

printout

Keystone MacCentral Macintosh Users Group ❖ <http://www.keystonemac.com>



**We're still on summer break.
See you in September!**

Meet us at

Giant Food

Corner of Trindle Road & 32nd St (Route 15)
3301 East Trindle Road, Camp Hill, PA 17011

Tuesday, September 18, 2012 6:30 p.m.

Attendance is free and open to all interested persons.

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Keystone MacCentral is a not-for-profit group of Macintosh enthusiasts who generally meet the third Tuesday of every month to exchange information, participate in question-and-answer sessions, view product demonstrations, and obtain resource materials that will help them get the most out of their computer systems. Meetings are free and open to the public. The *Keystone MacCentral Printout* is the official newsletter of Keystone MacCentral and an independent publication not affiliated or otherwise associated with or sponsored or sanctioned by any for-profit organization, including Apple Computer, Inc. Copyright © 2012, Keystone MacCentral, 305 Somerset Drive, Shiresmanstown, PA 17011.

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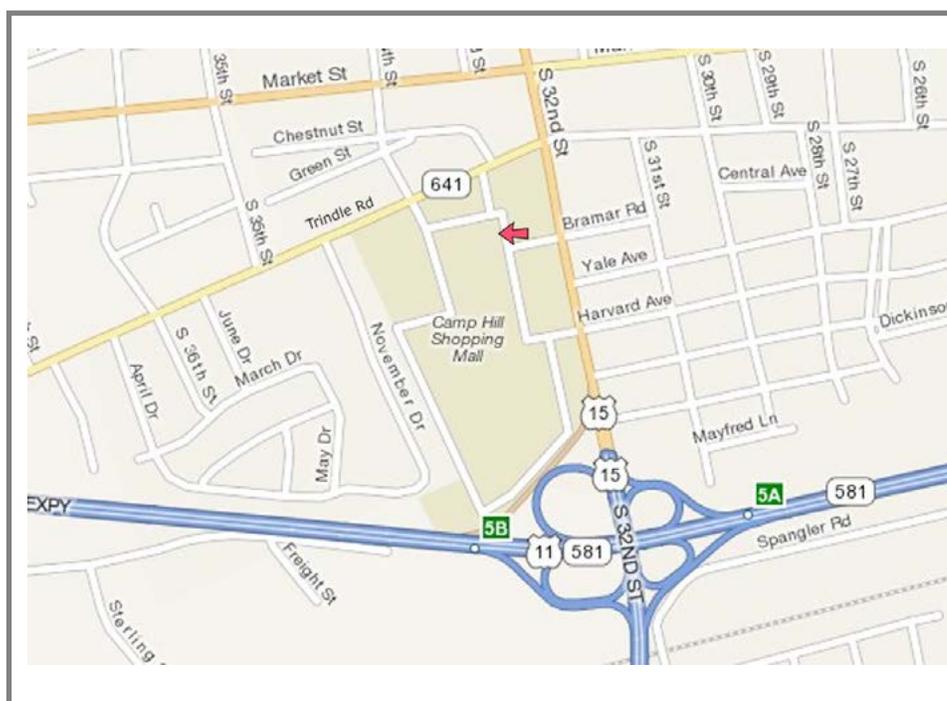
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Keystone MacCentral Essentials

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Keystone MacCentral

Minutes

May 15, 2012

Business Meeting

President Linda Cober mentioned that she would like us to post the links noted by Bob Levitus at his recent Hershey Apple Core presentation on our web site. Our webmaster Tom Bank II said he would take care of that, if we get permission.

KeyMac's MacBook will be upgraded to Lion over the summer so we can migrate from our iDisk account to iCloud. Our domain name has been renewed for another two years.

Our auction in May was very successful, thanks to all of the donating vendors and our bidders. Treasurer Tim Sullivan reported the expenses we incurred related to that meeting. Several items left over from the auction were subsequently sold by Linda Cober for an additional profit from the auction.

The move to Lion by several of our board members created a need for updated software to continue their duties. The board approved those expenditures at its May board meeting.

The biennial election of board officers was held at the May meeting. All of the currently serving board members were re-elected to serve two year terms.

Q&A & Comments

Someone looking to buy a lightly used 27 inch iMac with Snow Leopard was referred to Small Dog as a possible place to find one. A problem syncing calendars between an iPhone 4S and a Mac with Snow Leopard was reported. A suggestion was made to try syncing using iTunes on the Mac.

RTF files moved from an iBook running Mac OS 9 to a new Mac showed up as UNIX executable files on the new Mac. The flash drive used for the transfer might first have to be reformatted for Mac files before trying the transfer again.

Members have mentioned a few times problems they had converting old AppleWorks files to Pages. The current issue of Mac | Life magazine had an article on converting

those files. The new version of Quicken that runs on Lion was said to be working well.

Program Notes

Ernie Levasseur began the second installment of his Adobe Photoshop Elements program by passing out handouts to attendees. Those handouts provided a lot of valuable information about using the selection tools, which Ernie's presentation further clarified.

Ernie began with a quick review of his prior demonstration of layers which are the basis for any modifications done to an image. He also mentioned that saving modified files as PSD files before "saving as" JPEG or another format would allow you to reopen the PSD file for further editing.

Photoshop Elements has a total of nine selection tools. Ernie explained that trying out the various tools for making different types of selections can lead to finding the best one for the particular job. One important principle is finding the best way to detect the edges of a selection. This will help you determine if the edge should be hard or soft. The Feathering menu is useful here.

The rectangular and elliptical marquee tools can be useful in placing a selection inside a rectangular or oval frame. These tools can be constrained to squares or circles respectively by holding down the Shift key when choosing them. If you have chosen a properly sized marquee, you can move it around by holding down the spacebar to get it exactly where you want it.

Another way of making a selection is with the Quick Selection tool. Using this tool, your cursor acts like a brush as you paint a selection onto your image. Edges are automatically selected. The Selection Brush tool works in the same way without the auto selection of edges.

