

Executing the Assembly Language Programs Under Windows XP

This document describes in detail how you can the assembly language programs in the text under Windows XP using the NASM assembler.

Step 1: Getting the Windows version of NASM

Download win32 binaries (a zip file) from <http://nasm.sourceforge.net>. For example, at the time of this writing, the latest version is **nasm-0.98.39-win32.zip**.

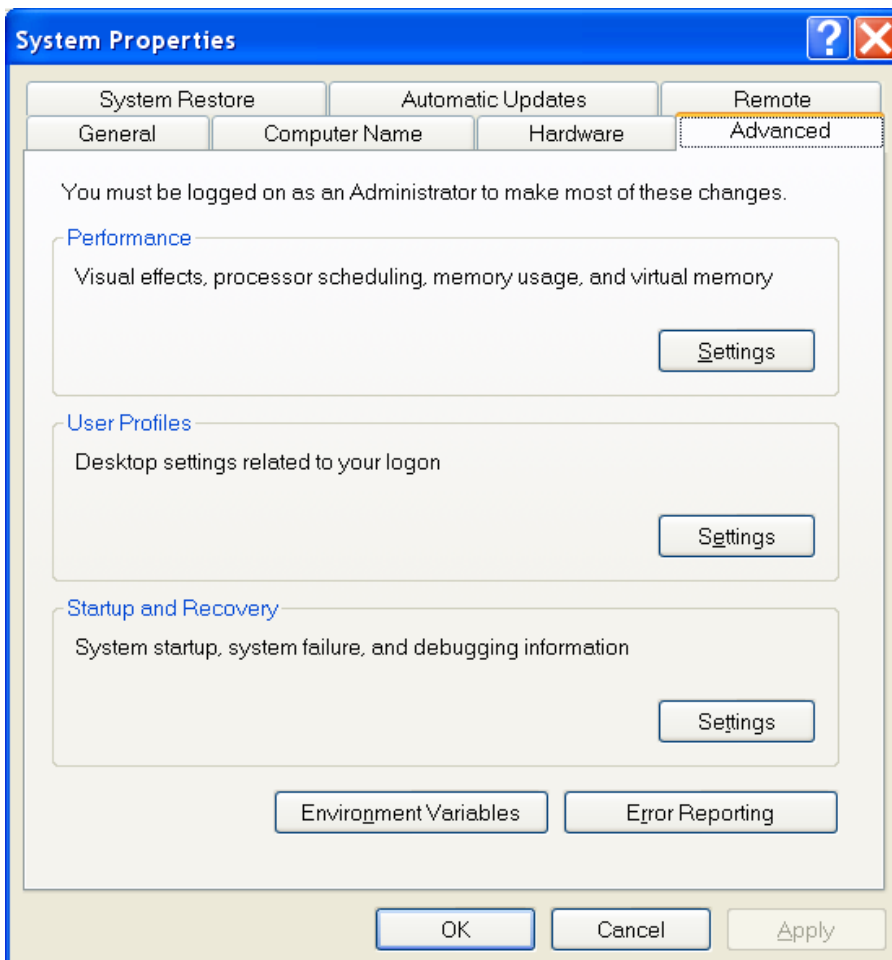
Unzip to extract all the files (by doubleclicking the zip file). This creates a folder with the following name: **nasm-0.98.39-win32**. Inside this folder, you see another folder **nasm-0.98.39**. The NASM assembler is in this folder: **nasmw.exe**.

For convenience, you may rename this to **nasm.exe**.

