WOODWARD

Application Note 51250
(Revision A)

Original Instructions

Visual C++ Installation

General Precautions

Read this entire manual and all other publications pertaining to the work to be performed before installing, operating, or servicing this equipment.

Practice all plant and safety instructions and precautions.

Failure to follow instructions can cause personal injury and/or property damage.

Revisions

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Proper Use

Any unauthorized modifications to or use of this equipment outside its specified mechanical, electrical, or other operating limits may cause personal injury and/or property damage, including damage to the equipment. Any such unauthorized modifications: (i) constitute "misuse" and/or "negligence" within the meaning of the product warranty thereby excluding warranty coverage for any resulting damage, and (ii) invalidate product certifications or listings.

Translated Publications

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Revisions—Changes in this publication since the last revision are indicated by a black line alongside the text.

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Warnings and Notices

Important Definitions

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

- **DANGER**—Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- **WARNING**—Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION**—Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTICE**—Indicates a hazard that could result in property damage only (including damage to the control).
- **IMPORTANT**—Designates an operating tip or maintenance suggestion.

⚠WARNING

Overspeed / Overtemperature / Overpressure

The engine, turbine, or other type of prime mover should be equipped with an overspeed shutdown device to protect against runaway or damage to the prime mover with possible personal injury, loss of life, or property damage.

The overspeed shutdown device must be totally independent of the prime mover control system. An overtemperature or overpressure shutdown device may also be needed for safety, as appropriate.

⚠WARNING

Personal Protective Equipment

The products described in this publication may present risks that could lead to personal injury, loss of life, or property damage. Always wear the appropriate personal protective equipment (PPE) for the job at hand. Equipment that should be considered includes but is not limited to:

- **Eye Protection**
- **Hearing Protection**
- **Hard Hat**
- **Gloves**
- **Safety Boots**
- **Respirator**

Always read the proper Material Safety Data Sheet (MSDS) for any working fluid(s) and comply with recommended safety equipment.

⚠WARNING

Start-up

Be prepared to make an emergency shutdown when starting the engine, turbine, or other type of prime mover, to protect against runaway or overspeed with possible personal injury, loss of life, or property damage.

⚠WARNING

Automotive Applications

On- and off-highway Mobile Applications: Unless Woodward's control functions as the supervisory control, customer should install a system totally independent of the prime mover control system that monitors for supervisory control of engine (and takes appropriate action if supervisory control is lost) to protect against loss of engine control with possible personal injury, loss of life, or property damage.

NOTICE

Battery Charging Device

To prevent damage to a control system that uses an alternator or battery-charging device, make sure the charging device is turned off before disconnecting the battery from the system.

Electrostatic Discharge Awareness

NOTICE

Electrostatic Precautions

Electronic controls contain static-sensitive parts. Observe the following precautions to prevent damage to these parts:

- **Discharge body static before handling the control (with power to the control turned off, contact a grounded surface and maintain contact while handling the control).**
- **Avoid all plastic, vinyl, and Styrofoam (except antistatic versions) around printed circuit boards.**
- **Do not touch the components or conductors on a printed circuit board with your hands or with conductive devices.**

To prevent damage to electronic components caused by improper handling, read and observe the precautions in Woodward manual *82715*, *Guide for Handling and Protection of Electronic Controls, Printed Circuit Boards, and Modules*.

Follow these precautions when working with or near the control.

1. Avoid the build-up of static electricity on your body by not wearing clothing made of synthetic materials. Wear cotton or cotton-blend materials as much as possible because these do not store static electric charges as much as synthetics.
2. Do not remove the printed circuit board (PCB) from the control cabinet unless absolutely necessary. If you must remove the PCB from the control cabinet, follow these precautions:
   - Do not touch any part of the PCB except the edges.
   - Do not touch the electrical conductors, the connectors, or the components with conductive devices or with your hands.
   - When replacing a PCB, keep the new PCB in the plastic antistatic protective bag it comes in until you are ready to install it. Immediately after removing the old PCB from the control cabinet, place it in the antistatic protective bag.

Visual C++ Installation

Introduction

Visual C++ is compiler software that works with Woodward Coder to create executable code. The executable code is used on Woodward controls that use the Windows NT 4.0 operating system with real-time extensions, or on controls created for simulations that run on a PC using NetSim™.

Only those controls with the NT_CPU GAP block or controls compiled for the NetSim environment require the Microsoft Visual C++ compiler. A simple way to determine this is by checking for the NT_CPU GAP block in the GAP Application software. Examples of these controls include the MicroNet™ with Pentium NT CPU and AtlasPC™ with NT CPU.

Since Microsoft no longer sells version 6.0 of Visual C++, Woodward has created the 1796-046 kit to support new installations of Coder or NetSim on customer PCs. The 1796-096 kit includes this manual, a CD ROM (1796-1064) to install Visual C++ version 6.0.

Conditions of Media Transfer

The C++ install disk (1796-1064) includes the files necessary to install Microsoft's Visual C++ 6.0 compiler for use with a product delivered by Woodward. Woodward makes these installation files available to our customer under the following conditions:

- The customer must be licensed appropriately for Microsoft Visual Studio.
  - Visual Studio Professional 2010 is the base level license currently available, and the Visual Studio environment it provides will allow the end user to use the Visual C++ v.6.0 Compiler.
- Your Visual Studio license must include product downgrade rights in order to use this compiler with a newer version of Visual Studio.
  - If you are purchasing a new license for Visual Studio, your license must be purchased under a volume agreement (examples: Open, Select, or Enterprise Agreements) in order to have the downgrade rights needed to run the older compiler.
- You should retain this media and documentation in the event you need to re-install the compiler. Product media is not available for purchase, nor is it available for download through Microsoft or through Woodward.

Conclusion

This media was duplicated by agreement with Microsoft because the Visual C++ c.6.0 compiler product is no longer available for purchase, and is provided to the Woodward customer at no charge. You, the customer, are responsible for ensuring compliance with all Microsoft licensing regulations, and should not use this media for any purpose other than the stated use to support Woodward control software.

The remainder of this manual consists of a procedure describing how to install Microsoft Visual C++ version 6.0 onto a Windows-based PC.

Installation Procedure

Step 1

Enter the C++ install disk (Woodward item number 1796-1064) into the CD drive. Double clicking on the CD drive from explorer or allowing the CD to autorun will bring up the Installation Wizard (shown below). If autorun is disabled, double click on setup.exe in Windows Explorer or use the Start menu to run (Start > Run) d:\setup.exe, where d: is the drive letter of the CD ROM drive. Click Next to continue with the installation.

Step 2

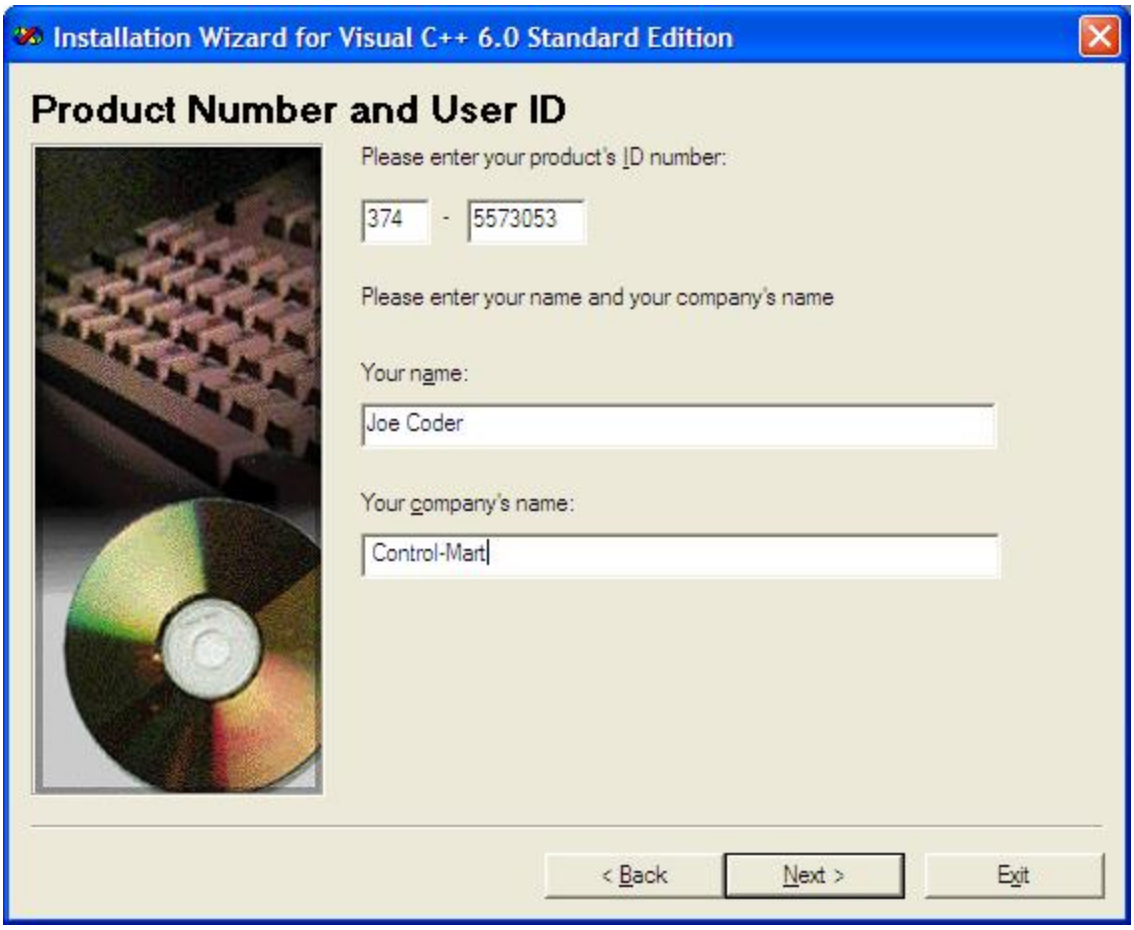
Acknowledge the licensing agreement by clicking on the “I accept the agreement” radio button and click “Next”.

