



Working with Screen Templates in Cisco Vision Director

User Role: Administrator / Content Manager

This module provides information about how to set up the layout of content on a TV display by defining regions for the screen using predefined or custom templates.

Information About Screen Templates

Screen templates define the video and non-video regions and layout of a display. Screen templates are used to create various layouts for the presentation of different types of content. Screen templates are assigned to zones or groups and apply to all locations within them.

[Figure 1 on page 105](#) shows three basic templates. The “L-wrap” template divides the screen into three sections where you have video in the top left of the screen, advertising along the right side, and a ticker across the bottom that might be showing scores and a news feed.

Figure 1 Three Basic Templates



Cisco Vision Director allows you to create the following types of screen templates:

- Custom template—Specifies the size and arrangement of regions on the screen.
- Overlay template—Specifies a video region that overlaps a secondary video region or non-video region that overlaps a video region in the template.




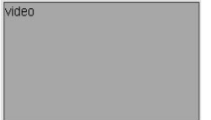

Default Screen Template Dimensions

The dimensions for the default screen templates are fixed and cannot be changed.

Alternatively, you can create custom screen templates (where you specify different sizes for the screen template regions) and overlay screen templates (where you have a non-video or video region overlapping a video or mixed media region).

[Table 1 on page 106](#) defines the default screen templates that are included with Cisco Vision Director **4.0 and later**. **Installing a full ISO image removes previously available templates.**

Table 1 Default Screen Templates

Template Name	Content Type	Dimensions	Region Layout
Full Screen Video	Displays full-screen video.	Video: 1920 x 1080	
Full Screen NonVideo	Displays full-screen graphic.	Graphic: 1920 x 1080	
3-Region Lwrapper	Displays live video footage or video replay in Region 1, a playlist of advertisements in Region 2, and a ticker with scores or news in Region 3. Also referred to as an “Lwrapper.”	Video: 1624 x 914 Ads: 296 x 914 Ticker: 1920 x 166	
Full Screen Dual Video	Displays a full screen video in each video region (video 1 and video 2). Using luma keying on video region 2, you can enable select areas of video region 1 content to be visible through video region 2. For video content with UHD resolution on the SV-4K, CV-UHD, and CV-UHD2 digital media players, luma key cannot be applied. Luma keying is only supported for dual video when an HD video in the secondary region uses a luma key over a UHD video in the primary region.	Video 1: 1920 x 1080 Video 2: 1920 x 1080	
Quad-Region Template	<ul style="list-style-type: none"> ■ Fixed 2x2 template on each screen, taking up the entire screen in four, equal parts. ■ No adjustable template/positioning, z-layer ordering or overlap. ■ No luma key support. ■ Each region can play HD video or a playlist only. ■ One quadrant of audio at a time is supported; select the active audio via local control API only. 	Video 1 (top left region): 1920x1080 Video 2 (top right region): 1920x1080 Video 3 (bottom left region): 1920x1080 Video 4(bottom right region): 1920x1080	

Information About Screen Templates

Note: Obsolete templates (such as 3-Region, Welcome, Exit, Emergency, Outside Emergency, 3-Region, 3-Region double) might still appear in your system if you have upgraded from earlier releases.

Note: Release 6.3 introduces UHD video support on the CV-HD2 DMPs and dual UHD video support on the CV-UHD2 DMPs.

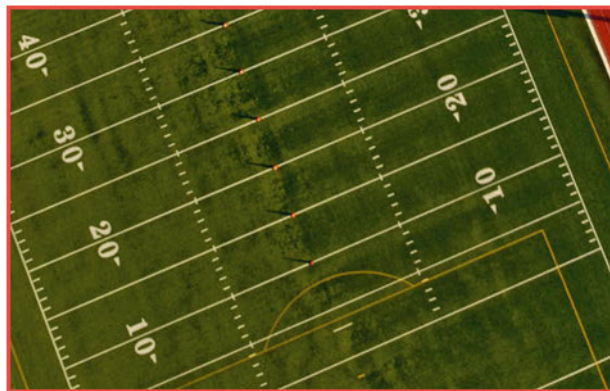
Note: Release 6.4 SP1 introduces quad-region video template design only available on CV-UHD and CV-UHD2 DMPs.

Full Screen Default Templates

The full screen templates that come with the Cisco Vision Director software are used to display full-screen video (or mixed media) or full-screen graphics. [Figure 2 on page 108](#) shows an example of a video (or mixed media) in the full screen template. [Figure 3 on page 108](#) shows an example of a graphic in the full screen template. Both are fixed screen templates and cannot be customized. [Table 2 on page 108](#) and [Table 3 on page 108](#) show the template dimensions.

Figure 2 Full Screen Video (or Mixed Media) Template Example**Table 2 Full Screen Video or Mixed Media Template Dimensions**

Content Type	Dimensions
Region 1: Video or Mixed Media	Region 1: 1920 x 1080
Full Screen Video	1920 x 1080

Figure 3 Full Screen Graphic Template Example**Table 3 Full Screen Graphic Template Dimensions**

Content Type	Dimensions
Region 1: Graphic	Region 1: 1920 x 1080
Full Screen Graphic	1920 x 1080

3-Region Lwrapper Default Template

[Figure 4 on page 109](#) shows an example of the content for the 3-Region Lwrapper template that comes standard with Cisco Vision Director. This is a fixed screen template and cannot be customized. [Table 4 on page 109](#) shows the template dimensions. Click on the regions and see the Properties in the right panel update with dimensions and layer names.

