Debunking HTML5 Video Myths: A Guide for Video Publishers

by Robert Reinhardt

@flashfreaker #SMEast
Now that Google has made the decision to remove H.264 from Chrome, it's more important than ever to pick the right video formats for online video distribution. Many claims about HTML5 have been laid down by both standards and Flash proponents, and not all of them are based on fact. This session walks you through the capabilities of HTML5 and the Flash platform as well as the codecs they support, including WebM and H.264. Learn the effect HTML5 will have on video encoding and distribution in the future and how HTML5 may impact your business.
contact information

- **email:** robert@theMakers.com
- **twitter:** @flashfreaker || @videoRx
- **blog:** probablyjustme.com
Robert Reinhardt, VP of [theMAKERS]

- **Creator**: Developer, solutions architect for Flash platform
- **Writer**: original *Flash Bible* series, *Video for Flash Studio Techniques*
- **Instructor**: Corporate training for Disney, global design agencies
- **Entrepreneur**: Online video services at videoRx.com
- **Contributor**: Online articles, calculators, tutorials.
Situation Normal: All Fouled Up
Browsers are riddled with inconsistencies.
Who is your target audience?
What resources are available?
answers: be specific and accurate.

- **ACCURATE:**
  - “I want to reach desktop browsers and iDevices.”

- **INACCURATE:**
  - “I want to reach HTML5 audiences.”
adoption statistics

now.periscopic.com
- **Full screen**: Not consistently available in HTML5

![HTML5 fullscreen](image1.png)  ![Flash Player fullscreen](image2.png)
- **Alpha channel mask:** Available in VP6, Adobe Flash Player (2005)
- **Embedded cue points**: Available in FLV, Adobe Flash Player (2003)
- **Web cam/mic access**: Available in Flash Player 6+, Silverlight 4
**Captions/subtitles:** Virtually no implementation in HTML5
- **Cross-domain access:** HTML5 spec dictates access policy in response header! (not currently implemented in browsers)

- **HTTP Streaming:** Flash Player, Silverlight, Apple Safari Mac/Mobile, Android 2.3+

- **Near-instant seek:** Any streaming/adaptive protocols

- **Video slicing:** Silverlight, Flash Player

- **DRM:** Silverlight, Flash Player 10.1 (Flash Access)

- **Live streaming:** Silverlight, Flash Player, HTTP Live Streaming

- **Display list control:** Flash Player 10.2 (Stage Video)
The Flash community has delivered practical video solutions since 2002.
who should you hire to deliver online video?

HTML5 developers are just starting to learn from their mistakes.
in the end... what do you need?

HTML5 <video>

✓ Smartphone/mobile devices
✓ Basic video capabilities
✗ Fluctuating bandwidth conditions
✗ Immersive experiences
In the end... what do you need?

**Flash Player**

- ✓ Smartphone/mobile/desktop with FP 10.1+
- ✓ Immersive experiences
- ✓ Fluctuating bandwidth conditions
- ✓ Content protection
- ✗ Platforms without Flash Player
In the end... what do you need?

**Silverlight**

- ✓ Windows Phone devices + desktop
- ✓ Immersive experiences
- ✓ Fluctuating bandwidth conditions
- ✓ Content protection
- ✗ Platforms without Silverlight
MPEG-4: AVC/H.264 and AAC variants
WebM: On2 VP8 and Vorbis
Adaptive HTTP Streaming: **What is It?**

Source: Apple HTTP Live Streaming Overview PDF
Adaptive HTTP Streaming: User Experience

✓ Reduces wait for loading & seeking
✓ Eliminates buffering once playback starts
✓ Cacheable video segments
Adaptive HTTP Streaming: **Integrator Experience**

✓ Firewall pass-thru
Increased encoding tasks
Adaptive HTTP Streaming: **Integrator Experience**

✗ Increased player development tasks
Adaptive HTTP Streaming: Hybrid servers

- Wowza Media Server: All-in-one solution
- Microsoft IIS 7+: Silverlight / HLS
- Adobe Flash Media Server (future): RTMP / HLS
Encoding guidelines for adaptive streaming video

**Consistent keyframe interval**

Keyframe interval = 8 → Higher quality keyframe for given bitrate

Keyframe interval = 4 → Lower quality keyframe for given bitrate
Consistent audio settings
Encoding guidelines for adaptive streaming video

CBR encoding (not VBR)
Mark every keyframe (i-frame) as IDR frame
videoRx.com: Optimal Quality of Experience

1. Uploaded video
2. Wowza Media Servers
3. Amazon S3
4. Encoding servers
5. Video output

- **Adaptive H.264 Baseline** up to 640x480
- **Adaptive H.264 Main** up to 1024x768
- **Adaptive H.264 Main** up to 1080p

**API**
“Flash first” approach

- Got Flash Player 10.1? Play adaptive RTMP video
- Got Safari Mac/Mobile? Play HTTP Live Streaming video
- Neither? H.264/WebM progressive download
Requirements

- OSMF SWF player (Strobe Media Player)
- SMIL manifests for H.264 bitrates for HLS
- F4M manifests for H.264 bitrates for RTMP streaming
- Progressive downloads for H.264 and WebM media
WANTED:

- **Better manifest specs:** F4M needs some indication of codec profile(s) in use.

- **Easier device targeting:** Reliance on JavaScript for HTML5 to properly specify video source.
get better video with prescription encoding

- Reduce the time to encode high quality video
- Provide the highest quality lowest file size video
- Trust video compression from a reputable source
- Enable adaptive bitrate encoding for everyone
- Enable easy and affordable hosting
thank you

- **email**: robert@theMakers.com
- **twitter**: @flashfreaker || @videoRx
- **survey**: [http://surveymonkey.com/s/encoding](http://surveymonkey.com/s/encoding) (10 free credits!)
- **contribute**: [http://tinyurl.com/html5compare](http://tinyurl.com/html5compare)
- **upcoming events**: Flash and the City, June 9-12