

# How to use MS-MPI with Fortran projects on Windows

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## Preface

This document explains how to quickly set up a Fortran MPI project using MS-MPI, Visual Studio 2008 and Intel Visual Fortran compiler.

## Project preparation

1. Start Visual Studio 2008.
2. Open the New Project wizard: *File -> New -> Project...*
3. Select *Intel(R) Visual Fortran -> Console Application -> Empty Project*
  - a. Give your project a name and chose an appropriate location to store it
4. Add your existing source files if you have any.
5. Right click on the project in Solution Explorer and select *Properties...*
6. Navigate to *Debugging* in the left pane and set Action properties as follows:
  - a. *Command: mpiexec.exe*
  - b. *Command Arguments: -n 4 \$(TargetPath)*
7. Navigate to *Linker -> General* and set the following properties:
  - a. *Additional Library Directories: \$(MSMPI\_LIB32)*
8. Navigate to *Linker -> Input* and set the following properties:
  - a. *Additional Dependencies: msmpi.lib mspifec.lib*
9. You must also compile the MS-MPI module definitions as part of your project. Right click on your project's "Source Files" folder and select *Add -> Existing item...*:
  - a. Navigate to "C:\Program Files\Microsoft HPC Pack 2008 R2\Inc"
  - b. Select "mpi.f90" and click on *Add*.

## Running the project

Start your project with *Debug -> Start Without Debugging* or simply press Ctrl+F5. This will launch your MPI application with 4 processes. If you'd like to change the number of MPI processes, repeat step **6.b.** from the previous section and change the numeric value after **-n**.

## Debugging

Unfortunately no supported debugging method is available in Visual Studio 2008. If you try to start the project with debugging you would get the error that mpiexec.exe is 64-bit and VS2008 cannot debug 64-bit executable files.