

A Quick Guide to the WinZip® Command Line Add-On

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ABSTRACT

If you are running SAS® under Microsoft® Windows, it could be worthwhile exploring the use of WinZip® along with the WinZip Command Line Add-On. The WinZip Command Line Add-On provides the MS DOS command prompt equivalent to the WinZip utility. It is very simple to use and can be readily employed in various ways, including via SAS, to automate what would otherwise be achieved through WinZip's graphical user interface.

INTRODUCTION

For those not familiar with WinZip software, it provides a compression utility for use in a Windows environment. This utility offers a method of archiving files in a compressed and/or encrypted form. Whilst the interface is easy to use, managing files with it can be tedious and prone to error. The WinZip Command Line Add-On is available for free and provides all the functionality of the WinZip utility through two additional MS DOS commands, namely, WZZIP and WZUNZIP. The advantage of having these commands is that accessing the functionality of the WinZip utility becomes enormously flexible. What can be done via the WinZip graphical user interface can, when necessary, be automated.

This paper firstly gives an outline as to how to get started with the WinZip Command Line Add-On. Once set up, the two commands, WZZIP and WZUNZIP become available as MS DOS commands. These can be used to zip (compress) and unzip (de-compress) files respectively. This is followed by a number of examples which should demonstrate how the two commands can be used directly from the MS DOS command prompt or from within SAS. Two SAS macros are then presented, %WZZIP and %WZUNZIP. They should help to make it easier to use this software from within SAS. The macros and examples given in this paper are available for download from <http://david.n.brennan.googlepages.com/phuse2006downloads>, contained in a zip file called **WZ_Test.zip**.

GETTING STARTED

The WinZip Command Line Add-On is available for download at <http://www.winzip.com/downcl.htm>. Only the most recent version is available, which at the time of writing is the version compatible with WinZip 10.0 Pro. In addition, it requires the Windows 98, ME, 2000 or XP operating system. If you are running an older version of WinZip, the corresponding download will have to be sourced elsewhere.

The download consists of a single executable called WZCLINE20.EXE (for WinZip version 9 the required file is called WZCLINE9.EXE). Running this executable file creates several files in the **C:\Program Files\WinZip** folder (or whatever folder you specify during the installation process), the ones of interest being WZCLINE.HLP, WZZIP.EXE and WZUNZIP.EXE. WZCLINE.HLP is a Windows help file and provides all the information needed to use the add-on. The WZZIP.EXE and WZUNZIP.EXE are responsible for providing the user with two new MS DOS commands, i.e. WZZIP and WZUNZIP.

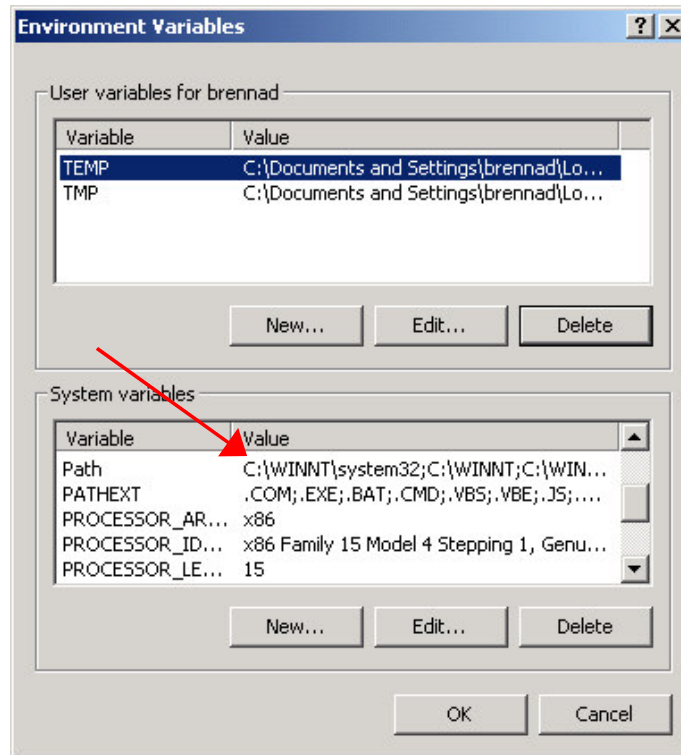
In order that these commands are automatically available at the MS DOS command prompt (without having to specify where the WZZIP.EXE and WZUNZIP.EXE files were installed), you could do the following:

- Copy the WZZIP.EXE and WZUNZIP.EXE files to a folder specified in your PATH environment variable. To determine this (i.e. where exactly these files can be copied), click on the following:

Start → Settings → Control Panel → System

- A window titled "System Properties" will appear on the screen with several tabs along the top, one of which is labeled "Advanced". Clicking on this, followed by a click on the "Environment Variables" button, will lead to a window appearing on screen as shown in Figure 1.

Figure 1



- In the lower half of this window the PATH system variable needs to be located. This will indicate the locations to which the WZZIP.EXE and WZUNZIP.EXE files can be copied, thus making the WZZIP and WZUNZIP commands automatically available at the MS DOS command prompt. In my own case, I copied these files to the **C:\WINNT\system32** folder (as indicated in the figure by the arrow).
- Alternatively, the PATH system variable could be updated to include the path where the WZZIP.exe and WZUNZIP.exe files are located. Doing one or the other should suffice – further information is available in the “Overview” section of the WZCLINE.HLP help file.

COMMAND STRUCTURE

The general structure of the WZZIP and WZUNZIP commands are as follows (with the elements in brackets as optional):

```
wzip [options] zipfile [@listfile] [files]
```

```
wzunzip [options] zipfile [@listfile] [path] [files]
```

Once the add-on has been installed, WZZIP and WZUNZIP commands can be issued in a variety of ways, e.g. from the MS DOS command prompt, from the Windows Run dialog, from batch files (**.bat** files), using various scripting languages or via SAS. The focus here will be on the commands themselves and how they are issued via SAS. Two SAS macros, %WZZIP and %WZUNZIP, available in the **WZ_Test.zip** file can be used to issue WZZIP and WZUNZIP commands respectively. Incidentally, the zip file also contains files (batch and SAS programs) which allow one to run the examples in the next section (with the exception of the first one). The macro parameters, as shown in Tables 1 & 2, map directly to the command structures as given above. Therefore, the macro parameter descriptions should serve as a description of how the commands themselves operate.

TABLE 1: %WZZIP SAS MACRO PARAMETERS

Parameter	Description
OPTIONS	The WZZIP options to be applied (by -a by default, that is, files are added to the specified zip file).
ZIPFILE	The name of the zip file to be created.
LISTFILE	A text file containing a list of files to be included in the zip file.
FILES	Files to be included in the zip file (enclosed in double quotes).
WZ_FOLDER	By default this is set to C:\Program Files\WinZip and specifies where the WZZIP.exe and WZUNZIP.exe files are located. If these files are located elsewhere, this parameter's default value should be changed accordingly.
ADD_DATETIME	This parameter is used to include a date/time suffix to the zip file name. By default this functionality is not activated. To activate, then specify 'Y'. The suffix is in the form '_YYYYMMDDHHMMSS' (translating to year,month,day,hour,minute,seconds). This is useful when you want to provide a unique zip file name.
XSYNC	This parameter is used to set the SAS option XSYNC or the option NOXSYNC which control whether the command is issued synchronously (specify 'Y') or asynchronously (default). If multiple commands are issued which interact with the same zip file it is likely that the commands will have to be issued asynchronously.

TABLE 2: %WZUNZIP SAS MACRO PARAMETERS

Parameter	Description
OPTIONS	The WZUNZIP options to be applied (by default this is -d , that is, the folder structure present in the zip file is recreated upon unzipping).
ZIPFILE	The name of the zip file to be unzipped (or queried if only zip file information is to be retrieved).
LISTFILE	A text file containing a list of files to be unzipped.
PATH	The path to which the files are unzipped.
FILES	Files to be unzipped.
WZ_FOLDER	See Table 1.
XSYNC	See Table 1.

