

Hiperwall Content Guidelines



Still images (photography, etc.)

Hiperwall software can display many types of images, specified below. The image files must be imported to the display nodes with the Content Manager before they can be used. All image files **MUST** have the proper extension for import and display to work. Files of over a billion pixels are supported.

Image formats: JPEG (.JPG), TIFF (.TIF), BMP, GIF, and PNG

Image format notes:

- Transparency is preserved in PNG files with an alpha channel. Such files are particularly useful as overlays in slideshows.
- Large images (greater than about 5MB) are converted to a special “big image” format that supports rapid loading of high resolution imagery. This conversion, performed during the import process, can take several minutes for very large images.
- If images are displayed larger than 1.0 zoom (their native resolution), they may appear blocky (pixelated) on the wall, depending on the amount of magnification. While smooth interpolation is used to maximize appearance, the effect will be visible to nearby viewers. Use of images in the 8-10 megapixels range will minimize these effects on walls of 20 displays or fewer. Larger walls need larger images.

Movies

Hiperwall software can show movies in two ways. If the user installs QuickTime on the display nodes and control node, the Hiperwall system can display QuickTime movies (.MOV, .MP4) that are imported to the display nodes. In addition, Windows media files (.WMV) can be streamed to the Hiperwall using Streamer software.

QuickTime movie formats and notes: QuickTime movies (.MOV) and H.264 .MP4 files

- The Hiperwall software requires that movies have a width that is a multiple of 4. Height is not similarly restricted, but common video sizes, like 1280x720 are suggested. Since most commercial monitors are 16x9 format, movies will likely fit better if they are 16x9.
- Hiperwall can display movies with codecs supported by QuickTime, but smoothness and synchronization depend on the capabilities of the display nodes and the number of movies being shown simultaneously. Some commercial displays with embedded PCs are unable to play a 1080p QuickTime movie smoothly.
- Even low resolution (720p) QuickTime movies can play badly depending on how they were encoded.
- Playing more than one large movie on a display node will cause the movies to compete with each other for CPU resources. If the movies do not play smoothly, avoid placing more than one movie per display node.
- QuickTime compatible audio formats are supported and are played on the control node and any display nodes where the movie is shown. Connecting an amplified speaker to either will allow the movie’s sound to be heard. If more than one movie is playing on a particular node, the sound from all the playing movies will be heard on the audio output of that node.
- Even if only one movie is being shown on any given display node, too many simultaneous movies on the wall can make the Control Node a bottleneck. If you need to show many (more than 3 or 4) large movies simultaneously, use a very powerful (3GHz, 6 core or better) Control Node, or consider using the Hiperwall streamer option which places a smaller load on the Control Node.
- Showing the same movie content multiple times, even on the same display node, does not burden the display node or control node more than showing that content item once.

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Streamer movie formats and notes: .WMV movies, .MP4 and .MOV under Windows 7

- The streamer is the best solution for playing high-quality, high-resolution movies, because its performance relies on the power of the Streamer node (with NVIDIA GeForce 8xxx or later graphics card) and the bandwidth of the network, rather than relying on the display nodes to decode the movie. Therefore, a 1080p stream at 24 or 30 frames per second can be streamed by a quality Streamer Node over a quality network switch to the wall.
- The Streamer software supports .WMV movie files and DirectShow-compliant capture devices.
- Streamer movies require both horizontal and vertical resolutions that are multiples of 4.
- If the Streamer Node is running Windows 7, .MP4 and many QuickTime .MOV files are also usable by the Streamer.
- A Streamer node may stream multiple movies or capture streams, but is limited by the CPU and graphics processor resources, as well as the network interface, of the Streamer node.
- Third-party software, such as FFDSHOW, can be used to make the streamer accept more movie formats, but Hiperwall can not guarantee the results of third party products. FLV and MPEG2 movies are not supported by default, though 3rd-party software may allow them to be used.
- There is a short delay between when a frame is decoded on the Streamer node and when it shows on the wall. The Streamer software provides a mechanism to adjust the audio delay so sound output of the Streamer node can match what is displayed on the wall.

Movie guidelines:

- For small or low frame rate movies, use QuickTime .MOV or H.264 .MP4 files imported to the wall. Some 720p movies work very well, while others don't because of their encoding.
- For high-resolution (720p, 1080p) movies, stream them as .WMV or .MP4 (under Windows 7).
- If you need two or more movies on one display node and they interfere with each other, play the least demanding one as a QuickTime movie and stream the others.
- We strongly recommend using a modern NVIDIA graphics card in the Streamer node to get hardware accelerated streaming.
- If disk space to import movies is constrained on your Display Nodes, stream the movies instead.

Content from Software Applications

Flash content, web pages, and most other software applications can be shown on the wall via the Hiperwall Screen Sender. The Sender is a Java application that is part of the Hiperwall software to enable viewing computer screen content, even proprietary applications, on the display wall. Some display content, like DirectX or OpenGL games may not be captured by the sender, but typical applications work well. Sender software requires Java version 1.6, so it can work on Mac OS X (Intel only) or many Linux systems, as well as Windows systems. The easiest way to make the Sender work on a Mac or Linux machine is to extract the HiperwallSender.jar file from a Windows Sender installation.

With the sender, the performance of both the Sender node and Display nodes come into play. The higher the resolution of the content being send, the lower the frame rate than can be captured and sent. A very powerful Sender machine, however, can send moderate resolution screens as fast as 20-30 FPS and low resolution screens much faster. Some display nodes have trouble displaying very high resolution sender content faster than 10-15 FPS, so experiment to find the resolution and frame rate combination that looks good for your content. Java performance is typically better under Windows than Mac or Linux, so Windows senders will have higher frame rather than when running another OS on the same hardware.