zaterdag 28 mei 2011

Ok hello I am Julik and I work for HecticElectric

Guerilla-DI

tracksperanto

depix

edl

timecode

sequencer

flamechannel parser

zaterdag 28 mei 2011

Guerilla-DI is a set of tools for modern post-production, written in ruby.

Post-production for image

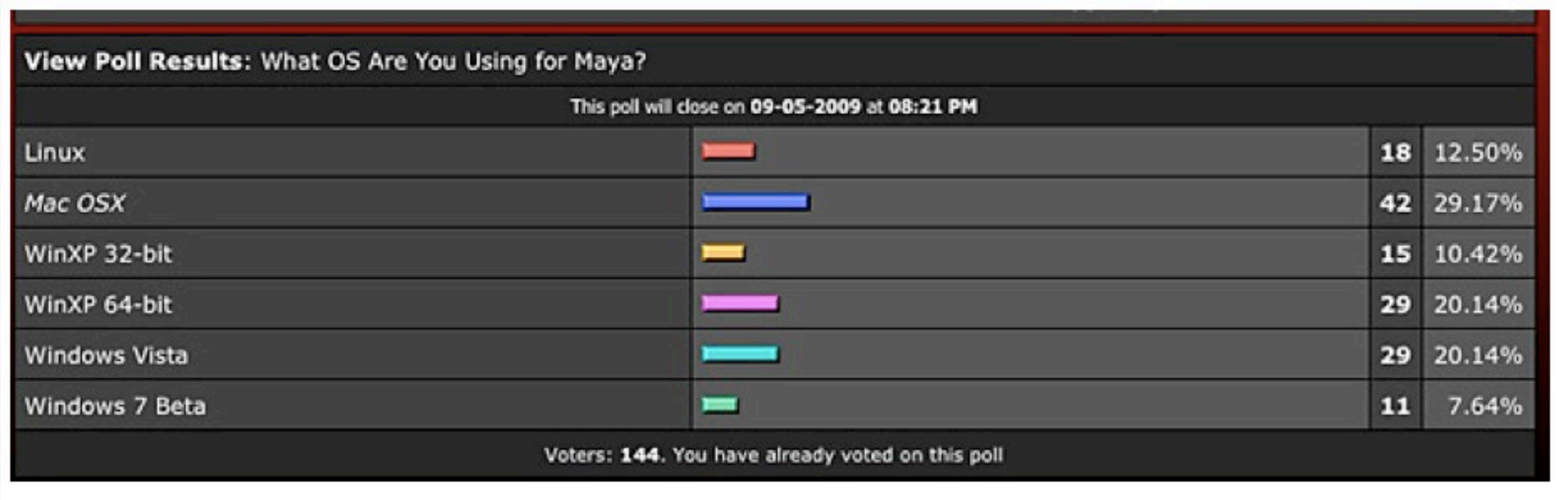
3d animation / FX
Compositing
Color correction
Titles and deliverables (tapes, .mov files, DCP)

- Post and VFX
  - Final quality material (HD material, 2K, RAW file conversion)
  - 3D animation, effects
  - Compositing
  - Color correction
  - Deliverables

PP is an interesting beast of an industry
- lon ghours
- one of the few indstrs using high-performance cmputing and real MATHZ FOO
- inhouse dev!

Cross-platform everywhere

Most apps available on 3 platforms



View Poll Results: What OS Are You Using for Maya?

This poll will close on **09-05-2009** at **08:21 PM**

Linux	🟥	**18**	12.50%
Mac OSX	🟦	**42**	29.17%
WinXP 32-bit	🟨	**15**	10.42%
WinXP 64-bit	🟪	**29**	20.14%
Windows Vista	🟦	**29**	20.14%
Windows 7 Beta	🟩	**11**	7.64%

Voters: **144**. You have already voted on this poll

- Post production one of the most demanding industries for computing with a few specuial quirks
- The first to use lots of military tech
- Probably the most cross-platform community out there
- Maya usage stats

But the industry not only uses commercial software from vendors...

In-house software

- In-house solutions (simulation and effects related, plugins, GUI apps)
- Commercial packages started as in-house tools
- Scripts inside applications

Scripting within apps

Maya, Houdini, Nuke, Toxik,
Blender, Katana, XSI, CINEMA4D...

SketchUp

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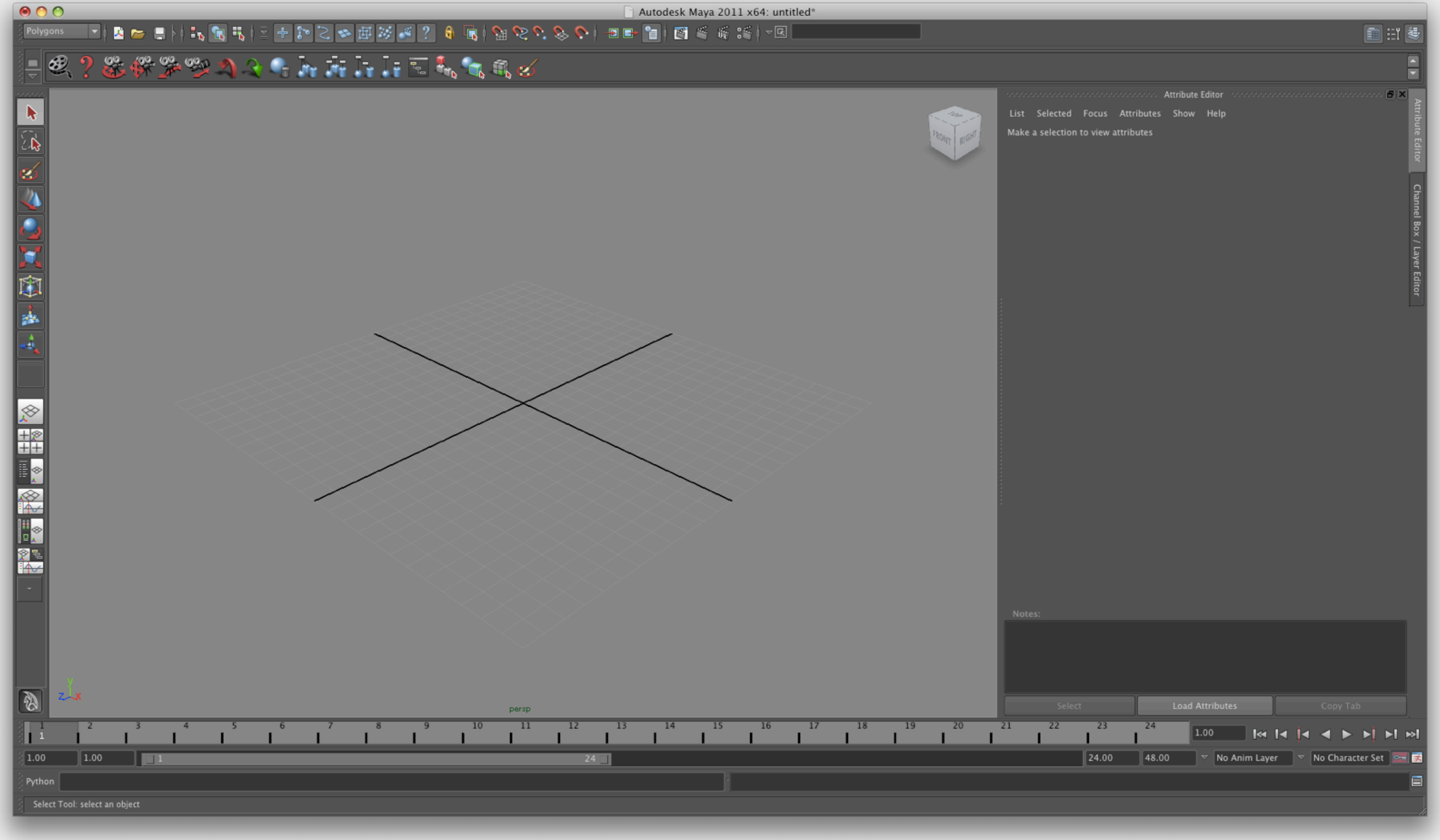
Because we all know that there are comunication problems in the Ruby community,
and this made vendors run away scared (little did they know by yielding to the Dutch –
but that’s a subject for another talk).

