

### 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

|                              |  |
|------------------------------|--|
| 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  |
| <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                          |
| ALT-.                        | 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 <i>123</i> |

### Bash Variables

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

### Bash Variables (cont)

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

### Pipes

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

### Command Lists

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

### Directory Operations

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

### Is 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

|                                     |  |
|-------------------------------------|--|
| <code>grep pattern files</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 /dir/ -name name*</code> | Find files starting with <i>name</i> in <i>dir</i> |



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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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