First Steps With Visual FlagShip For MS-Windows

1. Requirements

This instruction applies for FlagShip port using **Microsoft MS-VC6++** compiler or **Visual Studio 6**. The minimal requirements are:

- Microsoft Windows 32bit or 64bit operating system like NT4, 2000, 2003, 2008, XP, Vista or Windows-7
- 256 MB RAM (512 MB or more is recommended for performance)
- 60 MB free hard disk space
- Installed Microsoft MS-VC6++ compiler (any edition) or Visual Studio 6. It is required for compiling .c sources and to link.

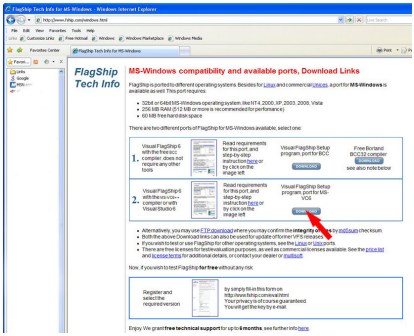
Note: neither MS-VC7 (aka .NET or C#), nor MS-VC5 or MS-VC8, nor other Visual Studios are compatible to MS-VC6++ (and to each other) and hence cannot be used with this port.

You may check the availability and the correct version of MS-VC6 compiler in CMD window (Start → Run → cmd) by invoking

```
C:\ > CL
Optimizing Microsoft (R) 32-Bit C/C++-Compiler, Version
12.00.8168, for x86
```

If you don't own it, or when another CL version is displayed, use FlagShip port for the free BCC compiler instead, see details in http://www.fship.com/-windows.html

2. Download FlagShip



In your preferred Web-Browser, open http://www.fship.com/windows.html and download the Visual FlagShip setup media for MS-VC6 and save it to any folder of your choice.

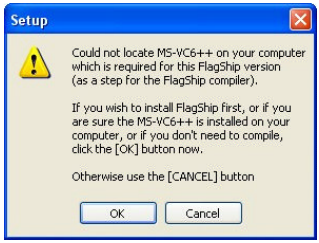
Alternatively, you may download FlagShip by FTP (link on the above page), where you may cross-check the authenticity and correct download checksum by *md5sum* available on the FTP server as well.

3. Install FlagShip

In the Windows Explorer, double click on the downloaded file ***FlagShip(vers)_msvc6_Setup.exe*** , or execute it at CMD prompt. On MS-Windows Vista, you will be prompted for Administrator password, otherwise use right mouse click. The whole installation takes approx. 3 minutes.

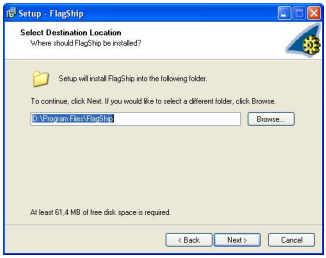
This FlagShip setup wizard will guide you thru the installation. Click on “Next” to start, or “Cancel” to abort the installation.

Your computer can be off-line, since the install wizard does **not** pass any data to multisoft nor to anybody else.

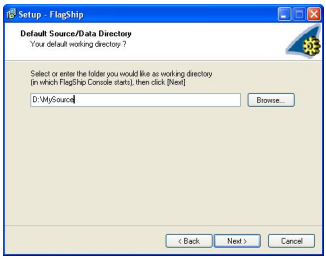


Setup now checks the availability of MS-VC6++ compiler, see (1) above, and prompts you if not found.

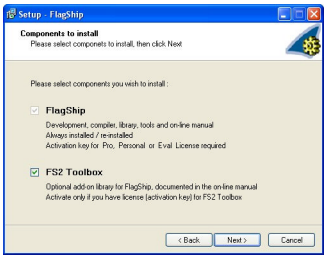
The License Agreement is displayed next. Reed it carefully and when accepted, click “I accept the agreement” and then the “Next” button.