Information About Screen Templates

Figure 4 3-Region Lwrapper Template

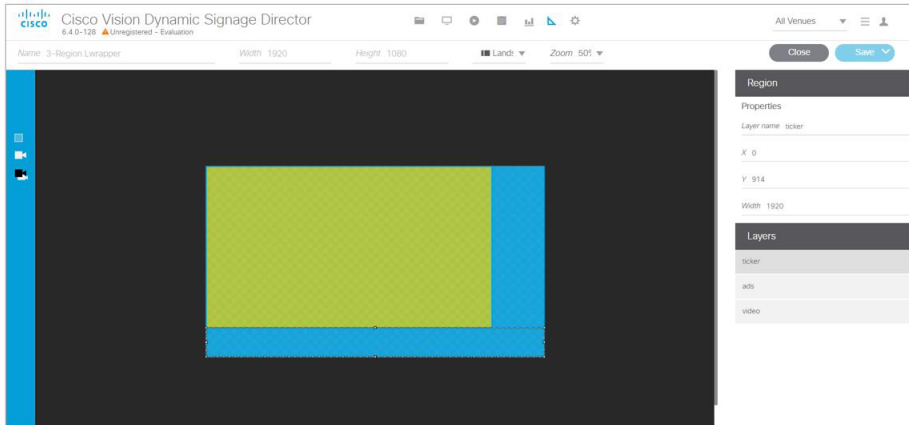


Table 4 Standard Lwrap Template Dimensions

3 Region Lwrap	x	y	width	height
Ticker	0	914	1920	165
Ads	1628	0	296	914
Video (feed)	0	0	1624	914

Figure 5 on page 110 shows an example of the content for the 3-Region Lwrapper template that comes standard with Cisco Vision Director. This is a fixed screen template and cannot be customized. Table 5 on page 110 shows the template dimensions.

Figure 5 3-Region Lwrapper Template

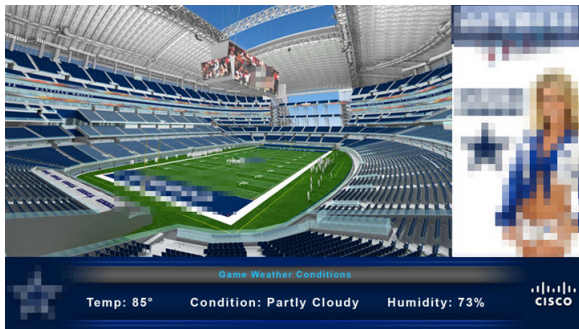


Table 5 3-Region Lwrapper Region Template Dimensions

Content Type	Dimensions
Region 1: video or mixed media	Region 1: 1624 x 914
Region 2: non-video	Region 2: 296 x 914
Region 3: non-video	Region 3: 1920 x 166

Table 6 on page 111 lists the characteristics of the 3-Region Lwrapper screen template.

Table 6 3-Region Lwrapper Screen Template Characteristics

Region	Description
Region 1	<ul style="list-style-type: none"> ■ 16:9 aspect ratio. ■ Supports live video broadcasts or video replay. For more details on video formats, refer to the Cisco Vision Network, Server, and Video Headend Requirements Guide for your release (available to qualified Cisco Vision partners).
Region 2	<ul style="list-style-type: none"> ■ Supports playlists of advertisements. ■ Due to the small dimensions of region 2, use graphic-intensive ads rather than ads that have a lot of small text in this region.
Region 3	<ul style="list-style-type: none"> ■ Designed for displaying a graphic and/or information in the form of a ticker. ■ The ticker content can be from a compatible RSS feed approved by the venue. ■ The ticker region can be customized with the venue logo (with the ticker content playing in the remaining space).

Full Screen Dual Video Default Template

A full screen dual video default template is available for the DMPs. Dual video regions allow you to overlay two video regions; a secondary local or multicast video region and a primary video region.

The dual video template provides the following capabilities:

- Show two video feeds at the same time.
- Place video-based advertisements.
- Promote a moment of exclusivity during an event.
- Apply luminance (luma) keying to the secondary video region.