Step 3

Enter the Product ID code; this is also referred to as the CD KEY:

The product ID for Woodward C++ installation disk (item number 1796-1064) is:

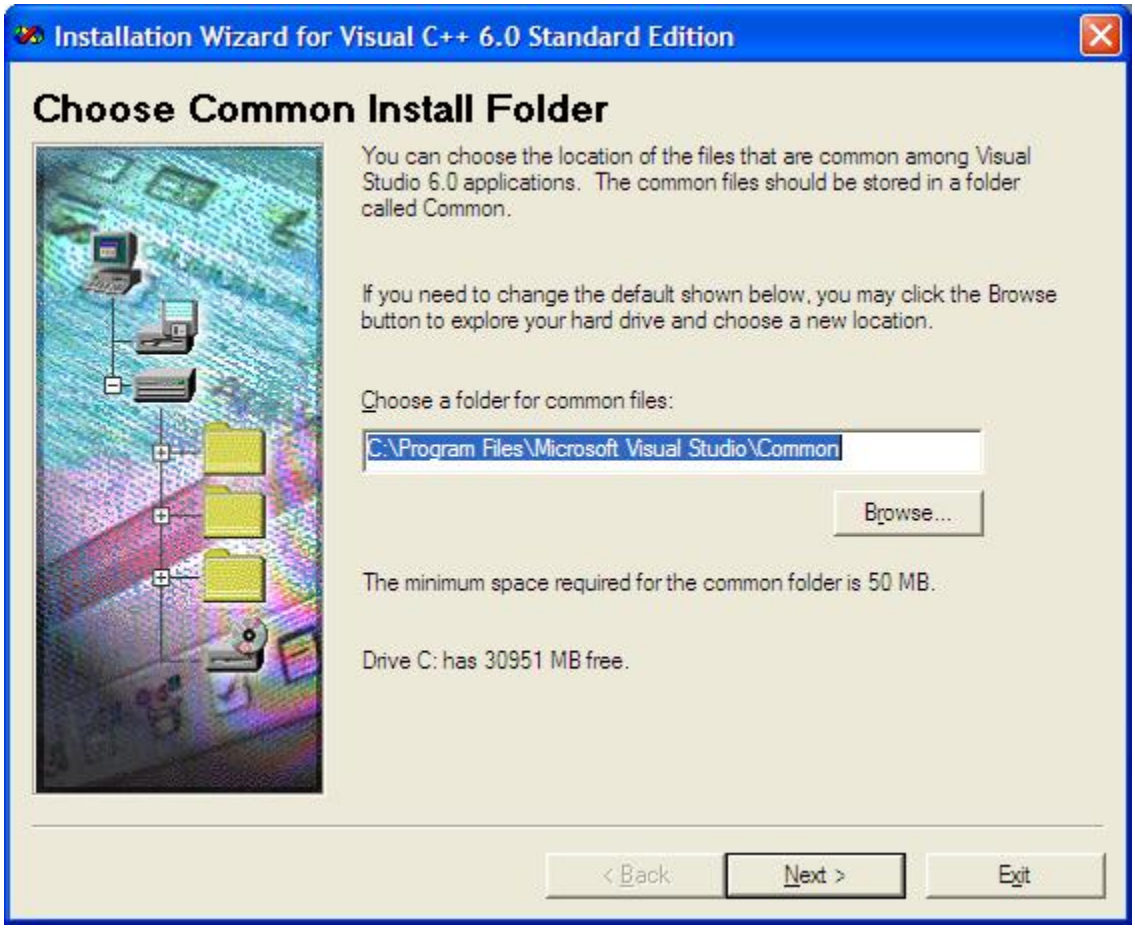
374-5573053



Once a valid product ID is entered, the NEXT button is enabled. Enter your name and company, and click “Next >” to move to the next step.

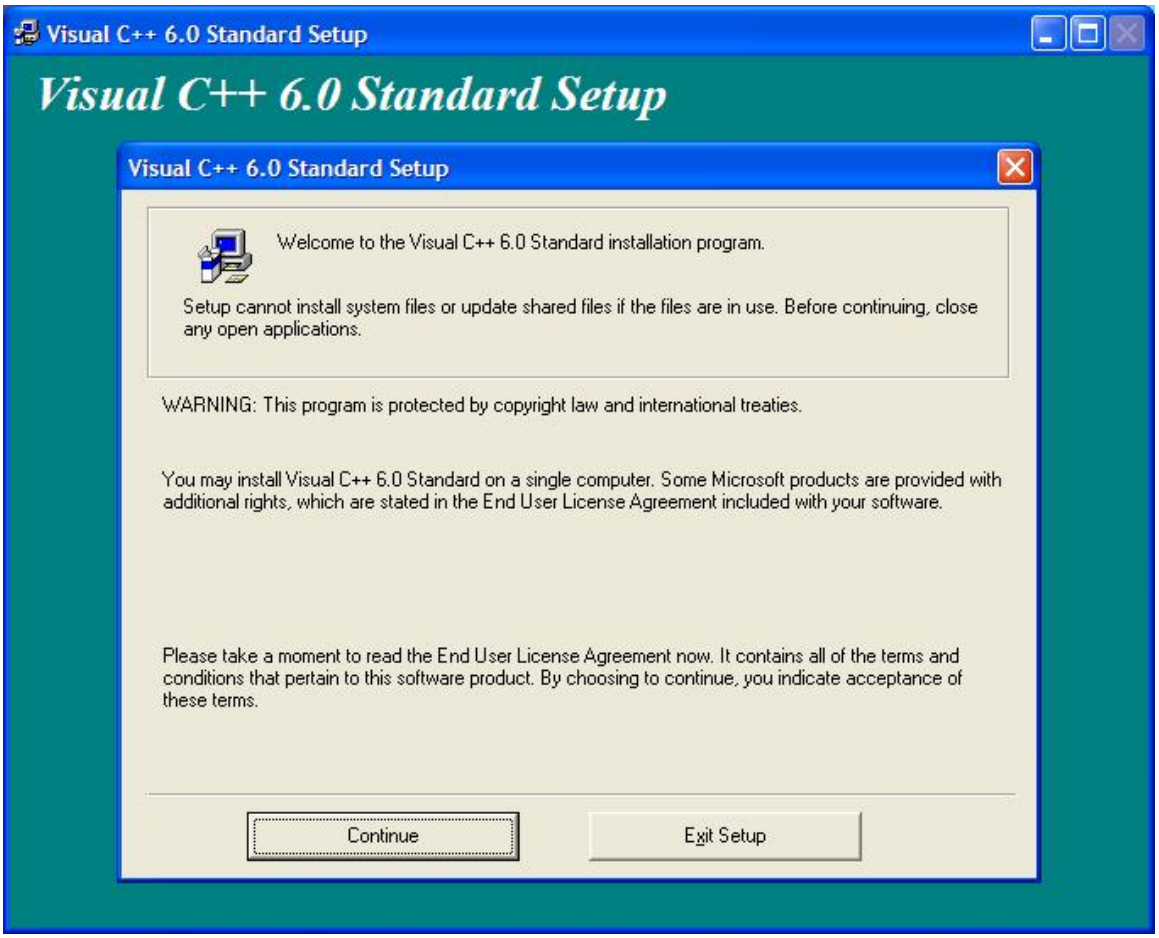
Step 4

Install into the default directory. Changing this directory will create problems and keep the compiler from working properly with Woodward Coder. The default directory is shown in the illustration below. Select Next to move to the next step. This will start the C++ Install process.