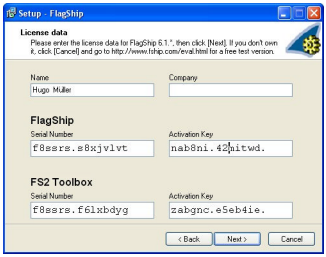
You may install FlagShip in any directory of your choice. The default is system folder “\Program Files\FlagShip7” on your Windows hard disk drive (recommended). All FlagShip binaries, libraries, tools and examples will be stored in this folder and its sub-directories. There are no interferences with other FlagShip versions (if such are available on your computer).



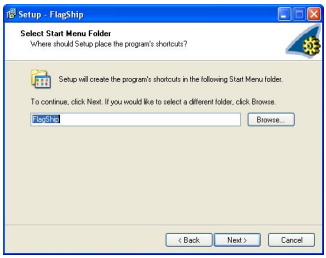
Next, you may specify the directory where your source files resides or will reside. The default setting is your home folder, but it is recommended to change it according to your needs, e.g. D:\Sources\Test etc. Note: the “FlagShip7 Console” environment (see chapter 6) will start in the specified folder.



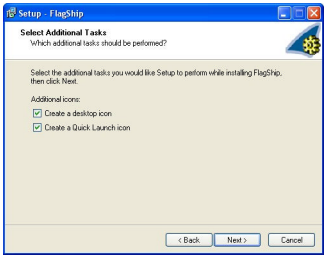
If you have purchased activation key for the add-on library "*FS2 Toolbox*", activate the corresponding check box. If you don't have it, let it unchecked. This library contains many additional functions (windowing, serial communication, statistics etc). All functions are call-compatible to Clipper's NT2/CA Toolbox functions. See further details in the online manual sect FS2



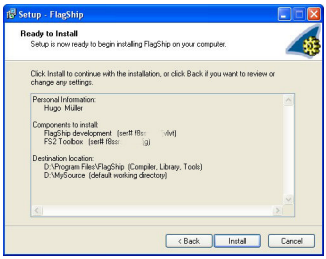
Now, enter the licensee data, i.e. your full name and optionally your company. Then enter the serial number and activation key for your FlagShip (in lower or upper case), which you got with the Activation Document; you also may use copy & paste. If you own FS2 Toolbox, enter also those s/n and key. If error occurs, check for typos. Note: data on this screenshot are for demonstration purpose only.



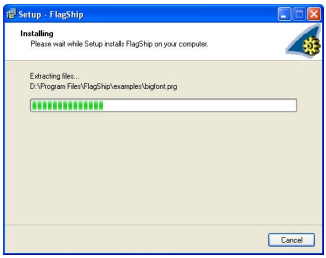
The Setup wizard creates common entry in the folder Start → All Programs. The default is "FlagShip", you may change it upon request.



Let's create desktop icons for the on-line manual, and developer's console environment



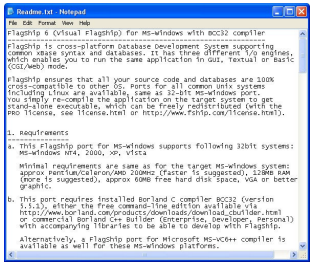
This screen let's you check the entered data. Press "Next" if everything is o.k., otherwise the "Back" button let's you to correct it.



Now, the wizard installs FlagShip in the selected directory (usually in C:\Program Files\FlagShip7). It additionally creates batch file *FlagShip_console.bat* in the installation directory. This batch file is assigned to the "FlagShip7 MSVC Console" icon on your desktop.

The FlagShip installation is finished **successfully** now.

We suggest to read the instruction in the Readme.txt file.



Once finishing tests with the free test/evaluation version, you may purchase the licensed FlagShip version, see chapter 5 below. To install it, simply repeat this step (3) anew by entering your new license data, your preference remains unchanged. The same is valid when you update to newer version.

4. Uninstalling FlagShip

You may completely remove the FlagShip installation either by selecting

Start → All Programs → FlagShip7 → Uninstall

or by

Start → Control Panel → Add or Remove Programs → FlagShip7

5. License Types, Support

There are three different license types available, see additional details and prices on http://www.fship.com/price.html :

- The free **Test/Evaluation license** is fully functional, and lets you test FlagShip with your applications without any risk. The only limitation is the evaluation period of 30 days and the requirement of using the created executables on the same computer where FlagShip is installed. On the registration page http://www.fship.com/eval.html you may select FlagShip and FS2 Toolbox for your used environment. Once satisfied with testing, purchase the Personal or Pro license.

