

# Perfesser Kev's Cheapskate Guide to Photo Nerdiness

## ...Or Setting Up a Personal Digital Darkroom While Still Affording Your Five-Mountain Ski Pass

So now that you have more than a passing fancy with photojournalism, you will surely want to have the ability to work with your images at home. This may threaten to be expensive. It doesn't have to be.

This guide is meant for students who want or need to live on the cheap. You can get away with that as a student. But if you become a freelance professional, it will be expensive. You can count on it. As an intern or staff photographer this equipment will usually be covered for you, so again, maybe this can help keep your personal setup a little cheaper.

We'll talk about image browsers, image editors, multimedia software, tools for uploading your images to a paying client, and archiving software. Much of this software is absolutely free. And one package actually runs on four different platforms, from your desktop to a mobile phone.

Overall there is a single industry standard software package. Adobe's Creative Suite series (CS) pretty much does it all on the Mac and PC platforms. If you can afford it (the student discount is pretty good), then you should have no complaints. But newest versions of the software are also hardware hungry, and running the suite on an old computer can be frustrating.

Right here I am going to briefly preach about the price of software theft. Yes, pirating a copy of Photoshop or the Creative Suite feels like an impersonal sticking it to the man. But remember karma has no scale. You will soon be making your entire living from copyright law, and you will find it deeply frustrating when your images are used without your permission. Do you want to be reincarnated as an enslaved code monkey in Macao?

Here are your karma-clean answers.

*\* Please note that prices listed here may not be current, and that this is only a sample of what is available.*

## Apple... PC... Linux... Tablet... Phone...

In the 21st Century, comparing Apples and PCs is not comparing apples and oranges. In the distant dawn of the era (about 1992), there was a huge difference in graphics capability between the two. Those days are long gone. You'll find as many publications running PCs in their photo departments now as are running Macs. The differences in quality, speed or capability are gone. Stick with what you have or what you know.

I don't pretend to know all the best answers either. What follows are simple starting points. With some clever Web searching and testing you will find lots more possibility out there. Tablet and phone apps are ever0-increasing in their capability and that is probably where the future lies.

Macs have the advantage of being common in the photo side of the business. PCs have the advantage of being cheaper and having more software options available. But if you have a creaking old clunker you can't afford to replace and a little extra time, you might consider **Linux**.

I know, Linux sounds intimidating. It doesn't have to be. Have a look at the very simple to install, nicely complete packages put together by **Ubuntu** to see what it's about. You can download a bootable CD to try a Linux system without having to install it first.

<http://www.ubuntu.com/download>

This is an organization devoted to making Linux easy, and they have succeeded. Their packages can be downloaded and burned to a single CD, run from the CD and installed in a few minutes. They come with complete office suites, an excellent image editor, a fine mail client, a Firefox browser, some games, chat clients... The works pre-installed with thousands more free apps available. Ubuntu is the third-most common OS in the world.

Have a look at the *Ubuntu Studio* package for Intel 64-bit machines. It's designed to be a standalone multimedia workstation, includes much of the software mentioned below, and optimizes the system core to eliminate video and audio lag. For older systems look at the clean and efficient Xubuntu and Lubuntu packages which run sleeker and faster on low video memory. Complete, stable and valuable Linux distros also come from Linux Mint, Debian, Red Hat, SuSe and others. Compare and contrast their advantages.

You can find a Linux distribution to run on about any computer ever made, no matter how old, and even on your cell phone or old Palm Pilot. More software is available for the PC versions of Linux, so fire up that old PC. Though it will also run on any new or old Mac, you'll have the easiest time with an Intel processor on any machine.

Installation of further software is generally easy through built-in functions. You can set up automatic updates. You can even run some Mac and PC software after you get a little savvy.

The joy of Linux is its openness. Most software (but not all) is free. That means it was written by geeks who wanted to be able to do something on their system. Sometimes that means development and updating of very task-specific software can be slow. Compatibility with new peripherals or cameras can also be a bit slower than the mainstream world. Adobe will be able to handle the raw files from your new camera months earlier than Linux will.

