

# HTML5 Audio and Video Support in Vewd App Store Applications



**Please note** that parts of this article refers to older Presto-based versions of the Vewd products (Vewd Core 3.x). These versions are still live in a lot of devices that are active in all markets, but most devices shipped since 2015 are based on the newer Blink-based Vewd product.

Update history:

- Article updated on 30 March 2012 to suggest explicit `<source>` workaround.
- Article updated on 18 April 2012 to include MPEG-1/MPEG-2 Audio Layer 3 audio codec for video and clarification on limitation of single `<audio>` or `<video>` element playback on some of the current devices.
- Article updated on 13 August 2014 to include information about supported Adaptive Bitrate Streaming and DRM formats.
- Article updated on 7 October 2014 to cover subtitles support
- Article update on 5 November 2014 with information about Shoutcast and fixed example player codes

## Introduction

The Vewd App Store browser comes with built-in support for the HTML5 `<audio>` and `<video>` elements, allowing developers to include multimedia content in their applications without any need for plugin-based solutions.

At its simplest, this means that multimedia elements can be included in a TV Store application by simply using markup such as:

```
<video src="/path/to/video.mp4"></video>
<audio src="/path/to/audio.mp3"></audio>
```

For more on the basics of HTML5 `<audio>` and `<video>`, read [Introduction to HTML5 video](#).

Due to limitations in how multimedia content is handled on certain current devices, there are situations in which the type of audio/video content being used is not automatically inferred by file extensions or MIME types. For this reason, we suggest to use the more explicit, though slightly more wordy, variant:

```
<video>
  <source src="/path/to/video.mp4" type="video/mp4">
</video>
<audio>
  <source src="/path/to/audio.mp3" type="audio/mp3">
</audio>
```

In contrast with desktop browsers — where multimedia decoding and playback is handled directly by the browser — the specifics of which codecs are supported on devices can vary considerably, as this depends on the underlying platform and integration work carried out by device manufacturers, as well as the specific version of the Vewd App Store that may be running on the device.

Additionally, due to the way some of the current devices have integrated audio and video support on their platform via an external media playback framework, it may not be possible to guarantee simultaneous playback of more than a single `<audio>` or `<video>` element.

Whenever you switch to the next audio/video source with JavaScript, make sure to destroy the current audio/video element, and create a new one. Without this, some devices may have problems playing the new audio/video source, especially if the format is different than the one previously played.

Shoutcast format is not officially supported. It may work with subset of devices with the Vewd App Store depending on platform capabilities. We recommend to not use it in order to increase the reach.

We recommend using bitrates from 2Mbps (lowest to get minimum video quality) to 4Mbps (highest limited by the network bandwidth users usually have) in your videos.

## Audio and video codecs

At the time of publication, the following container formats and codecs are supported for Vewd App Store applications:

Audio or video codec	Supported in the Vewd App Store	Supported in the Vewd TV Emulator
H.264	Yes	Yes
MP3	Yes	Yes

<b>AAC-LC</b>	Yes	Yes
<b>HE-AAC</b>	Yes	Yes

## Using MPEG-4 AVC (H.264) video

- Main and High Profiles,
- Up to Level 4 (inclusive),
- With audio codecs: MP3, AAC-LC or HE-AAC,
- Container format is MP4,
- Source type set to `video/mp4`,

Example player code:

```
<video>
  <source src="/path/to/video.mp4" type="video/mp4">
</video>
```

## Using MPEG-1/MPEG-2 Audio Layer 3 (MP3) audio

- Mono or Stereo options,
- 32kHz/44.1kHz/48kHz frequencies,
- 16kbps-10Mbps bitrate (2Mbps-4Mbps is recommended to be used),
- Container format is MP3,
- Source type set to `audio/mp3` or `audio/mpeg`,

Example player code:

```
<audio>
  <source src="/path/to/audio.mp3" type="audio/mp3">
</audio>
```

## Using AAC-LC and HE-AAC audio

- Mono or Stereo options,
- 32kHz/44.1kHz/48kHz frequencies,
- 16kbps-10Mbps bitrate (2Mbps-4Mbps is recommended to be used),
- Container format is MP4,
- Source type set to `audio/mp4`,

Example player code:

```
<audio>
  <source src="/path/to/audio.mp4" type="audio/mp4">
</audio>
```

## Adaptive Bitrate Streaming and DRM

When dealing with premium multimedia content, you'll encounter technologies like adaptive bitrate streaming, which allows for smooth video playback by dynamically adjusting the bitrate, and digital rights management (DRM).

