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Google's entry into the Web browser market made quite a splash, but now that all the buzz has died down, how does its Chrome browser stack up against the other players? Does it have Microsoft worried, or will it be a Firefox killer, as some pundits have speculated? What does it have that the rest don't have? In this article, I'll explore Chrome's features, examine its performance, and tell you what I think is great -- and not so great -- about it.

Many alternative browsers are available, but I'll be making comparisons here only with the three best known: IE, Mozilla Firefox, and Opera.

## #1: Minimalist interface

Compared to IE and Firefox, the interface is paired down and simple. Whereas each of the other browsers has at least three lines of buttons, bars, menus, and so forth, Chrome has only two, using the title bar to display the tabs. You'll also notice that the other three browsers have separate boxes for typing the URL and for searching. Chrome's address box doubles as a search box. Compare the interfaces in **Figure A**.

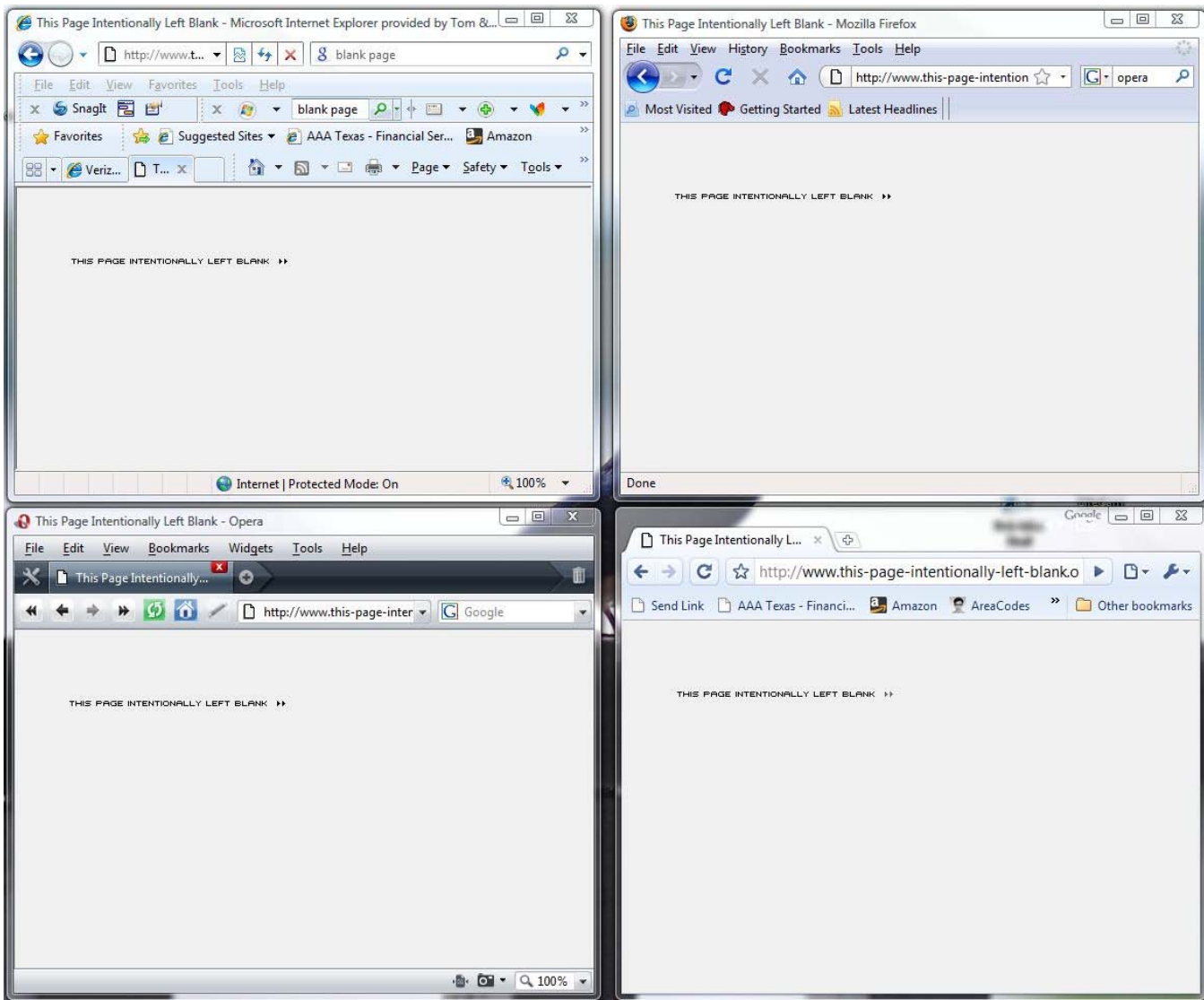


Figure A

This minimalist look may be something to love or something to hate, depending on your personal preferences. Some people like having a button for everything right there, easy to find and click. Others dislike the clutter and prefer to devote more screen space to the Web page itself.

## #2: Tab isolation

One of the best new features in IE 8 is tab isolation, which runs each tab in its own individual process. This takes more memory, but it means that if one tab crashes, it doesn't take the whole browser down with it. Chrome has a similar feature. If you visit a page that hangs up the browser (Java is notorious for this), instead of shutting down the whole browser as so often happens with IE 7, the individual tab for that page closes and the rest of your open tabs aren't affected. No more losing your place after hours of research when a bad page suddenly shuts down a dozen tabs.

## #3: New tab options

In Firefox and IE 7, when you open a new tab, it's just a blank page until you input a URL. In Opera, you can set specific Web pages to appear as "speed dial" choices when you open a new tab. In IE 8, a new tab gives the option of reopening tabs you've closed during the current session, restoring your previous browsing session, starting InPrivate Browsing, or using an Accelerator. In Chrome, by default the new tab shows you thumbnails of your most visited Web sites as well as the option to show your full browsing history or search your history, as shown in **Figure B**. I like IE 8's new tab options best, but Chrome comes in second.