The lasso tools include a basic lasso as well as a Magnetic Lasso. This tool sticks to the edges of an object if there is enough contrast with the background. A Polygonal Lasso is used to create a series of straight lines to make a selection.

The Magic Wand tool might be your choice of tools to make a selection based on color. If you want to choose all areas of a particular color in an image for changes, you can deselect the Contiguous option in the options bar. Tolerance can also be set for this tool.

Holding down the Shift key lets you add to a selection and holding down the Option key lets you subtract from a selection. A combination of the selection tools can be used to make one selection.

Ernie made a very important point as he demonstrated using the various tools. If you are working on a complicated selection, you can save selections as you work so you can revert back to them if you need to. A saved selection can be reloaded when you return to work on an image. ☒

by Steve McCabe

Wrangling PDFs in 2012's Web Browsers

Portable Document Format (PDF) – first launched by Adobe in 1993 and now an open ISO standard – has long been the de facto standard for documents shared via the Web. Thanks to the free [Adobe Reader](#) application and Apple's inclusion of Preview in OS X, anyone who happens across a PDF on a Web site can open it. But what if you just want to read the PDF quickly like any other Web page and move on, without having to download it, open it in Preview or Adobe Reader, and deal with the file in your Downloads folder later?

The Mac enjoys Web-based PDF support out of the box; Safari has natively rendered PDFs for many years. Chrome, Google's increasingly popular Web browser, also now includes native support for PDF. But Firefox, the last of the big three Mac browsers, has long struggled to display PDFs, forcing users to download PDF files and read them in Preview or Adobe Reader. At various times, an assortment of plug-ins have enabled Firefox to display PDFs internally, but many of those have come and gone, leaving Firefox users confused as to the options.

This status quo has been shaken up with the arrival of Adobe Reader 10.1.3, Adobe's free application-and-browser-plug-in bundle. However, installing the Adobe Reader PDF plug-in can affect browser behavior in various ways. It's time, then, for an overview of what you can do with PDFs in your browser of choice, what you can't do, and what you might want to figure out how to do.

Safari – Apple's Safari has long sported the capability to display PDF files as though they were just another Web page – click a link ending in .pdf and the linked file appears within the existing browser window, with no additional configuration required. If you want to save the PDF to your hard disk, you have a few options:

- If you know that a link leads to a PDF you want to download, Control-click the link and choose one of the Save As items from the contextual menu.
- For a faster approach, Option-click the link leading to the PDF to download the file instantly to your Downloads folder.
- If you have already loaded the PDF into a Safari window, you can Control-click anywhere on the PDF and choose Open in Preview, choose File > Save As, or click the Download button that appears at the bottom of the screen. (Those

controls tend to disappear; if you don't see them, move the mouse pointer to the bottom center of the screen.)



There is another, more permanent, way of forcing Safari to download PDFs; if you would like downloading to be Safari's default method, you'll need to resort to the command line. Quit Safari, and then, in Terminal, copy and paste this line and press Return:

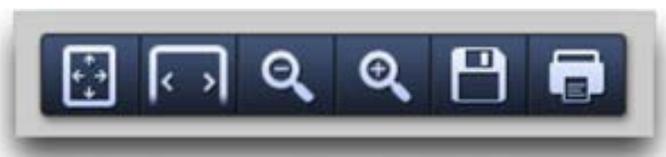
```
defaults write com.apple.Safari  
WebKitOmitPDFSupport -bool YES
```

The drawback to this approach is that it disables inline rendering totally. To get it back, use this command in Terminal:

```
defaults write com.apple.Safari  
WebKitOmitPDFSupport -bool NO
```

Once you're viewing a PDF in Safari, you have only a few options available by Control-clicking anywhere in Safari's window. You can select and copy text, and you can zoom in and out. You can also change the page display to show one or two pages, either at a time or continuously scrolling. Searching works, and internal links and Web links are hot, but Safari cannot show any bookmarks. And, of course, you can print the PDF using File > Print.

Chrome – Chrome's PDF handling closely resembles Safari's; the inline PDF renderer is enabled by default, and you can save PDF links to disk either from a contextual menu or by Option-clicking the link. Once a PDF is loaded in a Chrome window, you can save it either from another contextual menu or by clicking the floppy disk icon that appears in the lower right corner of the window whenever you move the pointer in that general location.



Unlike Safari, though, the option to disable inline rendering entirely is easily accessible – type `chrome://plugins/` into Chrome’s address bar and hit Return, and a list of plug-ins is displayed. Then, simply click the Disable link under “Chrome PDF Viewer” and Chrome will treat .pdf links as files to be downloaded, rather than pages to be displayed. In a further improvement over Safari, no restart is required in order to toggle between the two.

As with Safari, there aren’t many things you can do with a PDF in Chrome. You can zoom in and out, select and copy text, print the PDF, search for text, and, unusually, rotate the view. Internal and external links work, but again, no bookmarks are shown.

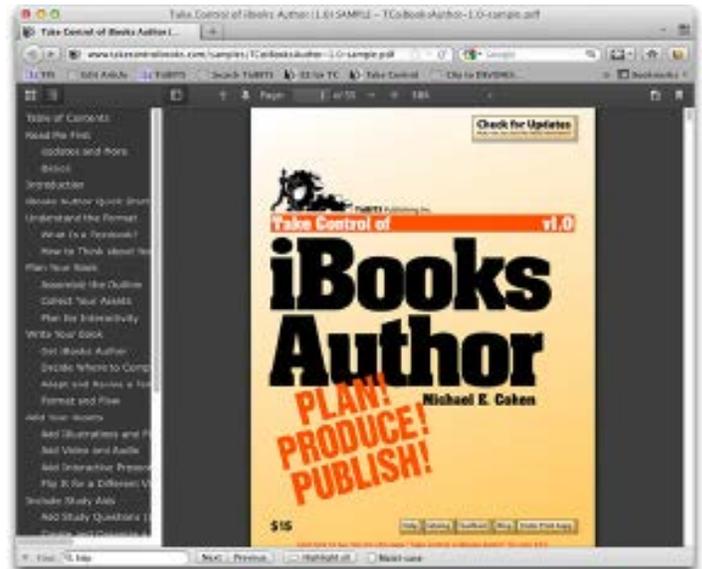
Firefox – Firefox does things differently. The good people at the Mozilla Foundation have clearly decided that native PDF support isn’t necessary – clicking a link to a PDF file displays a dialog asking “What should Firefox do with this file?” Firefox can either open the file in Preview (or whatever your default PDF program may be), or it can save the file to disk. But what it can’t do is display the file in a browser window.

