SilverStripe CMS browser testing overview

Introduction

In March 2011, we tested the content-authoring interface within SilverStripe CMS against various major browsers, in order to provide recommendations to our users, and to identify opportunities for improvement. This document reports on our findings.

The browsers tested were Internet Explorer (IE) 7, IE8, IE9, and Firefox 4 for both Windows and Mac. We chose not to use IE6 as it is no longer supported by Microsoft, and now has only a 5% share of the global browser market.

Similarly, as testing was done primarily from a content author's perspective, we did not test in Chrome or Safari, as our statistics do not show a significant number of users in this market. At some stage in the future we may incorporate these browsers, and we would welcome community involvement in their testing.

All tests were done using SilverStripe CMS's minimum browser resolution of 1024x768 px. We did the testing with our screen set to this resolution. To help identify problems found only in cramped screen resolutions. The testing was done on both a simple 'out of the box' installation as well as complex website to mirror a sophisticated production website.

We have included our testing methodology and individual results as appendices for your information.

Internet Explorer 7:

This browser is the minimum version of Internet Explorer (IE) required to run SilverStripe CMS. All the functionality of SilverStripe CMS that we tested worked in this browser, however some tasks were slow. If you are currently using IE7 to access SilverStripe, we recommend that you upgrade to IE9, as this will offer a significant speed improvement when carrying out some common tasks within SilverStripe CMS. IE9 also contains security and other incremental improvements that improve your overall web browsing experience. The IE7 browser version we used to test was 7.00.5730.13.

Internet Explorer 8:

All tested functionality within SilverStripe CMS works well, and functionality runs more quickly than in IE7. The IE8 browser version we used to test was 8.0.6001.18702.

Internet Explorer 9

As of April 2011, IE9 is Microsoft's latest browser, and the preferred Internet Explorer version for running SilverStripe. The IE9 browser version we used to test was 9.0.8112.16421.

Firefox 4.0 (Windows):

All SilverStripe CMS functionality worked well. Performance was similar, and in

several cases better, than IE8. Firefox 4 has better support of web standards (HTML, CSS, JavaScript) than Internet Explorer, and this offers users a small level of usability improvements.
Because Firefox provides the best experience, it is therefore our recommended browser for content authors using Microsoft Windows.

Firefox 4.0 (Mac):

All SilverStripe CMS functionality worked well. Performance was similar, but occasionally slower, than Firefox Windows. There are known issues with using Safari with SilverStripe CMS, therefore Firefox 4.0 is our recommended browser for Mac OS X content authors.

Performance tests

Note about performance times shown in benchmarks

The time you experience it takes to perform tasks with SilverStripe CMS are likely to be faster or slower than those displayed in the tables in this document. Hardware, software, your web server and PHP configuration, and the number of applications you have running will make a major impact on the benchmarks.

However, the numbers serve to identify useful comparisons between the browsers, providing objective information on which browsers are quicker, and by what factor. It also helps us understand if there are features in SilverStripe CMS which could be rebuilt in order to deliver a faster performance.

1. Logging into the CMS with different installations

	Basic	Advanced
IE7	2.84	5.79
IE8	2.20	8.28
IE9	2.31	5.55
Firefox4 PC	2.34	5.56
Firefox4 Mac	2.07	5.26

The size of the installation seems to have an effect on login speeds. IE8 is surprisingly slower than IE7 in this instance. However, as the average user really only logs into a site once or twice a day, generally this time does not matter so much in the grand scheme of things.

2. Time from clicking a default page in site tree until you can begin editing on different installations

	Basic	Advanced
IE7	2.75	9.78
IE8	1.62	6.45
IE9	2.21	3.21
Firefox4 PC	0.90	3.17
Firefox4 Mac	0.80	4.18

There is a notable increase in time for an advanced installation over all browsers. The best browser to use in this case would be Firefox PC, closely followed by IE9. Navigating the site tree is a repeated task, and it is important that the time it takes is as low as possible to make working with the site stress-free.

3. Time to create a single page on different installations

	Basic	Advanced
IE7	2.42	17.73
IE8	1.83	8.38
IE9	1.31	5.55
Firefox4 PC	1.11	5.61
Firefox4 Mac	1.09	5.94

Waiting 17 seconds to create one page is too long, so if you have an advanced site, we'd recommend using IE9 or Firefox.

4: Time to save a single page on different installations

	Basic	Advanced
IE7	2.93	25.72
IE8	1.94	27.94
IE9	1.47	9.28
Firefox4 PC	1.58	6.92
Firefox4 Mac	1.89	9.46

28 seconds is far too long to wait to save a page. This shows that IE9 and Firefox offer significantly better performance for saving pages in SilverStripe CMS.

5: Time to publish a single page on different installations

	Basic	Advanced
IE7	3.34	15.87
IE8	1.90	9.60
IE9	1.65	8.47
Firefox4 PC	1.33	8.33
Firefox4 Mac	1.25	9.39

Although publishing a page in a basic installation is a pretty quick task in all browsers, for an advanced installation, IE7 is much slower. This is important, as you may often want to make a quick change to a page, and publish it quickly too.

