Photography For Linux

A Tale Of Time
A Tale Of, Admittedly, Some Woe

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Overview

- My photography background
- Image software features
  - (From a hierarchical prospective)
- My Tale; as a time-line
- What I use today

- *(plus random pretty pictures and demonstrations)*

About Me and My Photography

- Camera history
  - First (film) camera in 198?
  - First better film camera in 1988
  - First digital camera in 2000-ish
  - First better digital camera in 2005-ish
  - First full-frame digital camera in 2013
- Captured On Earth Photography
  - Founded in 2010ish
  - You'd think I'd know this

Where Am I Now?

- Two Jobs
  - Captured On Earth
  - Programmer / Security-Architect for PARSONS
- Photography
  - My start is from comments from two people
  - Haven't lost money yet in a year
- Skills
  - You never stop learning
  - Photography is no different
  - Photography is changing faster than you can

Image Software Requirements

- (Digital) photography requires multiple parts:
  - Display
  - Workflow – Walking your pictures along a process
  - Indexing and retrieval
    - Cataloging
    - Tagging
  - Editing
    - Destructive and/or non-destructive
    - Regions via polygons, eg, or true "pixel selections"
- No software does them all!
  - Generally they Edit or Catalog

A History Of Wes

- **Self-written software**

- ...

The Early Years: ImageDirs

- Self-written software
  - Apache plugin
  - Perl: ImageDirs.pm
    - 2293 lines
    - Managed in CVS; last modification date of 2008
  - Indexed directories of files and showed them
  - Probably my first use of CSS
  - Stored data in ascii text files
  - Access control!
    - Cookie based via email
  - RSS feed!

The Early Years: ImageDirs

- Does it run today?
  - No; apparently – news to me
  - Fixed: authorization config was broken in apache
- Usage
  - Years!!!

ImageDirs: How Does It Stack Up?

- <u>Display</u>
  - Ugly (think late 90s web style)
  - Did have a slideshow feature
    - If you had a file list in a specially named text file
  - RSS Feed!
- <u>Indexing and retrieval</u>
  - No searching
  - No Tagging
  - Directory based; had to know where an image was

ImageDirs: How Does It Stack Up?

- Workflow:
  - Drop in a directory and go; none!
- Editing:
  - None at all
  - I really didn't do any editing back then

Demo

A History Of Wes

- Self-written software
- **Kphotoalbum**
- ...

KPhotoAlbum

- An image cataloging system
  - Scans directories for images
  - Has a number of tagging mechanisms
- Very fast!
- Storage
  - EXIF: in a Berkeley DB
  - Image tags, etc in an XML file
- Don't think actively developed at all anymore

KphotoAlbum and Me

- Used it for probably 5-ish years
- Loaded it with more images than it could handle
  - XML is just slow
- Made extensive use of the XML format

  - Scripts: http://www.hardakers.net/kphotoalbum/
  - Tagging via script
  - Moving files around
  - Merging databases together

KPhotoAlbum Patches

- I ended up becoming a core contributor

- Patches:
  - Full-screen tagging support
    - Controversial originally
    - Author wouldn't apply it – Didn't fit his workflow
    - Until lots of others kept applying it
  - Frequent external command support
  - Auto-multiple-version detection
    - Regexp matches on a file auto-stacks them
    - I miss this!!! nothing I have currently does this!

KPhotoAlbum
How Does It Stack Up?

- <u>Display</u>
  - – Eh (think late 2000s KDE Icons)
  - – Nice viewing and tagging
  - – Somewhat confusing
- <u>Indexing and retrieval</u>
  - – Excellent tagging and searching, once done
- <u>Workflow</u>
  - – Good workflow for tagging, which is its purpose
- <u>Editing</u>
  - – None at all – could invoke externals, like Gimp

Demo

Gimp

- **EXTREMELY** well known/powerful editor
  - Pseudo-competition with photoshop
- Love/Hate UI
  - (I'm fine with it)
  - Docked dialogs vs free-floating windows
  - 8-bit (24-bit) editing – 16bit always coming soon
    - Modern cameras shoot 12bit channels
    - 16bit (minimum) is needed to support better results!
- Reasonable documentation
  - (think lots of good google searches)

Gimp vs Photoshop
(or: I tried to leave this slide out)

- Cost
  - Photoshop: $10/mo for minimal creative cloud
  - Gimp: Free, unless you count your time
- Features
  - Gimp is quite feature rich
  - But photoshop does offer more
    - Most automated things
    - Spot removal
    - Panoramic and photo stacking
    - Better complex layer support
    - Slightly better UI – IMHO
      - (most people say "much" better; I disagree with the "much")

Gimp
How Does It Stack Up?

- <u>Display</u>
  - Love/Hate
- <u>Indexing and retrieval</u>
  - None
- <u>Workflow</u>
  - Self Imposed – No guidance available
- <u>Editing</u>
  - Pretty much anything
  - Destructive if you want
  - Layers if you don't

Other Important Linux Tools
*(I'm not even going to **try** to list them all)*

- Hugin
  - Panoramic stitching
  - Very good once you figure out how to use it
- ImageMagick
  - THE image manipulation library
  - I've used it extensively in scripts, etc
- Darktable
  - Fantastic image catalog
  - Fantastic non-destructive editing and workflow
  - Probably the best free cataloger on linux right now

Image Software
Purpose: decrease your time

- You can always go edit pixel by pixel

  – Very slow

- Image software lets you

  – Do use more powerful painting algorithms

  – Decreases your time to get the final result

- Time == Money

  – Still true, sadly

- Automate early, automate often!!

