ABSTRACT
For many reasons a user may not know the version of SAS® used or what components of SAS are installed on a particular computer. This paper discusses three different methods for determining what SAS is being used on a particular computer. The three methods discussed include PROC SETINIT, PROC PRODUCT_STATUS, and the SASINSTALLREPORT3.SAS macro. PROC SETINIT shows what is licensed; PROC PRODUCT_STATUS shows what is installed; and the SASINSTALLREPORT macro creates a report describing the complete setup and environment of the machine. Also discussed is the use of SAS system macro variables to determine the version of SAS used.

INTRODUCTION
Frequently it is important to know what version of SAS and what products of SAS are installed on a computer. This is often needed to manage a program or to solve problems that occur. It is not always clear how to determine this information.

DETERMINING THE VERSION OF SAS USED
There are two relatively simply ways to determine the version of SAS you are using. One is to look at the SAS LOG; the other is to display SAS system macro variables. When SAS starts, basic information on the version is supplied at the top of the SAS log.

Normally when SAS starts, a SAS log is created. When interactive SAS is used, the log appears in the LOG window. The first several lines of the log show the version of SAS used and the platform it is running on. This is illustrated in Figure 1.

SAS SYSTEM MACRO VARIABLES
An alternative to the SAS LOG is to display the contents of SAS macro variables. SAS creates a set of macro variables containing the parameters or attributes of the SAS installation. Some of these macro variables are static such as the version of SAS; others are dynamic and can be modified such as the page size. When system macro variables are displayed, they are displayed in the SAS LOG. Figure 2 below show parts of the SAS LOG displaying the system automatic macro variables indicating type of operating system and version of SAS currently being used.

DETERMINING SAS COMPONENTS LICENSED
The components that make up SAS software are licensed and not sold. These components are licensed for a specific length of time and may vary. Software without a valid license generally does not function. A first step in determining whether a SAS component is available is to determine whether it is licensed.
PROC SETINIT is a procedure that will tell you what parts of SAS are licensed. The procedure is referenced in the SAS knowledge base and there are SAS options and macro variables that deal with related ideas. It is a simple procedure that is run by submitting the code below. Output from the PROC SETINIT is given in Figure 3.

```
PROC SETINIT;RUN;
```

SAS components may be licensed and not installed or installed without a valid current license.

**Fig. 3. Example PROC SETINIT output**

```
4   PROC SETINIT;RUN;
NOTE: PROCEDURE SETINIT used (Total process time):
   real time           0.00 seconds
   cpu time            0.00 seconds
Original site validation data
Site name: 'JOHN DOE WX6 (64 BIT WNDW)'.
Site number: 12345678.
Expiration: 01OCT2013.
Grace Period: 45 days (ending 15APR2013).
Warning Period: 45 days (ending 30MAY2013).
System birthday: 01OCT2009.
Operating System: WX64_WKS.
Product expiration dates:
---Base Product                                01MAR2013
---SAS/STAT                                   01MAR2013
---SAS/GRAPH                                  01MAR2013
---SAS/OR                                     01MAR2013
---SAS/AF                                     01MAR2013
---SAS/IML                                    01MAR2013
{ITEMS DELETED}
---SAS Forecast Studio                        01MAR2013
---SAS Stat Studio                            01MAR2015
```

Organizations using base SAS add and subtract installed components as they need them. Most SAS software is licensed and not purchased. This means that it can be used only for a specific length of time. The SAS license information is contained in the installed software. If a SAS license is not valid, the SAS component software generally will not run. A SAS license is often invalid because it has not been renewed.

**DETERMINING SAS COMPONENTS INSTALLED**

Just because a SAS component is licensed does not mean it is installed and available. This is particularly true in large organizations. Beginning in SAS 9, SAS introduced a new procedure -- PROC PRODUCT_STATUS -- that shows what is installed. It is not well documented.

The code to run PROC PRODUCT_STATUS is given below and its output in Figure 4.

```
PROC PRODUCT_STATUS;RUN;
```
DETERMINING SAS SYSTEM CHARACTERISTICS

There are two ways to determine more detail on what SAS release is installed. One is working with the SAS registry; the other is working with SAS code to report the status of the installment of SAS software on a computer.

VIEWREGISTRY REPORT

The VIEWREGISTRY report identifies SAS software installed by looking at the SAS deployment registry. It is described in SAS Usage Note 35968 (“Usage Note 35968”, 2012). Use of the SAS registry is not be discussed in detail here. Working with the SAS registry should probably be done by those confident in the ability and knowledge of how SAS works. An extract from SAS usage note 35968 is given below.

“The installation of SAS products is logged in the SAS Deployment Registry. A reporting utility, ViewRegistry ... processes the deployment registry to generate a report name DeploymentRegistry.html. This report identifies all SAS 9.2 and SAS 9.3 software that is installed in the current SASHOME location. Hot fixes installed are also logged in the SAS Deployment Registry and reported in DeploymentRegistry.html.”

Implementation and use of the VIEWREGISTRY Report requires a knowledge and understanding of Java and having administrator privileges. This report can be used on both Windows and UNIX flavored operating systems.