In the past, various plug-ins have enabled PDF browsing in Firefox, but have either suffered from inelegant interfaces or have failed to maintain compatibility with Firefox updates.

The compatibility of Schubert | it’s [PDF Browser Plugin](#) has waxed and waned over the years; it currently seems to work in Firefox 12, but even when it works, it’s quite minimal, lacking even text selection, a surprising omission in a plug-in that costs \$69 for commercial use; it’s free for personal and educational use. (Interestingly, Schubert | it’s PDF Browser Plugin can also take over PDF rendering for both Safari and Chrome, though it’s unclear why anyone would want that, since it’s slower and generally less capable.)

Nitro PDF Software’s [PDF Download](#) talks a good game, offering options to save, open inline or open as HTML any .pdf link, but fails to deliver – the HTML option produces a page that bears only a passing similarity to the original document, while the “inline” option actually converts PDFs to images; the results are both fuzzy and slow to appear. Clearly, something more robust is required.

Last up is [PDF Viewer](#), a Firefox add-on that, according to Mozilla’s support site, “is a new revolutionary extension using Web standard technologies that allows you to display within Firefox almost all PDF files found on the Web without a plug-in.” What is revolutionary here is not a browser’s capability to display PDF files, but the fact that PDF Viewer relies on HTML5 and JavaScript and isn’t a plug-in (not that users will notice the difference). PDF Viewer appears to do a decent job of displaying PDF files, and offers many of the same features as Safari and Chrome, including text selection, zooming, and searching, along with a button to download the PDF to disk. Most notably, though, it offers an optional sidebar that can show either page thumbnails or PDF bookmarks.



What it lacks is support for printing (you’ll want to download and print from Preview instead). But its main flaw is that it is slow, both to load documents initially and sometimes to display pages even after loading. Short documents, such as a one-page flyer from my Web site, load without grief; longer files such as Apple’s product documentation come in rather slowly, but not unacceptably so. The Mozilla support site does, to be fair, acknowledge that this plug-in is still in beta.

Adobe Reader: One Size Fits All? – In theory, Adobe Reader 10.1.3’s browser plug-in should provide a unified and consistent style of interaction with PDFs across all three popular browsers. Unfortunately, although the Adobe Reader plug-in works as advertised in Safari, it doesn’t work at all in Chrome, and may or may not work in Firefox.

Installing the Adobe Reader plug-in overrides Apple’s built-in PDF rendering in Safari, and also disables the capability to switch off inline PDF display in the Terminal. Fortunately, then, if you prefer Safari’s built-in PDF capabilities, removing the plug-in is a simple matter of deleting these two files (your admin password will be required):

```
/Library/Internet Plug-Ins/AdobePDFViewer.plugin
```

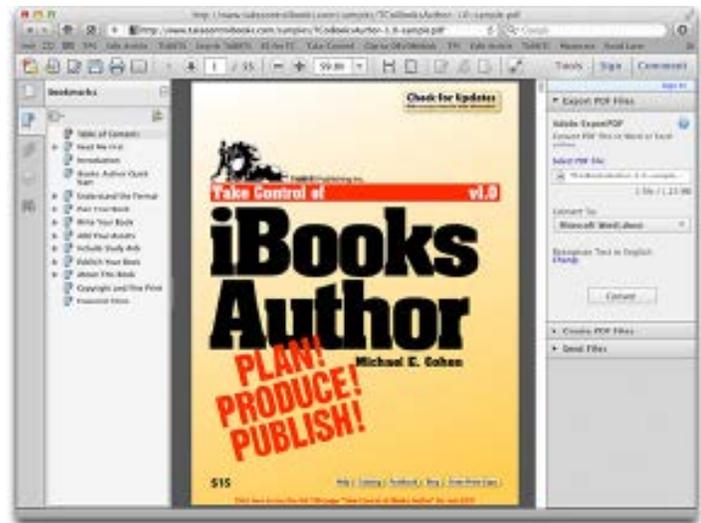
```
/Library/Internet Plug-Ins/  
AdobePDFViewerNPAPI.plugin
```

Chrome’s list of plug-ins shows that the Adobe Reader plug-in is available, but if you disable Chrome’s own PDF renderer, enable Adobe’s plug-in, and then attempt to view a PDF, your reward will be a black screen with a small message saying “Can’t load plug-in.” In short, the Adobe Reader plug-in simply does nothing for Chrome users.

And so we return to Firefox, which, in its usual quirky and unpredictable style, works well with the Adobe Reader plug-in, except when it doesn’t. In earlier versions of Firefox, including version 3, the Adobe Reader plug-in worked

well. The combination of Firefox 12 and Adobe Reader 10.1.3, however, has a major flaw that causes Firefox to display nothing but a blank screen when you click a .pdf link. This bug, according to a [blog post](#) on Mozilla's Web site, affects most users; as if that weren't enough, it can also cause crashes in Macs running in 32-bit mode. In my testing, on a recent MacBook Pro running OS X 10.7.3 Lion, I spent a lot of time staring at blank pages, without managing a single successful PDF display or experiencing a single crash. Adam Engst, however, clearly has powers I do not possess; Firefox, he tells me, quite elegantly displayed inline PDFs on his 2008 Mac Pro running OS X 10.6.8 Snow Leopard.