And few geeks are professional photographers. So some of the specific tasks of photographers — like archiving, captioning and managing color profiles — are a bit slower. It is all easily possible though.

## Workflow

To file images on deadline as a photojournalist you need to do the following: *Select your images, craft your images, caption your images, upload your images to a client* and then *archive your images*. Some software is designed to do all this for you, some just does one piece. Be sure you have the ability to do all five, whether that's in an all-inclusive workflow app or in five separate ones.

## Image Browsers and Workflow Apps

### ***The Standards***

You need to scan through your digital images to edit the take. The software with which you do this is called an image browser. Some only look at images. Others will catalog them. Still others will open and convert raw files and do basic manipulations. Some do it all.

### **Photo Mechanic**

<http://www.camerabits.com/>

In photojournalism Photo Mechanic is an industry standard piece of software. It is fast. If you need to rip through many many JPEG images, such as wire and sports photographers on immediate deadline may, it would be a valuable tool. It has excellent batch captioning functions and a built-in FTP client. But virtually all other editing packages have nice built-in browsers now so consider your budget. Work with this standard at internships or at the CU Independent so you are familiar. It is Mac- and PC-only software. \$127.50 with discount.

## **Bridge**

<http://www.adobe.com/products/creativesuite/bridge/>

This browser for Adobe's Creative Suite is quite excellent. If you are planning on buying an version of CS or Photoshop alone this will serve you well enough that spending additional money on another is a waste. Bridge will browse files of any of the CS formats, run slide shows, open and convert raw files from nearly any camera, edit the metadata (captions and other file info) and start batch file processes. It can be slower than Photo Mechanic in some circumstances. But the two seconds longer it takes to display the contents of a folder or raw files is worth the price of not buying Photo Mechanic as well.

## ***The Options (Workflow Apps)***

There are many many browsers out there designed for Harry Homeowner and his little point-and-shoot camera. You will need one key to function in this field, and that is the ability to write and edit captions. The format for those captions is the IPTC standard. The info is written to the file's metadata. Many will not do this, like iPhoto and others. Make sure what you use has this capability.

## **Adobe's Lightroom**

<http://www.adobe.com/products/photoshoplightroom/>

Lightroom is one of a couple pieces of software that created a new category. The intent of Lightroom and Apple's Aperture (below) was to make a one-stop shop for digital photo needs. These packages are browsers, raw converters, editors and archiving catalogs. And they are less expensive than Photoshop alone, much much cheaper than a full-blown CS package. Lightroom may cost you \$100 after a student discount.

## **Aperture**

<http://www.apple.com/aperture/>

Aperture (for Mac only) is quite like Lightroom (or vice versa). It arrived at about the same time and has the same purpose. If you're interested in either, demo them both and see which is more intuitive for you. \$150 after student discount.

## **Bibble**

<http://bibblelabs.com/>

If you're thinking of Lightroom or Aperture, consider Bibble. This package (named for the cat owned by the developer of this software) is one of the oldest raw converters on the market and has evolved into a nice browser, editor and archiving option as well. Bibble claims to be faster and with more accurate color than Adobe or the others. They may be right. Bibble now boasts some of the most advance local adjustments available for RAW files in version 5. Advanced dodging, burning and retouching combines with asset management as complete as Lightroom or Aperture. Another advantage to Bibble is that

you can also buy a nicely functional version for Linux, though it will only run on Intel-based hardware. Grab your old PC, install Ubuntu and Bibble and you'll be screaming along with everything you need for the \$130 student price.

### **GraphicConverter**

<http://www.lemkesoft.com/>

This \$40 piece of software from Thorsten Lemke in Germany is a superb browser, an excellent image editor and can read and convert about any image file format ever concocted. It runs slide shows and could be used to manage an archive.

Its few disadvantages include being only available for Macs and not having many options available when opening a raw file. But it will open them all.

