

Better PDF screenshots with gtk 3

nomeata's mind shares



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samstag, 18. Juni 2011

Satz der Stunde
„Jetzt haben wir ja WLAN und können darüber reden, da müssen wir uns nicht mehr anschauen.“
[Felix](#)

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identi.ca dents

If I'm not careful #Arch will have my gtk-vector-screenshot program before #Debian:
<https://bbs.archlinux.org/viewtopic.php?id=121316> :-)

I don't like this new world, where comments are not posted on my blog, but here: <http://ur1.ca/4hm88> But thx for the positive feedback :-)

Oh, and they (at [golem.de](http://www.golem.de)) also wrote a nice article:
<http://www.golem.de/1106/84316.html>

My pdf screenshot gtk module screencast is featured by [golem.de](http://www.golem.de):
<http://ur1.ca/4hc46>

Put my paper about "Conditional Elimination through Code Duplication" (<http://ur1.ca/4haqm>) on [arXiv.org](http://arxiv.org) (<http://ur1.ca/4haqo>)

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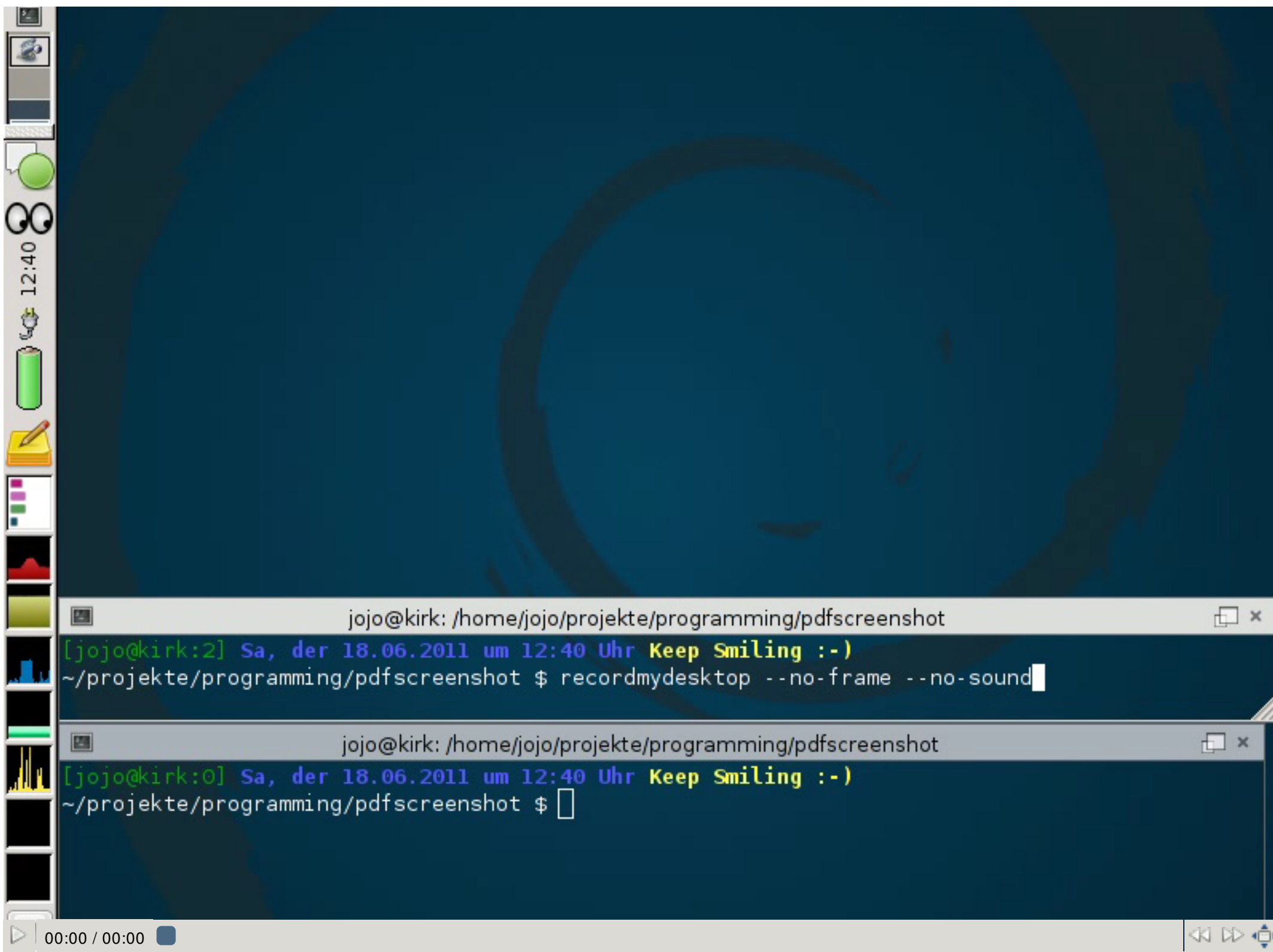