This odd level of compatibility is a shame, since while the Adobe Reader plug-in feels slower (particularly on load) than the built-in options in Safari and Chrome, it offers more capabilities. A click on the swirly-A logo in Adobe Reader's floating toolbar reveals roughly the same controls as are in the full Adobe Reader application, with a sidebar showing page thumbnails, bookmarks, attachments, and search results. It's easy to jump to specific pages, and you're provided with precise zoom options, along with buttons to show the entire page and to zoom to the full width of the page (Chrome offers similar shortcut buttons). You can also rotate the document, view its document properties, and adjust page display options. A right-hand sidebar provides access to tools for creating and converting PDFs, but those require a paid account with Adobe, and I was unable to get the signing and commenting tools also available in that sidebar to work.



In the end, the Adobe Reader plug-in is a somewhat odd beast – more capable than the built-in PDF renderers and Firefox's PDF Viewer, but slower and a bit clumsy due to the way it tries to shoehorn all of Adobe Reader into a Web browser window. If you want those features, you may be best off simply downloading the PDF and working with it in the full Adobe Reader application.

Recommendations – Since PDF is intended to be a unifying technology, one which provides consistent layout behavior across platforms, it's ironic that there is so little consistency between browsers in their handling of online

PDF files. Fortunately, this translates to choices and options for the user. But what choices to make?

For Chrome's growing number of users, there is no choice – you'll be using its built-in renderer, though that's not a terrible thing. Firefox users, on a good day, have a little more choice – PDF Viewer, despite occasional performance issues, is a functional and useful PDF display tool. What PDF Viewer lacks in features, it makes up for by actually working, which remains the Achilles heel of the Adobe-Mozilla partnership, and so at the moment PDF Viewer has to be the PDF renderer of choice for Firefox users. Should Adobe correct this problem, a rethink might be in order, but at time of writing I cannot recommend Adobe Reader under Firefox.

Which brings us neatly back to Safari, definitely the most PDF-friendly browser of the three. Built-in support is strong, but the capability to select (albeit in an inelegant manner) between Apple's and Adobe's renderers is a bonus. For those who wish only to view the occasional PDF on the Web and move on, Safari's built-in PDF renderer is fine, but for those who use PDF more frequently, Adobe Reader comes out ahead on features. This is hardly surprising given the extent to which Adobe Reader (and Acrobat Pro) have always offered far more comprehensive support than OS X's Preview for the format that Adobe itself created.

Now, if Adobe could just get the plug-in working in Chrome and Firefox, it might be possible to make a unified recommendation.

(Thanks to Roger Cohen for additional information for this article.) ☺



Rumors and Reality

Around Apple

- Off again, on again. EPEAT (Electronic Product Environmental Assessment Tool) is a program that ranks computers and displays based on environmental attributes in accordance with IEEE 1680.1-2009. Getting EPEAT approval is sort of like getting the Good Housekeep Seal of Approval: A clear and consistent set of environmental performance criteria for the design of personal computer products including notebook computers, desktop computers, and computer displays is provided, thereby providing an opportunity to secure market recognition for efforts to reduce the environmental impact of electronic products. This standard is intended to provide a tool for government, institutional, and corporate purchasers. Product manufacturers may also use this tool to earn recognition in the consumer market, recognizing that certain criteria may not be applicable to all types of purchasers.

Apple helped create the EPEAT standards in 2006, and it is part of a team that is currently rewriting those standards to bring them up to date with current manufacturing processes.

EPEAT is important. Many large companies, the government, and universities require that their purchases be EPEAT certified.

In June, Apple requested that the organization pull its 39 certified desktop computers, monitors and laptops, which included past versions of the MacBook Pro and MacBook Air. The likely reason is the new Retina MacBook Pro whose glass display is fused with the top of the case and batteries are glued to the bottom makes it extremely difficult to repair or recycle.

Within hours San Francisco indicated that it would stop buying Apple products.

Oops! Senior Vice President of Hardware Bob Mansfield issued a statement on Apple's environmental page regarding the contention. He said the company made a mistake and would concede by returning to EPEAT. Soon thereafter the EPEAT's registry had 40 Apple products listed, including the Retina MacBook Pro. However, its IEEE 1680-2009 Criteria Category Summary is a bit perplexing, especially considering the reasons reported as to why Apple pulled its products in the first place.

- iPhone's smaller dock connector: Apparently Apple is dumping 11 pins from its new dock connector. Legacy technology Firewire accounts for 7 of those pins. There will some pain associated with this upgrade (downgrade?) I can think of three things that I have that will become sort of

obsolete: my clock-radio, the iPod dock for charging, and my L5 remote control.

Smaller means more flexibility in design and cheaper to produce.

About those old 30 pin devices? Apple promises an adapter. And I'll just bet there will be third-parties developing their own version adapters.

- Apple Inc will buy fingerprint sensor technology developer AuthenTec Inc for about \$356 million, striking a deal that could put its iPhone at the center of the emerging mobile payments market.

Its fingerprint technology, used in mobile phones in Japan for authentication of mobile payments, could help Apple bring those services to markets such as the United States, where mobile-wallet services have been slow to catch on.

Down the road: how about downloading 70 DVDs worth of data in one second! Sounds good to me.

Light has a number of properties, such as wavelength. It also has a property known as "orbital angular momentum." It specifies how much light twists. Who knew that light twisted? Think of a bit of light spiraling along a path. Kind of like the walk of the drunken sailor, there are many ways it can move: clockwise or counterclockwise, in tight spirals or loose spirals.

As it turns out, it is possible to send multiple streams of light (that can be interpreted as data) out simultaneously and pull them apart later. So far people from the University of Southern California, NASA's Jet Propulsion Laboratory, and Tel Aviv University have twisted together eight light data streams into one single data stream carrying a whopping 320 gigabytes per second. My DVDs hold about 4.7 gigabytes. Yep, according to my handy dandy calculator that's a smidgen over 68 DVDs worth of info per second. I am suitably impressed.

