

Running the SAS System® 6.11 as a BATCH Job under Windows® 95 and Windows NT™

Warning:

These methods use the Registration database editor, REGEDT32.EXE or REGEDIT.EXE. This can be potentially dangerous to your operating system. Insure you back up the database once you have invoked it and export a copy as a backup.

These examples assume that the SAS System is installed in the "D:\SAS" subdirectory. Some of these examples depend on settings that are defined within the Windows registration database. These entries are automatically added when you install the SAS System. A copy of the registration data can be found as:

`!SASROOT\CORE\SASINST\SAS.REG.`

The SAS.REG file is the registration file that is executed during installation of the SAS System via SETUP.EXE. This SAS.REG is the template used but with an important difference, the drive and directory in SAS.REG default to C:\SAS. You must do a search and replace in an editor to change it to the drive and subdirectory where the SAS System is actually installed. If you double-click on SAS.REG you will actually run the REGEDIT program with this as the input file. This is useful in situations where the registration database may have been corrupted and you need to setup the default actions for SAS again or perhaps want to modify the SAS.REG to perform the actions you desire.

NOTE: The "SAS Companion for the Microsoft Windows Environment", chapter 1, section heading of "Submitting Code in .SS2 or .SAS files" states that double-clicking in Windows File Manager on a file with a .SS2 or .SAS extension will start SAS in batch mode and run the selected file. This is incorrect. The procedure will actually invoke the SAS System and `%include` the program you selected. The SAS System will then provide the log and output windows in DMS mode.

Windows NT 3.5x without Newshell:

This method will set up Windows NT so that when you double-click on a '.SAS' file you will run it in batch mode. You can modify this example as desired for your own use.

1. Execute 'C:\WINNT35\system32\REGEDT32.EXE'. This will start the Registry Editor for Windows NT. It's assumed that Windows NT is installed in 'C:\WINNT35'.

- If it is different please change it. Once in Regedit32 you will have 4 windows, one being 'HKEY_CLASSES_ROOT on Local Machine'.
2. At the top of 'HKEY_CLASSES_ROOT on Local Machine' will be 'HKEY_CLASSES_ROOT'. Below this will be the different classes or extensions that Windows NT knows how to deal with.
 3. Scroll down until you see 'SASProgram'. Double-click on this entry. This will expand to another entry for 'shell'.
 4. Double-click on 'shell'. This expands another entry called 'open'.
 5. Double-click on 'open'. This expands another entry called 'command'.
 6. On the right side of the screen you should see:

```
<No Name>:REG_SZ: D:\SAS\SAS.EXE -initstmt"%include `%1`;"
```

This tells the SAS System to `%include` the '.SAS' file you double-click on. In order to change the behavior and execute in true batch mode you must edit this entry. Double-click on the entry on the right side.

7. This brings up the 'String Editor' dialog box with the text described above. Edit it to read: `d:\sas\sas.exe %1`
8. Once this is changed you can shutdown the Registry Editor. From this point on if you double-click on a '.SAS' file it will invoke the SAS System in batch mode and place the .LOG and .LST files in the same directory as the '.SAS' file. See the Windows 95 example below on how to enhance the commandline options.

NOTE: If you drag and drop the '.SAS' file onto a 'running' SAS session icon it will still `%INCLUDE` the dropped '.SAS' file. If you drag and drop the '.SAS' file onto the SAS.EXE executable file in filemanager then SAS will run in batch mode, but the .LOG and .LST files will reside in the same directory as the SAS.EXE. The SASUSER and SASWORK subdirectories will be created in the same directory unless you edit the -SASUSER and -WORK entries in the config.sas to explicitly point to a preexisting subdirectory.