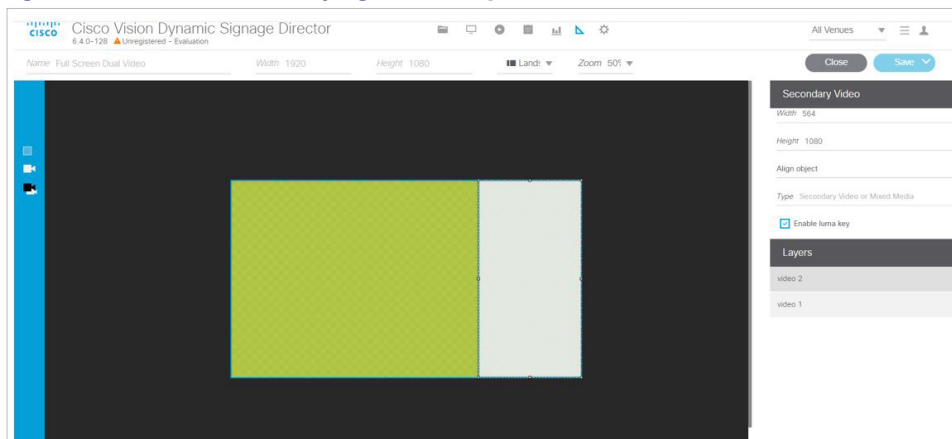
For video content with UHD resolution on the SV-4K, CV-UHD, and CV-UHD2 digital media players, you cannot apply a luma key. Luma keying is only supported for dual video when an HD video in the secondary region uses a luma key over a UHD video in the primary region.

[Table 7 on page 112](#) lists the specifications of the dual video regions.

Table 7 Full Screen Dual Video Template Specifications

Region	Specification
Video 1	<ul style="list-style-type: none"> ■ Can be controlled using an infrared remote (IR) remote or local control. ■ In the template, video region 1 appears as the bottom or primary layer. ■ Supports audio. ■ Source: Local or multicast video.
Video 2	<ul style="list-style-type: none"> ■ Cannot be controlled through an IR remote or local control. ■ In the template, video region 2 fully overlaps video region 1. ■ Luminance (luma) keying is applied to second video region (it cannot be disabled or changed in the template). ■ Does not play audio. ■ Source: Local or multicast video.

Note: The luma key default is set to #ff2000. To enable luma keying, scroll down the Properties panel and click the checkbox (Figure 6 on page 112).

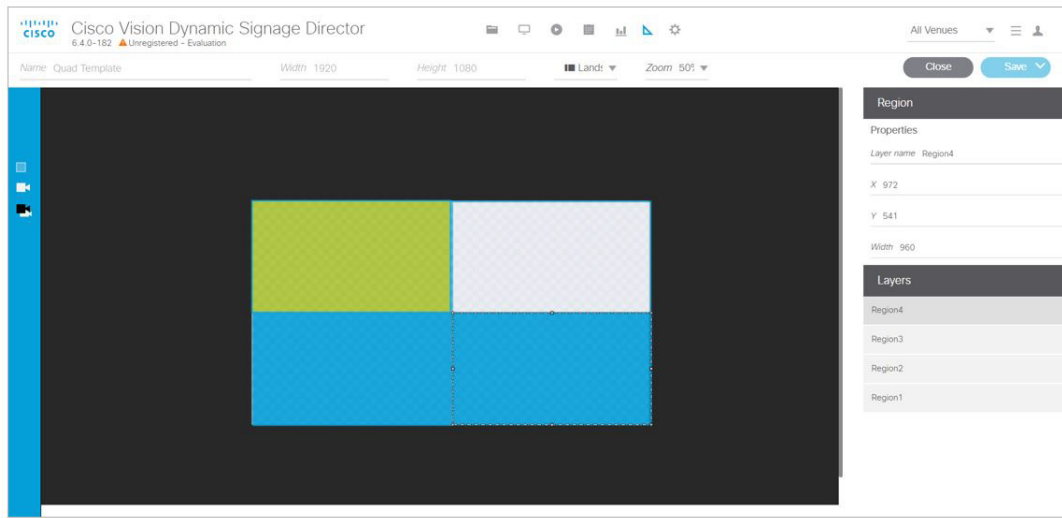
Figure 6 Enable Luma Keying in the Properties Panel

To change the global luma key value:

1. Click **Configuration > System Configuration > Global DMP Settings > Default - Audio/Video/Closed Caption**.
2. Select **Luma key** from the **Configuration Properties**. Click **Edit** (pencil icon). The Edit - Configuration Setting dialog box appears. See [Modifying the Default Luma Key Value, page 123](#).

Quad Video Default Template for the CV-UHD and CV-UHD2 DMPs

Release 6.4 SP1 introduces the four-region video streaming feature. This feature is available **only** on the CV-UHD and CV-UHD2 DMPs. We included a new default template called Quad Template. You cannot edit this template, but you can copy it and use it to create your own design. The default template splits the screen into four, equal 16:9 video quadrants/regions. The top left area is Region 1, the top right area is Region 2, the bottom left area is Region 3, and the bottom right area is Region 4. When you click into a region, the Layer information highlights (Figure 7 on page 113).

Figure 7 Quad Template for Four Video Regions

All these regions use local control for the audio volume and channel changing. Contact the third-party application developer of the device you are using (i.e., touch screen or remote) to determine if your device is compatible. This feature works best in a more private area, such as a luxury suite.

Work with the third-party device integrator to determine how the channel changing and volume controls operate on the third-party touch panels.

