

Installing PC SAS - One on One

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A procedure to selectively copy subsets of the PC/SAS* Software from one Personal Computer to another is described. The selection process is done on a PC that contains the PC/SAS Software. As choices are made, confirming information about the status of each of the PC/SAS products is windowed so that the axiom "What you see is what you get" is evident. The copy process requires the serial communication ports or the parallel printer ports of the computers be directly connected. This offers an attractive alternative to Backup-Restore or Upload-Download processes. Both processes, selection and copy, are robust so there is little concern about the consequences of "You pays your money and takes your chances."

The selection step uses an interactive menu window supported by a SAS Language program. The selection alternatives (CORE, BASE, BASE Sample Programs, STAT, STAT Sample Programs, etc.,) are displayed to show the selected status of each product together with an estimate of the disk space for the selections. This permits the user to select products that will not exhaust drive capacities on the target PC.

The copy process is handled by LAP-LINK*. The LAP-LINK Software's Yes-No options for copy sub-directories and copy hidden files are used to transfer the selected SAS products. As a result of the selection process mentioned, a DOS Batch file is created that assures the Hidden File attribute for PC/SAS Directories, Sub-directories and Files are consistent with the user's choice of products. Multiple batch files are created for the case where two or more drives are targeted to received subsets of PC/SAS.

Copying files from a source computer to a target computer is a common experience for virtually every person who uses a PC -- novice and veteran alike. Floppy diskettes are often used in the file transition and to date it is still the medium of choice for installing most computer software such as DOS, Word Processors, Spread Sheets, Data Bases, Games, etc. PC/SAS is often installed from dozens of floppy diskettes. An alternative to the floppy diskette ritual is sorely needed because the magnitude of the files, both in size and number, is substantial.

Iowa State University has access to a portion of the PC/SAS Software that contains over 800 files, ASCII and binary. These files reside on some 30mb of disk space. Some additional considerations associated with the distribution of the PC/SAS Software are:

1. The software is available to interested users as Leased Software only -it is not available for purchase.

2. There are cost advantages for a company or institution to be the leasing party in behalf of its members as opposed to each member contracting for the software.
3. The distribution of the leased software within a company is handled by the company -- usually by someone identified in the lease as The PC/SAS Representative, say for company ABC.
4. The PC/SAS Representative most likely has the task of distributing subsets of the software to a diverse group of individuals who do not place the same emphasis on the various products or components of the software. Indeed, the terms of the lease might specify a different number of copies for each product leased. Thereby requiring a flexible distribution procedure for ABC.
5. The array of PCs within a company is likely non-homogeneous in terms of hard disk capacity, the number and types of floppy drives, the number of hard disks and/or partitions, etc.
6. Custom Installation of the leased software is often defined as copying subsets, but not all, of the PC/SAS to some PC that can and will execute some of the PC\SAS Programs. Installing PC/SAS is the Whole Nine Yards.

As suggested, the SAS Institute delivers the contracted software to some individual in ABC. The delivery contains the software on diskettes, manuals, an installation guide, an installation diskette, etc., and furnishes the PC/SAS Representative with the tools to install the entire package or customer install a subset of the PC/SAS from the original diskettes -- onto any PC that has sufficient hard drive space and a compatible floppy drive. Also the delivery contains a backup-restore and upload-download program that can be used to copy files from a local source computer. However, the PC/SAS Representative's ability to custom install from a local PC is restricted if less than the full product was custom installed on the PC of interest.

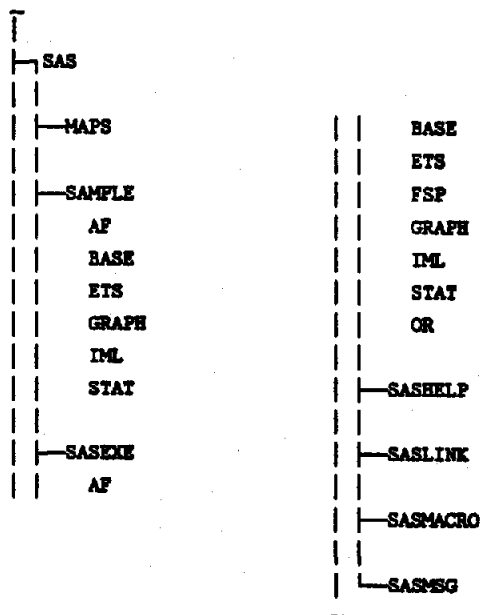
The ideal local PC, which will be subsequently referred to as The Source Computer or simple as Source, is one equipped with a sufficiently large hard disk, 640kb of RAM (required), a 3 $\frac{1}{2}$ " floppy drive and a 5 $\frac{1}{4}$ " floppy drive. In other words, a PC that will permit the entire PC/SAS Software to be copied to its hard disk. In addition to the copy process there is usually a small modification of the AUTOEXEC.BAT and the CONFIG.SYS files that is needed before the installation of the software is complete. However, the PC/SAS Representative can follow SAS's Installation procedure to put all the contracted software on The Source PC. All further references to selecting and

installing PC/SAS assumes the Source computer is in use. In my office, there are two PC's that are often used as the Source -a Zenith 386 with 325mb hard disk and a Zenith turbosPORT 386 with a 40mb hard disk.