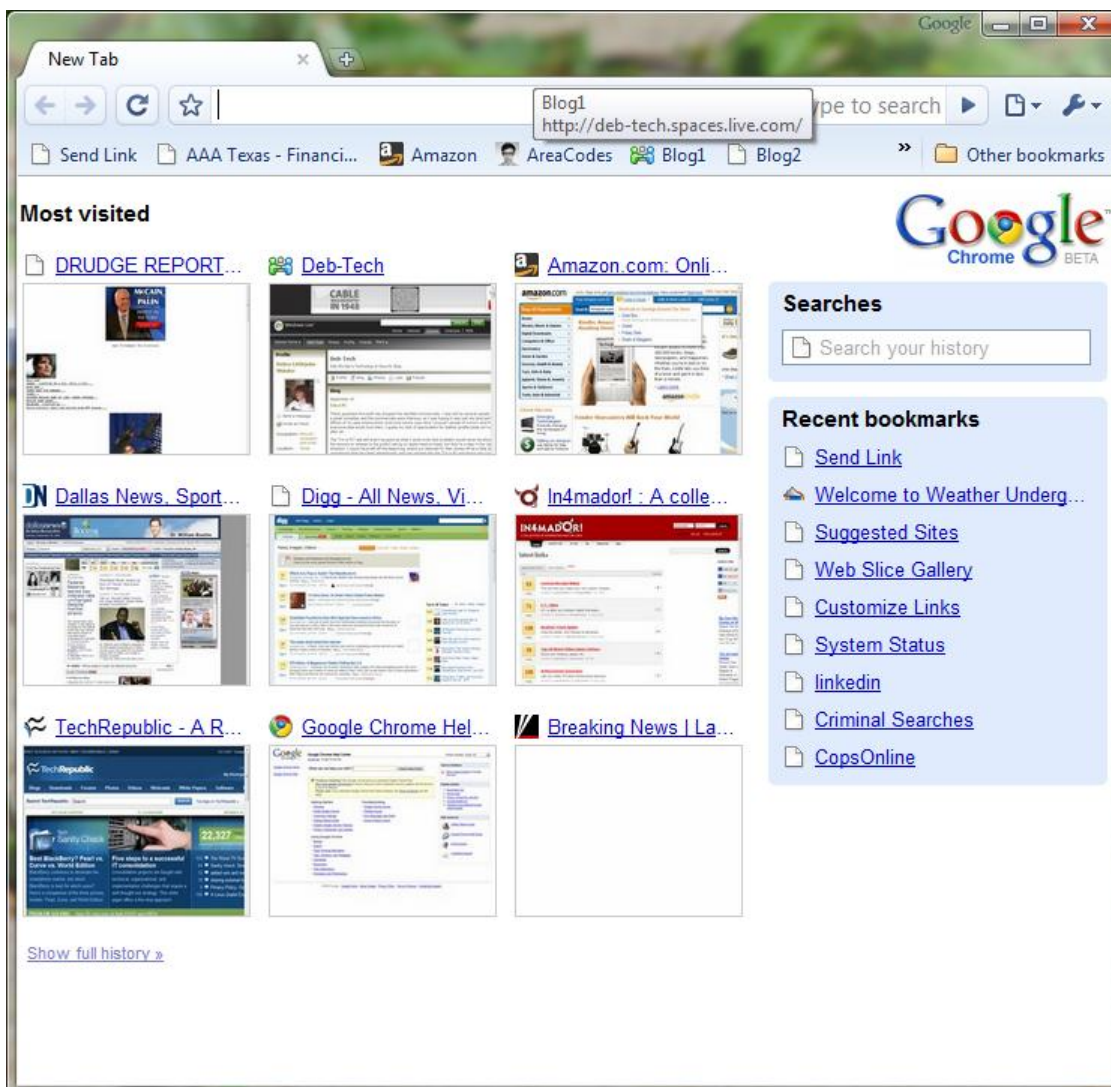


Figure B

## #4: Session recovery

Although Chrome doesn't, by default, give you the option to restore your last browsing session when you open a new tab, you can configure it to automatically open your last session when you start the browser. This is done by clicking the Tools icon at the right of the address bar and selecting Options. On the Basics tab, you can see that the default is to open your home page when the browser starts. Select Restore The Pages That Were Open Last to open up the tabs from your previous browsing session, as shown in **Figure C**.

Whichever way it's implemented, this is a lifesaver if you accidentally close the browser (or have to shut down the computer) when you have lots of tabs open that you need to go back to again.

Note that Firefox will offer to restore your last session if the browser crashes or unexpectedly closes, and like Chrome, it can be set to automatically restore the last session on startup. Opera also has a session restore feature and is set by default to continue from the last session. Thus the difference is in how this is implemented.

