



Overview of Content Support in Cisco Vision Dynamic Signage Director

Cisco Vision Dynamic Signage Director provides both basic and more advanced methods of content ingestion to achieve high levels of visual impact at your venue. This module provides a high-level introduction to the content types and data sources supported in Cisco Vision Dynamic Signage Director.

Content is defined as any digital media that is presented on a TV display using a digital media player (DMP) in the Cisco Vision Dynamic Signage Director solution. Cisco Vision Dynamic Signage Director supports a variety of content types and sources to create an impressive presentation of digital content at your venue.

Cisco Vision Dynamic Signage Director is a very flexible content design and presentation system. It allows you to:

- Upload existing content
- Integrate external content or data
- Design content presentation using widgets and templates

Cisco Vision Dynamic Signage Director supports three primary categories of content:

- Images (locally stored)
- Video (locally stored or streamed)
- External Content (variety of content forms and data integrations)

This module provides a summary of the types and sources of content supported in Cisco Vision Dynamic Signage Director:

- [Images, page 11](#)
- [Video, page 12](#)
- [External Content, page 12](#)
- [Widgets, page 17](#)
- [DMP Capabilities by Current Model, page 18](#)

Images

Images are static graphic assets used for advertisements or informational messages that do not require motion. This could include Welcome messages for luxury suites or directional information after an event. They are also used as backgrounds for other content such as menu boards.

Images are uploaded to the content **Library** in Cisco Vision Dynamic Signage Director and are stored locally on the media players when content is staged. Once the image is in the content library, it can be used in the graphic component of the Widgets tool or in a non-video template region. Images can also be used in a “Video or Mixed Media” template region.

Video

Images also can be uploaded as icons for assignment to channels in Cisco Vision Dynamic Signage Director channel guides.

Note: Video, widgets, and external URLs are also scalable.

Note: Images in quad-region default template design are not supported.

Video

Video can be locally stored by upload to the content **Library** in Cisco Vision Dynamic Signage Director, or can be streamed from a variety of sources and display methods.

Note: For quad-region default template design, you can only use HD video content. Dolby Vision and HDR+10 are not supported.

Video streaming can be implemented through the following content sources and display methods:

- Video streamed from the headend.

Video streamed from the headend can be in-house, terrestrial TV, satellite, or cable-provider feeds, which are typically multicast. The format of video provided from the headend is dependent upon the source.

For more details, see [Cisco Vision Network, Server, and Video Headend Requirements Guide](#) (available to qualified Cisco Vision partners).

- Video locally stored in Cisco Vision Dynamic Signage Director.

Locally-stored video is an external video that is uploaded to the Cisco Vision Dynamic Signage Director content library. It is stored in Cisco Vision Dynamic Signage Director and played through a video or mixed-media playlist.

- Video streamed to a local HDMI-In channel (HDMI-In Pass-Through).

Note: Local HDMI-In video is supported by the CV-UHD2, CV-UHD and SV-4K DMPs only, for HDCP-compliant devices and content. For best results, use maximum resolution of full HD (1920X1080X60p) on input to HDMI-In port for streaming.

Use the local HDMI-In channel when you want to easily send local content to a single TV display using the HDMI-In port of the DMP on a CV-UHD2, CV-UHD or SV-4K device. See [Content Deployed From Local HDMI-In \(HDMI-In Pass-Through\)](#), page 27.

- DMP-encoded video streamed as a multicast channel for video only (no audio).

DMP-encoded video can be deployed from several sources:

- Full-screen DMP display output (including multiple template regions), also known as *display encoding*.
- External URL channel content (including HTTP, HTTPs, and HLS channels)
- Local HDMI-In channel content

External Content

External content includes a number of different forms of content and supported data integrations, from referenced external URLs and HTML pages, to data feeds and scoreboard controller integrations, among others.

