

iTunes Extras/iTunes LP Development: Design Best Practices v1.0



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Design Best Practices

This section describes tips and suggestions to consider when designing an iTunes LP or iTunes Extras. It covers performance, naming conventions, images, animations, audio, and fonts.

Please Note: Automatic, electronic submission of your iTunes LP or Extra is scheduled for the first quarter of 2010. Until then, the submission process is manual and limited. Please contact your label or studio rep for details and consideration. An existing iTunes contract is required. Your iTunes LP or iTunes Extras will be reviewed by the iTunes team for appropriateness of content and for technical quality.

Design for a Computer

Performance


Since iTunes content may be displayed on a wide range of machine types and devices, performance should be a priority. Below are some suggestions that will help avoid problems on slower devices.

<ul style="list-style-type: none">■ Minimize the number of visible elements.	<p>The fewer the elements that are visible at any time, the quicker the page is to redraw. Make sure to look for "hidden" elements, which may be obscured by other elements.</p> <p>For example, suppose you have a stack of 20 photos all positioned at the same location. Without transparency, only the topmost photo will be visible, but the hidden 19 may be taking time to draw.</p> <p>If possible, remove hidden elements, especially media, from the page while they are not needed. As long as there is a reference to them somewhere (for example, a script), it should not be a performance hit to reinsert them when necessary.</p> <p>Remember that images that appear off screen are still considered visible (for example, images in chapter lists that have scrolled off-screen).</p>
<ul style="list-style-type: none">■ Avoid image resizing.	<p>You can improve performance by generating your image assets at the size they will be rendered. This is especially helpful if you have lots of images or images that will be drawn at a very large size.</p>
<ul style="list-style-type: none">■ Display video at the native resolution.	<p>Display your video at the same size as it was encoded. Think of video as a lot of images that need to be drawn very quickly.</p> <p>In most cases, it is possible to get an acceptable result by encoding the video at a larger resolution (but same bitrate). This is often better than having WebKit (the engine that Safari and iTunes use) do the resizing.</p>
<ul style="list-style-type: none">■ Use color profiles only when necessary.	<p>Embedding color profiles in image and video assets allow you to match colors with other assets and the webpage itself. If you want such matching, you should embed a color profile in all of the assets or none of the assets.</p> <p>However, while they give accurate color fidelity, color profiles require an extra processing step when rendering the images or video. This could mean you'll get better performance without an embedded profile.</p>

File Naming, Directory Structure, and Branding

<ul style="list-style-type: none">■ Make filenames as simple as possible.	<p>Keep the names of your files short, while still being understandable. Use the directory structure associated with the file location to indicate the function in the project.</p> <p>For example, use <code>ch01.jpg</code> instead of <code>yourProjectTitleNameChapterThumb01.jpg</code>.</p> <p>Also, some older versions of Windows have limits on filename paths (255 characters), so keep filenames short.</p> <p>Note: Filenames cannot start with the following (any combination or upper/lower case): "itunes" or "apple."</p>
<ul style="list-style-type: none">■ Use lowercase names for all files.	<p>Given that iTunes LPs/iTunes Extras are cross-platform, it reduces the chance of case-sensitive file systems being unable to find a resource that has been referenced with the wrong case.</p>
<ul style="list-style-type: none">■ Use standard file extensions for common file types.	<p>Since iTunes LP and iTunes Extras resources are served from the file system, there are no HTTP headers indicating what the media type of a resource is.</p>
<ul style="list-style-type: none">■ Organize the folders in the directory structure by segment.	<p>Use as many folders as you need, organizing them by the structure of the iTunes LP or iTunes Extras, rather than putting all files in one folder. For example, for a movie, you might have these folders: Main, Chapters, Features, and More.</p> <p>For more information on file structure, see the Development Guide.</p>
<ul style="list-style-type: none">■ Use sub-folders as needed.	<p>Sub-folders work well for organizing content within the top level and allow for much smaller filenames.</p>
<ul style="list-style-type: none">■ When referring to iTunes in any of your content, use a lower case "i" in iTunes.	<p>Don't use ITunes, even if a sentence starts out with the word iTunes and don't use ITUNES even if the font style being used is all caps.</p>
<ul style="list-style-type: none">■ Use "iTunes LP", "iTunes Extras", and "Apple TV" correctly.	<p>iTunes, iTunes LP, iTunes Extras, and Apple TV are Apple trademarks and must be used correctly. When referring to iTunes LP and iTunes Extras, the full title must be used, including "iTunes" as a prefix in the name. And note that LP is always singular and Extras is always plural. Apple TV is two words, with TV in all caps.</p>
<ul style="list-style-type: none">■ Use copyrights in context.	<p>If copyrights must be used to protect a particular property or asset, it is best to place the copyright in context to the property or asset, and not force the use of it throughout the iTunes LP or iTunes Extras on unrelated pages to conserve space and focus.</p>

