Use the Media Library

Concepts

Restrictions

- Before you add any asset to your media library, confirm that its file size is not more than 1.9 GB.

DMD Guidelines for Images

Animated GIF Images

DMP 4305G	• Not supported as an animation format. Loads and shows only the first frame, as if it were a standard GIF image.
DMP 4310G	
DMP 4400G	

GIF Images

DMP 4310G	• Not supported. (**CSCto34932**)

Progressive JPEG Images

DMP 4305G	• Not supported.
DMP 4310G	• Supported
DMP 4400G	• Supported.

PNG Images

DMP 4305G	• Not supported. (**CSCtq08800**)
DMP 4310G	• Supported
DMP 4400G	• Supported.

DMD Guidelines for SWF Animations

Note

- **When errors prevent a DMP 4310G from rendering a SWF asset, failover does not begin immediately.** Instead, it starts after a delay of 3 minutes and 10 seconds. The root cause is a defect in the Flash runtime from Adobe Systems. There is no workaround.

- **A DMP 4305G might show only a white screen during failover when its failover URL points to a SWF asset.** The root cause is a defect in the Flash runtime from Adobe Systems. There is no workaround. (**CSCtn12943**)

These guidelines cite values that are approximate. Do not deploy any design until you have tested its playback performance on at least one DMP.

Rather than crashing when they run low on memory, DMPs are designed to restart automatically, which clears their memory and causes downtime of much less than 1 minute, as opposed to the lengthy downtime that a hard crash would cause. In the rare cases when DMPs do run out of memory and restart automatically, SWF files are almost always responsible. The known scenarios when this can occur are as follows.

- The file size is greater than 500KB for your SWF file. Larger SWF files do work correctly in most cases, but we recommend as a best practice that you should always strive to use the smallest possible SWF files. Smaller files are far less likely to be burdensome to your DMPs.

- Your SWF file uses bitmapped image files outside itself that have a very large file size, either individually or collectively. Any bitmapped image files that you use in the production of a SWF file should be small files. If a bitmapped file has a large file size, it is important for you to understand that merely reducing the height and width of its placeholder on your canvas in Adobe Flash (or any similar authoring tool that you might use to develop a SWF file) will not reduce the actual file size.

- The webpage that you are showing uses too many embedded SWF files.

Additionally, we recommend that you use the following guidelines when you create SWF files.

- The resolution of the SWF can be up to 1920 x 1080 when animations within the SWF are small and are restricted to a 640x480 region.

- Avoid redraw of the whole screen in your Flash animation.

- Multiple movements on different parts of the screen cause more slowdown than localized movement.

- The FLV recommended resolution should be 320x240.

Related Topics

- Understand How to Render Shockwave Flash (SWF) Assets on a DMP 4310G, page 5-3
- Quality Control Considerations for SWF Animations, page 5-4
- Transparency Considerations for SWF Animations, page 5-5
- Performance Considerations for SWF Animations, page 5-5
- Text Considerations for SWF Animations, page 5-5
- Bitmap Considerations for SWF Animations, page 5-6

Understand How to Render Shockwave Flash (SWF) Assets on a DMP 4310G

Among all other possible options for what any DMP model might render, you can direct DMPs specifically to play:

- One supported SWF asset at a time, absent any supporting context. You might use one file this way as the DMP's startup URL, failover URL, or GoToURL, for example.

    OR

- Multiple assets of various supported types, all together—in tandem or in sequence—that take part in a presentation or a playlist.

Many SWFs are self-contained in the sense that they do not have any dependencies outside themselves. Nonetheless, the SWF format specification does not impose or enforce any requirement that they all be self-contained. SWF behaviors can be defined externally. Values from an XML data file that you store at "Location A," for example, might populate a SWF that you store at "Location B."

