A FURTHER INTRODUCTION TO SAS-L
AND
OTHER INTERNET RESOURCES

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Abstract

Anyone can share in the collective SAS® knowledge of users from around the world. Subscribing, posting, and searching on SAS-L are described. SAS Institute offers a variety of forms of electronic communication and adds new ones frequently. How to use these is explained. A sampling of ways to explore the Internet is also covered.

The Internet

The collection of networks that make up the Internet has perhaps 30 million users. That number, the tools they use, and the services and information they seek are in constant transition. Any attempt to describe this world, like the present paper, is doomed to being out-dated before the ink is dry. Nevertheless we will look out the window of this speeding train and gather some information about where we are and where we’re going.

What is SAS-L?

SAS-L is, first of all, a BITNET list. Of course that answer only generates two more questions, what is BITNET and what is a "list"? BITNET (Because It's Time Network) is a part of the collection of computer networks known as "the Net" which are generally (and inaccurately) all thought of as the Internet. The Net is literally a global link of computer users.

What is a "list"? It's an electronic mailing list that is automated to one degree or another with computer software. Also called 'listervs' or 'listerservers', they are each devoted to a particular topic. A computer user with access (of a wide variety of forms) to the Net sends a command with the proper syntax to a particular address (an ID at a "node" of the Net) in order to join a list of interest. More on the mechanics of this later, but let's go back to our original question about SAS-L.

Besides the technical answer that SAS-L is a Bitnet list, there are a couple of more useful definitions. It is a forum for exchange of information about SAS® software and programming. It is also a user group officially recognized by SAS Institute. In the spring of 1995, this user group had about 1500 subscribers from 37 countries, but this figure substantially under-represents the number who participate. There is also an internet newsgroup, comp.soft-sys.sas, “gated” to SAS-L, i.e. each receives all posts to either. It has been estimated that 20,000 people read this newsgroup (thanks to Greg Nelson at UGA, one of the SAS-L listowners, for help on these figures.) For comparison, look at the number of attendees at the annual SUGI conference - about 2700 at Orlando this year and an all-time high of 4000 at San Francisco in 1989 (thanks to Mike Rhoads of Rockville, MD.) As this description implies, SAS-L is a high volume list, averaging perhaps fifty messages each day. This may sound daunting, but most email systems allow a user to delete messages not of interest rather quickly. Proper use of the subject line makes this fairly convenient.

What is "posted" to SAS-L?

The most common types are requests for help with a SAS® problem, answers to such pleas, or thank-yous for the assistance. When do you resort to SAS-L for such help? You've RTFM'd, Read the Friendly Manuals, but you're still at a loss. Maybe you've asked some of the other SAS® users at your site to no avail. You've got a deadline; you need that answer. Don't worry. Help is at hand. Members of SAS-L are ready and willing to solve that thorny problem, usually complete with a useful snippet of example code.

Most members of this list like to try to answer a question if they can. Why? It's their chance to show others how clever they are, to enlighten the masses, or to balance the cosmic scale for that help they got last week. Why ask why? Just do it. Any member of this list can vouch for the fact that you'll probably get an answer and save yourself time and grief.

There are other types of posts as well - announcements of conferences (SUGI, NESUG, etc.), discussions about SAS Institute policies (often heated! e.g., pricing and licensing arrangements), ideas for features we'd like to see in the software, and occasional job announcements.
How do I join?

The first step is access to the Net. If you work at a major corporation, government, or academic institution, you can probably get top-notch access. Anyone can get some access through large commercial providers such as Compuserve or Delphi. For some more details on this, see the excellent paper by Michael Davis, "The One-Eyed Guide to Internet, E-mail, LISTSERV, and SAS-L", presented at SUGI 18.

Once you have Net access, joining is simple. Send a command to the listserv ID at one of the nodes that runs SAS-L (e.g. listserv@marist.bitnet) with the following syntax:

subscribe SAS-L Firstname Lastname

with your own name substituted in the obvious spots.

What nodes run SAS-L?

SAS-L is a "Peered List". Many of the larger, high volume lists have used this set-up for better efficiency. Essentially a number of nodes each runs SAS-L, and they share all posts to any of the nodes. In general, you should subscribe to the one closest to you. Currently the SAS-L peer nodes are:

<table>
<thead>
<tr>
<th>Internet Node Name</th>
<th>Bitnet Node Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>VM.MARIST.EDU</td>
<td>MARIST.BITNET</td>
</tr>
<tr>
<td>Poughkeepsie, NY</td>
<td></td>
</tr>
<tr>
<td>UGA.CC.UGA.EDU</td>
<td>UGA.BITNET</td>
</tr>
<tr>
<td>Georgia (USA)</td>
<td></td>
</tr>
<tr>
<td>VTVM1.CC.VT.EDU</td>
<td>VTVM1.BITNET</td>
</tr>
<tr>
<td>Virginia?</td>
<td></td>
</tr>
<tr>
<td>VM.AKH-WIEN.AC.AT</td>
<td>ATTHMC12.BITNET</td>
</tr>
<tr>
<td>Vienna, Austria</td>
<td></td>
</tr>
</tbody>
</table>

(Note: until recently UALTAVM.BITNET (VM.UCS.UALBERTA.CA) in Alberta, Canada was also a peer for SAS-L, but that node no longer hosts the list.)