With regard to issuing commands asynchronously, an example where it could be necessary would be if two commands were issued, the first to create a zip file and the second one to query the same zip file. The second command cannot run successfully until the first one has finished.

Note that if the macros are used and do not function as expected, the SAS log will display the issued command similar to the following:

```
*****
Issued command:
wzunzip -ye "C:\WZ_Test.zip" "C:\" "*"
*****
```

EXAMPLES

This section gives a number of examples – a couple to get you started, followed by a number of examples demonstrating some of the options available to the WZZIP and WZUNZIP commands. With the exception of the first example, each example gives, as a minimum, the command itself along with the corresponding SAS macro call which would achieve the same result. For each example below, the **WZ_Test.zip** file contains a batch file and a SAS program file (**.bat** and **.sas** extensions respectively), whose names correspond to the example numbers and titles below. The batch file and/or the SAS program can be executed to run each of the examples. The assumption is made that the WZZIP and WZUNZIP commands are available and the corresponding executables have been copied to one of the locations given by the PATH environment variable (as described earlier).

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1 - SETTING UP

If you wish to run the examples which follow this one, it is suggested you do the following:

- Download the **WZ_Test.zip** zip file (as mentioned in previous section)
- Save it to **C:**
- Run the following command from the MS DOS command prompt:

```
wzunzip -ye "C:\WZ_Test.zip" "C:\ " "*. "*"
```

This command unzips the complete contents of the **C:\WZ_Test.zip** zip file to the **C:** folder. Using the **-ye** option instructs that the zip file name be used to create a folder into which the contents are unzipped. Therefore, running this command will place the contents of the zip file into a new folder called **C:\WZ_Test**. If run successfully, all files are in place to run the remaining examples in this section.

2 - HELP

At this point it might be wise to issue one of the following commands:

```
wzzip -?  
wzunzip -?
```

Either of these commands will open up the WZCLINE.HLP help file.

Either of the following SAS macro calls will do the same:

```
%wzzip(options = -?);  
%wzunzip(options = -?);
```

3 - A SIMPLE WZZIP EXAMPLE

```
wzzip "C:\WZ_Test\Zipped Text Files.zip" "C:\WZ_Test\Various Files\*.txt"
```

This command, when issued directly from the MS DOS command prompt, adds all files in the **C:\WZ_Test\Various Files** folder with the **.txt** extension to the **C:\WZ_Test\Zipped Text Files.zip** zip file. If the zip file does not exist, it is created. Note that the quoting is only necessary when a path contains spaces. Note too that wildcard characters, '*' and '?', may be used as they normally are with MS DOS. An asterisk is used to denote any group of characters and a question mark is used to denote a single character.

To issue the same command via SAS there are several possibilities, which include:

- Using the 'X' statement

```
x 'wzzip "C:\WZ_Test\Zipped Text Files.zip" "C:\WZ_Test\Various Files\*.txt"';
```

- Using the CALL SYSTEM routine

```
data _null_;  
  call system('wzzip "C:\WZ_Test\Zipped Text Files.zip" "C:\WZ_Test\Various  
Files\*.txt"');  
run;
```

- Using a pipe

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```
filename wzpipe pipe 'wzzip "C:\WZ_Test\Zipped Text Files.zip" "C:\WZ_Test\Various
Files\*.txt"';

data wz_results;
  infile wzpipe length=1;
  input line $varying500. 1;
run;
```

The advantage using a pipe is that you capture, in a data set, what would appear in the MS DOS command prompt window, allowing you to see what happened when the command was issued. Note that the information displayed can be controlled using the **-v** option (mentioned again later).

- Using the %WZZIP SAS macro:

```
%wzzip(
  zipfile = C:\WZ_Test\Zipped Text File.zip
  ,files   = "C:\WZ_Test\Various Files\*.txt"
);
```

4 - A SIMPLE WZUNZIP EXAMPLE