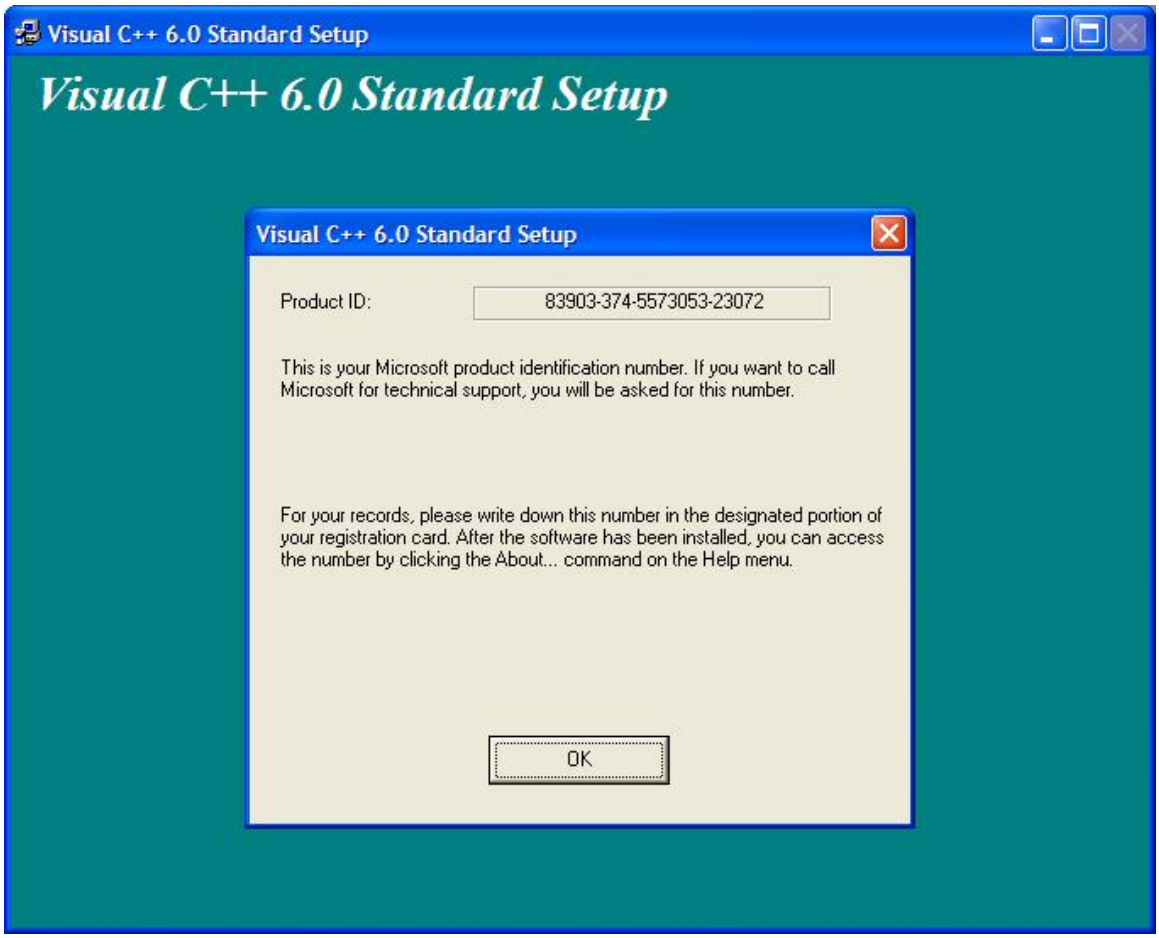
The install screen will disappear momentarily while information is being read from the install CD.

Step 5
Select Continue.



Step 6

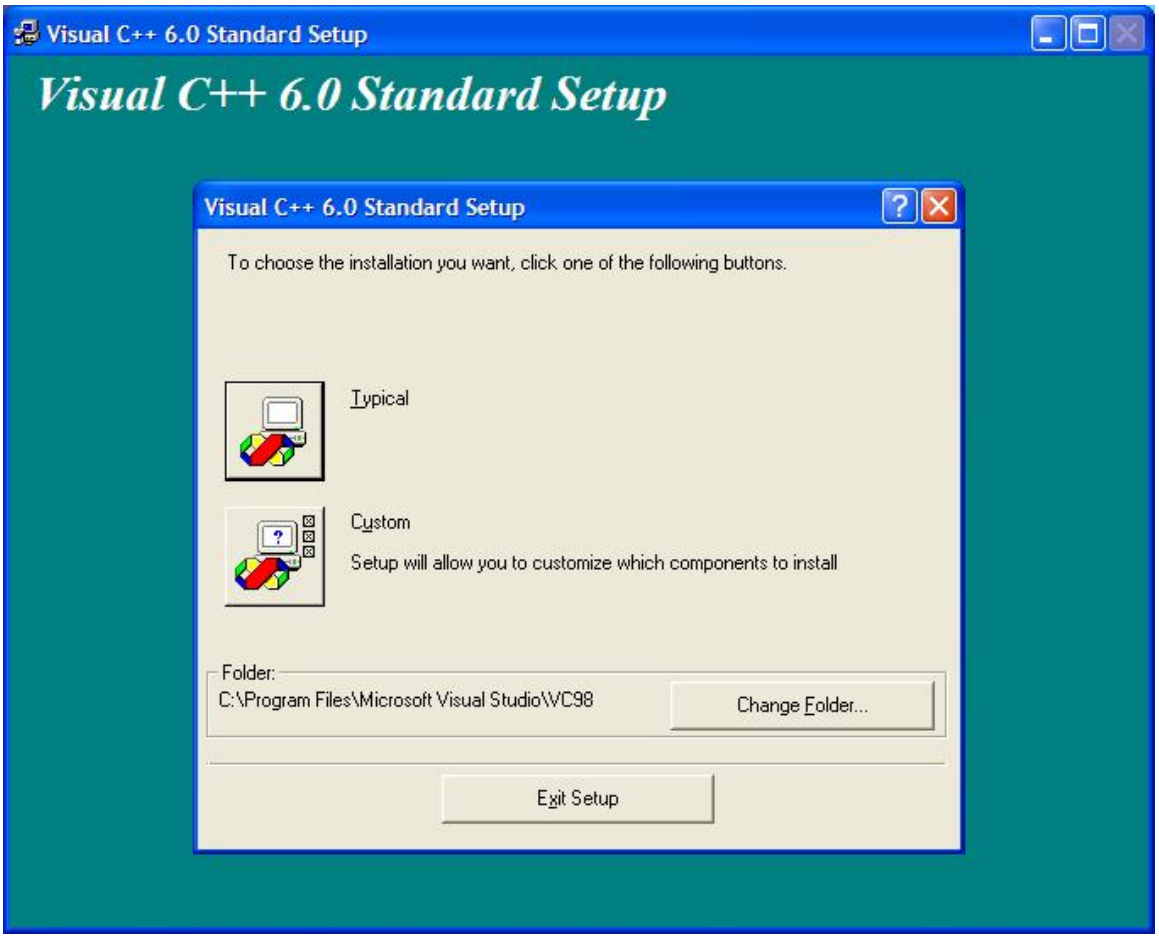
The product ID will be generated. This number is specific to each installation of the C++ program.



Click OK to continue.

Step 7

Select the “Typical” installation, and do not change the default folder location that is shown. Changing the default folder location will prevent the C++ Compiler from working properly.



Step 8

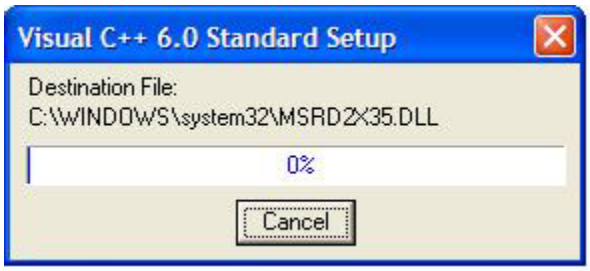
Check the box to “Register Environmental Variables”.