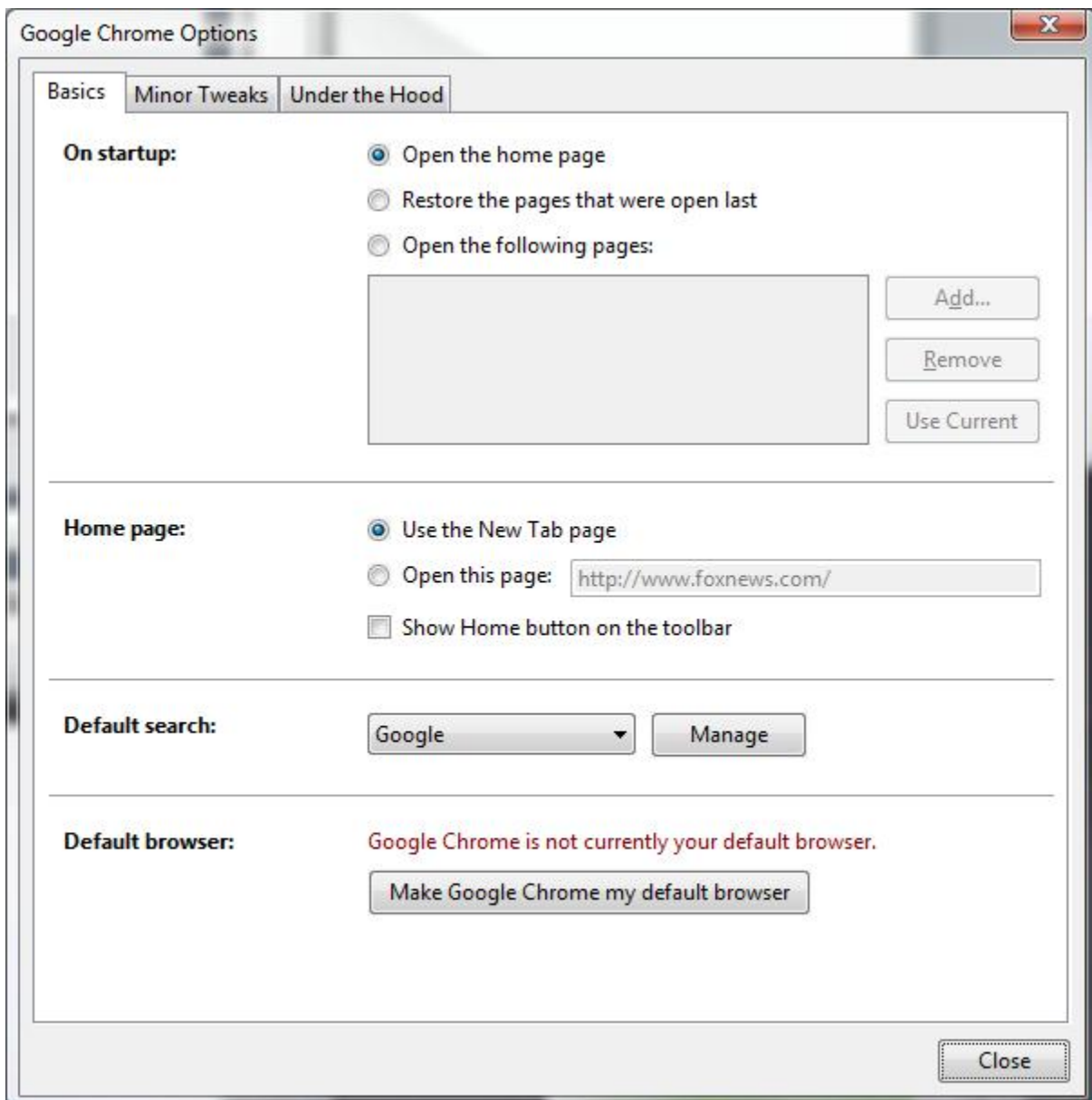


Figure C

## #5: Dynamic tabs

One of the coolest features in Chrome, and the one I love most, is its dynamic tabs. Opera is the only other member of the Top Four that has this feature. In these two browsers, if you have several tabs and you decide you'd like one of them to appear in a separate browser window of its own, you just grab the tab title with your cursor and drag it off the current browser window onto the desktop, where it becomes a separate window open to that page. This is very useful when you need to compare two pages side by side. IE doesn't allow you to drag from the tab at all, and if you try it in Firefox, it creates a shortcut to the page on the desktop instead of opening the page in a window.

## #6: Incognito mode

Similar to IE 8's InPrivate mode, Chrome has a feature that lets you prevent pages from being saved in your history and Internet cache and deletes any new cookies after you close the browser window, to cover your tracks concerning your Web browsing habits. You open an incognito window from the Page menu (first icon to the right of the address bar). You can have some windows running in incognito mode while others are running in standard browsing mode.

Note that according to reports, Firefox 3.1 (beta 1 to be released in October) will also have a private mode.

### Tip

If you're really concerned about privacy, you might be interested in the [Chrome Privacy Guard tool](#), which automatically deletes the unique client ID that's assigned to each installation of Chrome before starting the browser. It's a free download.

