

# Some Windows and Linux Commands for SAS Users

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## ABSTRACT

Windows and Linux command line can help SAS users with their daily work. We will discuss some frequently used commands. We will also show how to set up some short CMD files in windows and shell scripts in Linux for certain tasks.

## INTRODUCTION

SAS users in the Linux platform often run Linux commands and Linux scripts. Many of those commands have their counterpart in the windows command line. We will discuss some of the frequently used commands. We will also show how to set up short CMD files in windows and shell scripts in Linux that can create folders of a certain structure or submit SAS programs for batch run.

## WINDOWS COMMAND LINE FOR PC SAS USERS

To open the command prompt, you can type cmd in the search bar in windows.

Table 1 shows some frequently used commands in windows command line.

Command	Purpose	Example
cd /d	This opens a folder specified by a full path.	cd /d C:\demo\Hoc
cd	This is used to open a folder	cd tables
cd ..	This is used to go to the upper level of the current folder.	cd ..
cd \	This is used to go to the root level of the folders.	cd \
mkdir	This is used to create folders.	mkdir tables
del	This is used to remove files.	del table1401.log
rmdir	This is used to remove folders. If there are files in the folder, those files need to be removed first.	rmdir tables
rmdir /s	If you want to remove a folder without going through the step of removing the files inside the folder, use the /s option.	rmdir /s tables
dir	This is used to list all the files/folders in the current directory.	dir
dir /s	This is used to search a file or folder. This command is run in the folder within which the file or folder is to be looked for. The /s options directs a search of all folders within the top level.	dir /s table1.sas

findstr	This command is used to search for a string in some files. The /i option is used to ignore case.	findstr /i weight *.sas
rename	This is used to rename files or folders.	rename table1.sas t1.sas
copy	This is used to copy a file.	copy t1.sas t1_old.sas
xcopy	This is used to copy a folder.	xcopy temp2 temp3
fc	Compare two files and show the difference.	fc t1.sas t2.sas
File redirection	We can use the > and >> to direct the output of a command to a file.	

**Table 1: Frequently Used Commands in Windows**

Programmers need to create study folders of a certain structure. This can be done through a CMD file. Suppose we need folders of the following structure:

```

ABC-SD-01/programs/tables
ABC-SD-01/programs/listings
ABC-SD-01/programs/figures
ABC-SD-01/output/tables
ABC-SD-01/output/listings
ABC-SD-01/output/figures

```

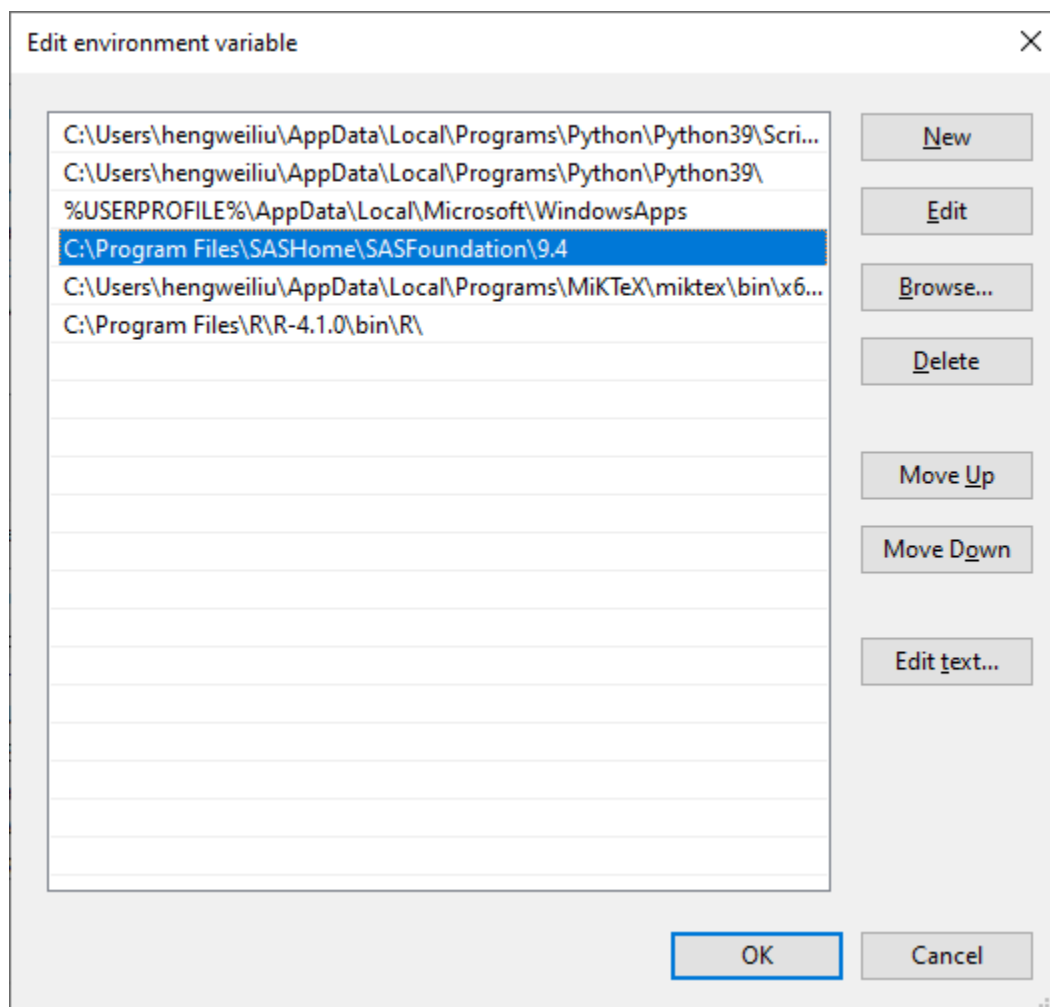
We can set up a short CMD file. This CMD file will be run in the level where the study folder is to be created.

```

:: dir.cmd
mkdir ABC-SD-01
cd ABC-SD-01
mkdir programs
cd programs
mkdir tables
mkdir listings
mkdir figures
cd ..
mkdir output
cd output
mkdir tables
mkdir listings
mkdir figures

