



Building an HTML5 Video Player

Streaming Media West 2011

#SMWest #html5video

Steve Heffernan, VideoJS & Zencoder

zencoder 



VideoJS
HTML5 Video Player

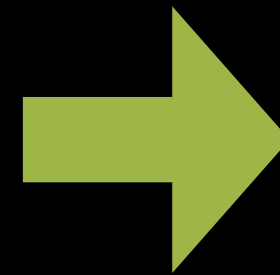
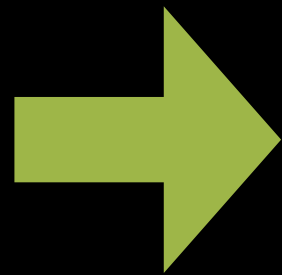




~2000

~2008

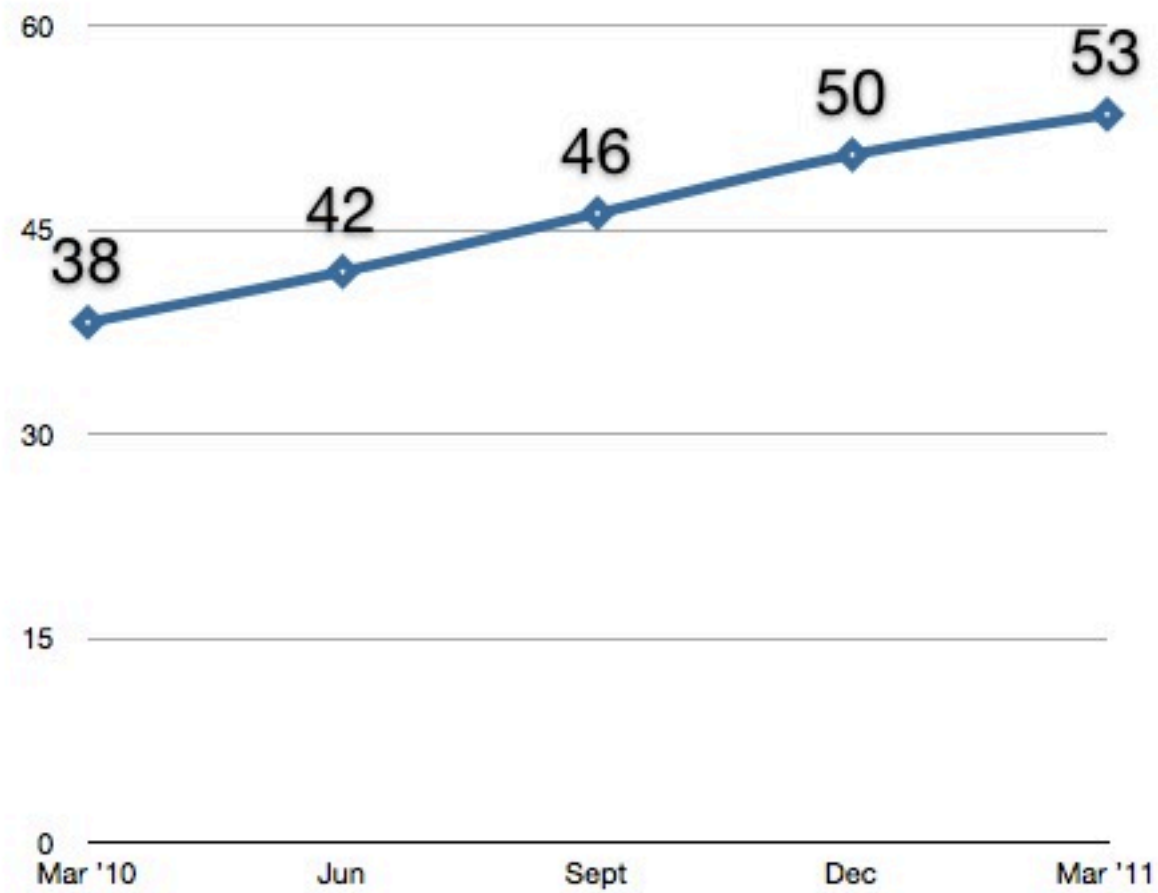
~2020



HTML



Percent of HTML5 Video Support



Based on global statistics from gs.statcounter.com. Compiled by videojs.com.