Woodward Coder software invokes the Visual C++ compiler with the help of the environmental variables, so this is mandatory. Checking this box allows Woodward Coder to find the Visual C++ compiler.

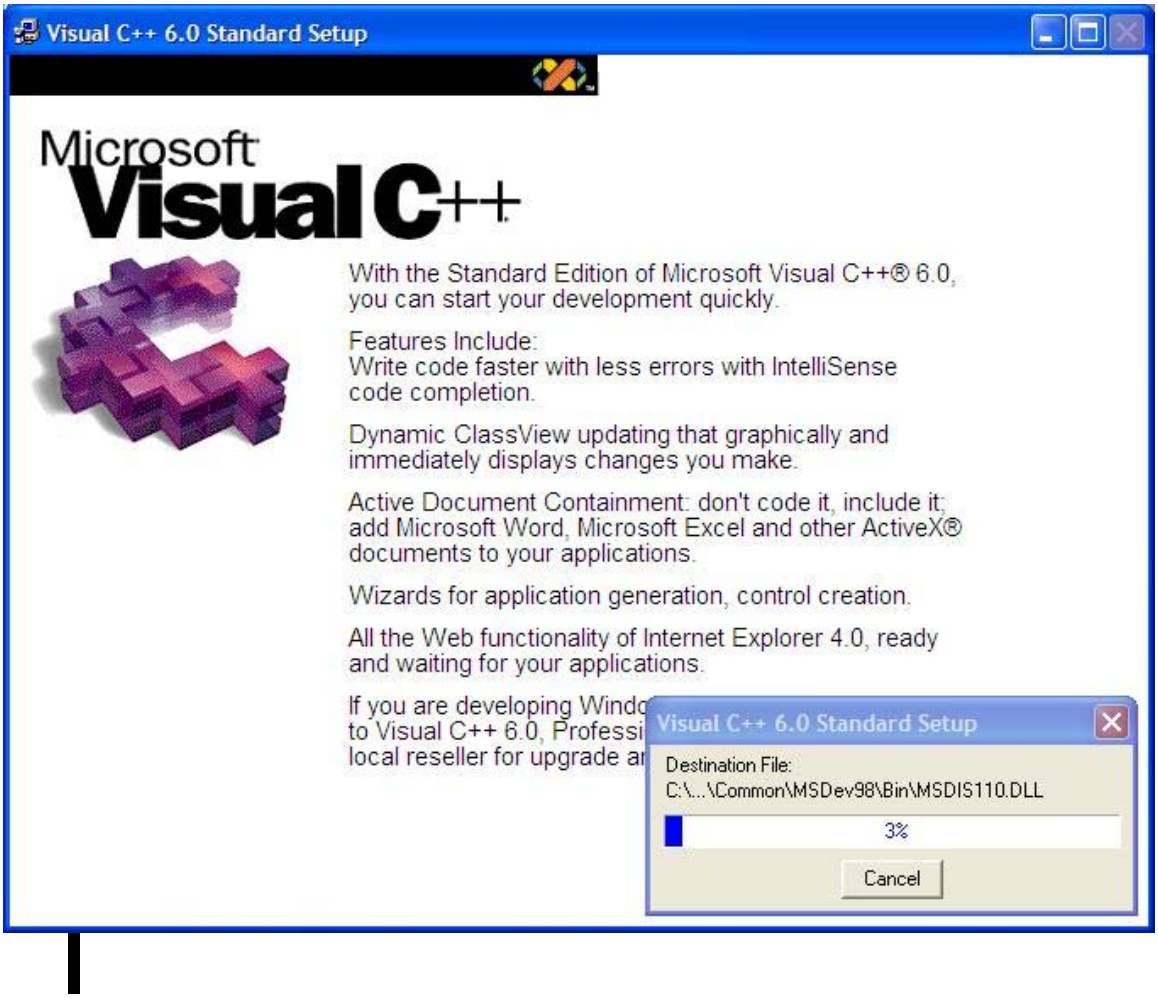
The environmental variables are also stored in a file called VCVARS32.BAT as indicated by the installation dialog box.

Step 9

Wait while file copying begins.



Continue to wait while installation continues.

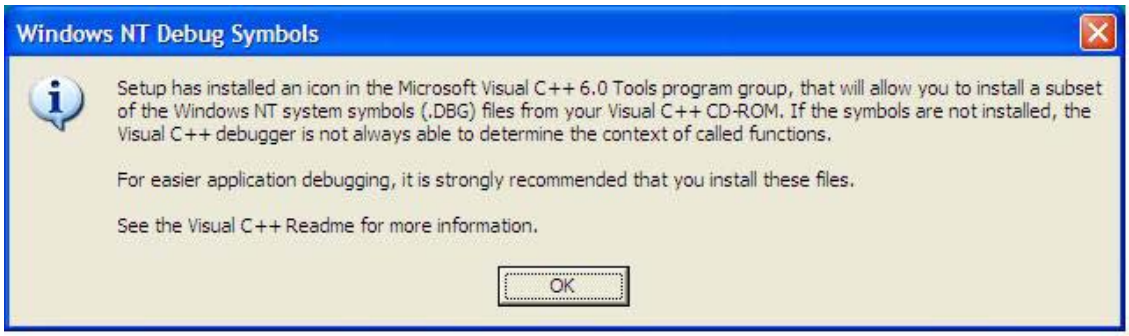


Step 9 (cont.)

Continue to wait while installation continues.

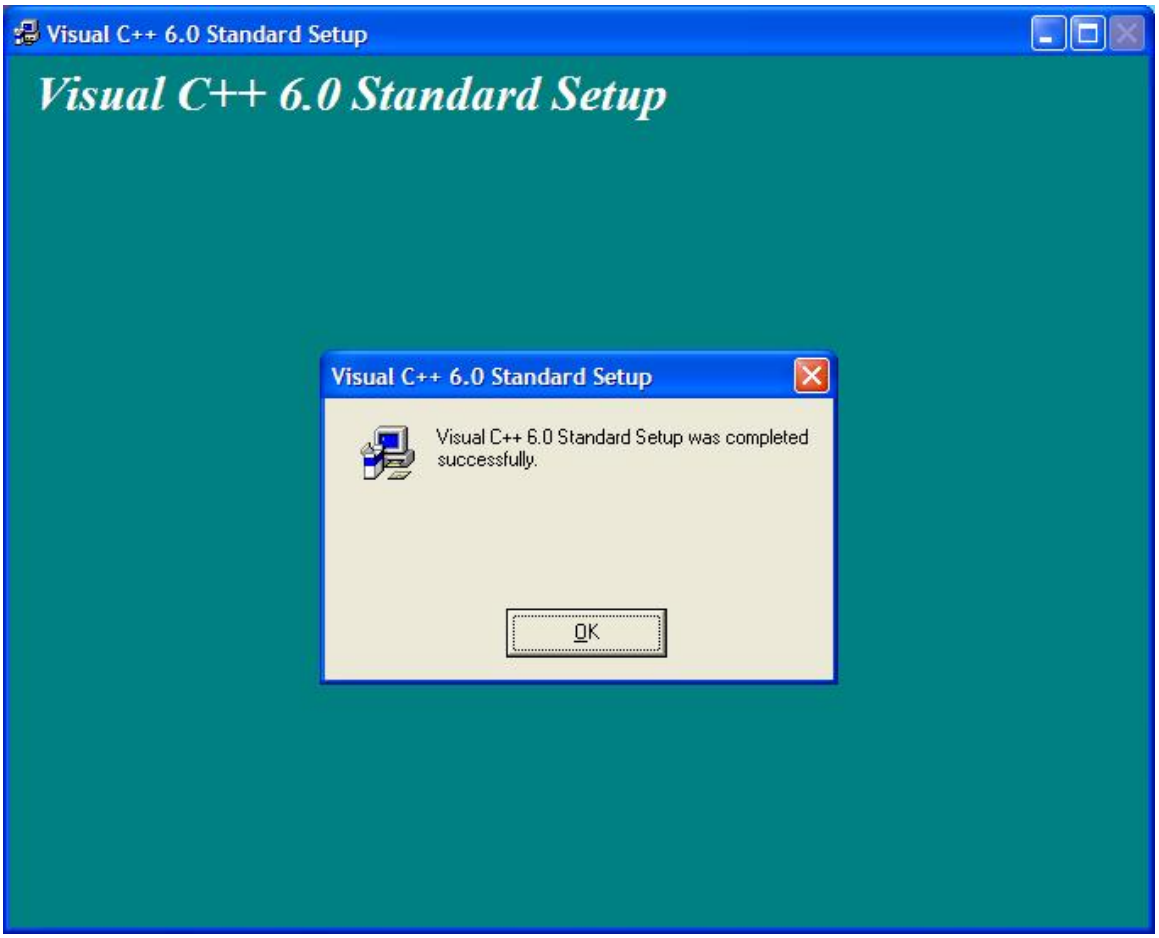
Step 10

When the file copying is complete, a dialog box like the one below appears. Click OK to continue. Installation of extra debug symbols is not required for Woodward Coder to function properly, so the dialog box instructions are for information only.



