Working with Content Deployment

Cisco Vision 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 Director.

Before you begin to deploy content at your venue, it is important that you understand all of the requirements for the types and methods of content that you want to deploy.

There are limitations and specifications for the content size and formats supported by Cisco Vision. These vary depending upon a number of factors including the TV display resolution, the media player used in the venue, the screen template region layout, and the TV proximity to the fans.

Note: For a full range of content planning and design services available by Cisco Systems, contact the Cisco **Creative** Services team.

Understanding Content and TV Resolution

There are several factors that determine the final resolution of your content on a TV display, including the model of media player deployed.

Physical and Signal Resolution

Physical resolution is the actual number of pixels supported by the TV display. **Signal** resolution is the resolution communicated between the media player and the TV display. These signal resolutions are negotiated between the media player and the display.

The physical resolution of the TV display and the negotiated signal resolution do not necessarily have to match. However, the signal resolution from the display and the media player must match for successful communication under almost all circumstances.

TVs smaller than 1920x1080 in physical resolution also can support a signal resolution of 1920x1080.

For TV-based tile-matrix video walls, the physical resolution is defined as the combined resolution of all of the displays. However, the signal resolution is likely to be different. For example, in a 2x2 video wall with TV displays of 1920x1080 resolution, the physical resolution of the video wall is 3840x2160, but the signal resolution would be 1920x1080.

For the digital media players, you can override the negotiated signal resolution by configuring a requested signal resolution in the Cisco Vision Director Control Panel. See the Configuring Resolution Under Control Panel Display Specifications on page 81.

Canvas and Template Resolution

Canvas resolution is the area on which the web browser draws, which ultimately determines what area can be shown on the display.

The canvas resolution is represented by the configurable **template** resolution in Cisco Vision Director. To be visible on the display, the template resolution must be able to fit within the canvas resolution.

Cisco Vision Director Template Resolution

Cisco Vision Director supports the same template resolution on all media players: 1920x1080

Canvas and Template Resolution Behavior on the SV-4K

For the SV-4K, the canvas resolution is mapped to signal resolution for resolutions below 1920x1200. For more information about signal resolution, see Physical and Signal Resolution, page 79.

For example, with content resolution of 1280x720, the SV-4K canvas and signal resolution also will be 1280x720.

Any content greater than this resolution (for example, anything at pixel 1281 and beyond) will not be displayed. Higher resolution content will **not** shrink to fit the canvas.

If you are using a 1920x1080 template for a TV that has a signal resolution of 720p, the SV-4K template canvas will be cropped, **not** shrunk. **Therefore, you must specify the correct template to match your signal resolution and your content must match the template.**

Guidelines for TV and Content Resolution with the Digital Media Players

The DMPs are set to run in full high-definition (HD) 1920x1080 mode by the runtime software.

IMPORTANT: It is highly recommended that your TV supports a minimum of 1080p HD resolution. Lower resolution displays might need some additional configuration of the TV Display Specification configuration in Cisco Vision Director to attempt to optimize the display. In some cases these TVs might cut off an area of the screen.

The quality and expected resolution for video and graphics display for the DMPs can be affected by several things:

- The resolution of the TV display and its ability to negotiate to 1080p.

- The configuration of the sv4k.videoMode serial command in the Display Specifications area of the Cisco Vision Director Control Panel.

- When set to a resolution, this value specifies the signal resolution of the DMPs.

- If the resolution is set to auto-detection, then the TV negotiates the signal resolution with the DMPs as long as the TV supports negotiation.

IMPORTANT: If you are using a 4K display, you must configure a fixed resolution value of 3840x2160x60p in the sv4k.videoMode serial command in the TV display specification

- The template region size.

- The size of the original graphic and whether any scaling needs to happen.

Note: For more information about content and template guidelines, see the Cisco Vision Content Planning and Spcification Guide: Dynamic Signage Director, Release 6.1.

## Restrictions for Control Panel TV Display Specifications with the DMPs Media Player

Before you configure TV display specifications for use with the DMPs media player, consider the following restrictions: The following Basic Info options are not supported:

- X Position / Y Position

- X Scaling / Y Scaling

Configuring Resolution Under Control Panel Display Specifications

The Display Specification for a TV can either be configured for auto-detection of resolution by the TV, or set to a fixed resolution in the Cisco Vision Director Control Panel (see).