Quad Video Template Specifications for the CV-UHD and CV-UHD2 DMPs

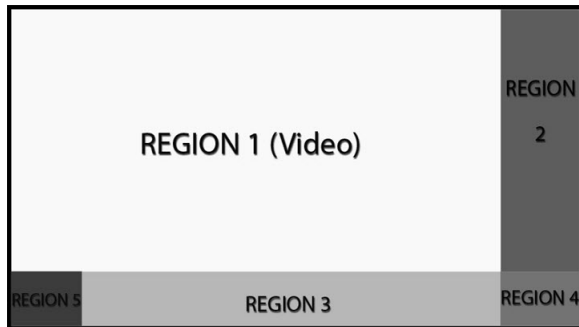
Here are the specs:

- Quad template video will be a fixed 2x2 template on each screen, taking up the entire screen in four, equal parts. That means there is no adjustable template/positioning, z-layer ordering or overlap.
- No luma key support.
- No support for use in scripting other than to put the display into quad video mode.
- Local control API controls video regions to change channels and switch audio to a different region.
- One quadrant of audio at a time is supported; select the active audio via local control API only.
- No support for images, widget text overlay, or external URLs while in quad video mode.

Note: The quad-region default template does not support Dolby Vision or HDR10 content.

Custom Screen Templates

Custom screen templates allow you to change the size and arrangement of content regions on the screen to fit your sponsor and venue needs. [Figure 8 on page 114](#) shows an example of some custom screen templates.

Figure 8 Custom Screen Template Example

Custom Overlay Screen Templates

Overlay screen templates are custom templates that allow a non-video region (graphics) to overlap a video (or mixed media) region on the DMPs.

TIP: On the DMP, you can also create a custom template that allows for dual video regions or you can use the default full screen dual video template. See [Full Screen Dual Video Default Template, page 111](#).

This overlay feature can be assigned to any region. Using the overlay feature you can display:

- A full-screen video (or mixed media) region with a full-screen non-video (graphics) content region overlaid on top.
- A brand/graphic overlaid in a small region of the screen.
- A ghosted brand/graphic such as a transparent logo where some of the colors in the logo are transparent and others are not.

Note: When creating an overlay screen template on the digital media player that has a primary video and a non-video region on top, be sure the image is designed to fit on the canvas. If the image is placed off the canvas, only part of the image will appear.

The recommended file format for graphics when using an overlay template is 8-bit or 24-bit PNG (transparent pixels supported). When you create the PNG file, you must make the pixels transparent for the full-size video region. JPG files are not recommended because they do not preserve transparency.

Dual Video Screen Templates–Enhancements

New in Release 6.3, you can set up the video / HTML layer order of a DMP display by using a new display specification called: `dmp.layerOrderMode`.

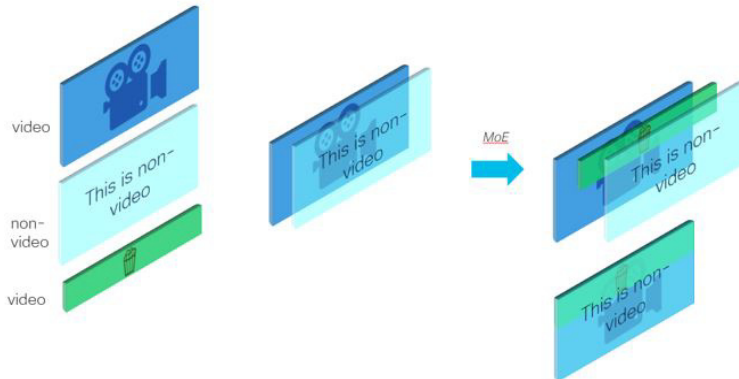
Previously, the video layers would always render on the bottom of the stacking order on the DMP display, regardless of the stacked order in the template ([Figure 9 on page 115](#)). You could achieve effects by transparencies and sizing, but video could not be overlaid.

There are three settings for `dmp.layerOrderMode`. By using this new display parameter, you can achieve the following:

- VideoOnBottom (same as existing behavior, [Figure 9 on page 115](#))
- GraphicsInMiddle ([Figure 10 on page 115](#))
- VideoOnTop ([Figure 11 on page 115](#))

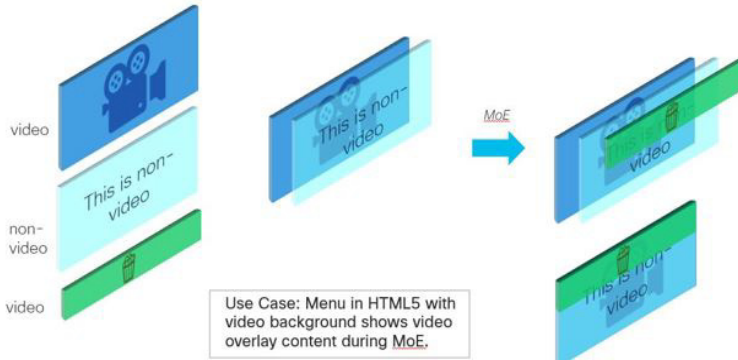
Information About Screen Templates

Figure 9 Default Layer Order–Single Video On the Bottom



For a use case such as a menu in HTML5 with video background showing a video overlay content during a Moment of Exclusivity, use GraphicsInMiddle (Figure 10 on page 115).

