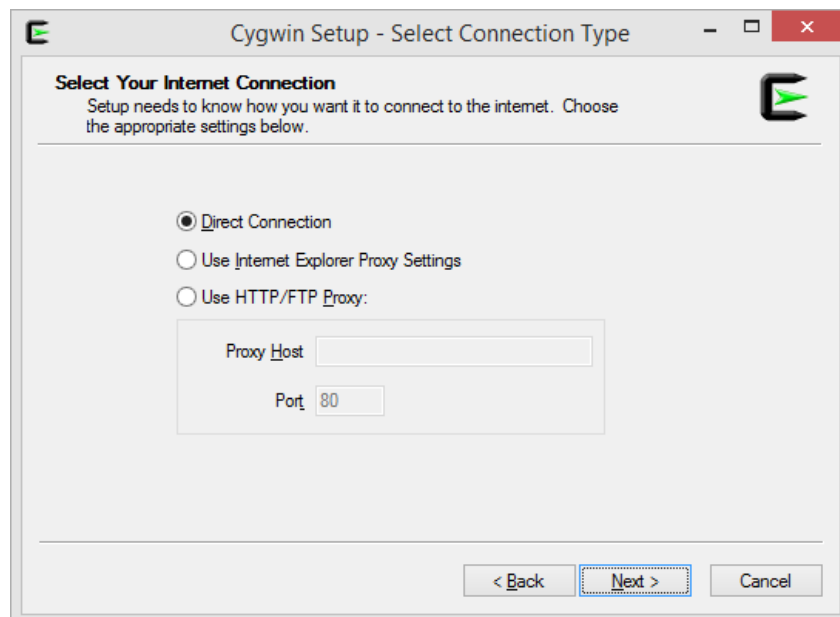
- Leave “C:\Cygwin” as the “**Root Directory**”.
- Click “**Next**”.



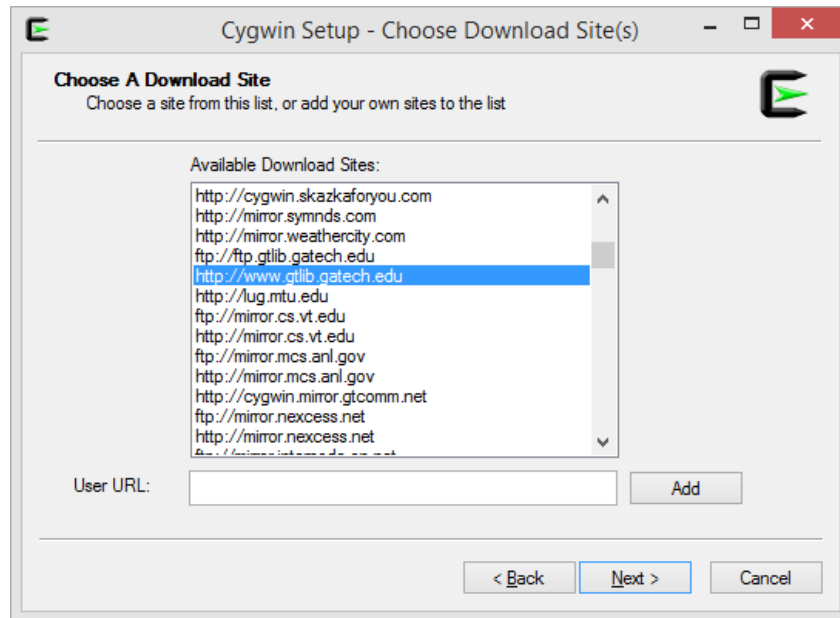
- The “**Local Package Directory**” is where temporary installation files are stored. By default, the installation will create a subdirectory within the directory containing the installation file.
- Click “**Next**”.



- Select “**Direct Connection**”.
 - Alternatively, select “**Use HTTP/FTP Proxy**” and enter additional information if required.
- Click “**Next**”.

