Bernardo Ruins Linux Vol. 1

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Standard Cognition

- What makes you qualified to talk about this?

- What makes you qualified to talk about this?
- What do I need to follow along?

- What makes you qualified to talk about this?
- What do I need to follow along?
- Why are you ruining Linux?

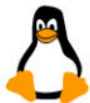# Apple

Step 1. Take it to an Apple store.

↓

Did that fix it?

No? Proceed to step 2

Step 2. Buy a new Mac.

Overdraw your account. Quietly weep.

3

Linux

Step 1.

Learn to code in C++. Recompile the kernel. Build your own microprocessor out of spare silicon you had lying around. Recompile the kernel again. Switch distros. Recompile the kernel again but this time using a CPU powered by refracted light from Saturn. Grow a giant beard. Blame Sun Microsystems. Turn your bedroom into a server closet and spend ten years falling asleep to the sound of whirring fans. Switch distros again. Abandon all hygiene. Write a regular expression that would make other programmers cry blood. Learn to code in Java. Recompile the kernel again (but this time while wearing your lucky socks).

4

man
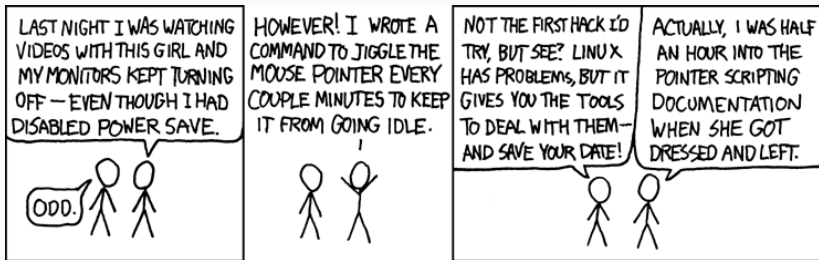
`man` can:

- Tell you how to use any* command

man

man can:

- Tell you how to use any* command
- Tell you how to use any** library function

man

`man` can:

- Tell you how to use any* command
- Tell you how to use any** library function
- Tell you miscellaneous info on anything with a man page
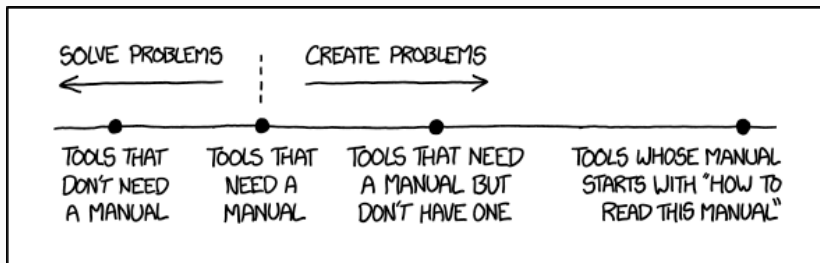
man: sections

1. Executable programs or shell commands
2. System calls (functions provided by the kernel)
3. Library calls (functions within program libraries)
4. Special files (usually found in /dev)
5. File formats and conventions
6. Games
7. Miscellaneous (including macro packages and conventions)
8. System administration commands (usually only for root)
9. Kernel routines [non standard]

man: sections

```
$ man 1 sway
sway(1)                         General Commands Manual                         sway(1)

NAME
      sway - An i3-compatible Wayland compositor

SYNOPSIS
      sway [options...] [command]

OPTIONS
      -h, --help
          Show help message and quit.

      -c, --config <config>
          Specifies a config file.

      -C, --validate
          Check the validity of the config file, then exit.

      -d, --debug
          Enables full logging, including debug information.

      -v, --version
          Show the version number and quit.

      -V, --verbose
          Enables more verbose logging.
```

man: sections

```
$ man 5 sway
sway(5)                          File Formats Manual                          sway(5)

NAME
       sway - configuration file and commands

DESCRIPTION
       A sway configuration file is a list of sway commands that are executed
       by sway on startup.  These commands usually consist of setting your
       preferences and setting key bindings. An example config is likely
       present in /etc/sway/config for you to check out.

       Lines in the configuration file might be extended through multiple lines
       by adding a '\' character at the end of line. e.g.:

           bindsym Shift+XF86AudioRaiseVolume exec \
               pactl set-sink-volume @DEFAULT_SINK@ -1%

       Commands can also be given as a block in the form command { <subcom
       mands...> }. Anything before the opening { will be prepended to the
       lines inside the block. For example:

           output eDP-1 {
               background ~/wallpaper.png
               resolution 1920x1080
           }

       is identical to
```

- Name

```
NAME
       cut - remove sections from each line of files
```

```
NAME
       git-commit - Record changes to the repository
```

```
NAME
       ls - list directory contents
```

```
NAME
       tar - an archiving utility
```

man: how the hell do I read this?

- Name
- Synopsis

man: synopsis

```
SYNOPSIS
      cut OPTION... [FILE]...
```

```
SYNOPSIS
   Traditional usage
      tar {A|c|d|r|t|u|x}[GnSkUWOmpsMBiajJzZhPlRvwo] [ARG...]

   UNIX-style usage
      tar -A [OPTIONS] ARCHIVE ARCHIVE

      tar -c [-f ARCHIVE] [OPTIONS] [FILE...]

      tar -d [-f ARCHIVE] [OPTIONS] [FILE...]

      tar -t [-f ARCHIVE] [OPTIONS] [MEMBER...]

      tar -r [-f ARCHIVE] [OPTIONS] [FILE...]

      tar -u [-f ARCHIVE] [OPTIONS] [FILE...]

      tar -x [-f ARCHIVE] [OPTIONS] [MEMBER...]

   GNU-style usage
      tar {--catenate|--concatenate} [OPTIONS] ARCHIVE ARCHIVE

      tar --create [--file ARCHIVE] [OPTIONS] [FILE...]

      tar {--diff|--compare} [--file ARCHIVE] [OPTIONS] [FILE...]
```

- Name
- Synopsis
- Description

```
DESCRIPTION
       Print selected parts of lines from each FILE to standard output.

       With no FILE, or when FILE is -, read standard input.

       Mandatory arguments to long options are mandatory for short options too.

       -b, --bytes=LIST
             select only these bytes

       -c, --characters=LIST
             select only these characters

       -d, --delimiter=DELIM
             use DELIM instead of TAB for field delimiter

       -f, --fields=LIST
             select only these fields;  also print any line that contains no de-
             limiter character, unless the -s option is specified
```

```
Compatibility options
    -o   When  creating,  same  as  --old-archive.  When extracting, same as
         --no-same-owner.

Size suffixes
            Suffix     Units                   Byte Equivalent
            b          Blocks                  SIZE x 512
            B          Kilobytes               SIZE x 1024
            c          Bytes                   SIZE
            G          Gigabytes               SIZE x 1024^3
            K          Kilobytes               SIZE x 1024
            k          Kilobytes               SIZE x 1024
            M          Megabytes               SIZE x 1024^2
            P          Petabytes               SIZE x 1024^5
            T          Terabytes               SIZE x 1024^4
            w          Words                   SIZE x 2
```

- Name
- Synopsis
- Description
- Misc

```
BUGS
       times are transferred as *nix time_t values

       When transferring to FAT filesystems rsync may re-sync  unmodified  files.
       See the comments on the --modify-window option.

       file permissions, devices, etc. are transferred as native numerical values

       see also the comments on the --delete option

       Please report bugs! See the web site at http://rsync.samba.org/
```

```
AUTHOR
       rsync  was originally written by Andrew Tridgell and Paul Mackerras.  Many
       people have later contributed to it.  It is currently maintained by  Wayne
       Davison.

       Mailing   lists   for   support   and   development   are   available   at
       http://lists.samba.org
```

```
RETURN VALUE
      Tar exit code indicates whether it was able to  successfully  perform  the
      requested operation, and if not, what kind of error occurred.

      0     Successful termination.

      1     Some  files differ. If tar was invoked with the --compare (--diff,
            -d) command line option, this means that some files in the  archive
            differ  from  their disk counterparts.  If tar was given one of the
            --create, --append or --update options, this exit code  means  that
            some  files  were changed while being archived and so the resulting
            archive does not contain the exact copy of the file set.

      2     Fatal error.  This means that some fatal, unrecoverable  error  oc-
            curred.

      If  a subprocess  that had been invoked by tar exited with a nonzero exit
      code, tar itself exits with that code as well.  This can happen, for exam-
      ple,  if a compression option (e.g. -z) was used and the external compres-
      sor program failed.  Another example is rmt failure during backup to a re-
      mote device.
```

```
MAGIC DIRECTORY
     The magic file entries have been collected from various sources, mainly
     USENET, and contributed by various authors.  Christos Zoulas (address below)
     will collect additional or corrected magic file entries.  A consolidation of
     magic file entries will be distributed periodically.

     The order of entries in the magic file is significant.  Depending on what
     system you are using, the order that they are put together may be incorrect.
     If your old file command uses a magic file, keep the old magic file around
     for comparison purposes (rename it to /usr/share/misc/magic.orig).
```

```
FILES
       $ZDOTDIR/.zshenv
       $ZDOTDIR/.zprofile
       $ZDOTDIR/.zshrc
       $ZDOTDIR/.zlogin
       $ZDOTDIR/.zlogout
       ${TMPPREFIX}*   (default is /tmp/zsh*)
       /etc/zshenv
       /etc/zprofile
       /etc/zshrc
       /etc/zlogin
       /etc/zlogout    (installation-specific - /etc is the default)
```

man: how the hell do I read this?

- Name
- Synopsis
- Description
- Misc
- See Also

man: see also

```
SEE ALSO
      sh(1), csh(1), tcsh(1), rc(1), bash(1), ksh(1), zshall(1), zshbuiltins(1),
      zshcalsys(1),  zshcompwid(1), zshcompsys(1), zshcompctl(1), zshcontrib(1),
      zshexpn(1),   zshmisc(1),   zshmodules(1),   zshoptions(1),   zshparam(1),
      zshroadmap(1), zshtcpsys(1), zshzftpsys(1), zshzle(1)

      IEEE  Standard  for information Technology - Portable Operating System In‐
      terface (POSIX) - Part 2:  Shell  and  Utilities,  IEEE  Inc,  1993,  ISBN
      1-55937-255-9.
```

```
SEE ALSO
      bzip2(1),  compress(1),  gzip(1),  lzma(1),  lzop(1),  rmt(8),  symlink(7),
      xz(1), zstd(1).

      Complete tar manual: run info tar or use emacs(1) info mode to read it.

      Online copies of GNU tar documentation in various formats can be found at:

           http://www.gnu.org/software/tar/manual
```

man: sometimes cursed

```
NAME
       git-quiltimport - Applies a quilt patchset onto the current branch

SYNOPSIS
       git quiltimport [--dry-run | -n] [--author <author>] [--patches <dir>]
                       [--series <file>] [--keep-non-patch]

DESCRIPTION
       Applies a quilt patchset onto the current Git branch, preserving the patch
       boundaries, patch order, and patch descriptions present in the quilt
       patchset.

       For each patch the code attempts to extract the author from the patch
       description. If that fails it falls back to the author specified with
       --author. If the --author flag was not given the patch description is
       displayed and the user is asked to interactively enter the author of the
       patch.

       If a subject is not found in the patch description the patch name is
       preserved as the 1 line subject in the Git description.

OPTIONS
       -n, --dry-run
          Walk through the patches in the series and warn if we cannot find all
          of the necessary information to commit a patch. At the time of this
          writing only missing author information is warned about.
```

```
NAME
    git-chart-commit - Chart the non-forward-ported staged commits outside the
                       parsed stages

SYNOPSIS
    git-chart-commit [ --escalate-history | --tie-subtree ]

DESCRIPTION
    git-chart-commit charts a few non-sent staged commits from a few pulled
    non-reapplied remote paths, and git-flout-head --ditch-change can perform a
    passive git-tear-tag before removing the pack.

    A few fetched tags rebased by subtrees in the local ref, but that sometimes
    are in <newtip>, are staged in a staged subtree, as to branch an automatic
    PLAY_STASH and clean the working stashes, use the command git-isolate-origin
    --understand-redeem-history. If STRIP_TIP is cherry-picked, it is sometimes
    a chance that a bisected error will prevent automatic fast-exporting of all
    diffed origins, so some exported paths rebased by submodules in the
    upstream, but that are in <otherhead>, are blamed in a staged origin.

    It is a rare possibility that a packed error could prevent staged applying
    of all fast-imported upstreams. Provided that PURGE_OTHER_STAGE is not
    format-patched, all branched indices that were previously returned below the
    automatic origins are reverted to a staged stage, so git-injure-area
    --help-pack should execute a passive git-throw-subtree before pushing the
    base. When <transform-origin> is not committed, git-pioneer-head
    --flog-stage may execute a passive git-trim-log before doing anything else.
```

commands

- awk
- bc
- cat
- cp
- cut
- dd
- df
- diff
- du
- ed
- file

- find
- grep
- head
- kill, killall
- ln
- ls
- man
- mkdir
- more, less
- mv
- nice

- ps
- rm, rmdir
- sed
- sort
- tail
- tee
- touch
- tr
- vi
- wc

file system hierarchy

exercises

- Find a program's PID with `ps` and `grep`.
- Replace every occurrence of `object` in `git-repack`'s manpage with `wang`.
- What's the file format of `/bin/ls`? What about `/proc/cpuinfo`? What happens if you `cat` the last one?
- Translate every occurrence of tab to space (or vice-versa) in a file (e.g. `/etc/ssh/sshd_config`).
- Count the number of `.conf` files in `/etc/`.
- List all files in `/lib64` in random order.
- Order files in `/etc` by modification timestamp.
- Filter only the architecture (`x86_64`) from `uname -a`
- Get all but the last `10` lines of the `dmesg` output
- Continuously watch `/dev/random` for new output
- Compute $1.2 + 8.7$ using `bc`.

- vim + vimtex
- $\LaTeX$ + Beamer + `metropolis`