Planning the SV-4K and DMP-2K Media Player Deployment

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This module describes aspects of the SV-4K and DMP-2K deployment that need to be considered and executed prior to the actual installation and provisioning of the SV-4K and DMP-2K media players.

It is intended for installers, network administrators, and administrators of Cisco Vision Dynamic Signage Director.

It includes the following topics:

- Workflow Summary to Plan Deployment of the SV-4K and DMP-2K Media Player, page 29

- Zones, Groups and Locations Planning, page 30

- TV Planning for the SV-4K and DMP-2K Media Player, page 30

- Network and Switch Planning, page 33

Workflow Summary to Plan Deployment of the SV-4K and DMP-2K Media Player

Table 1 on page 29 provides a summary of the tasks and related information to plan for the deployment of the SV-4K media player.

Table 1   Deployment Planning Task Summary

Planning Task	For more information see:
Plan Groups/Zones/Locations.	Zones, Groups and Locations Planning, page 30.
Perform TV qualification.	■ TV Requirements for SV-4K and DMP-2K Compliance, page 30. ■ TV Qualification for HDMI CEC Control of TV Power On/Off, page 30. ■ Guidelines for TV and Content Resolution with the SV-4K and DMP-2K Media Player, page 31.
Prepare for SV-4K and DMP-2K installation.	■ Using Bar Code Scanners and TV Labels at Installation Time, page 28. ■ Guidelines for Mounting the SV-4K and DMP-2K, page 19.
Determine cabling requirements.	■ Best Practices for SV-4K and DMP-2K Deployment, page 28. ■ Cabling Information for the SV-4K and DMP-2K Media Player, page 18.

Table 1   Deployment Planning Task Summary (continued)

Planning Task	For more information see:
Plan the Connected Stadium switch configuration.	Connected Stadium Switch Requirements, page 34.
Plan the DHCP server configuration.	External DHCP Server Requirements, page 33.
Determine the network time (clocking) sources.	How to Configure NTP and PTP on the SV-4K and DMP-2K Media Players, page 38.

Zones, Groups and Locations Planning

Note: Mixed groups that contain different media player device types are not recommended. Cisco Vision Dynamic Signage Director will provide a warning about such groups if you attempt to configure them.

TV Planning for the SV-4K and DMP-2K Media Player

This section includes the following topics:

■   TV Requirements for SV-4K and DMP-2K Compliance, page 30

■   TV Qualification for HDMI CEC Control of TV Power On/Off, page 30

■   Guidelines for TV and Content Resolution with the SV-4K and DMP-2K Media Player, page 31

■   Restrictions for Control Panel TV Display Specifications with the SV-4K and DMP-2K Media Player, page 31

■   Configuring Resolution Under Control Panel Display Specifications, page 31

TV Requirements for SV-4K and DMP-2K Compliance

For the optimal experience with the SV-4K and DMP-2K media player, be sure that the site TV displays are compliant with the following specifications and resolution:

■   High-bandwidth Digital Content Protection (HDCP)

■   High-Definition Multimedia Interface (HDMI)

■   HDMI Consumer Electronics Control (CEC) (as required for TV control)

■   RS-232 serial interface (as required)

■   Capable of 1080p HD display

TV Qualification for HDMI CEC Control of TV Power On/Off

Release 5.0 introduces support for the universal TV power on/off HDMI CEC command on the SV-4K and DMP-2K with a new Display Specifications configuration that allows you to control the following three TV functions through HDMI CEC:

■   Power On

■   Standby (Power Off)

■   Power Status

When HDMI CEC TV control is enabled, HDMI CEC is used instead of RS-232 for TV control functions.

Note: Not all TVs support the standard HDMI CEC commands. It is important that you test the TV models that you plan to install for support of HDMI CEC, and be sure to turn HDMI-CEC on. TV manufacturers refer to CEC by different trade names. (For example: Anynet+ [Samsung], BRAVIA Link [Sony], EasyLink [Phillips], and SimpLink [LG]).

For information about some of the TV models that have been tested with Cisco Vision Dynamic Signage Director, see Release Notes for Cisco Vision Dynamic Signage Director, Release 5.0.