Now thatyouy open Maya the first thing you see is this



Make a selection to view attributes

Select Tool: select an object

zaterdag 28 mei 2011

Below is the line to enter a command. Interestingly many apps started with theri own scripting langs and only then transitioned to python - nuke TCL, houdini cinema4d their own languages
Maya used MEL

External scripts

Anything goes as long as it works

No python required. Lots of folks from post will prefer python because they know it
but if a working and workable solution is offered and it plain works they wont regret it

Data wrangling

Not your momma’s git.
Selective file copying can save days.
File metadata is essential (which tape and which timecode).

Modern commercial (HD)

30 seconds in HD uncompressed - 5.8 gig, 750 frames

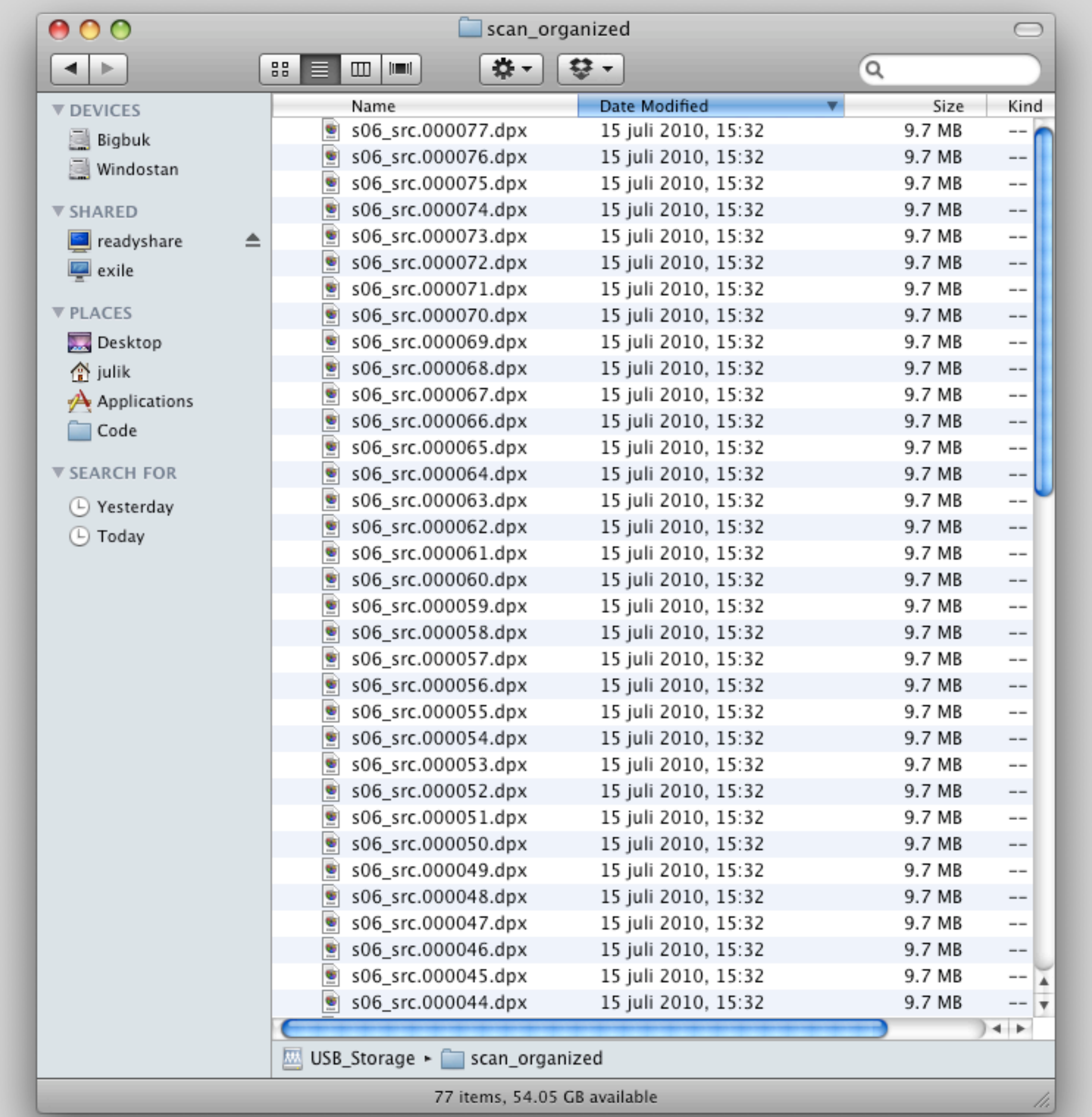
Modern feature

102 minutes running time -1.35 terabyte, 146880 frames

These are the sizes we are dealing with now. By they way to play that back you need disks that do 230 megabytes per second read sustained. Now if you heard about films in 4K, stereo (two images) and at 48 fps instead of 24 being shot now for Hobbit you can imagine the HORROR that this is for post. All datarates grow 16x times!

What we need to make effects (shots need something done) might easily be twice the original size

Material shot and needing search and metadata access is much bigger - shooting ratio
30-40 to 1 not uncommon
Sometimes say copying media that you will need might take you a day if you are not careful
It's crucial to know what you need to copy



Name	Date Modified	Size	Kind
s06_src.000077.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000076.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000075.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000074.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000073.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000072.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000071.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000070.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000069.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000068.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000067.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000066.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000065.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000064.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000063.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000062.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000061.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000060.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000059.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000058.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000057.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000056.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000055.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000054.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000053.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000052.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000051.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000050.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000049.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000048.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000047.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000046.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000045.dpx	15 juli 2010, 15:32	9.7 MB	--
s06_src.000044.dpx	15 juli 2010, 15:32	9.7 MB	--