Reasons to use HTML5 Video Now

- It's the future!
- Runs natively in the browser
- Cleaner code

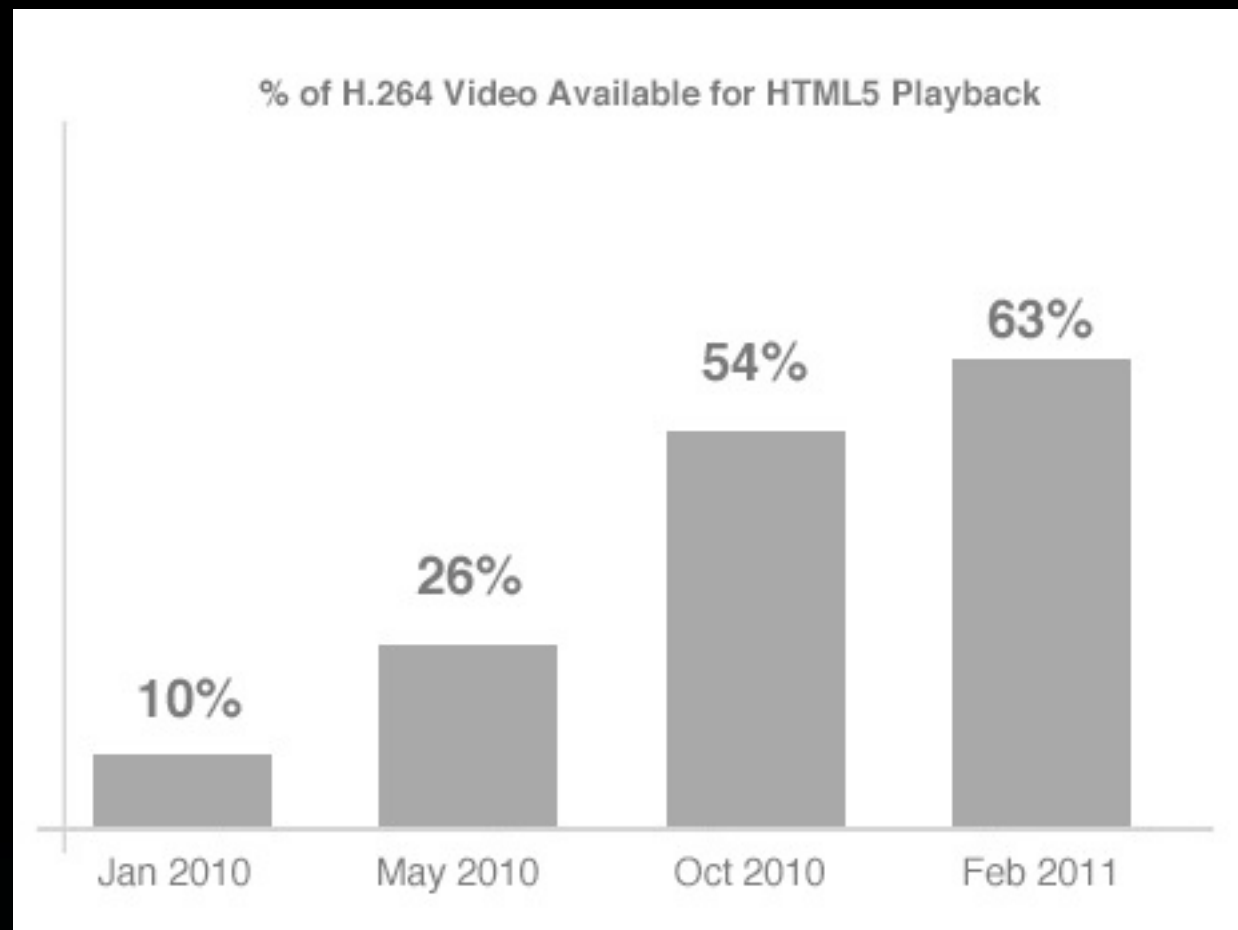
```
<video src="video.webm" controls></video>
```



```
<video controls>
  <source src="video.mp4" type="video/mp4">
  <source src="video.webm" type="video/webm">
  <source src="video.ogv" type="video/ogg">
  <object type="application/x-shockwave-flash" data="flash.swf">
    <param name="movie" value="flash.swf" />
    <param name="flashvars" value="file=video.mp4" />
  </object>
</video>
```







<http://blog.mefedia.com/html5-feb-2011>

```
<video src="video.webm" controls></video>
```



```
<video controls>  
  <source src="video.mp4" type="video/mp4">  
  <source src="video.webm" type="video/webm">  
  <source src="video.ogv" type="video/ogg">  
</video>
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<video controls>
```

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```
</video>
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<video controls>
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```

```
    <param name="flashvars" value="file=video.mp4" />
```

```
    
```

```
  </object>
```

```
</video>
```

```
<p>
```

```
  <strong>Download Video:</strong>
```

```
  <a href="video.mp4">MP4</a>
```

```
  <a href="video.ogv">Ogg</a>
```

```
</p>
```

Embed Builder

Embed Builder « VideoJS

⏪ ⏩ 🔍 + Reader ↻ 🔍 Google

 VideoJS
HTML5 Video Player

HTML5 Video | Embed Builder | Skins | Blog

GETTING STARTED DOWNLOAD DISCUSSION

Embed Builder

I know, the embed code looks a little complicated. But trust me, it's the way to go. It's based on [Video for Everybody](#), which is [super compatible](#). It will even work when a device doesn't have Javascript, or Javascript is turned off.

I built this embed code builder to help make it a little easier, and hopefully clarify what different sections are for.

☒ **Poster Image** (?)

☒ **MP4 Source** (?)

☒ **WebM Source** (?)

☒ **Ogg Source** (?)

☒ **Flash Source** (?) ☒ **Use MP4**

Width Height (?)

☒ **Download Links** (?)

☒ **Support VideoJS** (?)

☒ **Preload Video** (?)

☐ **Autoplay Video** (?)

☐ **Compact Version** (?)

```
<!-- Begin VideoJS -->
<div class="video-js-box">
  <!-- Using the Video for Everybody Embed Code http://camendesign.com/code/video_for_everybody -->
  <video class="video-js" width="640" height="264" controls preload poster="http://video-js.zencoder.com/oceans-clip2.png"
    <source src="http://video-js.zencoder.com/oceans-clip2.mp4" type="video/mp4; codecs="avc1.42E01E, mp4a.40.2" />
    <source src="http://video-js.zencoder.com/oceans-clip2.webm" type="video/webm; codecs="vp8, vorbis" />
    <source src="http://video-js.zencoder.com/oceans-clip2.ogv" type="video/ogg; codecs="theora, vorbis" />
    <!-- Flash Fallback. Use any flash video player here. Make sure to keep the vjs-flash-fallback class.
    <object class="vjs-flash-fallback" width="640" height="264" type="application/x-shockwave-flash"
      data="http://releases.flowplayer.org/swf/flowplayer-3.2.1.swf">
        <param name="movie" value="http://releases.flowplayer.org/swf/flowplayer-3.2.1.swf" />
        <param name="allowfullscreen" value="true" />
        <param name="flashvars" value="config={\"playlist\":[\"http://video-js.zencoder.com/oceans-clip2.png\", {\"url\": \"http://video-...
```