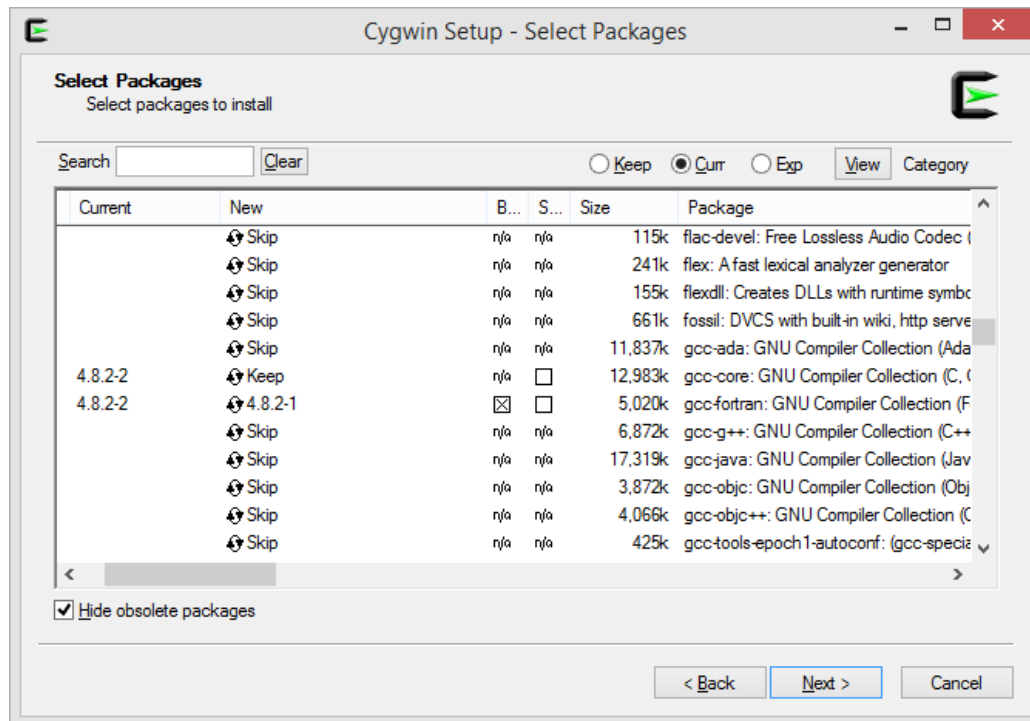


- Select any one of the download sites from the “**Available Download Sites**” list.
 - The list of sites changes from time to time; any one of the sites suggested by the installation can be used.
- Click “**Next**”.



- The installation will download a number of files.

- The installation window will maximize after downloading has completed. A number of Cygwin packages are available to install. Expand the “**Devel**” branch.
- Mark the following packages for installation: “gcc-fortran”, “gbd” and “make”.
 - Additional packages may have been selected by the installation.
 - Click on the line where it says ‘Skip’ to mark the package for installation; once marked, the line will show a version number instead of ‘Skip’.
- Click “**Next**”.

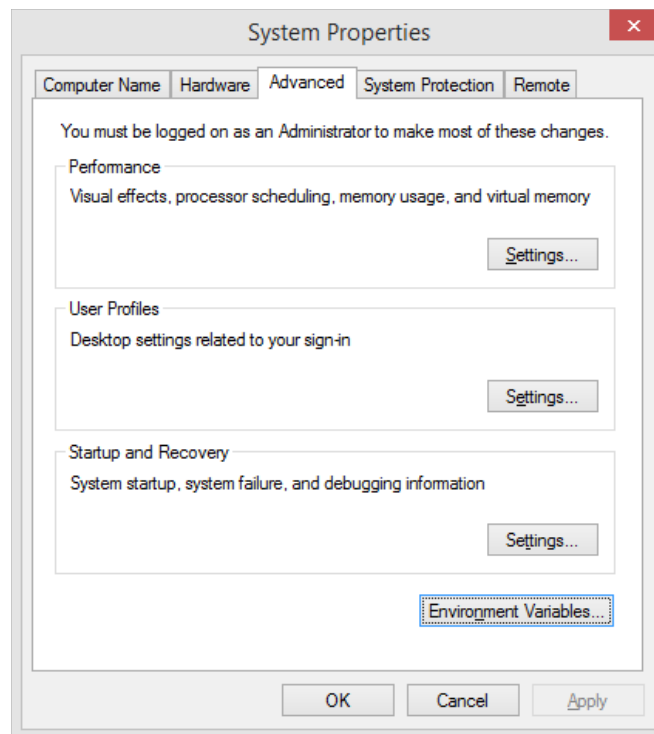


- The installation will download and extract packages to the Cygwin root directory.
 - This process will take a few moments.
- Click “**Finish**”.