### ***The Free***

#### **XnViewMP**

<http://www.xnview.com/>

This is another fine free package. Created and maintained by a French designer, XnViewMP is available for just about anything, from Macs to PCs to virtually any Linux hardware configuration to tablets and phones. And best yet, it is free.

You get much more than what you paid for here. It opens raw files from most cameras, edits IPTC captions, sorts, runs slide shows and all other browser functions. It also has simple image editing controls. It is extremely customizable. *Look for the latest XnViewMP multi-platform version.*

#### **Darktable**

<http://www.darktable.org/>

Darktable is a new player on the scene that models the Lightroom/Aperture/Bibble one-app workflow. Built for Linux, this freebie is a browser/raw converter and asset manager. It's raw conversion capabilities are quite good. At this writing it does not yet edit IPTC caption info completely enough so you would need to pair it with XnView or gThumb on a Linux machine. But they promise that is coming very shortly. It's free. Linux only, but if you're brave you might be able to compile it onto OS X.

#### **gThumb**

<http://gthumb.sourceforge.net/>

gThumb is the file browser designed with the Unix/Linux Gnome desktop manager in mind. It can display and edit IPTC caption info. It's also well integrated with GIMP and other open source image software. Development continues.

## **iPhoto and Picasa**

<http://www.apple.com/ilife/iphoto/>

<http://picasa.google.com/>

Both of these will browse JPEG, RAW and other image formats. But both are designed for amateurs to organize their point-and-shoot images. They are both pretty much free. But they can be sorely limited for use in photojournalism. iPhoto, for example does not edit caption info in the IPTC metadata fields. And anything produced by Google comes at the price of your personal information being digested and sold by Google and others for a profit. Be cautious.

## **Camera brand browsers**

Chances are your camera came with a CD that has some software that can handle many of your needs. Nikon has NikonViewNX, capable of browsing, raw conversion, some editing and captioning. Canon gives you Digital Photo Professional. Most other brands have them or will provide a third-party option. They may be fast and slick, they may be slow and clunky, but again, they are free.

That was just a taste. Go to [versiontracker.com](http://versiontracker.com) and search for more. You'll find many possibilities.

## Raw Converters

A raw converter is a piece of software that will open your camera's raw image files and let you control every aspect of the image other than on what point you focused and what aperture and shutter speed you used (so far). Most of these would need to be paired with a browser for selection and captioning.

*As with many of the software packages mentioned here, some already have built-in raw converters: Adobe's Photoshop, Bridge and Lightroom, Apple's Aperture, Bibble, GraphicConverter, Darktable, XnView, Photo Mechanic and camera brand browsers.*

But there are a few standalone options that produce very high quality images from raw files. They might work best when paired with standalone browsers and editors.

Some of these converters may produce better image quality than Adobe's Camera Raw or the camera manufacturer's software. I suggest you download demo versions and compare to see what works best with your style and gear.

### Capture One

<http://www.phaseone.com>

Phase One makes digital camera backs for medium format cameras, and one of the most highly regarded raw converter packages. It has a workflow that some love and some don't, but the image quality is reported to be of the highest caliber.

There are several versions. Capture One LE is a lite version for \$99. When paired with a browser or editor that can apply caption info it would work well for you. The Pro version chimes in at \$499 and includes support for their \$20,000 medium-format digital backs and a few other features including IPTC caption support.

### Silverfast DC

<https://www.silverfast.com/>

Silverfast is one of the top names in scanner driving software. They now produce a raw converter with prices starting at \$49. Demos available.

### Raw Developer

<http://www.iridientdigital.com/products/rawdeveloper.html>

Raw Developer is a Mac-only standalone raw converter. It supports most current camera models and is quickly updated to add support for new cameras. It is \$125.

## **UFRaw**

<http://ufraw.sourceforge.net/>

This Linux freebie (a.k.a Unidentified Flying Raw) was designed by Udi Fuchs. Like many things, it is a GUI front end for dcraw, which I'll talk about below. It does a nice job and reads most camera formats thanks to the perpetual updating of dcraw. It can be used on its own or as a plugin to GIMP (see image editors section).

