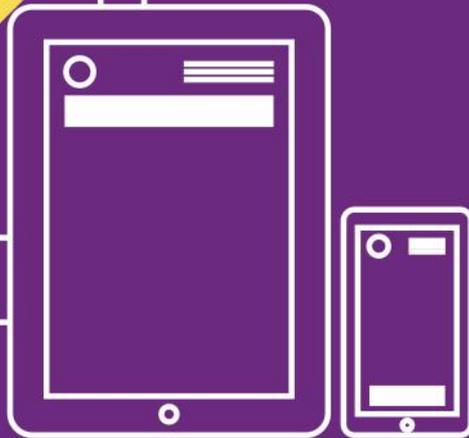


THE GUIDE TO  
**HTML5**  
BANNER ADS

by *Yoni Levy*  
VP Manager Director

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**DIGITALAND™**  
richmedia company



# Introduction

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After emerging into the digital landscape in 2012, HTML5 has grown from a promising industry buzzword to the new standard for banner ad creation among agencies and designers. The shift to HTML5 prominence came quickly after Google and Mozilla announced that their Chrome and Firefox browsers would stop playing various Flash content, leaving ads created in Flash at risk in the marketplace.

This shift has created a new and unexplored world for many designers, developers and any ad agency that previously relied on Flash and must now adapt to using HTML5 for banner ad creation.

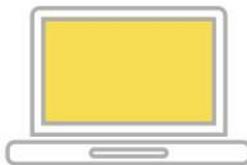
The end result of using HTML5 to create banners will ultimately be a very positive thing for brands, agencies and publishers as it will make it easier to market to multiple screens. But in the meantime many designers may need a guide to HTML5 best practices, tools and tips. While HTML5 and the standards that will shape its use are still in flux and are continually evolving, this e-book can provide a current overview of best practices in creating HTML5 banner ads.



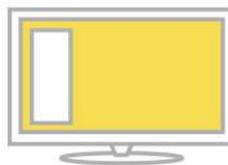
# All-in creative **SOLUTION**

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# About the **AUTHOR**

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**Yoni Levy** is no stranger to HTML5. As VP of Business Development and Advisory Board member for [Sparkflow](#), Yoni helped provide the market insights in HTML5 design to make the cloud-based start-up one of the most sought-after platforms for the multi-screen in the rich media ecosystem. As Managing Director of [Digitaland](#), Yoni and his team helps agencies use HTML5 development to bring engaging rich media solutions to some of the world's biggest brands.



# Table of **CONTENTS**

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Creative production for online advertising, rich media, interactive development and more

## **OVERVIEW**

---

What's different with HTML5

### **1.**

---

HTML File Size

### **2.**

---

Optimization of Banner Creative File Size

### **3.**

---

Ad Server Compatibility

### **4.**

---

Animation

### **5.**

---

In-banner Video

### **6.**

---

Links to Tools

## **CONCLUSION**



## Let's start at the start **what's different with HTML5?**

The key difference in HTML5 banners is that the creative assets for the ad are not compressed into one file like with flash. Everything needed for the creative must be compiled and included in the final package delivered to the publisher so that the HTML5 banner will open like a web page.

That's why it is essential to understand your publisher's ad serving specifications prior to building your Creative (and know that these specifications are continually evolving.)

Many publishers still follow the past IAB recommendation of 35KB (compressed) Initial Load for the Creative and 100KB for total Creative size, but larger 200KB total Creative size is expected to be the norm.

Regardless if guidelines allow for larger Creative sizes in the future, currently designers must be extremely careful in how they create banner ads to avoid producing such a large total size that the Creative can't load effectively.

That means all assets should be packaged and accounted for in the final .zip file size, including the Enabler, JavaScript, CSS and other image files. The code in the .zip file should have relative references, not absolute.

### **Note about Mobile:**

Note that in mobile apps, HTML5 banner ads are segregated away from other content by using a WebView that contains only the HTML5 ad file. HTML5 banner ads that are served into this WebView lack the ability to interact with the actual application. Tools like the IAB Mobile Rich Media Ad Interface Definition (MRAID) solution can enable better communication between the banner ad unit and the mobile app.

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All assets should be packaged and accounted for in the final .zip file size, including the Enabler, JavaScript, CSS and other image files.

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# 1. HTML5 File Size

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Because banner ads with smaller file sizes mean better load times and less negative impact to the consumer's viewing experience, the smaller your HTML5 banner size, the more effective it will be.

A common complaint in the Flash vs. HTML5 debate is that HTML5 Creatives are much larger in terms of file size. The reason for this misconception is because Flash is an **application** that not only handles the creation of ads, but also the compression of them.