Better PDF screenshots with gtk 3

Half a year ago, I experimented with [gtk+](#) and [cairo](#) to extract a PDF screenshot out of a program, i.e. a screenshot of the window that is not a table of colored dots as a regular PNG file would be, but rather a vector graphic that scales perfectly and has selectable text. The main use that I see is documentation: A scalable screenshots looks much better in print, and even in an online-PDF-file, having the full-text-search also find the text in the images is useful.

My [experiments back then](#) were successful in a proof-of-concept way, but they were very ugly hacks. With the new version 3 of gtk+, though, things become much easier, as only one cairo context is used, instead of each widget creating its own context to draw on.

By now, the first gtk-3 applications have reached Debian unstable, so I thought it would be time to re-do the experiment. And the result is very pleasing: The pdf screenshot program comes as a gtk module that you can load by setting an environment variable before launching a gtk-3 program. The application will run as usual, but there is an additional PDF screenshot button. If you click it, you get a "Save File" dialog (with a nice, live-updated preview of the screenshot, as an additional gimmick) that lets you save a PDF file. Its as easy as that. You can check out the [resulting PDF file of gucharmap](#) and a [screencast](#) of me creating that file, including copy'n'pasting from the resulting document.



PS: I would offer the video as well on YouTube, but it seems it does not accept Ogg Theora videos. I hope all of you can make use of the above links.

Update: By popular demand, I also created a [SVG version](#). It even looks better because the embedded pixmaps have a higher resolution – probably gtk is confused by the resolution of the PDF cairo surface. The code is almost trivially the same. I guess I could add other formats (PNG, PS) as well. Now I just have to find out how to tame GtkFileChooser to offer this feature better.