## **Raw Therapee**

<http://www.rawtherapee.com/>

This one is certainly cheap with a \$5 donation. It is also built on dcraw, so updates should be easy and support new cameras fast. Runs mainly on Linux, but also Mac and Windows.

## **RawStudio**

<http://rawstudio.org/>

Another Linux app, RawStudio will install on Linux for Intel or PowerPC chips, and can be installed on Mac OS X. It will convert most camera formats nicely. It does seem to have a more limited array of supported file types, but a long enough list to work for your needs. Installing on OS X, alas, is as complex as installing on Linux. Try it if you want to fly your geek flag.

## **iPhoto and Picasa**

<http://www.apple.com/ilife/iphoto/>

<http://picasa.google.com/>

Picasa is Google's answer to iPhoto on the Mac. Both are browsers and organizers, but can (thanks to dcraw) open raw files for most cameras. Its weakness is like iPhoto's — an inability to edit IPTC caption info. So it still needs to be paired with something that can write IPTC captions. Its value is that it would be a good raw converter for the price, but amateur as a file browser or final image editor. Bundled on most Macs or free online.

## **Camera-brand converters**

The software that came with your camera will most likely have a raw converter for your camera's files — such as NikonViewNX and Canon's Digital Photo Professional. The advantages are that this manufacturer software is largely free with the camera and accurate. I have found, though, that Nikon's software is not well written for Macs.

## Image Editors

Image editors may include all the above categories already. They may have browsers, they may open and edit raw files. But a few key ones don't do that stuff. Some of the above packages, like Lightroom, Aperture, Bibble and Darktable, have more limited built-in editors. These packages may round out your system, even for free.

### Adobe Photoshop

<http://www.adobe.com/products/photoshop/family/>

This is, of course, the de facto standard. It costs big bucks, but student discounts can help cut the price in half and allow you to have the license that is upgraded less expensively even after you become a pro. Has a browser in Bridge, has one of the fastest-updated and most usable raw converters — Adobe Camera Raw — built in.

### GIMP

<http://www.gimp.org/>

The GIMP — Gnu Image Manipulation Program — is an outstanding image editor that arose in the Linux world. It's the standard there and Linux will have the fastest updates. But there are easily installed versions for Windows and Mac OS X that run nicely. *It cannot yet edit IPTC caption info.* Excellent when paired with a browser that can edit IPTC info. It's a nice complement to Photo Mechanic, Aperture or Lightroom which have some limited editing functions.

### Graphic Converter

<http://www.lemkesoft.com/>

This \$40 piece of software from Thorsten Lemke in Germany is a superb browser, an excellent image editor and can read and convert about any image file format ever concocted. It runs slide shows and could be used to manage an archive.

Its few disadvantages include being only available for Macs and not having many options available when opening a raw file. But it will open them all.

## Digital Asset Managers

One of the great advantages of the digital world is the ability to more easily catalog your images for easy retrieval. Thoughtful keywords and good captions are a must. But what can you use to organize and search for those images? Below are software ideas. For more information on the details of archiving, download this guide:

<http://www.colorado.edu/Journalism/photojournalism/Archiving.pdf>

### Extensis Portfolio

<http://www.extensis.com/>

Portfolio is a very capable industry-standard archive manager. It will catalog any sort of file or media and allow key-wording of it. It will import your IPTC captions and keywords automatically. It's \$200, and academic discounts are available. Windows and Mac only.

### Phase One Media Pro

<http://www.phaseone.com/en/Software/Media-Pro/>

This DAM started as iView Media, was purchased by Microsoft to be Expression Media, then sold to digital camera back maker Phase One. It's powerful, extensible and a solid choice for running your archive. Free trials online. \$200. Windows and Mac only.

### Canto Cumulus

<http://www.canto.com/>

Cumulus is kind of hard to buy, but contacting them through the Web will facilitate a trial or purchase. Windows and Mac only.