USB_Storage ▸ scan_organized

77 items, 54.05 GB available

zaterdag 28 mei 2011

since everything looks like this

```
$dasburo --use SGG
In project SGG
$dasburo --scan /Volumes/Film02/SGG
Scanning sequences in /Volumes/Film02/SGG/**/*.dpx
Seq 1 of 33:   100% |oooooooooooooooooooooooooooooooooooooooooo| Time: 00:00:47
Seq 2 of 33:   100% |oooooooooooooooooooooooooooooooooooooooooo| Time: 00:00:11
Seq 3 of 33:   100% |oooooooooooooooooooooooooooooooooooooooooo| Time: 00:00:52
Seq 4 of 33:   100% |oooooooooooooooooooooooooooooooooooooooooo| Time: 00:00:35
Seq 5 of 33:   100% |oooooooooooooooooooooooooooooooooooooooooo| Time: 00:00:47
Seq 6 of 33:   100% |oooooooooooooooooooooooooooooooooooooooooo| Time: 00:00:51
```

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sequencer

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Extreme case study: a production shot on Phantom high-speed camera
For 1250 frames of final output, 56055 images shot
About 400 gigs of data
Being able to pick the right files to copy to the actual editing machine a boost!

```
require "sequencer"
s = Sequencer.from_single_file("/RAID/Film/CONFORM.092183.dpx")
s.file_count #=> 3201
s.gaps? #=> true
s.missing_frames #=> 15
s.pattern #=> "CONFORM.%06d.dpx", usable with printf
```

depix

sequencer

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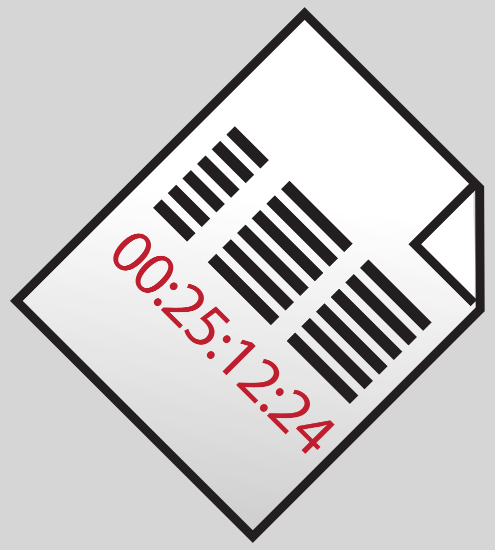
To scan files in batches and detect image sequences I wrote sequencer, which also handles renaming of sequences if need be

EDL files allow you to move your edit timelines from one app to another

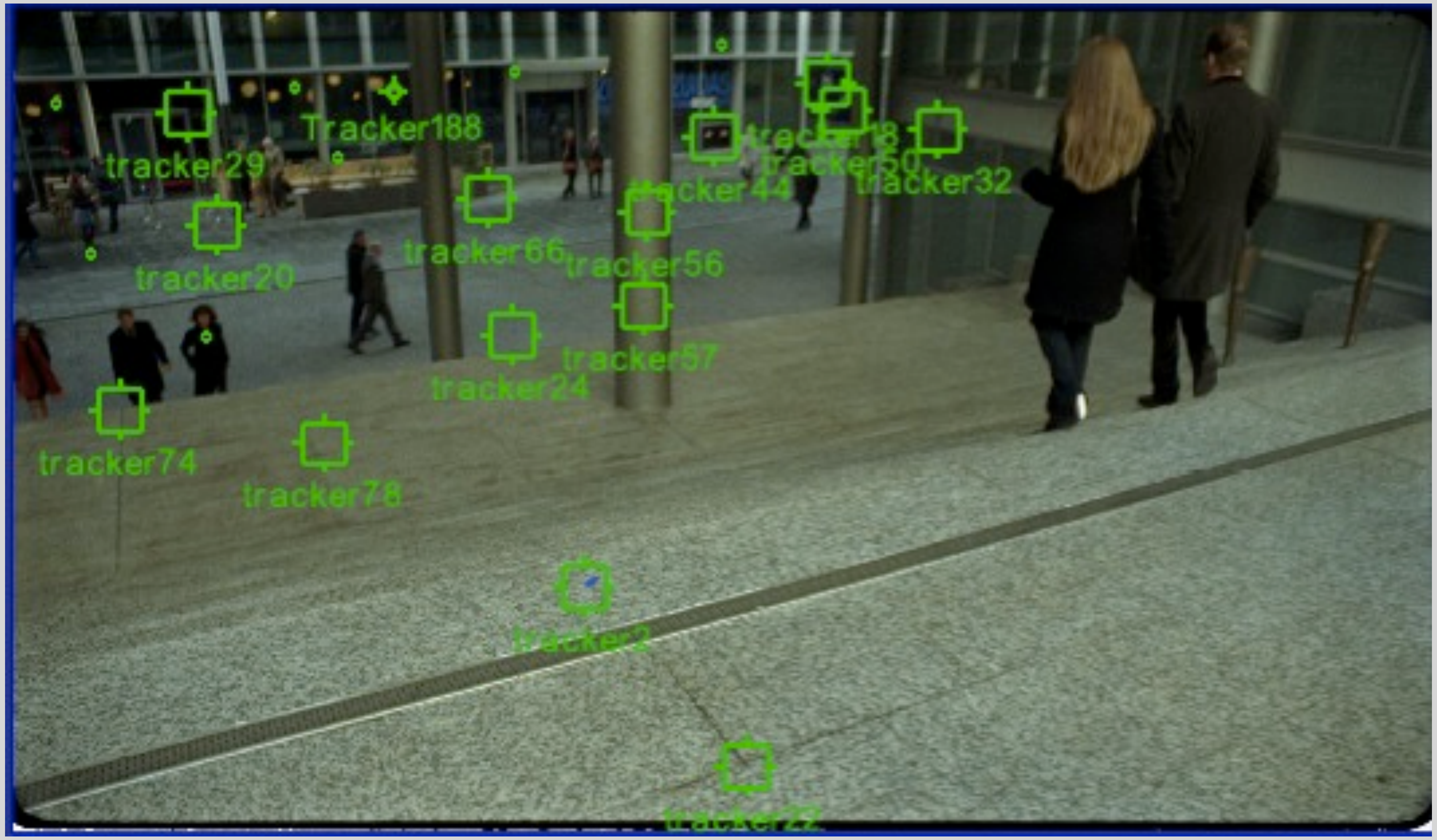
```
$dasburo --edl /Users/julik/Desktop/Edit_18102010_35_v1.EDL
In project REW
Found 21 events using 1281 frames of source
Doing frame lookup...
=> Missing 47 frames in event 020 in src reel REDAXTED
=> 425 frames found but 472 needed
=> Edit calls for 03:53:41:24 up to 03:54:00:21
=> but the frame block found has 03:53:41:24 up to 03:53:58:23.
=> ATTN: clip has a timewarp is 400.0% speedup
1 clips miss source media
20 clips are go
```