SAS INSTALLATION REPORT PROGRAM

Much simpler to understand and use is the “SAS Installation Reporter Program” created by SAS Institute. It is functionally similar to the ViewRegistry Report; but, it is created using SAS data step code and procedures. It is described in Usage Note 20390 (“Usage Note 20390”, 2012). This SAS code creates a report showing which applications, clients, and hot fixes are installed. Version 3, the current version of this report, can be downloaded from support.sas.com through Usage Note 20390. It is regular base SAS code run either interactively in the program editor or in batch. The reporting program works for SAS 8 and SAS 9 in both the windows and UNIX flavored environments. The code for this report is in a file associated with this paper in the 2012 NESUG Online Proceedings. This code is a macro with the name “%sasinstallreporter”. The structure of the six tables that make up the output of this macro is given below in Figure 5.
The SAS Install Report provides current detail information on all SAS installed on the computer. If multiple versions of SAS are installed, reports are provided on each installation. The SAS Install Report creates six separate tables.

**TABLE 1: PRODUCTS LICENSED**

The first table of the report provides information similar to PROC SETINIT. The report lists products and components licensed. An extract from table 1 is given in figure 6.

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>PRODNUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODNUM000</td>
<td>Base Product</td>
</tr>
<tr>
<td>PRODNUM001</td>
<td>SAS/STAT</td>
</tr>
<tr>
<td>PRODNUM002</td>
<td>SAS/GRAPH</td>
</tr>
<tr>
<td>PRODNUM003</td>
<td>SAS/ETS</td>
</tr>
<tr>
<td>PRODNUM004</td>
<td>SAS/FSP</td>
</tr>
<tr>
<td>PRODNUM005</td>
<td>SAS/OR</td>
</tr>
<tr>
<td>{terms deleted}</td>
<td></td>
</tr>
<tr>
<td>PRODNUM006</td>
<td>SAS/AF</td>
</tr>
<tr>
<td>PRODNUM007</td>
<td>SAS/IML</td>
</tr>
</tbody>
</table>

**TABLE 2: PRODUCTS PHYSICALLY INSTALLED**

Table 2 identifies SAS products that are actually installed. Products may be licensed and not installed. It is not clear what happens when a product is installed but with an expired license. Figure 7 shows an extract of Table 2.
TABLE 3: HOT FIXES INSTALLED

SAS evolves primarily through major (SAS 8 to SAS 9), minor (SAS 9.2.2 to SAS 9.2.3), and maintenance (SAS 9.21_M2 to 9.21_M3) releases. Often between these releases problems are identified that need correcting. These corrections are done through “Hot Fixes”. Hot fixes correct a specific problem. They may be unique to a specific procedure, a specific platform, or both. The list of the available hot fixes is on the SAS support web site. The code and instructions to update your version of SAS and correct the problem can be downloaded from the SAS website. Table 3 of the SAS installation report identifies what hot fixes have been installed to the current release of SAS. Table 3 is not produced when no hot fix has been installed. No example of Table 3 is given in this paper because the version of SAS used to produce this paper did not have any hot fixes installed.

TABLE 4: OTHER SAS APPLICATIONS AVAILABLE

When many people think of SAS, they think of BASE SAS. Increasingly there are a number of other SAS products available. Table 4 of the installation report lists other SAS related products currently being used. Figure 8 below show an extract of that table.
5: CUSTOM VERSIONS OF SAS PRODUCTS

Table 5 summarizes the customization of the current version of SAS software installed. The information it presents is quite similar to information presented by PROC PRODUCT_STATUS. Figure 9 shows selected output from Table 5.

Table 5: Custom Version Information for Selected SAS Institute Products or Components

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>Custom version</th>
<th>Build version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Product</td>
<td>9.21_M3</td>
<td>9.02.02M3P032410</td>
</tr>
<tr>
<td>SAS/STAT</td>
<td>9.22</td>
<td>9.02.02M0P033110</td>
</tr>
<tr>
<td>SAS/GRAPH</td>
<td>9.21_M2</td>
<td></td>
</tr>
<tr>
<td>SAS/ETS</td>
<td>9.22</td>
<td>9.02.02M0P033110</td>
</tr>
<tr>
<td>SASoned</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TABLE 6: SAS JAVA ENVIRONMENT

Java is an important tool and language in making components of the SAS system work together. Table 6 of the “SAS Install Reporter” lists the JAVA environment for the current installation of SAS. Figure 10 gives an extract of Table 6.
CONCLUSIONS

In order to properly understand and maintain SAS software it is important to understand what version of SAS is installed, what products are installed, and the current characteristics of the SAS installation. When problems happen, it is often because products do not work together. Verifying the current installation is often the first step to diagnosing and resolving problems. The tools available depend on the version of SAS being used. The simplest tools are PROC SETINIT and PROC PRODUCT_STATUS. These require minimal knowledge to use them. They will identify the basic problems. Probably the easiest and most comprehensive tool is the “%sasinstallreport” macro. Every SAS user should download it and try it out. For organizations that maintain a macro library, the “%sasinstallreport” macro could be maintained centrally in the organizations macro library for all to use.

REFERENCES:


ACKNOWLEDGMENTS

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