Remember Minority Report? Steven Spielberg picked the brains of a number of futurists to determine likely directions of technology in the near future. The police computer used gesture recognition as Tom Cruise demonstrated.

Currently we have some of that with the games in Kinect. The next generation of gesture-recognition hardware known as the [Leap](#) is due this winter. It is small, inexpensive, and much more accurate than Kinect controllers. When Leap launches, it will already be backwards compatible with Windows 7 and 8 as well as Mac OS X, allowing basic navigation through the operating system and web surfing.

I suspect that it will first be used for games and controlling the TV, quickly adapted for computers.

Mountain Lion is here. At least for some. According to Apple's Web site, in order to run Mountain Lion your Mac must be one of the following models:

- iMac (mid-2007 or newer)
- MacBook (late 2008 Aluminum, or early 2009 or newer)
- MacBook Pro (mid/late 2007 or newer)
- MacBook Air (late 2008 or newer)
- Mac Mini (early 2009 or newer)
- Mac Pro (early 2008 or newer)

The stumbling block for other Macs is the connection to 32-bit graphics drivers. If your Mac meets these requirements, then the only other needed step before upgrading is to have at least Snow Leopard installed on your system.

Before installing OS X 8, you should

1 Back up

Backing up before applying any software update or upgrade is always recommended.

2 Check for current problems

Current problems with your system can sometimes transfer odd behaviors to the new OS installation. For minor issues

such as slowdowns, use Disk Utility to check the hard drive for errors and fix permissions on the boot drive.

3 Wait a few weeks

Generally, Apple releases a quick update or two following a major OS release, which address some known bugs that either could not be fixed before the final release or which only became known after the release.

4 Prepare to back up the installer

Starting with OS X Lion, Apple is no longer releasing the OS on DVD media. While the installation process through the App Store will download all the needed files in a disk image, it will remove these files after the OS is installed. While the OS will still be available through the App Store if needed, it may be useful to back up the OS X installer BEFORE performing the upgrade, which can be done either by copying the installer to another drive or by accessing the embedded disk image and burning it to DVD or restoring it to a secondary USB or FireWire drive. The instructions for doing this should be the same as that for OS X Lion.

There are many explanations about how to create a Mountain Lion install drive. A bootable drive would be a good thing. [Macworld has a good explanation](#), or search Google for "Mountain Lion installation drive." ☞

by Glenn Fleishman

Apple Restores IPv6 Support in AirPort Utility

IPv6 has returned to AirPort Utility by popular demand, a reversal of its removal in the recently released version 6.0. The next-generation addressing system for the Internet, which replaces the empty pool of familiar IPv4 numbers (of the pattern 192.168.0.1), is required for the Internet to continue functioning. ISPs, network hardware providers, content sites, search engines, and groups that form the backbone of the Internet's infrastructure policy groups are all agreed.

The Internet Society (the folks behind the IETF and RFCs) even drew a worldwide line in the sand on 6 June 2012, not just to test IPv6 in a widespread fashion, as in previous years, but also to keep everything active from that point on and continue to expand the use of IPv6 for ordinary users, who shouldn't have to sweat the details.

IPv6 is necessary because IPv4 simply doesn't have enough addresses to encompass the many billions of devices that require Internet access – and that's just today. In the future, every mote of smart dust might need an IP address. While NAT (Network Address Translation) enabled IPv4 to limp

along for years, aided by a number of other behind-the-scenes tricks, IPv6's vastly larger set of possible addresses (3.4×10^{38}) is the only real solution.

It has been over a decade since IPv6 became standardized, but 2012 is the year in which IPv6 has finally hit the flash-point for adoption: IPv4 addresses are essentially exhausted (trading is still going on) and IPv6 infrastructure is ready but needs real-world commitment to bring about full operational equality with IPv4. Even if things break a little, IPv6 must be pushed forward. (The reason it has taken so long? There's no financial reward, only a cost, in switching. It's inevitable, but that money has to come out of somebody's budget in every organization.)

That's why it was so strange that Apple dropped IPv6 support in the housecleaning that resulted in AirPort Utility 6.0; the AirPort Utility iOS app never had it. While many of the features removed from AirPort Utility 6.0 impacted only network administrators, very few of whom use Apple Wi-Fi gear any more, IPv6 has a broader impact. Apple built it into OS X years ago, and it has been fully supported

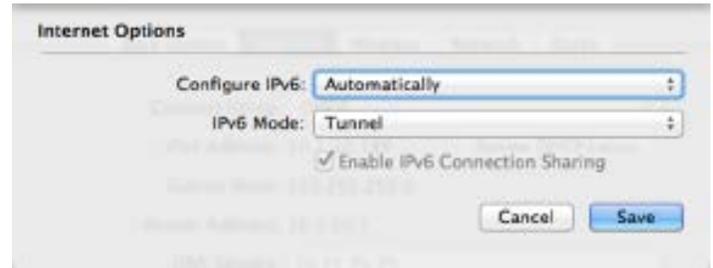
in iOS from the start. Removing IPv6 support in AirPort Utility meant that broadband modems plugged into newly configured AirPort base stations couldn't hand off IPv6 information to the base station nor to other devices on the same network. That's a problem. (See "[AirPort Utility 6.0 Adds iCloud Support but Removes Many Features](#)," 1 February 2012, for more details about the iOS app and the 6.0 changes.)

But IPv6 is back! On the heels of many WWDC announcements, including a quiet overhaul of the AirPort Express Base Station (see "[AirPort Express Turned into Simultaneous Dual-Band Hockey Puck](#)," 11 June 2012), Apple released updated OS X and iOS versions of AirPort Utility. The primary reason was to add support for simultaneous dual-band networking in the new AirPort Express, which appeared in [AirPort Utility 5.6.1](#) for 10.6 Snow Leopard and 10.5 Leopard. (All 5.x versions of AirPort Utility include IPv6 configuration, and 5.x versions continue to work with all released AirPort base stations starting with 2003 models.)