Figure 20   SV-4K and Display Signal Resolution
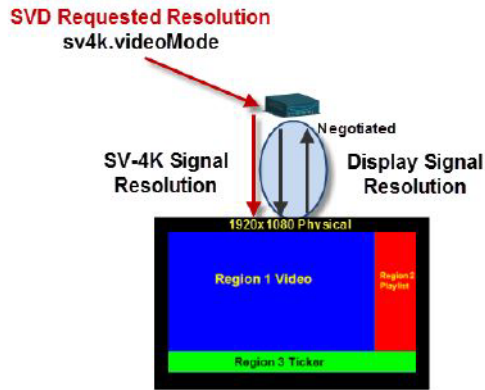
- If the resolution is set to auto-detection, then the TV and the SV-4K negotiate the signal resolution, as long as the TV supports auto-negotiation ().

- If a resolution is specified in the Control Panel, then the content is resized according to that setting. This is the requested SV-4K signal resolution shown in red in .

- If the signal resolution of the SV-4K is set below 1920x1080 for any reason, video content will be resized according to the template in use.

- The template in use and the corresponding content must match the signal resolution.

To set the resolution for a display:

12. Go to **Tools > Control Panel > Setup > Devices > Display Specifications**.

13. Select the TV that you want to configure.

14. Click **Serial Commands**.

15. Find the sv4k.videoMode command ().

Figure 21   SV-4K Resolution Setting in Display Specifications
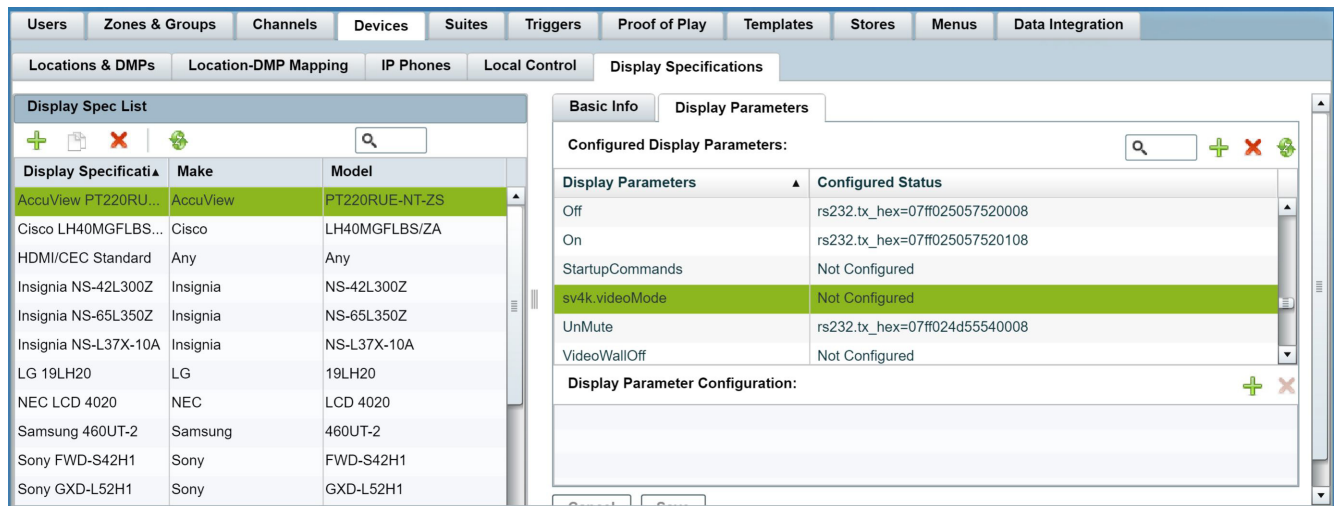
16. Specify one of the values in Table 2 on page 82 according to the desired resolution behavior.

Table 2   SV-4K Resolution Values

sv4k.videoMode Value	Resolution
3840x2160x60p[1]	Fixed at 2160p
1920x1080x60p	Fixed at 1080p
1280x720x60p	Fixed at 720p
Not Configured	Auto-detected
Auto	Auto-detected

1. This specification is required for 4K TV displays in Release 4.1.

17. Click **Save**.

18. Reboot the SV-4K device.

Understanding Content Types and Sources in Cisco Vision Director

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

External and Internal Data Sources

This section summarizes the external and internal data sources that are available using the Data Integration interface to bring additional content into Cisco Vision Director.

For more information, see the Cisco Vision Director Data Integration Guide.

Data Feeds

- Atom Feed

- RSS Feed (RSS 2.0)

Generic Data Sources

Cisco Vision Director also can support Generic Data Sources from the following source types:

- Database

- Supports automatic translation of MySQLand SQLServer database formats to XML data in Cisco Vision Director.