Below you can find the list of supported adaptive bitrate streaming formats and their combinations with DRM, together with simple examples how to correctly use such videos into your application. Please note that the actual support may slightly differ, depending on specific video stream parameters, firmware versions and device generations. It is also important to note that not all devices the Vewd App Store runs on support adaptive bitrate streaming and DRM.

Adaptive bitrate streaming formats supported in the Vewd App Store are as follows:

- HTTP Live Streaming (HLS) — VOD and Live profiles
- Microsoft Smooth Streaming (MSS) — VOD and Live profiles
- MPEG-DASH — Live profile only (recommended)

Adaptive Bitrate Format	Supported in the Vewd App Store	Supported in the Vewd TV Emulator
<b>HTTP Live Streaming (HLS) v3. Live and VOD profiles</b>	Yes	No

<b>Microsoft Smooth Streaming (MSS) v1. Live and VOD profiles</b>	Yes	No
<b>MPEG-DASH. Live profile only</b>	Yes	No

DRM Format	Supported in the Vewd App Store	Supported in the Vewd TV Emulator
<b>Microsoft PlayReady 1.2</b>	Yes	No

The DRM format supported in the Vewd App Store is Microsoft PlayReady 1.2 in combination with MSS (recommended) or MPEG-DASH.

## Using HTTP Live Streaming (HLS)

- VOD and Live profiles are supported,
- HLS version 3 specification up to and including Panthos 06,
- With or without AES 128 bit encryption,
- MPEG2TS as a container,
- Source pointing to a m3u8 playlist,
- Source type set to `application/vnd.apple.mpegurl`,
- At some devices HLS playback may be terminated if HLS stream is broken,

Example player code:

```
<video>
  <source type="application/vnd.apple.mpegurl" src="http://example.com/videofile.m3u8">
</video>
```

## Using Microsoft Smooth Streaming (MSS)

Technical details are as follows:

- VOD and Live profiles are supported
- Version 1.0 of the specification
- container format is MP4
- Source pointing to the MSS manifest file
- Source type set to `application/vnd.ms-sstr+xml`
- PlayReady content is supported here:
  - PlayReady content can be embedded with `ProtectionHeader` inside the MSS manifest
  - Some devices may not support Security Levels (content with any security level required is played)
  - DRM errors are signaled by the `MediaError` element of the video tag

Example player code:

```
<video controls>
  <source type="application/vnd.ms-sstr+xml" src="http://example.com/videofile.ssm/Manifest">
</video>
```

## Using MPEG-DASH

Technical details are as follows:

- Only Live profile is supported. VOD functionality can be still achieved by using Live profile
- container format is MP4
- Source pointing to the MPD manifest
- Source type set to `application/dash+xml`
- PlayReady content will be supported here by future devices
  - Such content can be embedded with the `ContentProtection` element as defined by the reactive licence acquisition method
  - Some device may not support Security Levels (content with any security level required is played)
  - DRM errors are signaled by the `MediaError` element of the video tag

Example player code:

```
<video controls>
  <source type="application/dash+xml" src="http://example.com/videofile.isml/videofile.mpd">
</video>
```

## Subtitles

Format	Supported in the Vewd App Store	Supported in the Vewd TV Emulator
Out-of-band WebVTT	Yes	Yes

Vewd App Store supports out-of-band subtitles through HTML5's `<track>` tag and a WebVTT (Web Video Text Tracks) file format. Out-of-band means subtitles are delivered in addition to the media file.

Example player code:

```
<video>
  <source type="video/mp4" src="http://example.com/video.mp4">
  <track src="http://example.com/subtitles.vtt" srclang="en" label="English">
</video>
```

WebVTT subtitles can be also used together with all ABR or DRM formats mentioned in this article just by adding the `<track>` tag.

More information about using the WebVTT format can be found in [this article](#).

In-band subtitles (included inside the media container e.g. MP4) are supported at subset of devices only. In addition platforms are fragmented so we recommend using out-of-band subtitles with the WebVTT format only.

## Testing

[Vewd TV Emulator](#) supports the above audio and video formats, including subtitles but without adaptive bitrate streaming and DRM. You can test H.264 streaming or audio playback in your application with it. Please note that because of licensing reasons the H.264 codecs are not installed by default. See the [emulator's user guide](#) for information of how to install these codecs.

Since the [Vewd TV Emulator](#) doesn't support any adaptive bitrate streaming or DRM formats, the only way to test such streams in your application is to use a retail device. We recommend to use Sony Blue-ray Disc Players 2013 or 2014 models e.g. BDP-S1100 or BDP-S1200. For more info on how to test your app inside the Vewd App Store see [our article](#) about it.