Thursday, November 10, 2011

H.264
MPEG-4/AVC



web▶m

OPEN

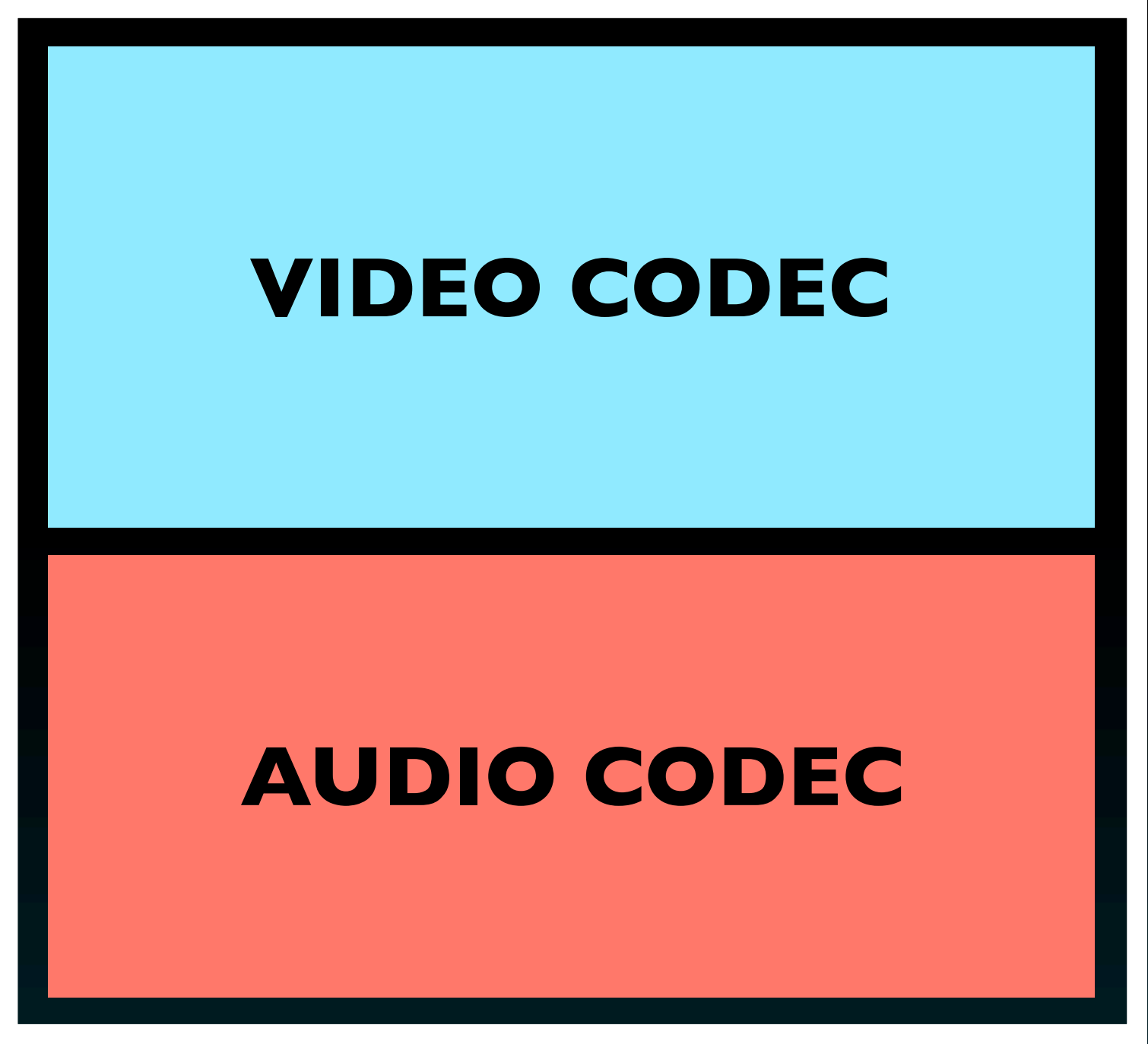


CLOSED





CONTAINER FORMAT



The diagram illustrates a container format structure. It consists of a large white rectangular frame containing two stacked colored rectangles. The top rectangle is light blue and contains the text 'VIDEO CODEC'. The bottom rectangle is light red and contains the text 'AUDIO CODEC'. Both rectangles are separated from each other and from the frame by a thin black border.