### Others

Software already mentioned above can also accomplish this. Some packages make archiving an integral part of the system, thereby lowering overall cost to you. Look at **Graphic Converter**, **Aperture**, **Bibble**, **XnViewMP** and **Adobe's Lightroom** for this (among others).

Virtually any browser can function as an asset manager — even the free ones — but with some limits.

Lastly, **your own operating system** may make for a reasonable archive manager so long as you organize your files logically (see that guide at the beginning of this section). In Apple's OS X from 10.4 onward the Spotlight file search function will search through IPTC caption info and keywords and even show you thumbnails of them. It's not as fast at finding things as an asset manager above, but it's free. Windows Vista and later has equal capabilities.

## Audio Editors

In the age of multimedia we are also radio and TV reporters. This is a rich field of possibilities, and thus a very incomplete list.

### *The Free*

#### **Audacity**

<http://audacity.sourceforge.net/>

Audacity is an open-source sound editor originally developed for Linux systems. But like GIMP it is available for Mac and PC, also for free. It's a powerful multi-track audio editor with effective built-in filters for sound control. On the download page you will find links to both the most recent stable version and newer, more feature-laden beta versions. I have had no stability issues with the beta versions.

Audacity has few disadvantages, but here are two things to keep in mind. The native Audacity file format creates a complex array of files and folders for one set of sound tracks.

**Do not change any file or folder names after saving an Audacity .aup file.** It won't reopen. If you need a clean, simple file for an archive and have finished all editing and filtering, use the export menu to save universal .wav or .aiff files. To export to MP3 format, you will also need to install the LAME encoder, an open-source MP3 encoder. Find it at <http://www.spghetticode.org/lame/>

#### **Ardour**

<http://www.ardour.org/>

Ardour is an open source audio workstation comparable to Reaper (below). It relies on the Jack audio interface system which adds an extra layer of complexity to using it, but it's all free. For OS X and Linux. This differs from Audacity in its greater ability to filter specific sections of audio, and fade those effects (like noise reduction) in and out with an envelope. Ultimately you'll find it more capable than Audacity, if less intuitive at first.

### *The Cheap*

#### **Reaper**

<http://www.reaper.fm/>

Reaper is an incredibly powerful multitrack editor, equivalent to Sony's Acid and Soundforge, and even venerable ProTools (below). It will display video files for building multimedia soundtracks, and will render video, though it can only edit the video soundtrack. You'll find the user interface more flexible than Audacity, and the software can envelope filters and effects (fade them in and out over the timeline where Audacity can't). The license for a single, non-commercial user is a mere \$40. When you make more than \$20,000 from your multimedia work, then pay them the full \$150. Mac and Windows.

## **Hindenburg Journalist**

<http://nsaka.com/products/hindenburg-journalist>

This audio editing program is designed for audio (and multimedia) documentary producers, and for sake of a faster learning curve, skips many of the features designed for multitrack music mixers. It's \$66, but there's a more limited free version too. And check out their iPhone/iPad field recording and editing app. It's built to record, quickly edit and upload on-scene radio interviews, but it could be a handy podcast tool too.

## ***The Others***

### **Adobe Soundbooth**

<http://www.adobe.com/products/soundbooth/>

Soundbooth is the simpler and less expensive audio editor found alone or in the Creative Suite Production Premium. It is available for both Mac and PC, and thanks to recent upgrades is now versatile enough for journalism multimedia use. It also has the great audio-cleanup advantage of displaying audio files as editable spectral displays as well as the traditional waveform. This allows you to edit specific sound frequencies or notes without as much affect on the other sounds happening at that precise moment. \$79 for students.

### **Pro Tools**

<http://www.digidesign.com/>

Pro Tools is a venerable and powerful audio editor by Avid, which makes high-end video editing systems. It's pricey — about \$600 for a full version — but it is very powerful. Pro Tools (like most Avid products) used to be tied to specific hardware. The new version has changed that, but also raised the price.