- [External URLs, page 13](#)
- [Data Integration Sources, page 15](#)

External URLs

There are several ways to bring content from external URLs into Cisco Vision Dynamic Signage Director and for different reasons. [Table 2 on page 13](#) summarizes these methods, why you might use them, and where to configure them.

Table 1 Summary of External URL Ingestion Methods

Ingestion Method	Why Use	Where Configure
Channels	<ul style="list-style-type: none"> ■ Display the entirety of content from a URL as a multicast channel to which other DMPs can be tuned. ■ For HTTP, HTTPS, and HTTP Live Streaming (HLS) content, including full HTML pages. 	<p>Configuration > Channel Definitions</p> <p>Configuration > Channel Guide</p>
Data Integration	<p>For more advanced data customization, you can:</p> <ul style="list-style-type: none"> ■ Introduce a sample XML schema. ■ Select certain data objects. ■ Create custom mapping expressions for the output. ■ Design custom content layout for the data using Widgets tool. <p>See “Generic Data Sources” in Data Integration Sources, page 15.</p>	<p>Configuration > Data Integration</p>
HTML Pass-Through	<ul style="list-style-type: none"> ■ Simple HTML browser content (not full HTML pages) with restrictions. ■ Content intended for more limited or short-term use. 	<p>Library > External Content Right click > Create</p>

Notes:

Use only external URLs that are compatible with an HTML I-frame.

When using external URLs, if you use a web page that constantly refreshes itself or a video, you will get updated information. Otherwise, there is no refresh from the DMP.

External URL content in quad-region default template design is not supported. You can only use HD video content from multicast video or a playlist.

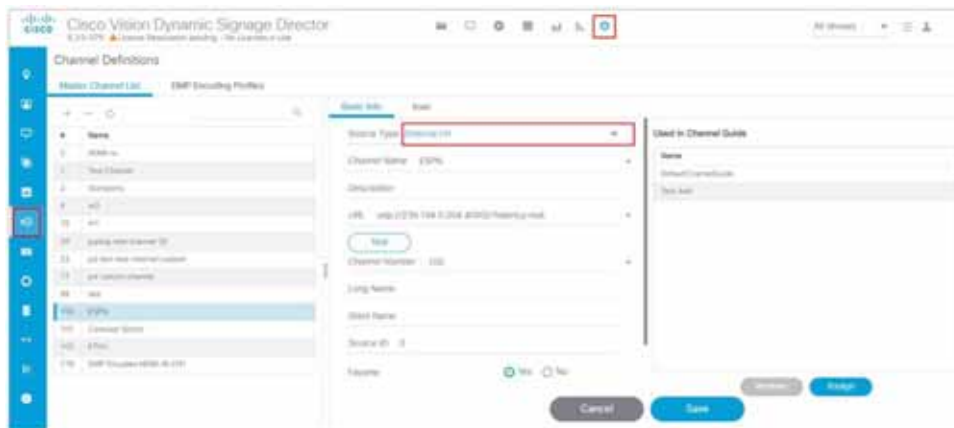
Detect X-Frame-Options in External URLs

This enhancement checks if the external URL asset or external URL channel contains XFrame-Options in the HTTP header that prevents it from being rendered by the DMP. Test the URL and validate it for rendering its content on the DMP.

1. Click **Configuration > Channel Definitions > Master Channel List** tab.
2. Click **Basics** tab.
3. In **Source Type** drop-down menu, select: **External URL**. The **Test** button appears ([Figure 1 on page 14](#)).

External Content

Figure 1 Testing External URL Content for X-Frame Option



4. Fill in the fields and click **Save**.

5. Click **Test**.

If X-Frame is present in the content, an error message appears.

