Managing Media Player Operation in Cisco Vision Director

This module provides information about maintaining normal operation of your media players. It includes the following topics:

- Information About the System Health Report, page 255

- Best Practices for Using the System Health Report, page 257

- How to Obtain the System Health Report, page 257

- Viewing Media Player Device Status, page 259

- Managing DMP Operation in Cisco Vision Director, page 261

- Replacing a Failed Media Player While an Event Script is Running, page 264

- Troubleshooting the Digital Media Players, page 264
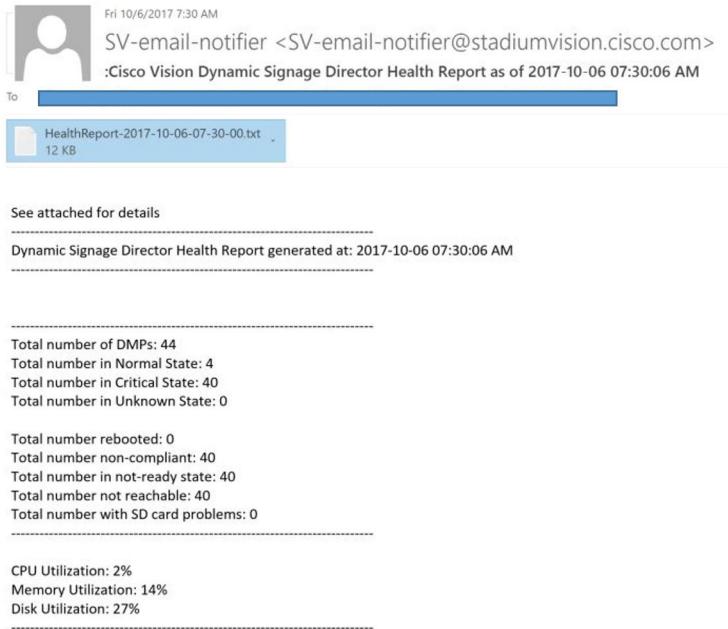
Information About the System Health Report

As a best practice, you should review the daily health report to monitor and maintain the media players and overall health of the Cisco Vision Director system. This report runs automatically at 08:00 daily. You can configure the system to send it to one or more email addresses.

Figure 1 on page 256 shows a typical email notification for the Cisco Vision health report. In the email body, a summary of the report is provided, with the full report details provided in an attached .txt file.
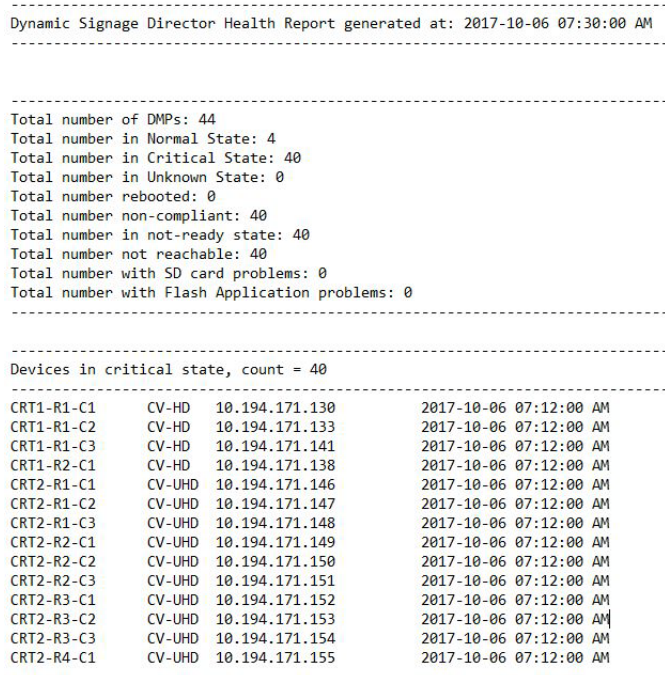
Information About the System Health Report