[An aside here, since AirPort Utility's version support seems confused in the 5.5 and 5.6 releases. In June 2011, Apple released AirPort Utility 5.5.3 for 10.6 Snow Leopard and 10.5 Leopard. This version continued to work under 10.7 Lion. Then on 30 January 2012, Apple released AirPort Utility 5.6 for OS X 10.7.2 Lion, alongside AirPort Utility 6.0, which was also only for Lion. Fair enough. But the new AirPort Utility 5.6.1 no longer lists support for Lion, showing only 10.5.7 to 10.6.8 as supported versions. It's confusing as all get out. If this is accurate, then Lion users must download AirPort Utility 5.6.0 to configure now-missing options on existing AirPort base stations, and if you're running Lion and get a new AirPort Express, which requires either AirPort Utility 6.1 or 5.6.1, those options removed in AirPort Utility 6.0 are just inaccessible.]

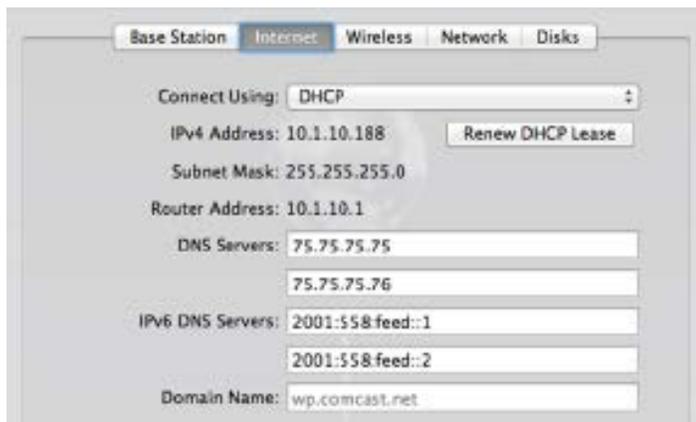
The updated [AirPort Utility 6.1](#) for Lion and the revised [AirPort Utility for iOS](#) include support for the new AirPort Express, along with an Internet Options button added to the Internet view. The main Internet view now lets you enter IPv6-based DNS servers, necessary for resolving domain names to IPv6 addresses.

The Internet Options dialog includes a Configure IPv6 pop-up menu that lets you choose from Link-Local Only (use only on local network), Automatically (pick up via DHCP from the broadband connection, like an IPv4 address), or Manually (requires specific address entry).



For all but Link-Local Only, you can select Native or Tunnel, which refers to how the IPv6 connection is made. A native connection provides IPv6 service to all devices on the network; a tunneled connection encapsulates IPv6 traffic at the router and wraps it up to carry across an IPv4 segment of the network to reach a fully native IPv6 backbone. That's a little technical, I know, but it might help you talk to your ISP or other service provider when trying to enable IPv6.

IPv6 isn't the most exciting technology in the world. If you're not involved in Internet infrastructure or IT, it's like listening to sewer engineers talk about the kind of plastic used in outflow pipes. But IPv6 is a necessary part of making sure the Internet continues to work. The bits must flow! 🗑️



Are You Getting the Bandwidth You're Paying For?

Not long ago, I was invited to participate in a post-session Google Hangout On Air at the Le Web conference in London. When the organizer asked me to report on my bandwidth, though, there was much head-shaking as to whether my roughly 1 Mbps upstream bandwidth would be sufficient to provide high-quality video (my 15 to 20 Mbps downstream bandwidth wasn't a problem). After a couple of brief Internet outages several weeks before this, Time Warner had replaced both my cable modem and the entire cable from the street, so I was pretty certain all the hardware was working within spec.

I hadn't revisited [Time Warner Cable's service offerings](#) in years, but some quick research online showed that I had the Turbo Internet plan, which promises up to 20 Mbps downstream and up to 2 Mbps upstream. Ignoring the fact that I wasn't ever seeing the 2 Mbps upstream I should have been getting, I decided that an extra \$20 per month to upgrade to the Extreme Internet plan (30/5 Mbps) was worthwhile, since we upload a fair amount of data and the 5 Mbps of upstream bandwidth would be welcome for video conferencing in particular. But since downstream bandwidth has never been our problem, the Ultimate Internet plan (50/5 Mbps) didn't seem worth the extra cost. Time Warner made it easy to click a link to chat with an online customer service rep, who was only too happy to help me upgrade. While we were chatting, I explicitly asked if my current cable modem – which had just been replaced, remember – would be sufficient for the Extreme Internet service level, and I was assured it would be. Some 20 minutes later, everything was done, and I was told that I'd start seeing improved performance either immediately, or within 2 to 4 hours.

(In fact, what happened was that 2 hours later, the entire connection went down, and I had to call support and get them to do something. It's always a little unclear what they do, although I believe it involved properly linking my cable modem to the updated account. Luckily, they managed to fix it just as my iPhone dropped the call because I was in a low-reception part of the house.)

When I started testing the performance again, Speedtest.net reported consistently that I was getting between 20 and 30 Mbps downstream, and while my upstream performance wasn't 5 Mbps, it was regularly between 1.5 and 2.5 Mbps. Bandwidth is very often shared, so it's entirely common to get a bit less than your promised bandwidth, and while 2.5 Mbps was less than the 5 Mbps I'd been promised with the Extreme Internet plan, it was good enough for the Le Web conference hangout (with [Kevin Rose of Google](#), if you want to watch). But as the days went by

afterwards, that 2.5 Mbps upstream maximum nagged at me, and when some ebook uploads were taking way too long, Speedtest.net reported I was seeing only about 800 Kbps upstream.