After sending the 'subscribe' command, you'll get back an acknowledgement and some information on the settings for your subscription. One of these that should be mentioned is 'nomail'. If you're going away for a while and don't want to have a stuffed mailbox when you come back, send your SAS-L listserv the following command:

set SAS-L nomail

I mentioned a command with which you can see how many members SAS-L has and what countries are represented. This command also gets sent to your SAS-L listserv:

review SAS-L by country

This will return a file from each of the peered SAS-L hosts, and by combining these, you can determine the membership and countries.

Posting to SAS-L

You've subscribed, you've been reading the posts of interest, and now you've got a question to ask. How do you get it to SAS-L? Most email systems include an editor for composing a short message. Thankfully most also include a way to pull in a file you previously wrote or modified in a real editor. It is helpful to include a short excerpt of SAS* code and the log along with your note. Whatever the mechanics of setting up this message in your particular email system, after you've gotten it ready, you need to send it not to the listserv but to the list itself (e.g. SAS-L@marist.bitnet). Remember that commands to set up or alter your subscription go to the listserv (and stop there) while posts to the list go to SAS-L (and are then distributed to all members.) If you confuse this, either the listserv will "bounce" your post as a bad command, or, much more embarrassingly, your attempt to set nomail will be sent to 1500 people and read by 20,000 more. Don't worry. We've all gotten that sort of egg on our faces.

It's Nice to Say Thanks

The etiquette of SAS-L generally indicates that you should thank those who took the time and trouble to help you. This gives them some recognition among fellow users and shows others both that help was found and that it was appreciated - good for encouraging continued help.
Many times you'll get several very different approaches to solving the problem, and sometimes the replies are sent not to SAS-L but directly to your email address. A summary of these approaches is often useful. Some people even run little benchmark tests to try to judge the relative efficiency of the solutions, and this often sparks a whole round of messages (a "thread") about the alternatives, the validity of the benchmarks, etc..

The SAS-L Archives

The foregoing has shown how SAS-L works day-to-day, but there's a long history of this interaction. Questions are often asked and answered that had been previously covered some time before. If you want to be a really efficient SAS-L user, you could avoid this duplication by looking for such an exchange before asking that question.

How to Search the Archives

Not all listservs are archived due to disk space and other resource considerations, but many lists including SAS-L are archived and can be searched with a standard software. This is part of the listserv. To get complete instructions on searching a listserv database, send a message with the following command in the body:

```
info database f=mail
```

The last part tells the listserv to return the reply to you as a mail message. This may be necessary if you are accessing the listserv from anywhere except another Bitnet node. You'll get back the full instructions for building more complicated search queries, but for now, I'll give you a simple example. A message should be sent to your SAS-L listserv (e.g. listserv@marist) with the following text in the body:

```
// JOB Echo=No
Database Search DD=Rules f=mail
//Rules DD *
Search search-term in SAS-L from 90/03/01
Index
/*
```

This will return a list of the number of each post containing your search term, in this case since March 1, 1990. The subject line of each is included, and you can often pick those of likely interest (e.g. a thoughtful "Summary" of responses as mentioned before.) To get the complete text of those posts send the same message as before but delete the line "Index" and replace it with the following:

```
Print 10023
Print 10029
```

where the numbers are those given in the list you got back and where the number of "Print"s equals the number of posts you want to read (if there are a lot, send several messages, each with a subset of the posts you want.)

In order to determine what listserv databases are available for searching at a particular node, send that listserv the following command:

```
database list f=mail
```

Electronic Communication with SAS Institute

Although SAS-L is a recognized user group, it is not a part of SAS Institute. SI staff do seem to monitor the list, and occasionally you'll get an unofficial email reply from one of them, directly to your address, not to SAS-L, to a question you've posted. Perhaps more importantly, SI seems to take the concerns of active SAS-L members very seriously, and if a discussion on the list indicates a widespread issue, SI may respond with action, e.g. the exchanges about the need for a better academic pricing policy. Beyond this unofficial channel that does seem to communicate to SAS Institute, there are a number of forms of official electronic avenues to SI. (For more information, see "SAS Communications", vol.XVII, no.4 (Fourth Quarter 1992), pp.34-35; "SAS Communications", vol.XX, no.3 (Third Quarter 1994), pp. 29f; "New Electronic Services Offered by SAS Institute's Technical Support Division" in the SUGI 20 Proceedings; and a post from Sally Muller to SAS-L with 'Subject: SI's Electronic Services ...' (try searching the archives for this one.))

