

VIEWS

NEWS

Issue 7 Summer 1999

News, Hints, Tips, and information for UK SAS Users

Recently I needed to call SAS Institute Technical Support regarding a particularly knotty UNIX problem. The support representative couldn't solve my problem immediately, so he said he'd investigate and call back. While I waited, I aimed a search at SAS Institute's technical support database on its web site. Bingo! I found the problem and its solution.

You could say that the technical support representative should have found the solution for me during my call (or that I should have searched my usage notes and/or SAS Institute's web site first) but that's not my point here. This episode reminded me what a wealth of help and information about the SAS System there is. In addition to those services provided by SAS Institute, we have SAS-L and Usenet plus a host of web sites world-wide. And then of course, for UK users there's VIEWS.

Through its conferences, sub-groups, and SIGs, VIEWS brings together the UK SAS community. The web site and VIEWS News provide a stream of information too. The committee has planned a large range of events for the coming twelve months – details are elsewhere in this issue.

But all of this takes time and costs money. VIEWS could not exist without the help of its supporters. If you appreciate what VIEWS does for you, please tell your SAS-related suppliers. If they are regular VIEWS supporters, please thank them; if they're not, encourage them to participate!

Andrew Ratcliffe (Editor)

Did You Know?

If you have a useful hint or tip, send it to the Editor and share it with the VIEWS membership.

Read Only the Last Observation

If you need to just read the last observation of a data set, the following code offers a very efficient solution. Only one record is ever read from "lib.input", namely the last record.

```
data lib.output ;
  /* nobs is set at compile time */
  set lib.input point=nobs nobs=nobs ;

  /* Now do all the desired processing on the record. */
  /* Make sure you use an OUTPUT statement to get last */
  /* record saved to the dataset "lib.output". */

  stop ;
run ;
```

You must have the STOP statement because the POINT option never sets any end of file markers so the step would loop indefinitely without it. Many people fail with this technique because they do not use the OUTPUT statement - you have been warned!

Don Stanley

(Reproduced with permission from HASUG Flash)

Excel Visual Basic via DDE

Using DDE, you can send Excel 4.0 individual macro commands from the SAS System but you cannot send Excel Visual Basic (VB) macros from SAS. However, you can send an Excel 4.0 macro that will execute a saved Excel VB macro using DDE with the following SAS code:

```
filename excdata dde 'Excel|System';

data _null_;
  file excdata;
  put ' RUN("File.xls!Macro2",FALSE)';
run;
```

File.xls is the name of the Excel file where the macro is stored, and Macro2 is the name of the Macro. These names are case-sensitive.

This is helpful because Excel 97 only records Visual Basic macros.

SAS NOTE -- V6-SYS.SYS-F885

Data Driven Footnotes

When printing data or data summaries it is sometimes desirable to identify particular items in a footnote. To avoid hard-coding such identifiers and later revisiting programmes, an alternative approach is to code the construction of a sentence and programmatically insert the identifiers of the note worthy items into the footnote as follows:

SQL's INTO function with the WHERE statement will create a macro variable separated by commas consisting of the data in question.

```
Proc SQL NoPrint;
  Select Distinct var Into: LIST Separated by ', '
  From dataset
  Where statement
  Group By var
  Order By var;
Quit;
```

A null DATA step may then be used to translate the final comma in the string into the word "and" creating a sentence.

```
Data _null_;
  Call Symput("LIST",
    Reverse(
      Substr( Reverse(Symget(Trim("LIST"))),
        1,
        (Index(Reverse(Symget(Trim("LIST"))),','))-2)
      )
    !! ' and ' !!
    Substr( Reverse(Symget(Trim("LIST"))),
      (Index(Reverse(Symget(Trim("LIST"))),','))+1)
    )
  );
Run;
```

The resulting macro variable can be simple resolved in a footnote statement providing a dynamic footnote. This principle may be generalised into a macro that allows for situations where no data are selected etc.

David Shannon

Character Table

To get a simple table of character codes, you can use the code on the following page. This is useful when constructing "pretty" reports from DATA step code.



Conference Report



Life as a SAS® consultant is often hectic and hard work, but sometimes there are compensations. This year's American and European conferences were both a pleasure to attend, not least because of their respective locations (Miami and The Hague). As ever, the tone of the events varied. SUGI always feels more of a techy forum, whereas SEUGI seems more business-focused and solution-focused.

This year's "big announcement" was the upcoming availability of version 8 of SAS Software. This represents the full delivery of SAS Institute's Nashville-vision and should be available in the UK in the first quarter of 2000.

Paul Nicholson (University of Leeds) won the award for the best paper. Congratulations Paul. Two other UK papers won Best in Stream awards. It certainly demonstrates the strength of SAS skills in the UK. We are making plans to get these speakers to show their papers to a UK audience as soon as possible.

Andrew Ratcliffe

```

data _null_ ;
do i=1 to 255 ;
x=byte(i) ;
put i x ' ' @ ;
end ;
run ;

```

Phil Mason

Use a Colon as a Wildcard

It may have slipped your notice that you can use colons as wildcards for data set naming in some circumstances. An example using PROC DATASETS follows.

```

proc datasets lib=work;
delete vw:;
run;
quit;

```

This program deletes all data sets with names beginning VW.

