

Paper 047-30

“That Can’t Be SAS®!” Starting SAS/AF® Applications

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ABSTRACT

As system developers create SAS software and applications, there are often several objectives, which must be adhered to. Some of the more common system development objectives include:

- ❖ Security
- ❖ Ease of Maintenance
- ❖ Functionality (does what it is suppose to do)
- ❖ Ease of Use

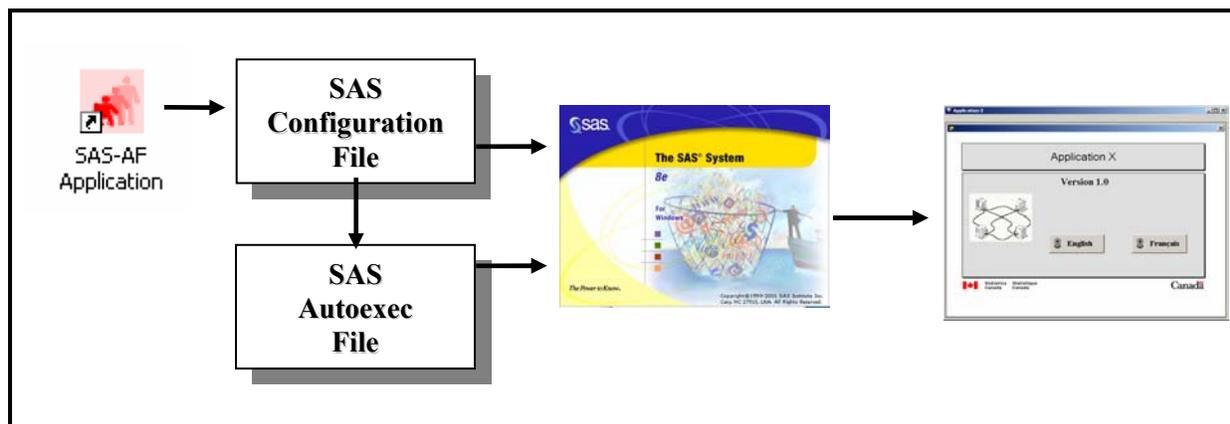
Depending on the system, often most or all of the objectives or specifications are equally important. However, if the client can’t figure out how to run and use the system, the fact that it is easy to maintain and does what it is suppose to no longer matters. As great as the SAS product is, often the user or client of a given SAS application may or may not have experience with the use of the SAS interface. Therefore, it is often necessary to make the invocation of a SAS/AF application as simple as possible.

The focus of this paper is to address the issue of “Ease of Use”, in particular, starting a SAS/AF application from the Microsoft Windows desktop (icon). Various SAS configuration commands will be discussed, including the use of a SAS “Configuration File” and SAS “Autoexec File”. The intended audience for this paper is SAS\AF application developers.

INTRODUCTION

What would most of us do if we couldn’t start applications from desktop icons or menus? The answer is probably an easy one.....we wouldn’t use the application! As humans, many of us are very visual in nature and prefer a graphical interface. Sure some of us love to type commands on a “command line”, however, most of us probably prefer to use icons and menus. This is also true for many SAS users. Not all SAS users are comfortable or familiar with the SAS interface. So why not make access to a SAS/AF application as easy as possible.

The objective of this paper is to describe a framework for starting SAS/AF applications from Microsoft Desktop icons. Various SAS configuration commands will be introduced along with the use of a SAS Configuration file and a SAS Autoexec file.



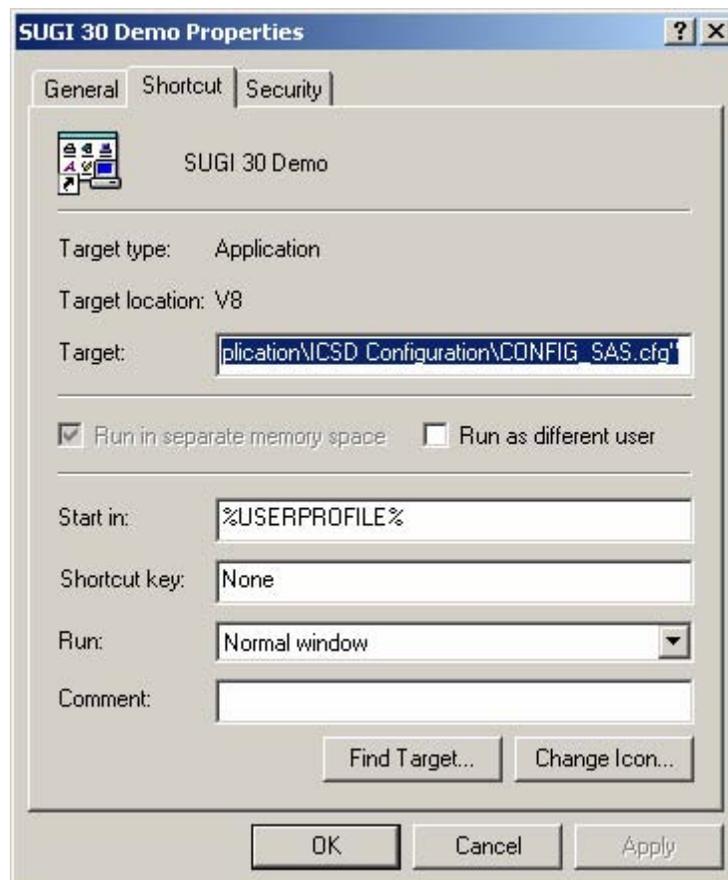
DESKTOP ICON



One of the easiest ways to start a SAS/AF application in the Windows environment is by using a desktop icon. The icon will need to perform three basic functions:

1. Start SAS
2. Configure SAS Environment
3. Start SAS\AF application

The best way to start creating an icon for your SAS/AF application is to copy an existing SAS icon. This will ensure that all necessary icon properties exist in order to start SAS correctly. Once the icon has been copied, changes can be made to customize it. To customize the new icon, right mouse click and select “properties”. The following window should appear.



One of the first things that should probably be done is to change the actual icon image. This way there will be no confusion between regular SAS and your SAS/AF application. It would also be a good idea to rename the icon to the name of your SAS/AF application.

The most important change that will be required is to the “Target” property. Typically the “Target” is comprised of two parts.

```
"C:\Program Files\SAS Institute\SAS\V8\sas.exe" -CONFIG "C:\SASV82\sasv8.cfg"
```

The first part contains the path and name of the file that executes the SAS system. There will be no need to change this value. The second part contains the location of a SAS Configuration file to use when SAS starts. The second part of the “Target” will need to be added or changed if it already exists. This part calls a SAS Configuration file. It is this configuration file that will determine what the SAS environment will look like and do when SAS is invoked. See the next section (The SAS Configuration File) for more information.

If the “CONFIG” option is not present in the “Target” area simply add the “-CONFIG” option along with the path and filename of the SAS Configuration file to be used for the SAS/AF application. Note that a space is required between the SAS invocation command and the “-CONFIG” command in the “Target” property. After copying the SAS desktop icon and making the above changes, the “Target” property may appear as follows (example):

```
"C:\Program Files\SAS Institute\SAS\V8\sas.exe" -CONFIG "C:\Application X\config.cfg"
```

After selecting the OK button on the icon properties window, you will have created an icon that will be used to start your SAS/AF application. However, other modifications and changes are still required.

SAS CONFIGURATION FILE

The purpose of a SAS Configuration File is to allow one to define and specify various system options and commands that will customize the way SAS will look, run and behave. So that we do not interrupt or disturb the way in which a regular SAS session starts and runs, it is recommended that a copy of the SAS Configuration file be made before making any changes. This will allow the SAS/AF application to have a dedicated SAS Configuration file. This is the file that should be referenced in the “Target” property (2nd part) of the icon properties mentioned in the previous section.

The default SAS Configuration file can be typically found in the folder where “SAS.EXE resides. The default name is “SASV8.cfg” (for SAS Version 8).

Example

```
C:\Program Files\SAS Institute\SAS\V8\SASV8.cfg
```

For our framework, the following SAS system commands / options are appended to the end of the SAS Configuration file that has been dedicated to our SAS/AF application:

```

/*****/
/* CUSTOMIZATION FOR THE APPLICATION BEGINS HERE. */
/*****/
-SASUSER "C:\Applications\Application X\Configuration"
-UNBUFLOG
-NODMSEXP
-NOENHANCEDEDITOR
-NOSPLASH
-AWSTITLE "Application X"
-SASCONTROL NOMINMAX
-AUTOEXEC "C:\Applications\Application X\Configuration\Autoexec_Appx.sas|"
-INITCMD "AF CATALOG=APPX.GUI.ROOT.FRAME;
        TOOLCLOSE;
        COMMAND CLOSE;
        WSTATUSLN OFF;
        WWINDOWBAR OFF;
        AWSMAXIMIZE ON"

```

Each of these commands has a particular function. The following table will give a brief description of their purpose.

| SAS Option | Purpose / Description |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| -SASUSER | Indicates to SAS, the folder in which the user's profile catalogs / files exist. If the profile does not exist, SAS automatically create.. |
| -UNBUFLOG | This option tells SAS to write all log information directly to the SAS log without being buffered in memory. This will ensure that no data is lost in the event of a system problem. |
| -NODMSEXP | As the SAS system starts, this option will ensure that the SAS “explorer and results” windows are not displayed. |
| -NOENHANCEDEDITOR | Typically when one starts SAS, the Enhanced Editor starts by default. However, when starting a SAS/AF application there is no need to see this editor. Thus, this option will suppress the invocation of the SAS Enhanced Editor. |
| -NOSPLASH | You will notice that when a SAS session initiates, one briefly sees a SAS “Splash” screen for a few seconds while the SAS system is loaded. To prevent the default SAS “splash” screen from appearing use this option. Note that it is possible to specify a customized “splash” screen for your application (not covered in this paper). |
| -AWSTITLE | This option allows a customized title to be placed on the title bar of the main SAS window. The default SAS title will not appear when this option is used. |
| -SASCONTROL | In general, this option specifies whether or not the SAS application window includes system / control menus and minimize / maximize buttons. In particular we shall use the “ NOMINMAX ” parameter. This will ensure that all windows within the main SAS window cannot be changed in size. (this option is merely a preference) |
| -AUTOEXEC | This system option specifies the location and name of a file that is called a SAS autoexec file. The autoexec file contains SAS statements that are executed automatically when you invoke the SAS System. The autoexec file can contain any valid SAS statement. (See Next Section for more detail) |
| -INITCMD | The INITCMD system option allows one to specify various command line settings that can suppress the Log, Output, Program Editor, and Explorer windows when you enter a SAS/AF application. This option can only be used in a windowing environment |

The following table describes some of the parameters used in conjunction with the `-INITCMD` option:

| INITCMD Parameter | Purpose / Description |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AF CAT= | Indicates the location and name of the AF FRAME to be started. Note that this is a four level name. The SAS Library reference should be defined in the SAS Autoexec File. |
| TOOLCLOSE | Ensures the suppression of the SAS Tool bar. |
| COMMAND CLOSE | Specifies to close the command bar or the Command dialog box. |
| WSTATUSLN OFF | This parameter turns off the SAS status line. This enables the message lines in the SAS application windows. |
| WWINDOWBAR OFF | If the window bar is on, it displays at the bottom of the main SAS window just above the status bar. This option turns this area off. |
| AWSMAXIMIZE ON | Ensures that the main SAS window is maximized. This option has the same effect as clicking on the maximize button. |

SAS AUTOEXEC FILE

One of the SAS system options that is used in the customized SAS Configuration file mentioned in the previous section is the “-AUTOEXEC” option. This option tells SAS to look for the specified file and run the contents of it as soon as the SAS system starts up. This file is called a SAS Autoexec file. The SAS Autoexec file can be used for such things as:

- ❖ Specifying various application specific values
- ❖ Redirecting the SAS Log (discussed in next section)
- ❖ Defining SAS Library References, File References and Catalog References

Although the SAS Autoexec file is not necessary, it is an excellent mechanism to run any pre-processing or SAS code prior to execution of the SAS/AF application. Typically it is here where one would define the SAS Library Reference that points to the folder containing that SAS/AF application.

Example

```
%LET PROTOTYPE=YES;
%LET VERSION=1.0;
%LET ROOT=C:\Applications\Application X;

LIBNAME ICSDGRID "&ROOT\AF";  /**** Location of SAS/AF Application Catalog ****/

*****;
* Re-direct the SAS log file *;
*****;
%let DATETIME      = %SYSFUNC(COMPRESS(%SYSFUNC(DATETIME(),datetime20.),':'));
%let SAS_LOG_PATH  = &ROOT\AF SAS Logs;
%let SAS_LOG_FILE   = %UPCASE(&SYSUSERID) &DATETIME..log;
%let SAS_LOG_FULL  = &SAS_LOG_PATH&SAS_LOG_FILE;
PROC PRINTTO LOG ="&SAS_LOG_FULL"; RUN;
```

REDIRECTING SAS LOG

Since the SAS Log is suppressed using this framework, it is not possible to see any results while the application (SAS session) is running. If something goes wrong while running the application, there is no way of knowing what really happened or where it happened. Therefore, it is desirable to permanently store the SAS Log to a file. That way there is a history of what occurred during any given SAS/AF session. The redirection of the SAS Log (see example) should be placed in the SAS Autoexec file.