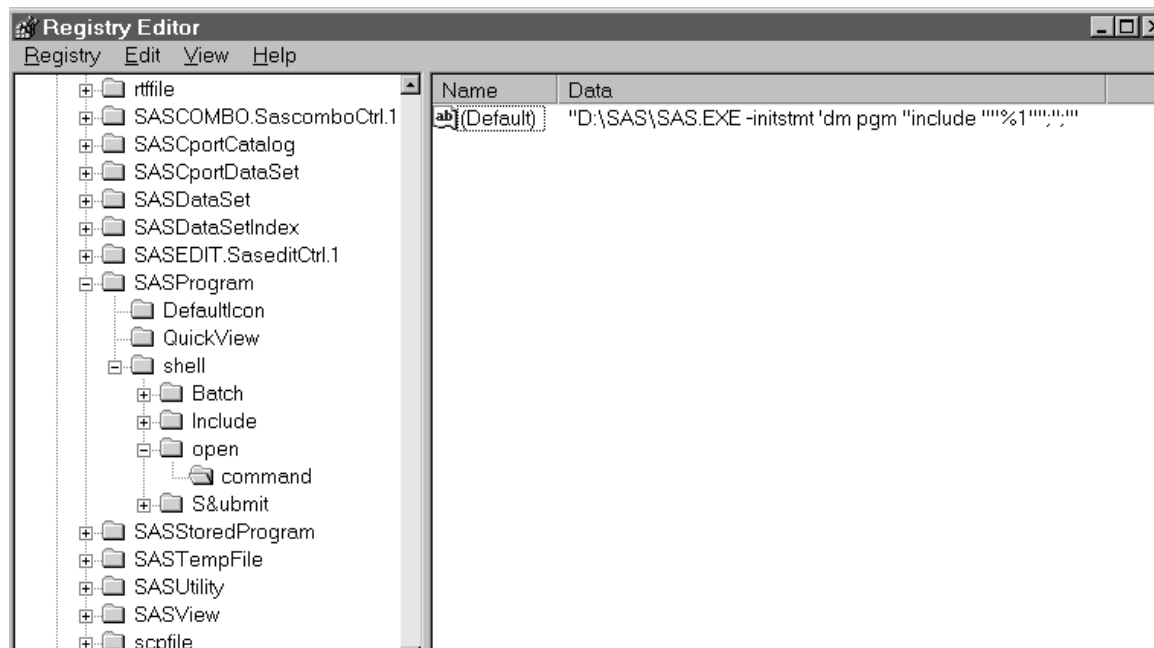
Windows 95 or NT with newshell

With the advent of Windows 95 you no longer deal with the WIN.INI as you did under Windows 3.1. You must now deal with a registration database as you do with Windows NT. This example will allow you to invoke the SAS System in a batch mode by double-clicking on the SAS program file and having the .LOG and .LST reside in the same subdirectory as the '.SAS' file.

The registration editor is located in the Windows 95 subdirectory. It is called 'regedit.exe'. Each site may have it installed in a different subdirectory and for this example we will assume it is installed in 'C:\WIN95' and that the SAS System is installed in 'D:\SAS'.

Invoke 'C:\WIN95\REGEDIT.EXE'. Once it is displayed on screen you will see an application screen with a split window. The window on the left side contains values called 'KEYS'. The key we are concerned with is the 'HKEY_CLASSES_ROOT'. If you double-click on this key the folder will expand. Shown are all the various type files that have been registered with Windows 95 (Win 95). You will see values such as '.386' or '.ani'. If you double-click on the .386 folder the right side of the split window shows a name value and a data value. The name value should be "(default)" and the data shows "vxdfile". If you now scroll the left window down to a folder called "vxdfile" and double-click on the folder you will see on the right side information about what a ".386" file type is and what it means to Win 95.