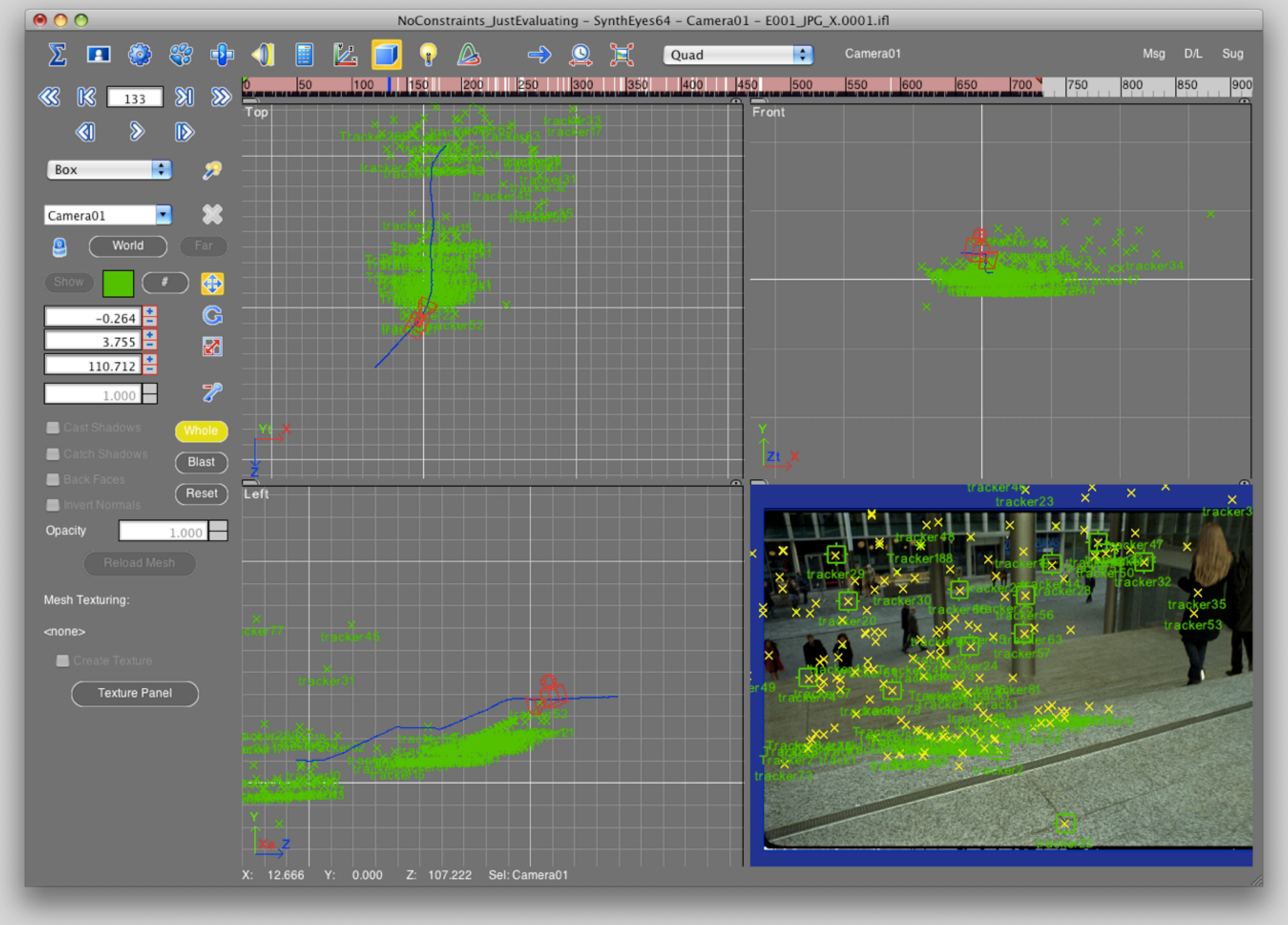
edl

Data exchange

Many apps do different things well.
Need to move data between them in unofficial ways.
Case in point: tracking data



Coordinates of a moving point in the image, per frame...



NoConstraints_JustEvaluating – SynthEyes64 – Camera01 – E001_JPG_X.0001.ifl

Same function, different apps

Track points and then solve camera in different applications.
Some apps can solve dramatically better than others.

Data conversion

The classics

```
parser.parse(file_with_data).each do | parsed_nugget_of_data |
  some_other_format.write(parsed_nugget_of_data)
end
```

tracksperanto

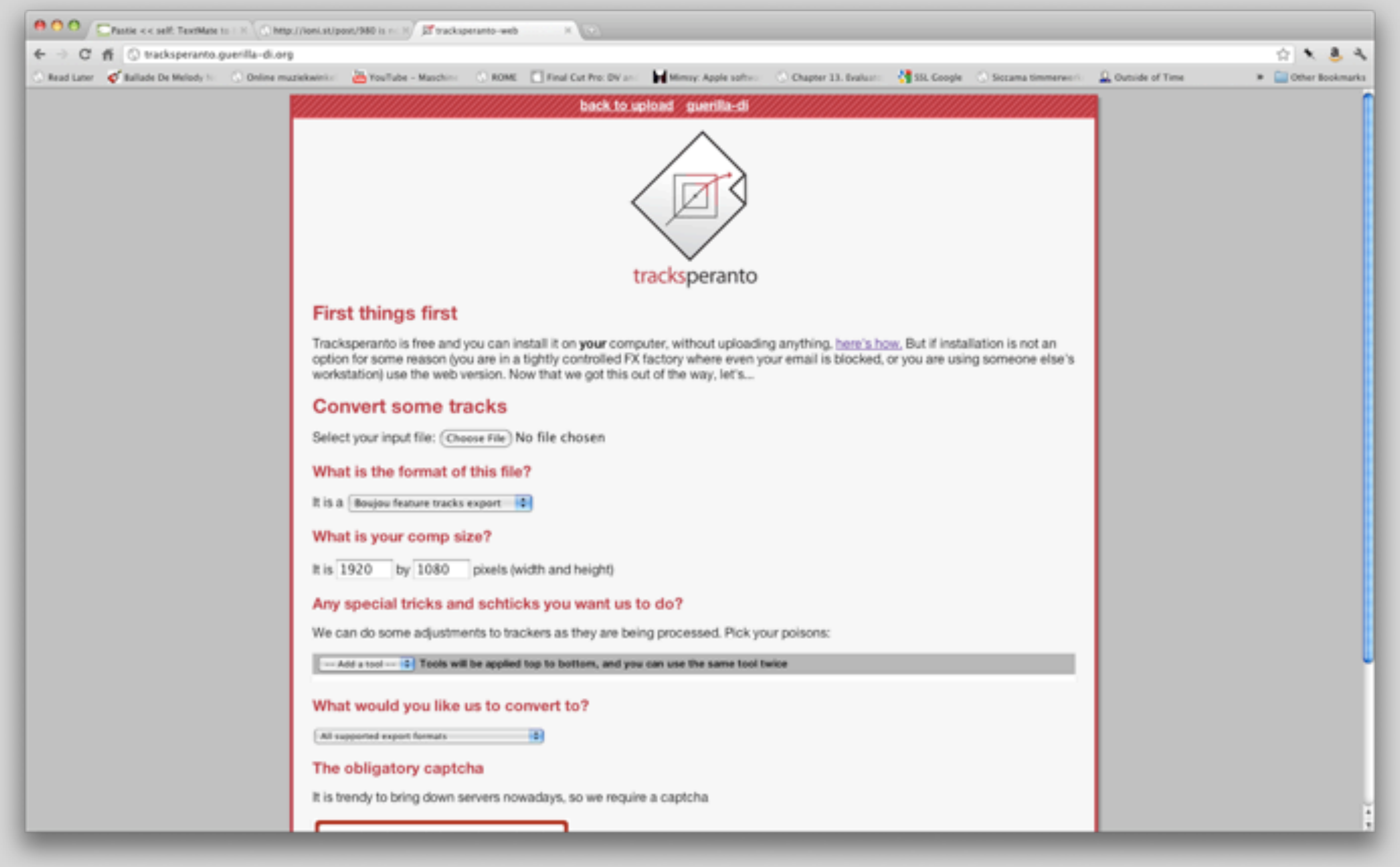
flamechannel parser

Distribution troublems

Some people cannot install anything on their boxes
Some people are in a crunch
Some are freelancers without a laptop
Some are scared of Ruby
Some are diehard GUI users

ZOMG! Pipe dream achieved

It is possible to have the same code on the web and on the CLI



First things first

Tracksperanto is free and you can install it on **your** computer, without uploading anything, here's how. But if installation is not an option for some reason (you are in a tightly controlled FX factory where even your email is blocked, or you are using someone else's workstation) use the web version. Now that we got this out of the way, let's...

