

Paper 188-28

Getting PC SAS® to Do What You Want, When You Want, How You Want

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ABSTRACT

Searching for a file that is not where you thought it was, starting SAS® up just to find that system options weren't set as you thought they were, or struggling to work with a windowing environment that is not comfortable – these are all obstacles to optimum productivity. This paper solves these potential problems by explaining how the PC SAS System uses configuration files, how it decides where to save files, and how to control SAS System startup. You'll also learn how to customize your display and use some of the new SAS System accessibility features.

INTRODUCTION

Where did that file go – I'm sure I saved it! Why is that system option set to OFF when I'm positive I edited my config file? When I bring SAS up, my fonts and window sizes are back to the default! Ack! How do I get my display back to the way it was!!!??

Version 9 of the SAS System under Windows is a powerful and flexible tool. But it isn't always intuitive how to get the results you want. This paper discusses editing and managing configuration files and controlling SAS startup, and clarifies the algorithm SAS uses when it can't find a config file where it expects one.

We also talk about the default location for files saved without an explicit pathname and several SAS features that allow you to customize the fonts, window size, and other display-related aspects of your SAS session.

While beginning PC SAS users will find this paper invaluable, even veteran PC SAS users may discover a couple of new tricks. This paper focuses exclusively on base SAS in the Microsoft Windows environment.

EDITING & MANAGING SAS CONFIGURATION FILES**With a Config File Here, and a Config File There...**

The default installation of Version 9 of the SAS System places three SAS configuration files (SASV9.CFG) on your system:

1. One in your C:\Documents and Settings\user-name folder.
2. One in the C:\Program Files\SAS\SAS System\9.0 folder
3. One in your language-specific SAS folder (such as C:\Program Files\SAS\SAS System\9.0\en).

By default, the second of these config files consists of only a CONFIG system option, pointing to the language-specific folder config file.

Why so many config files?

The SAS System uses a detailed algorithm to find a config file if one is not specified in the SAS command. The SAS System cannot start without a config file, so having config files in various strategic places enables the SAS System to find a config file when it needs one. Here is the basic algorithm SAS uses:

1. If you specify a configuration file in the SAS invocation command using the CONFIG SAS system option, then this is the *only* configuration file used. You can specify multiple CONFIG options in a single command. In this case, the SAS System uses all the files you specify, processing them in the order in which they appear in the SAS command. (For desktop shortcuts, the **Target** field of the Properties dialog box contains the SAS command.)
2. If the SAS command does not contain a CONFIG option, the SAS System looks for a configuration file with the default name (SASV9.CFG) in the current folder (see "Understanding the SAS Current Folder" later in this paper for more details).
3. If the SAS command does not contain a CONFIG option and there isn't a SASV9.CFG file in the current folder, then the SAS System looks for a SASV9.CFG file in the folder that contains the SAS.EXE file
4. If you double-click on a file containing SAS code (such as a .SAS or .SS7 file), the file is opened with the SAS.EXE executable file. For this method of submitting SAS code, you *must* have a SASV9.CFG file in the folder that contains the SAS.EXE file.

Note: There are other ways to specify SAS configuration files, including several Windows environment variables, that add complexity to these basic rules. See the SAS System help for more information.

If the SAS System cannot find a configuration file, it cannot start up, and you will receive some cryptic error messages, similar to the two error dialog boxes shown in Figure 1.

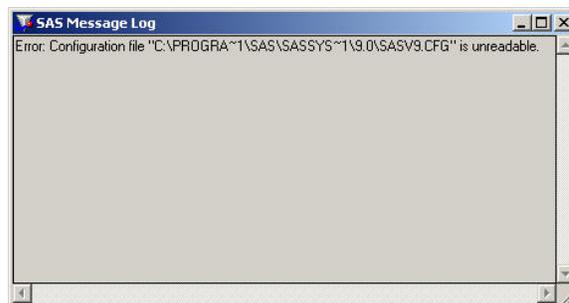
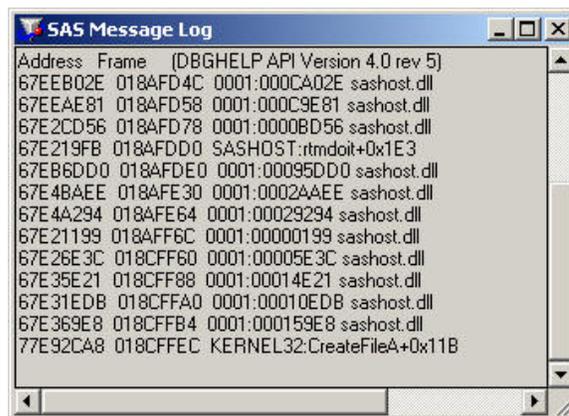