Figure 10 GraphicsInMiddle Value Output



Set VideoOnTop when you need the secondary region to always be on top of the primary region, regardless of region layer order. Videos will always be above non-video layers (Figure 11 on page 115).

Figure 11 VideoOnTop Value Output

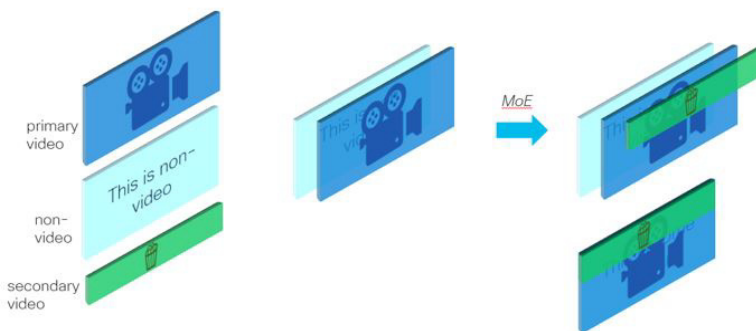


Figure 12 on page 116 shows a graphic representation of single video behavior.

Figure 12 Single Video Content Layering Behavior

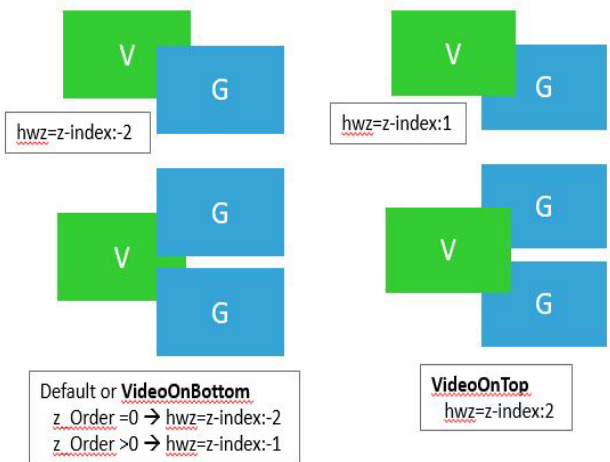
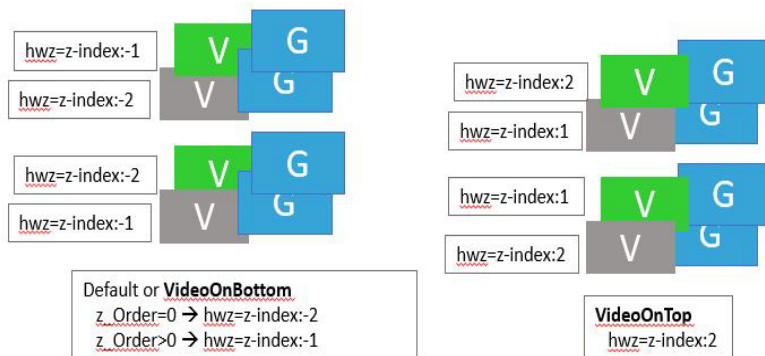


Figure 13 on page 116 shows a graphic representation of dual video behavior.

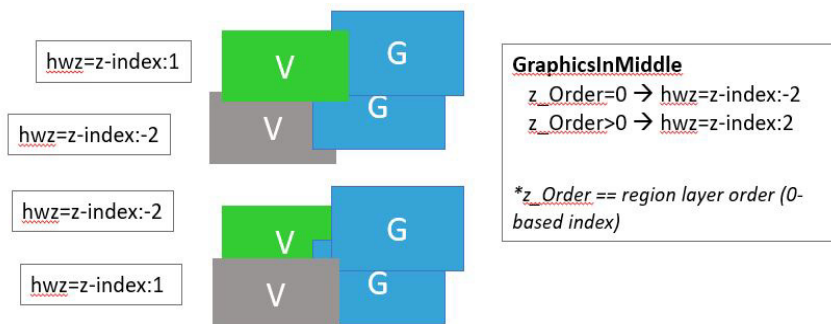
Figure 13 Dual Video Behavior: VideoOnBottom/VideoOnTop



Note: Use when you want HTML content below primary/secondary regions. Diagnostics, StartWebApp, Guide, TV Banner and PIN may not be visible.

Figure 14 on page 116 shows a graphic representation of dual video with graphics in the middle layers.

Figure 14 Dual Video with Graphics in the Middle Layers Between the Videos



Video in between graphics is not supported.

Layering Content—What is Not Supported

We do not recommend doing the following when designing your content displays:

- Video in between two non-video content layers, such as when using a URL channel
- Secondary video below a primary video when using VideoOnTop. The runtime will force the primary video to be below the secondary video.
- Swapping layer order of two video regions across different script states. This may have unpredictable results.
- Template regions do not match layer order. This may have unpredictable results.