Convert some tracks

Select your input file: Choose File No file chosen

What is the format of this file?

It is a Boujou feature tracks export

What is your comp size?

It is 1920 by 1080 pixels (width and height)

Any special tricks and schticks you want us to do?

We can do some adjustments to trackers as they are being processed. Pick your poisons:

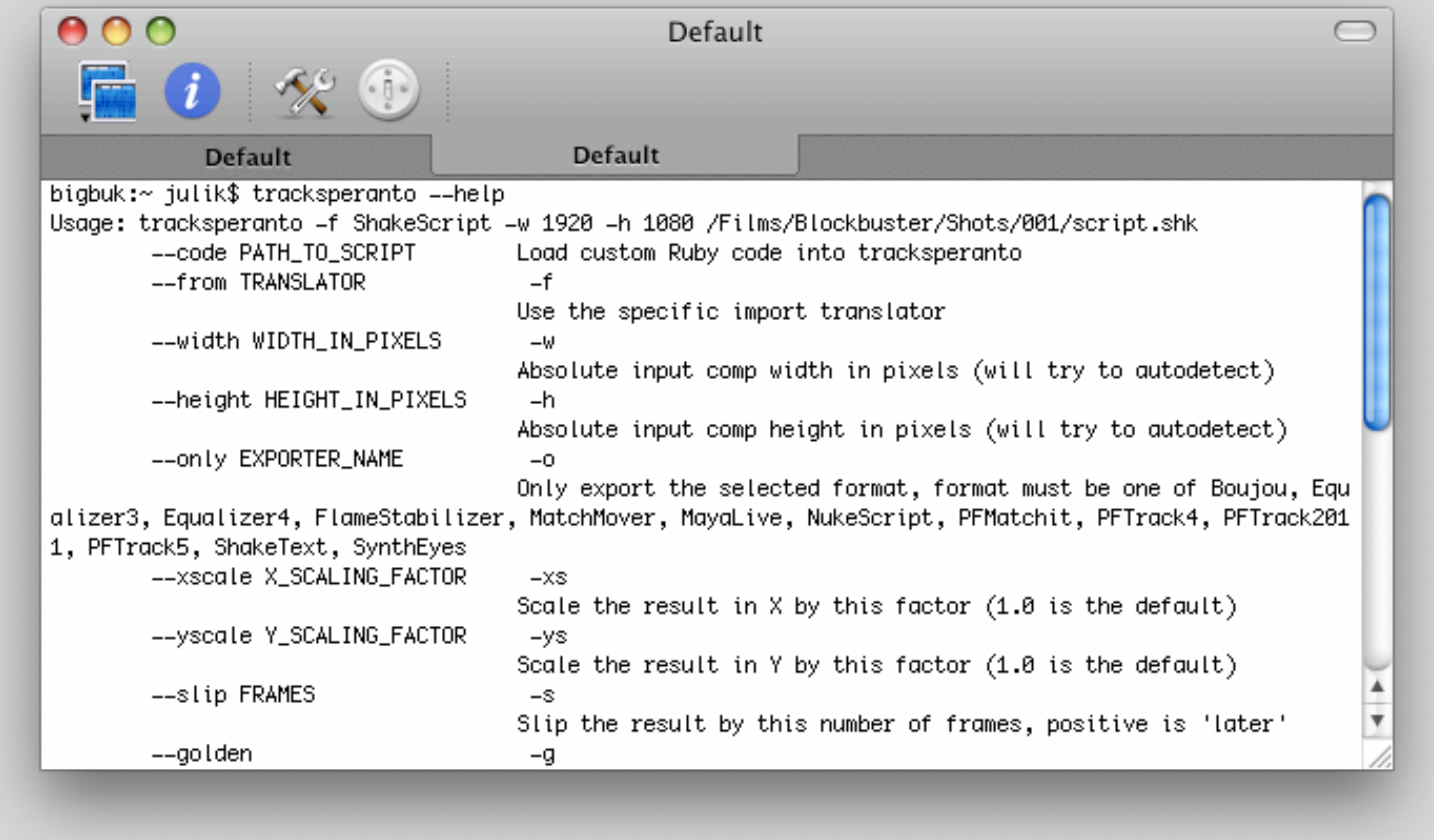
--- Add a tool --- Tools will be applied top to bottom, and you can use the same tool twice

What would you like us to convert to?

