



## Shell Scripting Cheat Sheet for Unix and Linux

Online: <http://steve-parker.org/sh/sh.shtml>  
Book: <http://steve-parker.org/shellscripting>

### File Redirection

> file	create (overwrite) file
>> file	append to file
< file	read from file
a   b	Pipe 'a' as input to 'b'

### Common Constructs

\$ while read f	read text file
> do	line by line
> echo "Line is \$f"	
> done < file	note: "\$" prompt becomes ">"
\$ grep foo myfile	find lines in
afoo	myfile
foo	containing the
foobar	text "foo"
\$ cut -d: -f5 /etc/passwd	get 5 <sup>th</sup> field
Steve Parker	delimited by colon
\$ cmd1    cmd2	run cmd1; if fails,
	run cmd2
\$ cmd1 && cmd2	run cmd1; if it
	works, run cmd2
case \$foo in	act upon the
a)	value of a
echo "foo is A" ;;	variable
b)	
echo "foo is B" ;;	note that ";;"
*)	is required
echo "foo is not A or B"	at the end of
;;	each section
esac	
myvar=`ls`	get output of
	ls into variable
doubleit() {	function
expr \$1 \* 2	declaration
}	and syntax
doubleit 3 # returns 6	for calling it

### Test Operators

if [ "\$x" -lt "\$y" ]; then	
# do something	
fi	

### Numeric Tests

lt	less than
gt	greater than
eq	equal to
ne	not equal
ge	greater or equal
le	less or equal

### File Tests

nt	newer than
d	is a directory
f	is a file
x	executable
r	readable
w	writable

### String Tests

=	equal to
z	zero length
n	not zero length

### Logical Tests

&&	logical AND
	logical OR
!	logical NOT

### Arguments

\$0	program name
\$1	1 <sup>st</sup> argument
\$2	2 <sup>nd</sup> argument
...	...
\$#	no. of arguments
\$*	all arguments

### Variable Substitution

\${V:-default}	\$V, or "default" if unset
\${V:=default}	\$V (set to "default" if unset)
\${V:?err}	\$V, or "err" if unset

### Conditional Execution

cmd1    cmd2	run cmd1; if fails, run cmd2
cmd1 && cmd2	run cmd1; if ok, run cmd2

### Files

mv /src /dest	move /src into /dest
ls a*	list files beginning with "a"
ls *a	list files ending with "a"
ls -ltr	list oldest first, newest last
ls -lSr	list smallest first, biggest last
ls -la	list all files, including hidden
find /src -print \	copy /src into current
cpio -pudvm	directory, preserving
	links, special devices, etc.

### Preset Variables

\$SHELL	what shell am I running?
\$RANDOM	provides random numbers
\$\$	PID of current process
\$?	return code from last cmd
#!	PID of last background cmd

### Generally Useful Commands

file /etc/hosts	determine file type
basename /bin/ls	strip directory name (ls)
dirname /bin/ls	get directory name (/bin)
ifconfig -a	show all network adapters
netstat -r	show routers
netstat -a	show open ports
date +%Y%m%d	Year, Month, Day
date +%H%M	Hours, Minutes
wc -l	count number of lines
pwd	present working directory

### Misc Useful Commands and Tools

egrep "(foo bar)" file	find "foo" or "bar" in file	find . -size 10k -print	files over 10Kb
awk '{ print \$5 }' file	print the 5 <sup>th</sup> word of each line	find . -name "*.txt" -print	find text files
cal 3 1973	March 1973	find /foo -type d -ls	list all directories under /foo
df -h	show disk mounts	less file	display file page by page
three=`expr 1 + 2`	simple maths	sed s/foo/bar/g file	replace "foo" with "bar"
echo "scale = 5 ; \	better maths	sed -i s/foo/bar/g file	in file (-i: update file)
5121 / 1024"   bc	(5.00097)	strace -tfd PID	trace system calls for PID
time cmd	stopwatch on cmd	tar cvf archive.tar file1 file 2 file3	create tar archive
touch file	create blank file	ssh user@host	log in to host as user
alias ll='ls -l'	alias for ls -l	scp file.txt user@host:	copy file.txt to host as user
unalias ls	unset existing alias	scp user@host:/tmp/file.txt /var/tmp	copy /tmp/file.txt from user at host to /var/tmp locally
		cd -	return to previous directory