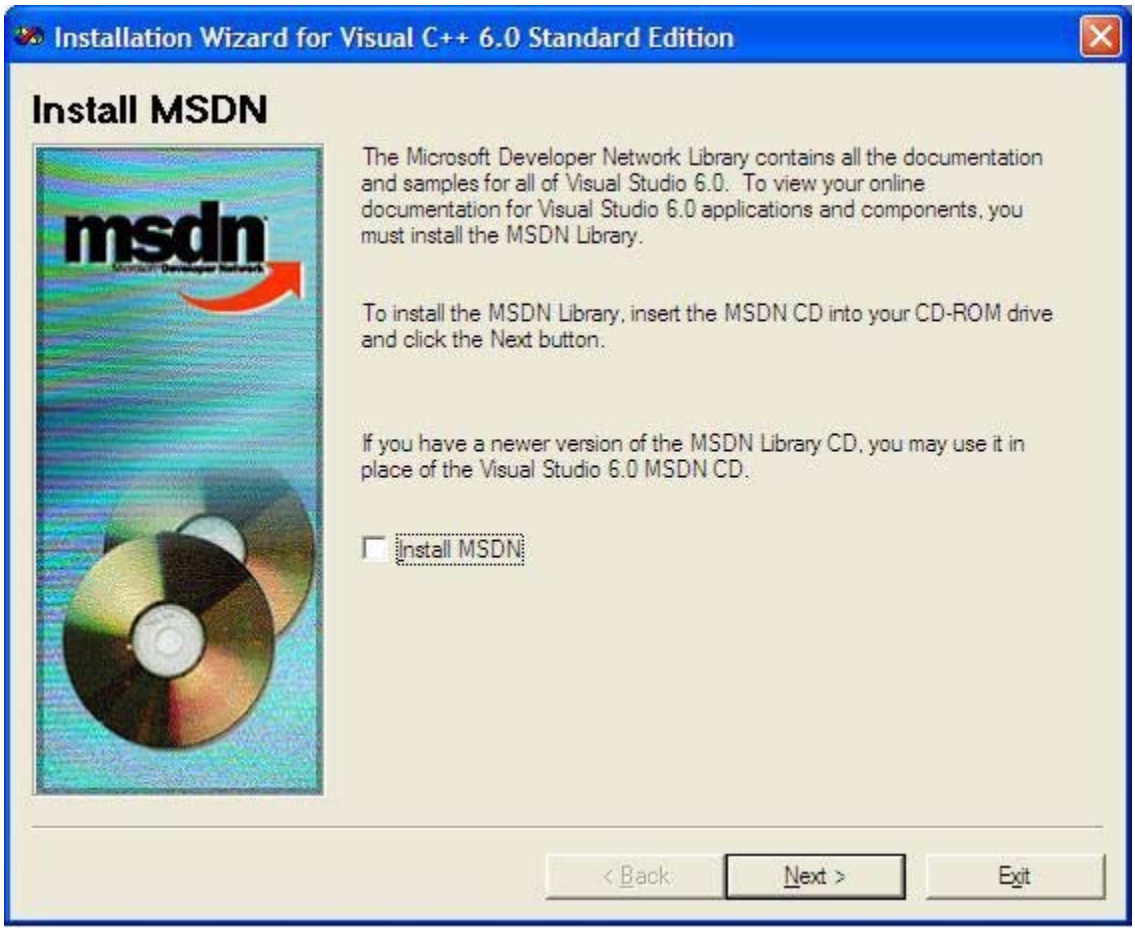
Step 11

When installation is complete, a dialog box indicates that Visual C++ was installed correctly. Click OK to continue.



Step 12

Uncheck the box to install MSDN. It is not needed to run the Woodward Coder software, and the MSDN disk is not included with the 1796-046 package.

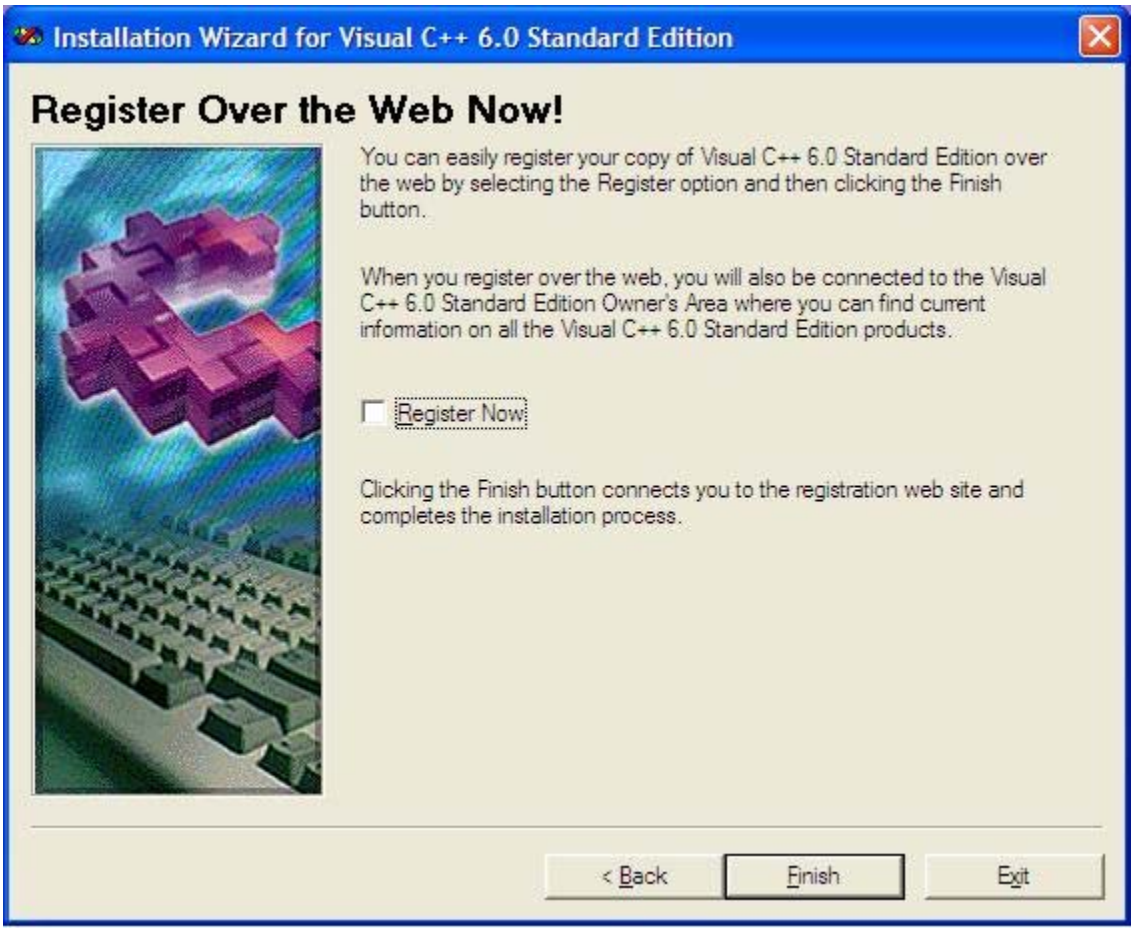


Step 13

A dialog box will alert that the help and documentation will be unavailable. Click “Yes” to continue.

Step 14

A dialog box asking to register over the web appears. ***Uncheck*** the box and click "Finish" to complete the installation.



The installation process is now complete for a single user PC. Visual C++ is installed and the environmental variables are configured for the currently logged-on user. If the PC is used for NetSim simulation, or if other users will use the PC for compiling GAP applications, the following section (**Managing Environmental Variables**) must also be completed.

