Improving SAS® System Support at a Large Site

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Introduction

This paper describes the steps taken to improve SAS system support at the Federal Reserve Board. We believe that these steps can be implemented at many large sites.

Characteristics of a large site

The characteristics of a large site vary, but might include several of the following:

1. Many users.
2. Diverse applications.
   - Report writing.
   - Full-screen data entry.
   - Production tape jobs.
   - Econometric modeling.
   - etc.
3. Many SAS products used.
   - SAS/ETS
   - SAS/FSP
   - SAS/DB2
   - SAS/AF
   - etc.
4. Users located at multiple sites.

Steps to Improve SAS Support

II. Develop full-screen menus to simplify interactive SAS use.
IV. Specialize SAS consulting responsibility by product.
V. Determine the appropriate level of consulting services.

I. Establish an in-house SAS User's Group

A SAS Board User's Group (SAS/BUG) was formed at the Federal Reserve Board and meets five times per year. The agenda includes any of the following:

- Common user problems and issues are discussed.
- Suggestions are made to improve the effectiveness of SAS.
- New releases of SAS and new SAS products are discussed and demonstrated. Testing and cutover dates are coordinated with the users.
- Users give demonstrations/talks on interesting applications or techniques.

Some consultants may be discouraged from forming a User's Group at their site because they do not expect to find users willing to make presentations. At the Federal Reserve Board, presentations at the meetings are planned as follows:
II. Develop full-screen menus to simplify interactive SAS use

Two full-screen menu applications developed at the Federal Reserve Board are the SASZ menu and the SASALLOC menus.

1. The SASZ menu collects all SAS and SAS related clists in 1 place. It combines prototypes provided by SAS Institute with utilities developed in-house. It was written as a dialog manager application. The capabilities include:

- Standard SAS invocation.
- Interactive allocation of SAS data libraries.
- Access to the SAS on-line HELP library and SAS sample library. Easy access to these tools makes it more likely that they will be utilized.
- Access to SAS Usage notes. The DMIDEMO clist distributed with SAS/DMI includes a SAS Usage notes application that greatly simplifies Usage notes access. Usage notes can be subsetted by operating system, procedure, and/or task and then viewed using SAS/FSP screens.

Figure 1 - SASZ Menu

<table>
<thead>
<tr>
<th>Option</th>
<th>Procedure</th>
<th>Name (if any)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SAS</td>
<td></td>
<td>Interactive execution of SAS on MVS/TSD</td>
</tr>
<tr>
<td>2</td>
<td>SAS2</td>
<td></td>
<td>As above but makes SAS an ISPF supported language</td>
</tr>
<tr>
<td>3</td>
<td>SASPRO1</td>
<td></td>
<td>Forecasting Menu Prototype</td>
</tr>
<tr>
<td>4</td>
<td>DMI</td>
<td></td>
<td>SAS/OMI (ISPF) Demonstration Prototype</td>
</tr>
<tr>
<td>5</td>
<td>SASAF</td>
<td></td>
<td>SAS/AF Demonstration Application</td>
</tr>
<tr>
<td>6</td>
<td>SASSL LOC</td>
<td></td>
<td>Allocates SAS (RA) Data Libraries-NEW or OLD</td>
</tr>
<tr>
<td>7</td>
<td>(more)</td>
<td></td>
<td>Allocations for specific libraries by menu display</td>
</tr>
<tr>
<td>8</td>
<td>SASHELP</td>
<td></td>
<td>Browse a listing of all Board generated SAS forms</td>
</tr>
<tr>
<td>9</td>
<td>SASHELPF</td>
<td></td>
<td>Browse the library containing samples of SAS code</td>
</tr>
<tr>
<td>10</td>
<td>SASHELPD</td>
<td></td>
<td>Registered installations of PC SAS (Authorized User Only)</td>
</tr>
<tr>
<td>11</td>
<td>SASHELPB</td>
<td></td>
<td>Browse the library of on-line HELP members</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(See manual SASHELP for a list of categories)</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td>X EXIT</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td>X Not Available</td>
</tr>
</tbody>
</table>
2. The SASALLOC menu simplifies interactive allocation of new or existing SAS data libraries.