VIDEO CODEC

AUDIO CODEC

MP4

H.264

AAC

H.264
MPEG-4/AVC



3+



9+



9+

OGV



3.5+



3+



10.5+

THEORA

VORBIS

WEBM

web►m



4+



6+

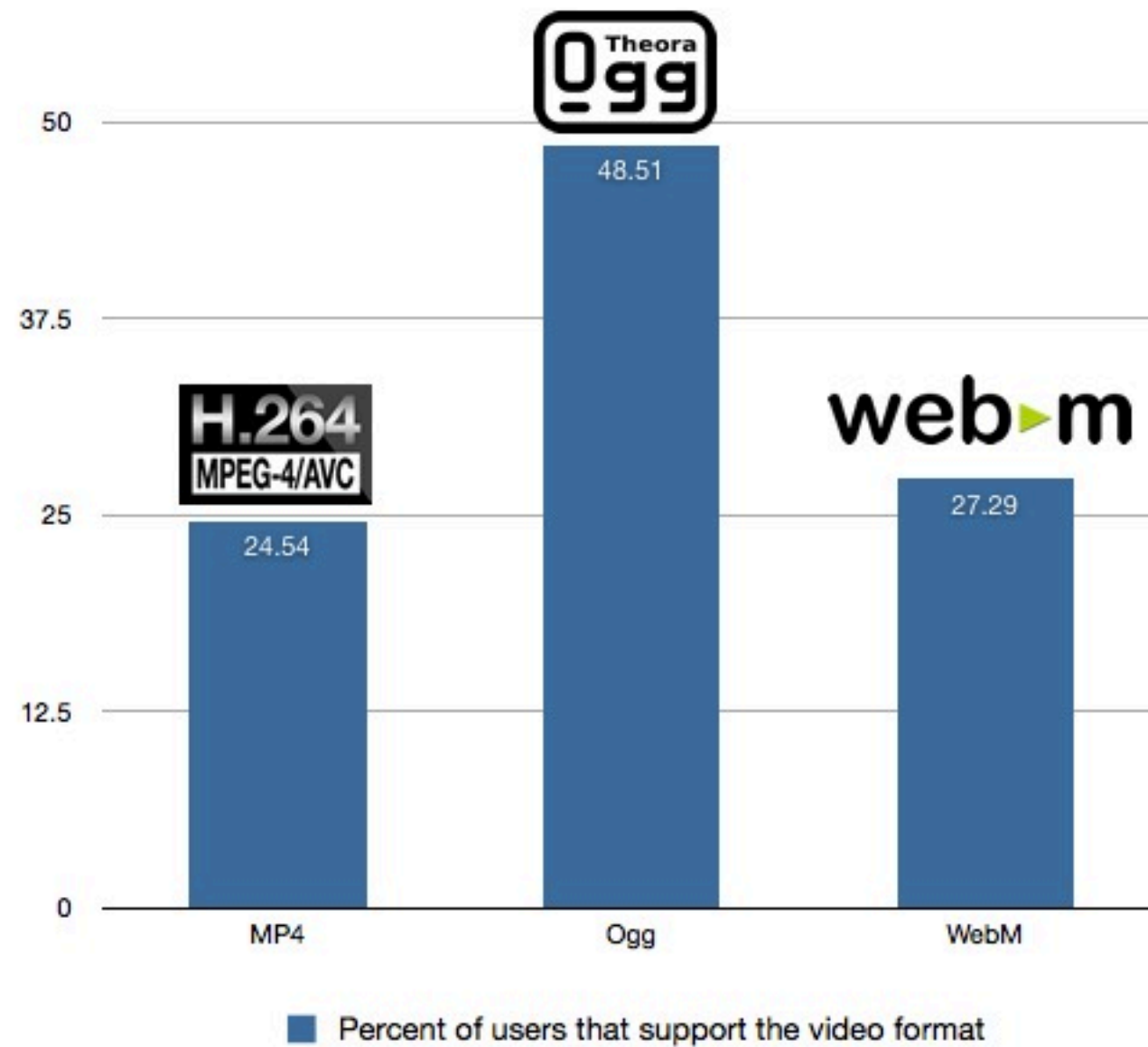


10.6+

VP8

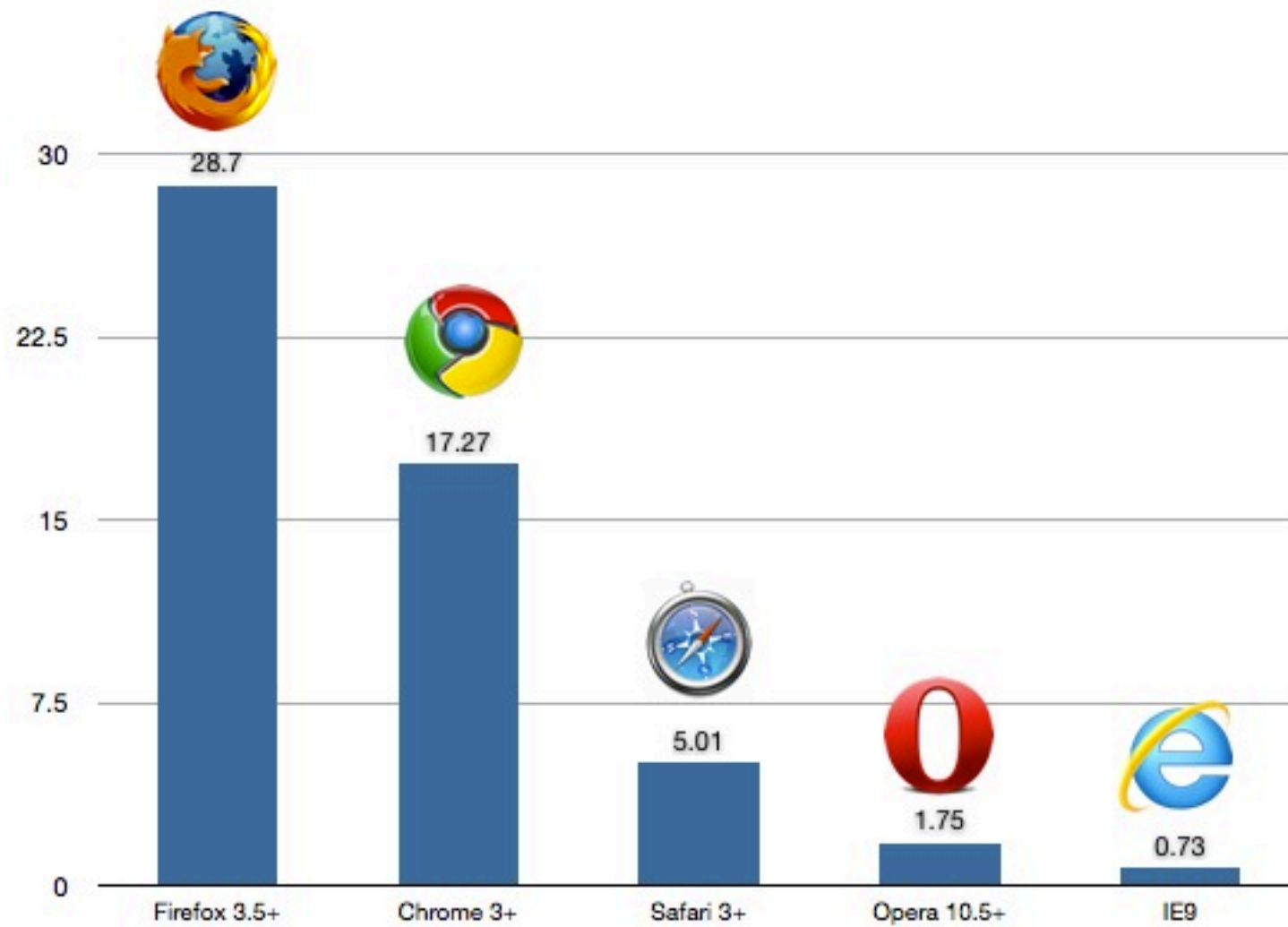
VORBIS

HTML5 Video Format Stats - April 2011



Based on global statistics from gs.statcounter.com. Compiled by videojs.com.

HTML5 Browser Stats - March 2011



Percent of Page Views per Browser

Based on global statistics from gs.statcounter.com. Compiled by videojs.com.

Three Formats



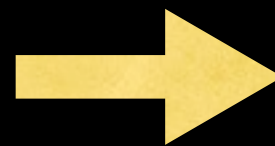
3+



9+



9+



H.264
MPEG-4/AVC



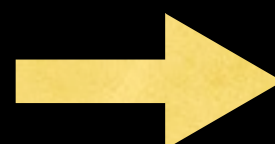
4+



6+



10.6+



webm



3.5+



3+



10.5+



Theora
Ogg

Two Formats



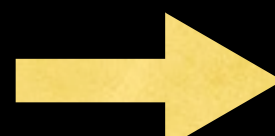
3+



9+



9+



H.264
MPEG-4/AVC



4+



6+



10.6+



web►m

One Format



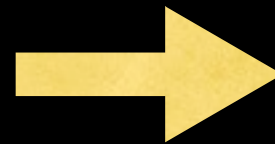
3+



9+



9+



H.264
MPEG-4/AVC

Handbrake.fr



HandBrake

Now with 21 essential vitamins and minerals, including Apple TV support!

HandBrake is an open source, GPL-licensed, multiplatform, multithreaded video transcoder, available for Mac OS X, Linux and Windows.

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[User Manual](#)
[Wiki](#)
[Contribute](#)

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[hlscrip](#)

Thanks

HandBrake now has a GitHub Mirror

Monday, Feb 21, 2011

HandBrake relies on people to volunteer their free time to contribute features, bug fixes and other enhancements, as such, we are trying to make it easier to contribute.

We have now created an official mirror of the HandBrake Subversion repository on GitHub.

Hopefully this will make it easier for people to branch and fork the code and contribute patches back for entry into the main subversion repository.

If you're a programmer and have spare time, along with skills in C, Obj-C or C#, please feel free to get in touch on our IRC room.