6. Time to unpublish a single page on different installations

	Basic	Advanced
IE7	0.56	2.86
IE8	0.56	2.78
IE9	0.65	2.67
Firefox4 PC	0.27	2.90
Firefox4 Mac	0.29	2.71

All browsers perform reasonably quickly.

Performance conclusions

For small installations, no browsers had difficulty performing all tasks quickly. More complicated sites, however, put more pressure on the installation and cause commonly performed sites to slow down. Using a more up-to-date browser such as IE9 or Firefox 4 will offer improved performance. It is likely that the JavaScript and PHP code in SilverStripe CMS can be optimized. This document outlines where we can make performance improvements for future releases of SilverStripe CMS.

Functionality testing

Functionality tests

A number of functionality tests were run using IE7, IE8, IE9 and Firefox 4 (PC and Mac) to discover if functionality was broken or buggy in those browsers, and to come up with recommendations about any areas that could be changed or improved.

Functionality conclusions

All browsers (IE7, IE8, IE9, FireFox4 on PC and Mac) worked reliably and no major problems were discovered. Therefore, users can confidently use any of these browsers, with the advantage of using more modern browsers being primarily to do with performance and the productivity this provides.

No new issues arose in Internet Explorer 9 or Firefox 4 that were not already apparent in Internet Explorer 8 or Firefox 3 respectively. Therefore, the issues that were discovered were already deemed minor and already in our public bug tracker at http://open.silverstripe.org and no other action was needed to taken.

Appendices

Tester and date

Testing was done by SilverStripe Ltd employee Michael Andrewartha in March 2011.

Assumptions:

- The advanced installation is assumed as the main SilverStripe test case
- The advanced installation is also assumed to be a very complex installation
- Not all SilverStripe sites are as complex as the advanced installation so the simple installation is used to represent a default installation with a couple of modules which are widely used on SilverStripe sites
- Windows is assumed to be the most popular operating system for SilverStripe CMS content authoring.
- 1024x768 is assumed as a broad browser resolution so will be considered as the default browser resolution and all browsers will be tested using this resolution. Any higher and you limit the bulk of users using SilverStripe.
- Limited resources meant only one browser could be tested on Mac, and we chose Firefox in order to compare it to Firefox on the PC .
- Only the SilverStripe CMS back end will be tested . All user tests are done on the same test server . Two sites will be tested concurrently with the same test
- All the performance user tests are designed to be run on both sites
- The tests will be tailored to a user's needs, hence outlining each use case followed by the outcomes of the use case on each browser
- Different test programs will be used for IE (AOL Pagetest) and for Firefox (Firebug), however it is assumed that as they are testing the same thing, so the results will be similar.

Basic installation of SilverStripe 2.4:

- Default installation of SilverStripe, basic modules installation, revisions set similar to advanced installation for accurate testing, incorporating 25 pages.
- Modules:
    - CMS
    - Sapphire
    - Blog
    - Userforms

Advanced installation of SilverStripe 2.4

- A website created for a client by the SilverStripe company, implemented on the SilverStripe test server, revisions set, incorporating 2238 pages.
- Modules:
    - CMS
    - Sapphire
    - blog

    - calendar
    - cmsworkflow
    - contentreview
    - events
    - forum
    - genericdataadmin
    - iframe
    - linkchecker
    - legacydatetimefields
    - multiform
    - payment_dpshosted
    - quicklinkscollections
    - recaptcha
    - spamprotection
    - Sphinx
    - staticimporter
    - subsites
    - userforms

Browsers:

- IE7 (7.00.5730.13)
- IE8 (8.0.6001.18702)
- IE9 (9.0.08112.16421)
- Firefox 4.0 (PC)
- Firefox 4.0 (Mac)

Environment:

- Windows testing is done in a VirtualBox environment (v3.2.6 r63112)
- Mac testing is done using Leopard (v10.5.8)

Performance test programs used:

- AOL Pagetest: IE7, IE8 , and IE9 performance
- Firebug: Firefox performance

Performance user cases list

These tests are used to compare a basic installation with an advanced installation:

- Time for logging into the CMS
- Time from clicking a default page in site tree until you can begin editing . Time to create a single page
- Time to save a single page
- Time to publish a single page
- Time to unpublish a single page

Functionality user cases list

These tests are used to test browser issues. Functionality issues in the performance tests will also be noted but some may not apply to the basic site:

- Search site tree for a title
- Search site tree page type
- Publish multiple pages (batch actions) . Delete multiple pages (batch actions)
- Show deleted pages
- Show changed pages
- Drag and drop a page in site tree
- Right click site tree and duplicate page
- Right click site tree and sort sub pages
- Page version history – View
- Page version history – Compare
- Page version history - include unpublished pages
- Site reports - pages edited in the last 2 weeks
- Content - Add an image
- Content - Add a link
- Content - Paste as plain text
- Content - Paste from word
- Behaviour - change page type
- Behaviour - Change page location
- Access - set access conditions
- Attach document to page
- Create a new folder
- Upload a file via files and images
- Drag files to different folders