10 Useful Command(ment)s

- Some commands & concepts that are useful in many unexpected situations
  - Not the only useful commands
  - Not even the most useful
  - Just some I like
  - Mixture of easy & advanced

Dave Gilbert / 2011

ln – links hard & symbolic

- The Unix equivalent of gaffer tape

- Hard links   ln   from to

- Symbolic links   ln -s from to

  - Can go across mounts

  - Can link to directories

- Don't always behave as expected

  - Editors

  - cp, backup programs

- Library tricks

Copy example with ln

- mkdir a; cd a

- echo hello > x

- ln -s x y

- ln x z

- ls -l

```
-rw-r--r-- 2 dg dg 6 2011-04-09 18:46 x
lrwxrwxrwx 1 dg dg 1 2011-04-09 18:46 y -> x
-rw-r--r-- 2 dg dg 6 2011-04-09 18:46 z
```

- cp -a a b; ls -l b

```
-rw-r--r-- 2 dg dg 6 2011-04-09 18:46 x
lrwxrwxrwx 1 dg dg 1 2011-04-09 18:46 y -> x
-rw-r--r-- 2 dg dg 6 2011-04-09 18:46 z
```

- cp -r a c; ls -l c

```
-rw-r--r-- 1 dg dg 6 2011-04-09 18:47 x
lrwxrwxrwx 1 dg dg 1 2011-04-09 18:47 y -> x
-rw-r--r-- 1 dg dg 6 2011-04-09 18:47 z
```

Wireshark (nee Ethereal)

- Network & USB debugging – grab packets & see what's really going on:

ImageMagick

- Old collection of image tools

- Handles almost any image format

- 'convert' is most useful

  - Convert formats – convert blah.png blah.jpg

  - Screen grab – convert X: wireshark.png

  - Simple enhancements – convert -enhance in.jpg out.jpg

  - Resize – convert in.jpg -resize 400x300 out.jpg

  - 100s of options!

  - Script resizes/conversions/etc on whole directories

ImageMagick . 2
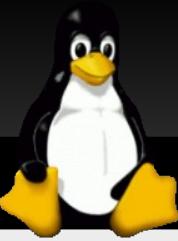
- Not just convert
    - display – simple display program (outdated)
    - identify – tell you everything about an image file
    - composite – overlap images
    - And a few more
- Can deal with animated gifs, vector->bitmap conversion and lots more

dd your data

- Pretty raw copying of data with some conversion and size tricks

    - dd if=infile of=outfile someflags

    - dd if=/dev/zero of=1megfile bs=1024k count=1

    - dd if=afile of=another bs=1024 count=10 skip=100

        - Copy 10k from 100k in

    - dd if=/dev/sda of=mbrcopy bs=512 count=1

    - Simple disk wipes! Be careful with parameters if & of especially!

udisks

- A layer on top of kernel->udev->udisks for managing disks

- Can often be run by normal users

- Used by gnome etc to mount disks

- udisks –mount /dev/whatever

- udisks –enumerate-device-files

  - See device by path, id, uuid, etc

- udisks –show-info /dev/sda

  - Type of drive, vendor, model, whether SSD or not, last SMART data

apt-file, locate, apt-cache, dpkg -S

- Find the package a file is in:

  - dpkg -S /bin/ls

- Which package to install a file from:

  - apt-file search tux.png

  - apt-file update

- Where did I put that file:

  - locate 10usefulcommandments

  - Update in cron ~once/day

- Which package to...

  - apt-cache search electrical

ltrace & strace

- See what a program is doing

  - ltrace for Library calls / strace for System calls

- ltrace /bin/ls

```
readdir(0x018e7c20)                          = 0x018e8180
strlen("index.html")                         = 10
malloc(11)                                   = 0x018efe10
memcpy(0x018efe10, "index.html", 11)    = 0x018efe10
```

- strace /bin/ls

```
open("/usr/lib/locale/locale-archive", O_RDONLY) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=2772576, ...}) = 0
```

- -p for attach to existing processes

- -f for follow forks (child processes)

- -T time spent in calls

procmail

- Filter a mail stream, add/remove headers, sort into folders, run through other things

    - Some mailers will run this for you if you just create a .procmailrc

- e.g. Put folders from a particular address in a particular folder:

```
:0:
* ^From.*dave@treblig.org
daves-mail
:0:
* ^X-Spam-Level: \*\*\*\*\*\*\*\*\*\*\*
almost-certainly-spam
```

dmidecode

- ## Find information from BIOS about your machine

  - ### sudo dmidecode

```
Base Board Information
        Manufacturer: ASRock
        Product Name: P55M Pro
Memory Module Information
        Socket Designation: DIMM0
        Bank Connections: 0 1
        Current Speed: Unknown
        Type: DIMM SDRAM
        Installed Size: 2048 MB (Double-bank Connection)
        Enabled Size: 2048 MB (Double-bank Connection)
        Error Status: OK
```

  - ## Only as good as your BIOS + system vendor

  - ## My laptop claims to be 91inch high with 18 power cords

chvt, /dev/vcs*

- chvt – equivalent of ctrl-alt-fn
    - Can be useful if keyboard has hung to remotely get out of X
- cat /dev/vcs1
    - Displays the text contents of a console
- Useful for seeing remotely what is on the console of a machine.