SAS Institute Bulletin Board Service (SIBBS)

SI has 3 phone numbers for dial-in with various speed modems:

<table>
<thead>
<tr>
<th>Speed</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2400</td>
<td>(919)677-8153</td>
</tr>
<tr>
<td>14.4 v.32</td>
<td>(919)677-8155</td>
</tr>
<tr>
<td>28.8 v.34</td>
<td>(919)677-8255</td>
</tr>
</tbody>
</table>

For any of these connections, use no parity, 8 data bits, and 1 stop bit. The first time you login, you'll need to provide some information to register to use the service.
Electronic Mail Interface to Technical Support (EMITS)

This is a means for your site's SAS® Software Representative and Consultant to exchange information via email. As a SAS® Consultant, I found this a fast way to get a description of a problem, a sample of SAS® code, and part of the log into the hands of the SI staffer who was helping me. It also avoided playing "telephone tag" as each of us tried to exchange updates about the situation. Note that, as per the 1994 article cited above, those of you working on IBM PROFS or OV mail systems should begin each command with "=".

TSNEWS-L

This is an automated list using software similar to SAS-L which is directly operated by SAS Institute. Any SAS® user can subscribe to this in order to get the problem alerts and other information from SI by sending a 'subscribe' message to listserv@vm.sas.com. The problem alerts clearly state what operating environment, what SAS® software, and what particular functions are affected by a problem. This is a very low volume list, and the few minutes of scanning these posts can save a user from possible errors.

SASDOC-L

Another listserv list ('subscribe' to listserv@vm.sas.com) operated by SI provides documentation, sample programs, publication catalogs, and other materials.

World Wide Web (WWW)

SAS Institute also has a WWW information server at http://www.sas.com/ and an informational file about WWW (send email to listserv@vm.sas.com with the message "get browsers document public").

Anonymous FTP

FTP is the acronym for File Transfer Protocol, and the "anonymous" flavor allows any user of the Net to transfer files. The article cited before notes that SAS Institute's node for this service is ftp.sas.com and you should change to directory techsup before trying to list or retrieve files.

FTPMAIL

What if you have email-only access to the Net? It is still possible to do FTP although with a very noticeable delay. You need to use a mail server ID which will allow you to interact with FTP via email. One of these is ftpmail@decwrl.dec.com which works quite well, but it will usually mean next-day service.

This server can be used for any FTP including that available from SI. There is an anonymous FTP for NESUG located at node jhuspo.ca.jhu.edu directory /pub/nesug

To find out how to use the ftpmail server, send a message to the ftpmail address given with no subject and just one line in the body of the message, help. This will return a short listing of the commands that ftpmail understands. A simple example of a message to get a listing of an FTP directory would have no subject and the following in the body of the message:

```
connect jhuspo.ca.jhu.edu
chdir /pub/nesug
ls
quit
```

If you already know the name of a file that you want, instead of the ls command, you would substitute the following:

```
get filename.txt
```

where the actual filename is substituted. As noted, be prepared to wait. You'll get back an acknowledgement which will indicate that your job is number XXXX in the queue (this is often in the thousands.) Usually this works just fine for plain text files. The server supports binary, compressed, and other formats also, but these are beyond the scope of this paper.

Searching for Lists/Newsgroups of Interest

Another important technique for the Net user is how to search for lists and newsgroups of interest. One useful ongoing source is the NEW-LIST list at node NDSUVM1.BITNET or, in the Internet form of the node address, vml.nodak.edu (knowing the alternate Internet form (if there is one) is handy if you are having trouble with a gateway to Bitnet. Some nodes are both Bitnet and Internet sites while others only have one type of address or the other.

The NEW-LIST list is an on-going source of
announcements of changes to current lists and the creation of new lists. It is an excellent way to stay aware of developments that might be of interest to you. Best of all it is not a high volume list. This list has another role - an information source for Net users seeking lists of interest. This list maintains several files with pointers about how to search for the lists of interest to you. These may be identified by sending the command, INDEX NEW-LIST, to the LISTSERV@NDSUVM1 (or the Internet node address.)

One of these files is the LISTSOFT LISTS file compiled by Marty Haag. This file is a list of hints on how to search for the lists of interest to you. For example, Marty suggests sending the following command to LISTSERV@NDSUVM1:

LIST GLOBAL /string

where string is the search term. To receive descriptions of all the lists, you could send the command without "/string" (be forewarned - this is a large file.) Marty also describes several database files that the NEW-LIST list has available for such searches. These are lists, intgroup, and new-list. They can be searched with the database search method already described - just substitute one of the database names after the word "in" in the search command.

