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Planning the Series 2 and Series 3 Media Player Deployment

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Series 2 DMPS: DMP-2K and SV-4K

Series 3 DMPs: CV-HD and CV-UHD

This module describes aspects of the Series 2 and Series 3 deployment to consider and execute—before you install and provision the Series 2 and Series 3 media players. It is for installers, network administrators, and administrators of Cisco Vision Dynamic Signage Director.

This module includes the following topics:

- Workflow Summary to Plan Deployment of the Series 2 and Series 3 Media Players, page 37

- Zones, Groups and Locations Planning, page 38

- TV Planning for the Series 2 and Series 3 Media Player, page 38

- Network and Switch Planning, page 41

Workflow Summary to Plan Deployment of the Series 2 and Series 3 Media Players

Table 1 on page 37 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 38.
Perform TV qualification.	- TV Requirements for Series 2 and Series 3 Compliance, page 38. - TV Qualification for HDMI CEC Control of TV Power On/Off, page 38. - Guidelines for TV and Content Resolution with the Series 2 and Series 3 Media Players, page 39.
Prepare for SV-4K and DMP-2K installation (Series 2). Prepare for CV-HD and CV-UHD installation (Series 3).	- Using Bar Code Scanners and TV Labels at Installation Time, page 35. - Guidelines for Mounting the Series 2 Media Player, page 24. - Guidelines for Mounting the Series 3 Media Players, page 25

Table 1   Deployment Planning Task Summary (continued)

Planning Task	For more information see:
Determine cabling requirements.	■ Best Practices for Series 2 and Series 3 Deployment, page 35. ■ Cabling Information for the Series 2 and Series 3 Media Player, page 22.
Plan the Connected Stadium switch configuration.	Connected Stadium Switch Requirements, page 42.
Plan the DHCP server configuration.	External DHCP Server Requirements, page 41.
Determine the network time (clocking) sources.	How to Configure NTP and PTP on the Series 2 and Series 3 Media Players, page 48.

Zones, Groups and Locations Planning

Note: We do not recommend mixed groups that contain different media player device types. Cisco Vision Dynamic Signage Director gives a warning about such groups if you attempt to configure them.

TV Planning for the Series 2 and Series 3 Media Player

This section includes the following topics:

■ TV Requirements for Series 2 and Series 3 Compliance, page 38

■ TV Qualification for HDMI CEC Control of TV Power On/Off, page 38

■ Guidelines for TV and Content Resolution with the Series 2 and Series 3 Media Players, page 39

■ Restrictions for Control Panel TV Display Specifications with the Series 2 and Series 3 Media Players, page 39

■ Configuring Resolution Under Control Panel Display Specifications, page 40

TV Requirements for Series 2 and Series 3 Compliance

For the optimal experience with the Series 2 and Series 3 media player, verify 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

We introduced support for the universal TV power on/off HDMI CEC command on the Cisco DMPs with a new Display Specifications configuration that allows you to control the following three TV functions through HDMI CEC:

■ Power On/Off

■ Reboot

■ Refresh

When HDMI CEC TV control is enabled, HDMI CEC is used instead of RS-232 for TV control functions. For information about accessing and setting up this parameter, see Configuring HDMI-CEC TV Control in TV Display Specifications in the Cisco Vision Dynamic Signage Director Operations Guide, Release 6.0.

Note: Not all TVs support the standard HDMI CEC commands. Test the TV models that you plan to install for support of HDMI CEC and 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 6.0.

Guidelines for TV and Content Resolution with the Series 2 and Series 3 Media Players

The Series 2 and Series 3 are set to run in full high-definition (HD) 1920x1080 mode by the runtime software.

Note: We highly recommend 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.

The quality and expected resolution for video and graphics display for the Series 2 and Series 3 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 Series 2 and Series 3 signal resolution.

 – If the resolution is set to auto-detection, then the TV negotiates the signal resolution with the Series 2 and Series 3, 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 Vision Content Planning and Specification Guide: Dynamic Signage Director, Release 6.1.

Restrictions for Control Panel TV Display Specifications with the Series 2 and Series 3 Media Players

Before you configure TV display specifications for use with the Series 2 and Series 3 media players, 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   Series 2 and Series 3 and Display Signal Resolution
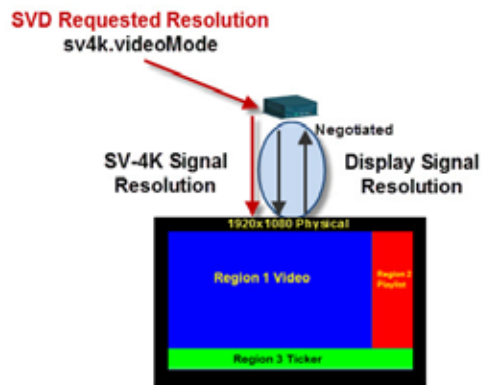
- If the resolution is set to auto-detection, then the TV and the Series 2 and Series 3 negotiate the signal resolution, as long as the TV supports auto-negotiation (Figure 1 on page 40).