All supported export formats

The obligatory captcha

It is trendy to bring down servers nowadays, so we require a captcha



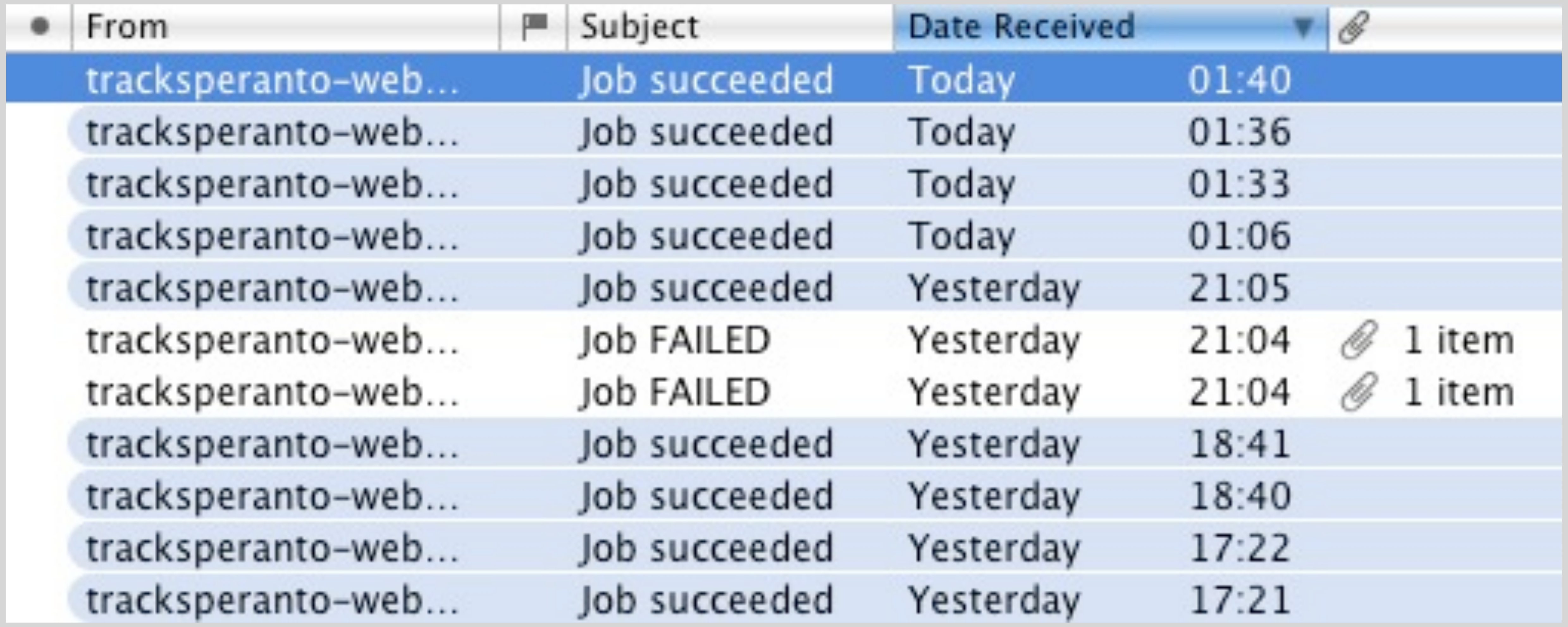
```
bigbuk:~ julik$ tracksperanto --help
Usage: tracksperanto -f ShakeScript -w 1920 -h 1080 /Films/Blockbuster/Shots/001/script.shk
        --code PATH_TO_SCRIPT        Load custom Ruby code into tracksperanto
        --from TRANSLATOR             -f
                                     Use the specific import translator
        --width WIDTH_IN_PIXELS       -w
                                     Absolute input comp width in pixels (will try to autodetect)
        --height HEIGHT_IN_PIXELS     -h
                                     Absolute input comp height in pixels (will try to autodetect)
        --only EXPORTER_NAME          -o
                                     Only export the selected format, format must be one of Boujou, Equ
alizer3, Equalizer4, FlameStabilizer, MatchMover, MayaLive, NukeScript, PFMatchit, PFTrack4, PFTrack201
1, PFTrack5, ShakeText, SynthEyes
        --xscale X_SCALING_FACTOR     -xs
                                     Scale the result in X by this factor (1.0 is the default)
        --yscale Y_SCALING_FACTOR     -ys
                                     Scale the result in Y by this factor (1.0 is the default)
        --slip FRAMES                 -s
                                     Slip the result by this number of frames, positive is 'later'
        --golden                      -g
```

tracksperanto

flamechannel parser

Offer both

Your unit test corpus delivered to your mailbox



●	From		Subject	Date Received ▼		📎
	tracksperanto-web...		Job succeeded	Today	01:40	
	tracksperanto-web...		Job succeeded	Today	01:36	
	tracksperanto-web...		Job succeeded	Today	01:33	
	tracksperanto-web...		Job succeeded	Today	01:06	
	tracksperanto-web...		Job succeeded	Yesterday	21:05	
	tracksperanto-web...		Job FAILED	Yesterday	21:04	📎 1 item
	tracksperanto-web...		Job FAILED	Yesterday	21:04	📎 1 item
	tracksperanto-web...		Job succeeded	Yesterday	18:41	
	tracksperanto-web...		Job succeeded	Yesterday	18:40	
	tracksperanto-web...		Job succeeded	Yesterday	17:22	
	tracksperanto-web...		Job succeeded	Yesterday	17:21	

tracksperanto

flamechannel parser

“Thanks! Powerful tool.”

“THIS IS THE GREATEST PIECE OF TRACKS CONVERSION SOFTWARE !!!”

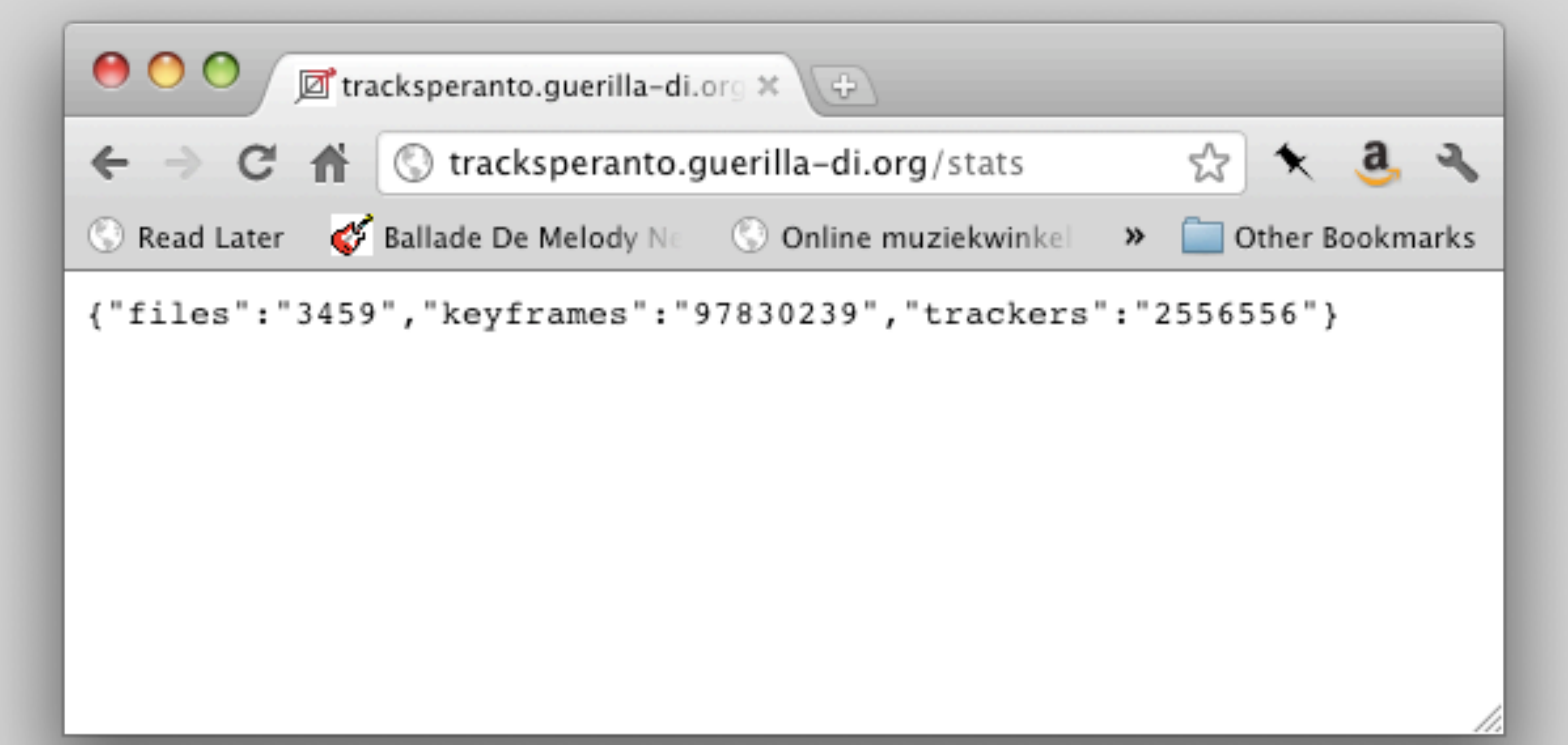
“Just an excellent and very useful tool!”