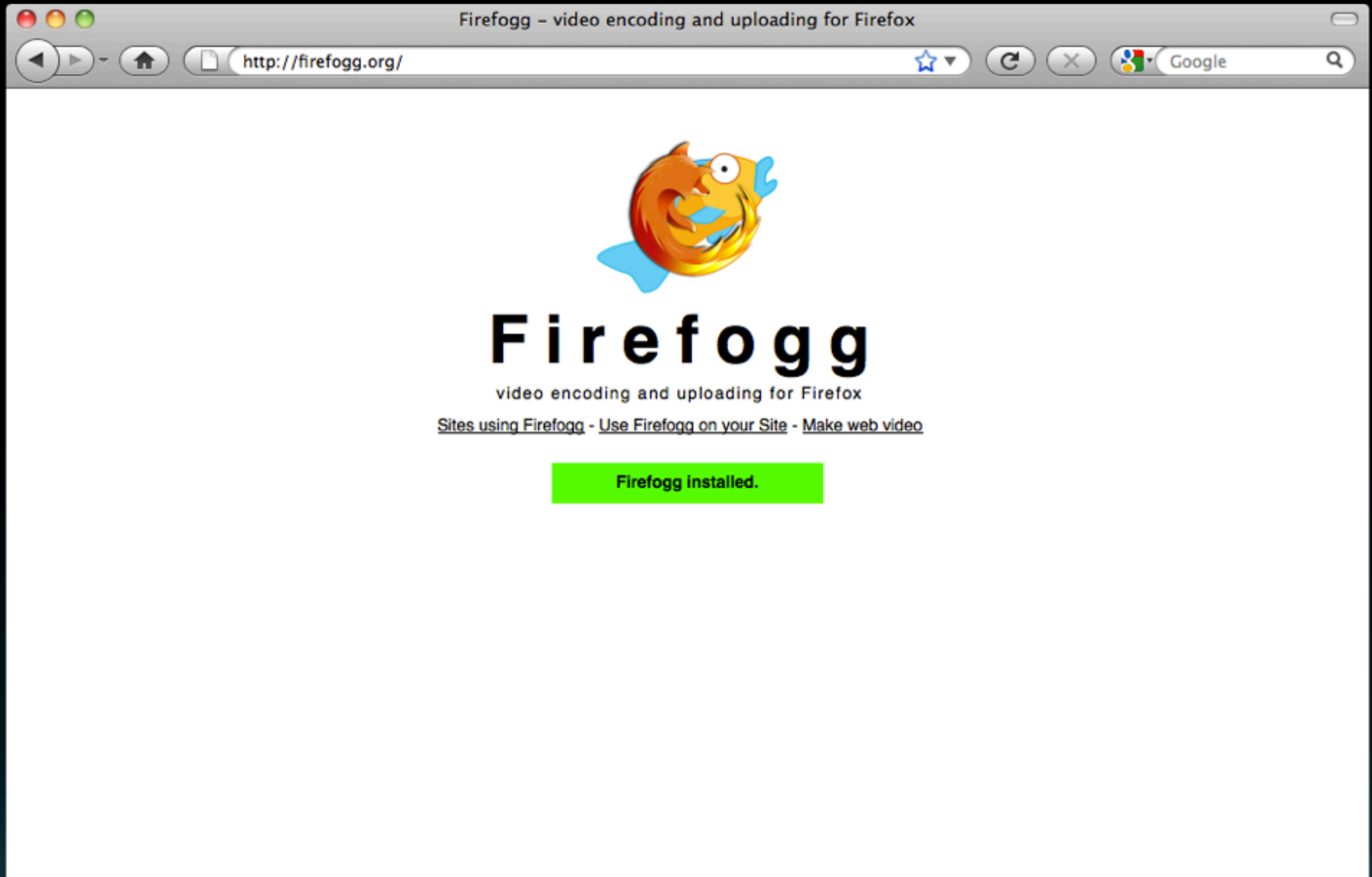
The GitHub mirror can be found [Here!](#)

HandBrake 0.9.5: Released!

Monday, Jan 03, 2011

"The function of good software is to make the complex appear to be simple."

Firefogg.org



Zencoder.com

The image shows a screenshot of the Zencoder.com website and its 'Encoding Overview' dashboard. The website header includes the Zencoder logo, navigation links (FEATURES, CUSTOMERS, FAQ, JOBS, PRICING & SIGN UP), and user links (API, Help/Support, Contact, Log In). The main headline reads: 'Easy-to-use, blazing fast video encoding for your app. Get started today.' A green speech bubble with 'SIGN UP FREE' is positioned over the dashboard. The dashboard, titled 'Encoding Overview | Zencoder', displays statistics for the selected time frame 'Today':

Stat	Value
SUCCESSFUL	3781
FAILED	0
MINUTES ENCODED	6429
AVERAGE PROCESSING TIME	00:01:13
AVERAGE QUEUE TIME	00:00:04

Below the stats is a 'Recent Jobs' section with a table of job details:

Job ID	Input File	Input Duration	Input Size	Outputs	Submitted	Status
453949	PianoChatroulette.mp4	00:05:29	51.35 MB	1	Less than a minute ago	Transcoding: 21.0%
453948	user_upload.avi	00:03:21	30.1 MB	3	2 minutes ago	Transcoding: 63.0%

At the bottom, it says 'HUNDREDS OF HAPPY CUSTOMERS' and lists logos for various clients including NBC, PBS, and others.

Content Protection



- RTMP Streaming
- DRM (Flash Access/Smooth Streaming)



- Source Obscurity
- Time/GEO/IP limited URLs



- Native App Obscurity
- HTTP Streaming
- AES Encryption

Browser/General Issues

- Autobuffer => Preload
- Missing Poster in Some Safari Versions
- Cross-browser Load Progress Tracking
- HTML5 Browsers Do Not Fallback on Incompatible Sources

Device Quirks: iOS 3

- Needs MP4 as first source.
- iPad Poster Attribute Bug
- iPad JS in Head / iPhone JS not in Head

Device Quirks: Android 2.1 / 2.2

- @type at MP4 source breaks.
- Video can only be programmatically started.

VideoJS.com

HTML5 Video Player | VideoJS

◀ ▶ 🔍

+

⌵

http://videojs.com/

Reader ↻

🔍

Google

 **VideoJS**
HTML5 Video Player

HTML5 Video | Embed Builder | Skins | Blog

GETTING STARTED | DOWNLOAD | DISCUSSION



▶ 00:00 / 00:47 🔊 🔍

Video encoding & hosting provided by [zencoder](#) - Video clip is from [Disney nature oceans](#)

SKINS (100% CSS)

 Original

Tube **CSS**

vimess

huCSS

MORE...

COMPATIBIILITY

SUPPORTED BROWSERS

FALLBACK SUPPORT FOR

FEATURES

✓ Free & Open Source

✓ Lightweight. **NO IMAGES USED**

✓ 100% skinnable using CSS

✓ Library independent

DOWNLOAD OPTIONS

Download (Free)

Latest Stable Version: **1.1.2**

[Source Repository \(GitHub\)](#)