Amadeus SAS Consultancy Team

The Consultant

This part of VIEWS is where you can get your technical questions answered. Send your questions to the Editor.

Multiple Graphs into MS-Word

Q: *I have generated a set of graphs using PROC GPLOT and would like to export them (all of them together) into a Word document. Is there a simple way of doing this please? In addition, is it possible to send all the graphs to a printer at once? I just want to avoid printing the graphs one-at-a-time!*

A: There is a way, though not a simple way. You can output the graphs using the CGM driver. That puts all graphs into one CGM file. Then you need a program call CGMSPLIT.SAS from the SAS web site. This will split the CGM file so you have a separate file CGM for each graph. Then you can import each graph into Word. SAS says that Word cannot read multiple graphs in a single CGM file (read: it is not our fault). That is why the file must be broken up.

Look on the SAS web site for the CGMSPLIT.SAS file at: techsup/download/observations/4q96/kossler.

SAS-L correspondents

Multi-Platform Development

Q: *I am about to embark on a new SAS/AF® project that will be deployed on multiple platforms. Are there any tips you can offer?*

A: SAS/AF applications should generally be portable between any platform supported by SAS Software (so long as the target platform is at the same or higher version as the development platform). To move your application between platforms you should just use PROC CPORT to create a transportable copy. However, there are always exceptions to the rule.

Firstly you should avoid using operating system calls (using CALL SYSTEM) or make sure that you are handling these conditionally so that you are handling them on possible target platforms. Obviously, SAS Software cannot help you out if you choose to use platform-specific features!

Secondly, I'd suggest you always run with the MULTENVAPPL system option switched-on. The MULTENVAPPL option restricts SAS/AF and SAS/FSP® applications to functions and features that are commonly supported on all platforms. For example, when selecting fonts at build-time, the list will be restricted to fonts available on all platforms, i.e. supplied as part of the SAS System.

One little trap that's worth remembering is that compiled macros cannot be transported. PROC CPORT cannot copy compiled macros. So, if you use compiled macros, you must copy the source to your target platform(s) and compile the macros on the target platform(s).

Andrew Ratcliffe

Printing External Files

Q: *I'm using the SAS/AF® External File Viewer (EFV) widget and I'd like to be able to offer my users the ability to print from my frame. I can't find any print methods. Is it possible to print from an EFV?*

A: One way to print an external file being viewed with an EFV widget is to use the following SCL. In my example I created a frame containing an EFV widget called MYWIDG, and a push button called PRINT.

```

print:
* Get widget id, which is a list of information about MYWIDG ;
call send(_frame_,'_get_widget_', 'mywidg',obj_id) ;
* This is the sublist that has the information we require ;
list=getniteml(obj_id,'_engattr_',1,1,0) ;
* Extract the external filename being displayed by MYWIDG ;
filename=getnitemc(list,'_fname_',1,1,' ') ;
* Allocate file to a fileref ;
rc1=filename('f',filename) ;
* Copy file into preview window ;
rc2=preview('include','f') ;
* Print it to the default printer ;
rc3=preview('print') ;
* Erase the preview buffer ;
rc4=preview('clear') ;
* Disassociate fileref ;
rc5=filename('f',' ') ;
return ;

```

Phil Mason

Slow Formats

Q: *I have created a large format (it has lots of values). This seems to make my DATA step(s) run slowly. Why is it causing this and can I speed them up?*

A: When SAS needs to resolve a format, it has to scan its table of unformatted values and then use the formatted value. When you created your format originally, SAS sorted your unformatted values before it built the table (if you list your formats with PROC FORMAT FMTLIB; RUN; you will see they've been sorted); when SAS needs to find an unformatted value it performs a "binary search" to quickly find it. The binary search relies upon the values being sorted. Of course, the larger the table of values, the longer the search takes.

If you know that some of your values will be needed more often than others, you can tell SAS not to sort them by using the (NOTSORTED) option. In this case it will search for values sequentially. So, if you put your most frequent values at the beginning of your format definition SAS will find them quickly. Some example code follows.

```

proc format;
value styles (notsorted)
10 = 'Most likely'
3 = 'Next most likely'
7 = 'Least likely'
;
run;

```

Without (NOTSORTED), SAS would sort the unformatted values and build a lookup table in the order 3,7,10. When searching for 10, the binary search would start in the middle of the table and find 7; it would then find 10 - a total of two actions. Using (NOTSORTED), 10 would be found straight away.

You must know your data very well in order to achieve good results.

Andrew Ratcliffe

Formats, Options, and Functions

The **FRACTw** format converts values to fractions. Dividing the number 1 by 3 produces the value .33333333. Use the **FRACTw** format to write this value as '1/3'.

The **RESERVEDB1** option routes output produced by the **MPRINT** option to an external file. This is useful for debugging macros. The **MPRINT** option must be in effect to use **RESERVEDB1**, and the external file must be assigned the fileref **MPRINT**.