### **Adobe Audition**

<http://www.adobe.com/products/audition/>

Adobe has two audio editors in its stable. Audition is their rerelease of Cool Edit, an old, PC-only pro sound editor used by NPR. It is the more capable and versatile of the two. Audition is designed for professional audio engineers. \$350 for the full version. \$149 for students.

### **Logic Studio**

<http://www.apple.com/logicstudio/>

Apple's new addition to the audio editing game is very powerful, and fully uses that Mac-like (love it or hate it) interface. It's aimed mostly at musicians, but also promised high-end mixing and production tools. \$499 for the full license. Logic Express, the audio editor

standalone, is \$199. As per all Apple software, the student pricing saves about ten percent, but will not allow upgrades. Mac only.

### **Sony Soundforge**

<http://www.sonycreativesoftware.com/soundforgesoftware>

Sony is the master of PC-world audio and video. If you're a Windows user their software is powerful and capable and worth a look. The pro version is \$375, but the Audio Studio version is only \$65 and may easily fill your needs.

### **WavePad**

<http://www.nch.com.au/wavepad/>

WavePad is an interesting little editor for Windows, Mac and Linux with a limited free version. The free versions should handle most multimedia needs, but upgrades are available for a mere \$38 at this writing. The free version will not export from another format to MP3. It will edit and save an MP3 file if it opens that way.

### **Garage Band**

<http://www.apple.com/ilife/garageband/>

Mac-only Garage Band is principally designed for musicians (and not) who want to create songs with digital instruments. Editing recorded sound files has some complications. Like iPhoto, this Apple software insists the sound files be imported into other Apple software to be found and imported. You will need to import your recorded sound into iTunes for it to be found easily by the software. Filtering and mixing options are limited as Apple is trying to make things simple and easy. Though I do not recommend using Garage Band for audio editing, you may have it pre-installed on your Mac already. Experiment. You may develop a good working relationship with it.

## Multimedia Production

Online multimedia presentations are now a very common method of delivering photojournalism to readers. Most publications have far more online readers than they do for their print versions, and they want to serve up something newer, different or more complete.

Since Web space is not as limited as print space, many stories that once would have been illustrated with one image are now presented online as full-blown photo essays. These can be presented as slide shows, combos with video and stills and sound, and even with interactive graphics. Create them on video editors for the most creative potential.

### The Standards

#### Final Cut Studio

<http://www.apple.com/finalcutstudio/finalcutpro/>

This Mac-only software is one of the major standards for video editing. It is probably the most versatile method for building even a slide show of stills for the Web or for broadcast. You can sew in video and audio as well. Powerful editing tools. But they cost. The Pro version is delivered through Final Cut Studio and includes an excellent sound editor and text manipulation tool. It lists for \$1,300, but look at the Apple Store for deep educational discounts (currently \$899, though Apple does not allow upgrades for academic versions — other companies are friendlier to students).

A lite version is available in **Final Cut Express** at <http://www.apple.com/finalcutexpress/> for only \$200 list. Student discounts also available. Be aware that FCE has limited titling capabilities and only simple audio editing capabilities. But those can be made up for by using other tools.

#### Adobe Premiere

<http://www.adobe.com/products/premiere/>

Less expensive than Final Cut Studio, this professional editing system is as powerful even if less common in the pro production world. Though it lacks integrated sound “sweetening” tools and text tools, when purchased as part of the Adobe Creative Suite Production Premium, those tools come along with Photoshop, Flash and audio software. Integrates deeply with Adobe’s industry-standard After Effects compositing program. \$350 with student discount that — unlike Apple — allows full-license upgrade pricing.

#### Sony Vegas Pro

<http://www.sonycreativesoftware.com/vegaspro>

A top choice among VJs and other video pros, Vegas is an outstanding non-linear video editing suite for Windows. It ain’t cheap at \$600, but you may find a student discount.

## **Soundslides**

<http://soundslides.com/>

This Adobe Flash™-based little package was developed for newspaper Web editors to quickly and easily get an audio slide show onto the Web. It does an excellent job of assembling still pictures onto a timeline and laying in a single, edited soundtrack behind them.

