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# Save and export video and animations

[Photoshop User Guide](#)

[Saving and exporting](#)

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**Note:**

For Photoshop versions earlier than Photoshop CC, some functionality discussed in this article may be available only if you have Photoshop Extended. Photoshop CC does not have a separate Extended offering. All features in Photoshop Extended are part of Photoshop CC.

After you've created video or animation content in Photoshop, you can easily optimize, render, and export it.

## Video and animation export formats

You can save animations as GIF files for viewing on the web. Videos and animations can be saved as QuickTime movies or PSD files. If you're not rendering your work to video, then saving the file as PSD is best because it preserves the edits and saves the file in a format that's supported by Adobe digital video applications and many motion picture editing applications.

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## Optimize animation frames

After you complete your animation, optimize it for efficient download to a web browser. You optimize an animation in two ways:

- Optimize the frames to include only areas that change from frame to frame. This greatly reduces the file size of the animated GIF file.
- If you are saving your animation as a GIF image, optimize it as you would any GIF image. A special dithering technique is applied to animations to ensure that dither patterns are consistent across all frames and to prevent flickering during playback. Due to these additional

### ON THIS PAGE

[Video and animation export formats](#)

[Optimize animation frames](#)

[Flatten frames into layers](#)

[Export video files or image sequences](#)

[Specify QuickTime Movie settings \(Photoshop Extended\)](#)

Applies to: **Photoshop CC**,  
**Photoshop Extended**

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optimization functions, more time may be required to optimize an animated GIF than to optimize a standard GIF.

**Note:**

When optimizing the colors in an animation, use the Adaptive, Perceptual, or Selective palette. This ensures that the colors are consistent across frames.

- 1 Make sure that the Timeline panel is in the frame animation mode.
- 2 Choose Optimize Animation from the panel menu.

- 3 Set the following options:

**Bounding Box** Crops each frame to the area that has changed from the preceding frame. Animation files created using this option are smaller but are incompatible with GIF editors that do not support the option. (This option is selected by default and is recommended.)

**Redundant Pixel Removal** Makes all pixels transparent in a frame that are unchanged from the preceding frame. The Transparency option in the Optimize panel must be selected for redundant pixel removal to work. (This option is selected by default and is recommended.)

**Note:**

Set the frame disposal method to Automatic when using the Redundant Pixel Removal option. (See [Choose a frame disposal method.](#))

- 4 Click OK.

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## Flatten frames into layers

When you flatten frames into layers, a single layer is created for each frame in a video layer. This can be useful, for example, if you're exporting the individual video frames as separate image files, or if you're planning to use the video of a static object in an image stack.

- 1 In the Timeline or Layers panel, select the video layer.
- 2 In the Timeline panel, choose Flatten Frames Into

Layers from the panel menu.

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## Export video files or image sequences

- 1 Choose File > Export > Render Video.
- 2 In the Render Video dialog box, enter a name for the video or image sequence.
- 3 Click the **Select Folder** button, and navigate to the location for the exported files.  
To create a folder to contain your exported file, select the Create New Subfolder option and enter a name for the subfolder.
- 4 Choose either Adobe Media Encoder or Photoshop Image Sequence from the menu below the Location section of the Render Video dialog box. Then choose a file format from the pop-up menu. If you chose Adobe Media Encoder, you have the choice of CPS, H.264, and QuickTime formats.
- 5 (Optional) Specify format-specific options from the menus below the file format menu.
- 6 (Optional) If you chose Image Sequence in step 4, specify the Starting and Digits numbers. (These options specify the numbering system for the exported files.)  
Then do any of the following if necessary:
  - Choose from the Size pop-up menu to specify the pixel dimensions for the exported files.
  - Click the Settings button and specify the format-specific options.
  - Choose a frame rate from the Document Frame Rate menu.

- 7 Under Range, select one of the following options:

**All Frames** Renders all the frames in the Photoshop document.

**Start Frame and End Frame** Specify the sequence of frames to render.

**Work Area** Renders the frames selected by the work area bar in the Timeline panel.

**In Frame and Out Frame (Photoshop Extended)**

Specify the sequence of frames to render.