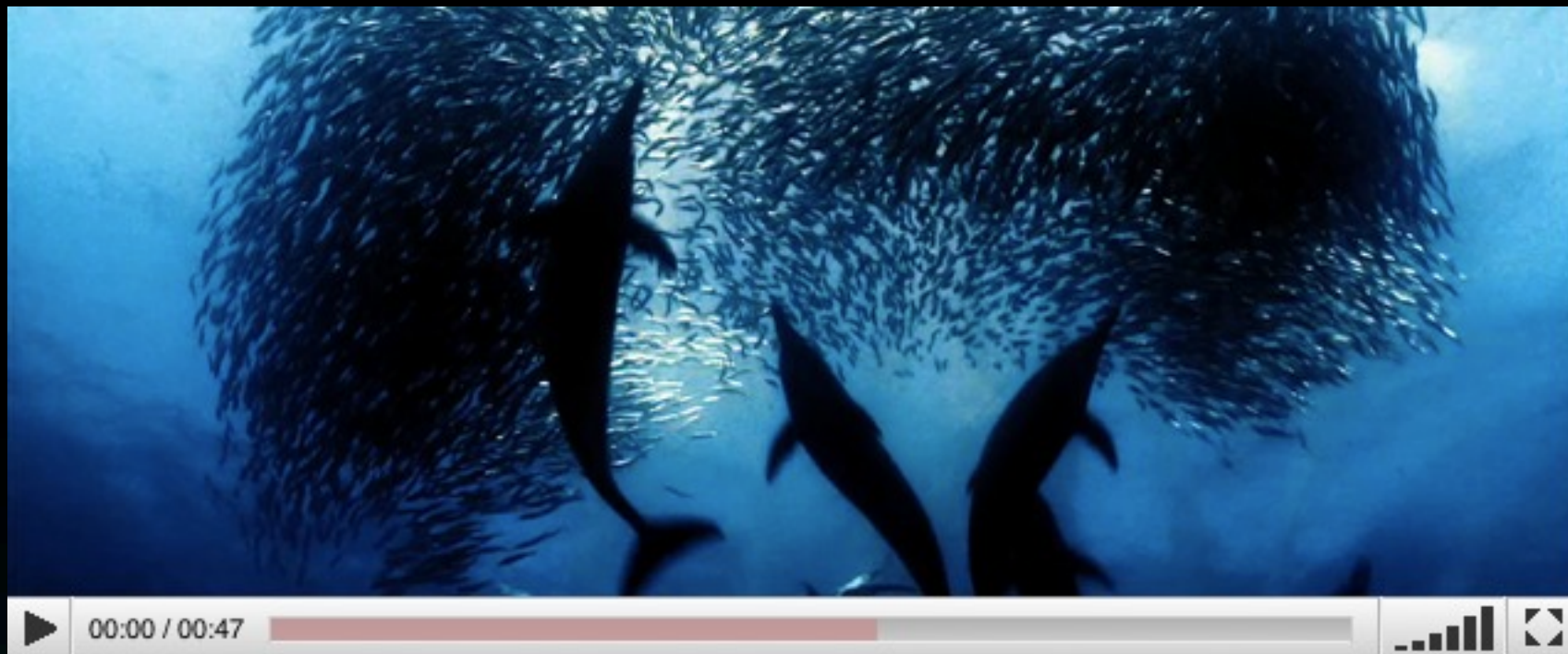
VideoJS - 3 Pieces

- HTML Embed Code
- Javascript Library ([video.js](#))
- CSS Skin ([video-js.css](#))

