

Paper 109-28

Build a SAS® Development Environment under Windows®

Wei Cheng, ISIS Pharmaceuticals, Inc., Carlsbad, CA

ABSTRACT

The SAS System continues to improve the user interface and application integration for Windows operating system. This paper discusses how to build a SAS development environment by using the features from both the SAS system and the Windows system. Topics include how to set up a SAS shortcut icon, how to add actions to the context menu, and how to perform SAS log scan.

INTRODUCTION

As the Microsoft Windows family keeps improving its functionality and its stability, more and more SAS users are developing their SAS programs on the Windows platform. It becomes very important to take advantage of both the SAS system and the Windows operating system to achieve rapid and effective software development.

This paper provides some practical solutions that can be used in daily SAS program development under Windows. These solutions are tested under Windows NT and Windows 98, but can be adapted to other Windows systems with a few modifications.

SET UP THE SAS SHORTCUT ICON

Shortcuts are one of the handiest features on the Windows operating systems. The shortcuts can be kept on the desktop or inside a special folder. Double-clicking the icon makes it very convenient to activate the application without keeping track of the application's actual location.

During installation of the SAS system, a shortcut is created automatically on the desktop by the SAS System Setup program. The shortcut can be used to start the SAS System. Multiple shortcuts can be set up to represent differently configured SAS sessions for different projects.

A SAS shortcut can be created in a number of different ways:

- 1) Make a copy from the existing SAS shortcut on the desktop.
- 2) Go to the !SASROOT directory (By default it's C:\Program Files\SAS Institute\SAS\V8) in Windows Explorer where the sas.exe resides.
 - a) Select sas.exe, and then click Create Shortcut on the File menu.
 - b) Right-click sas.exe to display the context menu, and then click Create Shortcut.
 - c) Use the right mouse button to drag the sas.exe to the desktop and drop it there. A context menu will pop up. Click Shortcut on the context menu.
- 3) Right-click on the desktop and click New on the context menu, and then select Shortcut on the extended submenu. Click the Browse button to find the sas.exe file in the !SASROOT directory.
- 4) Using Shell Scripting or Windows Scrip Host.

After the SAS shortcut icon has been created, the properties window (Shown in Figure 1) of the icon can be brought up by right-clicking on the icon and clicking the Properties on the context menu.

Several SAS system options can be added to the Target field to customize the SAS session. Some of the commonly used options are the following:

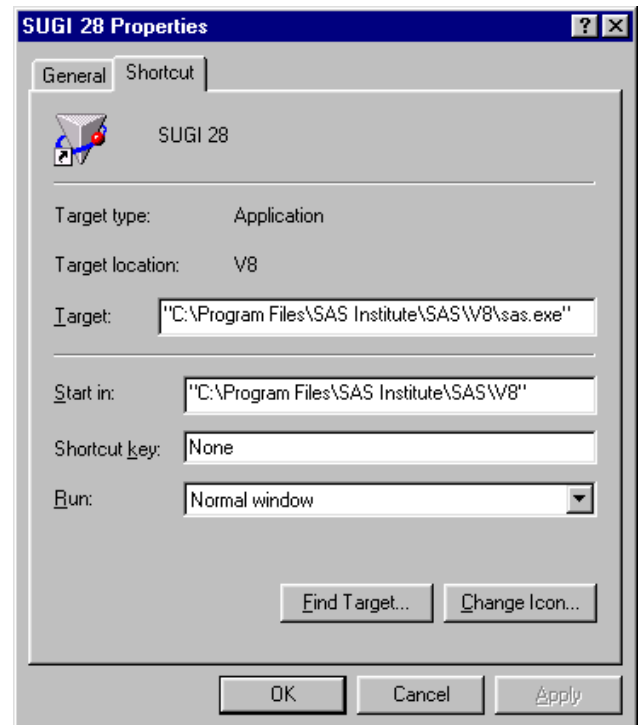


Figure 1. Set up the SAS shortcut icon.

-CONFIG

Specifies the complete file name of an alternative SAS configuration file. Additional -CONFIG options can be specified.

-AUTOEXEC

Specifies an alternate SAS autoexec file.

-AWSTITLE

Replace the default text "SAS" in the main SAS title bar to help you distinguish different SAS sessions.

-SASINITIALFOLDER

Changes the working folder and the default folders for the Open and Save As dialog boxes to the specified folder after SAS initialization is complete.

-SASUSER

Specifies the name of the SASUSER library which contains a user's profile catalog.

-RSASUSER

Controls whether members of the SASUSER data library can be opened for update or for read-only access.

-REGISTER

Add an application to the Tools menu in the main SAS window so you can execute the application by clicking on its name.

ADD ACTIONS TO THE CONTEXT MENU

Right-clicking an object, such as a file that is displayed in Windows Explorer or on the desktop, usually pops up a context menu. This menu contains a list of commands that the user can select to perform various actions to the object. For example, a default context menu (Shown in Figure 2) will be displayed by right-clicking on a SAS program which has a file extension .sas.

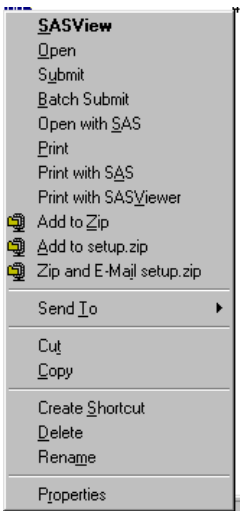


Figure 2. Default context menu of SAS program.

