

### Bash Commands

<code>uname -a</code>	Show system and kernel
<code>head -n1 /etc/issue</code>	Show distribution
<code>mount</code>	Show mounted filesystems
<code>date</code>	Show system date
<code>uptime</code>	Show uptime
<code>whoami</code>	Show your username
<code>man <i>command</i></code>	Show manual for <i>command</i>

### Bash Shortcuts

<code>CTRL-c</code>	Stop current command
<code>CTRL-z</code>	Sleep program
<code>CTRL-a</code>	Go to start of line
<code>CTRL-e</code>	Go to end of line
<code>CTRL-u</code>	Cut from start of line
<code>CTRL-k</code>	Cut to end of line
<code>CTRL-r</code>	Search history
<code>!!</code>	Repeat last command
<code>!<i>abc</i></code>	Run last command starting with <i>abc</i>
<code>!<i>abc</i>:p</code>	Print last command starting with <i>abc</i>
<code>!\$</code>	Last argument of previous command
<code>ALT-</code>	Last argument of previous command
<code>!*</code>	All arguments of previous command
<code>^<i>abc</i>^<i>123</i></code>	Run previous command, replacing <i>abc</i> with <i>123</i>

### Bash Variables

<code>env</code>	Show environment variables
<code>echo \$<i>NAME</i></code>	Output value of <i>NAME</i> variable

### Bash Variables (cont)

<code>export <i>NAME=value</i></code>	Set <i>NAME</i> to <i>value</i>
<code>\$PATH</code>	Executable search path
<code>\$HOME</code>	Home directory
<code>\$SHELL</code>	Current shell

### IO Redirection

<code><i>cmd</i> &lt; <i>file</i></code>	Input of <i>cmd</i> from <i>file</i>
<code><i>cmd1</i> &lt;(<i>cmd2</i>)</code>	Output of <i>cmd2</i> as file input to <i>cmd1</i>
<code><i>cmd</i> &gt; <i>file</i></code>	Standard output (stdout) of <i>cmd</i> to <i>file</i>
<code><i>cmd</i> &gt; /dev/null</code>	Discard stdout of <i>cmd</i>
<code><i>cmd</i> &gt;&gt; <i>file</i></code>	Append stdout to <i>file</i>
<code><i>cmd 2&gt; file</i></code>	Error output (stderr) of <i>cmd</i> to <i>file</i>
<code><i>cmd 1&gt;&amp;2</i></code>	stdout to same place as stderr
<code><i>cmd 2&gt;&amp;1</i></code>	stderr to same place as stdout
<code><i>cmd</i> &amp;&gt; <i>file</i></code>	Every output of <i>cmd</i> to <i>file</i>
<code><i>cmd</i> refers to a command.</code>	

### Pipes

<code><i>cmd1</i>   <i>cmd2</i></code>	stdout of <i>cmd1</i> to <i>cmd2</i>
<code><i>cmd1</i>  &amp; <i>cmd2</i></code>	stderr of <i>cmd1</i> to <i>cmd2</i>

### Command Lists

<code><i>cmd1</i> ; <i>cmd2</i></code>	Run <i>cmd1</i> then <i>cmd2</i>
<code><i>cmd1</i> &amp;&amp; <i>cmd2</i></code>	Run <i>cmd2</i> if <i>cmd1</i> is successful
<code><i>cmd1</i>    <i>cmd2</i></code>	Run <i>cmd2</i> if <i>cmd1</i> is not successful
<code><i>cmd</i> &amp;</code>	Run <i>cmd</i> in a subshell

### Directory Operations

<code>pwd</code>	Show current directory
<code>mkdir <i>dir</i></code>	Make directory <i>dir</i>
<code>cd <i>dir</i></code>	Change directory to <i>dir</i>
<code>cd ..</code>	Go up a directory
<code>ls</code>	List files

### Is Options

<code>-a</code>	Show all (including hidden)
<code>-R</code>	Recursive list
<code>-r</code>	Reverse order
<code>-t</code>	Sort by last modified
<code>-S</code>	Sort by file size
<code>-l</code>	Long listing format
<code>-1</code>	One file per line
<code>-m</code>	Comma-separated output
<code>-Q</code>	Quoted output

### Search Files

<code>grep <i>pattern files</i></code>	Search for <i>pattern</i> in <i>files</i>
<code>grep -i</code>	Case insensitive search
<code>grep -r</code>	Recursive search
<code>grep -v</code>	Inverted search
<code>grep -o</code>	Show matched part of file only
<code>find /<i>dir</i>/-name <i>name</i>*</code>	Find files starting with <i>name</i> in <i>dir</i>



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Published 28th October, 2011.  
 Last updated 29th February, 2020.  
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### Search Files (cont)

`find /dir/-user name` Find files owned by *name* in *dir*

`find /dir/-mmin num` Find files modified less than *num* minutes ago in *dir*

`whereis command` Find binary / source / manual for *command*

`locate file` Find *file* (quick search of system index)

### File Operations

`touch file1`  
Create *file1*

`cat file1 file2`  
Concatenate files and output

`less file1`  
View and paginate *file1*

`file file1`  
Get type of *file1*

`cp file1 file2`  
Copy *file1* to *file2*

`mv file1 file2`  
Move *file1* to *file2*

`rm file1`  
Delete *file1*

`head file1`  
Show first 10 lines of *file1*

`tail file1`  
Show last 10 lines of *file1*

`tail -F file1`  
Output last lines of *file1* as it changes

### Watch a Command

`watch -n 5 'ntpq -p'`  
Issue the 'ntpq -p' command every 5 seconds and display output

### Process Management

`ps` Show snapshot of processes

`top` Show real time processes

`kill pid` Kill process with id *pid*

`pkill name` Kill process with name *name*

`killall name` Kill all processes with names beginning *name*

### Nano Shortcuts

#### Files

Ctrl-R Read file

Ctrl-O Save file

Ctrl-X Close file

#### Cut and Paste

ALT-A Start marking text

CTRL-K Cut marked text or line

CTRL-U Paste text

#### Navigate File

ALT-/ End of file

CTRL-A Beginning of line

CTRL-E End of line

CTRL-C Show line number

CTRL-\_ Go to line number

#### Search File

CTRL-W Find

ALT-W Find next

CTRL-\ Search and replace

More nano info at:  
<http://www.nano-editor.org/docs.php>

### Screen Shortcuts

`screen`  
Start a screen session.

`screen -r`  
Resume a screen session.

### Screen Shortcuts (cont)

`screen -list`  
Show your current screen sessions.

CTRL-A  
Activate commands for screen.

CTRL-A c  
Create a new instance of terminal.

CTRL-A n  
Go to the next instance of terminal.

CTRL-A p  
Go to the previous instance of terminal.

CTRL-A "  
Show current instances of terminals.

CTRL-A A  
Rename the current instance.

More screen info at:  
<http://www.gnu.org/software/screen/>

### File Permissions

`chmod 775 file`  
Change mode of *file* to 775

`chmod -R 600 folder`  
Recursively chmod *folder* to 600

`chown user.group file`  
Change *file* owner to *user* and group to *group*

### File Permission Numbers

First digit is owner permission, second is group and third is everyone.

Calculate permission digits by adding numbers below.

4 read (r)

2 write (w)

1 execute (x)



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