## #7: Web applications

Here's a neat idea for Web applications such as Gmail. Now you can create a shortcut on the desktop, in the Start menu, and/or on the Quick Launch bar and open your Web apps without opening the browser (**Figure D**).

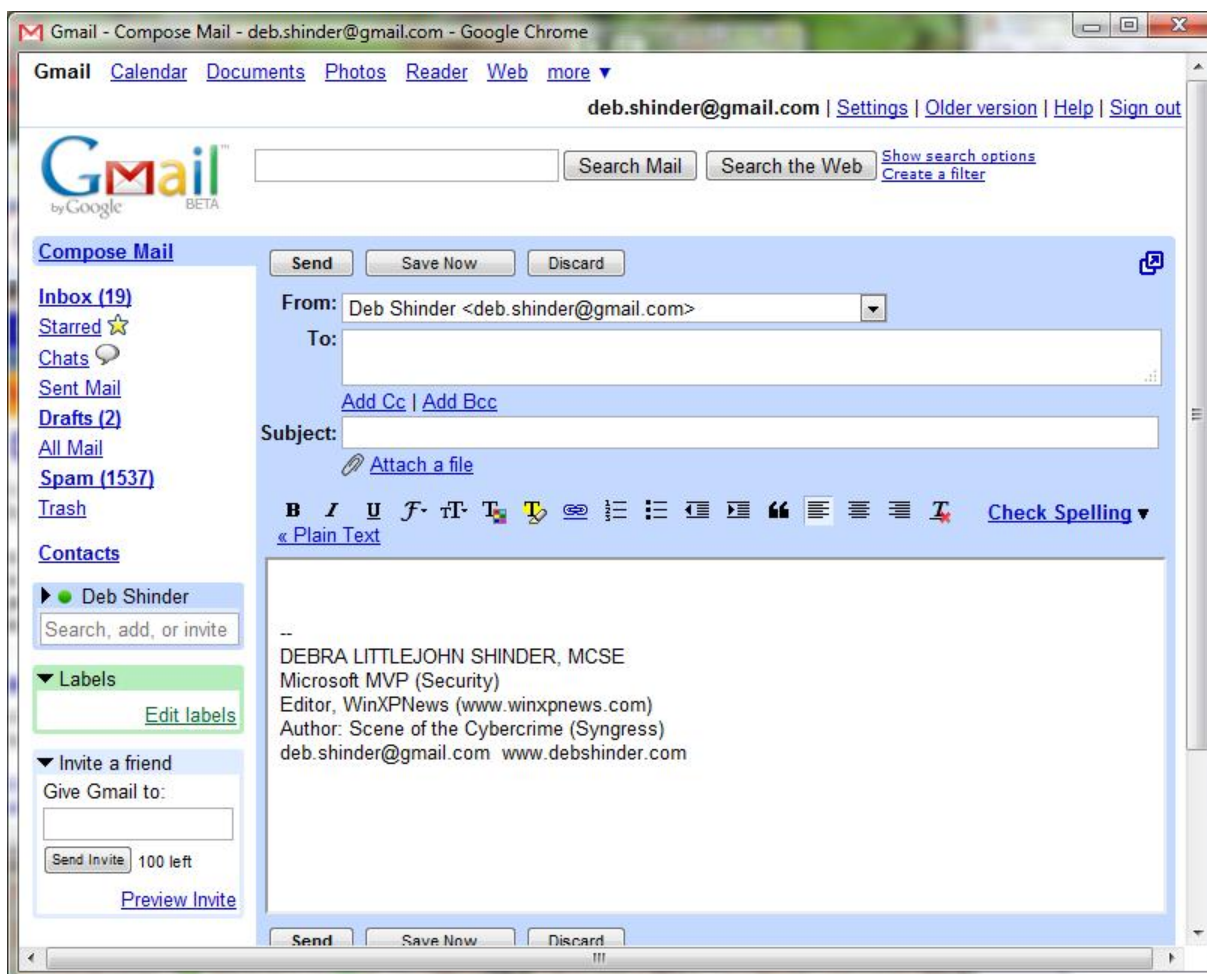


Figure D

Of course, the app uses the browser, but it opens in a special dedicated window that's even more streamlined than Chrome's own interface, so it feels more like you're using a regular local application rather than the Web. This is actually a very handy feature.