CSS Skin



CSS Skin



CSS Skin



CSS Skin

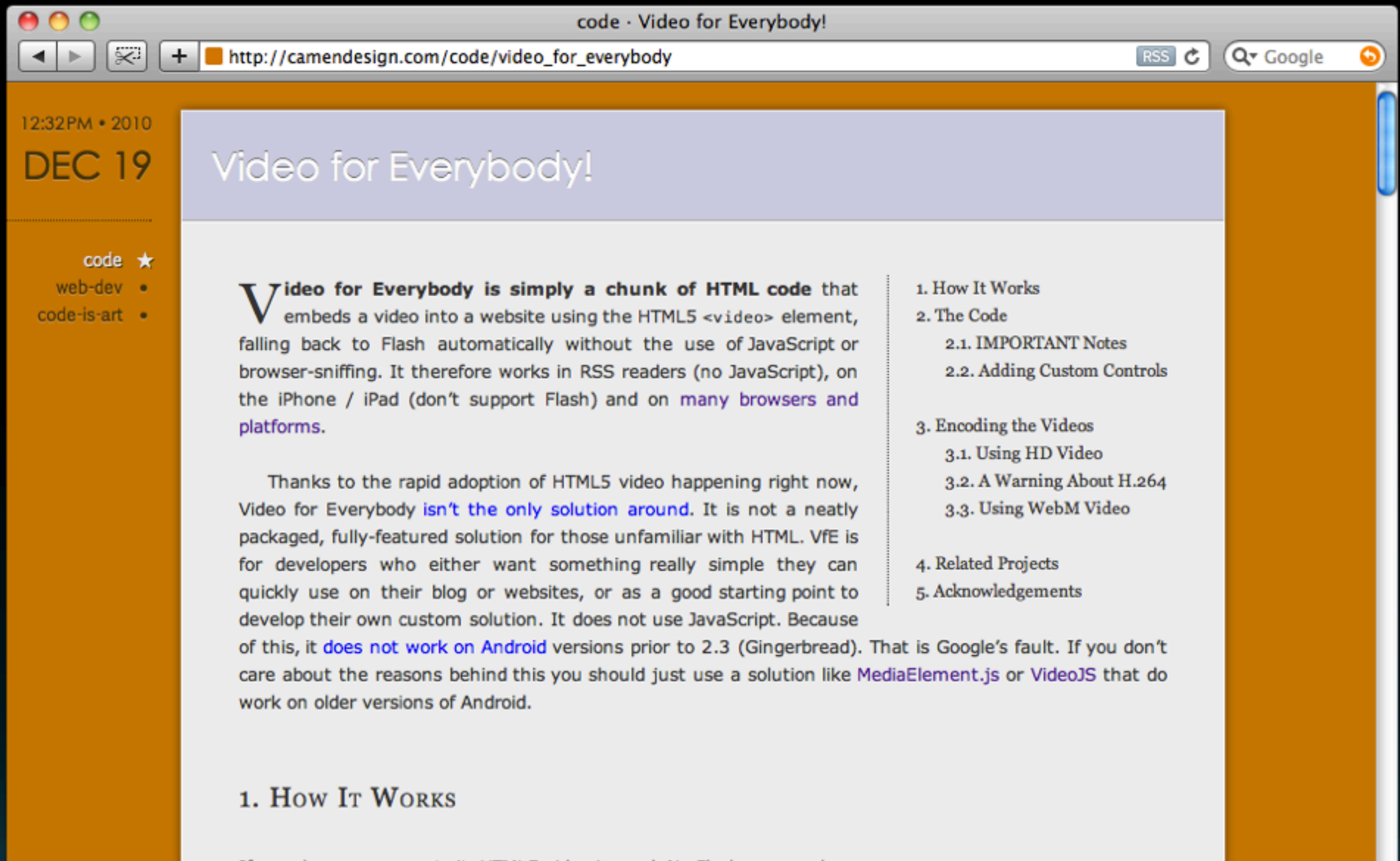


CSS Skin



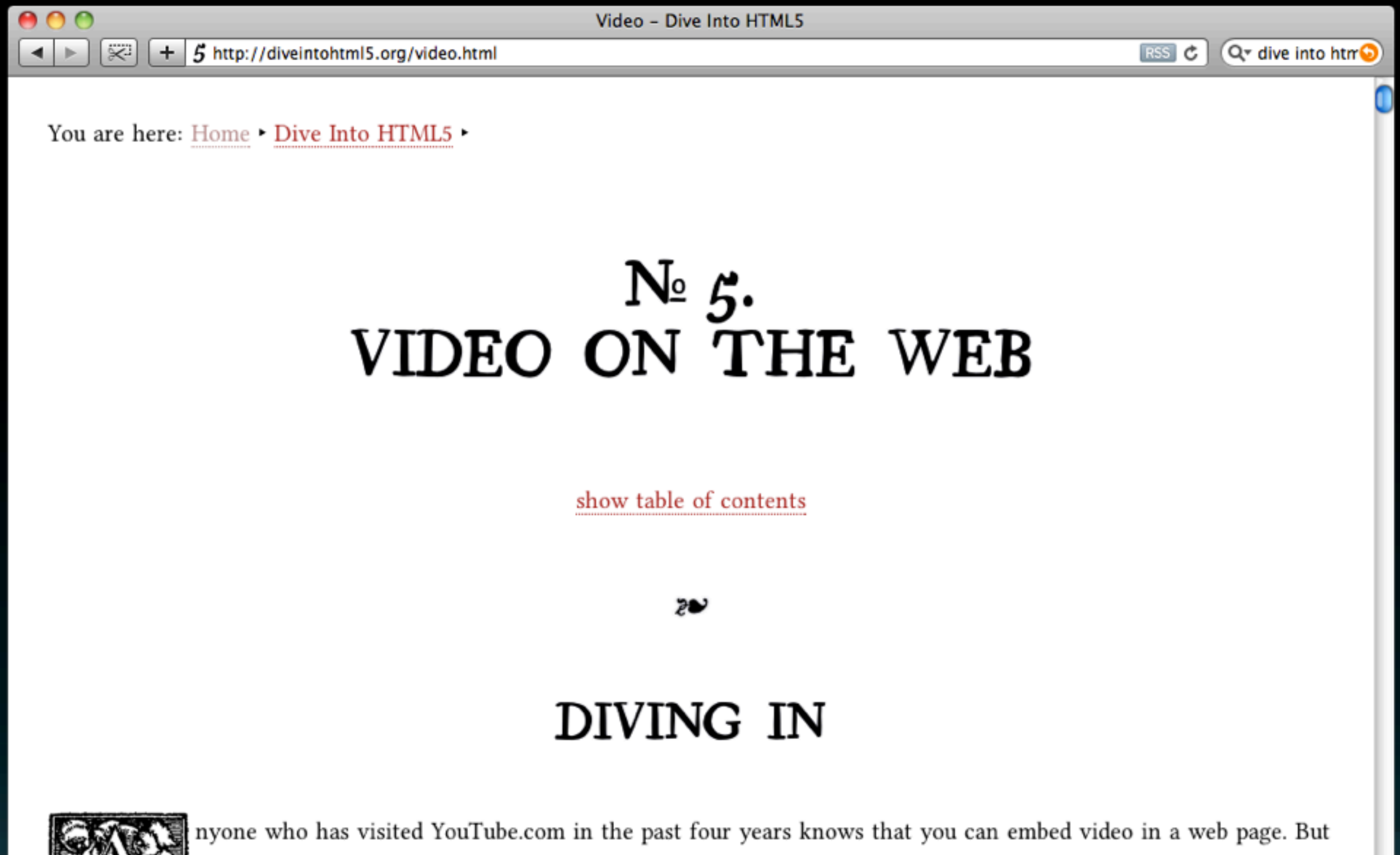
Video for Everybody

By Kroc Camen



Dive into HTML5

By Mark Pilgrim



HTML5 Video and Audio in Depth



<http://videojs.com/lynda>





Building an HTML5 Video Player

Streaming Media West 2011

#SMWest #html5video

Steve Heffernan, VideoJS & Zencoder

<http://videojs.com>

@videojs