

Title: Installing AspenONE 2004 & Associated Tools on Non-NREL Computers  
Author: John Jechura  
Platform: Analysis  
Date: March 17, 2006

---

Abstract: The steps to install AspenONE 2004 and associated tools on a computer for use with NREL's bioethanol conversion Aspen Plus model and associated spreadsheet are presented.

Keywords: AspenONE 2004, Installation, VEDIT, in-house databank, ASPEN Toolkit, USRAN4

The following are the steps to install and use AspenONE™ 2004 on a new computer for use with NREL's bioethanol conversion Aspen Plus model and associated spreadsheet:

## 1. Install a Fortran compiler

- Fortran is necessary to compile user routines used in both the Biochemical and Thermochemical models developed at NREL.
- The Aspen products (up to version 2004.1) have been designed to work with the Visual Fortran compiler from HP/Compaq. The latest version of this compiler is Visual Fortran 6.6. However, HP has announced that they will be dropping Visual Fortran as a product and have recommended that their customers migrate to Intel Visual Fortran 9.0. A technical memo on the Aspen Tech web site:

<http://support.aspentech.com/webteamasp/KB.asp?ID=116305>

states:

### Versions up to 2004.1:

The products were designed to work only with HP Visual Fortran. The latest version of the compiler (version 6.6) will work for versions 10.2, 11.1, 12.1, 2004 and 2004.1.

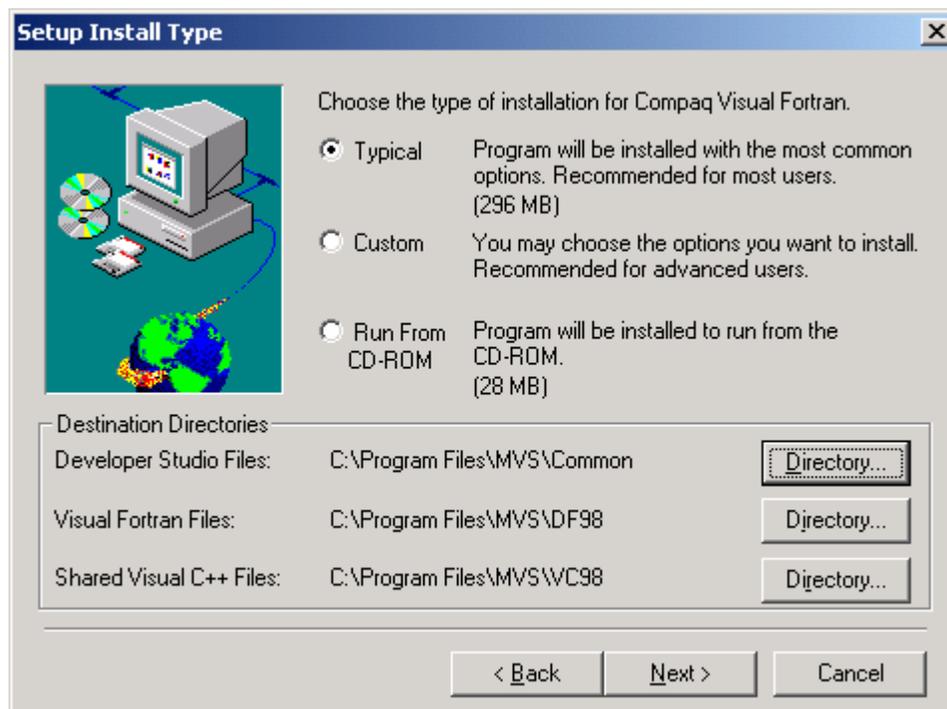
These versions have not been and will not be tested with Intel Fortran Compiler.

**Version 2006 (target release date: second quarter of 2006):**

Aspen Plus 2006 will use Intel Visual Fortran 9. We recommend that users switch to Intel Fortran at that point as well. It is unlikely that user models and other user-written Fortran compiled with Compaq Visual Fortran will work with Aspen Plus 2006 which will be compiled with Intel Visual Fortran. Some limited compatibility might be possible, and we will test various scenarios before 2006 is released. This document will be updated when the necessary testing has been completed.

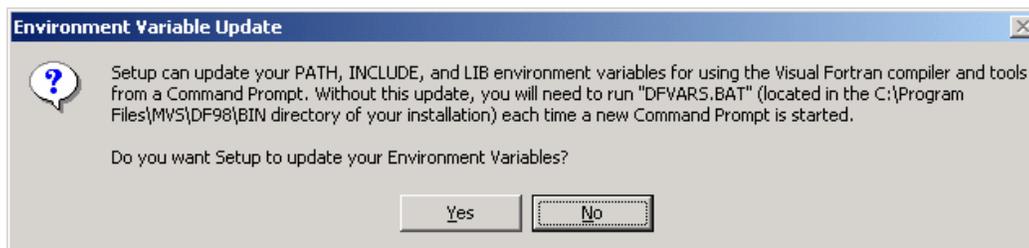
- Visual Fortran is a commercial product for which each computer must have a distinct license.
- There are two changes that should be made to the way the compiler is typically installed: the naming of the sub-directories and updating environment variables:
  - a. Do not use the default name for the directory to contain the compiler's files. There are so many characters that the resulting DOS PATH statement may become longer than what is allowed. This could be a problem even when running Aspen under Windows XP. Consider changing "Microsoft Visual Studio" to "MVS".