- The **Personal** FlagShip (and FS2 Tools) license is intended as a low cost Starter Kit for personal, company internal/in-house and software developer use, as well as the presentation of applications. Its only limitation is the requirement of using the created executables on the same computer where FlagShip is installed, it allows access to the same shared database by two different users (or processes) simultaneously. You may not pass/sell the created applications (executables) to third parties.

- The FlagShip (and FS2 Tools) **Pro license** does not have any limitation. It is intended as the regular license kit for software developers who will resell their executables, and for large in-house systems, accessed simultaneously by any number of users. You also may pass/sell/distribute the by FlagShip created applications (executables, .EXE files) to anybody else.

There are generally no run-time fees, nor hidden cost. The development package is licensed to you/your company and may not be passed to any third party, but the .exe files created by the Pro license may freely be sold or passed to anybody. Refer to the License Agreement http://www.fship.com/license.html for full details.

Multisoft (or its distributor) grants **free technical support** for up to **6 months** after purchasing the package, see details on www.fship.com/support.html The common support e-mail address is support@multisoft.de

6. Using FlagShip

The FlagShip development package contains full compiler, libraries, tools and examples. All are located per default in the C:\Program Files\FlagShip folder and its sub-directories. In addition to, the Setup wizard (3) creates development environment using batch file named FlagShip_console.bat located in the Windows system directory and assigned to the "*FlagShip MSVC Console*" icon on your desktop.

As with any compiler, the application program is based on *source file*, which is usual text file (with .PRG extension) created by any editor, e.g. Notepad, UltraEdit, JEdit and similar program editors. Do not use MS-Word or similar text processing software, since it often adds special formatting code into the text, which may create you headaches later.

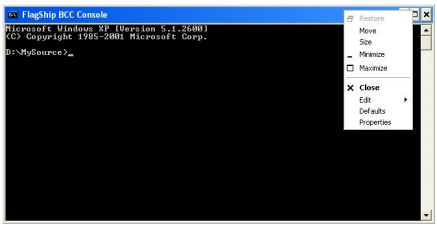
If you are familiar with interpreters like dBase, Foxbase or FoxPro, the difference is that FlagShip compiles the .prg files into native executable instead of interpreting the source, hence you don't need any run-time modules nor need to distribute your sources.

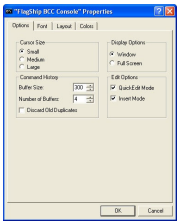
From the same source, FlagShip will create either GUI or textual oriented or basic i/o application. We will learn here in short all of them.

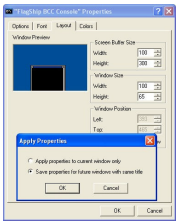
6.1 Invoke the development environment

Double click the "*FlagShip7 MSVC Console*" icon on the desktop. It opens CMD window with locally set environment variables and paths, required for compiling and debugging the application. This icon and the underlayed batch file is created by the Setup wizard according to your preferences.

Hint: you may adapt the window properties by a right click on the blue top bar. In the "Option" tab activate Quick Edit Mode checkbox (for copy & paste), and specify required screen and buffer size in the "Layout" tab, save and select there "Save for future use..."





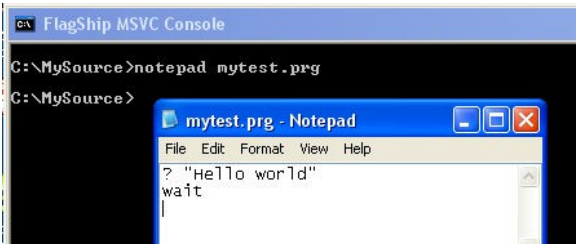


6.2 Create your first program

Invoke your editor, e.g. "*notepad mytest.prg*", enter there

```
? "Hello world"
wait
```

and save it.