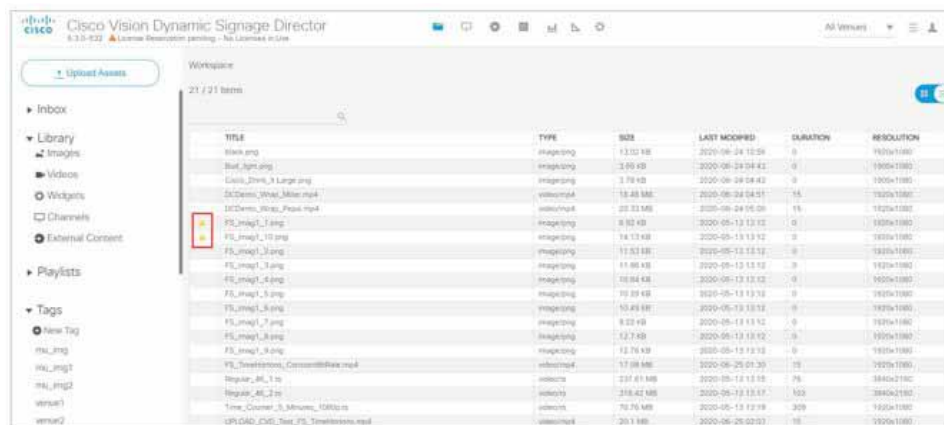


The TEST function is also available whenever you create a new external URL connection.



If your external content is unlikely to render to the DMP, you get a caution symbol until you clear it (Figure 2 on page 14).

Figure 2 Caution Symbol Indicating this Content will Not Render as Desired



External URLs as Channels

External URL is a channel source type that allows you to specify an HTTP, HTTPS, or HTTP Live Streaming (HLS) source as a channel, including HTML page sources. Use an external URL as a channel when you do not need synchronization of content, but you would like to be able to tune to that content from a script, User Control API, IP phone (with IP Phone integration software), or IR remote. External URL channels also can be streamed to a DMP-encoded multicast channel, but do not support audio when streamed in that form.

HLS sources are hardware-accelerated on the DMP. The content is specified as an External URL source type in the Channels setup. The system recognizes the content as an HLS source based on the Allowed HLS file formats designated in the **System Configuration**. The default extensions allowed are m3u and m3u8.

IMPORTANT: For External URLs as channels to stay at the **bottom layer**, make sure that video layers are ordered at the **bottom** of the list of layers on the template editor using the **Designer** tool. This assumes that the display specification for the DMP has `dmp.layerOrderMode` uses the default, or **VideoOnBottom** value. For detailed information about the new layering options, see [Dual Video Screen Templates–Enhancements, page 60](#).

For more information, see [Channel Content Deployment, page 25](#).

Note: You cannot use external URLs in quad-region default template design. You can only use HD video content from multicast video or a playlist.

HTML Pass-Through

When you select **Library > External Content**, then right click > **Create** to specify the external URL, an external URL asset is created in the content **Library**. When referencing an external URL in this way, you can render simple HTML browser content (with some restrictions) on the media players, by including the external URL object in a playlist and scheduling it in a script. [Figure 3 on page 15](#) shows creating new external content URLs.

Note: Use only external URLs that are compatible with an HTML I-frame.

Figure 3 Referencing an External URL to Content



Although the External Content URL is referenced in the content **Library**, the content itself is not actually stored in the content **Library** in Cisco Vision Dynamic Signage Director. Any changes to the content on the external site page are dynamically updated on the media players when the external URL is referenced, such as when the external URL playlist item is played.

Data Integration Sources

Cisco Vision Dynamic Signage Director predefines some data structures for ease of integration with the system. Configure these sources with **Configuration > Data Integration** in Cisco Vision Dynamic Signage Director. Use **Designer > Widgets** to design layouts. For details, see [Cisco Vision Director Data Integration Guide](#).

- Content Feeds
 - Atom Feed
 - RSS Feed (RSS 2.0)

External Content

A ticker is a region that displays content received from an RSS feed (news, weather, or other dynamic information) over a customizable background. RSS feeds can come from external or internal sources. Venue Operators can use RSS feeds to publish their own in-house promotions or other proprietary messaging.

