Paper 206-25

Procedures for a New SAS® Release

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ABSTRACT

This paper describes the procedures followed at the Federal Reserve Board (FRB) when a new or maintenance release of UNIX SAS is available. To decide whether to replace the production release with a newer release appears to be a trivial decision. However, this paper shows that the decision is influenced by many factors. Changing the production release is time consuming for those who install SAS and maintain SAS documentation as well as an inconvenience for SAS users. For some releases compatibility and data conversion issues arise. A new release usually requires extra disk space which could be difficult to obtain and require the intervention of others.
This paper has two purposes. The first is to document the steps taken when a new SAS release is available. This document can then be used as a guide to handle future releases. Second, while no other SAS site is exactly like this one, the information in this paper might help other SAS sites decide how to handle a new release. Most SAS users on any operating system should understand most of this paper.

STEPS TAKEN

Suppose a new or maintenance release of UNIX SAS is made available by SAS Institute. The following procedures are followed at the FRB.

Step 1. Investigate the new release.
First, a report which describes the new capabilities available in the new release is written. Information for such a report can be obtained from SAS Institute (web site or published report), recent SUGI proceedings, and help documentation included with the new release. A group at the FRB called the SAS Executive Committee (EC) consists of key users and people responsible for installing and maintaining SAS software. The EC will investigate the new release and decide whether to ignore it or look at it further. It will generally further explore the new release if one of the following is true:

i. The new features are thought to be of interest to SAS users at the site, or the new release contains significant improvements.

ii. The new release fixes relevant errors in the current release.

iii. The current release will not be supported much longer by SAS Institute.

Also, a new release from SAS Institute will be looked at more carefully than a maintenance release.

We assume at this time that the new release warrants further investigation. The SAS EC will investigate any new products introduced in the new release. A trial for the new product will be requested if we think users would be interested.

Step 2. Install the new release.
a. Install a single copy of the new release for testing while keeping the production version unchanged. Our UNIX network consists of 60 machines, each with their own limited disk space. There is also common disk space accessible from all 60 machines. Frequently used files are stored on every local disk for quicker access by users on their home machine. A single copy of infrequently used files is stored on common disk space to conserve local disk space. Each of the 60 machines has the SASROOT directory on its local disk space. A single copy of the new release is installed on the common disk space because there is not enough space to store both the new release for testing and the current production release on every machine. Also, the new release will not be used frequently.

b. Inform the 200 UNIX SAS users of the new release via e–mail and make the new features report available to them. We request that the users test their applications and indicate any interest in the new features. Warn the users not to execute production programs in the new release, which is only for testing. Frequent users are contacted by phone.

c. Compute the extra space required by the new release. Since SAS is distributed to 60 machines, we inform the UNIX systems staff of the possible need for addition disk space.

Step 3. Accept or reject the new release.
The SAS EC must now decide whether to accept or ignore the new release. If we accept, the new release will become the production release at a future date. We assume the decision is to accept the new release. An actual conversion date is announced to all users.

Step 4 Customize the SAS release.
a. Create a UNIX directory called sas.common on the common disk space. This directory will contain large but infrequently used files. Only a single copy of these files will be kept instead of distributing these files to all 60 machines. A significant amount of disk space on each machine is therefore saved. These large files include: the directory of compressed maps, (only the US map is initially not compressed), sastest, X11, terminfo, sas_notes, and samples. UNIX links must be created so that sas.common files are accessible from SASROOT.