Frustrated, I called Time Warner once again, the support rep agreed that I should be seeing better performance, and he dispatched a tech to my house. As with the first tech who had replaced my cable, the second tech was extremely amiable and knowledgeable, but he had some choice words for the online customer service rep who had upgraded my account. Apparently – and this is so common that the techs have a word for it: "office-only'd" – the change had been made only in the office, and there was no way my cable modem could support 5 Mbps upstream bandwidth. Making this even more obvious was the fact that the Extreme Internet plan includes wireless clients – the cable modem also acts as a wireless gateway – and the cable modem I had didn't have any wireless capabilities at all (I didn't notice this discrepancy when ordering, since I was focused on the bandwidth and had no desire to replace my AirPort Extreme).

After trying two cable modems that he'd been told were new (the first had a locked wireless network named "We no speak Americano" configured on it, and the second didn't advertise any wireless network or allow wired connections), he grew irritated and gave me one straight from a shrink-wrapped box. It worked properly and provided the full 30 Mbps downstream and 5 Mbps upstream, as you can see in my graphs below, which also show the improvements over time.



(Or, rather, it worked for about 2 hours, at which point the entire connection went down again, and I had to work my way through three levels of Time Warner phone support before I got to a guy who was able to link my fancy new cable modem to my account properly and get it all to work again. It seems clear that the Time Warner system has some disconnects between what happens in the office and what happens in the field.)

So the moral of this story is that it's absolutely worth using Speedtest.net (or a similar service) to check your downstream and upstream bandwidth. Performance does vary throughout the day, so be sure to run multiple tests in Speedtest.net over a number of days and at different times of day. Also be sure to test from a computer – although I like the [Speedtest.net Mobile Speed Test app](#) for testing general connectivity, its download numbers are often way too low and its upload numbers are often a bit high. Speedtest.net will keep track of your results (as you can see in the screenshots above), assuming you keep the same IP address, or you can set up an account to ensure that your tests are collected regardless.

Once you have a pretty good sense of your average downstream and upstream bandwidth, compare that against what your Internet service provider promises you. Based on my experience, here's what I'd advise:

- Internet plans are a bit like phone plans – they're always changing, and there are often limited-time signup discounts – so what you signed up for a few years ago (or more) may not be the best plan that's available to you now.
- If you decide to change plans, I recommend calling rather than using online chat, if that's available. Online chat is fine for determining service levels and asking questions (and it eliminates issues with heavy accents from offshore phone banks), but I think it's better to have quick interaction with someone while actually making changes.
- While you're talking to the rep, make absolutely certain that your cable or DSL modem will be able to handle the new service level. Be insistent on this point, and make sure that the rep understands how long you've had your current hardware if it's old. Modems are generally identified by their unique MAC addresses, but there might be several such numbers on your device, so it's worth taking pictures of all the appropriate labels ahead of time so you can read out numbers easily if requested.
- If a tech comes to your home or office to troubleshoot problems, stick with them while they're working and tell them whatever you can think of that might help. For instance, my house was wired with coaxial cable in the walls, and while we originally had to use it, the first tech found that it was adding interference. Relocating the cable modem to avoid the internal wiring helped with upstream bandwidth. Also ask them to check your cable's connectors, since corrosion there can cause loss of signal.
- Don't let the tech leave until you have tested the connection with Speedtest.net and can prove to your

satisfaction that you're getting the promised bandwidth. Although I had two good techs, the second one grumbled that there were a number of others in the organization who did shoddy work and ended up having to be bailed out later.

- If trenching is necessary, be certain to talk with the crew doing the work and tell them if you know where any underground wires are located. And, regardless, ask them to try to locate whatever electric, phone, invisible fence, or other wires might be buried in the trenching area, since trenching machines can slice right through existing cable with little or no indication (speaking from hard-won experience here). Personally, I plan to photograph the area and mark up the photos for future reference, now that we know what wires go where.
- Lastly, whenever you talk with anyone from the Internet service provider, make sure to write down a case number or get contact information, so it's easier to get back into the support queue should you need additional help. In my case, both the service level upgrade and the second cable modem swap required phone follow-ups to bring the connection back online, so be aware that such efforts might be necessary.

I certainly wasn't expecting my Internet connection – which is generally quite reliable – to require so many phone calls and truck rolls to my house, but I'm glad I stuck with it in the end, since I appreciate actually getting the full bandwidth that I've been promised. It's easy to imagine someone who's not particularly network-savvy suffering with a lousy Internet connection, just because they don't realize what they should be getting. ☹



June / July Software Review

iPhoto 9.3.2

Jul 25, 2012 - 637 MB

System Requirements

- OS X Lion 10.7.4 or later
- OS X Mountain Lion 10.8

What's New in Version 9.3.2

- Supports compatibility with OS X Mountain Lion
- Sharing options now include Messages and Twitter on OS X Mountain Lion
- Includes performance and stability improvements

Aperture 3.3.2

Jul 25, 2012 - 529.17 MB

System Requirements

- OS X Lion 10.7.4 or later
- OS X Mountain Lion 10.8

What's New in Aperture 3.3.2

- Supports compatibility with OS X Mountain Lion
- Addresses issues that could affect performance when entering and exiting Full Screen mode
- Auto White Balance can now correct color using Skin Tone mode, even when Faces is disabled
- Projects and albums in the Library Inspector can now be sorted by date in addition to name and kind
- Includes performance and stability improvements

iMovie 9.0.7

Jul 25, 2012 - 1.01 GB

System Requirements

- OS X version 10.7.4 or later

About iMovie 9.0.7

- Fixes an issue related to third-party QuickTime components that could cause iMovie to quit unexpectedly
- Resolves stability issues when previewing MPEG-2 video clips in the Camera Import window
- Fixes an issue where audio was not included when importing MPEG-2 video clips from a camera

iWork 9.2

Jul 25, 2012 - 302.02 MB

System Requirements

- OS X Lion 10.7.4
- OS X Mountain Lion 10.8

iWork Update 9.2 adds support for the following features available on OS X Mountain Lion:

- iCloud: Store documents in iCloud and keep them automatically up to date across your Mac, iPad, iPhone, iPod touch, and the web. Changes made to a document on

one device automatically appear on all your other devices. Requires iWork for iOS 1.6.1 or later installed on iOS device.