Figure 1. Sample Error Messages When the SAS System Cannot Find Any Configuration File

Managing Your SAS Config Files

The safest thing to do, of course, is to ALWAYS specify a configuration file using the CONFIG system option. But, if you leave the default config files, it is easy to assume one is being used, when really another is used, or to make changes to one and forget the other. I have developed two tricks to help me keep them straight:

1. Do a search using the Windows Explorer to find all files named SASV9.CFG. Now you know where you stand.
2. Place the following system option in each config file, which identifies the pathname of the config file.

```
-INITSTMT "%PUT Config file used: C:\config-file-pathname;"
```

When SAS starts up, the name of the configuration file that was used appears in the SAS log. You can refer to the log if a question arises about which config file was used.

UNDERSTANDING THE SAS CURRENT FOLDER

The SAS “current folder” (which used to be called the “working folder”) is an important concept related to SAS configuration files and to saving and accessing files within the SAS System. This is the folder that SAS looks for files in and stores files to when a specific pathname isn’t given. For example, if you do not specify a pathname for a file specified in the FILENAME statement, the SAS System looks for the file in the current folder.

Note: The Save As and Open dialog boxes do not default to the current folder; rather, they default (at the beginning of a SAS session) to the folder associated with the SASUSER libref.

The simplest case for the current folder is when you start your SAS session using a program shortcut, such as starting SAS from the Windows **Start** menu. In that case, the current folder is the pathname specified in the **Start in** field in the Properties dialog box for the SAS System shortcut that you used. To use a different folder as the current folder, simply edit the contents of the **Start in** field.

Note: It is not recommended to leave the **Start in** field blank.

Things start getting more complicated when you use the Windows Run dialog box or a command-prompt window to start the SAS System. In this situation, two scenarios have two different results:

- If you specify a path to SAS.EXE, the current folder is the path that you specify as part of the SAS command. This is true, even if the SAS.EXE file actually is not in that folder. If the SAS.EXE file is not in the folder you specify in the path, Windows searches the paths named in the PATH Windows environment variable for a file named SAS.EXE. But the current folder remains the path you specified in the command.
- If you specify just SAS.EXE as the command (no path to the file), then the current folder is the path from which you issued the command.
 - For the Run dialog box, this translates to C:\.
 - For commands issued from command-prompt windows, it is the pathname that appears before the command prompt. For example, if you change directories to C:\SASBOOK, then type SAS.EXE at the command prompt and press Enter, the SAS System starts up, using C:\SASBOOK as the current folder.

Note: Issuing the SAS command from a command prompt window or the Run dialog box with no pathname assumes that the folder that contains the SAS.EXE file is listed in the PATH Windows environment variable.

If the SASINITIALFOLDER system option is specified at SAS System start-up (such as in the SAS configuration file or in the SAS command), the pathname specified by the option becomes the current folder, overriding any other rules.

Note: The SASINITIALFOLDER system option also affects the default folder used in the Open and Save As dialog boxes (which normally default to the folder associated with the SASUSER libref).

The current folder is displayed in status bar at the bottom of the SAS workspace.

To change the current folder during a SAS session, double-click the folder name in the status bar of the SAS workspace. The Change Folder dialog box appears, similar to Figure 2.