HTML5 Creatives, on the other hand, are ads created with multiple **programming languages** HTML, CSS, and Javascript. While Flash automatically provides optimizations for code and assets as it compiles everything into a single file, HTML5 ads need tools to optimize assets in order to achieve the smallest size. *(Top HTML5 optimization tools are listed in the appendix of this document.)*



### When building HTML5 banners, remember:

- Final banner ad size is determined after final compression of the ad
- Banner's .zip file must include all codes, including JavaScript libraries
- Because with HTML5 all assets are included in the file, once uncompressed the banner ad will be viewable offline

The key is to know the tips and tricks to shrinking the size of size of assets for optimal packaging and performance.

### Polite Load

Polite loading means that your HTML5 banner will delay the loading of certain elements and assets (like images or video) until the parent creative has completely loaded and is set. Not all publishers require Polite Loading, but it is smart to require if this is an requirement before you build your banner ad file.

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With HTML5 all assets are included in the file

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## 2. Optimization of **BANNER AD** Creative Packaging

As mention previously, designers will need tips and tools to reduce HTML5 banner size. This section highlights some of the important optimizations that are crucial in adopting HTML5 for the digital advertising marketplace.

### Initiating the Enabler

The Enabler is the main code library of DoubleClick Studio and basically is core to the creative. All Rich Media components and API calls must go through the Enabler. With HTML5 banners, the Enabler must be included in Studio creative when it is packaged, but web browsers do hold a cached copy.

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Nothing in your HTML5 banner ad should execute until the Enabler has initialized

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To ensure that everything is properly loaded and Enabler methods can be accessed, nothing in your HTML5 banner ad should execute until the Enabler has initialized. Once the Enabler has initialized, start animation, load in your image assets, and call tracking methods, or include other Studio modules.

Because the same script is loaded for each Studio creative, the size of the Enabler script is 25KB (compressed) and 75KB (raw).

See the [IAB](#) and [DoubleClick guidelines](#) for additional details.



## Compressing code

To optimize the way your HTML5 banner creative is coded:

- Use efficient & compact JavaScript,
- Take advantage of CSS techniques (CSS3 if possible)
- Use global class-names instead of repeating in-line styles for each tag
- Minimize your code whenever possible to reduce final size

When you compact your code, it is recommended to use a YUI-based library, like <http://refresh-sf.com/yui/>

## Shrinking images and assets

Images and other assets can add a great amount of weight to your final Creative package; so first consider whether an image is even necessary. Some image elements may be replaced with CSS styles. For example, color doesn't need to be an image if it can be created in CSS.

Below are suggestions and resources for reducing the number of images in your creative and for optimizing the images you need.

- **Replace GIF, JPG, and PNG with SVG (Scalable Vector Graphics).** GIF, JPG, and PNG images are pixel based ("raster") and have larger sizes. SVGs are point-to-point based graphics ("vector") and can greatly reduce file size.
- **Compress the image.** If a pixel-based image is required, compress it as much as possible while preserving quality. Photoshop's **Save For Web** is a familiar way to do this.

Other free tools for compressing images and assets include:

- [TinyPNG](#)
- [TinyJPG](#)



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SVGs are point-to-point based graphics and can greatly reduce file size

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### Shrinking fonts

Icon fonts are regular fonts that can be used just like standard fonts. They're often vector-based, which is good for reducing your overall HTML5 banner file size. If you use the same icons over and over, you can also consider building your own icon font.

#### Popular font-shrinking tools include:

- Icomoon Icon Font Creator
- NounProject css icons
- FontAwesome css icons

### Sprite sheets

A sprite sheet is a great tool for reducing ad file size because it is a single tiled image that is loaded only once. (With CSS, individual tiles of the overall image are the only ones shown.)

Because sprite sheets reduce the number of HTTP requests, your creative loads faster and performs better. It's still important to find the right compression for your sprite sheet.

- Texture Packer is a popular tool for generating and optimizing sprite sheets.

#### Note about gzip compression:

Ad servers will send the banner ad file packet as a .gz (gzipped) file to make sure that all the assets in the ad file are compressed before they are sent over the Internet. Agencies and designers are not required to use gzip compression when completing their final file, but everyone should consider gzip as a powerful tool since it can compress everything easily with no loss in quality. You'll get a smaller file size that works great—optimally compressed codes and assets are vital for the optimal performance of the banner ad creative.



### 3.

# AD SERVER compatibility

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HTML5 banner ad creative is most often displayed on a website within an IFrame, to ensure the layout of the page is not affected. IFrame restrains the communication between the banner ad creative and the rest of the page.

The most popular formats (JavaScript, CSS and HTML5) are all supported by the biggest browsers, including Chrome, Firefox, Internet Explorer and Safari), however slight differences can occur in how they are executed. You should always make sure before creating and packaging your banner creative that all of the file formats are compatible with your target browsers.