This content development approach supports versatility, speed, and reuse. However, a DMP 4310G cannot take advantage of this approach unless you use a special variable that only a DMP 4310G understands. Moreover, a DMP 4310G cannot begin to render a SWF asset of this kind until you tell it explicitly where to obtain the external values that it is programmed to present.

Note   **Other DMP models do not require or recognize these special instructions.** So, if you mistakenly instruct other DMP models to play URLs that include the variable, they merely disregard every character after the SWF filename extension in the URL. Earlier DMP models — specifically the 4305G and 4400G — are engineered to check for Flash variables in an HTML wrapper file. We use a different method for the DMP 4310G because many of its components and features differ from earlier DMP models.

Thus, the URL syntax requirements for a DMP 4310G are sharply different to render a self-contained SWF, versus one whose values are external.

- Suppose that you want your DMP 4310G to play a SWF. When the SWF is self-contained, you can use typical URL syntax to load it on the DMP. This is just what you might do with any other supported asset type or any other DMP model. If the SWF location were `http://mediahost_FQDN/path/PRESENTATION.SWF`, for example, then this would be exactly the correct URL to use, without modification.

- But now, suppose instead that exactly this same SWF at exactly this same URL is not self-contained. Instead, it relies on a range of values inside an XML data file that you store at `http://datahost_FQDN/path/VALUES.XML`. In this case, you must use special syntax to serve the full combination of all these essential goals:

    - Identify both URLs (SWF and XML) for your DMP 4310G.

    - Use a query parameter to invoke a MIB function that we call "fl_flashvars" — which exists exclusively on the DMP 4310G.

    - Pass a MIB variable that we call "Data_Url" — which indicates that the two URLs share one, unified purpose. (Third-party Flash applications would use other names for their variables.)

    - Apply percent encoding (HTTP URL encoding) to reserved characters in:

        - The MIB variable, including its "=" character (which becomes %3D).
        - The variable value, including its "://" character string (which becomes %3A%2F%2F).

    So, the final string that you would enter for this scenario in place of a conventional URL would be consistent with this example.

    ```
    http://mediahost_FQDN/path/PRESENTATION.SWF?fl_flashvars=Data_Url%3Dhttp%3A%2F%2Fdata_
    host_fqdn%2Fpath%2FVALUES.XML
    ```

Tip   **Remember that there is no need to take these measures unless you use a DMP 4310G and your SWF depends on external values.**

Quality Control Considerations for SWF Animations

- Verify per project that output quality and playback performance are both acceptable for all assets — no matter how you developed or acquired them — on all DMP models that you use.

- Never delete or overwrite your Flash (FLA) source file. You can modify its settings to produce suitable output for various DMP models.

- Consider carefully how bandwidth limitations anywhere in your network might affect playback.

Transparency Considerations for SWF Animations

- We do not support transparent SWF files.
- Alpha transparency is most effective for objects whose dimensions are less than 200px X 150px.

Performance Considerations for SWF Animations

We consider an animation to be nonstandard when it does not abide by our best practices to limit complexity and use DMPs effectively. And any animation is complex — for our purposes — when its playback uses so much of the CPU capacity on a DMP that performance suffers. These guidelines suggest how to avoid and reduce complexity in ways that improve performance.

Dimensions

- Ensure that each animation is smaller than 640 x 480 pixels.
- Ensure that none of your animations contain any embedded or referenced object whose dimensions are greater than 640 x 480 pixels.

Timeline Segments

- Ensure that you have not used more than one animation effect per timeline segment. For example, do not fade an object in a segment where you also resize an object.
- When you use an animation effect to resize an object, avoid changing its dimensions by more than 10 percent per timeline segment.

Other Factors

- Avoid shape-tweening.
- Split the animation apart by function, into smaller files. For example, instead of combining a text ticker and a slideshow in one file, isolate them inside two separate animation files.
- Avoid combining the animation with multiple or complex JavaScripts. If you cannot simplify a complex animation, simplify your JavaScripts instead, and use fewer of them.
- We recommend that your animation frame rate be 12 frames per second (fps) or less.