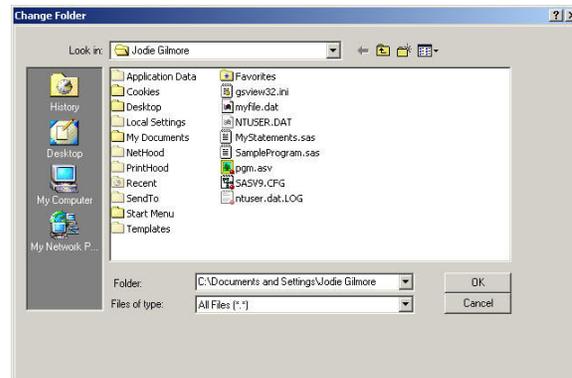


Figure 2. Change Folder Dialog Box

Type the full pathname of the folder in the **Folder** field. Or, you can use the mouse to navigate the list of folders and double-click the folder that you want to use. To move up in the folder hierarchy, click the icon showing a folder with an up arrow, to the right of the **Look in** field.

Once the **Folder** field contains the name of the folder you want, click **OK**. If you change the folder more than once during a single SAS session, the **Folder** field remembers all the folders you have used. To select a previous current folder, click the down arrow by the **Folder** field and select the correct folder. Then click **OK**.

Note: Changing the current folder using the Change Folder dialog box is not a permanent change. The next time you invoke the SAS System, the current folder defaults to the last current folder that was permanently set.

An alternative way to open the Change Folder dialog box is to issue the DLGCDIR command from the Command bar.

CONTROLLING SAS SYSTEM STARTUP

When you click use the Windows **Start** menu (accessed by clicking the **Start** button) to start an application, Windows uses properties to control how that application behaves. For example, for the SAS System, properties can specify which folder to use as the current folder, which system options to use at invocation, and whether the application begins as a normal-sized, maximized, or minimized window.

To begin, you must find the **Start** menu shortcut for the SAS System. Because everyone’s PC is configured differently, your shortcut may be located in a different place than documented here. In general, the **Start** menu shortcuts for the SAS System are stored in the following path: C:\Documents and Settings\All Users\Start Menu\Programs\SAS.

Note: One way to find the SAS shortcut is to use the Windows Explorer's Search feature. Type V9 in the search box. Although there will be several files in the search results, you should be able to pinpoint the SAS shortcut fairly easily.

Once you have located the correct folder, you are interested in editing the properties associated with the shortcut named (for example) **The SAS System for Windows V9 (English)**. Of course, if you specified a different name for the shortcut or are using a different language, the shortcut will have a different name.

To change the system options used in the SAS command that starts the SAS System, use the Properties dialog box. To access this dialog box, follow these steps:

1. Right-click the **The SAS System for Windows V9 (English)** icon, then click **Properties**.
2. Click the **Shortcut** tab.
3. Click in the **Target** field, and use the Backspace and Delete keys to delete any system options you do not want to use; type any new system options after the SAS.EXE. Remember that each system option begins with a hyphen.

To affect the initial size of the SAS window, click the down-arrow next to the **Run** field in the Properties dialog box (**Shortcut** tab). Choose between **Normal window** (takes up about 4/5 of the display), **Minimized** (shows only the SAS icon in the Windows Taskbar), or **Maximized** (takes up the entire display).

When you have finished editing the **Target** field and other fields in the Properties dialog box, click **OK**. The next time you use the **Start** menu to start the SAS System, the changes you have made will be in effect.

Note: This change applies only to the SAS System shortcut that is accessed from the SAS System program group in the Windows **Start** menu. If you have created additional shortcuts to the SAS System (such as on the desktop), you must change each shortcut's properties individually.

DISPLAY CUSTOMIZATION & ACCESSIBILITY

By enlarging the fonts, icons, and mouse pointer, you may find it easier to work with the SAS System. This section explains some of the methods you can use to adjust the SAS windowing environment.

Enlarging the Fonts Used in SAS Windows

Many people may find the SAS System's default type difficult to read. You can enlarge the font used in many portions of the SAS System. However, the technique differs, depending on which portion of the SAS System you want to change.

Only monospace fonts work well with the SAS System – proportional fonts do not produce satisfactory results. By default, the SAS System uses the Sasfont font in windows. Other monospace fonts that are common include Courier and IBMPCDOS.

Table 1 gives a quick reference to the various font areas you can affect and how they are modified. The subsequent sections provide more detail.

Table 1. Summary of Methods for Adjusting Fonts

Area Affected	Method to Access
"standard" SAS windows (such as the Program Editor, Log, Output, and Notepad)	Tools → Options → Fonts or FONT system option
Enhanced Editor	Tools → Options → Enhanced Editor
Descriptive text in the SAS Explorer, as well as "standard" SAS windows	SYSGUIFont system option
Font used in the SAS Results Viewer	Cycle Font tool in toolbar 

Caution: At the time this paper was written, the SYSGUIFont system option was considered an internal option. Although valid in the SAS command or config file, it does not appear in the System Options window or in the results of PROC OPTIONS.

Note: When you enlarge the font size, less information is visible at one time in a window. You may need to maximize the SAS window in order to allow space for large fonts to be readable, and it is possible that some dialog boxes may extend off the edge of the screen.

Enlarging the Font in "Standard" SAS Windows: Change the font in windows such as the Program Editor, Log, Output, and Notepad by using the Font dialog box. To open the Font dialog box, type DLGFont in the command bar or select **Tools → Options → Fonts**.

Note: The **Fonts** menu choice is not available from the **Options** submenu if the Enhanced Editor is the active window.

Figure 3 shows a sample Font dialog box.

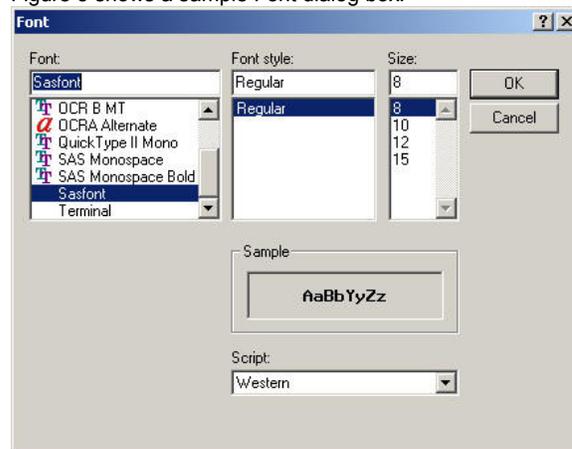


Figure 3. Font Dialog Box

You can choose a monospace font name in the **Font** field and a font size in the **Size** box. The maximum font size you can choose is 15 points.

When the settings are satisfactory, click **OK**. The font you choose in the Font dialog box accessed through the **Tools → Options** menu affects only the font used in SAS windows. To affect the font used for printer output, use the **Font** button in the Print Setup dialog box.

By default, the SAS System does not retain the Font dialog box settings from one session to the next. To make font settings permanent, either use the FONT system option in your SAS configuration file, or issue the WSAVE ALL command from the Command bar. If the FONT system option is set and WSAVE entries exist in the SASUSER catalog, the FONT option setting will override WSAVE entries.

Enlarging the Font in the Enhanced Editor: The Enhanced Editor does not recognize the font setting in the Fonts dialog box. To change the font in the Enhanced Editor, first make sure it is the active window. Next, click **Tools** → **Options** → **Enhanced Editor**. Figure 4 shows the resulting dialog box.

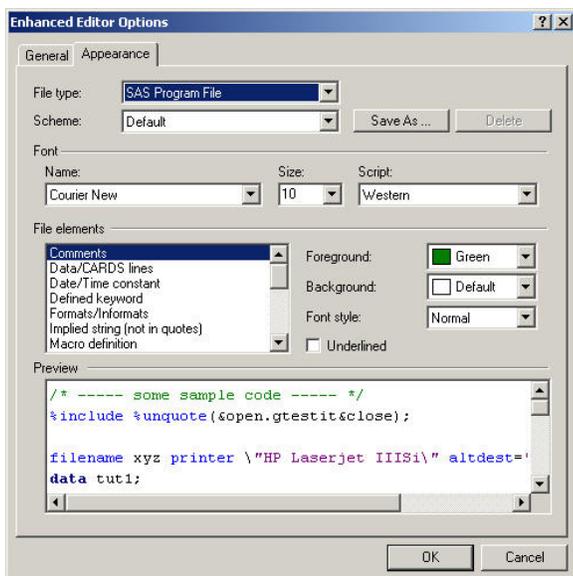


Figure 4. Enhanced Editor Options Dialog Box

Use the **Name** and **Size** fields in the **Font** area to adjust the font to something you are comfortable reading. The maximum font size you can choose is 72 points. When you are satisfied, click **OK**.

Note: The Enhanced Editor remembers your font settings from one SAS session to the next, so you do not have to reset them every time you run the SAS System.

Enlarging the Fonts Used in the Descriptive Text of the SAS Explorer: To enlarge the font used in descriptive text (such as the tab labels) that appears in the SAS Explorer as well as the text that appears in basic SAS windows such as Program Editor, Log, Output, and Command bar, use the SYSGUIFONT system option.

This system option is valid only at SAS start-up (such as in the SAS command or in your SAS configuration file). The syntax of the SYSGUIFONT system option is as follows:
-SYSGUIFONT "font-name" <font-size>

"font-name"

This option is required, and specifies the name of a valid Windows font that matches the name of the font as it is installed on your system. Quotation marks are necessary.

font-size

specifies the font size to use for the window text. If you omit font-size, SAS uses the default size of 8 points.

Note: If you do not have the FONT system option set, the SYSGUIFONT system option affects the text in the basic SAS windows (Log, Output, Program Editor, etc.). However, if you have both the FONT and SYSGUIFONT options set, the value of

the FONT option overrides that of SYSGUIFONT for SAS windows, and affects only the SAS Explorer text and the Command bar.

Enlarging the Fonts Used in the SAS Results Viewer: When viewing HTML files in the SAS Results Viewer window, you can enlarge the fonts displayed by clicking the Cycle Font tool in the

toolbar: . Be sure the Results Viewer is the active window.

The font size you choose by clicking Cycle Font is permanent, even from one SAS session to the next, until you change it again.

Note: The Cycle Fonts tool has no effect on any type of output except HTML. For example, it has no effect on PDF or RTF output.

Customizing Icons Used in the SAS System

The SAS GUI uses icons in several places – in the SAS Explorer, in the SAS toolbar, and in some menus. You can customize these icons to some extent.

Enlarging Toolbar Icons: You can make the SAS toolbar icons larger, if you want. To do so, click **Tools** → **Customize**. This opens the Customize Tools dialog box, as shown in Figure 5.

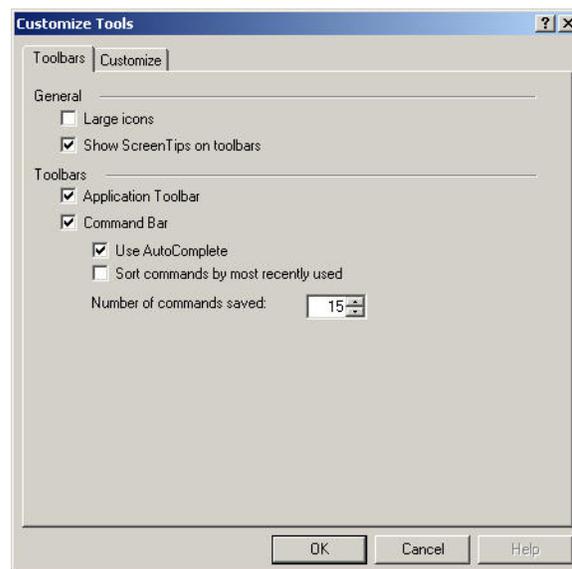


Figure 5. Choosing Large Toolbar Icons

Figure 6 shows a comparison of the SAS toolbar using the large icons versus the default icon size.

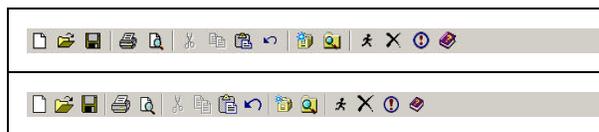


Figure 6. Comparison of Large and Small Toolbar Icons

The **Large icons** option affects only the toolbar; it does not affect the tool box.

Note: Using large icons may make some tool icons disappear off the edge of your screen. To use large icons, it is recommended that you have a high-resolution display.

Enlarging SAS Explorer Icons: You can also enlarge the icons used in the SAS Explorer window (as well as the My Favorite Folders window). To use large icons, make the SAS Explorer window active, then click **View** → **Large Icons**. Figure 7 compares the large and small icons used by the SAS Explorer.

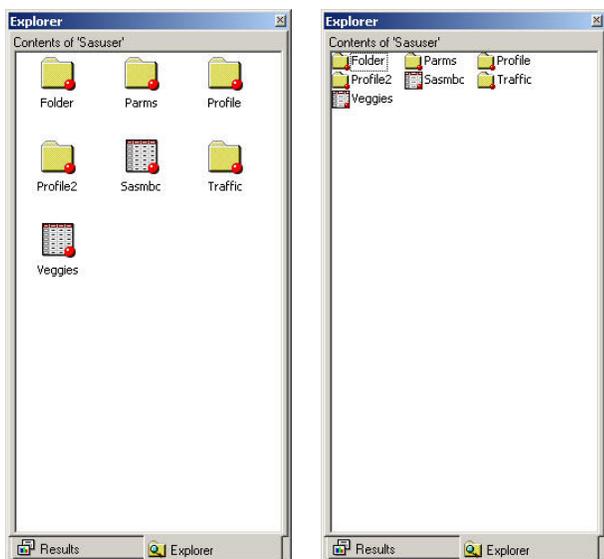


Figure 7. Comparison of Large and Small Icons in the SAS Explorer

Note: The large icon view is mutually exclusive with the list or details view. This technique affect the size of the icons used in the Results window – see “A Few More Useful Tips” later in this chapter for how to increase the icon size in the Results window.

Turning Off Icons in Menus: Some screen readers do not perform well when reading menus that contain icons. To turn the menu icons off, use the NOMENUICONS system option. This system option is valid both at SAS System start-up and in an OPTIONS statement, and has the following syntax:

MENUICONS | NOMENUICONS

By default, this option is set to MENUICONS. Figure 8 shows the **View** menu with and without menu icons.

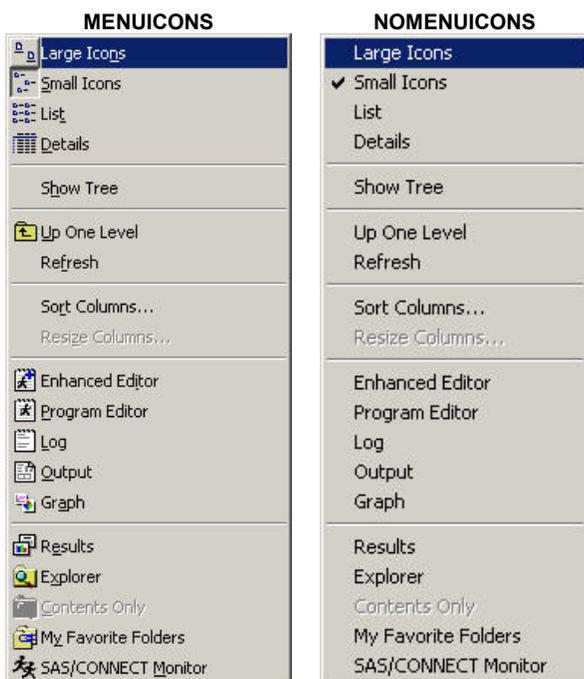


Figure 8. Comparison of View Menu, Depending on the Setting of the MENUICONS System Option

A Few More Useful Tips: The Windows Control Panel also offers some accessibility customizations through its **Display** and **Mouse** options.

- Increasing the size of the icons on the Windows desktop and in the first-level **Start** button menu – click **Start** → **Settings** → **Control Panel**, then double-click **Display**. Click the **Effects** tab, then select the **Use large icons** option and click **OK**. This makes the icons on the Windows desktop much more visible. Unfortunately, the descriptive text below the icons stays the same size, as do the icons and text associated with deeper levels of the **Start** button menu.
- Increasing the size of icons and text in Windows Explorer and SAS Explorer, and elsewhere in your system – click **Start** → **Settings** → **Control Panel**, then double-click **Display**. Click the **Appearance** tab. Now click the down arrow next to the **Item** field, and click **Icon** (you may need to scroll the **Item** list). Finally, select a font name and size in the **Font** and **Size** fields, then close the dialog box by clicking **OK**. Not only does the descriptive text of icons increase in the SAS Explorer, and SAS Results window, but so do fields such as the font and paragraph names in Microsoft Word and other programs.

Note: You can experiment with other selections in the **Item** field to further customize your display.
- Increasing the size of the mouse pointer – click **Start** → **Settings** → **Control Panel**, then double-click **Mouse**. Click the **Pointers** tab; in the **Scheme** area, scroll through the list of available pointer schemes. Look for one called “Extra Large” or “Magnified”. The exact schemes available depend on the mouse you have connected to your system. After choosing a scheme, click **OK**. The mouse pointer now exhibits the new scheme. (If you don’t like the new one, you can always use the Mouse dialog box to choose a different one. Try various schemes until you find one you like.)

SAVING YOUR CHANGES TO THE WINDOWING ENVIRONMENT

After you’ve made changes to your SAS windowing interface, you may not want to make these changes again. You can tell the SAS System to save the changes you’ve made. Or, you can save the changes only to a particular window.

Saving All Your Changes

To save all the windowing interface changes you have made, follow these steps:

1. Click **Tools** → **Options** → **Preferences** in the SAS System main menu.
2. In the Preferences dialog box, click the **General** tab.
3. Select the **Save settings on exit** option.
4. Click **OK**.

Following these steps is equivalent to issuing a `WSAVE ALL` command from the Command bar, and creates several `WSAVE` entries in your `SASUSER.PROFILE` catalog.

Saving Changes to a Particular Window

To save the changes you’ve made in a particular window, but not to other windows, follow these steps:

1. Make the window you want to save active.
2. Issue a `WSAVE` command from the Command bar.

This creates a `window-name.WSAVE` entry in your `SASUSER.PROFILE` catalog.

RETURNING TO THE DEFAULT WINDOWING ENVIRONMENT

Sometimes you may want to undo one or more changes you have made to the SAS windowing environment.

If you want to undo only one change from among many, you may want to redo the command. For example, if you have used the COLOR command to change many aspects of several windows and want to save the majority of the changes, your best approach is to reissue the COLOR command for the few window aspects you want to change. Or, if you are happy with most of the settings in the Preferences dialog box but want to change one of them, open the dialog box, make your change, and click **OK**.

If, however, you want to completely undo a set of changes, such as all color settings or all tool bar changes, use the techniques in Table 2. Where several actions are listed, try each of them in order – you may have to take several steps to completely return to the default settings.

Note: To see the entry types for catalog entries in the SAS Explorer window, click **View** → **Details** in the SAS System main menu. You may have to scroll or resize the SAS Explorer window to see the **Type** column. You can also use the **Description** field in the SAS Explorer window to help you find specific entries.

Table 2. Returning to the Default Windowing Environment

Window Element	To Return to Default Settings
Keys	Delete or rename the Dmkeys entry in your SASUSER.PROFILE catalog
Tools	Open the Customize Tools dialog box, click the Customize tab, and click the Restore Defaults icon Delete all .TOOLBOX entries in your SASUSER.PROFILE catalog
Colors	Open the SASCOLOR window and click Defaults Delete all .WSAVE entries in your SASUSER.PROFILE catalog. Delete the SAS.CPARMS entry in your SASUSER.PROFILE catalog
Preferences	Delete the xyzWSAVE entries from your SASUSER.PROFILE catalog, where xyz represents the various tabs in the Preferences dialog box
Window size and position	Click Window → Resize in the SAS System main menu. Delete .WSAVE entries with a window name from your SASUSER.PROFILE catalog. Delete or rename the Dmsdef entry in your SASUSER.PROFILE catalog. Restart your SAS session

CONCLUSION

Most people feel more comfortable driving their own car, and work most efficiently in their own personally-organized space. Similarly, your use of the SAS System will be most efficient when you understand how it works and how to customize it to suit your needs. Hopefully, this paper has given you some good ideas about how to start customizing PC SAS.

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