Its advantages are that you can quickly adjust transitions from one image to the next so they align with moments or sounds on the audio file. Its disadvantages are that it can be clunky to use and is significantly less versatile than a video editor. \$70 for the Plus version. Deep student discounts available by contacting the manufacturer.

## ***The Free***

### **Lightworks beta**

<http://www.lightworksbeta.com/>

Lightworks is one of the oldest names in digital video editing. It's been around as long as Avid systems and is designed for high-end studio work. Great films such as Pulp Fiction and The King's Speech were edited on Lightworks systems.

And now it's free. The company they recently purchased it has released it as open source. At this writing it is available only for Windows systems, but Mac and Linux releases are promised soon. Before you pay for Final Cut, Premiere or the others, give this a try. It should advance quickly in capability as the release is polished and encoder licenses are adjusted.

### **Cinelerra**

<http://cinelerra.org/>

Cinelerra is a very powerful Linux video editor as capable as the high-end paid packages like Final Cut and Premiere. It edits and exports HD video formats and has a great array of filters and effects. It has a longer learning curve and runs on Linux only. But it's free.

### **Blender**

<http://www.blender.org/>

Blender also started life as commercial software, but is now free and open source. It is a 3D image generator and video compositor that mixes features of Adobe's After Effects with Maya 3D software. It has a competent built-in video editor that could be used to build multimedia work, though you might try a more traditional non-linear video editor for lengthy video production. This could also help you build in effects, interesting titles and other artful video work.

## **OpenShot**

<http://www.openshotvideo.com/>

This Linux-only Gnome video editor is simple, as iMovie and Windows Movie Maker are simple. But often that can be enough to do the work you have.

## **Kino**

<http://www.kinodv.org/article/static/2>

Kino is a Linux video editing system for the KDE Linux desktop. It is much like Final Cut Express in that it is capable and well designed. But it can only output DV video resolutions. This is generally fine for the Web or standard-def TV. But HD is becoming increasingly common on the Web. Linux only.

## **Cinefx**

<http://www.cinefx.org/cinefx/>

Cinefx aims to be a cross-platform and open-source answer to the cost of Final Cut, Premiere or Avid. It's a very capable video editor you can run on virtually any machine. This is a fairly new project, so some functionality is not there quite yet. But it may fully do what you need. Windows, Mac, Linux...

## **Avidemux**

<http://fixounet.free.fr/avidemux/screenshots.html>

Avidemux is a free, open-source video editor capable of slides shows and slide/video combinations. Available for Windows, Mac and Linux. This is not an intuitive package, but it'll make you a video rendering expert.

## **The Others**

### **Avid Media Composer**

<http://www.avid.com/US/products/media-composer-software>

Avid was one of the first in the game for professional digital video editing. Their proprietary equipment is a cinema and broadcast standard. Media Composer is a standalone application for your own computer giving their experience and the power of the others above to your Mac or PC. This one is \$2,500.

### **iMovie**

<http://www.apple.com/ilife/imovie/>

Apple's video editor is really designed for home movies, so it's not as powerful as others. But photojournalism is not often delivered with Hollywood glitz, so the tools here can be very effective. It will also export to Quicktime format for easy Web or portfolio viewing. Part of Apple's iLife suite. \$80 List, but it may have come bundled with your Mac.

## **Adobe Flash**

<http://www.adobe.com/products/flash/>

Soundslides above and a couple things below are simply an interface for this Web graphics software. If you learn the actual system, you'll find you have many many more options in presentation. This can be as powerful as any video editor and produces pieces that can be seen on almost all computers. Comes as a standalone application or in variations on Adobe's Creative Suite. \$600 list. About \$200 with student discount.

## **SlideShowPro**

<http://slideshowpro.net/>

SlideShowPro is an Actionscript component for Adobe Flash. It also works as a gallery extension to Adobe's Lightroom image editing and archiving application. If you have Creative Suite, Flash or Lightroom, this plugs in and makes excellent, versatile multimedia productions and features slick updating tools to load new material to the site you are managing. \$30 for Flash, \$25 for Lightroom.