  – I do this extensively

  – Posting to 6 or 7 social networks, frames: drag-n-drop

Automation Case Study
My 2014 Calendar – Entirely Linux

- Content
  - 12 pictures
  - Calendar with dates/moon phases/etc
  - Front/Back covers
  - Titles

- Scripts I wrote: kdialog --passivepopup 'google+ ready'
  - Generate each page
  - Added the title
  - Added my name, etc, to the calendar pages
  - Produced the final images to send to the printer

Me. Today.

Where Am I?

- My issues in the past:
  - No good non-destructive catelog tools
    - (dark table was awful at the time of this decision)
  - No great
  - Processing workflow and speed was too slow
  - Still loved and used linux as my only desktop
- Enter Aftershot Pro
  - Bibble Labs → Corel Aftershot Pro
  - Professional image catalog / non-destructive editing
  - Linux, OS X, and Windows   (Qt based)

Why Aftershot Pro

- Time-Based
- It's lightening fast
  - (makes use of all the cores; optimized for speed)
  - Handles my 40k images
- Extensible via an API
  - It was hard to **get** the API package, but I did get it
- The bad
  - There are bugs
  - Love/Hate relationship with the community
  - They use forums for support. I hate forums.

Aftershot Hacks

- Converted the KPhotoAlbum index.xml
  - Converted it to AfterShot XML side-cars
  - Imported them all in about 24 hours
- Many output-scripts
  - Drag and drop to post to various places, etc
  - Had one for selecting calendar images, eg
- Things I haven't done
  - Data is stored in XML side-cars
    - (sort of an industry standard ; with many hacks)
  - Real database of everything is in sqlite3
    - I **want** to go hack on this; but haven't. Yet.

Aftershot Image Editing

- Non-Destructive
- Done by
    - Takes the original image
    - Applies the changes in a list-order
    - (some changes are always last, like sharpening)
    - Many sliders and plugins to do stuff (eg, "vignette")
- Has a history so you can back up to any point
- Has regional editing
    - Polygon shapes
    - Selecting regions by brushing, etc

AfterShot Image Editing

- Does not replace a full-blown image editor!

- Analogies from Adobe:

  - AfterShot == LightRoom

    - Designed for cataloging

    - Global filters and modifications

    - Never destructive

  - Photoshop == Gimp

    - Designed for editing everything under the sun

    - Including pixel-by-pixel transformations, etc

    - Can be destructive

      - But you shouldn't use it that way

AfterShot
How Does It Stack Up?

- <u>Display</u>
  - Very nice, sleek design   (Qt with styles)
  - Nice viewing and tagging
  - Generally intuitive and powerful
- <u>Indexing and retrieval</u>
  - Amazing tagging and searching
- <u>Workflow</u>
  - Panels are arranged to lead you along (if needed)
- <u>Editing</u>
  - Non destructive but not pixel by pixel

Demo

Windows Software On Linux

- Eventually you end up here
  - Some tools are simply better on windows/osx
    - Photoshop is better than Gimp. (I wish it wasn't)
    - Every time I fill out a survey: "need linux support"
  - Some tools barely exist on linux
    - HDR Editing: photomatix
  - When time == money
    - you're likely going to need something at some point
- The two big ones:
  - Photomatix
  - Adobe Lightroom and Photoshop (CC)

High Dynamic Range

- Auto-blending software for creating
  - High Dynamic Range images
  - Scenes a camera just can't handle
  - Super dark shadows and super bright skies, eg

- Linux Tools
  - A couple of barely functioning tools
  - Produce really really bad images
  - Aftershot supposedly will support some HDR come Q3 14
  - (works now on windows, linux is trailing in this case)

- Windows / OS X
  - Photomatix is **the** game

Photomatix

- Pseudo-supported for linux
  - The developer has wine-setup instructions
  - Seems to test and ensure it works
  - Nearly bug-free under wine
    - (and when have you **EVER** said that before???)
- Me: automation scripts to:
  - Create a todo list from Aftershot
  - Fire it up one at a time
  - Move results around when done
  - etc

Photoshop
(I didn't want to have to put this slide in)

- About 4 months ago
  - I applied to "the arcanum"
    - A master/apprentice program online
    - Created by Trey Ratcliff
    - Just getting off the ground
  - A while later I got accepted
    - One of the first 10 people out of a few thousand
    - As an apprentice under an <u>AMAZING</u> photographer
  - The problem
    - EVERYONE uses photoshop, typically on a mac
  - So... to continue my learning process, I bit the bullet.

How To Run Photoshop?

- Boot into windows – No way!
- Roll across my room to the mac mini
  - Done it – not ideal
- Run under wine
  - There are instructions for doing this online
  - Works, but with many bugs
    - The thing you just did (painting, turning layer visibility off, etc) often shows up after the **next** mouse click.
- Run in an emulator
  - EG, QEmu

Me? Windows in Qemu
(started with virt-manager)

- Upsides:
  - Fast
  - Sync files over samba
  - Well support way of running windows and apps
- Downsides:
  - Memory intensive
    - I can't run both Chrome and QEmu at the same time
      - I gave windows half the memory == 8GB
  - No 3D graphics card support
    - Photoshop complains and is slower than true native

Take Aways

- Use the right tool for the right job
  - Needs/Requirements change
  - Use the right tool to minimize your time and energy

- Learn the principals not the tools
  - The tools will change!
  - Allows you to use every tool at the right time

- Photography for linux has come a long way
  - A lot exists natively – much more than 5 years ago

Questions?

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Captured On Earth Photography
http://capturedonearth.com/

Following My Work:

http://plus.google.com/+WesHardaker
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