- If a resolution is specified in the Control Panel, then the content is resized according to that setting. This is the requested Series 2 and Series 3 signal resolution shown in red in Figure 1 on page 40.

- If the signal resolution of the Series 2 and Series 3 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 41). 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:

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

2. Select the TV that you want to configure.

3. Click the **Display Parameters** tab.

4. Find the sv4k.videoMode command (Figure 2 on page 41) and select it.

Figure 2   Resolution Setting in Display Specifications
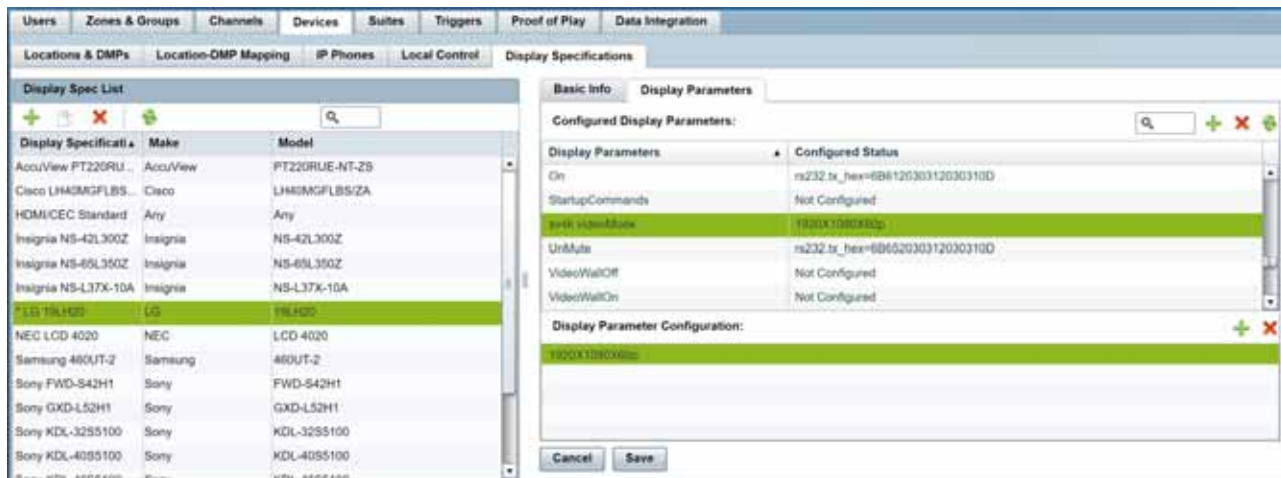
5. Click the green "plus sign" to add in the specs in the **Display Parameter Configuration** field. Specify one of the values in Table 2 on page 41 according to the desired resolution behavior.

Table 2   Series 2 and Series 3 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 41

- Connected Stadium Switch Requirements, page 42

External DHCP Server Requirements

The Series 2 and Series 3 medias player require 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 Vision Dynamic Signage Solution Operation and Network Requirements available to qualified Cisco Vision partners.

DHCP Configuration Guidelines for the Series 2 and Series 3 Media Player

Consider the following guidelines before configuring a DHCP server for the Series 2 and Series 3:

- 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 Series 2 and Series 3 devices.

- If you are supporting a deployment with mixed models of media players, configure an Option 60 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), configure a separate DHCP scope for each media player model.

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

    – CV-HD global string: "Cisco CV-HD"

    – CV-UHD global string: "Cisco CV-UHD"

    – CV-UHD with WiFi global string: "Cisco CV-UHD-WiFi"

    – 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 Series 2 and Series 3. For more information, see Appendix C: Configuring an IOS DHCP Server to Support the Series 2 and Series 3 Media Players, page 75.

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 Vision Dynamic Signage Solution Operation and Network Requirements available to qualified Cisco Vision partners.

Switch Configuration Requirements for the Series 2 and Series 3 Media Player

Be sure that the Connected Stadium switch meets the following configuration requirements to support the deployment of the Series 2 and Series 3 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 Vision Dynamic Signage Solution Operatoin and Network Requirements available to qualified Cisco Vision partners.

Network and Switch Planning