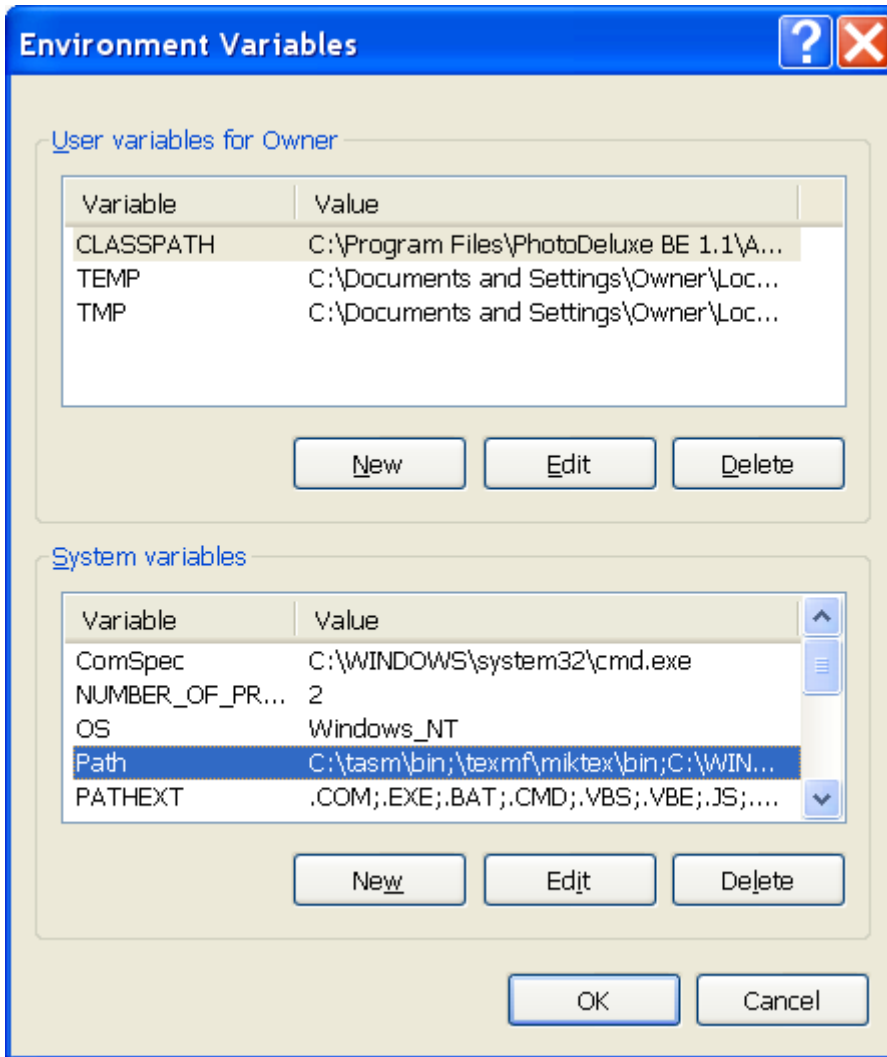
It is convenient to add this directory to your PATH environment variable (see below).

Updating the PATH variable

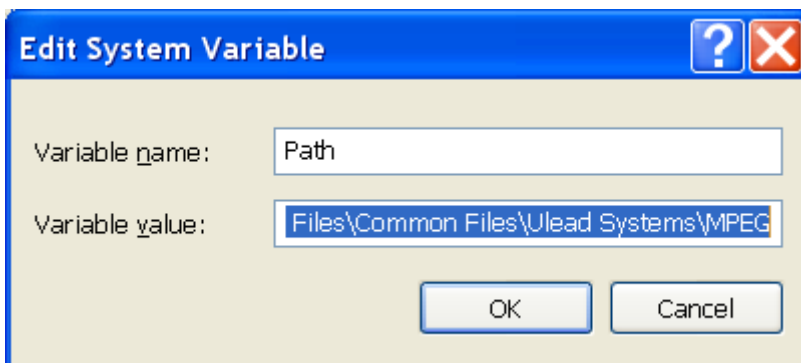
Click **start** and select **Control Panel**. In the **Control Panel**, select **System**. It pops the **System Properties** window. Press the **Advanced** tab to get access to **Environment Variables** (see below).