■ NFL Content

- National Football League (NFL) Game Statistics and Information System (GSIS) Cumulative Statistics
- NFL GSIS Game Clock

■ Scoreboard Controllers

- Daktronics All Sport 5000 Scoreboard Controller (basketball, NFL™ football, and hockey only)
- OES ISC9000 Intelligent Scoreboard Controller (basketball and hockey only)

■ POS (Point-of-Sale) Data Sources

- Generic POS
- Internal Database POS
- Menu Theme

■ Generic Data Sources

Generic data sources can be used for other forms of XML or JavaScript Object Notation (JSON) sources that you want to ingest into Cisco Vision Dynamic Signage Director whose format does not conform to some of the standard out-of-the-box data source types, such as RSS 2.0.

Cisco Vision Dynamic Signage Director also can support Generic Data Sources in JSON or XML format from the following source types:

- Database—Supports automatic translation of MySQL and SQLServer database formats to XML data in Cisco Vision Dynamic Signage Director
- FTP
- HTTP/HTTPS
- TCP
- UDP

■ Table Lookup

The Table Lookup feature for data integration allows users to create multiple tables, each having multiple key-value mappings. Users can upload tables from a TSV file or create tables and mappings from the Cisco Vision Director UI. Once tables are created, a custom XPath function can be defined to look up values from these tables for specified keys.

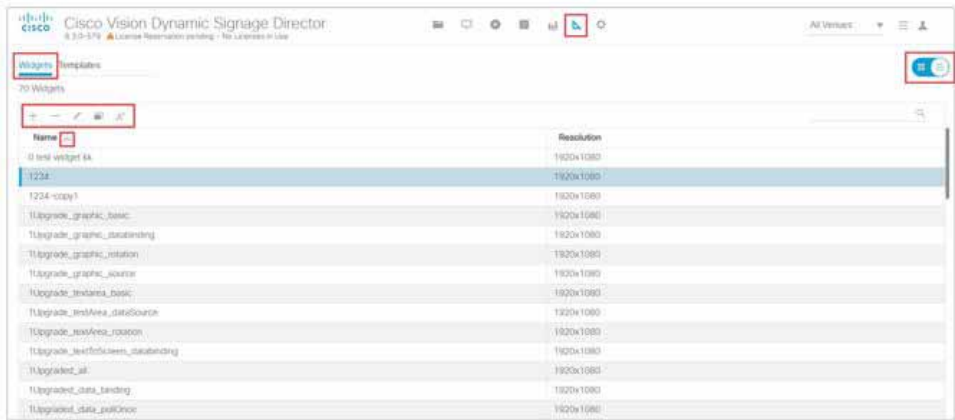
The Table Lookup feature for data integration supports the following primary use cases:

- Custom Suite Welcome Messages
- Images in the Asset Library folders (such as local locations)
- Local weather information

Widgets

Widgets are content objects for external data. Use **Designer > Widgets** (Figure 4 on page 17) to create a widget used to map real-time statistics or content from external data sources for output display in Cisco Vision Dynamic Signage Director.

Figure 4 Designer Widget Interface



The Widgets tool includes image-based and text-based components and a tabular list component to help you design the layout of external data (Figure 5 on page 17).

Figure 5 Widget Designer



As content assets, widgets are stored in the Cisco Vision Dynamic Signage Director **Library** once published from the **Widgets** tool. Use the standard template, playlist, and script configuration elements to deploy the widget.

Note: Widget content is not scalable. For details, see [Cisco Vision Director Data Integration Guide](#).

Note: Widgets in quad-region default template design are not supported.

DMP Capabilities by Current Model

To date, we offer the following DMPs:

- Series 2: DMP 2K and SV-4K
- Series 3: CV-HD and CV-UHD
- Series 4: CV-HD2 and CV-UHD2

Table 2 on page 18 shows a highlight of the available features, capabilities or restrictions for each DMP model.