Anything that appears in the context menu is an action that can be taken on that particular file type. The SAS program can be SASviewed, Opened, Submitted, Batch Submitted, etc. by clicking on the corresponding action on the context menu. One of these appears in bold type, and that one is defined as the default action, it means the action would happen if you double-clicked the object instead of right-clicking it.

Actions can be added to the context menu by using the File Types dialog. For example, if the "Batch Submit" action, which generates the SAS log file and SAS lst file in the same directory as the SAS program resides, is not the preferred action for batch submitting the SAS program, a "My Batch Submit" action can be added to the context menu which can store the SAS log file and SAS lst in separate directories.

From Windows Explorer, select the menu item View \ Options (or Folder Options) and select the File Types tab, all the registered File Types can be viewed. Select the SAS System Program and hit the New... button, the New Action window pops up (Shown in Figure 3). Enter the action name "My Batch Submit" in the Action field, enter the following command to the Application used to perform action field:

```
"C:\Program Files\SAS
Institute\SAS\V8\SAS.EXE" "%1"
-nologo
-config "C:\Program Files\SAS
Institute\SAS\V8\SASV8.CFG"
-autoexec "YourAutoexec.sas"
-log ..\log
-print ..\lst
```

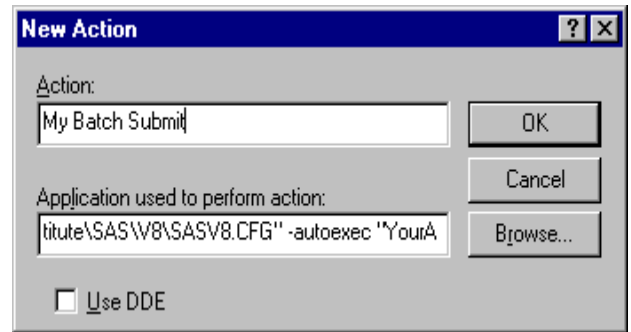


Figure 3. Add new action to the context menu.

By clicking the "My Batch Submit" on the context menu of any SAS program, the program will be executed, and the SAS log file and SAS lst file will be stored at the respective \Log and \Lst directory parallel to the directory containing the SAS program.

Actions on the context menu can be edited to perform the way you desire. Selecting the action and hitting the Set Default button can change the Default Action. To avoid the File Types dialog, actions can be added or edited directly in the Registry, or simply by saving the following line in a registry file with file extension .reg and double-clicking the file to merge the same action of "My Batch Submit".

```
REGEDIT4

[HKEY_CLASSES_ROOT\SAS.Program.701\shell\My
Batch_Submit]
@="My Batch Submit"

[HKEY_CLASSES_ROOT\SAS.Program.701\shell\My
Batch_Submit\command]
@="\"C:\\Program Files\\SAS
Institute\\SAS\\V8\\sas.exe\" \"%1\" -config
\"C:\\Program Files\\SAS
Institute\\SAS\\V8\\sasv8.cfg\"
-nologo
-autoexec YourAutoexec.sas
-log ..\log
-print ..\lst
-nosplash"
```

After the new action is added, the "My Batch Submit" command can be selected from the context menu. (Shown in Figure 4)

CAUTION: Registry customization is generally performed by advanced users with experience and knowledge of the Windows operating system and the SAS System. Here are a few helpful tips: 1) Back up the entire registry or key you intend to customize; 2) Do not blindly make modification, consult an experienced expert; 3) Make only one change each time.

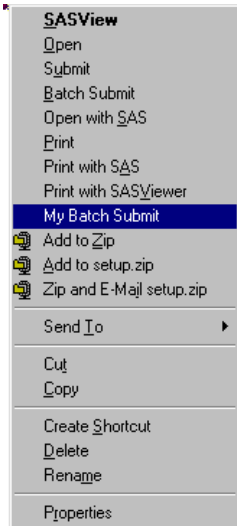


Figure 4. Context menu of SAS program after the new action is added.

PERFORM LOG FILE SCAN

A SAS log is written when the SAS program is running in batch mode or can be saved from the LOG window when the SAS System is running interactively.

By using the Windows NT command FINDSTR, a log file scan utility can be built to check the SAS log.

First create a file CATCH.txt with messages to look for:

```
error
warning
repeats of by values
outside the axis range
.....
.....
```

Then create a file PASS.txt with messages that can be passed:

```
scheduled to expire on
.....
.....
```

Assume both of the files are stored in C:\ drive, then the following commands can be saved in a script file LOGCK.bat to perform SAS log file scan:

```
FINDSTR /i /n /g:c:\catch.txt %1
| FINDSTR /i /v /g:c:\pass.txt
> logck.log
```

By typing

```
logck logfiletobechecked.log
```

in the command prompt window, all the ERROR, WARNING, or some NOTES from the SAS log which you are looking for will be printed in a file called logck.log.

CONCLUSION

By utilizing the features from the Windows operating system, a SAS development environment can be built to speed up the software development. This paper showed only a small part of building a SAS development environment, the more advantage taken of the operating systems, the easier and happier the SAS developer's life will be.

REFERENCES

SAS Institute, Inc., *SAS Companion for the Microsoft Windows Environment, Version 8*, Cary, NC: SAS Institute, Inc., 1999. pp.562

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CONTACT INFORMATION

Your comments and questions are valued and encouraged. Contact the author at:

Wei Cheng
 Isis Pharmaceuticals, Inc.
 2292 Faraday Ave.
 Carlsbad, CA 92008
 Work Phone: (760) 603-3807
 Fax: (760) 603-2588
 Email: wcheng@isisph.com
 Web: <http://www.geocities.com/prochelp>