Images

<ul style="list-style-type: none">■ Create a bleed.	<p>Design an extremely large image to be used as the "bleed" (the overflow around the 1280x720 pixel main screen area). The bleed accommodates your viewers who have large monitors so that the iTunes Extras or iTunes LP appears to take up the whole screen; there won't be a distracting border around the 1280x720 main viewing area.</p> <p>The following shows the bleed from Quantum of Solace:</p>  <p>Keep in mind the following:</p> <p>Don't assume your viewers will be able to see the bleed. The bleed shouldn't contain "real" content because viewers with smaller screens will not be able to see it.</p> <p>On some monitors, your viewers will see only part of the bleed, so you want to make sure the bleed is appealing when only part of it is visible</p>
<ul style="list-style-type: none">■ Generate images, photos, etc at the size you want to display them.	<p>You can ensure the quality of images by generating your image assets at the size they will be rendered. This way the images will not have to be resized to fit, which could degrade the quality. If you must resize, see the suggestion in the next row.</p>
<ul style="list-style-type: none">■ If you must rescale, it is better to scale down than to scale up.	<p>Images that are scaled up run the risk of becoming fuzzy or jaggy.</p> <p>As an example, the chapter images in the iTunes Extras template grow from large when the image is the main focus in the Slider to small when the image is before or after the main image. For best results, generate the image at the large size so that it scales down to the smaller size in the Slider.</p>
<ul style="list-style-type: none">■ Distill images down to their barest essentials.	<p>When creating images, think of ways to extract out repeating elements. For example, suppose your chapter images have the same border around them. Remove the border from all the images and put the border by itself in another image. One border can get replicated on every image. So instead of having large transparent PNG files for each image that includes the border, have one border that loads and stays on the screen. Your chapter images can be JPEG, which are smaller and take less time to load, and can be layered over the PNG image via code. You don't have to re-load the border with each JPEG.</p>

<ul style="list-style-type: none"> ■ Limit the use of large transparencies. 	<p>Transparencies tend to make things slower. Use JPEG for most of your images and use PNG only when you need transparency. For example, instead of one large transparent image, make a large JPEG for the background, figure out where on the image you need a transparency, and add small PNGs on another layer. As another example, suppose you have a background element for titles, such as a placard. Have one JPEG for the placard that can be re-used and use only the item that changes as a transparent PNG (such as the title).</p>
<ul style="list-style-type: none"> ■ Masking images. 	<p>If you have several images that need to be masked in some way that blends them into the surrounding background, build the mask in the background rather than masking each individual image.</p>
<ul style="list-style-type: none"> ■ Keep similar images the same size. 	<p>If you are using several images (such as for chapters), keep the images the same size. If the images are not the same size, they will appear to move as they gain focus. In the chapter slider, you can use CSS to scale the images down as the move from focus.</p>
<ul style="list-style-type: none"> ■ Put shared images in a Shared Images folder. 	<p>If an image is used on several pages, buttons for example, don't copy the shared buttons into the image folder for each view. Save space by putting shared images in a Shared Images folder.</p>
<ul style="list-style-type: none"> ■ Compress image files as much as possible. 	<p>Make sure your image assets are as compressed as they can be to allow them to load faster. For example, don't use a Photoshop (PSD) or Illustrator (AI) file; use the "save for web" feature. This makes the image much smaller, because it eliminates thumbnails, finder previews, and other things that are not necessary.</p>
<ul style="list-style-type: none"> ■ Optimize amount of color information. 	<p>If you have images that have a lot of white or black, you don't need enormous amounts of details/variations in the whites or the blacks. To make the image smaller so it will load faster, compress the image in color space, for example changing an image from 24 bits per pixel to 9 bits per pixel.</p>