b. Create the autoexec.sas file in SASROOT. This will serve as the default autoexec.sas file for all site users. The FRB's current autoexec.sas is:

```
filename gsasfile pipe 'lp';
filename gsasfilc pipe 'lp –Pcoloprinter'
 /* above 2 lines for graphic  print */
libname frbforms '!SASROOT/sasforms';
 /* local printforms library */
options comamid = tcp remote=mvscs1;
filename rlink'!SASROOT/misc/connect/sas.scr';
   /*above 2 lines for  for SAS/CONNECT */
```

c. Customize the default config file in SASROOT.
i. Disable the infrequently used maps:

```
/* –maps !SASROOT/maps *
```

ii. Change sasuser name if necessary:

```
–sasuser ~/sasusr12
```

iii. Define the local work directory name:

```
–work /tmp
```

iv. Add following FRB specific options:

```
–pagesize 59
–linesize 80
–noovp
–filelocks none
–yearcutoff 1950
```

d. Copy the FRB printforms directory from the previous release into the new SASROOT directory. This directory is a collection of FRB written printforms. Test some printforms with the new release.

e. Copy the FRB written macro directory (frbmac) into the new SASROOT from the previous release. Then in the new config file, modify the –sasautos line to:

```
–sasautos(!SASROOT/sasautos' '!SASROOT/frbmac')
```

f. Copy the in house written macmisc directory into the new SASROOT from the previous release. The macmisc directory contains site written software used by SAS to copy data between SAS and FAME databases. Many FRB time series are stored in FAME databases.

g. Copy sasflx.scr and sas.scr into the new SASROOT/misc/connect directory from the previous release. There files are used by SAS/CONNECT to establish a connection between UNIX and the FRB mainframe. Modify these files if necessary.

Step 5. Test graphic devices.
The following frequently used graphic devices must be tested.: imggif, ps, xbw, and xcolor. The xbw and xcolor devices output a graph to X Windows and can be tested with SAS code similar to:

```
goptions reset=all Device=xcolor;
data ran;
do i = 1 to 15;
r=ranuni(i);
output;
end;
symbol1 color=yellow i=join;
proc gplot data=ran;
plot r*i;
```

The imggif device can be tested with the above code by replacing the goptions statement with

```
goptions reset=all Device=imggif Gsfname=gsasfile Gsfmode=Replace;
```

and adding the statement

```
filename gsasfile 'atest1.gif'
```

Executing this code will create the file atest1.gif which can be displayed with the UNIX *xv* command. Similarly, the ps device can be tested by replacing the goptions statement above with

```
goptions reset=all Device=ps Gsfname=gsasfile  Gsfmode=Replace;
```

and replacing the filename statement with

```
filename gsasfile 'atest1.ps';
```

This code will produce atest1.ps which can be displayed with the UNIX *ghostview* command.
To print graphic output to the default printer retain the goptions statement:

```
goptions reset=all Device=ps Gsfname=gsasfile  Gsfmode=Replace;
```

and replace the filename statement with:

```
filename gsasfile pipe 'lp';
```

which is also in the autoexec.sas file. To print to a specified printer, include the filename statement:

```
filename gsasfile pipe 'lpr –Pprintername';
```

For color graphics, specify a color printer in the filename statement and specify the goptions statement:

GoptionsReset=All Device=pscolor Gsfname=gsasfile Gsfmode=Replace

Test the pslmono device, which prints only black and white (no gray). The US map should also be tested. by including

```
libname maps '!SASROOT/maps';
```

in the code. The locally written map file of the FRB districts should also be tested.

Step 6. The SAS script

Modify the new SAS test script which is the actual SAS command invoked by users. Make sure the script records each SAS usage with the new release number to a log file. SAS usage is monitored.

FINAL TASKS

Send out a final notice requesting that the users test the new release and report any problems.

On the announced conversion date:

a. Make a single copy of the old release on the common disk space. This copy will be available to users after the new release is in production.

b. Remove the old production release and distribute the new version as the production version to all 60 machines. One must take into account that the SASROOT name is changed from the test version to the production version.

c. Notify the users of the new production release. Remind them to modify any individual config.sas or autoexec.sas files in order to conform to the new config and autoexec files. Remind them of any data conversion if necessary. Update the local SAS web page.

d. Monitor use of the old release. Contact users of the old release and determine why they are still using it.

Make sure you are sitting near your phone the first week after installing a new production release. Although I have tried to include everything necessary in this paper, something will always be forgotten.

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