6.3 Compile your program

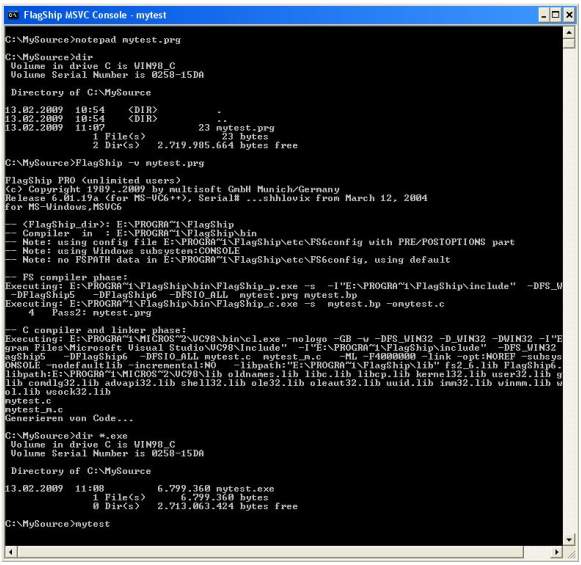
Enter

FlagShip mytest.prg

or

FlagShip –v mytest.prg

This simple command will first compile the .prg file to .c, then creates object file .obj and invokes the linker to link it with the library into final, native executable. In our case, the executable is named *mytest .exe* - you however may specify another name by the –o option, as described in the manual section FSC.

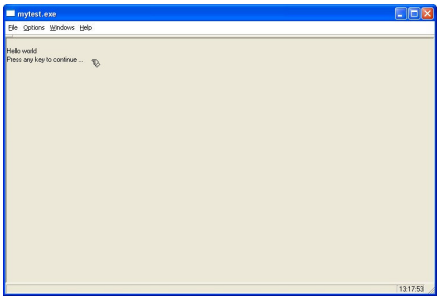


6.4 Execute your first program

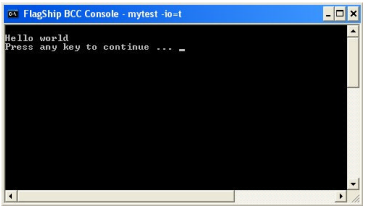
Now, invoke your application by

mytest

or by double click on the file *mytest.exe* in Windows explorer. It displays the given output text and then waits for Enter key to terminate. With an Eval version, the Test notice displays first.



Instead of running it in *GUI mode*, you may force the execution in *Textual mode* (known e.g. from Clipper or dBase) by



mytest –io=t

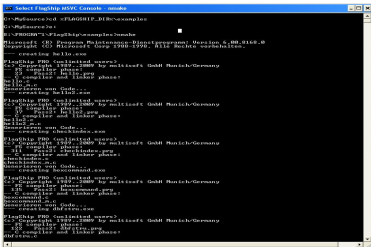
or in the simplified *Basic i/o mode* by

mytest –io=b

see details in manual sections LNG.1.2 and LNG.9.7. These switches may be specified also directly at the compiling stage, refer to manual sect. FSC.1.3.

6.5 Compile and execute supplied examples

More interesting programs are available in the \examples directory located in the main FlagShip folder. Invoke

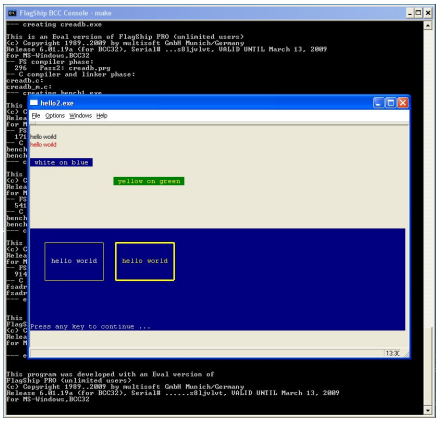


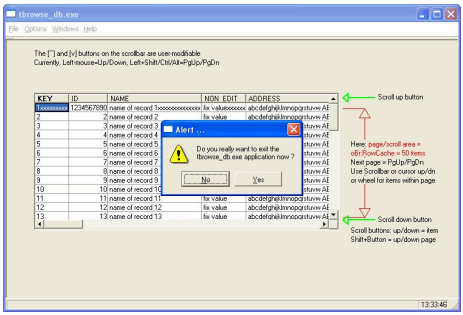
cd %FLAGSHIP_DIR%\examples

to select this directory, and then start the Microsoft Make utility

nmake

to compile and execute all files there, by using the default template named *makefile* (described in the manual section FSC.2*)*. You will get e.g.