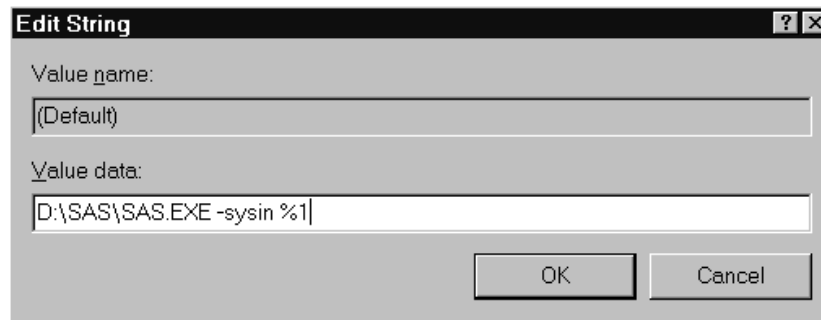
The 3 file types we are concerned with are, .SAS, .LOG and .LST. Scroll the left window down to a folder with ".sas". When you double-click on this folder you will see values on the right side with "SASProgram". With this value now known you can scroll the left window down to the folder labeled "SASProgram". Double-click on this folder and 3 subfolders of "DefaultIcon", "QuickView" and "shell" appear. Double-click on "shell" and other folders appears along with one that is "open". Double-click on "open" and another folder of "command" will be shown. Double-click on "command" and now the registry should look like:



In looking at the value for the "Data" section we see that the SAS System will invoke itself in interactive mode via the -initstmt and "include" the double-clicked

file. We want to change the default behavior to run in the background non-interactively.

If you double-click on the value “(Default)” on the right side of the split window you will get an Edit String dialog box which allows you to change the Data value. Change it to read as:



The contents of the “Value data:” line are the commandline values you can use as SAS System options, such as:

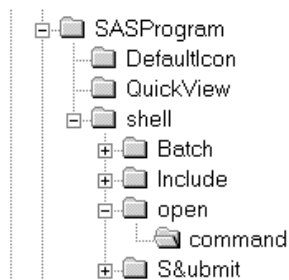
```
-icon -work d:\sas\saswork -sasuser d:\sas\sasuser
```

It is up to you what you place there and how you want the SAS System to operate. One recommended way is:

```
d:\sas\sas.exe -sysin %1 -nologo -icon -work d:\sas\saswork
-sasuser d:\sas\sasuser
```

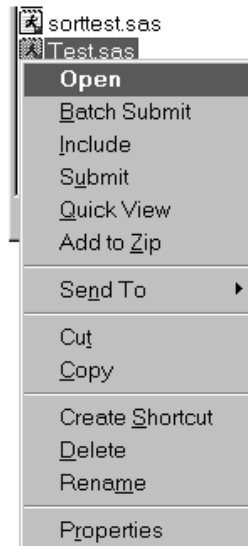
This will invoke the SAS System in batch mode, run the double-clicked program, not show the splash screen with the SAS logo, icon itself on the Win 95 taskbar and use the appropriate `sasuser` and `saswork` subdirectories. When the job is complete it will remove the SAS icon from the Win 95 taskbar and the resulting *.LOG and *.LST files will reside in the same subdirectory as the *.SAS file.

You may have noticed the other entries for SASProgram as shown below.



The additional entries are ‘Batch’, ‘Include’ and ‘Submit’. These entries have special meaning when you run under Win 95. If you go into the Win 95 Explorer and click on a

‘.SAS’ with your right mouse button (RMB) you will see a popup context menu with different actions. It may look similar to:



This shows you what your RMB click may look like.

Open:

If you select ‘Open’ it will invoke the SAS System interactively and ‘Include’ the ‘TEST.SAS’ into the Program Editor. This simply places the TEST.SAS file into the Program Editor and does **NOT** run it. Most Win 95 logo compliant applications will not execute a program by default, but rather place it into the applications default viewer prior to any action.

Batch Submit:

If you select ‘Batch Submit’ it will run as: `D:\SAS\SAS.EXE "%1"`

This entry again can be modified to any action you desire. In this case the default action will run the SAS System in a batch mode with the ‘TEST.SAS’ as the input file. This is how we modified the default double-click action earlier.

Include:

If you select ‘Include’ it will be the same action as above for ‘Open’.