Also note that you aren't limited to Google's applications; I created a Web app shortcut for my Hotmail account (although the Hotmail Web site will try to persuade you to upgrade your Web browser to IE, Firefox, or Safari and warns that if you continue to the site, some parts may not display properly. So far as I can tell, though, Hotmail works fine in Chrome.

## #8: Themes

Do you like the Chrome browser but aren't so crazy about its somewhat "blah" look? As with other browsers, you can dress it up with a theme (**Figure E**). Go to [www.themesforchrome.com](http://www.themesforchrome.com) and download a theme. Save it to any location you want on your hard disk and then copy it to the following directory:

- **On Windows XP:** <drive letter>\Documents and Settings\<user name>\Local Settings\Application Data\Google\Chrome\Application\<version number>\Themes\
- **On Windows Vista:** <drive letter>\Users\<user name>\AppData\Local\Google\Chrome\Applications\<version number>\Themes\

I use several browser clients, and I like to use themes to quickly differentiate them.



Figure E

## #9: Performance

My own experience and (unscientific) performance tests, running on Windows Vista Ultimate on a Dell XPS with 4 GB of RAM, show Chrome to be slightly slower than IE 8 and Opera v.9.52 and slightly faster than Firefox v.3.0.1 in opening most Web sites. Interestingly, Chrome took a long time to open the Gmail site, longer than any of my other browsers. On initial startup, Chrome opens slightly faster than IE 8 and Firefox and about as quickly as Opera.

I don't see speed as a major issue with any of the current browsers; all are sufficiently fast for my needs (and all are noticeably faster than IE 7).

With all four browsers open to the same Web site, with only one tab open, Chrome shows three running processes using a total of 33,440 K of memory; IE 8 shows four running processes using 112,400 K of memory; Firefox shows one running process using 47,680 K of memory; and Opera shows one running process using 42,984 K of memory. Thus Chrome uses less memory than any of the others, with a single page open.

## #10: Security

Web browsers are a favorite target of attackers, and it's unlikely that any browser will ever be completely secure. One day after release of the first public beta, Chrome was found to have [a security vulnerability that exploits Webkit and a Java bug](#). Shortly thereafter, [a critical buffer overflow vulnerability](#) was identified by a Vietnamese security company. These vulnerabilities appear to have been patched by [Google's updates](#).

As with any browser, it's vitally important to apply updates regularly. Because Chrome is new and has a high profile, we can expect attackers to make it a prime target.

## Summary

Chrome is a good browser, especially when you consider that it's Google's first try at this. It doesn't contain much that's unique; most of its best features have already been done in IE 8, Firefox, and/or Opera. But it does combine some of the best of those browsers. In my experience, Chrome is not appreciably faster than the latest versions of its competitors, but it's considerably speedier (and less crash prone) than the browser most people are currently using (IE 7).

Like IE 8, Chrome doesn't correctly render some Web pages (those built for IE 6 and 7), but unlike IE 8, it doesn't offer users a "broken page" button that fixes the problem -- not that we would expect Google to provide that option to emulate the previous versions of IE, but it is an advantage that IE 8 has over Chrome.

I expect to continue to use IE 8 as my primary browser, but Chrome is a good option and I like it better, in many ways, than the current version of Firefox. It's great to have so many choices, especially so many good choices. In my opinion, Chrome's appearance on the scene is a good thing because it will further motivate Mozilla, Microsoft, and Opera to keep improving their browsers.

## Additional resources

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- Check out all of TechRepublic's [free newsletters](#)
- [10 reasons why you should use the Opera browser](#)
- [10 things to love \(and hate\) about IE 8](#)
- [10 Firefox extensions you can't live without](#)

## Version history

**Version:** 1.0

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