## **Quicktime**

<http://www.apple.com/quicktime/>

Apple's Internet media standard can edit video and present slide shows with and without Audio. High-end applications like Final Cut export to this format for the Web anyway. Quicktime Pro is \$30 for all the editing functions. Many Mac and Windows packages will create files in this fairly universal format.

## The Cloud

It appears the future is in the *the cloud* despite the potential there for data mining, hacking and other security problems. Be cautious about with what companies or online entities you share your work. But you can now use pretty powerful image editing tools online. Sharing is also something to consider very carefully. It can have marketing advantages and be very worthwhile. But it can also compromise the saleability of an image. Understand the terms of use for each site, and your choice of sharing settings. There are a thousand more tools out there. Explore, but as with anything online, understand the source and the risks.

### *Image, Audio, Vector Graphics*

#### **Aviary**

<http://advanced.aviary.com/tools/>

Aviary is an online sweet of media tools, with an image editor, music and audio editing, vector graphics and more.

### *Image Editing*

#### **Pixlr**

<http://pixlr.com/>

Pixlr is both an online image editing and sharing system as well as an app for iOS and Android. It also mates well with Facebook. The online version has a quite a powerful set of tools for use in abject poverty or in case of emergency. It has no caption editing capability, however. It would still need to pair with a browser that can apply IPTC caption info.

### *Video Editing*

#### **Stroome**

<http://www.stroome.com>

Stroome is an online video editing and collaboration system built by former Newsweek correspondent Nonny de la Peña. It edits videos, not photos, but is designed with independent journalists and video bloggers in mind.

### *FTP*

#### **Net2FTP**

<http://www.net2ftp.com/>

With so many free options I would be hesitant to pass sensitive files through the servers of someone else. But in a crunch this could be helpful.

## Command-line Nerdiness

These are tools that are run from the command line — meaning you type the commands in a terminal a la the 1980s or with great geek aplomb. Why would you want to? I use them to edit, resize, caption and upload images residing on my office computer remotely when I am on the road with a slow connection. It takes no connection speed, no special software and no graphics for me to type these commands into my phone or into an Internet cafe computer in Timbuktu and have images appear in an editor's FTP queue. They are certainly not critical, but they have saved my butt.

### **ImageMagick**

<http://www.imagemagick.org/>

Here's another Linux-based thing that can be used on Mac and Windows machines as well. Many programs actually install and use these tools through a graphical interface. On some systems you can see what you are doing to the images. On other systems not. I use this mostly to resize and caption images already in my files, or in batches.

### **sips**

<http://developer.apple.com/documentation/Darwin/Reference/ManPages/man1/sips.1.html>

If you have a Mac running OS X, there is a nice set of command-line image editing tools built into the Unix core of the system. From an OS X terminal I use this to batch resize images into thumbnails for publication editors. These tools are used by programs like iPhoto, Preview and other image software for editing. The GUI simply uses them in the background. You can use them directly while sitting in front of your computer or remotely by phone or host machine of any sort. I won't explain the details here, but if you want to play with them let me know. I have a short guide.

### **dcraw**

<http://cybercom.net/~dcoffin/dcraw/>

As mentioned above the command line tools of choice for opening raw images is dcraw. Like ImageMagick or sips, you can open, change white balance and tonal range, sharpen and do all that other raw converters do. If you are feeling geeky, download and install the latest version for whatever platform you use, and experiment.

### **FTP/SFTP**

<http://unixhelp.ed.ac.uk/CGI/man-cgi?ftp>

<http://unixhelp.ed.ac.uk/CGI/man-cgi?sftp+1>

Many image browsers have built-in FTP clients with which you can send your images. If they don't, you can find many inexpensive or free FTP clients for any system. But if you're poor, or if you want to control your home or office computer remotely, have a look at the command-line FTP tools built into almost every system. You don't really need to buy software like Fetch to do the job. As above, if you want to play, I can send you a guide.