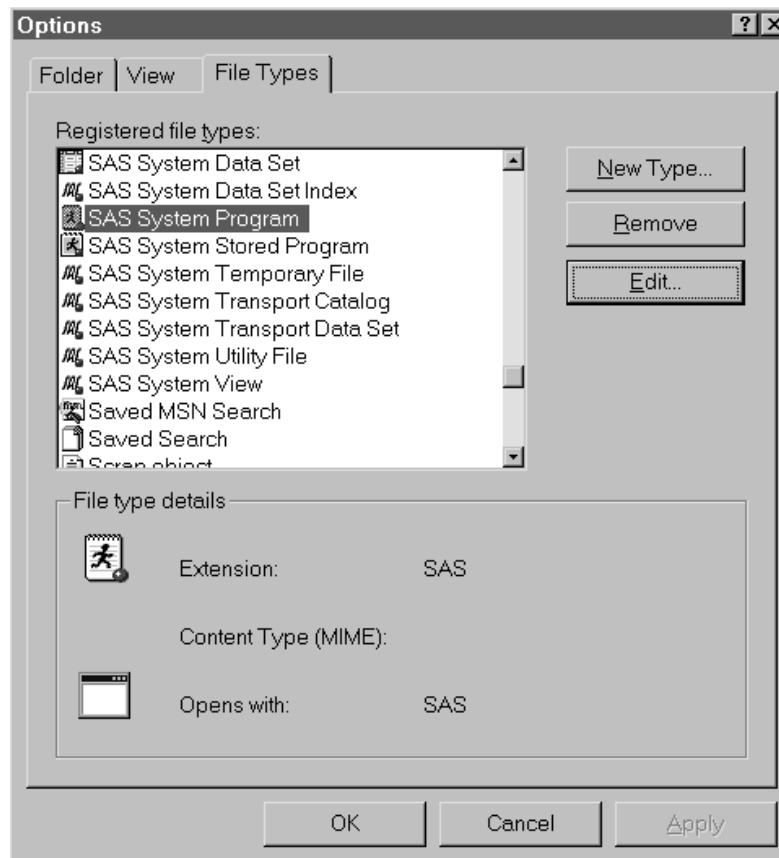
Submit:

If you select ‘Submit’ it will perform:

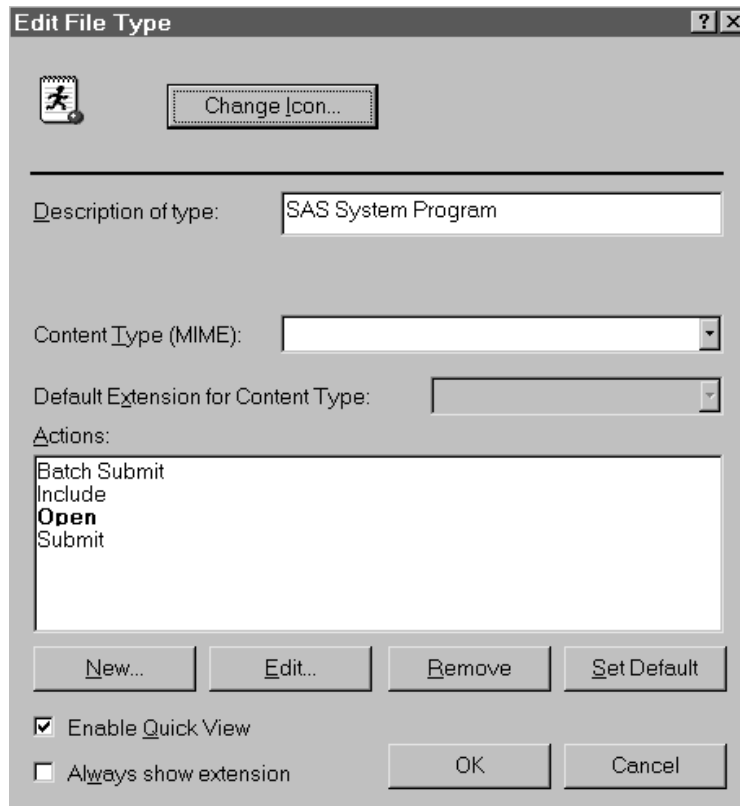
`D:\SAS\SAS.EXE -initstmt '%include "%1";'`

which will start the SAS System interactively and %include the TEST.SAS file. This will interactively invoke the SAS System, include the TEST.SAS program into the Program editor, and submit it for execution.

