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?

• **Display**
  - 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!

• **Indexing and retrieval**
  - 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?

- **Display**
  - Eh (think late 2000s KDE Icons)
  - Nice viewing and tagging
  - Somewhat confusing

- **Indexing and retrieval**
  - Excellent tagging and searching, once done

- **Workflow**
  - Good workflow for tagging, which is its purpose

- **Editing**
  - 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?

• **Display**
  – Love/Hate

• **Indexing and retrieval**
  – None

• **Workflow**
  – Self Imposed – No guidance available

• **Editing**
  – 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:
  – 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 catalog 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?

• **Display**
  - Very nice, sleek design (Qt with styles)
  - Nice viewing and tagging
  - Generally intuitive and powerful

• **Indexing and retrieval**
  - Amazing tagging and searching

• **Workflow**
  - Panels are arranged to lead you along (if needed)

• **Editing**
  - 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 AMAZING 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?

Wes Hardaker

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

Following My Work:

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