- New SAS data libraries are created and allocated on a menu analogous to the IBM PDF 3.2 menu. Users can interactively create a SAS data library without learning the TSO ALLOC and ATTRIB commands.

- Up to 12 existing SAS data libraries can be allocated at a time. All information displayed on the screen is retained from session to session, so that frequently-used data libraries need be typed in only once.

Figure 2 - SASALLOC Menu for new SAS data libraries

```
------------------------ SAS Allocations ------------------------

Command ***

NEW Allocations:  (Use standard IBM naming conventions)

On a TSO pack:
  File name  >>>
  Data Library Name  >>>

On a DATA pack:
  Volume Name  >>>  (Call x5002 for a volume)
  Type of space  >>>  (TR or CYL)
  Primary Alloc  >>>
  Secondary Alloc  >>>
  File name  >>>
  Data Library Name  >>>

Enter an 'X' for:

>>> OLD Allocations (next screen)

Enter Enter to allocate  End(PF13) to Exit  or  PF11 for HELP

```

Figure 3 - SASALLOC Menu for existing SAS data libraries

```
------------------------ Allocations of OLD (Already Cataloged) Files ------------------------

Command ***

Enter an 'X' for files to be allocated for this session:

Disp File  DATA LIBRARY NAME  (Use IBM naming conventions)

(old)

(ghi)

Enter Enter to allocate  End() to Exit  or  PF11 for HELP

```

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III. Publish an in-house SAS User's Guide

An in-house SAS User's Guide can document site-specific SAS information that is not available in SAS Institute's manuals. At the Federal Reserve Board, this includes the following:

- Job card (JCL) information.
- Default settings for SAS options, which can differ from the defaults in the SAS manuals.
- Formats in local (in-house) public format libraries.
- Interactive and batch SAS and SAS related procedures.
- SAS data library allocation procedures.
- JCL for graphics devices and special printing.

- SAS macros and SAS procedures developed in-house.
- Available consulting assistance.
- List of available SAS manuals, and brief descriptions of the manuals most commonly used.

An important objective in designing an in-house SAS User's Guide is to not rewrite SAS Institute's manuals. Information available in SAS Institute's manuals should be included only in a few exceptional cases. The Federal Reserve Board in-house SAS User's Guide repeats from SAS Institute's manuals only two frequently asked questions: how to increase the Work dataset size and how to allocate a SAS data library in an MVS batch job.

In addition to permanent staff, outside consultants, who must quickly learn the vagaries of new sites, also benefit from an in-house SAS User's Guide.

Figure 4 - Federal Reserve Board SAS User's Guide table of contents

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IV. Product Support
Specialization

The SAS system includes many products and thousands of pages of documentation. Limited time resources make it difficult for one consultant to maintain the level of expertise necessary to provide effective support for all SAS products.

Because the SAS system products are largely independent of each other, SAS system support can be improved through product support specialization. All consultants should be familiar with the base SAS product. For all other products, a "primary consultant" and a "backup consultant" can be identified.

Some SAS products can be logically grouped together and supported by the same consultant. For example:

- SAS/FSP + SAS/AF + SAS/DMI
- SAS/STAT + SAS/ETS + SAS/IML

V. Determine the appropriate level of consulting services

All sites must address the issue of how much support is provided to the end user. At some sites, consulting services consist exclusively of debugging programs and making users aware of new SAS software. At other sites, consulting services include participation in the design and coding of application systems.

Conclusion

Five steps to improve SAS system support at the Federal Reserve Board were described in this paper: establishing an in-house user's group, developing full-screen menus, publishing an in-house user's guide, specializing SAS consulting responsibility, and determining the appropriate level of consulting support. These steps do not require substantial time resources or intensive technical efforts and can be implemented at many large sites.

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