An additional way to use the RMB within Win95 and change its functionality is to select the menu item 'View' while in an explorer window. Select the 'Options' menu item and you will see a dialog box similar to:

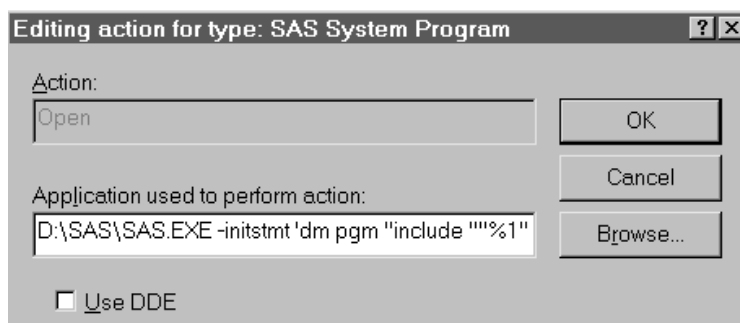


You can select the 'Edit...' button after you have highlighted the Registered file type of 'SAS System Program' and you will then see:



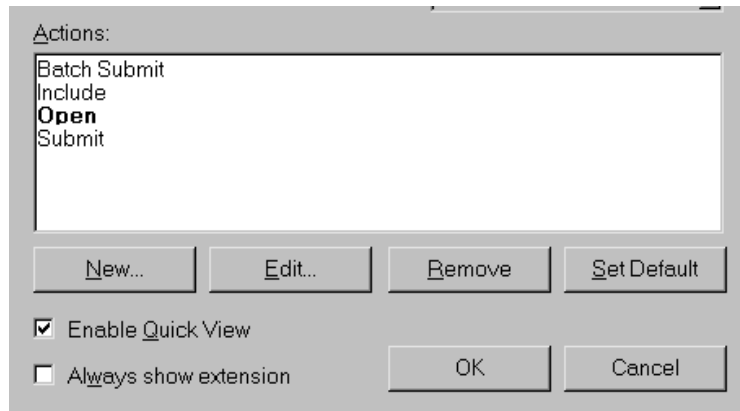
If you click on 'Open' you can then select the button on the bottom of the dialog box labeled 'Edit...'. This will allow you to change the default behavior of the 'Open' entry of the RMB when applied to a '.SAS' file.

You should see something similar to:



At this point you can change the action to 'D:\SAS\SAS.EXE -sysin %1' or any action you so desire.

One of the other items on the snapshot below is the capability to set a 'Default' for an action. You can then have that action float to the top of the RMB popup context menu:



The item that is shown in Bold is the default action. When you select a different action such as 'Batch Submit', that one will be in bold and will float to the top of the list when you use the RMB on a '.SAS' file.

MULTIPLE SAS JOBS:

NOTE: The SAS System has a hard time deciding which program should be run first when submitting multiple SAS programs by dragging more than one .SAS program on top of SAS.EXE. The SAS system will only run the first one in the alphabetically sorted list, the rest are not submitted. You cannot put multiple names on the -SYSIN command line option. If you do, the SAS System thinks the second and subsequent files are commands to be sent to SAS upon invocation.

