Appendix N. Converting DOS Batch Files to Shell Scripts

Quite a number of programmers learned scripting on a PC running DOS. Even the crippled DOS batch file language allowed writing some fairly powerful scripts and applications, though they often required extensive kludges and workarounds. Occasionally, the need still arises to convert an old DOS batch file to a UNIX shell script. This is generally not difficult, as DOS batch file operators are only a limited subset of the equivalent shell scripting ones.

Table N-1. Batch file keywords / variables / operators, and their shell equivalents

Batch File Operator	Shell Script Equivalent	Meaning
%	$	command-line parameter prefix
/	-	command option flag
\	/	directory path separator
==	=	(equal-to) string comparison test
!==!	!=	(not equal-to) string comparison test
|	|	pipe
@	set +v	do not echo current command
*	*	filename "wild card"
>	>	file redirection (overwrite)
>>	>>	file redirection (append)
<	<	redirect `stdin`
%VAR%	$VAR	environmental variable
REM	#	comment
NOT	!	negate following test
NUL	/dev/null	"black hole" for burying command output
ECHO	echo	echo (many more option in Bash)
ECHO.	echo	echo blank line

Batch File Operator	Shell Script Equivalent	Meaning
ECHO OFF	set +v	do not echo command(s) following
FOR %%VAR IN (LIST) DO	for var in [list]; do	"for" loop
:LABEL	none (unnecessary)	label
GOTO	none (use a function)	jump to another location in the script
PAUSE	sleep	pause or wait an interval
CHOICE	case or select	menu choice
IF	if	if-test
IF EXIST *FILENAME*	if [-e filename]	test if file exists
IF !%N==!	if [-z "$N"]	if replaceable parameter "N" not present
CALL	source or . (dot operator)	"include" another script
COMMAND /C	source or . (dot operator)	"include" another script (same as CALL)
SET	export	set an environmental variable
SHIFT	shift	left shift command-line argument list
SGN	-lt or -gt	sign (of integer)
ERRORLEVEL	$?	exit status
CON	stdin	"console" (stdin)
PRN	/dev/lp0	(generic) printer device
LPT1	/dev/lp0	first printer device
COM1	/dev/ttyS0	first serial port

Batch files usually contain DOS commands. These must be translated into their UNIX equivalents in order to convert a batch file into a shell script.

Table N-2. DOS commands and their UNIX equivalents

DOS Command	UNIX Equivalent	Effect
ASSIGN	ln	link file or directory
ATTRIB	chmod	change file permissions
CD	cd	change directory
CHDIR	cd	change directory

DOS Command	UNIX Equivalent	Effect
CLS	clear	clear screen
COMP	diff, comm, cmp	file compare
COPY	cp	file copy
Ctl-C	Ctl-C	break (signal)
Ctl-Z	Ctl-D	EOF (end-of-file)
DEL	rm	delete file(s)
DELTREE	rm -rf	delete directory recursively
DIR	ls -l	directory listing
ERASE	rm	delete file(s)
EXIT	exit	exit current process
FC	comm, cmp	file compare
FIND	grep	find strings in files
MD	mkdir	make directory
MKDIR	mkdir	make directory
MORE	more	text file paging filter
MOVE	mv	move
PATH	$PATH	path to executables
REN	mv	rename (move)
RENAME	mv	rename (move)
RD	rmdir	remove directory
RMDIR	rmdir	remove directory
SORT	sort	sort file
TIME	date	display system time
TYPE	cat	output file to `stdout`
XCOPY	cp	(extended) file copy

Virtually all UNIX and shell operators and commands have many more options and enhancements than their DOS and batch file counterparts. Many DOS batch files rely on auxiliary utilities, such as **ask.com**, a crippled counterpart to read.

DOS supports only a very limited and incompatible subset of filename wild-card expansion, recognizing just the * and ? characters.

Converting a DOS batch file into a shell script is generally straightforward, and the result ofttimes reads better than the original.

Example N-1. VIEWDATA.BAT: DOS Batch File

```
REM VIEWDATA

REM INSPIRED BY AN EXAMPLE IN "DOS POWERTOOLS"
REM                           BY PAUL SOMERSON


@ECHO OFF

IF !%1==! GOTO VIEWDATA
REM  IF NO COMMAND-LINE ARG...
FIND "%1" C:\BOZO\BOOKLIST.TXT
GOTO EXIT0
REM  PRINT LINE WITH STRING MATCH, THEN EXIT.

:VIEWDATA
TYPE C:\BOZO\BOOKLIST.TXT | MORE
REM  SHOW ENTIRE FILE, 1 PAGE AT A TIME.

:EXIT0
```

The script conversion is somewhat of an improvement. [1]

Example N-2. *viewdata.sh*: Shell Script Conversion of VIEWDATA.BAT

```
#!/bin/bash
# viewdata.sh
# Conversion of VIEWDATA.BAT to shell script.

DATAFILE=/home/bozo/datafiles/book-collection.data
ARGNO=1

# @ECHO OFF                 Command unnecessary here.

if [ $# -lt "$ARGNO" ]    # IF !%1==! GOTO VIEWDATA
then
  less $DATAFILE          # TYPE C:\MYDIR\BOOKLIST.TXT | MORE
else
  grep "$1" $DATAFILE     # FIND "%1" C:\MYDIR\BOOKLIST.TXT
fi

exit 0                    # :EXIT0

#  GOTOs, labels, smoke-and-mirrors, and flimflam unnecessary.
#  The converted script is short, sweet, and clean,
#+ which is more than can be said for the original.
```

Ted Davis' Shell Scripts on the PC site had a set of comprehensive tutorials on the old-fashioned art of batch file programming. Unfortunately the page has vanished without a trace.

Notes

[1] Various readers have suggested modifications of the above batch file to prettify it and make it more compact and efficient. In the opinion of the *ABS Guide* author, this is wasted effort. A Bash script can access a DOS filesystem, or even an NTFS partition (with the help of ntfs-3g) to do batch or scripted operations.

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