Figure 1   Sample Cisco Vision Health Report Email Notification

Fri 10/6/2017 7:30 AM

SV-email-notifier <SV-email-notifier@stadiumvision.cisco.com>

:Cisco Vision Dynamic Signage Director Health Report as of 2017-10-06 07:30:06 AM

To

HealthReport-2017-10-06-07-30-00.txt
12 KB

See attached for details

Dynamic Signage Director Health Report generated at: 2017-10-06 07:30:06 AM

Total number of DMPs: 44
Total number in Normal State: 4
Total number in Critical State: 40
Total number in Unknown State: 0

Total number rebooted: 0
Total number non-compliant: 40
Total number in not-ready state: 40
Total number not reachable: 40
Total number with SD card problems: 0

CPU Utilization: 2%
Memory Utilization: 14%
Disk Utilization: 27%

To see the details for the devices by category, open the text file attachment in the email. shows an excerpt of the device details report provided for the different status categories.

Figure 2   Cisco Vision Health Report Details (Excerpt)

```
------------------------------------------------------------------------------
Dynamic Signage Director Health Report generated at: 2017-10-06 07:30:00 AM
------------------------------------------------------------------------------


------------------------------------------------------------------------------
Total number of DMPs: 44
Total number in Normal State: 4
Total number in Critical State: 40
Total number in Unknown State: 0
Total number rebooted: 0
Total number non-compliant: 40
Total number in not-ready state: 40
Total number not reachable: 40
Total number with SD card problems: 0
Total number with Flash Application problems: 0
------------------------------------------------------------------------------


------------------------------------------------------------------------------
Devices in critical state, count = 40
------------------------------------------------------------------------------
CRT1-R1-C1    CV-HD    10.194.171.130    2017-10-06 07:12:00 AM
CRT1-R1-C2    CV-HD    10.194.171.133    2017-10-06 07:12:00 AM
CRT1-R1-C3    CV-HD    10.194.171.141    2017-10-06 07:12:00 AM
CRT1-R2-C1    CV-HD    10.194.171.138    2017-10-06 07:12:00 AM
CRT2-R1-C1    CV-UHD   10.194.171.146    2017-10-06 07:12:00 AM
CRT2-R1-C2    CV-UHD   10.194.171.147    2017-10-06 07:12:00 AM
CRT2-R1-C3    CV-UHD   10.194.171.148    2017-10-06 07:12:00 AM
CRT2-R2-C1    CV-UHD   10.194.171.149    2017-10-06 07:12:00 AM
CRT2-R2-C2    CV-UHD   10.194.171.150    2017-10-06 07:12:00 AM
CRT2-R2-C3    CV-UHD   10.194.171.151    2017-10-06 07:12:00 AM
CRT2-R3-C1    CV-UHD   10.194.171.152    2017-10-06 07:12:00 AM
CRT2-R3-C2    CV-UHD   10.194.171.153    2017-10-06 07:12:00 AM
CRT2-R3-C3    CV-UHD   10.194.171.154    2017-10-06 07:12:00 AM
CRT2-R4-C1    CV-UHD   10.194.171.155    2017-10-06 07:12:00 AM
```

Expand System Health Notification Report

The Daily health report will now include the status of various service endpoints described in HPMMonitoredServices.xml. The status can be anyone of the following - UNKNOWN, NORMAL, NONOPTIMAL, CRITICAL.

DSD server status: CPU, memory, storage utilization

In DailyHealthReport.java => generate(), the following snippet can be included:

Best Practices for Using the System Health Report

- Verify your system regularly to be sure that the Cisco Vision health report is being sent as expected:
  - Confirm your health report email configuration.
  - Check often with venue IT personnel that the SMTP server that is configured for the Cisco Vision health report is running normally.

- Review the Cisco Vision health report daily to monitor the media players and overall health of the Cisco Vision Director system.