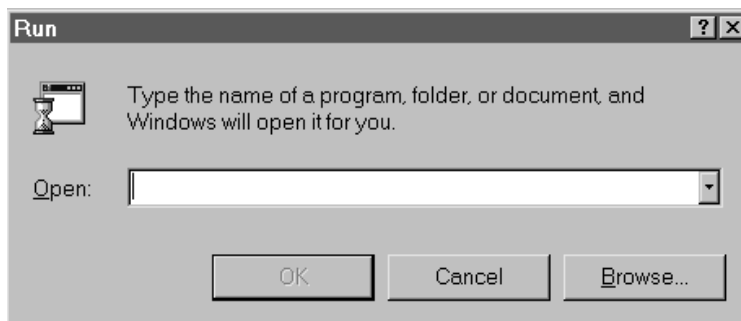
The simplest and most direct way to submit multiple SAS programs is to create a single SAS System program that contains multiple %INCLUDE's. You might call this program BATCH.SAS and have it contain programming statements similar to the following:

```
options source2; /* lists in log %include code */
proc printto log='prog-1.log' print='prog-1.lst new';
%include 'prog-1.sas';
proc printto log='prog-2.log' print='prog-2.lst new';
%include 'prog-2.sas';
proc printto log='prog-3.log' print='prog-3.lst new';
%include 'prog-3.sas';
```

In this example the LOG and PRINT files are explicitly defined with names using the PROC PRINTTO statement. The PROC PRINTTO could also be placed in the file being included.

COMMANDLINE MODE:

1. Select the "START" button menu item "Run...".



2. On the 'Open:' dialog box enter

```
d:\sas\sas d:\sas\code\yourfile.sas
```

3. "yourfile.log" and "yourfile.lst" will reside in "C:\SAS" which is where the "SAS.EXE" program was executed from.
4. If you desire to have the .lst and .log file in a different directory then you must issue the -log and -print SAS command line parameters. Step 2 would look like:

```
d:\sas\sas -sysin d:\sas\code\yourfile.sas
-log d:\sas\code\yourfile.log
-print d:\sas\code\yourfile.lst
```

NOTE: This is all on one line. The disadvantage to this method is the amount of typing.

DRAG & DROP onto SAS.EXE

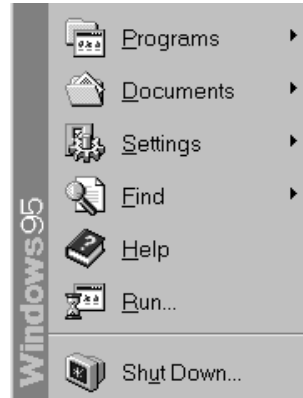
If you drag a .SAS file onto the SAS.EXE located in your Win 95 Explorer window you will be able to run the .SAS program, but the .LOG and .LST will be located in the C:\WINDOWS subdirectory. This is because there is no default working directory with this method.

DRAG & DROP onto SAS icon on the Taskbar

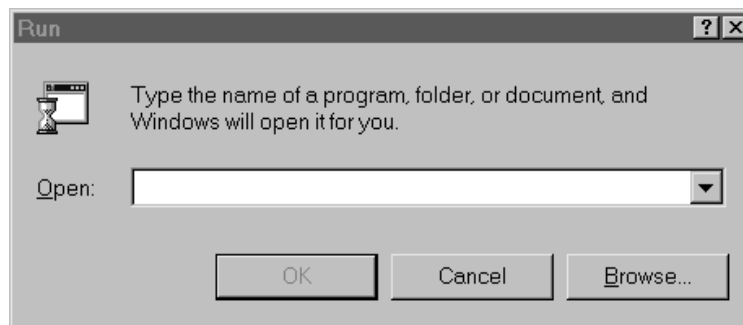
If you drag a .SAS file onto an interactive SAS System session and the SAS System is icon on your taskbar you must hold the .SAS file over the taskbar icon for a second or two and the SAS System will maximize for you to drop it into the program editor.

DRAG & DROP onto the 'RUN...' dialog box

You can select the 'Run...' menu item when you click on the 'START' button on the task bar:



Once you click on 'Run...' you will be presented with a dialog box:



If you drag a .SAS file onto the 'Open:' entry you can then add commandline options for that SAS session such as below:

