

DFSG §2: Source Code

“The program must include source code, and must allow distribution in source code as well as compiled form.”

Guus Sliepen

MiniDebConf Cambridge

November 13, 2016

Outline

About

File types

- Executables

- Documentation

- Fonts

- Images

- Sound and Music

Real life examples

Conclusion

DFSG §2

“The program must include source code, and must allow distribution in source code as well as compiled form.”

- ▶ One of the cornerstones of Debian
- ▶ Applies to all kinds of files, not just executables
- ▶ Tools to edit source code must be in main too

Parallels with the GPL

From the GPL version 3:

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

And later:

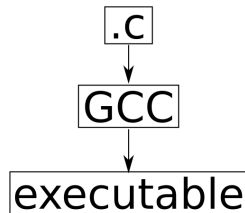
The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities.

Debian is practical

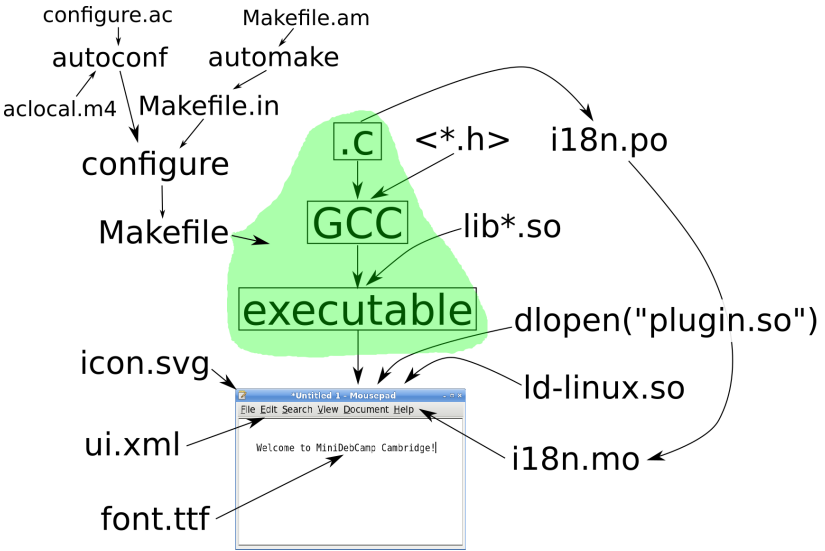
- ▶ We recognize some people need non-free software to make use of their equipment
- ▶ We do not prevent those people from making efficient use of Debian
- ▶ We recognize we are not perfect ourselves
- ▶ We sometimes make (temporary) exceptions in order to progress

But we always try to improve ourselves.

Executables



Executables



Source of executables

- ▶ Binaries: C, C++, Rust, Go etc
- ▶ Scripts: their own source
- ▶ Sometimes written by another program:
 - ▶ Lex/yacc
 - ▶ GNOME Glade, Qt Creator
- ▶ Sometimes minified:
 - ▶ jquery.js (DocBook)
 - ▶ Web apps: CivicCRM, Moodle, LAVA server, RoundCube, Wordpress

Source of documentation

- ▶ Man pages: their own source, generated from `*2man`
- ▶ Info manuals: `TEXinfo`, `DocBook`
- ▶ PDF: `LATEX`, `DocBook`, `*2pdf`, ...
- ▶ HTML: their own source, `DocBook`, `*2html`, `MarkDown`, ...

Source of fonts

- ▶ Small handmade bitmap fonts: themselves
- ▶ TTF, OTF, other bitmap fonts: from FontForge SFD
- ▶ METAFONT
- ▶ Hinting bytecode (ttfautohint)

Images

- ▶ Bitmap output from XCF, PSD
- ▶ SVG is it's own source?
- ▶ Destructive vs. nondesctructive editing
- ▶ Images takes with a camera
- ▶ Lossy vs. lossless
- ▶ Ray-tracers, OpenGL

Sound and Music

- ▶ OGG, MP3 vs. WAV, FLAC
- ▶ Recorded audio
- ▶ Mixing, filtering, panning
- ▶ Software synthesizers
- ▶ MODule trackers are their own source

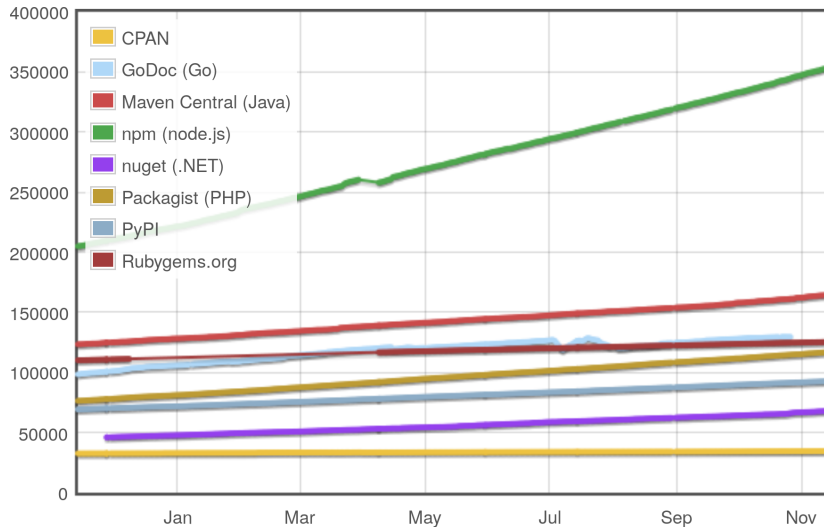
node.js

We need node.js packages to build Grunt/browserify, to create compact JavaScript files for web apps.

Problem with node.js ecosystem:

- ▶ NPM currently has 350,000 packages
- ▶ Mostly one-function or even one-liner packages
- ▶ Huge dependency tree
- ▶ Multiple versions, APIs not necessarily stable

node.js



Source: <http://www.modulecounts.com/>

Mostly everything upstream is DFSG-compliant, but:

- ▶ We can't do 1:1 npm-to-deb
- ▶ We want it in free, or rdeps suffer
- ▶ Upstream doesn't see a problem

Our current approach:

- ▶ Package only what's necessary for rdeps
- ▶ Send bug reports/patch stuff as usual
- ▶ See where it takes us...

Thanks Pirate Praveen and Sruthi Chandran for getting Grunt in Debian.

Blobwars

- ▶ Cutscenes raytraced, source non-existent
- ▶ Backgrounds (were) in lossy format
- ▶ Word art in PNG, hard to translate
- ▶ Music in OGG format, CC-BY(-SA)



METAL BLOB SOLID

Blob Wars : Episode I

Start New Game

Load Game

Continue Current Game

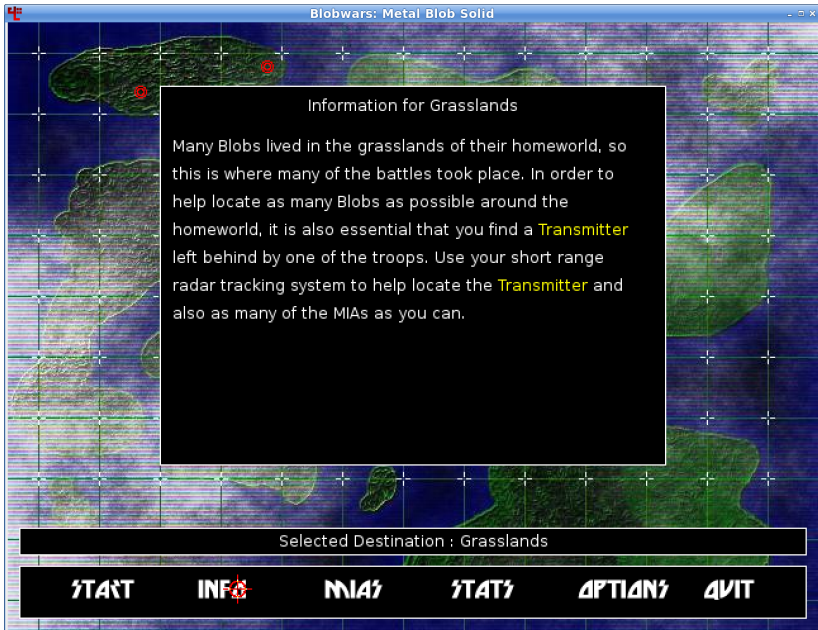
Options

Help

Quit

Copyright (C) 2004-2011 Parallel Realities
Copyright (C) 2011-2015 Perpendicular Dimensions

Version 2.00



Information for Grasslands

Many Blobs lived in the grasslands of their homeworld, so this is where many of the battles took place. In order to help locate as many Blobs as possible around the homeworld, it is also essential that you find a **Transmitter** left behind by one of the troops. Use your short range radar tracking system to help locate the **Transmitter** and also as many of the MIAs as you can.

Selected Destination : Grasslands

START

INFO

MIAS

STATS

OPTIONS

QUIT

Starfighter

- ▶ Sound effects missing source, compiler not packaged
- ▶ PNG created in GIMP missing XCF sources
- ▶ Proof-of-concept sourceful music

```

X:1
T:Space (Starfighter intro)
C:Guus Sliepen
M:2/2
L:1/8
Q:120
K:Bb
V:1 clef=treble
%%MIDI channel 1
[| z8          | z8      | z8          | z8
|| "Eb" e6 dc | f4 d4 | "Cm" e6 dc | f4 d4
|  "Gm" B6 AG | d4 B4 | "F"  A8-   | "Dm" A8
|  "Eb" e6 dc | f4 d4 | "Cm" e6 dc | g4 e4
|  "Gm" d6 cB | f4 d4 | "F"  c8    | "Bb" d8
|]
V:2 clef=treble
%%MIDI channel 2
[| C8-        | [CF]8-  | [CFB]8-   | [CFBe]8
|| [EGB]8-   | [EGB]8  | [CEG]8-   | [CEG]8
|  [B,DG]8-  | [B,DG]8 | [A,CF]8-  | [A,DF]8
|  [EGB]8-   | [EGB]8  | [CEG]8-   | [CEG]8
|  [B,DG]8-  | [B,DG]8 | [A,CF]8-  | [B,DF]8
|]

```

```

sr = 48000
ksmps = 32
nchnls = 2
0dbfs = 1

gifluid fluidEngine; start fluidsynth engine
ifont fluidLoad "/usr/share/sounds/sf2/FluidR3_GM.sf2", gifluid, 1
fluidProgramSelect gifluid, 1, ifont, 0, 98 ; Crystal
fluidProgramSelect gifluid, 2, ifont, 0, 89 ; Warm pad

instr 1, 2
    ikey    notnum
    ivel    ampmidi 127
            fluidNote gifluid, p1, ikey, ivel
endin

instr 99
    iamp init 1.6
    al, ar fluidOut gifluid
    arl, arr freeverb al, ar, 0.9, 0.1, sr
    outs (arl + al) * iamp, (arr + ar) * iamp
endin

```

```
SONGS = space warm-up
OGG = $(SONGS:%=%.ogg)
PDF = $(SONGS:%=%.pdf)

all: $(OGG)
pdf: $(PDF)

%.ogg: %.wav
    oggenc $<

%.mid: %.abc
    abc2midi $< -o $@

%.wav: %.mid %.csd
    csound -d -o $@ -T -F $^

%.pdf: %.abc
    abcm2ps -B 4 -O - $< | ps2pdf - $@

clean:
    rm -f $(OGG) $(WAV) $(MID) $(PDF)

.PHONY: all clean
```

Space (Starfighter intro)

Guus Sliepen

♩ = 120

The first system of musical notation consists of two staves. The top staff is in treble clef with a key signature of two flats (Bb and Eb) and a 3/4 time signature. It contains four measures of whole rests. The bottom staff is in bass clef with the same key signature and time signature. It contains four measures of sustained chords: a single Bb in the first measure, and triads of Bb-Eb-Gb in the subsequent three measures.

The second system of musical notation consists of two staves. The top staff has a treble clef, two flats key signature, and 3/4 time. It features a melodic line starting with a half note Eb, followed by quarter notes Gb and Bb, and ending with a half note Eb. The bottom staff is in bass clef with the same key signature and time signature, providing sustained chord accompaniment for the four measures.

The third system of musical notation consists of two staves. The top staff has a treble clef, two flats key signature, and 3/4 time. It features a melodic line starting with a half note Gb, followed by quarter notes Bb and Eb, and ending with a half note Eb. The bottom staff is in bass clef with the same key signature and time signature, providing sustained chord accompaniment for the four measures.

The fourth system of musical notation consists of two staves. The top staff has a treble clef, two flats key signature, and 3/4 time. It features a melodic line starting with a half note Eb, followed by quarter notes Gb and Bb, and ending with a half note Eb. The bottom staff is in bass clef with the same key signature and time signature, providing sustained chord accompaniment for the four measures.

The fifth system of musical notation consists of two staves. The top staff has a treble clef, two flats key signature, and 3/4 time. It features a melodic line starting with a half note Gb, followed by quarter notes Bb and Eb, and ending with a half note Eb. The bottom staff is in bass clef with the same key signature and time signature, providing sustained chord accompaniment for the four measures.

- Music is GPLed, authors claim OGG is the source

```
> ogginfo battle-epic.ogg
```

User comments section follows...

ALBUM=The Battle for Wesnoth OST

ALBUMARTIST=Wesnoth Project

ARTIST=Doug Kaufman

COMPOSER=Doug Kaufman

COPYRIGHT=Doug Kaufman (C) 2007

DATE=2007

DISCNUMBER=1

GENRE=Romantic Classical

LICENSE=GPL

TITLE=Battle Epic

TRACKNUMBER=16

WEBSITE=dougkaufman.net

Conclusions

- ▶ We are missing source for many things
- ▶ Some of it will be problematic to package
- ▶ Don't panic
- ▶ Please check your own packages
- ▶ Work with upstream to make missing sources available

Thank you for listening!