**Currently Selected Frames (Photoshop Extended)**

Renders the frames selected by the work area bar in the Animation panel.

**Note:**

The available Range options depend on the file format you chose.

- 8 (Optional) Specify render options:

**Alpha Channel** Specifies how alpha channels are rendered. (This option is available only with formats that support alpha channels, such as PSD or TIFF). Select None to ignore the alpha channel, Straight-Unmatted to include the channel, or one of the Premultiplied options to mix a matte color with the color channels.

**3D Quality** Controls how surfaces are rendered if your project includes 3D objects. Interactive is suitable for video games and similar uses. Ray Traced Draft is

low quality but lets the video render quickly. Ray Traced Final is high quality but the video takes a long time to render.

**Frame Rate** Determines how many frames are created for each second of the video or animation. The Document Frame Rate option reflects the rate in Photoshop. If you're exporting to a different video standard (from NTSC to PAL, for example), choose the appropriate rate from the pop-up menu.

- 9 Click Render.

## QuickTime export file formats (Photoshop Extended)

**3G** A file format developed for third-generation mobile devices.

**FLC** An animation format for playback of computer-generated animations on workstations, Windows, and Mac OS. This format is also referred to as FLI.

**Flash Video (FLV)** Adobe Flash Video is the Adobe format for streaming audio and video over the web and other networks. (To use this format, you must first install an FLV QuickTime encoder).

**QuickTime Movie** The Apple Computer multimedia architecture that includes a number of codecs. (To export audio, you must use this format.)

**AVI** Audio Video Interleave (AVI) is a standard format for audio and video data on Windows computers.

**DV Stream** A video format with intraframe compression

that uses FireWire (IEEE 1394) interface to transfer video to nonlinear editing systems.

**Image Sequence** A sequence of still images that can reside within one folder and use the same numeric or alphabetic filename pattern (such as Sequence1, Sequence2, Sequence3, and so on).

**MPEG-4** A multimedia standard for delivering audio and video streams over a range of bandwidths.

**Note:**

Photoshop also supports other third-party formats such as Avid AVR codecs; however, the necessary QuickTime codecs must be installed.

## Understanding QuickTime key frames

In QuickTime terminology, the term *key frames* refers to something different than the animation keyframes in Photoshop. In QuickTime, key frames occur at regular intervals in the movie and are stored as complete frames. Each intermediate frame that separates them is compared to the previous frame, and only changed data is stored. Using key frames greatly reduces movie size and greatly increases the memory required to edit and render a movie. Shorter intervals between key frames enable faster seeking and reverse playback, but can significantly increase the size of the file.

## 3G export settings (Photoshop Extended)

For more information on 3G settings, search for 3G on the Apple Computer website.

**File Format** 3GPP and 3GPP2 are standards for the creation, delivery, and playback of multimedia over third-



generation high-speed wireless networks. 3GPP is for GSM networks and 3GPP2 is for CDMA 2000 networks. 3GPP (Mobile MP4), 3GPP2 (EZmovie), and AMC (EZmovie) are for specific networks. 3GPP (Mobile MP4) is for NTT DoCoMo's i-motion 3G service. 3GPP2 (EZmovie) is for KDDI's 3G network service. AMC (EZmovie) is for KDDI subscribers with AMC-capable phones.

**Video** Choose Video from the pop-up menu below the **File Format** menu and specify the following:

**Video Format** Selects the codec used during video export. If your source movie has only one video track and it is already compressed, you can choose Pass Through so that the video doesn't get compressed again.

**Data Rate** Specifies the kilobits per second (kbps) during playback. A higher kbps rate usually improves movie playback quality; however, don't choose a data rate higher than the available bandwidth.

**Optimized For** Specifies the intended delivery method if you choose H.264 from the Video Format menu, click Video Options, and select Best Quality. This setting tells the codec how much the data rate can vary above and below the data rate you choose.

**Image Size** Specifies a standard for sending the file to a mobile phone. Current maintains the source material size; the resulting file may not play on a mobile phone. Choose Custom to specify a size not listed in the menu.