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- SVG screenshots would be better since they could be included into HTML pages.
- #1 foo** am 18.06.2011 15:34 ([Antwort](#))
- SVG should work just as well, I'll see how good the resulting SVG files are.
- #1.1 Joachim Breitner (Homepage)** am 18.06.2011 15:44 ([Antwort](#))
- Brilliant idea.
- I agree that SVG is a good idea, since most people read documentation online on html/web pages.
- *) it's my assumption anyway.
- #1.2 Frank lin Piai (Homepage)** am 20.06.2011 08:57 ([Antwort](#))
- Done: http://www.joachim-breitner.de/various/pdf_screenshot_3.svg
- It is really amazing how exactly like the original program it looks.
- #1.2.1 Joachim Breitner (Homepage)** am 20.06.2011 09:39 ([Antwort](#))
- cool -- will we see this as code & packaged soon, or is this rather work in progress that still needs reworking?
- #2 me** am 18.06.2011 15:35 ([Antwort](#))
- It could be released soon. It still needs some UI to select the window in case the application has more than one.
- Ideally, I'd like to take screenshots of any running program, not only those started with the right GTK module. But I don't know if it is possible to hook into a running gtk program without resorting to too much hacks.
- Or maybe the gtk module is included by default in all running applications, and activated by some signalling, e.g. via the X properties of the window.
- But other than those bells and whistles, the code is ok so far.
- It does not work in all cases, of course. It can only handle gtk-3 applications, and excludes those that do not use cairo for drawing (e.g. gnome-terminal's vty widget).
- #2.1 Joachim Breitner (Homepage)** am 18.06.2011 15:47 ([Antwort](#))
- Pretty nifty. You can actually do similar things in Qt: QPainter draw calls can be serialized into SVG via QSvg. The resulting SVG lacks some polish, and if the app buffers any rendering through pixmaps it will embed raster data for those elements which then can't scale, but depending on the app it can be of some use. Perhaps your work will inspire some additional improvements there.
- #3 Eike Hein** am 19.06.2011 19:26 ([Antwort](#))
- Brilliant !
It opens an interesting path for UI functional testing of GTK+ 3 apps.
- #4 Ludovic Danigo** am 19.06.2011 22:56 ([Antwort](#))
- This could be very cool in GitHub and let others help you :) Maybe with Qt support and improvements.
- #5 Ignacio Lago (Homepage)** am 20.06.2011 11:05 ([Antwort](#))
- Soon. But if anything, then on gitorious.org – I prefer cloud services based on Free Software :-)
- #5.1 Joachim Breitner (Homepage)** am 20.06.2011 11:50 ([Antwort](#))
- What is the difference with File, Print, Print to file, PDF file?
- #6 Eleassar (Homepage)** am 20.06.2011 17:10 ([Antwort](#))
- You'll get a PDF document of the edited file, but not of the application. Very different things.
- #6.1 Joachim Breitner (Homepage)** am 20.06.2011 17:25 ([Antwort](#))
- nice!
but when i read it on golem at first i thought that text remains text...:)
would be pretty cool no, it really would be awesome!!
i do not mean ocr stuff. i was thinking about exporting "selectable text" as text.
if you can select text as a user, it should be possible for a process as well, right?
ps: have you finished your double-diploma yet?
- #7 Daniel Dreke** am 21.06.2011 00:52 ([Antwort](#))
- Yes, you thought right: text stays text. Check out the PDF file, you can select the text. Or check out the screencast, I am copying the unicode smiley.
- As for the diploma: I am waiting for the transfer of credits from India, then I should be done with the computer science diploma.
- #7.1 Joachim Breitner (Homepage)** am 21.06.2011 08:37 ([Antwort](#))
- ah ok, i just checked the svg version, where text is converted :/
not checked pdf file yet. but man, that's awesome!
ps: thumbs up for finishing :)
pps: the text-selection color in this comment box is not distinguishable from the background color, intention or does something went wrong with css? (ff4, win7)
- #8 Daniel Dreke** am 21.06.2011 12:02 ([Antwort](#))
- Ah, I see. I did not know that with SVG, the font gets included as shapes. Slight disadvantage, but maybe that can be fixed within Cairo. Filed a bug report at https://bugs.freedesktop.org/show_bug.cgi?id=38516
- It is here. Try tilting your laptop screen, if I tilt mine down, it becomes indistinguishable.
- #8.1 Joachim Breitner (Homepage)** am 21.06.2011 12:16 ([Antwort](#))
- Yeah, the text-selection background color is almost the same as the page background color, and nearly identical to the text box background color.
- This, on a desktop LCD with a backlight so bright that it'd fry your retina if you looked at it for too long. :-)
- (need to get some sun-glasses...)
- #8.1.1 Ben** am 21.06.2011 15:47 ([Antwort](#))
- le Gall Erwan tried to comment here but it did not work properly, hence I am pasting his mailed comment:
- Inkscape can convert Pdf to Svg, while asking you if you want to convert text to shape (or not).
A test made with the Joachim's PDF sample worked very well: I was able to edit and translate all texts from German to French, even the smileys! :)
Very useful to send translation in context (i. e. showing labels that are too short to contain a translated text), both in a portable manner (all modern browsers are indeed able to show svg graphics) and an indexable one (svg are text, easy to index and edit). Gzip compressed svz graphics are generally lighter (i. e. 1/7 in this case) than equivalent png bitmaps. Very nice for good quality printing too!
- Lots of advantages. Thanks to Joachim for this brilliant idea.
- #8.2 Joachim Breitner (Homepage)** am 26.06.2011 21:23 ([Antwort](#))
- "tilt your laptop screen" haha, i'm sitting in front of an eizo fleixscan s2100...or in other words, pretty true colors :) i activated picture mode and i am still not able to distinguish the colors.
- #9 Daniel Dreke** am 21.06.2011 18:14 ([Antwort](#))
- Strange. You are not saying that my annoying angle-dependent T400 display has a better color range than some high-end monitor?
- Anyways, I'm not too worried about that at the moment. The layout of the webpage is not too great any more anyways.
- #9.1 Joachim Breitner (Homepage)** am 21.06.2011 22:30 ([Antwort](#))

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