For Compaq Visual Fortran 6.5, this is done when the *Setup Install Type* dialog box comes up. (See below.) In the part of the dialogue box for *Destination Directories*, press the *Directory...* button for the name of the directory for the *Developer Studio Files* and change the middle portion of the path name. Changing it for this one item will usually change it for all three items.



- b. Let the set up program update your PATH, INCLUDE, and LIB variables for using the compiler from a Command Prompt. This option is not the default.

For Compaq Visual Fortran 6.5, this is done when the *Environment Variable Update* dialog box comes up. (See the following.) Do not accept the default *No*, but rather press the *Yes* button.



## 2. Install a text editor.

- The standard Notepad application that comes with Windows can be used for viewing and editing the input & report text files but it is not very powerful. There are other text editors that are recommended.
- The Developer Studio editor associated with Compaq Visual Fortran can be used to edit input files and view report files. This should have been installed on the computer as part of installing the Fortran compiler.

## 3. Install AspenONE 2004.

- Follow the instructions as given by Aspen Tech. When done, check for, download, and install any service packs and patches for AspenONE 2004. These can be found at the web site:

<http://support.aspentech.com/>.

There are other programs that must be installed on a new computer to be able to use the in-house properties database with Aspen and to download Aspen results into Excel.

## 1. Install the files for the in-house properties databank.

The instructions for installing the in-house databank are based upon those given in the document "APLUS 2004 System Management.pdf", Chapter 4, "Configuring Physical Property Databanks."

- Save the file "biodfms3.inp" from the file "biodfms3.zip" in any Aspen-related directory on your computer.
- Open the Aspen Plus Simulation Engine (i.e., the command line or DOS window). Do this by choosing the *Start* button, *Programs*, *Aspen Tech*, *Aspen Engineering Suite*, *Aspen Plus 12.1*, and *Aspen Plus Simulation Engine*. Change the directory to the one containing "biodfms3.inp". Enter:

```
dfms bi odfms3
```

This will create the object file for the physical properties.

- Change directory in the command line window to the Aspen GUI/custom directory (usually "C:\Program Files\AspenTech\APRSYSTEM 2004\GUI\custom").
- Open the file "tbprop.dat" in a text editor (such as Notepad). After the line:

```
I NCLUDE pure856. dat
```

insert the line:

```
I NCLUDE i nhspcd. dat
```

Save the file and exit the text editor.

- In the command line window you will enter two commands. First enter:

```
mmcustom mmtbs
```

This will rebuild the record definition files. Be patient, this will usually take several minutes.

You will probably get an error messages when doing this; this message can generally be ignored. At the very end you should get the message:

```
Unable to retrieve value of MMTOP from Aspen
Propertie s Regi stry
```

```
\xeq does not contain Aspen Propertie s user
i nterface fi les
Aspen Propertie s customi zati on ski ped
```

Next enter the command:

custinst

This copies the customized user interface record definition files.

Again, you may get an error message that looks like the following:

```
Unable to retrieve value of MMTOP from Aspen  
Properties Registry  
.  
.\xeq does not contain Aspen Properties user  
interface system files  
.  
Skipping installation of Aspen Properties  
customized files
```

This message, too, can be ignored.

## 2. Install the User Unit Operation Model for an Anaerobic Digester (USRAN4).

- This is a user model for the Anaerobic Digester. The Fortran code is stored in the Aspen Model Database and must be compiled to an OBJ file. The OBJ file must reside in any subdirectory in which an Aspen input file will be run.
- Save the file "USRAN4.FOR" in any directory on your computer.
- The user module need only compiled once; the OBJ file can then be copied into any directory for subsequent use. The user module can be compiled from the Aspen command line. Open the Aspen Plus Simulation Engine (i.e., the command line or DOS window). Do this by choosing the *Start* button, *Programs*, *Aspen Tech*, *Aspen Engineering Suite*, *Aspen Plus 12.1*, and *Aspen Plus Simulation Engine*. Change the directory to the one containing "USRAN4.FOR". Enter:

```
aspcomp usran4
```

This will create the object file for the User Unit Operation Model in that directory.

- Copy USRAN4.OBJ to any subdirectory in which an Aspen file will be run.

## 3. Install the Aspen Toolkit.

- This set of files allows the user to bring results in from the Aspen sensitivity block to Excel in a form that the Excel economic spreadsheet uses.
- Extract the contents of the file "AspenToolkit\_12-1.zip" to a directory "C:\aspen toolkit 12-1".