IMPORTANT: Here is the current caveat to using this new display parameter:

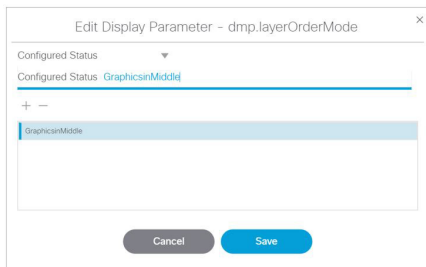
- The template layering must be consistent with the layer mode. For example, once VideoOnTop is set for a DMP, the video layer will **always** be on top, even if the **template** has the video layer on the bottom. Therefore, carefully design your display templates and content if you intend to use this new capability.

The following is an example process using GraphicsInMiddle. Make sure the template used in the script has the regions layered properly (Video/non-Video/Video).

To set the Display Parameter allowing new video layering:

1. Click **Configuration > Devices > Display Specifications > Display Parameters**.
2. Select the DMP in the left panel.
3. Type **layer** in the Search field on the right. The `dmp.layerOrderMode` displays in the list.
4. Click **Edit** (pencil icon). The Edit Display Parameter dialog box appears ([Figure 15 on page 117](#)).
5. In the **Configured Status** field, type **GraphicsInMiddle**.
6. Click **Save**.

Figure 15 Configuring `dmp.layerOrderMode` Display Parameter



7. Reboot the DMP to get the new configuration to appear on screen.

How to Configure Screen Templates

This section includes the following topics:

- [General Guidelines for All Screen Templates, page 118](#)
- [Guidelines for Custom Screen Templates, page 118](#)
- [Understanding the Templates Screen, page 119](#)

- [Creating Custom Screen Templates, page 120](#)
- [Naming Screen Templates, page 121](#)
- [Setting the Size and Position of a Region on the Template Canvas, page 121](#)

General Guidelines for All Screen Templates

When creating screen templates and populating content, consider the following:

- Templates are ordered by name.
- For Proof of Play, you can have more than one region with an ad playlist.
- Regions are listed from top-to-bottom layer order, where the top layer appears at the top of the list.
- Layers are numbered, if a screen template contains a non-video region and a video or mixed media region, the video or mixed media region always appears at the bottom of the list.

Note: You can manually drag a video region to be on top of other regions; however, the rendering of the regions below the video region will not be predictable and can be completely invisible.

- A box icon adds a non-video region.
- A video icon adds a video or mixed media region.
- Switching a non-video region to a video region might produce a warning if there is already an existing video region.
- Saving an existing template with regions removed will produce a force dialog for confirmation. In addition, when a template that is used in an event script is edited (including when one is adding a region) a force dialog appears for confirmation. You should also edit the scripts that use the changed template to verify that the added or removed regions contain the appropriate content and changes occur as expected.

Note: Cisco Vision Director supports HD/SD and video content with UHD resolution (local and streaming video) on the SV-4K, CV-UHD, and CV-UHD2 digital media players. Graphics with UHD resolution are not supported. The DMP-2K media players only support HD/SD content.

Guidelines for Custom Screen Templates

Consider the following guidelines when creating custom screen templates:

- Regions can contain non-video content (static graphics), video, or a combination of both (in a mixed media region).
- The number of allowable regions will vary based on the media player.
- Up to 5 regions are supported for each screen template, more than 5 may cause degradation. Results may vary depending on what type of non-video content is used. For example, a very simple widget may not cause degradation but a very complex widget could.

[Table 8 on page 119](#) provides the number of content regions that you can have when creating custom templates.

Table 8 Number of Allowed Content Regions When Creating Custom Templates

Region Type	DMPs
Non-Video (Graphics)	Zero or more
Video Region 1 or Mixed Media	Up to one
Video Region 2 or Mixed Media	Up to one

- A custom template designed for DMPs can contain up to two video regions.

Note: The digital media players do not support *dual* UHD video regions.

- Using luma keying on video region 2, you can enable select areas of video region 1 content to be visible through video region 2.
- You can change the order of the video regions by changing their relative layer order in the template.

- When layering regions, the non-video content (graphics, widgets, etc.) will always appear **above** the video content.

IMPORTANT: When layering two video/mixed media regions on the DMPs, if the playlist for the first video/mixed media region includes both video and non-video content, then the non-video content in the first region will always appear on top of the video in the second video region. Name the layers with “top” or “bottom” so that “Layer1Bottom” will be covered by “Layer2Top.”

Note: If you configured `dmp.layerOrderMode`, be very careful to adjust the template for those DMPs or you may see unexpected results on the displays.

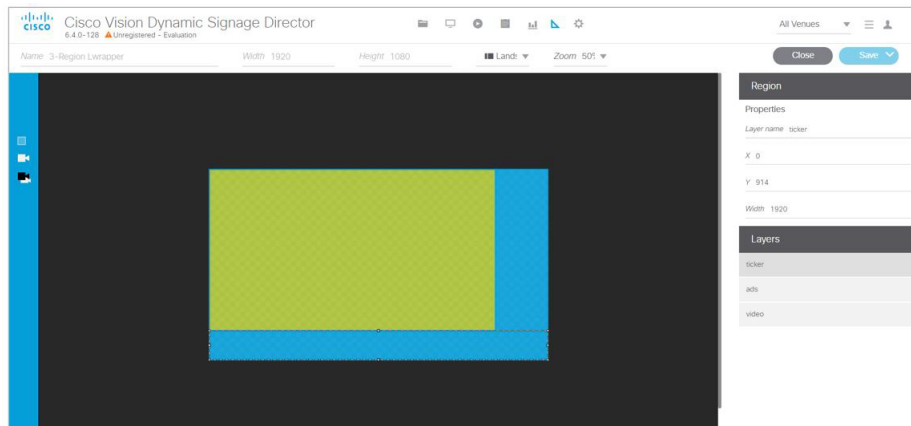
If you must include non-video content in region 1, then a workaround is to create a local video of the static content and use that in the playlist so that it remains in the primary region.