> **Note** **DMP 4310G endpoints in this release do not support JavaScript.** Instead, they support ActionScript 2.

Text Considerations for SWF Animations

- DHTML's "marquee" method is an effective way to produce a text ticker.
- When your design includes a text ticker:
  - Ensure that the ticker is not any wider than 1,366px.
  - Ensure that the text height is not any greater than 28pt.

Bitmap Considerations for SWF Animations

Imported (embedded)

DMP 4305G	• Do not import low-quality or low-resolution images into your FLA source file.
DMP 4310G	
DMP 4400G	

External (referenced)

DMP 4305G	• Do not refer to any external JPG file unless it is *nonprogressive*.
	• The image resolution must not exceed 72 dpi.
	• The maximum file size *per image* must be less than **450KB**. Similarly, the *combined* file size of all images must be less than **1.45MB**. **Otherwise, your DMP might run out of memory and restart automatically.**
DMP 4400G	• Do not refer to any external JPG file unless it is *nonprogressive*.
	• The image resolution must not exceed 72 dpi.
	• The maximum file size *per image* must be less than **1MB**. Similarly, the *combined* file size of all images must be less than **3MB**. **Otherwise, your DMP might ignore the large images and skip past them when it plays your presentations.**

Exported

DMP 4305G	• Set the publishing options in Flash to 100 percent high quality JPG.
DMP 4310G	
DMP 4400G	

The Installed Flash Version on a DMP

DMP 4305G endpoints in this release run Flash 7.

DMP 4310G endpoints in this release run FlashLite 3.1.

DMP 4400G endpoints in this release run Flash 10.

DMD Guidelines for Audio

- We do not support the Dolby Digital Plus (E-AC3) audio codec.
- We do not support audio in SWF files.

Tip   **You can use video editing software to add an audio track to an MPEG file.**

DMD Guidelines for Video

Progressive, Not Interlaced

Interlaced video is inferior to progressive-scan video. Modern equipment must expend some of its capacity to deinterlace what is interlaced. By avoiding interlaced video, you can conserve this capacity and expend it on more important functions.

DMP Model Implications for Video

- DMP 4305G endpoints do not support MPEG-2 TS/H.264.
- We recommend that you use MPEG-2 instead of FLV.

Bitrate Implications for Video

- 16 Mbps maximum for MPEG-2 SDTV (HDTV)
- 12 Mbps maximum for MPEG-4 Part 10 (H.264) SDTV (HDTV)
- 10 Mbps maximum for WMV9 SDTV (HDTV)

Aspect Ratio Implications for Video

When the width and height of a rectangle are exactly the same — making it a perfect square — we say that its *aspect ratio* is "1:1." This notation compares width to height in relative terms. However, there are actually **two** aspect ratios to consider when you think about digital video.

- The *frame aspect ratio* describes the entire visible space, which contains every pixel.
- The *pixel aspect ratio* describes the shape that contains merely one pixel.

Note   **Use a 1:1 pixel aspect ratio when you encode video for playback at a resolution of 1366 x 768 pixels.**

Limited Support for VC-1

Note   Despite the extreme and misleading similarity of their names, the **VC-1 codec** for digital video and the **.VC1 container format** ("wrapper") for digital video are **not the same thing**—nor are they equivalent, interchangeable, or mutually compatible.

- **Some DMP models support *part* of the VC-1 codec, when used with the .ASF container format.**
- **No DMP models support any part of the .VC1 container format.**

The Microsoft standard for its Windows Media VC-1 video codec includes three profiles: *Simple*, *Main*, and *Advanced.* Although DMP 4400G and 4310G endpoints support the *Simple* profile and the *Main* profile, they do not support the *Advanced* profile.

Video assets with .VC1 as their filename extension use the SMPTE 421M codec, which we do not support. (Such files are used on Blu-ray discs and HD DVD discs.) .VC1 files are also likely to be protected with DRM technologies that prevent unauthorized playback.