**Preserve Aspect Ratio Using** Specifies an option when you're changing the image size and the movie must be scaled to the new dimensions. Letterbox scales the source proportionally to fit into the clean aperture, adding black bars to the top and bottom or sides as necessary. Crop

centers, scales, and trims to the clean aperture.

**Frame Rate** Specifies the frames per second (fps) during playback. In most cases, your video looks better if you choose a number that your source fps is exactly divisible by. For example, if your source is captured at 30 fps, choose a frame rate of 10 or 15. Don't choose a rate larger than that of your source material.

**Key Frame** Specifies how frequently key frames are created in the exported video. A higher key frame rate (lower number) improves video quality, but increases the file size.

**Video Options** If available, click the Video Options button to open the 3G Advanced Video Settings dialog box. Depending on the video, you can specify whether to add re-sync markers inside the video frames to help with packet loss recovery when streaming. With H.264 video, you can also speed up the compression process (for preview purposes, for example) by choosing Faster Encode (Single-pass). The default option, Best Quality (Multi-pass), allows the codec to determine how many passes are needed to compress the data for the best quality.

**Audio** All audio options are disabled because Photoshop Extended does not include audio in exported 3G files.

**Text** All text options are disabled because Photoshop Extended does not include text tracks in exported 3G files.

**Streaming** Choose Streaming from the pop-up menu below the **File Format** menu and specify the following:

**Enable Streaming** Creates a file for RTSP streaming to QuickTime Player. This option creates a hint track (instructions necessary for streaming a file).

Helps the server to process the file faster, but increases the file size.

**Advanced** Choose Advanced from the pop-up menu below the **File Format** menu and specify the following:

**Restrict Distribution** Specifies how many times the file can play back on the handset once downloaded. Also specifies file expiration options: set the file to expire in a number of days or enter a date. If your file is in Mobile MP4 or EZmovie format, you can restrict distribution so that once the file is on a handset it can't be sent or copied elsewhere.

**Fragment Movie** Enables the file to download via HTTP in small pieces so that playback can start faster and so that larger files can be played on the handset (only the fragment, not the entire movie, must fit on the handset at one time).

## FLC export settings (Photoshop Extended)

The following options are available in the **FLC Export Settings** dialog box:

**Color Table** Specifies the color table using the Windows system colors or Mac OS system colors in the exported movie.

**Motion** Sets the playback frame rate.

## Specify AVI export settings (Photoshop Extended)

- 1 In the Render Video dialog box, select QuickTime Export and then choose AVI from the pop-up menu.
- 2 Click the Settings button.
- 3 In the AVI Settings dialog box, make sure Video is selected.

**Note:**

Sound options are disabled because Photoshop Extended does not include audio in exported AVI files.

- 4 Under Video, click the Settings button and set the following:

**Compression Type** Chooses the video compressor (codec) to compress your video.

**Frame Per Second** Specifies the number of individual images shown every second. NTSC is generally the standard video format and is 29.97 fps. PAL is a European video format that is 25 fps. The standard for film is 24 fps. QuickTime movies are sometimes created with a slower frame rate to reduce bandwidth and CPU requirements. Movies with higher frame rates display motion better, but have larger file sizes. If you choose a frame rate that's lower than the movie's current frame rate, frames are deleted. If you choose a number that's higher than the movie's current frame rate, existing frames are duplicated (not recommended, since it increases file size without improving quality). In most cases, your video will look better if you choose a number that your source fps is exactly divisible by. For example, if your source is captured at 30 fps, choose a frame rate of 10 or 15. Don't choose a rate larger than that of your source material.

**Key Frame Every** Specifies the key frame frequency. A higher key frame rate (lower number) improves video quality, but increases the file size. With some compressors, an additional key frame is inserted automatically if too much of the image has changed from one frame to the next. In general, one key frame

every 5 seconds (multiply the frames per second by 5) is usually sufficient. If you are creating a file for RTSP streaming and have concerns about the reliability of the delivery network, you may want to increase key frame frequency to one key frame every 1 or 2 seconds.