where the above also shows a prompt when aborting the execution by click on the [X] button at top right.

To run the same applications in textual instead of GUI mode, invoke

nmake terminal

You of course may compile and/or execute each program separately, according to 6.3 and 6.4 above, the instruction is also given in the header of each source file. When you wish to modify some of these examples, best to copy the source to your working directory first.

Note: on Windows Vista or Windows-7 with active UAC (user account control), or with restricted user rights on Windows XP, you will not be able to create the output (.obj and .exe files) in the system directory \Program Files* without administrator rights; the compiler or make reports error "Could not open xxx.exe". In such a case, copy the examples to your working directory

```
cd %FSWORKDIR%
mkdir examples
cd examples
xcopy /S %FLAGSHIP_DIR%\examples
```

and run the "`nmake`" and "`nmake terminal`" in this working directory.

6.6 Debugging and testing

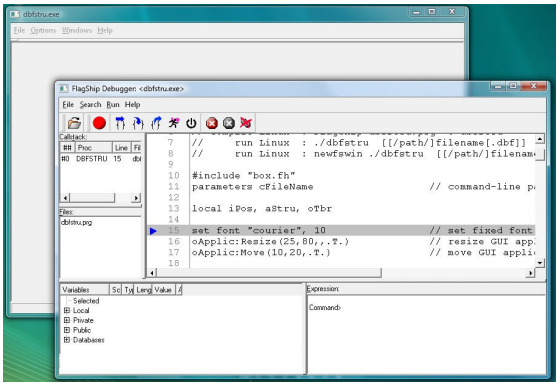
Nearly none of newly developed application is free of typos, syntax and logical errors. Fortunately, most of the problems are detected already at compile and link stage (see manual section FSC.1.8). When using prototyping of variables and the –w? compiler switch (see manual LNG.2.6.6 and FSC.1.3), also the most misspelled variables are detected at compile-time as well. But neither the compiler nor the linker can detect errors in the program logic.

If your program does not behave as expected, you may

- either use the (common, old fashioned) output of the variable data in interest, e.g. `?# procstack(),"myvar=",myvar` to display the content of your variable named "myvar" on separate console window incl. the program location and call stack (you may redirect this output to file by e.g. "`myapplic –io=t 2>myapplic.log`"),
- or compile and run the application with FlagShip source-code debugger (see details in manual FSC.5), which gives you all the required information at any program stage.

To avoid large typing here, we will use one of the standard examples to demonstrate the use of FlagShip debugger:

a. Double click the "*FlagShip Console*" icon on your desktop (see 6.1 above)
b. Either
   ```
   copy %FLAGSHIP_DIR%\examples\dbfstru.prg
   copy %FLAGSHIP_DIR%\examples\tdbedit.dbf
   ```
   or on Vista (see note above)
   ```
   cd %FSWORKDIR%\examples
   ```
c. Compile the application with debugger
   ```
   FlagShip –d dbfstru.prg
   ```
d. Invoke the application
   ```
   dbfstru
   ```



The debugger-window pop-ups together with the application, and stops at the first executable statement of your main program (here in line#15 of dbfstru.prg).

You may now set breakpoints (where the application should stop before executing the statement) by a click on the line number, e.g. on line#39 and line#91.

Continue the execution, until breakpoint is reached, by F9 or click on the button. You alternatively may step thru by buttons (or by F11, F10), where the first steps over procedure or function, whilst the second steps into (but only if the procedure is available in source code).