Understand Bridging Images

In playlists that show two video clips in sequence, there is sometimes an extremely brief delay while switching playback from one video to the next. This delay—which lasts about 200 milliseconds—is so brief that many viewers cannot perceive it. Even so, your use of the "bridging image" feature in DMD can help to reduce human perception of such fleeting delays in playback.

A bridging image is a specially designated GIF or JPEG file, whose playback duration is roughly 200 milliseconds long. You can designate any graphic as the bridging image for a video. However, our intent for this feature is that the bridging image should look identical to the nearest visible frame of video. For best results, its resolution, cropping, and frame aspect ratio should match the equivalent video frame exactly. The desired effect is either of these:

- The last frame in a video clip seems to linger for a fraction of a second until the next video begins playback.

- The first frame in a video clip seems to linger for a fraction of a second before its playback starts.

Note
- **This feature does not generate bridging images automatically for you.** Instead, it provides the means to use a bridging image (or not) and assign particular image assets to serve this purpose for particular video assets. After you couple a video clip to a bridging image, the bridging image loads itself automatically into any future playlist that includes its coupled video clip.
- In this release, you must use the Single property sheet to associate bridging images to video clips. **The Batch property sheet does not support this feature.**

When you capture a frame of video for use as a bridging image, strive to match these video attributes identically:

- frame aspect ratio and pixel aspect ratio

- resolution and cropping

- brightness and contrast

- bit depth and saturation

Tip   **The background color for a playlist can also influence whether video transitions are obvious.** For best results, avoid any background color that is in stark contrast to your videos.

Related Topics

- Elements to Add Assets to Your Media Library, page 5-15

Procedures

- Open and Browse the Media Library, page 5-10
- Add One Asset at a Time to Your Media Library, page 5-11
- Add Multiple Assets Simultaneously to Your Media Library, page 5-13
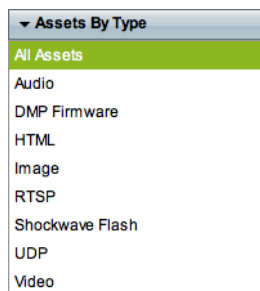
Open and Browse the Media Library

Procedure
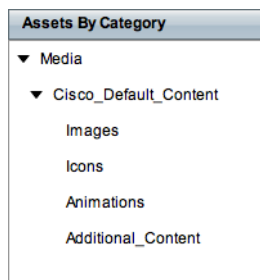
Step 1   Click **Media** on the toolbar.

DMD opens the media browser.

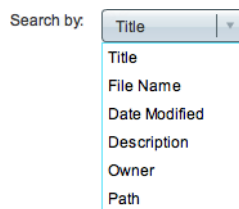**Step 2**   Use any combination of these functions to find assets in your media library.

- Browse by asset type.

- Browse by asset category.

- Search by keyword.

- Apply a filter to a search query and restrict its matches to only the one attribute type that you specify.

Step 3   Stop. You have completed this procedure.

Add One Asset at a Time to Your Media Library

Before You Begin

- *Are you adding a video asset to your media library? And should the video use a bridging image?* If so, we recommend that you capture the bridging image and upload it to a webserver before you start this procedure.
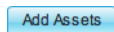
Procedure

Step 1   Click **Media** on the toolbar.

DMD opens the media browser.

Step 2   Click **Add Assets**.

Step 3   Click **Single**.

Step 4   Choose between two methods.

- Have DMD download the asset from a server.

    OR

- Upload the asset to DMD from a volume that you have mounted locally.

Step 5   When DMD reveals a field to you in response to your choice in Step 4, use the field.

- If you chose *URL*, DMD shows the URL field and the Download check box.

    a. Enter the communications protocol to use, such as **http://**.

    b. Enter the server's fully-qualified domain name, such as **www.example.com**.

    c. Enter a logical port number—if needed, such as **:8080**.

    d. Enter the full pathname to the asset, such as **/root/subdirectory/example.gif**.

