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SAS/Connect® Simply Stated

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ABSTRACT

Have you ever wondered how or why you might use SAS/Connect®? In the world of computing today, we are faced with the challenge of processing data on a multitude of platforms. Many of us are faced with the reality of having to process data on two or more platforms. By utilizing SAS/Connect®, we can easily take advantage of the strengths of the various platforms we have at our disposal. This paper will explore what is necessary to run SAS/Connect®, demonstrate how to move data between platforms (Data Transfer Services), how to process jobs remotely (Remote Compute Services), and how to process remote SAS datasets locally (Remote Library Services). This paper is introductory in its nature and is designed to help users get started with SAS/Connect®.

WHAT YOU NEED TO GET STARTED

In addition to having SAS® software on the platforms you intend to do the processing on, you will need three key pieces of information. The three key pieces of information needed to make use of SAS/Connect® are as follows: specify the communications access method (COMAMID), specify the remote node name (REMOTE), and identify a script file for signing on and signing off The remote host (RLINK). (If you are feeling a bit lost or overwhelmed at this point, that's a good sign. Stay with me please and you will see how simple it really is.).

The communications access method and the remote node name are supplied to SAS as SAS system options: COMAMID and REMOTE respectively. The location of the script file is coded on a filename statement and is assigned the fileref RLINK.

COMAMID is an acronym for Communications Access Method Identification. This identifies the access method used by the local machine to communicate with the remote machine (e.g. TCP/IP, etc.).

REMOTE is where you would code either the IP Address of the remote host or the remote hostname.

The fileref RLINK points to the script you wish to use to connect to the remote host. SAS/Connect® supplies numerous signon scripts to be used to establish a connection to a remote host.
So there you have it, all you need is COMAMID, REMOTE, and RLINK and you are on your way to making use of SAS/Connect®.

DATA TRANSFER SERVICES

This section will cover how to move SAS® datasets between platforms by utilizing the Data Transfer Services of SAS/Connect®. Consider the following scenario: you have a SAS® dataset named **TESTDAT** on OS/390 stored under DSN **myuserid.sas.data** and you want to move it to the following directory on Windows **d:\projects\companyx\data**. The access method used to connect to the remote host is TCP/IP and the name of the remote host is **MAINFR1**. The signon script is named **tcptso.scr** and is stored in the following directory on Windows C:\Program Files\SAS Institute\SAS\V8\saslink. The code to accomplish this follows:

```
1       Options comamid=tcp remote=MAINFR1;
2       Filename RLINK 'C:\Program Files\SAS
Institute\SAS\V8\saslink\tcptso.scr';
        Run;
3       Signon;
4       Libname out 'd:\projects\companyx\data';
        Run;
5       Rsubmit;
6       Libname in 'myuserid.sas.data';
        Run;
7       Proc download in=in out=out;
8       Select testdat;
        Run;
9       Endrsubmit;
10      Signoff;
```

Step1 – Access method (COMAMID) is identified as TCP and remote (hostname) MAINFR1
Step2 – fileref RLINK is established and points to tcptso.scr signon script.
Step3 – signon to remote host is initiated. User is prompted to enter MAINFR1 userid and password. Once signon is complete, remote session of SAS® is started.
Step4 – libref OUT is assigned to point to directory on Windows
Step5 – statements following rsubmit will be processed on the remote session of SAS®
Step6 – libref IN is assigned on MAINFR1
Step7 – PROC DOWNLOAD is executed on MAINFR1
Step8 – testdat is selected for download
Step9 – signifies the end of statements to be executed on the remote session
Step10 – connection to remote session is terminated

REMOTE COMPUTE SERVICES

This section will cover how to make use of the Remote Compute Services of SAS/Connect®. Consider the following scenario: you have a SAS® dataset named **TESTDAT2** on UNIX stored in the following directory /**mydir**/**compx**/**data**/ and you want to run a frequency on variable KEY and return the procedure output to the output window of the session of SAS® running on Windows. The access method used to connect to the remote host is TCP/IP and the name of the remote host is **UNIX1**. The signon script is named **tcpunix.scr** and is stored in the following directory on Windows C:\Program Files\SAS Institute\SAS\V8\saslink. The code to accomplish this follows:

```
1       Options comamid=tcp remote=UNIX1;
2       Filename RLINK 'C:\Program Files\SAS
Institute\SAS\V8\saslink\tcpunix.scr';
        Run;
3       Signon;
        Run;
4       Rsubmit;
5       Libname in '/mydir/compx/data/';
        Run;
6       Proc freq data=in.testdat2;
        Table key / missing;
```

```
      Run;
7     Endrsubmit;
8     Signoff;
```

Step1 – Access method (COMAMID) is identified as TCP and remote (hostname) UNIX1
Step2 – fileref RLINK is established and points to tcpunix.scr signon script.
Step3 – signon to remote host is initiated. User is prompted to enter UNIX1 userid and password. Once signon is complete, remote session of SAS® is started.
Step4 – statements following rsubmit will be processed on the remote session of SAS®
Step5 – libref IN is assigned on UNIX1
Step6 – PROC FREQ is executed on UNIX1
Step7 – signifies the end of statements to be executed on the remote session
Step8 – connection to remote session is terminated

REMOTE LIBRARY SERVICES

There are times when moving a SAS® dataset to the local host is not practical or may not be possible for security or other reasons. In any event, the Remote Library Services component of SAS/Connect® allows you to access data stored on a remote host from the local host. Consider the following example: you want to process a SAS dataset named **CUST** stored in the directory **/mydir/compa/data** on UNIX from a SAS® session running on Windows. The access method used to connect to the remote host is TCP/IP and the name of the remote host is **UNIX1**. The signon script is named **tcpunix.scr** and is stored in the following directory on Windows C:\ProgramFiles\SAS Institute\SAS\V8\saslink. Here is the code:

```
1     options remote=UNIX1 comamid=tcp;
2     Filename RLINK 'C:\Program Files\SAS
Institute\SAS\V8\saslink\tcpunix.scr';
3     signon;
4     libname inremote "/mydir/compa/data/" server=UNIX1;
      run;
```

Step1 – Access method (COMAMID) is identified as TCP and remote (hostname) UNIX1
Step2 – fileref RLINK is established and points to tcpunix.scr signon script.
Step3 – signon to remote host is initiated. User is prompted to enter UNIX1 userid and password. Once signon is complete, remote session of SAS is started.
Step4 – libref INREMOTE is assigned locally but by coding the server= option it points to UNIX1

Once the libname is executed, you now have local access to the SAS® dataset on the remote host.

For example, if you want to run a PROC CONTENTS on the members in the libref inremote, you would simply need to code the following:

```
PROC CONTENTS DATA=INREMOTE._ALL_;
RUN;
```

Please note: it is **not** necessary to construct the code around a rsubmit/endrsubmit statements since the data is being processed locally.

CONCLUSION

SAS/Connect® is a great way to easily conquer some of the obstacles we face related to distributed processing. While this paper in no way represents a comprehensive study of SAS/Connect® and its capabilities, it should at a minimum form the basis of a solid introduction to SAS/Connect® and some of its uses.

CONTACT INFORMATION

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