Deploying CSS3 web fonts with cross-browser support

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Introduction

What are web fonts?

Web fonts are downloadable font resources in CSS Fonts Module Level 3. This is not a universal term but we are going to use it throughout this document. Web fonts are hosted on web sites, not desktop computers. They are supported at the browser level in a variety of formats including EOT, TTF, SVG, and WOFF. Web fonts allow web pages to use custom fonts without requiring users to install those fonts on their computers or browsing devices.

Cross-browser web font support

Different browsers do not provide uniform support for web fonts. Some browsers do not support all web font formats. For example, Internet Explorer 7 and 8 support only EOT web fonts. Currently, most web browsers support either WOFF or EOT web fonts, so the way to provide cross-browser web font support is to host both formats on your web site, with browser-dependent links to the fonts.

Requirements

Operating Systems

These instructions should work for creating web sites on Windows, Mac OS X, or Linux operating systems. However, throughout this document we assume the operating system is Windows, specifically Windows Vista Business with SP1. Note that the operating system you use to create your web site has nothing to do with the users that visit the site.

Software

To create web sites that incorporate web fonts you need the following software:

Description	Purpose	What we're using	Alternate
Custom fonts in TTF format	To install the fonts on your computer.	Bentley fonts	Any
Matching web fonts in WOFF and EOT formats	To host the fonts on your web site, so visitors can seem them.	Bentley web fonts	Any
HTML editor with GUI	To edit HTML pages through a graphical user interface (GUI)	Sea Monkey 2.0	Macromedia or Adobe Dreamweaver.
Text editor	To edit HTML and CSS code manually	Windows NotePad or WordPad	Any
Web browser	To test your web pages including the web fonts	MS Internet Explorer 8 Mozilla Firefox 3.6	Any web browser that supports CSS Fonts

		Google Chrome 14 Apple Safari 5.1 Opera 11.5	Module Level 3 and WOFF or EOT fonts.
FTP Client	To upload web pages, style sheets, and fonts to web sites.	FileZilla 3.3	Any

Developing your web page

To develop a web page that incorporates web fonts, do the following.

1. Install the custom TTF fonts on your computer. Here, we are using our own Bentley fonts.
2. In an HTML editor, for example Sea Monkey, create a test page that uses the custom fonts.
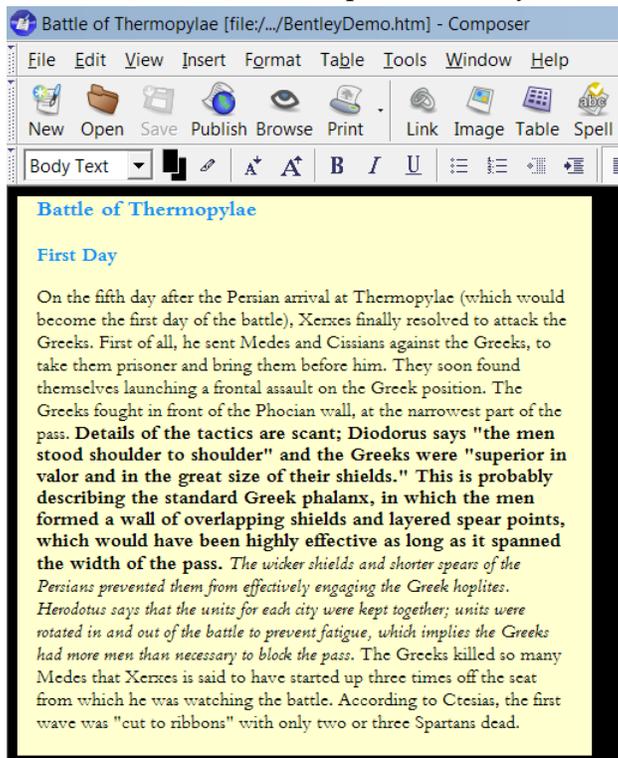
Here, we have a test page that uses Bentley Roman, Bold, and Italic, which are clearly different from standard browser fonts.

Testing your web page

To test your web page and web fonts on your local computer, do the following:

1. Remove the custom TTF fonts from your computer. This ensures that your browser is not using them when you test your web page. Visitors to your web site, in general, will not have the custom TTF fonts installed on their machines.
2. In Windows, navigate to the folder that contains your web page.
3. Copy the custom web font files to this folder, in both WOFF and EOT formats.

4. In a text editor, create a CSS style sheet like the one below, to provide links between the fonts in your web page and the web font files. In our case, we named this file **stylesheet.css**.

```
/* Copyright (c) Rubicon Computer Labs Inc., 2011 */
/* This code provides cross-browser @fontface support */

@font-face {
   font-family: 'Bentley';
   src: url('Bentley-Roman.eot');
   src: url('Bentley-Roman.eot?#iefix') format('embedded-opentype'),
   url('Bentley-Roman.woff') format('woff');
   font-weight: normal;
   font-style: normal;
}
@font-face {
   font-family: 'Bentley';
   src: url('Bentley-Italic.eot');
   src: url('Bentley-Italic.eot?#iefix') format('embedded-opentype'),
   url('Bentley-Italic.woff') format('woff');
   font-weight: normal;
   font-style: Italic;
}
@font-face {
   font-family: 'Bentley';
   src: url('Bentley-Bold.eot');
   src: url('Bentley-Bold.eot?#iefix') format('embedded-opentype'),
   url('Bentley-Bold.woff') format('woff');
   font-weight: bold;
   font-style: normal;
}
```

Note: The CSS @font-face rules associate font family, weight, and style with the URLs of the corresponding web font files. The syntax of the URL definitions provides the cross-browser support, by ensuring that Internet Explorer links to EOT files and other browsers link to WOFF files. This code is based on the FontSpring @Font-Face Syntax of Feb. 21, 2011. For details, refer to Further Hardening of the Bulletproof Syntax at http://www.fontspring.com/blog.