Guidelines for TV and Content Resolution with the SV-4K and DMP-2K Media Player

The SV-4K and DMP-2K are set to run in full high-definition (HD) 1920x1080 mode by the runtime software.

Note: 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 Dynamic Signage Director to attempt to optimize the display. In some cases these TVs might cut off an area of the screen, rather than resize the graphics to the area as the Cisco DMP 4310G does.

The quality and expected resolution for video and graphics display for the SV-4K and DMP-2K 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 Dynamic Signage Director Control Panel:

  - When set to a resolution, this value specifies the SV-4K and DMP-2K signal resolution.

  - If the resolution is set to auto-detection, then the TV negotiates the signal resolution with the SV-4K and DMP-2K as long as the TV supports negotiation.

  Note: 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 StadiumVision Content Creation Design and Specification Guide.

## Restrictions for Control Panel TV Display Specifications with the SV-4K and DMP-2K Media Player

Before you configure TV display specifications for use with the SV-4K and DMP-2K 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 Dynamic Signage Director Control Panel.

Figure 1   SV-4K and DMP-2K and Display Signal Resolution
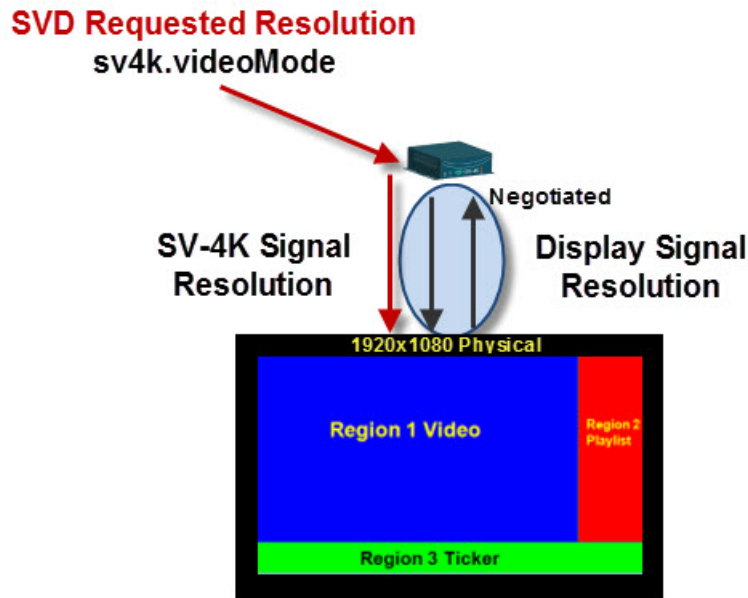
- If the resolution is set to auto-detection, then the TV and the SV-4K and DMP-2K negotiate the signal resolution, as long as the TV supports auto-negotiation (Figure 1 on page 32).

- If a resolution is specified in the Control Panel, then the content is resized according to that setting. This is the requested SV-4K and DMP-2K signal resolution shown in red in Figure 1 on page 32.

- If the signal resolution of the SV-4K and DMP-2K 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.

Note: The sv4k.videoMode display parameter is unrelated and is not a required or expected configuration for use of portrait mode. In addition, only certain values are supported for sv4k.videoMode, and they should not be changed to any other values (Table 2 on page 33). Portrait mode is enabled and configured using the dmp.portrait display parameter only. However, when preparing your content for portrait mode, the content should be designed for 1920 pixels high and 1080 pixels wide. The default template canvas will still show horizontal orientation when you are using portrait mode, but you can add regions that extend beyond the canvas.

To set the resolution for a display, complete the following steps:

1. Go to **Control Panel** > **Setup** > **Devices** > **Display Specifications**.

2. Select the TV that you want to configure.

3. Click **Display Parameters**.

   4. Find the sv4k.videoMode command (Figure 2 on page 33).

Figure 2   Resolution Setting in Display Specifications
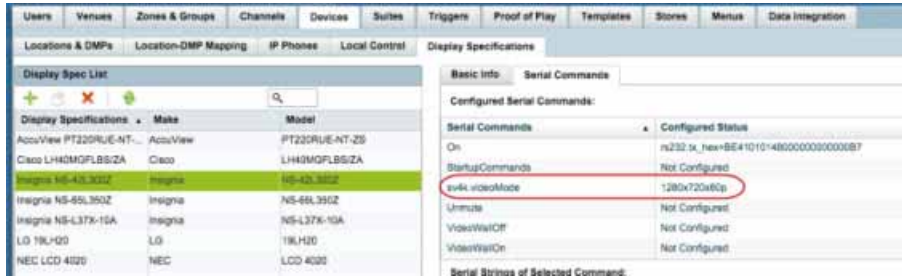
   5. Specify one of the values in Table 2 on page 33 according to the desired resolution behavior

