

### Bash Commands

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

### Bash Shortcuts

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

### Bash Variables

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

### Bash Variables (cont)

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

### IO Redirection

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

### Pipes

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

### Command Lists

<i>cmd</i> 1 ; <i>cmd</i> 2	Run <i>cmd</i> 1 then <i>cmd</i> 2
<i>cmd</i> 1 && <i>cmd</i> 2	Run <i>cmd</i> 2 if <i>cmd</i> 1 is successful
<i>cmd</i> 1    <i>cmd</i> 2	Run <i>cmd</i> 2 if <i>cmd</i> 1 is not successful
<i>cmd</i> &	Run <i>cmd</i> in a subshell

### Directory Operations

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

### ls Options

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

### Search Files

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



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### Search Files (cont)

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

### File Operations

<code>touch <i>file1</i></code>	Create <i>file1</i>
<code>cat <i>file1 file2</i></code>	Concatenate files and output
<code>less <i>file1</i></code>	View and paginate <i>file1</i>
<code>file <i>file1</i></code>	Get type of <i>file1</i>
<code>cp <i>file1 file2</i></code>	Copy <i>file1</i> to <i>file2</i>
<code>mv <i>file1 file2</i></code>	Move <i>file1</i> to <i>file2</i>
<code>rm <i>file1</i></code>	Delete <i>file1</i>
<code>head <i>file1</i></code>	Show first 10 lines of <i>file1</i>
<code>tail <i>file1</i></code>	Show last 10 lines of <i>file1</i>
<code>tail -F <i>file1</i></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 <i>pid</i></code>	Kill process with id <i>pid</i>
<code>kill <i>name</i></code>	Kill process with name <i>name</i>
<code>killall <i>name</i></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.

### Screen Shortcuts (cont)

<code>screen -list</code>	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

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