```
wzunzip "C:\WZ_Test\Zipped Text Files.zip" "C:\WZ_Test\"
```

This command, when issued directly from the MS DOS command prompt, unzips all files in the **C:\WZ_Test\Zipped Text Files.zip** zip file to the **C:\WZ_Test** folder.

The command as issued using the %WZUNZIP SAS macro:

```
%wzunzip(
  zipfile = C:\WZ_Test\Zipped Text Files.zip
  ,path    = C:\WZ_Test\
);
```

Note that if we wanted to state explicitly that only files with either a **.txt** or a **.dat** extension were to be unzipped, the following command could be used:

```
wzunzip "C:\WZ_Test\Zipped Text Files.zip" "C:\WZ_Test\" "*.txt" "*.dat"
```

The command as issued using the %WZUNZIP SAS macro:

```
%wzunzip(
  zipfile = C:\WZ_Test\Zipped Text Files.zip
  ,path    = C:\WZ_Test\
  ,files    = "*.txt" "*.dat"
);
```

5 - SOME WZZIP OPTIONS

Consider the following WZZIP command:

```
wzzip -a -r -p -o -en -xIncriminating.txt -tf"20060101" -s"NeverGuess"
"C:\WZ_Test\Another Zip File.zip" "C:\WZ_Test\Various Files\*.txt"
"C:\WZ_Test\Various Files\*.dat"
```

This command adds files with either a **.txt** or a **.dat** extension present in the **C:\WZ_Test\Various Files** folder to the **C:\WZ_Test\Another Zip File.zip** zip file. However, the following also apply:

- The files to be zipped are added to the zip file. The **-a** option is responsible for this. This does not actually need to be specified as this is the default behaviour. If the files were to be moved into the zip file instead of being added, the **-m** option would be used.

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- Subfolders are considered (the **-r** option, which requires either the **-p** or **-P** option in addition).
- The names of the folders recursed are stored (**-p** option).
- The zip file's file date will be the same as that of the newest file in the zip file (**-o** option).
- The compression level of the zip file will be 'normal' (**-en** option). Changing the compression level would come into play if you wanted to ensure compatibility across different versions of WinZip.
- The file **Incriminating.txt** is explicitly excluded from the zip file (**-x** option).
- Only those files with a file date of 1st January 2006 or more recent are included in the zip file. The **-t** option is responsible for this. The specification of **-tf** indicates that the date is given in a country-independent format (yyyymmdd or yyyy-mm-dd).
- The string "NeverGuess" is applied as the zip file password (case-sensitive) (the **-s** option).

The command as issued using the %WZZIP SAS macro:

```
%wzzip(
  options = -a -r -p -o -en -xIncriminating.txt -tf"20060101" -s"NeverGuess"
, zipfile = C:\WZ_Test\Another Zip File.zip
, files   = "C:\WZ_Test\Various Files\*.txt" "C:\WZ_Test\Various Files\*.dat"
);
```

Note that the options used in this example are a small subset of the available options. See the WZCLINE.HLP file for further details.

6 – RETRIEVING ZIP FILE INFORMATION

Consider the following command:

```
wzzip -vb >"C:\WZ_Test\ZipInfo.txt" "C:\WZ_Test\Zipped Text Files.zip"
```

This command will produce a text file called **ZipInfo.txt** in the **C:\WZ_Test** folder, which details the contents of the **C:\WZ_Test\Zipped Text Files.zip** zip file. In general, the **-v** option is responsible for this. By specifying **-vb** you are requesting a 'brief' overview (one could specify **-vt** for a 'technical' overview of the contents).

The command as issued using the %WZZIP SAS macro:

```
%wzzip(
  zipfile = C:\WZ_Test\Zipped Text Files.zip
, options = -vb >"C:\WZ_Test\ZipInfo.txt"
);
```

7 – RETRIEVING FILE INFORMATION

The WZZIP command can also be used to retrieve file name information from a location on a drive:

```
wzzip -r -p -@"C:\WZ_Test\My_WZ_Test_Files.txt" All_WZ_Test.zip "C:\WZ_Test\*.*"
```

The WZZIP command above generates a text file called **My_WZ_Test_Files.txt** in the **C:\WZ_Test** folder, which will list all files on the **C:\WZ_Test** folder. Note that folders are recursed (the **-r** option) and subfolder information will be included (the **-p** option). Incidentally, a zip file will not be created in the process; the **-@** option specifies that a list should be produced containing the details of those files which would be zipped had this option not been specified. Although a zip file is not created, it seems one must be specified in the command.

The command as issued using the %WZZIP SAS macro:

```
%wzzip(
  zipfile = All_WZ_Test.zip
, files   = "C:\WZ_Test\*.*"
, options = -r -p -@"C:\WZ_Test\My_WZ_Test_Files.txt"
);
```

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Note that the -@ option is also available to the WZUNZIP command and is used to create a text listing of those files that would be unzipped if this option had not been used.

8 – SOME WZUNZIP OPTIONS

Consider the following WZUNZIP command:

```
wzunzip "C:\WZ_Test\Another Zip File.zip" "C:\WZ_Test\" "*.txt" -d -s"NeverGuess" -ye -x@"C:\WZ_Test\Do not unzip.lis"
```

This command is used to unzip files with the .txt extension from the **C:\WZ_Test\Zipped Text Files.zip** into the **C:\WZ_Test** folder. However the following also apply:

- The folder structure contained within the zip file is re-created upon unzipping (-d option).
- The password "NeverGuess" is given, otherwise a prompt for it would appear (-s option).
- The zip file name is used to create a subfolder with the same name as the zip file, into which the zip file contents are unzipped (-ye option).
- The files listed in the **C:\WZ_Test\Do not unzip.lis** file are not unzipped (-x@ option). (This file contains a single line with the text "Top Secret.txt" and as such the file **Top Secret.txt** will not be unzipped.)

The command as issued using the %WZUNZIP SAS macro:

```
%wzunzip(  
  zipfile = C:\WZ_Test\Another Zip File.zip  
  ,path    = C:\WZ_Test\  
  ,files    = "*.txt"  
  ,options = -d -s"NeverGuess" -ye -x@"C:\WZ_Test\Do not unzip.lis"  
);
```

Once again, note that the options used in this example are a small subset of the available options. See the WZCLINE.HLP file for further details.

APPLICATION OF WZZIP AND WZUNZIP COMMANDS

The functionality offered by the WinZip Command Line Add-On proved useful in the development of a SAS macro called %FIND_REPLACE. This macro is presented in the Posters section of this year's conference under the title "A SAS® Macro to Find and Replace".

The %FIND_REPLACE macro allows for a text string search with the option of replacing the search string with another. Searching can take place in various ways – on a single file, on a selection of files in a folder and, if necessary, in its subfolders. In fact, several folders can be specified for searching, and each one need not necessarily reside on the same drive. In addition, multiple search strings can be specified and the results of all searches (with or without replacement) are captured in a SAS data set.

The WinZip Command Line Add-On is used by the macro in a number of ways. Firstly, it is used by the macro to provide file information through the use of the WZZIP command and its -@ and -rP options. More importantly, before a file is amended through a find and replace action, a backup is made by adding the file to a zip archive. This is achieved by issuing a WZZIP command. Finally, before a file is overwritten, a WZUNZIP command is issued, using its -@ option to provide confirmation that the file was successfully zipped.

DISCLAIMER

The author accepts no responsibility for damage resulting from the use of the SAS macros presented in this paper. They have not been peer-tested. Use at your own risk.

CONCLUSION

The WinZip Command Line Add-On is a useful tool, which can be deployed in a variety of ways – using batch files, through the Windows Run Dialog or via various scripting languages. The commands it offers, WZZIP and WZUNZIP, can also be issued through SAS in several ways, including with 'X' statement, pipes or the CALL SYSTEM routine. Alternatively, the %WZZIP and %WZUNZIP macros can be used. These commands offer the possibility of automating tasks and provide a convenient way of retrieving zip file information as well as normal file information.

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