Animations and Videos

<ul style="list-style-type: none"> ■ Use movie animations sparingly. 	<p>Instead of using a large movie for animation, think of other ways to create the same affect. For example, dissect the movie image out into layers. Keep a large background image static, but make some elements transparent. On a layer underneath the static image, move a small JPEG around using CSS to simulate the animation shown in the movie. So for example, the small JPEG can be stretched, moved, and repeated using CSS to give the illusion of movement through the transparent areas of the static image.</p>
<ul style="list-style-type: none"> ■ Use animated GIFs sparingly, if at all. 	<p>Animated GIFs can be large and do not work well with Apple TV. It is better to recreate the animation using CSS. With CSS, the animations will have smoother transitions.</p>
<ul style="list-style-type: none"> ■ Use CSS instead of JavaScript where possible. 	<p>Use JavaScript only when you can't create the same effect in CSS. JavaScript is slow on Apple TV.</p>

<ul style="list-style-type: none"> When crossfading or dissolving, use CSS transitions instead of JavaScript. 	<p>Crossfading, or dissolving, is where a current image is faded out as the new image is faded in. You can achieve this effect in CSS using the opacity property more efficiently than using a script.</p> <p>When designing the images to use in the crossfade, keep the two images the same size, otherwise the crossfade transition between the two images will be jarring and not smooth.</p> <p>When developing an iTunes LP/iTunes Extras package, use the built-in Image Fader class, which is simple, uses opacity to create the fade, and uses CSS. See the TuneKit Programming Guide for guidelines and examples.</p>
<ul style="list-style-type: none"> For elements on the screen that are interactive, create two images. 	<p>If you have an element that changes when a user clicks or mouses over it, you should create two images: one for the active state and another for the inactive state. Make sure to keep the active and non-active images the same size, or they will appear to move as they gain focus.</p>
<ul style="list-style-type: none"> Generate extra videos (that is, any added videos that are not the main asset, such as deleted scenes) at the size to fit the main screen area within iTunes LP and iTunes Extras. 	<p>The main screen area inside the bleed on an iTunes LP or iTunes Extras is 1280 x 720 pixels. Generate your videos at that same aspect ratio.</p>
<ul style="list-style-type: none"> Keep the dimensions, framerate, and bitrate of inline movies (that is, movies that are part of the user interface) to an absolute minimum. 	<p>In many cases, inline videos larger than 25% of the screen size will have unacceptable results.</p>

Background Audio

<ul style="list-style-type: none"> Background audio for iTunes LP. 	<p>When using background audio on iTunes LP, follow these recommendations:</p> <ul style="list-style-type: none"> Duration should be no longer than 30 seconds Should not loop Should have a lower volume than the audio files of your album (reduce by 5-10 decibels) Don't use voices or other sound effects that will tend to annoy if restarted frequently or left playing for long periods of time
<ul style="list-style-type: none"> Background audio for iTunes Extras. 	<p>When using background audio on iTunes Extras, follow these recommendations:</p> <ul style="list-style-type: none"> Duration can be up to 2 minutes Can repeat or loop