Persons who are not familiar with the SAS software or who have not worked with PC/SAS might be interested in some specific information about the scope and structure of PC/SAS. Table 1 is presented for this purpose.

Table 1. PC/SAS Products Leased by Iowa State University				
Product*	No. of Copies	Hard Disk Requirements		
		Compiled Code	Sample Programs Text	Maps
BASE	200	5.64mb	0.26mb	na
STAT	200	6.25mb	0.74mb	na
IML	200	0.64mb	0.14mb	na
GRAPH	200	5.21mb	0.53mb	2.88mb
ETS	50	2.99mb	na	na
FSP	50	0.82mb	na	na
AF	50	0.17mb	na	na
SASLINK	na	0.06mb	na	na

Also, some idea of the directory structure of the PC/SAS Software is needed before continuing. The public utility RN.COM will produce a diagram as follows.



A sample problem for the PC/SAS Representative is given as a means of illustrating the new software being presented herein. Let us say a client named Jones has a Zenith 248 with 640kb RAM and wants the Statistical Procedures, Matrix Algebra Capabilities

(IML) and the Graphics feature including map datasets. It is not obvious to Jones that he needs some support components of PC/SAS found in the directories \SAS, \SAS\SASMSG, \SAS\SASHELP, etc. as well as some of the more obvious directories such as \SAS\SASEXE\STAT. Fortunately this is not a problem for Jones and is not an intimidating or difficult task for The Rep.

The software presented herein uses a SAS Program named SELECT.SAS developed for this application. The Rep sees the following window and types the drive-letter C, letters C, D, E and F are permitted, by the selections that Jones requested, and types a space to remove some default drive-letter values for components that are not wanted.

CHOICES

Command _____

Enter a drive letter (C, D, E or F) for the products and/or product support files you want. Use any other character for the stuff you do not want.

<u>SAS Product Component</u>	<u><*></u>	<u>Product Support Files</u>	<u><*></u>
\SAS	C	-none-	.
\SAS\CORE	C	-none-	.
\SAS\BASE	C	Sample Programs (BASE)	C
\SAS\STAT	C	Sample Programs (STAT)	C
\SAS\IML	C	Sample Programs (IML)	C
\SAS\GRAPH	C	Sample Programs (GRAPH)	C
		Map Data Sets (GRAPH)	.
\SAS\ETS	.	-none-	.
\SAS\FSP	.	-none-	.
\SAS\AF	.	-none-	.
\SAS\SASLINK	.	SASLINK not recommended.	.

Disk space for PC/SAS Product Selections are estimated each time you go through the list. Type "OK" on the next line to accept these selections. Otherwise hit <Enter>. Disk space is estimated at 19.4mb.

Note: The <Enter> key can be used to locate each of the Cursor or Option

Using the Enter key after each type-over and to go to the next option, the cursor reaches the lower portion of the screen near the 19.4mb - message. The Rep now has two choices:

1. Pressing Enter causes the select software to show a new value for the estimated disk storage. If this is not acceptable, press Enter so that changes can be made as the Cursor goes through the menu again. This can be repeated until The Rep takes option 2.

2. Type OK and press Enter. This terminates the selection process.

The Rep can confer with Jones or simply check the target 248 to assure there is

sufficient amount of free disk space to accept the proposed file copy process to deliver the desired components, namely STAT, IML and Graph, to Jones' PC.

The select process creates a batch file named SASONC.BAT. The purpose of this batch file is to assure the Hidden File or Hidden Directory Attribute is removed from the products targeted for Jones. Too, that the Hidden Attribute is added to any of the SAS Products that are not targeted.

The last step is the actual file/directory copy process. The Parallel Printer Ports of the source PC and target PC are cabled -- the Serial Ports could be used but the time of transfer is increased by approximately 50 percent. A LAP-LINK Software Program is used to copy all of the designated PC/SAS components. This software presents easy to use windows and copy options. The primary options The Rep has to make are:

- Say No to the question Copy hidden files?
- Say Yes to the question Copy sub-directories?
- Say No to the question Copy newer files only?

And finally, select the appropriate port, Serial or Parallel, and then take the WildCopy Option. Incidentally, LAP-LINK windows indicate whether the two PC's are connected or not and show file names as they are copied. The LAP-LINK software and cables can be purchased for approximately \$100.

This procedure for installing PC/SAS is much improved over the earliest use of LAP-LINK at Iowa State University where the installing PC/SAS was frequently done with LAP-LINK alone. Using a public utility DR.COM to control the file/directory attribute was an improvement in both the selection and copy steps. Problems associated with misclassification of (wanted vs. unwanted) and in exceeding the target PC's capacity are greatly reduced.

As stated earlier, this new contribution to supporting PC/SAS is an attractive alternative to Backup-Restore and Upload-Download processes.

*1 SAS, SAS/CORE, SAS/BASE, SAS/STAT, SAS/IML, SAS/GRAPH, SAS/ETS, SAS/FSP, SAS/AF and SAS/SASLINK are trademarks of SAS Institute, Inc.
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*2 LAP-LINK is a trademark of Traveling Software, Inc.
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