- Investigate all of the devices reported in the "Devices in critical state" and the "Devices not reachable" sections.

Note: The device counts in these two sections are typically equal, but not necessarily.

  - Inform the Event Manager about these devices.
  - Investigate the affected devices and bring to Normal state. Replace if necessary.
  - Do not ignore the devices reported in these sections. The media players almost always will be showing black screens on the TV displays.

- If you see that an unusual number of devices have recently rebooted, investigate further. This could be due to a power fluctuation issue in the edge switch, the edge switch itself was rebooted, or another issue caused a break in power supply to the affected devices.

- Non-compliant devices:
  - If you know that you normally have a certain number of devices in non-compliant state, then ignore this entry.
  - If the number of non-compliant devices is not what you expect, investigate and correct the issue(s).

How to Obtain the System Health Report

This section includes the following topics:

Configuring the System Health Report for Email Notification

User Role: Administrator

By default, Cisco Vision Director automatically runs a system health report at 08:00. However, email notification is disabled.

To configure the system health report for email notification:

1. Go to **More > Management Dashboard > Dynamic Signage Director Configuration > System Configuration > Notification Settings > Email Settings.**

2. In the Configuration Property box, set the required properties shown in Figure 3 on page 258.

Figure 3   System Health Report Configuration Properties
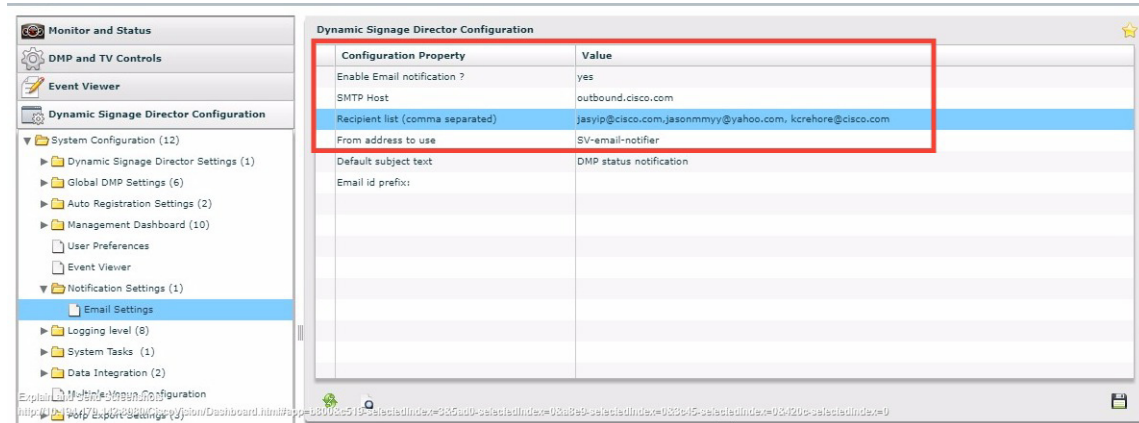
Table 1 on page 258 describes the properties and possible values.

Table 1   Email Notification Configuration Properties

Property	Values
Enable email notification?	Yes—Enables email notification. No—(Default) Disables email notification.
SMTP host	IP address or hostname of the SMTP email server for the venue. (If hostname is used, it must be resolvable by your network DNS server.)
Recipient list (comma separated)	Comma-separated list of email recipients to receive the report. (For example: email1@domain.com, email2@domain.com)
From address to use	(Optional) Email sender name. The default is " SV-email-notifier."
Default subject text	(Optional) Text to appear in the email subject field. The default is "Cisco Vision Health Report as of year-month-day hh:mm:ss am/pm."
Email id prefix:	(Optional) Prefix to use in the beginning of the email subject field. This can be used to organize email alerts from multiple customers or sites.

Modifying the Time of the System Health Report Task

User Role: Administrator

By default, Cisco Vision Director runs a system health report daily at 08:00.