<ul style="list-style-type: none"> ■ The background audio file should be in iTunes Plus .m4a format. 	<p>To encode background audio files, create your final background audio file in iTunes Plus .m4a format (256 kbps stereo, 44.100 kHz, AAC).</p> <p>Follow these steps:</p> <ol style="list-style-type: none"> 1. Once you have your master background audio file (.wav file format), copy it into iTunes. 2. From within iTunes, choose iTunes > Preferences... . In the General panel, click Import Settings. 3. Choose AAC Encoder and use the iTunes Plus setting. 4. Go to your library, highlight the master audio .wav file, and choose Advanced > Create AAC Version. This will create the final iTunes Plus .m4a file you can use in your iTunes LP or iTunes Extras. 5. Place this iTunes Plus .m4a file in the "audio" folder within your .ite or .itlp package for it to work appropriately.
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Fonts and Scrollbars

<ul style="list-style-type: none"> ■ Don't use Open Type. 	<p>When using fonts, use SVG fonts, which are small, render quickly, and scale better. The fonts to be turned into SVG fonts need to be legally cleared for use within the iTunes LP or iTunes Extras, and should be distributed in the package as an SVG font to restrict consumer usage of the font.</p> <p>However, it is often better to use images rather than SVG fonts. See the next two suggestions.</p>
<ul style="list-style-type: none"> ■ Use buttons instead of live text for menus. 	<p>Use images for menu buttons, instead of an SVG font. This has a couple of advantages:</p> <ul style="list-style-type: none"> ■ Rendering is the same on all platforms (Mac, Windows, Apple TV). ■ You have more control over spacing of text since you can use kerning and other ways to make the text smaller or bigger, depending on how much space the design allows. ■ No potential fonts rights issue.
<ul style="list-style-type: none"> ■ Use a JPEG for large blocks of text. 	<p>Instead of using live text from a font for a song list or lyrics, make the list or lyrics an image.</p> <p>You have more control over sizing and spacing, which can be useful on lyrics pages where space is limited or for long, one-line lyrics that might not fit.</p> <p>JPEGs are smaller than fonts and compressed, so one small image gets loaded into memory instead of larger-sized font elements.</p> <p>By putting lyrics in an image, the text can't be copied and pasted (legal considerations).</p> <p>Rendering is the same on all platforms.</p> <p>No fonts rights issue (if there ever would be one).</p>

<ul style="list-style-type: none"> For menus, keep them horizontal instead of vertical. 	<p>Horizontal menus are less confusing. With vertical menus, the user could get lost in sub-menus. This is especially true for content on Apple TV. See Navigation Best Practices.</p>
<ul style="list-style-type: none"> If you use custom scrollbars, reset all scrollbar properties. 	<p>The iTunes client sets a number of custom scrollbar properties which are inherited into iTunes content. This can sometimes cause any scrollbar customization performed within an iTunes Extras or iTunes LP to display incorrectly, especially on Windows. For this reason, if you use custom scrollbars in your content, make sure to reset all scrollbar properties before you apply your customization.</p> <p>Use the built-in CSS file (scrollbar-reset.css) to reset the scrollbar properties. This should be the first CSS file loaded in order to work properly.</p>

Visualizers

iTunes LP visualizers can be thought of as a mode where the screen emphasis changes from an interactive experience for the user, to a more passive experience where the user can watch a visual presentation of the music. Below are some suggestions to keep in mind when developing visualizers.

Unless publishing rights have been secured for this specific purpose, do not use lyrics timed to the music.

<p>Things that cause poor performance:</p>	<ul style="list-style-type: none"> Full screen graphics that move quickly, change size or rotate Several full-screen PNGS with transparency Diagonal movements (unless the image is small - <150px) Very fast and extremely slow movements Fast movement while fading Scaling photos down from 100% does not work well (scaling up works fine) Movement of large images with solid colors and high contrast, i.e. white text on solid blue background, can cause image breakage Animated GIFs do not work on Apple TV
<p>Things that work well:</p>	<ul style="list-style-type: none"> Changing graphic opacities Repeating behavior using smaller images – like particle effects Rotation of smaller images (4 simultaneous rotations of <300px graphics works fine) Creating movement using a semi-transparent static foreground and a simple patterned background that moves behind it Visualizers work best when they are based entirely on css animations, without any JavaScript. They should essentially be animated loops. Basically, although there is some room for large-scale movement, especially with changing opacities, graphics less than ¼ the size of the page and contained animation will render more smoothly.