```

How can we do a batch run of SAS in windows? We need to have SAS in the path. To check that, review the system environment variables, and add SAS to the path if it is not there. The display 1 shows dialogue window for path.



**Display 1: the Path for Windows**

Once this is done, we can do batch run of SAS in the command window, by typing sas and the program name.

In one study there may be hundreds of SAS programs for the tables. How can we submit all the SAS programs for a batch run? We can use a bat script to create a CMD file.

```
:: runall.bat
@echo off
for %%i In (t14*.sas) DO echo sas %%i >> runall.cmd
```

The display 2 shows the CMD file runall.cmd.

```

sas t14010101.sas
sas t14010102.sas
sas t14010201.sas
sas t14010202.sas
sas t14010301.sas
sas t14010302.sas
sas t14010401.sas
sas t14010402.sas
sas t14010403.sas
sas t14010501.sas
sas t14010502.sas
sas t14010503.sas
sas t14010504.sas
sas t14010505.sas
sas t14010506.sas
sas t14010507.sas
sas t14010508.sas
sas t14010509.sas

```

## Display 2: Screenshot of the runall.cmd

Now programmers can run the runall.cmd to submit all the SAS programs for batch run.

## LINUX COMMAND LINE

Table 2 shows some frequently used Linux commands for SAS Users.

Command	Purpose	Example
cd	This is used to open a folder	cd tables
cd ..	This is used to go to the upper level of the current folder.	cd ..
cd	This is used to go to user's home directory.	cd
pwd	This shows the current path	pwd
mkdir	This is used to create folders.	mkdir tables
rm	This is used to remove files.	rm table1401.log
rm -r	This is used to remove folders. There is a -f option to avoid prompt.	rm -r tables
ls	This is used to list all the files/folders in the current directory.	ls ls -l ls -la
find -name	This is used to search a file or folder. This command is run in the folder within which the file or folder is to be looked for.	find -name table1.sas find -name *.sas
grep	This command is used to search for a string in some files. The -i	grep -i randomization a.sas

	option is used to ignore case.	
mv	This is used to rename files or folders.	mv table1.sas t1.sas
cp	This is used to copy a file.	cp t1.sas t1_old.sas
cp -r	This is used to copy a folder.	cp -r temp2 tem p3
diff	This is used to compare two files or the files in two folders.	diff a.sas b.sas
File redirection	We use the > and >> to direct the output of a command to a file.	

**Table 2: Frequently Used Commands in Linux**

The script dir can be used to create study folders. It is the same as the dir.cmd. In practice, the Linux script should set up the permissions for the folders.

```
#script dir
mkdir ABC-SD-01
cd ABC-SD-01
mkdir programs
cd programs
mkdir tables
mkdir listings
mkdir figures
cd ..
mkdir output
cd output
mkdir tables
mkdir listings
mkdir figures
```

How to do a batch run of a SAS program in Linux?

Suppose we are working with SAS grid in Linux and the path for sasgsub is /apps/sas/SAS94/Config\_GCS/Lev1/Applications/SASGridManagerClientUtility/9.4/sasgsub.

We can create a small shell script called sas to invoke SAS.

```
#!/usr/bin/bash
#usage: sas yyy.sas
/apps/sas/SAS94/Config_GCS/Lev1/Applications/SASGridManagerClientUtility/9.4/sasgsub $1
```

We must make sure that the path for this script is set in the variable \$PATH. This can be done in the files such as .tcshrc or .bashrc.. Now we can use sas to invoke SAS.

To submit multiple programs for batch run, we can use this script:

```
#!/usr/bin/ksh
ls -l *.sas | awk '{print $9}' | sed 's/^/sas /' > runall
chmod u+x runall
```

The file runall is like the file runall.cmd shown in display 2. The user can run the runall to submit all programs for batch run.

## CONCLUSION

Command line operations can be very helpful to SAS users in either Windows platform or the Linux platform. SAS users should invest some time to master the frequently used commands and learn how to set up some short scripts.

## CONTACT INFORMATION

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

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