Table 2   SV-4K and DMP-2K Resolution Values

sv4k.videoMode Value[1]	Resolution
3840x2160x60p[2]	Fixed at 2160p
1920x1080x60p	Fixed at 1080p
1280x720x60p	Fixed at 720p
Not Configured	Auto-detected
Auto	Auto-detected

1. Do not use any values other than what are listed in this table. There is no specific sv4k.videoMode resolution that is required to support portrait mode. Portrait mode is configured only through the dmp.portrait display parameter.

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

   6. Click **Save**.

   7. Reboot the DMP.

Network and Switch Planning

This section includes the following topics:

■ External DHCP Server Requirements, page 33

■ Connected Stadium Switch Requirements, page 34

External DHCP Server Requirements

The SV-4K and DMP-2K media player requires configuration of an external DHCP server to provide IP addressing to the devices. This service can be configured using Cisco Network Registrar (CNR) or another external server at the venue.

This section highlights some of the key requirements to plan your DHCP configuration. However, it does not describe all of the details for you to perform the configuration.

Note: For more information and details about DHCP configuration, see the Cisco Connected Stadium Design Guide available to qualified Cisco StadiumVision partners.

DHCP Configuration Guidelines for the SV-4K and DMP-2K Media Player

Consider the following guidelines before configuring a DHCP server for the SV-4K and DMP-2K:

- Do not configure the Connected Stadium Switch as the IOS DHCP server for Cisco Vision Dynamic Signage Director.

- Be sure to set the DHCP server for an infinite lease of IP addresses to the SV-4K and DMP-2K devices.

- If you are supporting a deployment with mixed models of media players (such as Cisco DMP 4310G and SV-4K devices), you will need to configure an Option 43 string for each model.

- If the DHCP server is limited to a single Option 43 string per DHCP pool (such as with a Cisco DHCP server), then be sure to configure a separate DHCP scope for each media player model.

- Configure the DHCP Option 60, Vendor Class Identifier string:

  - DMP-2K string for new, factory-shipped devices: "Cisco DMP-2K"

  - SV-4K string for North America: "Cisco SV-4K-NA"

  - SV-4K string for all other regions: "Cisco SV-4K-ROW"

- Configure the converted DHCP Option 43, Vendor Specific Option URL:

  http://*x.x.x.x***:8080/StadiumVision/dmp_v4/scripts/boot.brs**

  where "*x.x.x.x*" is the IP address of the Dynamic Signage Director server.

Note: The option 43 string must be converted to TLV format for compatibility with the SV-4K and DMP-2K. For more information, see Appendix C: Configuring an IOS DHCP Server to Support the SV-4K and DMP-2K, page 65.

Connected Stadium Switch Requirements

This section highlights some of the key requirements to plan your Connected Stadium switch configuration. However, it does not describe all of the details for you to perform the configuration. For configuration details, see the Cisco Connected Stadium Design Guide available to qualified Cisco StadiumVision partners.

Switch Configuration Requirements for the SV-4K and DMP-2K Media Player

Be sure that the Connected Stadium switch meets the following configuration requirements to support the deployment of the SV-4K and DMP-2K media players:

- Supports PoE+ (IEEE 802.3at) with 30W of port power.

- Configures Internet Group Management Protocol (IGMP).

- IGMPv1, IGMPv2, and IGMPv3 are supported.

- Configures Link Layer Discovery Protocol (LLDP), which is required to determine available power using PoE+ and also supports the IOS Civic Location feature.

Note: For more information and details about the switch configuration, see the Cisco Connected Stadium Design Guide available to qualified Cisco StadiumVision partners.