- FTP

- HTTP/HTTPS

- JSON

- TCP

- UDP

NFL Data

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

- NFL GSIS Game Clock

Other Data Sources

- Table Lookup (internal or external data source)

- 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

- Translation of Point-of-Sale (POS) codes to names for menu boards.

- System (internal data source)

POS Data Sources

- Generic PoS

- Internal Database PoS (internal data source)

- Menu Theme (internal data source)

Scoreboard Controllers

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

- OES ISC9000 Intelligent Scoreboard Controller (basketball and hockey only)

HTML Pass-Through Content

Cisco Vision Director allows you to render simple HTML browser content (with some restrictions) on the Cisco DMPs by including an external URL in a playlist and scheduling it in a script.

The content is not actually stored in the Cisco Vision Director content repository (CMS), and any changes to the content on the external site page are dynamically updated on the DMP when the script restarts.

Menu Board Content

IMPORTANT: The DMP does not support deployment of menu board data using the DMB gadget archive (GAR--now obsolete) or for in-suite ordering. However, stores data and DMB menu theme data can be deployed on the DMP using data integration and widgets.

Cisco Vision Director supports three overall methods of Point of Sale (POS) integration for menu board implementation:

- Hybrid DMB and Data Integration—POS Integration (NCR/Quest and Micros) using internal DMB data integration and widgets.

- Data Integration Only—Third-party POS vendor integration using the POS API and data integration and widgets.

For More Information

- Cisco StadiumVision Director Dynamic Menu Board and Store Configuration Guide—Describes how to work with stores, menu themes, and create menu boards in the DMB application.

- Cisco Vision Director Data Integration Guide—Describes the differences between the DMB application and using POS data sources for menu board creation, deployment guidelines and configuration tasks, and widgets tool information and examples.

RSS Ticker Feeds

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.

Data Integration Method

IMPORTANT: This is the only method supported by the SV-4K media player.

The Data Integration method was introduced in Cisco StadiumVision Director Release 3.1 (now Cisco Vision Director) to add RSS data sources and modify their layout using the Widgets tool.

For more information, see the Cisco Vision Director Data Integration Guide.

Static Graphic Sources

Static graphics are images used for advertisements or informational messages that do not require motion.

Add static graphics to Cisco Vision Director using the Library screen.

Video Sources

Cisco Vision supports the basic sources of video content:

- Video from the headend (in-house, terrestrial TV, satellite and cable providers feeds, typically multicast).

- Video locally stored and played through a video playlist or a mixed media playlist (beginning in Release 3.1).

- Video streamed from a laptop or other supported device connected to the HDMI-In port.

Video Content Sourced Using HDMI-In

Cisco Vision Director supports two ways to source local video content using the HDMI-In port on the digital media player:

■ Encoding streamed video as a channel in Cisco Vision Director.

Encoded HDMI-In video on the DMP can be started and stopped using multiple local control methods, as well as within Cisco Vision Director:

– IP phone

– IR remote

– Management Dashboard

– Script states

– User Control API

■ Configuring Local HDMI-In as a video source in a region that is controlled using script states only.

IMPORTANT: The HDMI-In port on the digital media player can only be supported either as a source to video region or source to encoder as a channel, but not both.

Therefore, you cannot have a script in a state which tunes to the HDMI-In as video source in a region, and then transition to the next state where you are streaming video from HDMI-In.

Workflow Summary to Deploy Content in Cisco Vision Director

provides a summary of the tasks and related information to deploy content in Cisco Vision Director.

Table 3   Content Deployment Task Summary

Content Deployment Task	For more information see:
Plan the type of content that you want to create.	Understanding Content Types and Sources in Cisco Vision Director, page 82
Plan where it will be deployed.	Working with Zones, Groups, and Locations, page 55
Understand the content guidelines and best practices.	Cisco Vision Content Planning and Specification Guide: Dynamic Signage Director, Release 6.1 Also refer to the related content-specific guides for the content types that you plan to support, including: Cisco StadiumVision Director Dynamic Menu Board and Stores Configuration Guide Cisco Vision Director Data Integration Guide
Plan and create the screen template and region sizes for your content.	Working with Screen Templates in Cisco Vision Director, page 87

Understanding Content and TV Resolution

Content Deployment Task	For more information see:
Create your content and get it into Cisco Vision Director.	Getting Content Into Cisco Vision Director, page 136
Create a playlist for your content.	Working with Playlists in Cisco Vision Director, page 143
Create a script to define when your content is displayed.	Working with Event Scripts, page 173