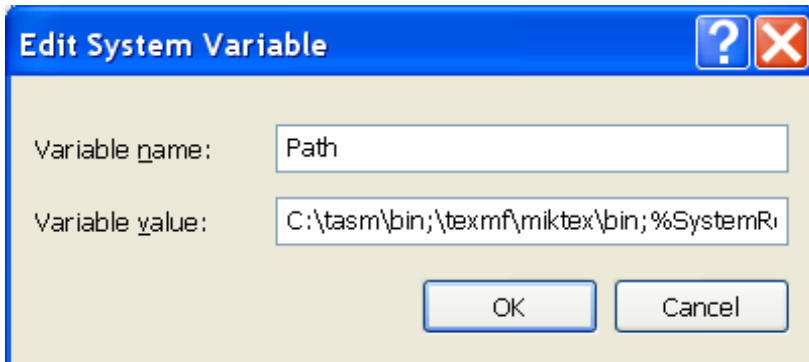
Click [Environment Variables](#) button to open system and user environment variables (see below).



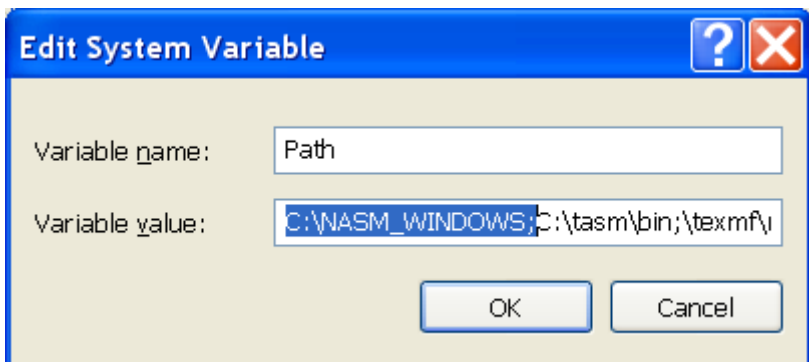
Doubleclick [Path](#) (shown highlighted in the above screenshot) or select [Path](#) and click the [Edit](#) button to edit the system variables (see below).



Place cursor in the **Variable value** field and press **Home** key on your keyboard. This takes you to the beginning of the path variable list as shown below.



Enter the path of the directory that contains the **nasm.exe** file. For example, if it is in **C:\NASM_WINDOWS**, add **C:\NASM_WINDOWS;** (don't forget the semicolon) as shown below:



Press OK several times to exit all the popped up windows.
That's it. Now open a command prompt window (if you already opened one, close it and reopen) and try typing
nasm -h
You should see the NASM help information.

Step 2: Getting the Linker

Download **lnk563.exe** from the following URL:

<http://download.microsoft.com/download/vc15/Update/1/WIN98/EN-US/Lnk563.exe>

Execute this self-extracting file in the **Command Prompt** window. This gets the linker **link.exe** we want. For convenience, keep this in the same directory as the **nasm.exe**.

Now you are ready to execute assembly language programs under Windows XP using the NASM assembler.

Step 3: Running Assembly Programs under Windows XP

First, you need to copy the Windows versions of the programs in the text. You can get them from the book's Web site

http://www.scs.carleton.ca/~sivarama/asm_book/.

Do not use the Linux I/O files (**io.mac** and **io.obj**). Make sure to use the I/O files that come with the Windows version. Now you are ready!

To assemble a source file (say, **addigits.asm**), use the following command:

```
nasm -f obj addigits.asm
```

To link the object files, use

```
link addigits.obj io.obj
```

This produces **addigits.exe** file.

If you have multiple modules, assemble each and link them together as in the following example (uses two source files **module1.asm** and **module2.asm**)

```
nasm -f obj module1.asm
```

```
nasm -f obj module2.asm
```

```
link module1.obj module2.obj io.obj
```

Good luck!

Some changes in the source code from their LINUX versions in the textbook

1. You will see the following directive
`.STACK 100H`
for the stack segment.
2. Pointers are 16 bits as opposed 32 bits (this changes offsets in the stack-based parameter passing) and in the `ret` instruction to clear the arguments.

Note

Not all programs are available in the Windows version. In particular, you don't see programs for Chapters 14, 17, and 18 as the programs in these chapters are Linux specific (int 80H, gcc, and so on).