**Limit Data Rate To** Specifies the kilobits per second (kbps) during playback. A higher kbps rate usually improves movie playback quality; however, don't choose a data rate higher than the available bandwidth.

**Depth** Specifies the number of colors to include in video that you export. This menu is not available if the selected codec supports only one color depth.

**Quality** If available, drag the slider or type a value to adjust the exported video's picture quality and, consequently, its file size. If you are using the same codec to capture and export, and you've rendered previews of a sequence, you can save rendering time by matching the export quality setting with your original capture quality setting. Increasing quality above the original capture quality does not increase quality, but may result in longer rendering times.

**Scan Mode** Specifies whether the exported movie has fields (Interlaced) or no fields (Progressive).

**Aspect Ratio** Specifies a 4:3 or 16:9 aspect ratio for the exported movie.

**Options** (Intel Indeo® Video 4.4 only) Sets compression, transparency options, and access for the Intel Indeo® Video 4.4 codec.

## DV Stream export settings (Photoshop Extended)

The following options are available in the **DV Export Settings** dialog box:

**DV Format** Specifies either the DV or DVCPRO format for your exported video.

**Video Format** Specifies either NTSC or PAL video broadcast standard.

**Scan Mode** Specifies whether the exported video has interlaced fields or no fields (Progressive Scan).

**Aspect Ratio** Specifies an aspect ratio of 4:3 or 16:9.

**Preserve Aspect Ratio Using** Specifies an option if the movie is scaled to new pixel dimensions. Letterbox scales the source proportionally to fit into the clean aperture, adding black bars to the top and bottom or sides as necessary. Crop centers, scales, and trims to the clean aperture.

**Note:**

Although the **DV Export Settings** dialog box has Audio Format options, Photoshop Extended does not export audio in DV files.

## Image sequence settings for QuickTime export (Photoshop Extended)

Typically, QuickTime is used to export video files. However, you can also select Image Sequence from the QuickTime Export pop-up menu. Click Settings to access the following options:

**Format** Chooses a file format for the exported images.

**Frames Per Second** Sets the frame rate for the image sequence.

**Insert Space Before Number** Inserts a space between the name and generated number in the image's filename.

**Options** If available, click the Options button and set format-specific options. For more information on the specific file formats and their options, see also [Saving and exporting images](#) and [File formats](#).

## Specify MPEG4 export settings (Photoshop Extended)

- 1 In the Render Video dialog box, select QuickTime Export, and choose MPEG-4 from the pop-up menu. Then click Settings.
- 2 In the MPEG-4 **Export Settings** dialog box, choose MP4 or MP4 (ISMA) from the **File Format** menu. The MP4 (ISMA) format ensures operability with devices made by ISMA members.
- 3 Under Video, specify the following:

**Video Format** Chooses the codec to compress your video. For the highest quality at the lowest data rate (or the smallest file), H.264 is recommended. If you need the file to play on a device that supports MPEG-4 video, choose MPEG-4 Basic or MPEG-4 Improved, depending on the target device. If your source movie's video track is already compressed, you can choose Pass Through so that the video doesn't get compressed again.

**Data Rate** Specifies the kilobits per second (kbps) during playback. A higher kbps rate usually improves

movie playback quality; however, don't choose a data rate higher than the available bandwidth.

**Optimized For** Specifies how much the data rate can vary above and below the data rate you choose. This option becomes available if you choose MP4 from the **File Format** menu, choose H.264 from the Video Format menu, click Video Options, and select Best Quality.

**Image Size** Specifies the pixel dimensions of your exported video. Current maintains the source material size. To specify a size not listed in the **Image Size** menu, choose Custom.

**Preserve Aspect Ratio Using** Specifies an option if the movie needs to be scaled to the new pixel dimensions. Letterbox scales the source proportionally to fit into the clean aperture, adding black bars to the top and bottom or sides as necessary. Crop centers, scales, and trims to the clean aperture. Fit Within Size adjusts to the destination size by fitting to the longest side, scaling if necessary.