- To optimize performance, the video and graphic aspect ratio sizes should match the aspect ratio of the region. Multi-screen template stretching is not currently supported on DMPs.
- All regions must fit within the 1920x1080 dimensions. If you are using an overlay, then you can have two regions that are both 1920x1080.

Note: DMPs support negotiation to many resolutions. When the negotiated resolution is less than 1920x1080, the template will be cropped to that lower resolution.

Understanding the Templates Screen

Figure 16 on page 120 shows the 3_region Lwrapper Template, one of the five default templates.

Figure 16 Templates Screen Navigation

The left panel has Non-Video Region, Primary Video Region, and Secondary Video Region icons.

Choose Landscape or Portrait orientation for your content.

Choose a zoom percent from the drop down.

Click Layer name, type in a name and set the X, Y, Width, Height, Align object, Type, and click the Enable luma key box metadata (if needed).

When finished, click **Save As** from the drop-down menu.

The template used for a DMP must be consistent with the configured layer order mode for the DMP's display specification.

Creating Custom Screen Templates

User Role: Administrator / Content Manager

There are two ways that you can create new custom screen templates in Cisco Vision Director:

- Adding a new template for which you define all properties and regions.
- Copying from the default standard templates or another existing template to leverage the same properties and regions.

Default templates (indicated by a lock icon to the left of the template name) can be copied but not modified.

Adding a New Template

The default view is List View for templates. Select a template and use the icons above the list.

To add a new template:

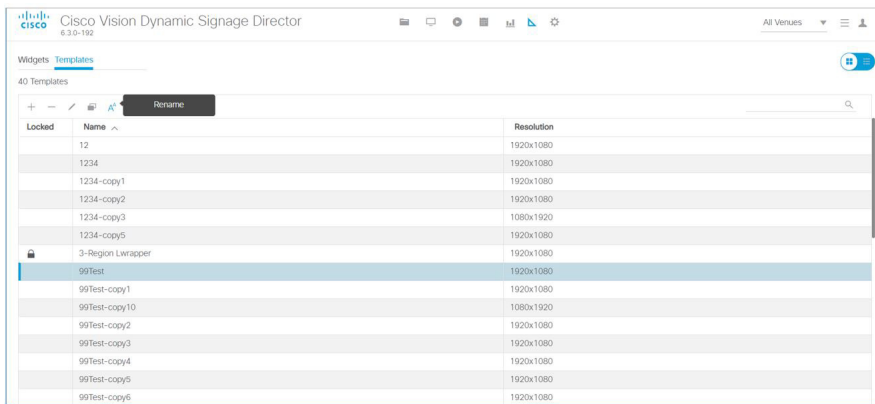
1. Click **Designer > Templates**.
2. Click New Template “+” icon. A new template appears.
3. Type a new name. For suggestions on naming conventions, see the [Naming Screen Templates, page 121](#).
4. Add one or more regions (up to 5).
5. Specify the region properties.
6. Save the template.

Copying From an Existing Template

An alternative way to create a new template is to copy an existing template that you have already customized, or copy from one of the default system templates. This method saves you time and includes all of the properties from the copied template.

To copy an existing template:

1. Go to **Designer > Templates**.
2. Select the template, click **Copy**. “Copy of...” the template you chose appears.
3. Select the template name and click **Rename** icon. The Rename dialog box appears.



4. Type a new name. Click **OK**. For suggestions on naming conventions, see the [Naming Screen Templates, page 121](#).
5. Click **Edit** (pencil icon).
6. (As required) Modify the region properties and layers.
7. Save the template.

Note: Another way to copy/create a new template is to open an existing template, click **Edit** to make changes, then click **Save As**. Type in a new name in the dialog box.

Naming Screen Templates

When naming screen templates, use meaningful abbreviations within the name to help you identify it. For example:

- Use “FV” in the name to indicate the screen template is for full-screen video
- Use “LW” to indicate the screen template is for an Lwrapper.

Additionally, you can include other pertinent information such as “beer” for a playlist that only has beer advertisements in it or “BrandY” for a playlist that only has BrandY products in it.

Setting the Size and Position of a Region on the Template Canvas

User Role: Administrator / Content Manager

There are several ways that you can modify the size and position of a region on the template canvas.

Resizing a Region

IMPORTANT: For the DMPs, the Width and Height of the template canvas must match the content resolution and/or aspect ratio. For more information, see [Canvas and Template Resolution, page 97](#).