The program prompts you now for the database name. Just hit RETURN to see what happens: the debugger stops on the breakpoint at line#39. To observe your used variables, click on the [+] sign for “Local” or “Private” or “Public” variables. You alternatively may enter `len(trim(cfilename))` in the command window, which reports 0 in this case (the string is empty). By F11 or click on the ⇒ button, you will step thru back to line#21 etc. Continue by F9 and enter now `tdbedit` for the file name. The debugger stops again at line#39; you may observe variables anew and/or step thru. Then disable this breakpoint by click on line#39 (the red mark disables), and press F9 to continue. The database structure is displayed in browser, press ESC to exit the browser.

When pressing F2 key in the entry field for database name, the debugger stops at line#91 in *function listdbf()*. You may see the call-stack in the top left debugger window (or by `procstack()` in command window), where item#0 is the current procedure or function. Item#1 shows here the internal representation of code block, double click on this item#1 shows where it was created (set key…to…). Step thru or continue by F9, you will see a list of available databases in the current directory to be displayed, select one by Up/Down and ENTER key, or by mouse click.

When setting breakpoint on line#62, you may observe in debugger also the (or all open) database structure(s) and data by a click on [+] Databases.

To save breakpoints for the next run, select File → Save Status, and at begin of the next execution select File → Restore Status of the debugger. ESC in the database entry field will terminate the program.

6.7 Other tools

There are additional tools available in the folder *C:\Program Files\FlagShip\Tools* including short textual description and full source code. Some of them are also documented in the manual section FSC.6. Here only some, the most interesting tools:

- **fsmake** creates semi-automatically template for the Make utility (see 6.5 above and manual FSC.2) for all (or selected) sources of your project(s)
- **dbu** is a database manipulation utility to create and/or manage database structure and data
- **fsi** is a simple interpreter, slightly comparable to dBase or Foxbase. It allows you quick data manipulation or syntax checking etc.
- **indexdump** may help you on problems with indices
- **webtools** provides source for the web*() functions in the standard library
- **foxconvert** is a helper for porting Foxbase and FoxPro sources. Note: when compiling Foxbase or FoxPro sources, use the –fox compiler switch and study the C:\Program Files\FlagShip\system\foxpro_api.prg as well as the …\include\stdfoxpro.fh files

Best to copy the source of interest into your working directory (see note in 6.5 above), and compile it there according to the description and header of the source.

In the *C:\Program Files\FlagShip\System* directory, there are sources and APIs to modify the default behavior of many standard functions or classes. On requirement, copy the source into your working directory, compile there and link with your application. Use it with care and only if you really know what you are doing.

Many examples are also available in the reference section of the FlagShip manual.

7. The FlagShip Manual

This first, short overview of FlagShip cannot and will not replace the full manual. In any FlagShip distribution, there are two complete manuals available:

- the manual in .pdf format (requires e.g. Acrobat reader) which can also be printed (caution: more than 2.500 pages), available in the C:\Program Files\FlagShip7\Manual\pdf directory, and
- the on-line manual (named *fsman*) is available on mouse-click on your desktop

Both are equivalent in content, however the on-line manual is updated more frequently (on each sub-release), whilst the .pdf manual is updated on main release only. The on-line manual includes Release Notes for the used operating system (Linux, Windows etc), this file is available for printing in text form in the …\Manual\relnotes.asc file.

To invoke the on-line manual, double click on the "*FlagShip Manual*" icon on your desktop.

Note: on special needs, you also may use its textual version by executing %FLAGSHIP_DIR%\bin\fsman_t.exe

Simply select the required section by click on the top menu (see Manual Contents for overview of sections), then select the chapter in the pop-up window to display the corresponding description. Browse the page(s) by PgDn or PgUp key.

Press the ESC key to close the manual description and/or the pop-up window. To exit fsman, press ESC in the main window, or select File → Exit, or click on the [X] top right button.

To search for specific text, use the "Search" section. You may enter there either single word, or word sentence, or words combined by AND or OR, optionally case sensitive. In the pop-up window, select the found page and then press "s" to skip directly to the found word (see also F1 help there).

And now, enjoy FlagShip!