- Dictation: Speak words, numbers, or sentences and watch them appear in your presentation, document, or spreadsheet.
- The iWork apps are also enhanced to take advantage of the Retina display on new Mac hardware so presentations, documents, and spreadsheets appear sharper and more vibrant.

This update is recommended for users of iWork 9.0 and later.

MacBook Air and MacBook Pro Update 1.0

Jul 18, 2012 - 76.64 MB

System Requirements

- OS X 10.7.4

This update fixes an issue that can lead to increased CPU power consumption, and it improves compatibility with some USB devices.

This update is recommended for all Mac notebooks introduced since June 2012.

Brother Printer Drivers 2.9 for OS X

Jul 5, 2012 - 156.4 MB

System Requirements

- OS X 10.6.1 or later
- OS X Lion

This update installs the latest Brother printing and scanning software for OS X Lion and Mac OS X 10.6.

Canon Printer Drivers v2.9 for OS X

Jun 28, 2012 - 317.12 MB

System Requirements

- OS X 10.6.1 or later
- OS X Lion or later

This download includes the latest printing and scanning software for OS X Lion and OS X v10.6.

Epson Printer Drivers v2.11 for OS X

Jun 28, 2012 - 991.83 MB

System Requirements

- OS X Lion
- OS X 10.6 or later

This download includes the latest printing and scanning software for OS X Lion and OS X v10.6.

Lexmark Printer Driver v2.8 for OS X

Jun 28, 2012 - 169.14 MB

System Requirements

- OS X 10.6 or later
- OS X Lion 10.7 or later

This download includes the latest Lexmark printing and scanning software for OS X Lion and OS X v10.6.

Infotec Printer Drivers v2.3 for OS X Jun 28, 2012 - 8.77 MB

System Requirements

- OS X 10.6 or later
- OS X Lion

This download includes the latest printing and scanning software for OS X Lion and OS X v10.6.

Gestetner Printer Drivers v2.3 for OS X Jun 28, 2012 - 10.14 MB

System Requirements

- OS X 10.6
- OS X Lion

This download includes the latest printing and scanning software for OS X Lion and OS X v10.6.

Ricoh Printer Drivers v2.3 for OS X Jun 28, 2012 - 20.26 MB

System Requirements

- OS X 10.6 or later
- OS X Lion

This download includes the latest printing and scanning software for OS X Lion and OS X v10.6.

Savin Printer Drivers v2.3 for OS X Jun 28, 2012 - 10.80 MB

System Requirements

- OS X 10.6 or later
- OS X Lion

This download includes the latest printing and scanning software for OS X Lion and OS X v10.6.

Lanier Printer Drivers v2.3 for OS X Jun 28, 2012 - 11.59 MB

System Requirements

- OS X 10.6 or later
- OS X Lion

This download includes the latest printing and scanning software for OS X Lion and OS X v10.6.

InfoPrint Printer Drivers v2.3 for OS X Jun 28, 2012 - 798 KB

System Requirements

- OS X 10.6 or later
- OS X Lion

This download includes the latest printing and scanning software for OS X Lion and OS X v10.6.

NRG Printer Drivers v2.3 for OS X Jun 28, 2012 - 10.84 MB

System Requirements

- OS X 10.6 or later
- OS X Lion

This download includes the latest printing and scanning software for OS X Lion and OS X v10.6.

Aperture 3.3.1 Jun 28, 2012 - 528.37 MB

System Requirements

- OS X Lion 10.7.4 or later

What's New in Aperture 3.3.1

- Fixes an issue that in rare cases could cause Aperture to hang or quit unexpectedly when upgrading libraries.

Included in Aperture 3.3

- New unified photo library for both iPhoto (v 9.3 or later) and Aperture; no import/export required; Faces, Places, slideshows, albums and web sharing work across both applications
- Support for AVCHD video has been added
- Aperture now lets you use camera-generated previews for faster browsing of RAW files immediately after import
- Highlights & Shadows tool has been updated to deliver higher-quality results and work with extended range data
- A new Auto Enhance button has been added to the Adjustments panel
- White Balance tool now includes Skin Tone and Natural Gray modes to simplify color balance
- Auto button has been added to the White Balance tool for one-click color balancing
- Set Desktop command has been added to Share menu so you can set a desktop background from within Aperture
- A new Manual option allows you to drag and drop projects to customize sort order in the Projects view
- New preference allows you to set the background brightness of the full screen browser
- Facebook, Flickr, and MobileMe albums are now displayed as thumbnails in the main window when accounts are selected in the source list
- Minor terminology changes, including "Original" instead of "Master" and "Info" instead of "Metadata"
- Source list includes a new "Recent" section, showing Last Import and recently-viewed projects
- Raw Fine Tuning is no longer displayed in the Adjustments panel by default
- Faces can now be named by dragging them from the Unnamed Faces browser to existing snapshots on the corkboard
- The Faces corkboard now includes a menu that allows you to set the order of face snapshots
- Newly designed monochrome source list and toolbar icons
- Addresses numerous issues related to overall performance and stability

The update is recommended for all users of Aperture 3.

Digital Camera RAW Compatibility Update 3.14

Jun 26, 2012 - 7.9 MB

System Requirements

- OS X 10.6.8
- OS X Lion 10.7 or later

This update adds RAW image compatibility for the following cameras to Aperture 3 and iPhoto '11:

- Canon EOS Rebel T4i / 650D / Kiss X6i
- Sony Alpha SLT-A37

Thunderbolt Software Update 1.2.1

Jun 18, 2012 - 520 KB

System Requirements

- OS X Lion 10.7.4

Adds support for the Apple Thunderbolt to Gigabit Ethernet Adapter. 



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