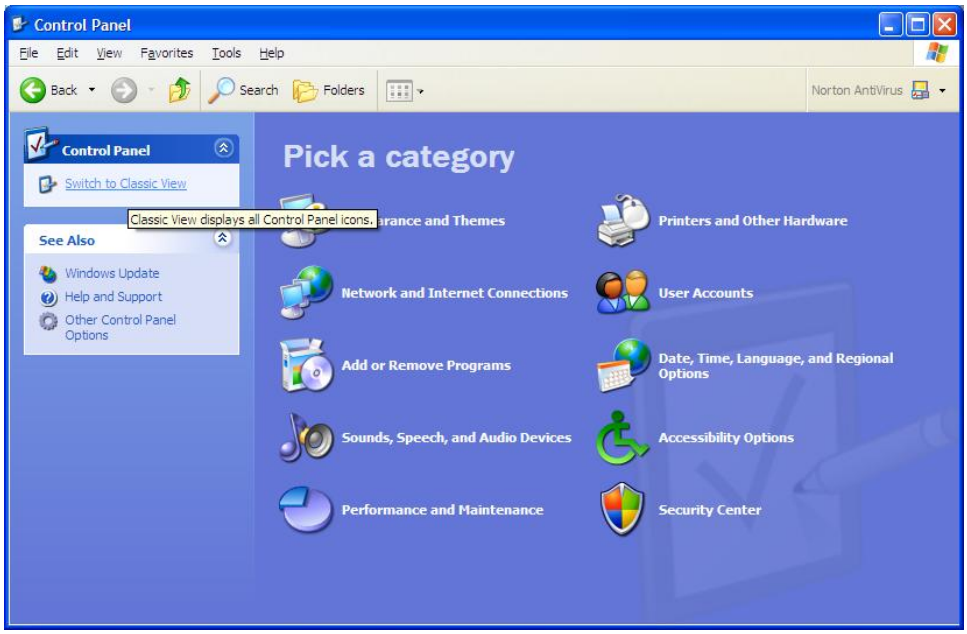
Managing Environmental Variables

All NetSim™ users must move their C++ compiler local user variables to system level variables. The following procedure details how to reconfigure the local environmental variables on a user's PC so they are defined as system variables.

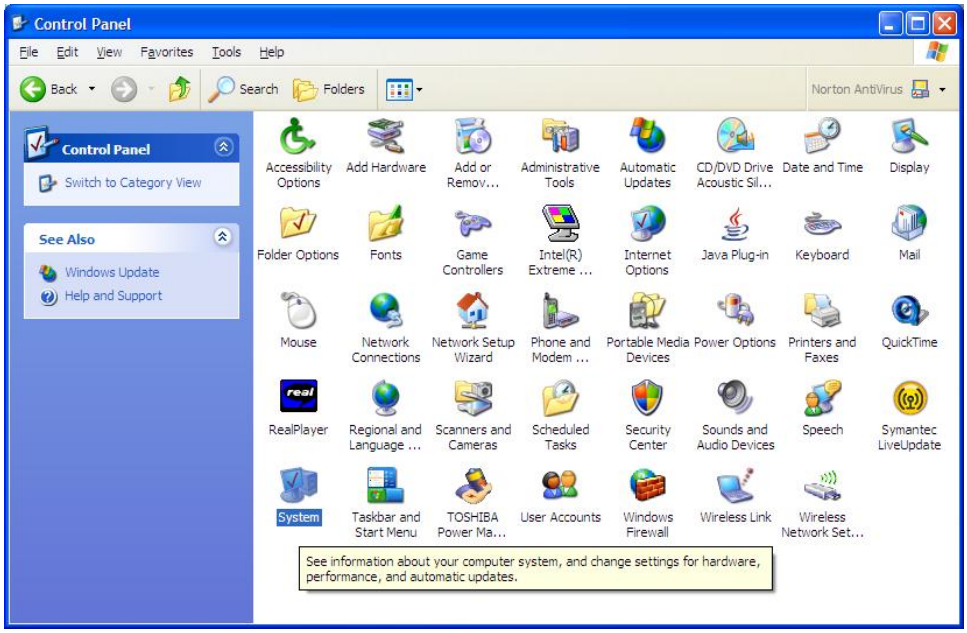
The procedure is also useful for PCs with multiple users. Local environmental variables only apply for the current user. If multiple users log onto a single PC, each user will have to configure Visual C++ environmental variables for the compiler to work properly. Moving the variables to system variables allows the Visual C++ installation to apply to all users, and eliminates the need for additional users to configure their local environmental variables.

Step 1

Use the start menu to open the Control Panel (shown in Category View below).



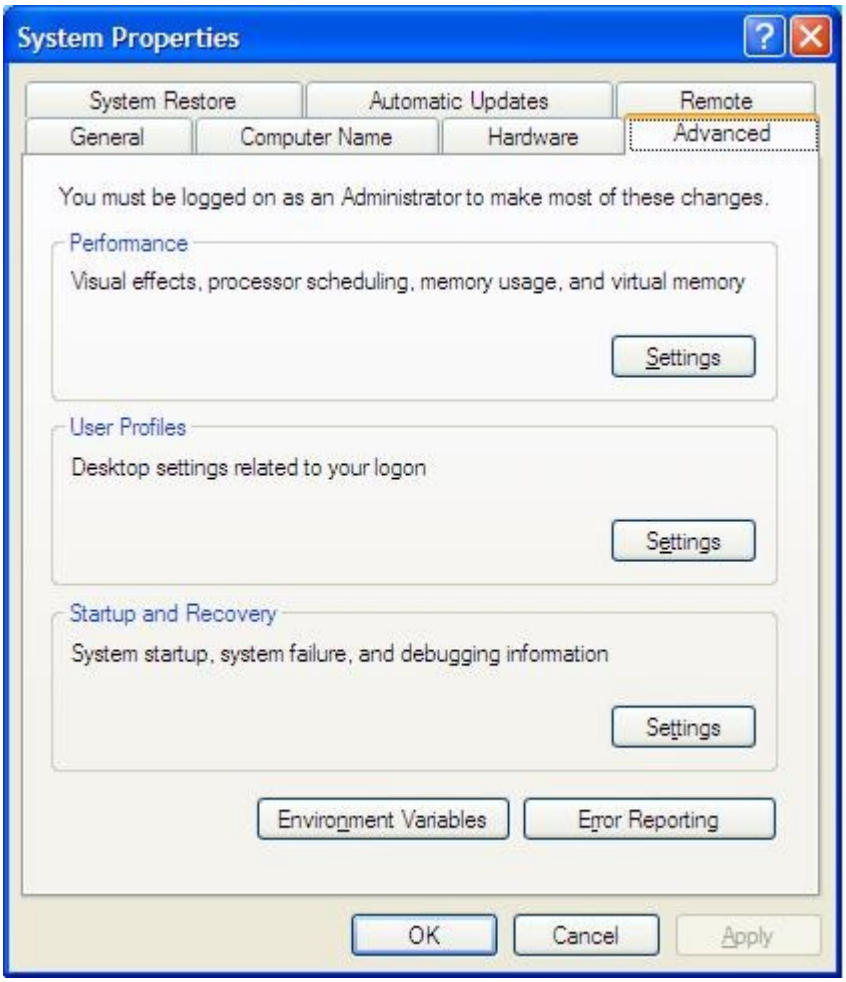
Switch to Classic View if necessary to view the control panel as it is shown below.



Double click on the System icon to open the System Properties dialog box.