“thanks for your time. yout tracksperanto helped me many times”

tracksperanto flamechannel parser

14,949 total downloads

16 for this version


tracksperanto.guerilla-di.org
tracksperanto.guerilla-di.org/stats
Read Later
Ballade De Melody N
Online muziekwinkel
Other Bookmarks

{"files":"3459","keyframes":"97830239","trackers":"2556556"}

tracksperanto

flamechannel parser

HE

Publicity

Use the most hardcore nerdy specialist forums and mailing lists you can find.

It should not be fast

But it should never beachball!

```
do_something_long do | status_message, percent |
  # On the web
  memcached.set("status-#{id}", [status_message, percent].join(" "))

  # On the CLI
  pbar.set(percent)
end
```

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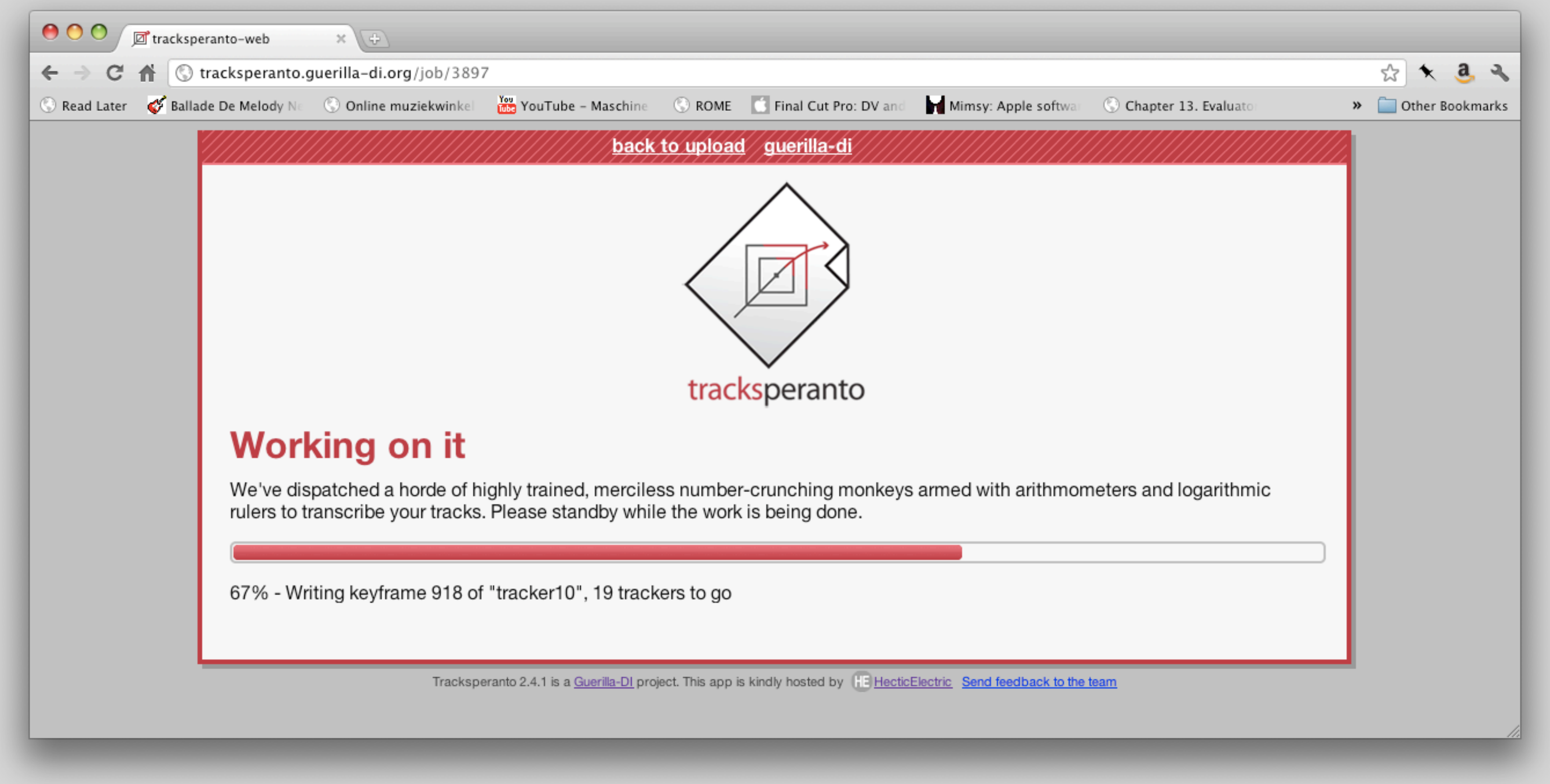
flamechannel parser

zaterdag 28 mei 2011

This is a very imporant piece. Anticipate which operations might take alot of time and make a status reporting method in there that would output tracing messages. If there is some percentage (I use the amount of file read so far to gauge this in tracksperanto) use it too!



Working on it

We've dispatched a horde of highly trained, merciless number-crunching monkeys armed with arithmometers and logarithmic rulers to transcribe your tracks. Please standby while the work is being done.

67% - Writing keyframe 918 of "tracker10", 19 trackers to go

Tracksperanto 2.4.1 is a Guerilla-DI project. This app is kindly hosted by HE HecticElectric Send feedback to the team

tracksperanto

flamechannel parser

This is how it looks on the web side of things - once the upload is complete the user gets realtime reports
And it’s best achieved by an IO since we parse the IO linewise

Progressive ops

https://gist.github.com/306661

IO wrapper that calls a proc each time a chunk is read

Easy.

```ruby
file = ProgressiveIO.new(File.open("/tmp/blobz", "r")) do | offset |
  puts "Read to offset #{offset}"
end
# Now pass the file to anything that expects a File object
```

All of these would never be possible without delegate dot rb

A kingdom for delegate.rb

Your best friend.

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I love it so much lots of parts in tspto use it

Files can be big

Process sequentially, store huge blobs on disk (tracksperanto has a class for that - Accumulator, which is like a disk-backed Enumerable)

again I've seen people deal with files like 50 megs big and your app should be able to chew them aright. ..... standard files

...It's also important to quickly eradicate bugz and offer autoupdate hints

Suggest updates automatically

Distribute as gem and use Gemcutter as Sparkle.

```
UpdateHints.version_check("tracksperanto",
      Tracksperanto::VERSION, STDERR)
```