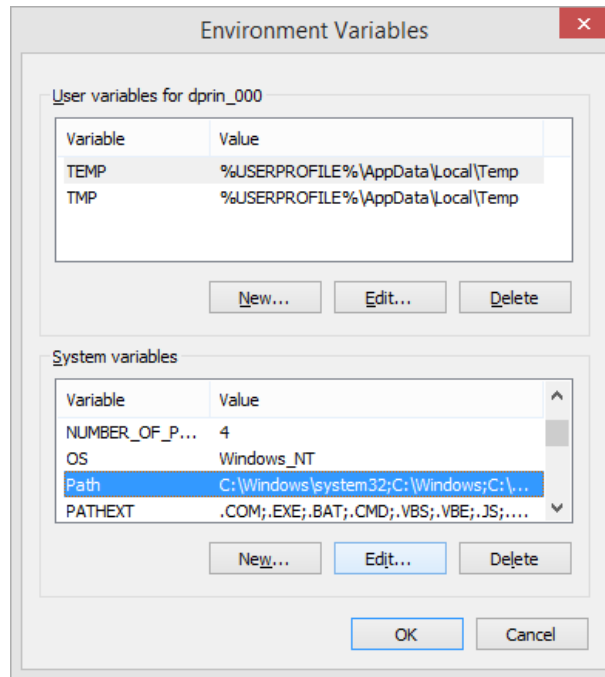
Updating the “PATH” system variable

Once installed, the root directory of either MinGW or Cygwin must be added to the “PATH” system variable. This variable permits Eclipse to access the compiler and other components included in the distribution.

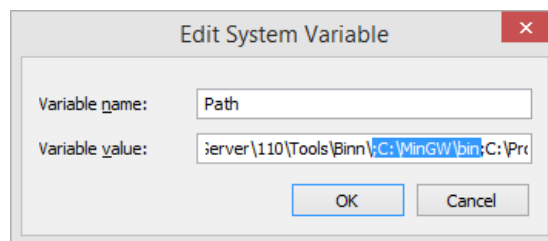
- Search and click “Edit the system environment variables” in the Start menu, or:
 - From Windows Explorer, open “**Control Panel**”.
 - Click “**System and Security**” or “**Performance and Maintenance**”.
 - Click “**System**”.
 - Click “**Advanced system settings**” to open the “**System Properties**” window.
- Click the “**Advanced**” tab.
- Click “**Environment Variables...**”.



- Select the “Path” variable in the “**System variables**” group
- Click “**Edit...**”.



- Append the root directory of the appropriate distribution to the “**Variable value**”. A semicolon is used to separate individual directories.
 - For MinGW:
 - For Cygwin:
- Click “**OK**” to save and apply the change in each window.



Installing Photran and Eclipse

Once Java and either MinGW or Cygwin have been installed, Eclipse can be installed to the system. Eclipse is distributed as an archive.

- Download ‘Eclipse for Parallel Application Developers’:
 - Eclipse for Parallel Application Developers:
<http://eclipse.org/downloads/packages/eclipse-parallel-application-developers/keplersr1>
 - This distribution of Eclipse includes Photran. Alternatively, Photran can also be installed to an existing configuration of Eclipse. See the ‘Photran 8.0 Installation Guide’ for more information: <http://wiki.eclipse.org/PTP/photran/documentation/photran8installation>.
 - “eclipse-parallel-kepler-SR1-win32.zip” (32-bit, approx.. 212MB) was used at the time of writing.
- Extract the archive to a directory (e.g., “C:\Eclipse”).

Running Eclipse for the first time

Eclipse does not automatically add shortcuts to your Start menu, Desktop or Taskbar. You may wish to create a shortcut to the executable, which can be copied to the Desktop for future reference.

- Right-click on “eclipse.exe”.
- Click “**Create shortcut**”.

To run Eclipse:

- Double-click “eclipse.exe”.

While the Eclipse splash screen is displayed, the “**Workspace Launcher**” window will open. The workspace acts as a centralized location where future projects can be saved. By default, a subdirectory in the User directory is recommended.

- Check “**Use this as the default and do not ask again**”.

Eclipse will load.

- Once the Eclipse IDE has opened, the “**Welcome**” page is shown. Click the ‘X’ in the “**Welcome**” tab to close the page.
- The default ‘C/C++’ perspective will load.
 - A perspective is a pre-assembled arrangement of common windows and panes that are typically suited to a particular development environment.
- Click “**Window**” in the window menu.
- Click “**Open Perspective**”.
- Click “**Other...**”. A new window will open.
- Select “**Fortran**” in the list.
- Click “**OK**”. The Fortran perspective will load.

Updating Photran and Eclipse

The debug option was temporarily removed in Photran 8, and may have been omitted in the online installation distribution. Update the software to re-enable the debug option.

- Click “**Help**” in the window menu.
- Click “**Check for Updates**”.
 - Photran 8.0.4.201302122310 was used at the time of writing.