Step 2

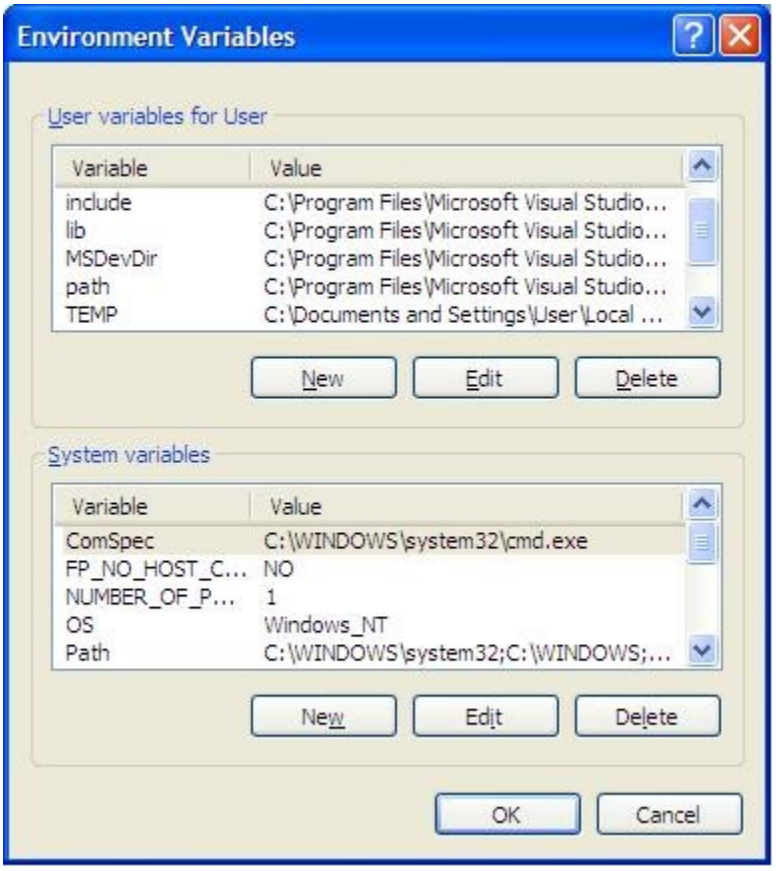
Click on the Advanced tab and then click on the Environment Variables button to open the Environmental Variables dialog box.



Step 3

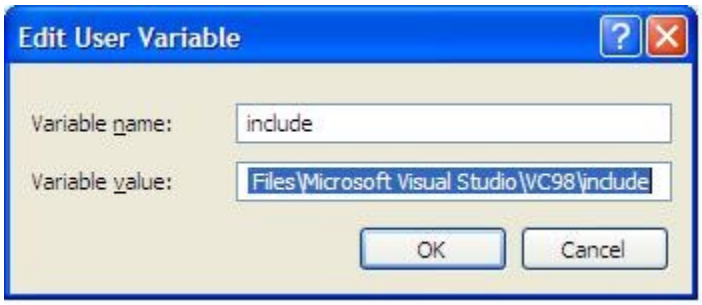
You will be working with the Environmental Variables dialog box to move values from the User (top) area to the System (bottom) area:

Find the variable named “include” under User Variables (top box) and single click on it to select it. Once it is highlighted, click on the “edit” button immediately below the User Variables box.



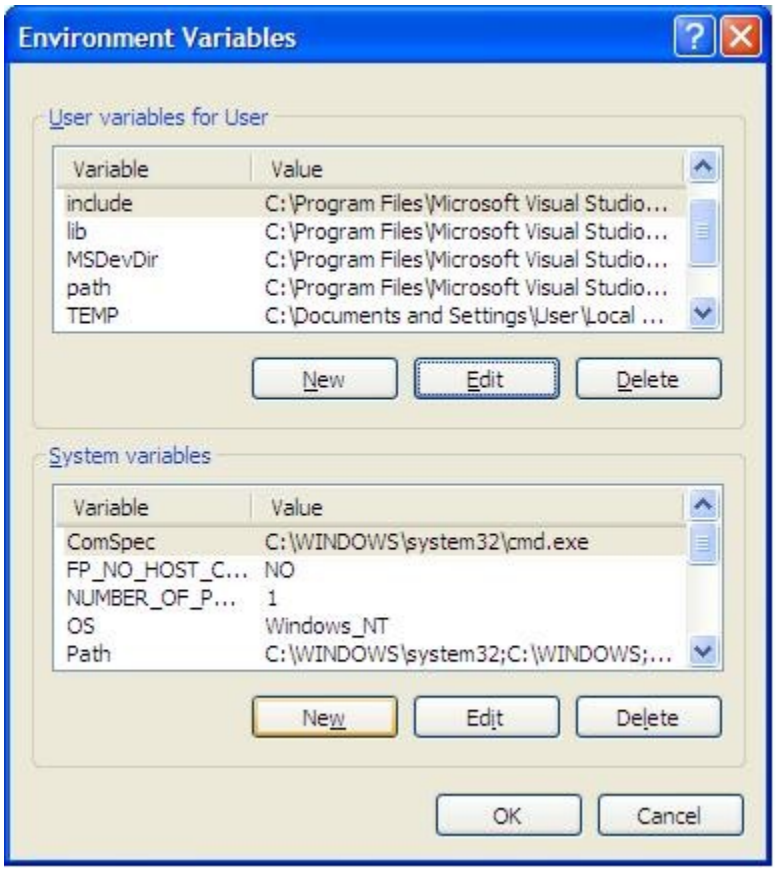
Step 4

If it is not already highlighted, click and drag across the Variable value box to select the entire field. Once it is highlighted as shown below, hit <CTRL-C> on the keyboard to copy the value. Click cancel to close the dialog box.



Step 5

Under System Variables (bottom box), click “New” to create a new System variable.



Step 6

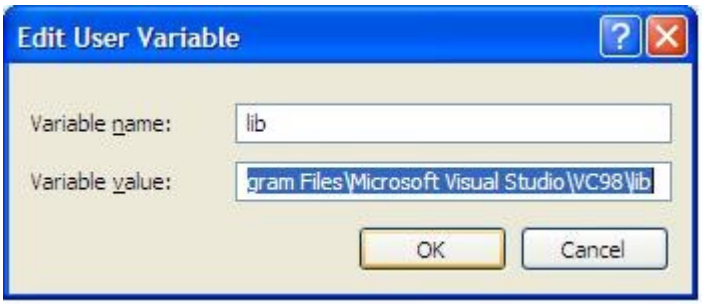
Type “include” in the variable name box.

Step 7

Click in the Variable value box and hit <CTRL-V> to paste the value. Click “OK” to close the dialog box and create the *include* System variable.

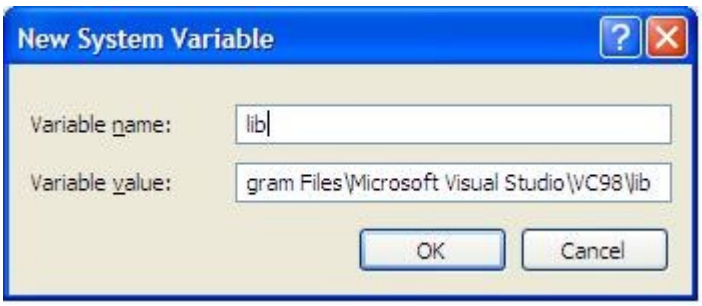
Step 8

Click on the *lib* user variable to highlight it (top box), and click edit to open the dialog below. If it is not already highlighted, click and drag the variable value to highlight the entire value. Hit <CTRL-C> to copy the variable.



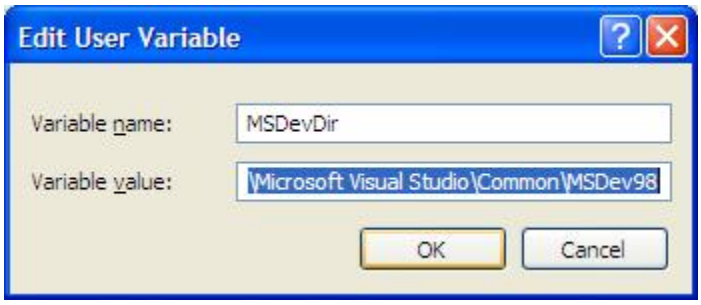
Step 9

Under System Variables (bottom box), click “New” to create a new System variable. Type “lib” in the variable name box and paste the value in the Variable value box.



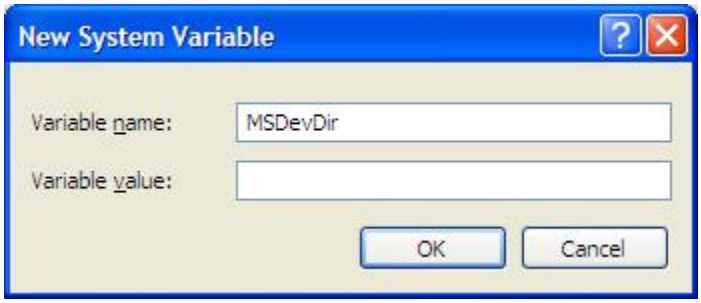
Step 10

Click on the *MSDevDir* user variable (top box) to highlight it, and click edit to open the dialog below. If it is not already highlighted, click and drag the variable value to highlight the entire value. Hit <CTRL-C> to copy the variable.



