

## How to compile and execute PHITS using gfortran

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### 1. Download and install the latest gfortran

- ✓ Access to <https://sourceforge.net/projects/mingw-w64/files/?source=navbar>
- ✓ Click “Looking for the latest version? Download mingw-w64-install.exe”
- ✓ Run the downloaded installer, select “x86\_64” or “i686” for 64-bit or 32 bit PC, respectively, as “Architecture”. You do not have to change other parameters during the installation process.

### 2. Compile PHITS using gfortran

- ✓ Revise “makefile” in “phits/src” folder to set “ENVFLAGS = WinGfort”. You cannot activate neither OpenMP nor MPI.
- ✓ Open a command prompt by clicking “mingw-w64.bat” in the gfortran install folder
- ✓ move to “phits/src” folder, and type “mingw32-make” to compile PHITS

### 3. Execute PHITS compiled by gfortran

- ✓ Copy “phits\_WinGfort.exe” to “phits/bin”
- ✓ Open “phits.bat” in “phits/bin”, and add “set PATH=C:/Program Files/mingw-64/...” written in the 2<sup>nd</sup> line of “mingw-w64.bat”, and set “PHITS\_EXE” to the PHITS executable file compiled by gfortran, i.e. “phits\_WinGfort.exe”.
- ✓ Run PHITS via Windows explorer using “sendto -> phits” command.
- ✓ After finishing the PHITS calculation, you may find some warnings such as “Note: The following floating-point exceptions are signaling: IEEE\_DENORMAL”. *You can ignore those warnings.*