The **TRANWRD** function replaces or removes all occurrences of a word in a character string.

News

More VIEWS Events for 1999/2000

The VIEWS committee has planned a schedule of events for the coming twelve months. These are summarised in the *Diary* section and include data mining, pharmaceuticals, and business topics.

Coming soon is VIEWS' first event outside of the South East of

England. This first event will be staged in the North of England in November, but further events around the UK are likely.

Whilst SAS Software grows stronger in new technological areas, the long-serving DATA step remains a key part of every SAS programmers skill-set. A sub-group focusing on the DATA step is planned for Summer 2000.

To keep up-to-date with dates and details of all VIEWS events, make regular visits to the web site at <http://www.views-uk.demon.co.uk>. If you don't have web access, don't worry because you'll always receive postal invitations to VIEWS events too.

SASware Ballot Survey Results

The results of the SASware Ballot are available at <http://ftp.sas.com/techsup/download/sasware/99results.html>. In addition to voting on SAS features, users were invited to comment on certification and documentation. Both are very large subjects so the small number of questions only scratch at the surface of both areas.

Between 70% and 80% of respondents voted positively for certification. Certification has a number of very vociferous critics but it seems that the majority of SAS users want certification and will adjust their recruitment policies based upon it.

Cheaper Documentation

SAS Institute has significantly reduced the price of documentation in the UK. The new prices are available now. The updated price list and order form have been sent to all site representatives. Some examples of the new prices (including P&P) follow:

- *SAS Language and Procedures Usage 2* previously £48.00 now £35.00
- *SAS Guide to the REPORT Procedure: Reference, Release 6.11* previously £20.50 now £11.50
- *Little SAS Book, a Primer* previously £34.50 now £18.50

The catalogue is available on the SAS Institute web site at service/doc/intro.html. You may even order on-line!

In Brief

- SAS software is used for a varied range of tasks. To see one of the wilder uses, take a look at the information about Rhinowatch at Bruce Bovill's personal web site (see *Contacts*).
- The second parameter of the SCL function named CLEARLIST() is documented as taking values of either 'Y' or 'N' but it also accepts 'D'. Using the undocumented 'D' parameter deletes all sub-lists (as opposed to 'Y' that just removes references to them from the subject list). This feature is useful but undocumented and, thus, unsupported. Use it with caution.
- The CDE command offers interesting information of your SAS session's memory usage. The M, I, and S parameters provide information about memory pools, images, and stacks respectively. The P parameter purges any deletable images.
- The Linux bandwagon seems to be growing day-by-day. You can visit the SAS For Linux web site at www.netcom.com/~kmsself/SAS/SAS4Linux.html or join the new SAS for Linux discussion list by sending an email to majordomo@Cranfield.ac.uk with message: `subscribe sas-linux user@domain.net`
- HASUG is the Hartford Area SAS users group. They have a web site at www.hasug.org which is a good place to catch-up with the HASUG flash. The HASUG Flash is a quarterly e-newsletter packed with hints & tips and published in HTML form.

Stop Press. VIEWS 5, Earls Court, London

- This year's annual conference was attended by approximately 250 people.
- The winner of the Best Paper award at VIEWS 5 was Andrew Wilcox of Amadeus Software Ltd with his paper entitled "Efficiency Techniques for Accessing Large Data Files". Congratulations Andrew! Enjoy your free trip to SEUGI in Dublin next June.

Diary

Are you organising an event that would be of interest to the VIEWS readership? Let us know, as we are interested in all non profit making events related to SAS software.

September 1999

Pharma SIG (provisional)

November 1999

1st Eighth edition of VIEWS News
Northern conference (provisional)

February 2000

Business sub-group (provisional)

April 2000

9-12 SUGI, Indianapolis, USA
Data Mining / Pharma SIG (provisional)

June 2000

20-23 SEUGI, Dublin, Ireland

September 2000

VIEWS#6 conference (provisional)

Contacts

Contributors and Contacts

Amadeus Software Ltd	Tel: 01993-775454 Fax: 01993-700577 Email: enquiries@amadeus.co.uk
HASUG	Hartford Area SAS Users Group Web: www.hasug.org
Don Stanley	Sysware Consulting Group Tel: +64 (21) 479 863 Email: don_stanley@ibm.net Web: www.sysware.co.nz
David Shannon	Quintiles, Battle Tel: 01424-776229 Email: david.shannon@qbat.quintiles.com
VIEWS Web Site	http://www.views-uk.demon.co.uk
Phil Mason Chairman	Tel/Fax: 01491-834615 Email: phil_mason@email.com 16 Wood Street, Wallingford, Oxfordshire. OX10 0AY
Bruce Bovill SAS Liaison	Tel: 01628-404347 Fax: 01628-404303 Email: sukbnb@suk.sas.com Web: www.assisi.demon.co.uk
Andrew Ratcliffe Newsletter Editor	Tel: 01322-525672 Fax: 01322-525672 Email: andrew@ratcliffe.demon.co.uk Web: www.ratcliffe.demon.co.uk

