Create Directory on Windows Without the Fleeting DOS Window
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ABSTRACT
On newer Windows environments, the pipe feature on a filename statement can be used to create directory without the fleeting DOS window. This is better than the X command approach. Any DOS commands can be used in the filename pipe feature. Finally we will show example of managing directories on remote machine from local SAS session.

INTRODUCTION
Sometimes we need to create or delete a directory from within a SAS session. Previously we can use the X command construct to issue such create directory (MKDIR) command. However this technique results in an annoying DOS window, flashing and vanishing on screen. On newer Windows environment and with the filename pipe feature, we can accomplish the same without the extra DOS window.

THE FILENAME PIPE FEATURE
The filename pipe feature is available in the Windows environment in both SAS 6.12 and 8. Its syntax is this:

filename fileref PIPE 'a DOS command';
For example, a valid DOS command for creating directory is:

Mkdir "directory name"

So to create a directory from within SAS, we would do:

Filename fileref PIPE 'mkdir "c:\a dir"';
Data _null_;
Infile fileref;
Input ;
    Put _infile_;
Run;

And here is the execution result:
NOTE: The infile FILEREF is:
Unnamed Pipe Access Device,
PROCESS=mkdir "c:\a dir",RECFM=V,LRECL=256

NOTE: 0 records were read from the infile FILEREF.

The fact that “0 records were read from the infile” shows a drawback of this pipe feature, namely, for most DOS commands we don’t know for sure if that command was executed successfully or not. To overcome this limitation, we can test the existence of such directory by issuing a libname statement, like:

libname libref "c:\a dir";
%put Result of directory creation is &SYSLIBRC;
where a zero in SYSLIBRC indicates that directory is successfully created.

OTHER DOS COMMANDS FOR MANAGING DIRECTORIES
We have seen the create directory command:

Mkdir "directory name"
Related commands for managing directory and its contents are:

Del /q "file name" for deleting file(s) in a directory without prompting.
Rmdir /q "directory name" for removing a directory without prompting
Dir "directory name" for display a directory contents

copy “source directory” “target directory” for copying files from source directory to target directory.

Most DOS commands return nothing when successful. Some commands, like DIR and COPY, return useful information that can be further analyzed.

Filename fileref PIPE 'dir "c:a dir"';
Data important_message;
Infile fileref length= LNG;
Input @;
    /* Put _infile_; */
    /* Additional logic to parse the directory contents for further analysis. */
    if LNG >= 8 then do;
        input last_modified_date mmddyy8. @;
        ...
    end;
Run;

APPLICATION: MANAGE DIRECTORY ON REMOTE PC
Here is a typical sequence for managing remote directory from local SAS session:

Filename rlink …;
Options comamid= tcp remote= remote_host;
Signon;
Rsubmit;
Filename dir pipe 'dir …';
Data _null_;
Infile dir;
Input ;
    Put _infile_;
Run;
Filename dir;
Endrsubmit;
...
Rsubmit;
Filename mkdir pipe 'mkdir …';
Data _null_;
Infile mkdir;
Input ;
    Put _infile_;
Run;
Filename mkdir;
Endrsubmit;
...

In essence, from a local SAS session via SAS/Connect, we can manage the remote host’s directory structure without opening remote host’s Windowing environment.

Also note when issuing X command on remote PC, from within SAS/Connect, we must be sure the remote SAS session has the NOXSYNC option in effect. If XSYNC option is in effect, then the remote SAS session hangs up and we’ll have to abort and re-login to try again. However with the filename pipe feature, then we don’t have to be concerned with NOXSYNC. This alleviates the chance of having local SAS session lock-up due to incorrect remote SAS options.

OTHER TECHNIQUES?
Alternatively, we can use CALL MODULE for invoking Windows API for creating and managing directories. However, this
presents a learning curve to be overcome and additional documents to read on the Windows API convention. The filename pipe feature is readily usable since most people are already familiar with the DOS commands.

CONCLUSION
The filename pipe feature on newer Windows environments (Win 2000, Win NT, Win 98) can accomplish the same as the X command, without the annoying DOS window, and without regard to particular SAS options in effect (i.e. XSYNC). The feature is superior than the CALL MODULE approach in that no new learning is required. The authors have successfully deployed methods for managing directories on remote PC via SAS/Connect.

CONTACT INFORMATION
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