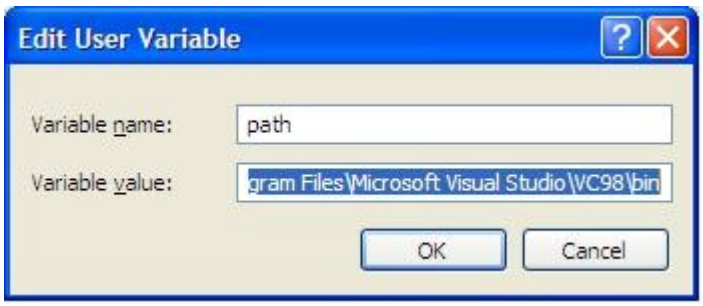
Step 11

Under System Variables (bottom box), click “New” to create a new System variable. Type “MSDevDir” in the variable name box and paste the value in the Variable value box.



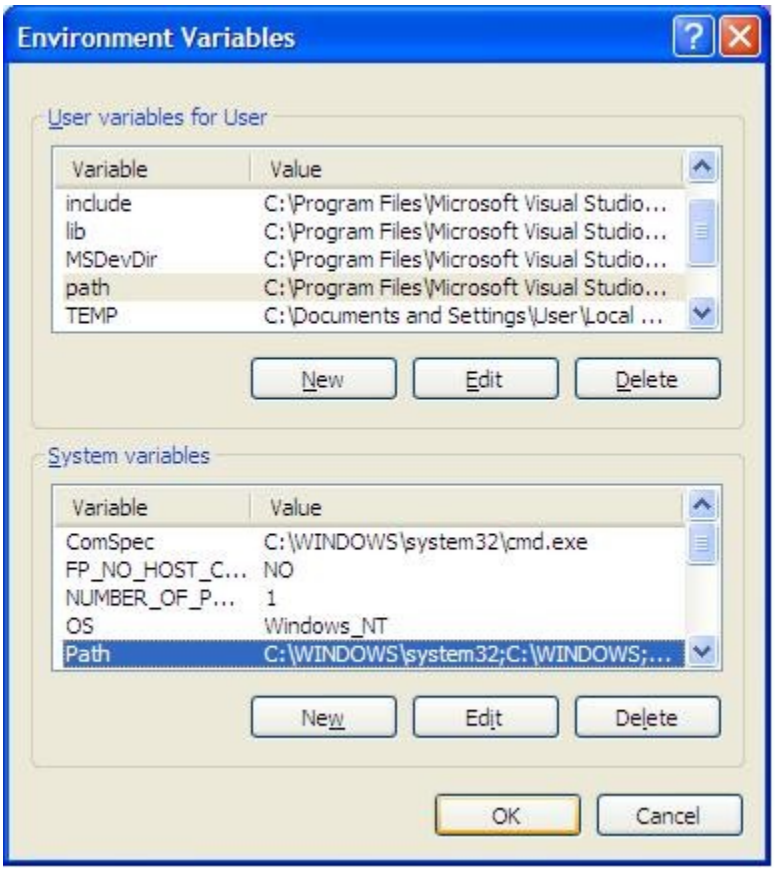
Step 12

Click on the *path* user variable (top box) to highlight it and click edit to open the dialog below. If it is not already highlighted, click and drag the variable value to highlight the entire value. Hit <CTRL-C> to copy the variable.



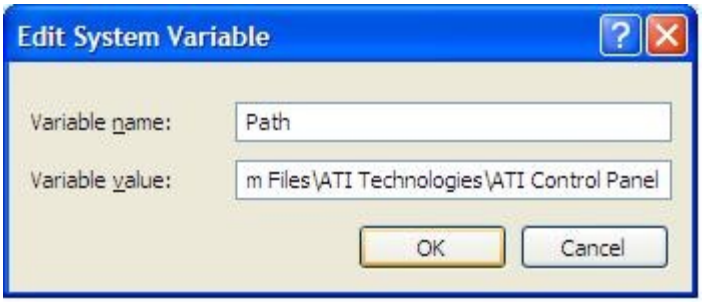
Step 13

Under System Variables (bottom box), click on the *Path* System variable. Click edit to open the *Path* system variable.



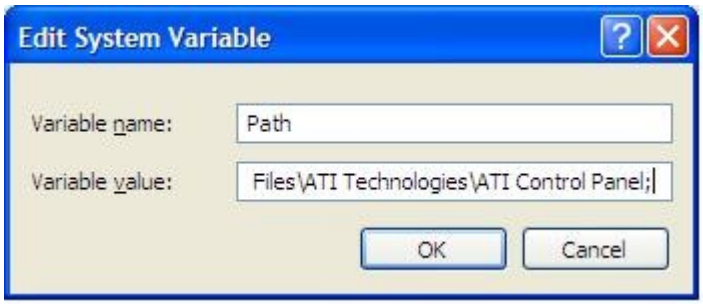
Step 14

Click in the Variable value box and hit the right arrow key to move to the end of the value.



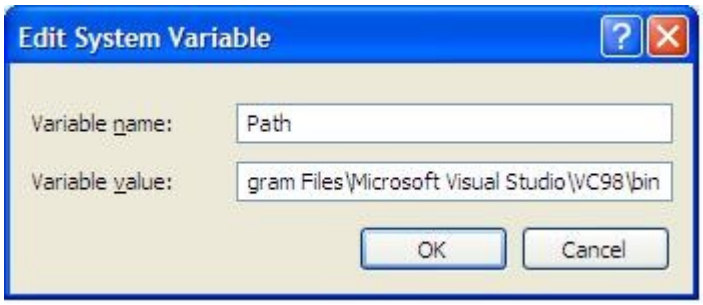
Step 15

Type a semi-colon (;) at the end of the value.



Step 16

Hit <CTRL-V> to paste the User variable into the System variable field. Click OK to close the dialog box and append the *path* variable.



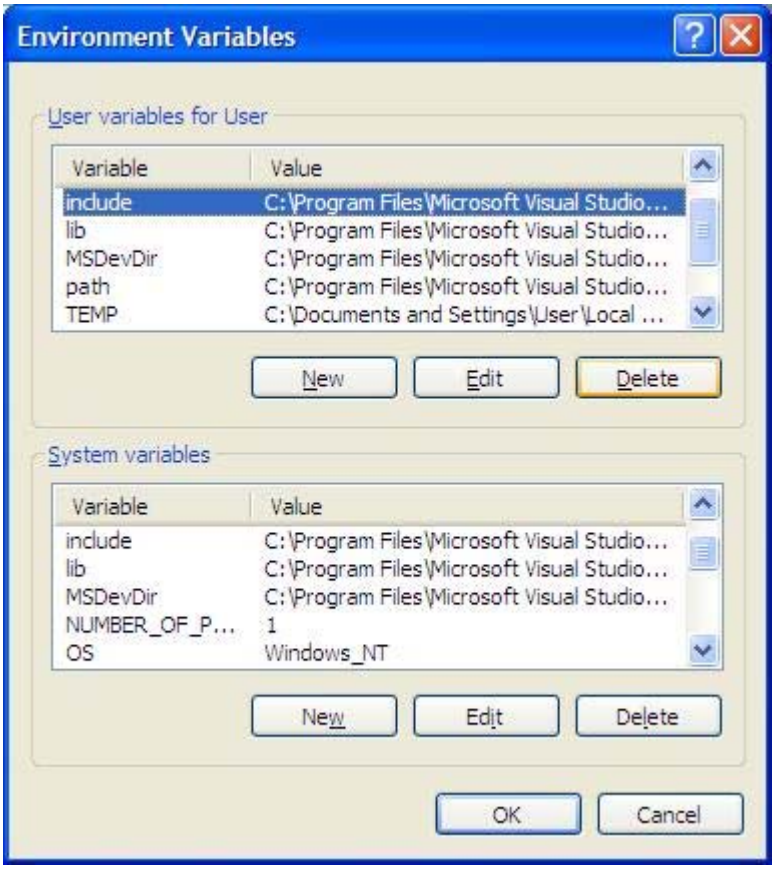
Step 17

Now that the *include, lib, MSDevDir, and Path* variables have been moved to the System area, they may be deleted from the User area.

Click on the *include* User variable in the top box, and click the Delete button.

Repeat for the *lib, MSDevDir, and path* User variables. (leave the System variables intact.

Click the OK button to save the changes.



This completes the Environmental variable move process.

IMPORTANT	**The environmental variables may be checked at any time from a command prompt by typing “set”.**

We appreciate your comments about the content of our publications.

Send comments to: icinfo@woodward.com

Please reference publication 51250A.

B51250:A

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