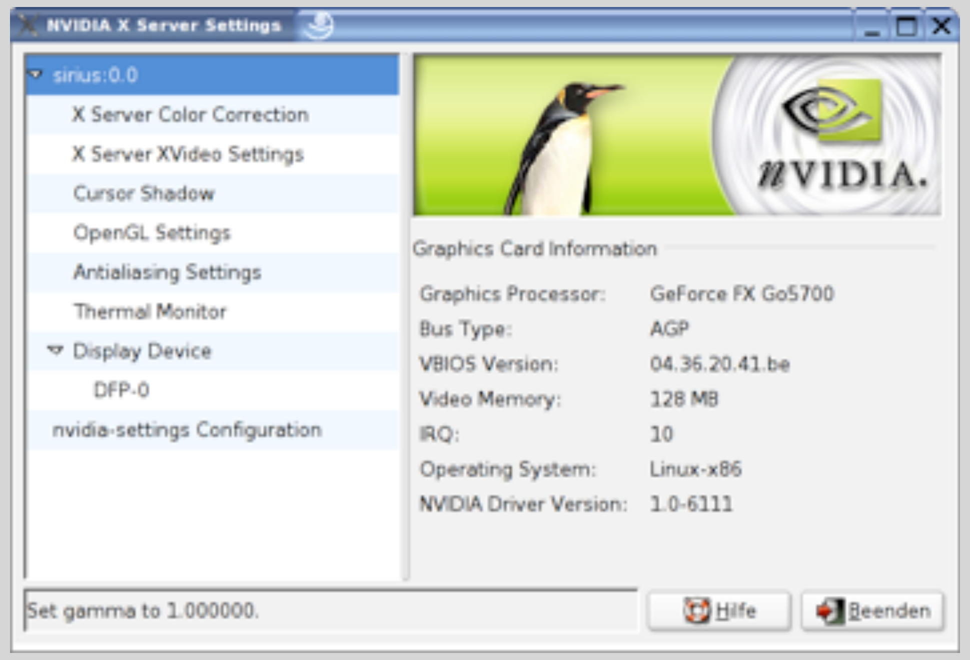
```
Your version of tracksperanto is probably out of date
(the current version is 2.4.1, but you have 2.3.0).
Please consider updating (run `gem update tracksperanto`)
```

gem install update_hints

Note that people using workstation Linux and desktop Linux are wary of updating

Compatibility is important

The cross of terrible in workstation Linux



NVIDIA X Server Settings

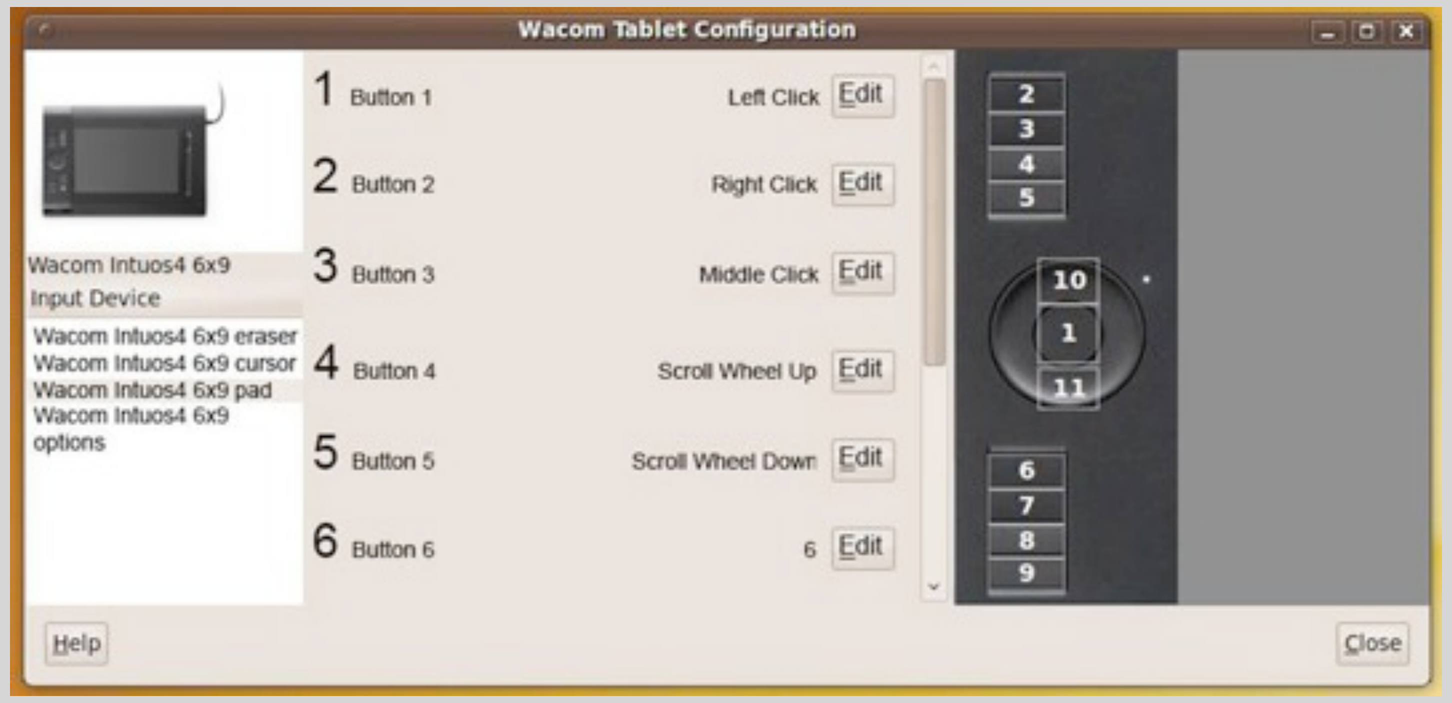
- sirius:0.0
  - X Server Color Correction
  - X Server XVideo Settings
  - Cursor Shadow
  - OpenGL Settings
  - Antialiasing Settings
  - Thermal Monitor
  - Display Device
    - DFP-0
- nvidia-settings Configuration

Graphics Card Information

Graphics Processor:	GeForce FX Go5700
Bus Type:	AGP
VBIOS Version:	04.36.20.41.be
Video Memory:	128 MB
IRQ:	10
Operating System:	Linux-x86
NVIDIA Driver Version:	1.0-6111

Set gamma to 1.000000.

Fragile dependencies and configs. Updates that break workstations. Fear of updates.



Wacom Tablet Configuration

Wacom Intuos4 6x9
Input Device

- Wacom Intuos4 6x9 eraser
- Wacom Intuos4 6x9 cursor
- Wacom Intuos4 6x9 pad
- Wacom Intuos4 6x9 options

1	Button 1	Left Click	Edit
2	Button 2	Right Click	Edit
3	Button 3	Middle Click	Edit
4	Button 4	Scroll Wheel Up	Edit
5	Button 5	Scroll Wheel Down	Edit
6	Button 6	6	Edit

This is a problem for many. Point I am making is – if you are making a downloadable app
even considering 1.8.6 compat is something you should do. OLD CentOS is very common!! VERY!

Ok now who uses pivotal tracker and GH issues and things like that?

Less dependencies

And specify dev deps carefully!

Less process for users

People who downloaded your app can just email you.

```
support#{64.chr}your-server.org
```

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Ok wonderful for a niche tool is total overkill esp.

if users are not developers
the chr trick is to protect from spammers

In a perfect world...

RubyQT top notch reliable (and packaged)
Maybe another, slim, OGL-based UI toolkit?

Thank you!

**Thanks to Matz for creating Ruby that we all love
and to HecticElectric for allowing me to develop OSS.**

http://guerilla-di.org
http://github.com/guerilla-di
http://hecticelectric.nl
@julikt