**Frame Rate** Specifies the frame rate for the playback of your exported video. Usually, your video looks better if you choose a number that is exactly divisible by the frames per second (fps) of your source. For example, if your source is captured at 30 fps, choose a frame rate of 10 or 15. Don't choose a rate greater than that of your source material.

**Key Frame** Specifies that key frames are generated automatically or specifies how frequently key frames are created in the exported video. A higher key frame rate (lower number) improves video quality, but increases the file size.



- 4 (MP4 file format only) Click the Video Options button and specify the following:

**Re-sync Markers** (MPEG-4 Basic and MPEG-4 Improved only) Uses re-sync markers in the video bit-stream. This can help regain synchronization due to transmission errors.

**Restrict Profile(s) To** (H.264 only) Selects profiles for playing video files on a device that conforms to one or more of the standard's profiles.

**Encoding Mode** (H.264 only) Specifies whether you want the best quality or faster encoding.

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## Specify QuickTime Movie settings (Photoshop Extended)

- 1 In the Render Video dialog box, select QuickTime Export and then choose QuickTime Movie from the pop-up menu.
- 2 Click the Settings button.
- 3 In the Movie Settings dialog box, make sure Video is selected.

**Note:**

Although the Movie Settings dialog box displays Sound options, you cannot adjust the current audio settings. To include audio in exported files, see [Preview audio for video layers](#).

- 4 Under Video, click the appropriate button to set the

following:

**Settings** Opens the Standard Video Compression Settings dialog box so you can set the video compression and accompanying options.

**Filter** Opens the Choose Video Filter dialog box, where you can apply built-in QuickTime video effects.

**Size** Opens the Export Size Settings dialog box to specify pixel dimensions for your exported video.

- 5 (Optional) If your movie is being delivered over the Internet, select Prepare For Internet Streaming and choose any of the following:

**Fast Start** Sets up the movie to start playing from a web server before the movie has completely downloaded to a user's computer hard drive.

**Fast Start-Compressed Header** Compresses the movie's header losslessly and sets up the movie to start playing from a web server before the movie has completely downloaded to a user's computer hard drive.

**Hinted Streaming** Sets up the movie to be streamed by a QuickTime Streaming Server.

## QuickTime standard video compression settings (Photoshop Extended)

The following options are available in the Standard Video Compression Settings dialog box:

**Compression Type** Choose a compression type to apply when exporting a file.

**Motion** Specify the frame rate for your video by choosing the number of frames per second (fps). Some codecs support a specific set of frame rates. Increasing the frame rate may produce smoother motion (depending on the original frame rates of the source clips) but uses more disk space. If available, specify how often the key frames are generated. (See [Understanding QuickTime key frames.](#))

**Data Rate** Select (if available for the selected compressor) and type a data rate to place an upper limit on the amount of video data produced by the exported video when it is played back.

**Compressor** Set compressor options specific to the selected codec. Click the Option button (if available) to specify further compressor options. If the Depth menu is available, choose the number of colors to include in exported video. (This menu is not available if the selected codec supports only one color depth.) If the Quality slider is available under Compressor, drag the slider or type a value to adjust the exported video's picture quality and, consequently, its file size. If you are using the same codec to capture and export, and you've rendered previews of a sequence, you can save rendering time by matching the export quality setting with your original capture quality setting. Increasing quality above the original capture quality does not increase quality, but may result in longer rendering times.

**Note:**

Compressor options are not available for the Component Video codec.

## QuickTime movie size settings (Photoshop)

## Extended)

The following settings are available in the Export Size Settings dialog box:

**Dimensions** Specifies the frame size for your exported movie. If you want to specify a frame size not included in the Dimensions menu, choose Custom and enter values for Width and Height.

**Preserve Aspect Ratio Using** Specifies an option if the movie is scaled to a new frame size. Letterbox scales the source proportionally to fit into the clean aperture, adding black bars to the top and bottom or sides as necessary. Crop centers, scales, and trims to the clean aperture. Fit Within Dimensions adjusts to the destination size by fitting to the longest side, scaling if necessary.

**Deinterlace Source Video** Deinterlaces the two fields in each interlaced video frame.

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