To resize a region, you can:

- Select a handle of the region box and drag it to enlarge or shrink that dimension of the region.
- For a more precise result, type the actual pixel value in the Width and Height properties.

Repositioning a Region

TIP: X and Y values should be 0, 0 when creating fullscreen template regions. The upper left corner (0,0) position is the starting point for all templates.

To reposition a region, you can:

- Select a region (layer) and drag it on the canvas to change its position (offset).
- For a specific position, type the actual pixel offset values:
 - X–(Horizontal offset) Number of pixels to indent the content from the left side of the canvas.
 - Y–(Vertical offset) Number of pixels to indent the content from the top of the canvas.
- To change the layer order of a region on the canvas, go to the Regions list box and drag and drop the region up or down to change its order.

IMPORTANT: A multicast video layer should always be the bottom layer (Layer 1). Make sure all video regions are nearest the bottom.

How to Use Luma Keying for Dual Video Templates

Note: Dual video luminance keying is not supported by the CV-HD or CV-HD2 media players.

This section includes the following topics:

- [Understanding How the Luma Key Works, page 122](#)
- [Modifying the Default Luma Key Value, page 123](#)

Understanding How the Luma Key Works

Luminance keying is used to filter the brightness level of content. Based on the key value, a range of brighter and darker pixels are filtered out and made transparent.

Note: Luma keying only applies to video content.

Luma Key Examples

Luma keys are useful when you want to overlay video content over the multicast stream of a live event using dual video regions.

[Figure 17 on page 123](#) shows an example of overlaying “GOAL” to highlight a moment of exclusivity during a game.

Figure 17 Goal Overlaying Game Stream

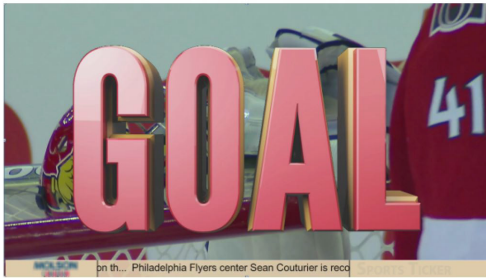


Figure 18 on page 123 shows an example of a hockey puck moving over the game stream to highlight a goal during the game.

Figure 18 Flying Hockey Puck Overlaying Game Stream After Goal



Modifying the Default Luma Key Value

User Role: Administrator

The Luma key property is set globally for all digital media players in the system. It can be enabled or disabled per dual video template from the **Designer > Templates** screen while editing the template.

TIP: Contact the Cisco Vision Customer Experience (CX) Digital Media Services team for guidance on how to effectively use and set the luma key value for your content needs.

The Luma key property is a 6-digit hexadecimal value that is set to #ff2000 by default. Table 9 on page 123 shows the format of the hexadecimal key and how the bits are interpreted.

Table 9 Luma Key Format

8-Bit Mask	8-Bit High Range	8-Bit Low Range
0xff	0x20	0x00

With the default value, content with the luma of 0xff is masked (left unchanged), and content with luma values in the range of 0x00 to 0x20 (the darker pixels) are filtered from the content and made transparent.

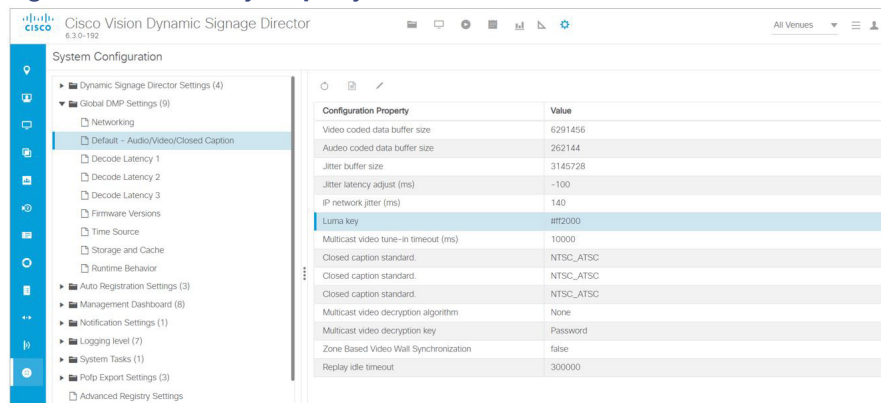
To disable the luma key property globally for all DMPs, do not set a value (Figure 19 on page 124). If the Luma key property is blank, then no masking will be applied even if the option is set on the template.

To modify the default luma key value:

1. Click **Configuration > System Configuration > Global DMP Settings > Default - Audio/Video/Closed Caption**.
2. In the **Configuration Property** box, select the **Luma key** property (Figure 19 on page 124).

How to Use Luma Keying for Dual Video Templates

3. Click **Edit** (pencil icon). The Edit Configuration Setting dialog box appears.

Figure 19 Luma Key Property

4. In the value box, type the 6-digit hexadecimal value beginning with the # sign.

5. Click **Save**.

TIP: You do not need to reset the media player to apply the new value. Whenever a script starts, the digital media player retrieves the global settings.