Example

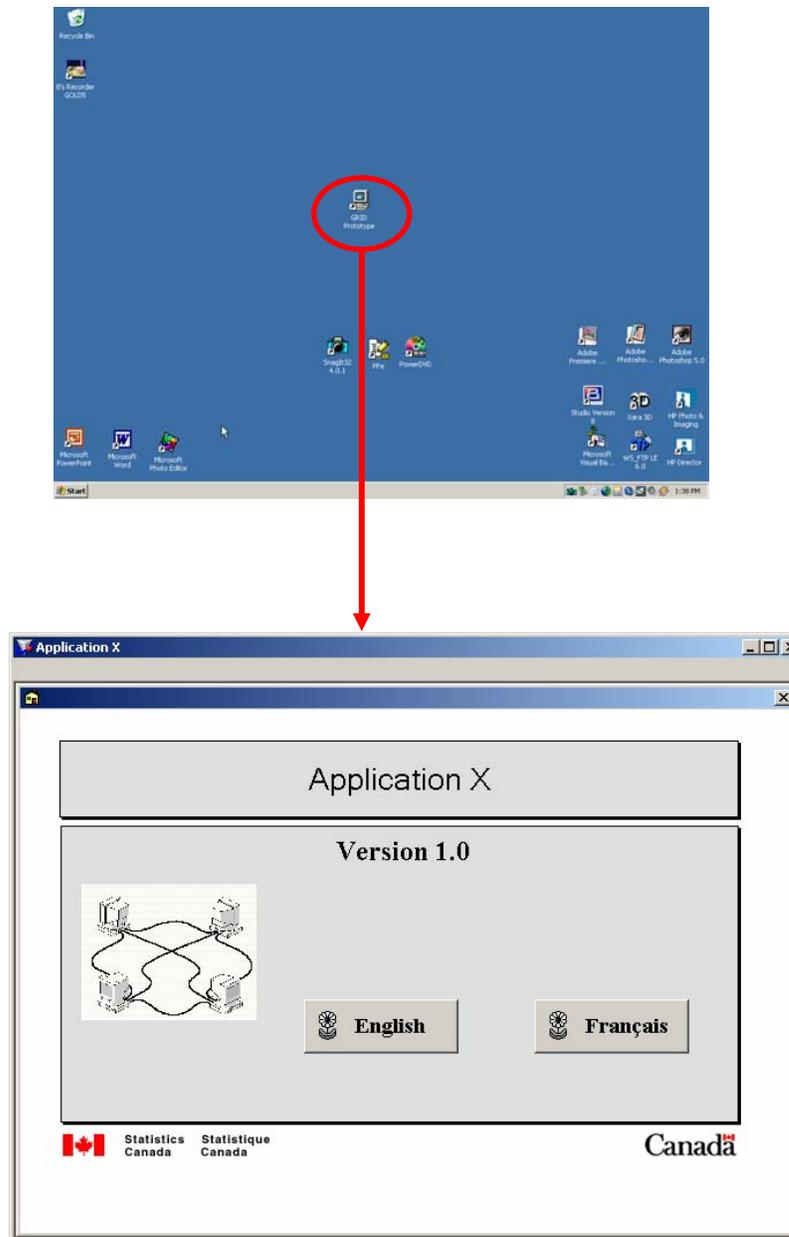
```
*****;  
* Re-direct the SAS log file *;  
*****;  
%let DATETIME      = %SYSFUNC(COMPRESS(%SYSFUNC(DATETIME(),datetime20.),':'));  
%let SAS_LOG_PATH  = &ROOT\AF SAS Logs;  
%let SAS_LOG_FILE   = %UPCASE(&SYSUSERID)_&DATETIME..log;  
%let SAS_LOG_FULL  = &SAS_LOG_PATH&SAS_LOG_FILE;  
PROC PRINTTO LOG = "&SAS_LOG_FULL";  
RUN;
```

Note: From the example (excerpt from SAS Autoexec file), a unique name is assigned to the permanent log file using the Userid and Date/Time stamp. This will ensure a unique SAS Log name in the case of a multi-user application.

The one disadvantage of redirecting the SAS Log to a permanent file is that these files can tend to build up and accumulate. A periodic cleanup of these files is recommended, whether it is a scheduled SAS job or a manual delete operation.

CONCLUSION

As a SAS software developer, one should always strive to ensure that the SAS/AF application is as easy to use as possible to reduce burden on the end user or client. And one way to reduce this burden is to ensure that the application is easy to start. Basically we want to be able to “double click” on an icon and start a SAS/AF application.



This paper has outlined a method or framework that can be used. Of course there may be many ways in which one could accomplish similar results. However, if one follows the “recipe” outlined in this paper, don’t be surprised if you hear a client or user say:

“That can’t be SAS!?”

ACKNOWLEDGMENTS

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CONTACT INFORMATION

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

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