

# 1 Shell CheatSheet

## LANGUAGES

- PDF Link: [cheatsheet-shell-A4.pdf](#), Category: languages
- Blog URL: <https://cheatsheet.dennyzhang.com/cheatsheet-shell-A4>

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## 1.1 Basic

Name	Comment
Redirect stdout/stderr	<code>ls /tmp &gt;/dev/null 2&gt;&amp;1</code>
Deal with filename	<code>basename \$f, dirname \$f</code>
Use timeout: avoid command hang	<code>timeout 10 sh -c 'ls -lt'</code>
Restart shell without killing terminal	<code>exec -l \$SHELL</code>
Run sub-shell	<code>echo \$BASH_SUBSHELL; ( echo "Running in subshell: \$BASH_SUBSHELL" )</code>
Run static code check	link: <a href="#">shellcheck</a>

## 1.2 Shell script

Name	Comment
Trap exit signal	<code>code/trap-exit.sh</code>
Shell retry	<code>code/shell-retry.sh</code>
Check if a string contains a substring	<code>code/string-contains.sh</code>
Check if a string in a list	<code>code/string-in-list.sh</code> , link: <a href="#">stackoverflow</a>
Log with timestamp	<code>code/log-with-timestamp.sh</code>
Quit if current user is not root	<code>code/assert-user-root.sh</code>

## 1.3 Environment variables

Name	Comment
List all environment variables	<code>export</code>
Define a new env variable	<code>export NAME1="value1"</code>

## 1.4 GNU tools

### 1.4.1 Check file

Name	Comment
Show file content	<code>cat /etc/hosts</code>
Show file content with line numbers	<code>cat -n /etc/hosts</code>
Show with line numbers, excluding blank lines	<code>cat -b /etc/hosts</code>
Show the first 3 lines	<code>head -n3 /etc/hosts</code>
Show the first 20 bytes	<code>head -c20 /etc/hosts</code>
Show the last 3 lines	<code>tail -n3 /etc/hosts</code>
Show the last 20 bytes	<code>tail -c20 /etc/hosts</code>
Keep tailing log files	<code>tail -f /var/log/system.log, taif /var/log/system.log</code>
Show file starting from 4th line	<code>more +4 /etc/hosts</code>
Show the 4th line	<code>sed -n '4p' /etc/hosts</code>
Show 4th, 5th, 7th and 8th lines	<code>sed -n '4,5p;7,8p' /etc/hosts</code>
Show matched string with 3 lines before and after	<code>grep -C 3 "127.0.0.1" /etc/hosts</code>
For table-like files, show 2nd column	<code>awk -F'\t' '{print \$2}' /etc/hosts</code>
For table-like files, swap 1st and 2nd columns	<code>awk -F'\t' '{print \$2,\$1}' /etc/hosts</code>

### 1.4.2 Watch files

Name	Comment
Show file changes	<code>watch -d -n 1 stat /var/log/message</code>
Keep tailing log files	<code>tail -f /var/log/system.log, taif /var/log/system.log</code>

### 1.4.3 Echo string

Name	Comment
Echo red text	<code>echo -e "hello,[0;31m there [0;31m"</code>
Echo multiple lines	<code>echo -e "hello,"</code>
Echo bold text	<code>echo -e hello, "\033[1mThis is bold text.\033[0m"</code>
Echo underlined text	<code>echo -e hello, "\033[4mThis is underlined text.\033[0m"</code>

### 1.4.4 Check process via /proc

Name	Comment
Check process start command	<code>cat /proc/\$pid/cmdline</code>
Check process environment variables	<code>cat /proc/\$pid/environ</code>
Check process ulimits setting	<code>cat /proc/\$pid/limits</code>

## 1.5 Shell Basic

### 1.5.1 cd

Name	Comment
Go to given folder	<code>cd /var/log/</code>
Go to folder in subshell	<code>(cd /var/log/ &amp;&amp; ls)</code> After this, PWD won't be changed
Go to home	<code>cd</code>
Go to parent folder	<code>cd ..</code>
Go to previous folder	<code>cd -</code>

### 1.5.2 mkdir

Name	Comment
Make directory. Report error, if existing	<code>mkdir foo</code>
Make directory. Avoid reporting error, if existing	<code>mkdir -p foo</code>
Make directory and its parents	<code>mkdir -p foo/bar/dir1</code>
Make directories with the hierachy	<code>mkdir -p foo/{bar,bad/{dir1,dir2}}, tree foo</code>

### 1.5.3 Numeric

Name	Comment
*	<code>expr 5 \* 4</code>
+	<code>let z=x+y, z=\$((x+y))</code>
==	<code>int1 -eq int2, [ \$? -eq 0 ] &amp;&amp; echo "good"</code>
>=	<code>int1 -ge =int2</code>
>	<code>int1 -gt =int2</code>
<=	<code>int1 -le =int2</code>
<	<code>int1 -lt =int2</code>
!=	<code>int1 -ne =int2</code>

### 1.5.4 xargs

```
# Run grep for files filtered by find
find /var/log -name "*.log" | xargs grep -i error
```

```
# Loop with pipes
cat /etc/passwd | awk -F':' '{print $1}' | xargs -I{} sudo -l -U {} | grep -v "not allowed to"
```

## 1.6 Scripts

- Compare command output

```
[ 0 -eq $(find ./data -name "*.txt" -type f -print | wc -l) ]
```

- get ip from eth0

```
/sbin/ifconfig eth0 | grep 'inet addr:' | cut -d: -f2 | awk '{ print $1}'
```

## 1.7 More Resources

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