

MathCode F90 for Windows: Installation instructions and administration

*MathCode F90 Version 1.2.2,
May 2009.*

1 Important to remember

When you start MathCode:

Remember to **close all Mathematica sessions** before using MathCode.

Remember to use always the **MathCode F90 button** available in your Start Menu. This button starts a batch file which sets up correct environment for your F90 compiler, and then starts Mathematica.

2 Installation step by step

Please follow these steps for successful MathCode F90 installation.

2.1 Required Fortran Compiler

MathCode F90 generates Fortran90 code. In order to compile the Fortran90 code into executable you need a Fortran90 compiler. Currently MathCode F90 supports automatic compilation with free compiler **g95**.

You need to install the CygWin tool (www.cygwin.com) with at least these 3 packages: gcc, g++, make.

Then you have to install the **g95** tool for CygWin (www.g95.org).

Make sure that the command **g95** is directly available from your CygWin (bash) command line.

These Fortran90 compilers: **Digital Visual Fortran 6.0** and **Intel Visual Fortran 8.0-9.1** are supported by request. Please contact support@mathcore.com if you are going to use this compiler.

1.2 Check your Mathematica and Windows version

- Mathematica 4.0, 4.1, 4.2, 5.0, 5.1, 5.2,6.0 are supported.
- Windows 95, 98, NT, ME, 2000, XP Pro and XP Home are supported.

During the installation you will need to specify the location of *Mathematica*. You should select the *Mathematica* directory manually. This should be the directory containing `MathKernel.exe`.

1.3 Determine your \$MachineID

The \$Machine ID is needed for registration. It is the identity of the machine you want a license for. To find out your \$Machine ID, evaluate the following in *Mathematica*:

```
$MachineID
```

1.4 Obtain license key for purchased license

You should register to get a key file that will enable you to use the software. If you purchased the software you can register it online at the following URL:

```
http://www.mathcore.com/register.html
```

Please do not use this page for demo(trial) licenses !

When you start installaion of MathCode you can click the button **Register** to register your software.

Within two business days you should receive an e-mail with the key file attached. Save the attachment to a file. Remember where you saved it; you will need to select this location during MathCode F90 installation.

1.5 Obtaining license key for demo(trial) license

You apply for demo(trial) license using online demo request form at

<http://www.mathcore.com/products/mathcode/>
and click on **Download Trial version**

When you start installaion of MathCode you should not click the **Register** button to register

your software.

Within two business days you should receive an e-mail with the key file attached. Save the attachment to a file. Remember where you saved it; you will need to select this location during MathCode F90 installation.

1.6 Check for the latest release

Since MathCode relies on many other software products that often change their versions and properties please **always download the latest version** from the address you get from us together with your key file; currently it is

<http://www.mathcore.com/products/mathcode/download/downloadframe.shtml>

1.7 Start setup

Run the program you downloaded or found on a CD and follow the on-screen instructions.

1.8 (Advanced:) Alternative compilers

If you are going to use any Intel Fortran compiler please be aware that matching version of Microsoft Visual C++ must be installed before Fortran compiler installation. This C++ version installation must be mentioned in the batch file which sets environment for this Fortran compiler in the command line.

When asked in the MathCode F90 setup dialog whether to set g95 or do not set any compiler, select "do not set any compiler".

In the next dialog select a directory where your BAT file is placed. For Intel Fortran it is typically

"c:\Program Files\Intel\Compiler\Fortran\9.1\IA32\Bin\"

Batch file is typically **ifortvars.bat**

After installation the last line of MathCodeConfig.m should be changed to

DefaultCompiler["Fortran90"->"ifort808"]

If you use other compilers you should set:

IFort 9.1 + VC2005 ifort808

IFort 9.0 + VC2003 ifort80

IFort 8.0 + VC2003 ifort80

DF 6.0 + VC6.0 df60

The MathCode F90 runtime library (sheep.lib) is compiled when the first MathCode example runs.

1.9 Always use the MathCode button in Start Menu

Remember to always use the **MathCode F90 button** available in your Start Menu. This button starts a batch file which sets up correct environment for your Fortran 90 compiler, and then starts Mathematica.

If you start Mathematica without using this button, you will typically get **errors** during

compilation phase since the Fortran 90 compiler will not be found.

2 License management

2.1 What are licenses?

For each machine you wish to run *MathCode* on, you should obtain one key file containing the license. *MathCode* uses the same MathID as *Mathematica* does to distinguish between machines. A key file is a text file containing a mix of letters and digits. Key files should be put into the `Licensing` subdirectory of the *MathCode* installation. The names of the key files do not matter.

2.1.1 Adding a license

When you register for a new *MathCode* license, you will receive a file that should be put in the `Licensing` subdirectory of your *MathCode* installation.

2.1.2 The license index file

MathCode will use an index file `index.m` in the `Licensing` directory to speed up license lookups. If a new license is added, `index.m` is rebuilt automatically as needed.

If you experience problems with the licensing, you can remove the `index.m` file, forcing *MathCode* to rebuild it on the next license check.

For a site installation, users might not have write permissions to the `Licensing` subdirectory. In this case, the system administrator should rebuild the index file by evaluating the following in *Mathematica*:

```
Needs["MathCode"];  
RebuildIndex[ToFileName[{$MCRoot, "Licensing"}]];
```

If `index.m` didn't exist, you will see an error message about opening it. This error message can safely be ignored.