

Working with Videos

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Introduction

What are some of the activities that can be performed with videos?

- Take them with our digital cameras or mobile devices
- Download videos from YouTube or other web sites
- Convert videos from one format to another format to play on our mobile devices
- Extract the audio from a YouTube or other type of video
- Extract a frame from a video

What You Need to Know About the 5 Most Common Video File Formats

Beginning from the home video era up to the most cutting-edge standards of today, video file formats have undergone some major changes. Different file formats do different things, and the right video format for a specific file isn't necessarily the right one for the others. Each file format has its own set of specifics, and today, we're going to look at 5 of the most common file formats every user will come across when streaming videos on the Web or playing them from the computer itself.

A normal video file in a digital format is made up of two parts, a "codec" and a "container". A "codec" is used to compress and decompress a video file, as there are times where video files are too large and may cause difficulty when trying to download or play the file. Some examples of "codecs" are FFMpeg, DivX, XviD, and x264. A "container" is a collection of files that stores information about the digital file. It simply means there is a combination of both audio and video data in a single file to allow for simultaneous audio-with-video playback. Some popular types of "containers" are AVI, FLV, WMV, MP4, and MOV.



AVI (Audio Video Interleave)

Developed by Microsoft and introduced to the public in November 1992 as part of its Video for Windows technology, the AVI format is one of the oldest video formats. It is so universally accepted that many people consider it the de facto standard for storing video and audio information on the computer. Due to its simple architecture, AVI files can run on several different systems like Windows, Macintosh, Linux; is also supported by popular web browsers. AVI files stores data that can be encoded in several different codec's, although most commonly with M-JPEG or DivX codecs. This means that all AVI files, while they may look similar on the outside, differ substantially from one another on the inside.



FLV (Flash Video Format)

FLV files are videos that are encoded by Adobe Flash software, usually with codecs following the Sorenson Spark or VP6 video compression formats. They can be played via the Adobe Flash Player, web browser plugins or one of several third-party programs. Since virtually everyone has

the player installed on their browsers, it has become the most common online video viewing platform used on the Web today. As almost all video sharing sites such as Youtube stream videos in Flash, practically all browsers support and are compatible with the Flash Video format and can play the video with ease. In addition to being an online video viewing format, the Flash Video format is also what many video-sharing sites convert videos to, from formats that were uploaded by their users in something other than Flash. This is because videos in the FLV format remain in high quality even after compression to a smaller file size, which means that the videos on the Web load quickly and won't spend a lot of time using up bandwidth. Some notable users of the Flash Video are Youtube, Yahoo! Video, VEVO, Hulu and Myspace among many others.



WMV (Windows Media Video)

Developed by Microsoft, WMV was originally designed for web streaming applications, as a competitor to Real Video, but it can now cater to more specialized content. WMV files are the tiniest video files over the Web, as their file size decreases significantly after compression, which results in poor video quality. However, one advantage of this small file size is that it is probably the only video file format that allows users to upload and share their videos through the e-mail system. Being a Microsoft software, the Windows Media Player is the main application that is used to play WMV files on all Microsoft's Windows operating systems, but there are also WMV players available for free for the Macintosh operating system.



MOV (Apple QuickTime Movie)

Developed by Apple, Inc, the QuickTime file format is a popular type of video sharing and viewing format amongst Macintosh users, and is often used on the Web, and for saving movie and video files. In recent years, Apple came up with a newer version called QuickTime X, currently available on Mac OS X Snow Leopard, Lion and Mountain Lion. MOV files are most commonly opened via the Apple QuickTime Player for the Macintosh Operating System. However, MOV files are not just limited to being played on Apple computers, as there is a free version of the QuickTime Player available for the Windows Operating System among many other players. Considered one of the best-looking file formats, MOV files are of high quality and are usually big in file size.



MP4 (Moving Pictures Expert Group 4)

MP4 is an abbreviated term for MPEG-4 Part 14, a standard developed by the Motion Pictures Expert Group who was responsible for setting industry standards regarding digital audio and video, and is commonly used for sharing video files on the Web. First introduced in 1998, the MPEG-4 video format uses separate compression for audio and video tracks; video is compressed with MPEG-4 or H.264 video encoding; and audio is compressed using AAC compression. The MP4 file format is also another great file sharing format for the Web, MP4 file sizes are relatively small

but the quality remains high even after compression. MP4 standard is also becoming more popular than FLV for online video sharing, as it compatible with both online and mobile browsers and also supported by the new HTML5.

iPhone and iPad

Compatible Video Formats

The iPad natively supports many of the common video formats used today, including H.264, MP4, M4V, MOV, MPEG-4 and M-JPEG. By default, these play in the iPad's Videos app. The iPad does have limitations within these formats. For example, H.264 videos are limited to 1080 pixels and 30 frames per second. MPEG-4 videos are limited to 2.5 Mbps and 640 by 380 pixel resolution at 30 frames per second. Videos exceeding these limits may not play correctly on an iPad, or may not play at all. Although the iPad does support stereo sound, you will need headphones or external speakers to hear it. The built-in speaker provides only mono playback.

