

### 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>^ 123</code>	Run previous command, replacing <i>abc</i> with 123

### Bash Variables

<code>env</code>	Show environment variables
<code>echo \$<i>NAME</i></code>	Output value of <i>\$NAME</i> variable
<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>cmd</i> 1 &lt;( <i>cmd</i>2)</code>	Output of <i>cmd</i> 2 as file input to <i>cmd</i> 1
<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</i> 2&gt; <i>file</i></code>	Error output (stderr) of <i>cmd</i> to <i>file</i>
<code><i>cmd</i> 1&gt;&amp;2</code>	stdout to same place as stderr
<code><i>cmd</i> 2&gt;&amp;1</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>
<i>cmd</i> refers to a command.	

### Pipes

<code><i>cmd</i>1   <i>cmd</i>2</code>	stdout of <i>cmd</i> 1 to <i>cmd</i> 2
<code><i>cmd</i>1  &amp; <i>cmd</i>2</code>	stderr of <i>cmd</i> 1 to <i>cmd</i> 2

### Command Lists

<code><i>cmd</i>1 ; <i>cmd</i>2</code>	Run <i>cmd</i> 1 then <i>cmd</i> 2
<code><i>cmd</i>1 &amp;&amp; <i>cmd</i>2</code>	Run <i>cmd</i> 2 if <i>cmd</i> 1 is successful
<code><i>cmd</i>1    <i>cmd</i>2</code>	Run <i>cmd</i> 2 if <i>cmd</i> 1 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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### Search Files (cont)

<code>find /dir/ -user name</code>	Find files owned by <i>name</i> in <i>dir</i>
<code>find /dir/ -mmin num</code>	Find files modified less than <i>num</i> minutes ago in <i>dir</i>
<code>whereis command</code>	Find binary / source / manual for <i>command</i>
<code>locate file</code>	Find <i>file</i> (quick search of system index)

### File Operations

<code>touch file1</code>	Create <i>file1</i>
<code>cat file1 file2</code>	Concatenate files and output
<code>less file1</code>	View and paginate <i>file1</i>
<code>file file1</code>	Get type of <i>file1</i>
<code>cp file1 file2</code>	Copy <i>file1</i> to <i>file2</i>
<code>mv file1 file2</code>	Move <i>file1</i> to <i>file2</i>
<code>rm file1</code>	Delete <i>file1</i>
<code>head file1</code>	Show first 10 lines of <i>file1</i>
<code>tail file1</code>	Show last 10 lines of <i>file1</i>
<code>tail -f file1</code>	Output last lines of <i>file1</i> as it changes

### Watch a Command

<code>watch -n 5 'ntpq -p'</code>	Issue the 'ntpq -p' command every 5 seconds and display output
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### Process Management

<code>ps</code>	Show snapshot of processes
<code>top</code>	Show real time processes
<code>kill pid</code>	Kill process with id <i>pid</i>
<code>pkill name</code>	Kill process with name <i>name</i>
<code>killall name</code>	Kill all processes with names beginning <i>name</i>

### 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

<code>screen</code>	Start a screen session.
<code>screen -r</code>	Resume a screen session.
<code>screen -list</code>	Show your current screen sessions.

### Screen Shortcuts (cont)

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: <a href="http://www.gnu.org/software/screen/">http://www.gnu.org/software/screen/</a>	

### File Permissions

<code>chmod 775 file</code>	Change mode of <i>file</i> to 775
<code>chmod -R 600 folder</code>	Recursively chmod <i>folder</i> to 600
<code>chown user:group file</code>	Change <i>file</i> owner to <i>user</i> and group to <i>group</i>

### 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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