#### Click Tags

To accurately measure when user clicks on your banner—and to ensure your specific landing page will open in a new window—you must Click Tag the ad with open destination urls (“target=\_blank”.) Using Click Tags enables you to properly track the performance of your campaigns.

If your banner creative requires multiple landing page destinations, you can number your Click Tags as such:

- Clicktag1
- Clicktag2
- Clicktag3, etc.

One great site to consult regarding compatibility is [caniuse.com](http://caniuse.com)

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Using Click Tags enables you to properly track the performance of your campaigns

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Click Tags enables you to properly track the performance of your campaigns

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### Defining Ad Size Dimensions

You can choose to define the creative dimensions for your HTML5 banner ads. In HTML5, functions such as `<meta>` tags or viewports can be applied to the creative code to accomplish defining ad sizes.

Keep in mind that `<meta>` tags: `<meta>` tags are optional elements that are read by a browser to help different systems identify the size of an ad for placement. Know that some methods can't utilize the approach of `<meta>` tags, because there is no place to apply the tag. Working in content modules is one example of where this wouldn't work. Additionally, `<meta>` tags can be applied either within the `<head>` tag, or the `<body>` tag depending on your need.

### Mobile

When considering how your banner creative responds to mobile, think about using mobile events like Pinch-to-Zoom, Swipe, Touch, and more to set up HTML mobile properties including pixel ratio and viewport settings. This will ensure your HTML5 banner displays and interacts with the end user in the correct fashion.



## 4. ANIMATION

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Animation is a very critical element of an engaging rich media banner ad. While creating animation in Flash was easy, designers are finding it hard to sync audio with the animation when using HTML5. It is very time intensive and complicated, which adds to the expense of producing the banner ad. There are a few solutions. New tools in the market are becoming available to help create animations faster in HTML5.

While Flash banners are going away, Flash is still a good animation tool and Flash can be used to create the initial animation for an HTML5 banner. Designers could simply use Flash to create an animation and then turn it into video to incorporate in the HTML5 banner. The benefit of using Flash and converting it to video to create the animation is the ease of the process. However, the drawback is that while this solution allows the animation to be seen, it is not ideal because it prohibits user interaction with the ad.

Consider “outsourcing” your animation to products like [GreenSock’s Automation Platform \(GSAP.\)](#)

GSAP can produce fast, flexible and engaging animation with minimal file size by just using plugins as needed. GSAP can be used with Google Web Designer and Adobe Edge Animate. However, GSAP cannot be swapped in for Adobe Edge Animate’s standard animation engine in order to boost speed and tighten file size — as of today. (But that could easily change at some point.)



Note: GSAP is just plain JavaScript and it was specifically designed to be super flexible, and is able to animate virtually anything that JavaScript can touch. GSAP is not like famo.us or other frameworks that force you to build everything in a very particular way, nor does it have any dependencies. Load the JS, and BOOM, start animating.

For the tightest, most compressed file size, just load GreenSock's TweenLite and CSSPlugin— those two are likely the only tools you'll need. (Or perhaps TimelineLite if you're doing sequences and want a cleaner workflow.)

### **Animation can also be created for HTML5 by using CSS or jQuery/JS**

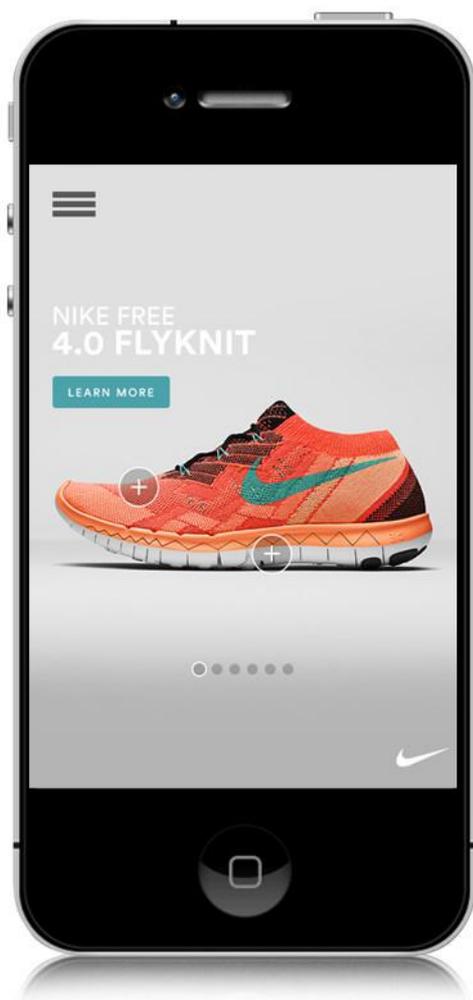
If you choose one of these two options, it is smart to know the differences and capabilities of each.