Incompatible Video Formats

The iPad does not support AVI, Flash (FLV) or Windows (WMV) video file formats. If you have a video in these formats, you will need to convert it to a compatible format before you can play it on an iPad. If your video is in a compatible format, but the size or speed is incompatible, you can convert it in iTunes. After dragging a video into the Movies section of iTunes, just select the video and select "Create New Version" from the File menu. You can then specify an "iPad version" of the video.

Additional Video Apps

If there is a format not supported natively by the iPad, a third-party app available from the iPad's App Store may do the job. For example, iMedia Player is free ad-supported app that can play AVI, WMV and AVI videos without the need to convert them. Video Downloader is another free app that plays a wide range of formats, including WMV, FLV, DVX and MPG. It also gives you the ability to download videos to the iPad. Media Player Pro also plays a wide variety of video formats and includes support for high definition video.

Online Video Apps

Several online services make streaming video available through an app on the iPad. YouTube is one of the most popular and well-known, but there are many others, free or with a paid subscription, including Vodio, Hulu Plus and Netflix. When it comes to video compatibility, the benefit of these apps is that the developers ensure they are compatible with the iPad before making them available to you. The service automatically optimized a video before sending it to your iPad.

Downloading video from the Internet

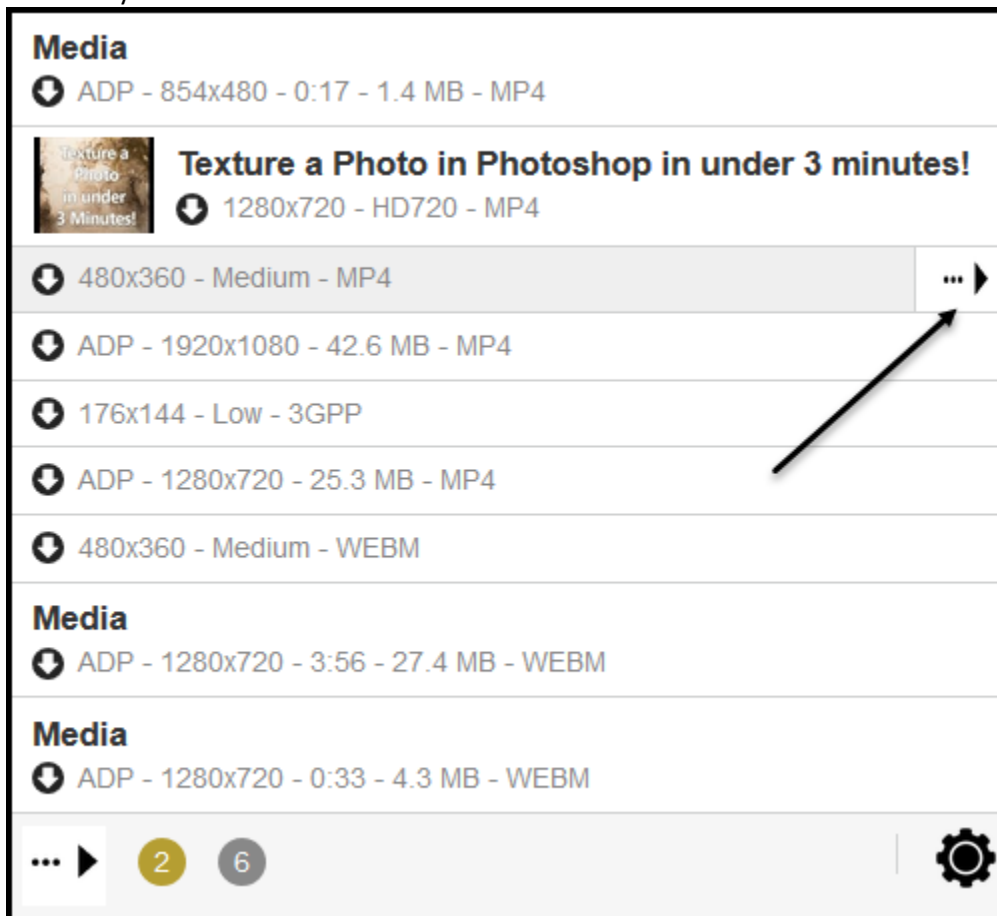
YouTube is the most popular web site for locating videos. Downloading them using Google Chrome is very difficult if possible at all. Using Firefox makes it easy with the right plug-in. The best plug-in that I have found is located [here](#) with help for the program located [here](#).

