

PC Tips for Mainframers

Claudine Lougee, Dualenic LLC, Glen Allen, VA

ABSTRACT

Do you ever need to access, change, view, or edit data on the mainframe? Do you not like the mainframe or like logging onto the OS/390 environment for fear of getting "lost"? There are ways to help you avoid writing JCL code or submitting a job that will sit in queue waiting for CPU time. Even if you are an expert mainframe user, there are tips and tricks in the PC environment that will make your life easier.

INTRODUCTION

Even the best SAS coder who uses the OS/390 environment, commonly called the "mainframe" or "MVS", can learn a few new tricks. Time can be saved by connecting to the mainframe directly from PC SAS using SAS/Connect® remote services. Remote services allow the user to view SAS libraries, edit SAS datasets, and run SAS code without waiting in a "queue" typically found in the OS/390 environment. There are numerous shortcuts available within the PC Environment.

This paper covers several useful tips found helpful to the author and several other SAS Version 8 users.

SAS/CONNECT®

SAS/CONNECT® is software required to allow the user to connect to several platforms directly from various operating systems. This paper will only cover the mainframe or OS/390 environment. Once this software is loaded, it is behind the scenes and usually does not affect the user directly unless a connection link has problems. Is it important to note that passwords used for the mainframe must be changed to match the PC environment and can have "lock out" limitations standards set by the company. The connection from the PC is separate from the mainframe. The user should log off from mainframe environment before attempting logon from the PC environment.

AUTOEXEC.SAS FILE

When SAS is invoked, the autoexec.sas file will be included. The user can create this file to pull in various items that are needed with every job. Usually this file is created by the user for standard system passwords, user ids and any macros needed that are not stored in autocall libraries. (It is usually suggested to store all standard macros in autocall libraries.) The user passwords will be hidden in the SAS log when using this method. The autoexec file should be stored in the same folder where the SAS executable is initiated.

A FEW PC TOOLS

Once logged onto the mainframe through remote connect, there are many "tools" that the PC environment has available. These "tools" can also be used for datasets on a local server. Some programmers do not even know these "tools" exist. One example is copying datasets using the cut and paste buttons on the toolbar. This would be suggested for smaller datasets, but can be used to copy datasets from the mainframe to PC local server. Datasets can be renamed, column names can be changed, properties of the dataset can be viewed (including the number of observations), and even the data can be edited. These tips are especially useful for new programmer and can be accomplished without writing any SAS code.

REMOTE COMMANDS

Several remote commands can be used to copy, download, export and run SAS code directly on the mainframe within the PC Environment. These remote commands only work after connecting to the mainframe platform.

RSUBMIT

The RSUBMIT command is used to run SAS code on the mainframe platform from the PC Environment. Several PROCs mentioned below are typically used with RSUBMIT.

Proc Download
Proc Copy
Proc Contents

syntax
rsubmit;
 sas code here;
endrsubmit;

SERVER=

SERVER=remote-session-id

The server= identifies the remote session of the mainframe for viewing datasets directly on the mainframe library location referenced. In order to use the libname reference, the user must be signed on to the mainframe. Once signed on to the mainframe, submitting a libname reference for OS390/MVS environment will allow user to view datasets, edit the data, delete datasets, and view all datasets within a library. These views will look just like the PC environment, but will be viewing data directly on the mainframe. Datasets can also be exported using Proc Export directly from the mainframe without having to download the actual data first.

syntax
libname *libref* "location of dataset on mainframe" server=*remote-session-id*;

CONNECTWAIT OR CWAIT

The CWAIT command allows the user to change the system default synchronous processing to asynchronous processing. The default synchronous processing will force the host to wait until the RSUBMIT command is finished processing. Changing the default to CWAIT=NO changes the process to asynchronous which frees the PC environment for other SAS processing.

syntax
CWAIT=YES (default)
CWAIT=NO

RDISPLAY

Creates a window for the mainframe log and output. This is for the asynchronous remote submit. (CWAIT=NO)

RGET

Retrieves the log and output window from the remote submit on the mainframe and merges both to the local PC session.

CONCLUSION

There are many commands which can be used in the PC environment to avoid actually logging on to the mainframe. This paper gives a few examples. The overall concept is that SAS code is not needed for many of the remote services available when assigning a library reference to the mainframe directly. More information can be found in the references and recommended reading.

REFERENCES

SAS Online Docs V8

Syntax for Remote Library Services (RLS)
<http://www.uc.edu/sashtml/conn/z0271374.htm>

RECOMMENDED READING

The following sites were found during the creation of this paper and provide a great amount of detail for using the commands suggested and reviewed. (All sites current at time of paper creation.)

SAS Connect Software Fact Sheet
<http://www.sas.com/technologies/dw/etl/connect/factsheet.pdf>

Chapter 1 What is SAS/Connect Software
<http://www2.stat.unibo.it/ManualiSas/conn/c01.pdf>

Chapter 3 Syntax for Compute Services (Rsubmit Command)
<http://www2.stat.unibo.it/ManualiSas/conn/c03.pdf>

Chapter 5 Syntax for Remote SQL Pass-through (RSPT)
<http://www2.stat.unibo.it/ManualiSas/conn/c05.pdf>

Changes and Enhancements
<http://www2.stat.unibo.it/ManualiSas/conn/cae.pdf>

For more autoexec info.
<http://www.pauldickman.com/teaching/sas/autoexec.php>

CONTACT INFORMATION

Your comments and questions are valued and encouraged. Contact the author at:

Claudine Lougee
Dualenic, LLC
PO Box 1108
Glen Allen, VA 23060
Work Phone: 724-467-0559
Email: claudine@dualenic.com
Web: <http://www.dualenic.com>

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