- jQuery/JS lets you control move CSS methods, and when targeting audience's browsers, it can result in fewer issues with Internet Explorer 7 and 8 and many other older browsers. The negative is that using JQuery involves the extra step of loading Javascript as the code runs, delaying the animation's play.
- CSS animation is optimal for best performance because it is native code that works quickly, easing the use of the processor. The negative is that quality is decreased in non-supported browsers.



To recap, good tools for animation in HTML5 banners include:

- GSAP
- TweenLite
- TimeLineLite
- JQuery/JS
- CSS animation



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For the tightest, most compressed file size, just load GreenSock's TweenLite and CSSPlugin

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## 5. In-Banner VIDEO

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Video on the web and in mobile is becoming more popular and more effective in reaching consumers. In fact, according to Bytemobile Mobile Analytics Report, online video makes up 50 percent of all mobile traffic and as much as 69 percent of traffic on some networks. That is why more brands are demanding video in their banner campaigns.

Prior to HTML5, designers could create video playback from with the Flash (SWF) creative because the flash player worked across all screens and browsers. It's not that easy anymore.

Today designers must build a “browser only” solution within HTML5 parameters.

Video tags are used to define the video in the creative:

```
<video>, </video>
```

Designers must also source the filename of the video, and the width and height. Attributes can be included to customize the video experience for the user, as well, including adding in controls.



## Optimizing Video Size

To be effective, web video must load quickly. On average, if a video doesn't load in two seconds, most users tend to give up. Here are the most effective ways to optimize the size of any web video you create:

- **Know where the video will be used** and for what devices and screens. Then make videos that are specific to desktop, tablet and mobile devices. It is especially important for tablets and mobile devices, due to WIFI bandwidth issues that can slow video down.
- **Use prototyping software to help you plan out the video size.** [Adobe Edge Reflow](#) is a recommended tool to help. Once you know the sizes of the videos you can output them accordingly.
- **Reduce the sizes of images, video and audio.** This not only speeds up video production but also optimizes the output. That's because you won't need to compress the video as much to reach the desired file size.
- **Understand quality settings.** The higher the settings of video/audio the better the quality, however high quality can also increase file size and impact the video's upload speed.
- **Explore all services the upload video.** Explore all services the upload video. [Youtube](#) may be the most popular, but keep in mind that sometimes your videos can stutter or stall. If this becomes an issue, investigate services like the paid version of [Vimeo](#) or [Amazon S3](#).

“

if a video doesn't load in two seconds, most users tend to give up

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- **Include the height and width attributes in your code.** It's the only way to ensure that these attributes match the actual size of your video. If the video scaling is larger than the quality of the video is made for, it will appear rough and ragged. If it scales smaller, the quality will be fine, but you will wind up with a video that takes longer to load than it should. That's why it is important to produce a video that matches the height and width attributes you need.
- **Limit the number of <DIV> tags.** Instead, use the new HTML5 tags to define the layout of your site. Some examples are: HEADER, FOOTER, NAV, ARTICLE, etc. This takes up less weight and helps improve load times.
- **Know that HTML5 video simply doesn't work with all browsers.** Be sure to convert your video to the .OGG format and build it into your code.

### Browser compatibility

While the major browsers all support the HTML5 video element, the video asset needs to be transcoded to ensure it plays effectively on all devices.

### Forced Video

In some cases, designers can replay video playback to overcome a video that creates too large of a file size.

Note: Autoplay on mobile devices is not allowed.



# 6. Essential TOOLS

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## Free Image compressors

[TinyPNG](#)

[TinyJPG](#)

## Tools for Optimizing Fonts

[Icomoon Icon Font Creator](#)

[NounProject css icons](#)

[FontAwesome css icons](#)

## Animation support

[GSAP](#)

[TweenLite](#)

[TimeLineLite](#)

[JQuery/JS](#)

[CSS animation](#)

## Optimizing Video

[Adobe Edge Reflow](#)





# CONCLUSION

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HTML5 is in demand and it is here to stay. HTML5 creates a lot of opportunities for rich media banner ads on mobile and tablet devices, but it can also create a few issues for ad agencies and designers who previously relied on the ease of developing banner ads in Flash.

**Digitaland is here to help.** We are proficient in HTML5 banner ad creation and are committed to helping designers create the most engaging and successful rich media possible. We hope this brief guide helps navigate new waters on the digital landscape.

If you would like to learn more about HTML5 or need help in developing HTML5 banner ads or campaigns, please get in touch. We're here for you.



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