This plug-in not only downloads most all video types including FLV, MP4, WEBM, but can also convert them if you install the Converter which is available [here](#).

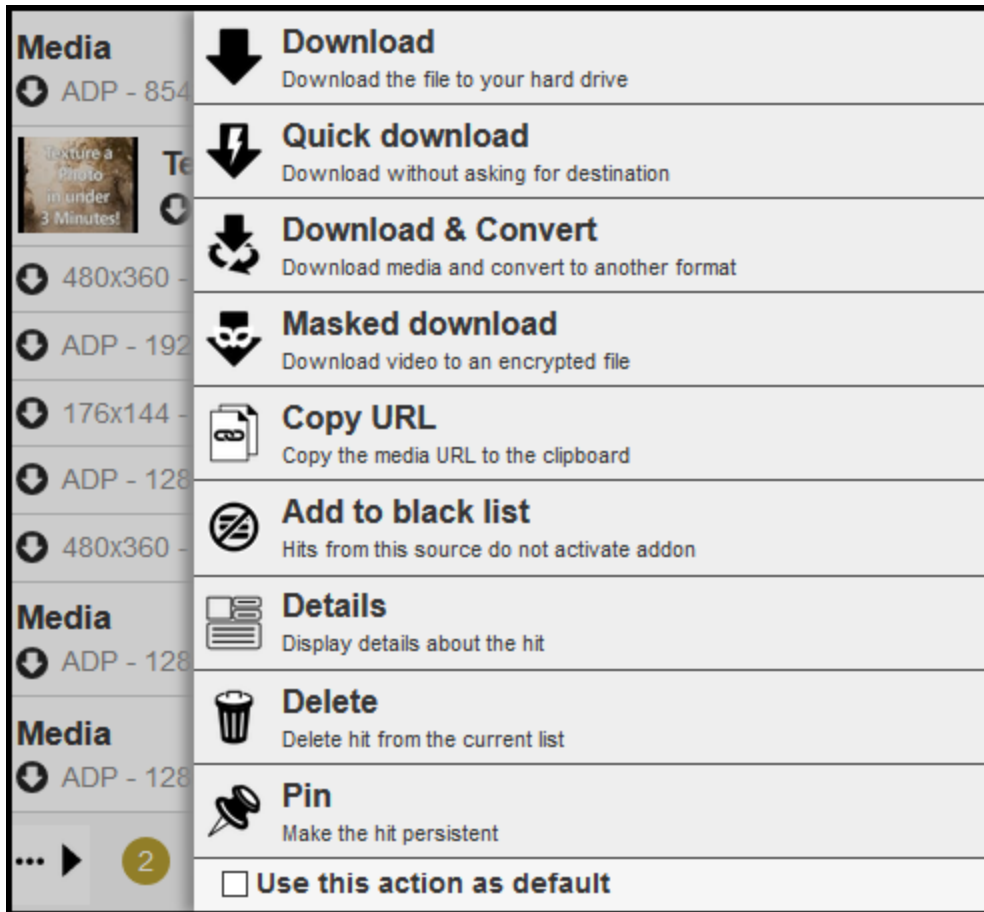
The plug-in installs a button at the upper right of the Firefox browser as shown below.




When you're viewing a video just click the button and a box as shown below will open. You can click the MP4 entry or click the arrow as shown below for more choices.



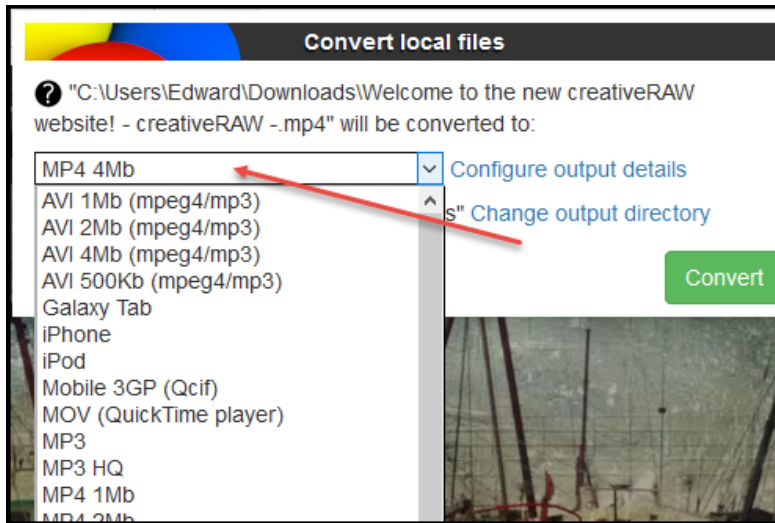
When you click the arrow, you will get the box as shown below. If you installed the converter you can click Download & Convert.