Tip   The Download check box controls whether your media library should download a local copy of the asset or use the version of it that is stored remotely.

- When you choose *Local File*, DMD shows the Local File field and the Browse button.

  Local File*:   Browse...

  – Enter the asset's full local pathname if you know it, using syntax that is correct for your operating system.
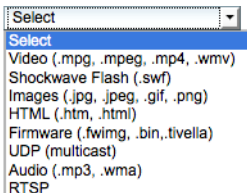
    OR

  – Click **Browse**, and then navigate among the folders on your locally mounted volumes. When you locate the asset, click to highlight its name or icon. Then, use your browser's method to confirm the selection. Your browser then populates the *Local File* field for you.

Step 6   Enter a title to identify the asset.

  Title*:

Step 7   Choose the appropriate asset type.

  Asset Type*:   Select

                        Select
                        Video (.mpg, .mpeg, .mp4, .wmv)
                        Shockwave Flash (.swf)
                        Images (.jpg, .jpeg, .gif, .png)
                        HTML (.htm, .html)
                        Firmware (.fwimg, .bin,.tivella)
                        UDP (multicast)
                        Audio (.mp3, .wma)
                        RTSP

  Tip   When you choose Video from this list, we reveal a toggle near the bottom of the page (▶ **Advanced**). You will use this toggle a few minutes from now if you already captured a bridging image for your video asset and uploaded the bridging image to a webserver.

Step 8   Enter the estimated duration for playback.

  Estimated Duration: 0 hr 0 min 0 sec

  Note   **The user interface in Cisco Digital Signs sometimes shows a mistaken estimate of 0 (zero) seconds as the full duration of a video playlist.** Even though the estimate is wrong, the error does not have any practical consequences. Playback starts and stops as scheduled, without disruption.

  This occurs after you set any video asset in the playlist to use 0 seconds as its planned duration. A video asset whose planned duration is 0 (zero) seconds will play from beginning to end.

  When you want to skip a video instead of playing it, you must remove it from the playlist. Any playlist's constituent nonvideo assets must have a planned duration of at least 1 second.

Step 9   Ensure that the asset is associated to categories that are best for it.

  Category:

Name ▲	Delete
Additional_Content	🗑

- As needed, click the trash can icon (🗑) to delete one association to a category.
- As needed, click **Select Category** (Select Category) to start adding associations to other categories.

Step 10   Enter a description.

Description:

Step 11   Specify who in your organization is responsible for this asset.

Owner:

Step 12   (**Optional**)

Is your asset a video? And should the video use a bridging image? If so, you must direct DMD to the exact location of your bridging image on a webserver.

a. Click **Advanced** (▶ Advanced) to open the toggle and show the bridging image controls.

Bridging Image: ○ None
                   ● Image URL:

b. Click the radio button labeled **Image URL**.

c. Enter **http://** as the communications protocol.

d. Enter the server's fully-qualified domain name, such as **www.example.com**.

e. Enter a logical port number — if needed, such as **:8080**.

f. Enter the full pathname to the bridging image, such as **/root/subdirectory/example.gif**.

> **Note**   **You must use a dedicated webserver to host a bridging image.** Do not use an FTP server to host it. Do not use a content distribution network to host it. Do not use DMP local storage to host it.

Step 13   Click **Save**.

Save

Step 14   Stop. You have completed this procedure.

Related Topics

- Add Multiple Assets Simultaneously to Your Media Library, page 5-13
- Elements to Add Assets to Your Media Library, page 5-15

Add Multiple Assets Simultaneously to Your Media Library

> **Note**   **The amount of time that a batch download operation requires depends on the speed of your connection, the number of directory levels that you search for downloadable files, and the total combined file size of all files that you transfer.**
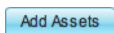
Procedure

Step 1   Click **Media** on the toolbar.