Table 2 Current DMPs by Feature and Content Capability

Features	Series 2		Series 3		Series 4	
	DMP 2K	SV-4K	CV-HD	CV-UHD	CV-HD2	CV-UHD2
Video Streaming Capable	Yes	Yes	1 X HD	1 x UHD + 1 x HD	1 X UHD	2 X UHD
Audio Streaming Capable (Audio only)	No	No	No	No	No	No
Video File Size (Release 5.0 and later)	4GB	4GB	4GB	4GB	4GB	4GB
Dual Video ¹ with Luma Key (applied to secondary HD video region over an HD or UHD video in the primary region)	Single Video Only	Yes	Single Video Only	Yes	Single Video Only	Yes
HD Video Wall Support	No	Yes	Yes	Yes	Yes	Yes
HTML5 Performance	Entry	Entry	Entry	Great	Good	Excellent
Low Live Video Latency	Yes	Yes	Yes	Yes	Yes	Yes
Synchronized Playback	Yes	Yes	Yes	Yes	Yes	Yes
RS-232	Yes	Yes	Yes	Yes	Yes	Yes
PoE Requirement ²	30W	30W	PoE 15W	Dynamic 15W/30W	PoE 15W	Dynamic 15W/30W
Storage	53 GB	100 GB	128 GB	128 GB	64 GB	128 GB
USB Ports	1 X A	1 X A	1 X A	1 X A, 1 X C	1 X A	1 X A, 1 X C
HDMI-CEC Port	Yes	Yes	Yes	Yes	Yes	Yes
HDMI-In Streaming ³ (with port) Maximum resolution: full HD (1920X1080X60p input)	No	Yes	No	Yes	No	Yes
Advanced Video & Graphics	No	UHD Video and HTML	No	UHD Video and HTML	No	Dolby Vision, HDR10, UHD HTML
Content Orientation (portrait/landscape)	Yes	Yes	Yes	Yes	Yes	Yes
Portrait ⁴ Content Support ⁵	Yes	Yes	Yes	Yes	Yes	Yes
Scaling Content: multicast and local video ⁶	Yes	Yes	Yes	Yes	Yes	Yes
Scaling Content to Fit: Scale down large content and keep the correct aspect ratio. If your image or widget resolution is smaller than the region, the content resolution will not scale up.						

Table 2 Current DMPs by Feature and Content Capability

Features	Series 2		Series 3		Series 4	
	DMP 2K	SV-4K	CV-HD	CV-UHD	CV-HD2	CV-UHD2
Scaling Content to Fill: Videos and external URLs only scale to fill the region.						
UHD Video Encoding	No	H265	No	H265	No	H265
Quad-Template	No	No	No	Yes	No	Yes

1. Dual UHD resolution video regions is not supported.
2. Performance is throttled and peripheral power is disabled at lower power.
3. Videos with UHD resolution are not supported for HDMI-In streaming.
4. We do not recommend streaming rotated (portrait) video. Instead, rotate local content when creating it.
5. When using video in portrait mode, do not scale the video beyond the full HD resolution. Match the aspect ratio of the video relative to the screen region, for non-UHD video. Use portrait HD video content (1080x1920) at 60p.
6. Multi-screen template stretching generally is not currently supported.

Notes:

- The DMPs only support HD/SD content and do not support UHD resolution video streaming.
- To place video over graphics (graphics in the middle), use `dmp.layerOrderMode`. See [Dual Video Screen Templates-Enhancements, page 60](#).
- Content scaling works with multicast video and local video, static graphics, widgets, and external URLs.
- The Screen Template editor in Cisco Vision Dynamic Signage Director presents all region sizes based on an HD 1920x1080 canvas size. Do not configure templates based on the ultra HD size of 3840x2160 when using a UHD display.
- For Release 6.3, GPIO port is available for external content.
- If using quad-region template design, a new local control API controls channel changing and audio control. Only one region can play audio at any time.

DMP Capabilities by Current Model