5. Link your web page to your style sheet as follows.
   a. In Sea Monkey, select **<HTML> Source.**
   b. In the <head> section at the top of the file, add a link to your style sheet, as indicated in bold below:

   <head>

   <meta content="text/html; charset=ISO-8859-1" http-equiv="Content-Type">

   <title>Battle of Thermopylae</title>

   <meta content="Rubicon Computer Labs Inc." name="author">

   <link rel="stylesheet" href="stylesheet.css" type="text/css" charset="utf-8">

   <style type="text/css">

   </style>

   </head>

   c. Click **File|Save.**
6. Browse your web page as follows:
   a. In Windows Explorer, right click your web page file.
   b. Select **Open With** and choose a browser, for example **FireFox** or **Internet Explorer**. The web page appears. (**Note:** other browsers may not appear on the Open With menu, but can browse the web page when you post it to your web site.)
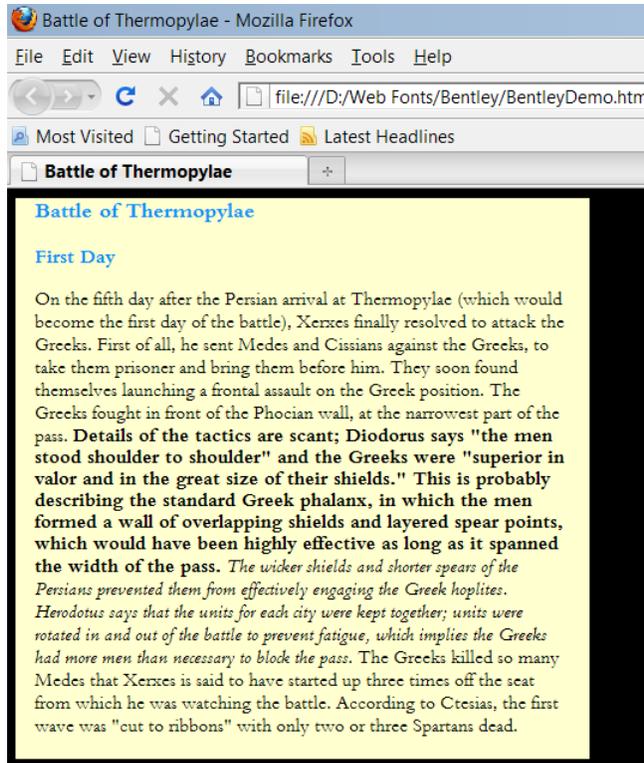
7. Proofread the page. If there are any errors that you need to correct, make the corrections in Sea Monkey and browse the page again.

Disabling hot linking with .htaccess

Hot Linking is the practice of unknown web sites linking to resources on your web site, such as images or web fonts. Unknown sites do not pay for your bandwidth charges when their users download resources from your site, nor do they pay for web fonts and other content that you have licensed. Therefore, it is a good practice to disable hot linking to resource files on your web site, including images and fonts.

A popular method to disable hot linking is with .htaccess, which uses the Apache ModRewrite module. In order for this to work on your web site, your web host must support ModRewrite. To disable hot linking with .htaccess do the following:

1. Using a text editor, create a file called **.htaccess**. **Note:** if your operating system does not allow this filename, call it something else.
2. Copy the following code to your text editor:

```
# Enable URL rewrite engine
RewriteEngine on
# Use website's root folder as the reference base
RewriteBase /
# Allow hotlinks with no referrer provided
# (some browsers strip HTTP_REFERER for privacy)
RewriteCond %{HTTP_REFERER} !^$ [NC]
# Allow your website to access local resources
RewriteCond %{HTTP_REFERER} !^http(s)?://(www\.)?example.com [NC]
# Optional: allow "nohotlinks.jpg" to be displayed
```

```
# RewriteCond %{REQUEST_FILENAME} !nohotlinks.jpg$ [NC]
# if you get here, you get an error message
# Generate an error for web font file extensions: eot and woff.
RewriteRule \.(eot|woff)$ [F]
```

3. In line 9, change example.com to your domain name.
4. Save the text file.

Note: You can add more file extensions such as ttf or png, in the RewriteRule in the final line.

Uploading your web page and resources

To upload your web page and dependent resources to your web site, do the following:
1. Log on to your web site using an ftp client such as FileZilla and administrator credentials.
2. Navigate to the root folder of your site.
3. Upload your .htaccess file. If your file is not named .htaccess you must rename it after you upload.
4. Upload your test page.
5. Upload your web fonts.
6. Upload your web font style sheet.

Notes:
1. If your domain is example.com and your test page is BentleyDemo.htm, your test URL is http://www.example.com/BentleyDemo.htm.
2. Test your page with a variety of browsers including the following:
    - Internet Explorer 7, 8, and 9
    - Mozilla Firefox 3.6 or newer
    - Google Chrome 14 or newer
    - Apple Safari 5.1 or newer