Another file from NEW-LIST is NEW-LIST WOUTERS written by Amo Wouters. The author begins with a description of mailing lists and Bitnet and Internet addresses. This general information ought to be very useful to a new user. Wouters' next topic is sources of lists of lists and how to access them. This is good detailed information for the user to pursue.

The user should be aware that the way the search string is matched in the LISTS GLOBAL command is quite arbitrary (the full instructions mentioned earlier could help this problem somewhat.) An example would be searching for the string "/SAS". This will return not just the hoped for lists about SAS® software but also several lists with the word "Arkansas" or "disaster" in their description. Another word of caution - these searches are only as good as the currency of the files against which they search. If those files are not up to date, you may not find recently established lists.

Newsgroups

To get a list of newsgroups, send email to mailserver@rtfm.mit.edu with the message:

send usenet/news.answers/active-newsgroups/part1
send usenet/news.answers/active-newsgroups/part2

Be forewarned that these will be long and that not all sites with a "newsfeed" get all groups.

NESUG-L

There is one other list that should be of interest to all of us in NESUG, the NESUG-L list. You can join this by sending the command:

subscribe nesug-l Firstname Lastname

to the address, listserv@jhusp.ca.jhu.edu

JSE Archives

In addition to the files of back postings (of varying time coverage) at the nodes which host SAS-L, there is also an archive of items of interest to SAS-Lers. This is a server which has slightly different syntax. One of the documents available from this source is the SAS-L FAQ document. This contains answers to "Frequently Asked Questions" (FAQ). To get this file, send an email message with the following contents in the body of the message:

send software/sas/sasl_faq

(for DOS users, I'll point out that these are forward slashes, not backslashes) to the following address:

archives@jse.stat.ncsu.edu

"jse" stands for Journal of Statistical Education. This site has a number of items of interest to SAS® users. A file that will tell you about the goodies to be had from this site is:

software/sas/readme

which can be obtained by a send command to the same address. This file will list and explain all the offerings of that site. Many of these are in the form of packages - collections of files which will require some work to set up after you have gotten them. One of these which is of great interest is a package of program files and datasets for Frank DiFiorio's book, Fundamentals of SAS® Programming, A Gentle Introduction. This package saves
owners of that book the tedium of keying in the exercises and examples given. Be forewarned - there is some work to be done after retrieving this package. First it must be divided up into 94 SAS® program files, 19 data files, an introduction, and an errata file. Also the SAS® programs have MS-DOS file conventions that must be modified for another environment. After doing that, I still needed to make some corrections when some examples got errors due to missing SAS® datasets. Nevertheless this is an excellent package which is well worth the effort to set it up and make it functional.

Other Sources on the Net

There are many other sources on the Net of interest to those dealing with statistics or to people in any given field. One very useful source is:

statlib@lib.stat.cmu.edu

This is a mail server at Carnegie Mellon University. Send a one-line mail message to that address as follows:

send Index

You’ll get back a description of the contents and information about search capabilities. Many algorithms and pieces of program source code are available.

Statistics Canada

Statistics Canada is that country’s national statistical agency which offers demographic, social, and economic statistics. They now have a site offering a listserver, anonymous FTP, and other information retrieval methods. This is talon.statcan.ca and for more information contact thoemic@statcan.ca

Further Exploring

One excellent source of information on the Net in various topics is the Internet Clearinghouse. This is at the University of Michigan, and it can be accessed with a variety of Internet tools such as FTP and gopher. The node name is gopher.lib.umich.edu

Another source is a set of files put together by John December at RPI. Follow the FTP instructions already given - node ftp.rpi.edu, directory /pub/communications, and three files to get:

internet-cmc.txt
internet-tools

Scott Yanoff has also put together an excellent guide which can be obtained via FTP from node csd4.csd.uwm.edu in directory /pub filename inet.services.txt

The Boston Computing Society Internet Special Interest Group has a mailing list:

bcs-isig@mit.edu

To subscribe send a note to Michael Barrow at

bcs-isig-request@mit.edu

You can also join this group and get several publications of interest to computer users. Besides exploring the Net on-line, the informed user needs to explore such publications. One of these is the EDUCOM Review. This is published by a consortium of academic institutions "seeking to transform education through the use of information technology." They also put out an on-line summary of news items about IT called Edupage. To subscribe send email to listproc@educom.edu with the following text:

sub edupage Firstname Lastname

Conclusion

The resources on the Net are constantly changing. Right now there is no well-ordered directory or how-to manual. A user needs to explore, get publications, and ask other users. My experience has been that the time spent in that effort will be repaid by finding groups of people with common interests and valuable information for your use. I hope I’ve given you a few useful hints to encourage you to make this journey. The spirit of free information is what the Net is all about. Good hunting.

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