DMD opens the media browser.

Step 2   Click **Add Assets**.


Step 3   Click **Batch**.

Step 4   Use the Base URL field to enter the root-level URL for a batch-download operation.

Step 5   Use the Pattern area to enter a filename pattern that matches only the files that should all be downloaded.

For example, to download every file that uses the three-letter MPG filename extension, the pattern would be ***.MPG**.
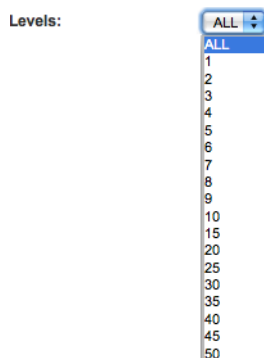
Note   **Do not enter the filename pattern to use any unsupported file type.**

Step 6   Choose the appropriate asset type.
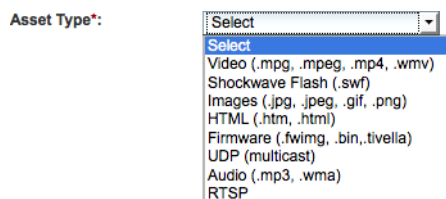
Step 7   Choose how many levels to search for matches.

Step 8   Click the name of the one category that should contain these assets.

Step 9   Click **Save**.

Step 10   Stop. You have completed this procedure.

Related Topics

- Add One Asset at a Time to Your Media Library, page 5-11

- Elements to Add Assets to Your Media Library, page 5-15

Reference

- Software UI and Field Reference Tables, page 5-15

- FAQs and Troubleshooting, page 5-17

Software UI and Field Reference Tables

- Elements to Add Assets to Your Media Library, page 5-15

Elements to Add Assets to Your Media Library

Navigation Path

- Media button on toolbar > Add Assets

Table 5-1   Elements for Adding Assets

Element	Description
Single (properties sheet)	
Source	One of these. • URL (recommended) • Local File
URL	Enter exactly the URL from which to download the asset, when it is stored on a remote volume. Permitted values in this field always start with with **http://**, **udp://**, or **rtsp://**. The URL must be encoded properly (using **%20** instead of spaces, for example), according to the principles set forth in RFC 2396. We do not support any use of spaces in URLs. This field is visible only when "URL (recommended)" is chosen in the Source area.
Local File	Upload the asset from a volume that you have mounted locally. Click **Browse** to navigate to the folder where you can choose and upload the asset. This field is visible only when "Local File" is chosen in the Source area.
Title	A unique and human-readable name for the asset. Angle brackets (**<** or **>**) and ampersands (**&**) are forbidden values in this field.

Table 5-1   ***Elements for Adding Assets (continued)***

Element	Description
Asset Type	Choose the type that best describes the asset. See our release notes on Cisco.com to learn more specifically which formats we support per asset type in this release. • **Video**—A video file. • **Shockwave Flash**—An Adobe Shockwave Flash file. – The filename extension must be SWF. – You must enter the estimated duration. • **Images**—An image file. – The filename extension must be JPG, JPEG, GIF, or PNG. • **HTML**—A web page. – The filename extension must be HTM or HTML. • **Firmware**—A firmware or kernel image for the DMP. – The filename extension must be FWIMG or BIN for firmware. – The filename extension must be TIVELLA for kernels. • **UDP**—The routable IP address and UDP port to join a multicast stream. • **Audio**—An audio file. • **RTSP**—A properly hinted MPEG2-TS stream.
Estimated Duration	The estimated duration for playback, counted in hours, minutes, and seconds.
Category	States which categories include the asset. Click **Select Category** to associate the asset with additional categories. Choose at least one.
Description	Optional, brief description of the asset. Descriptions cannot use any more than 255 characters. Angle brackets (**<** or **>**) and ampersands (**&**) are forbidden values in this field.
Owner	Your name or the name of the person who added the asset.
Bridging Image	One of these. • **None**—The video asset should not use a bridging image. • **Image URL**—The video asset should be coupled with a bridging image, which is available from the HTTP URL that you enter here. The URL must be encoded properly (using **%20** instead of spaces, for example), according to the principles set forth in RFC 2396. We do not support any use of spaces in URLs.