Design for Apple TV

In addition to all of the above suggestions, there are two main things to think about when designing your iTunes LP or iTunes Extras for Apple TV:

- **Navigation:** Apple TV users navigate using a 6-button remote: Up, Down, Left, Right, Play, and Menu.
- **Performance:** Apple TV has a limited amount of RAM, so optimize as much as possible.

<ul style="list-style-type: none">■ Use the same code for both the desktop and Apple TV and conditionalize it so it works one way on desktop and another way on Apple TV.	Have a fork in the code to conditionalize things that are specifically for Apple TV or that do not work on Apple TV.
<ul style="list-style-type: none">■ Make sure that all navigable content fits within the title and action-safe areas of a television display.	When launched on Apple TV, the iTunes LP/iTunes Extras will be displayed within a viewport that is sized at 1280 pixels wide and 720 pixels high, even though the display resolution may be different.
<ul style="list-style-type: none">■ Make sure that the design of the iTunes LP/iTunes Extras makes sense under the interaction restrictions of Apple TV.	Apple TV does not have a pointer device, but instead uses a six-button directional remote. Make sure the user can navigate everywhere using the 6-button remote. If there are areas in your content that are not accessible using the remote, hide these when running on Apple TV. Also, the user must be able to navigate back to the native menu system. Do not attempt to override the system behavior. See Best Practices for Navigation.
<ul style="list-style-type: none">■ The Menu button on the Apple TV remote will always take you up in the hierarchy.	Keep that standard in mind when setting up your navigation.
<ul style="list-style-type: none">■ If you use visualizers in your iTunes LP, strip them out for Apple TV.	<p>There might be burn-in concerns on televisions if the animation is too subtle; Apple TV considers it not moving. To avoid burn-in on televisions, it is recommended that a visualizer cause every pixel on the screen to change frequently.</p> <p>Some televisions (such as plasma televisions) are especially susceptible to burn-in. As a result, a visualizer might cause burn-in on a television when it wouldn't on a computer.</p>
<ul style="list-style-type: none">■ Put the bleed graphic on a DIV, so you can turn it off for Apple TV.	The page bleed must not be displayed on Apple TV, because it can adversely affect performance.
<ul style="list-style-type: none">■ Use layers instead of one large layer.	Apple TV can hold about 2000 pixels per layer. Rather than having one gigantic layer that could exceed the maximum number of pixels per layer, slice and layer it in chunks. Render them as tiled elements.

<ul style="list-style-type: none">■ For animations, use CSS, as opposed to JavaScript or movie animations.	<p>Complex animations may create a sub-optimal user experience on Apple TV. CSS animations have a few advantages:</p> <ul style="list-style-type: none">■ CSS animations are executed by the Safari engine and can be accelerated when possible. For this reason, they have much better performance than JavaScript animations. See an example of CSS animations in the "Image Faders" section of iTunes LP/Extras Development Guide.■ CSS animations can be conditionally excluded from Apple TV as needed.■ CSS animations can be easier to pause or remove than JavaScript. Content developers should always try to reduce the amount of CPU load, especially when media is playing.
<ul style="list-style-type: none">■ When a movie is used as part of the user interface (such as a small clip that plays in the background of the home page), exclude the movie conditionally for Apple TV.	<p>If possible, these background ambient effects should be implemented using animations (preferably CSS Animations). However, if the effect is an actual movie clip (which is not currently supported on Apple TV), design an alternate effect, such as a static image or crossfading between a reduced number of static frames.</p>