You can also convert local files. Just click the right-facing arrow at the lower left () to bring up the box below. Click the indicated icon to bring up the file browser. Just select the file that you want to convert and click open.



In the next window click the drop-down box to select the new format and click Convert.

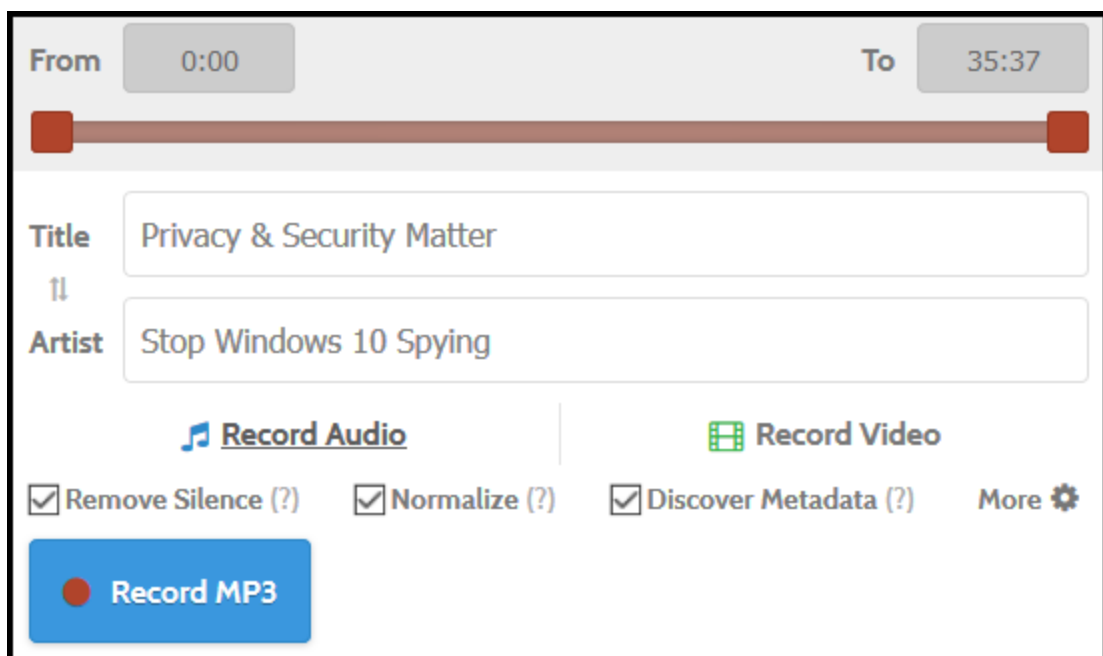


Transferring Videos to and from your iOS mobile devices

See the information [here](#).

Extracting the audio from a YouTube Video

1. Go to YouTube and locate the video
2. Copy the URL
3. Go to <http://peggo.tv/>
4. Paste the URL
5. A window as shown below will open where you can select Record Audio or Record Video. Next, it will ask you where to save the file.



6. You can also use the free VSDC Video Editor for this. See the link below.

Editing Videos

The only free video editor that I can recommend is the VSDC Video Editor Pro from <http://www.videosoftdev.com/free-video-editor>. I tried this and really like it. Their YouTube channel is [here](#).

If you don't like the VSDC program you can download the free, but older Windows Movie Maker. It's available [here](#). When you install it you can choose only the features that you want. It doesn't state that it works with Windows 10 but I tried it and it works.

Converting Videos from one format to another

Either of the 2 programs discussed above will allow you to convert videos from one format to another.

Extract a frame(s) from a video

Using the VLC Media Player

- Open a video and start playback
- Stop it when you see the frame that you want to save or extract
- Click Video, Take Snapshot
- A JPG will be saved in your Pictures folder

Note – if you click Tools, Preferences and select the Video tab you can change how and where Video Snapshots are saved.

Using the VSDC Video Editor

- Import a video
- Select the Editor tab at the top and click Cutting and Splitting
- Navigate to the frame that you want to save
- Click Export Image at the top
- Select you image format and location for saving
- Click Create Snapshot