Table 5-1   *Elements for Adding Assets (continued)*

Element	Description
Batch (properties sheet)	
Base URL	An HTTP URL that points to a directory on a server. The directory that you point to serves as the root-level URL for the batch download operation; every file that you download is retrieved from this directory or from one of its children at a lower level. The URL must be encoded properly (using **%20** instead of spaces, for example), according to the principles set forth in RFC 2396. We do not support any use of spaces in URLs.
Pattern	The filename pattern that identifies which files to download. We do not support any use of spaces in filenames.
Asset Type	Choose the type that best describes these assets: • **Video**[1]—A video file in MPEG-1, MPEG-2, MPEG-4, or WMV format. • **Shockwave Flash**[2]—Any Adobe Shockwave Flash 7 file if your DMP is a 4305G. Alternatively, if your DMP is a 4400G, any Adobe Shockwave Flash 10 file. • **Images**—Any standard image file, such as a nonprogressive JPEG image. The filename extension must be JPG, JPEG, GIF, or PNG. • **HTML**—Any web page. The filename extension must be HTM or HTML. • **Firmware**[3]—Any firmware image for the DMP. The filename extension must be FWIMG or BIN for firmware, or TIVELLA for kernels. • **UDP**—The routable IP address and UDP port for a streaming server. • **Audio**—An audio file in MP3 or WMA format. • **RTSP**
Levels	The number of levels below the specified base URL to search for (and download) files with filenames that match the specified pattern. Unless you choose a numbered option explicitly, we search all levels.
Category	Click the name of the one category that should contain these assets.

1. Our support for MPEG-4 requires that you use the MPEG-4 Part 2 or Part 10 (H.264) codec and that you multiplex audio and video in an MPEG-2 Transport Stream. If your DMP is a 4400G, we support MPEG-4 Part 10/H.264 video in MPEG-2 TS. The 4305G does not support MPEG-4 Part 10/H.264. The filename extension must be MPG, MPEG, MP4, or WMV and you must enter the estimated duration.

2. The filename extension must be SWF and you must enter the estimated duration. This release does not support audio in Shockwave Flash media. If your media library contains any Shockwave Flash files that use audio, their playback will be silent on your public presentation systems.

3. You cannot use these assets in presentations or playlists.

Related Topics

FAQs and Troubleshooting

Q. **Why does SWF playback stop momentarily?**

A. SWF playback stops momentarily when the main processor in a DMP 4310G exhausts its reserved memory capacity to render a SWF. The playback is stopped just long enough to clear DMP memory. Then, the DMP restarts SWF playback automatically. However, this process fails on rare occasions. When it fails on a DMP where failover is enabled, Flash failover occurs. But when it fails while

failover is disabled, the DMP 4310G does not play anything. To prevent this behavior, you might use a greater variety of SWF assets for your digital signs or edit your playback schedule. To work around this problem, set the DMP failover URL to load the same SWF.

Q. **What makes a playlist stop before it should?**

A. A DMP 4310G might stop rendering a playlist immediately before you expect it to load and render a SWF asset. Or, it might fail to render a SWF asset in some other context.

In either case, examine the FLA source for the SWF and verify that it does not use ActionScript 3. Or, when you do not have the FLA source, open DMPDM on the DMP 4310G and choose Flash Playback from the Display Actions list. Then, direct DMPDM to play the SWF. DMPDM will not play an incompatible SWF.

We do not support any use of ActionScript 3 on a DMP 4310G. Instead, we support ActionScript 2.