To modify the time of the system health report task:

1. Go to **More > Management Dashboard > Tools** drawer **> Advanced** tab **> Scheduled Tasks.**

2. In the Scheduled Task Data box, find the task named HPMReportTask (Figure 4 on page 259).

3. Click in the Task Time column and specify the time (in 24:00 format) when you want the report to run.

4. Click **Apply**.

Figure 4   Changing the Health Report Time

Task ID	Task Type	Task Time	Servers
10	MulticastStateChange	periodic-5-seconds	control
13	HPMMonitorTask	periodic-180-seconds	config
14	HPMReportTask	07:30	config
15	HPMDMPCommandTa	07:30	config
16	CleanupScriptInstanc	05:30	config

Add Row   Delete Row

Running the System Health Report Task Manually

User Role: Administrator

To run the system health report task manually:

1. Go to **More > Management Dashboard > Tools** drawer **> Advanced** tab **> Run a Task**.

In the Tasks to Run box, select the **HPMReportTask** (see Figure 5 on page 259).

2. Click **Apply**.

Figure 5   Run HPMReportTask Detail

Viewing Media Player Device Status

User Role: Administrator / Help Desk / Support / Venue Administrator / Venue Operator

The Management Dashboard provides a number of levels and ways to obtain information about the status of your media player devices. This topic describes how to obtain detailed device status as shown in Figure 6 on page 260.

IMPORTANT: Not all commands or display areas are supported for every digital media player. Therefore, some areas of the display might not report any information for a device. Also, under the Utilization tab, the CPU Usage reports an average load that is normally always between values of 0 and 1.

Figure 6   Management Dashboard Media Player Device Status
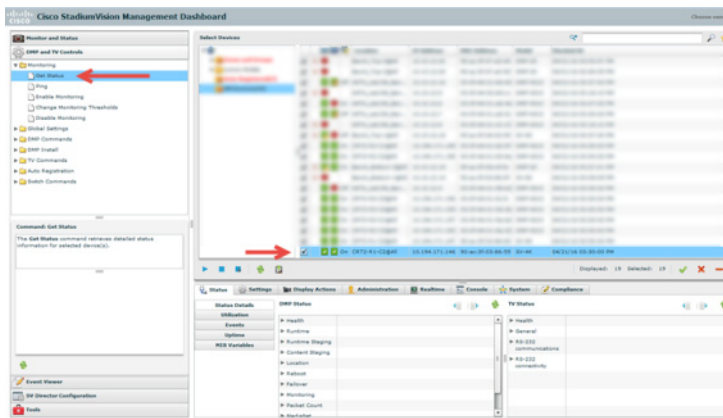
To view media player device status:

1. Go to **More > Management Dashboard > DMP and TV Controls > Monitoring > Get Status.**

2. In the Select Devices panel, select the devices that you want an updated status for.

3. To execute the command, click the play (>) button located at bottom left of the panel.

4. In the Device List panel, select the device that you want to verify.

5. Go to the device details area at the bottom of the panel and click **Status**.

   Use the buttons on the Status panel to obtain more details about the media player as described in Table 2 on page 261.

Table 2   Management Dashboard Status Panel Buttons

Button	Description
Status Details	Displays a combination of device details for both the media player and its associated TV displays.
Utilization	Displays media player–specific resource information such as CPU usage, memory, and disk storage.
Events	Displays system events that pertain to media players.
Uptime	Displays information about how long the device has been running.
MIB Variables	Displays internal settings for the media player.

Note: When using the **dmp.monitorPower** display parameter, you can run the **Get Status** command from the **Management Dashboard** to get the latest TV health status known to the DMP. This information can be up to two minutes old, or a few seconds depending on when the power query last ran. If the "dmp.monitorPower" parameter is set to false then you will not get the correct TV health status.

Managing DMP Operation in Cisco Vision Director

This section provides information about maintaining normal operation of your digital media players.

It includes the following topics:

- Management Dashboard Commands for the Digital Media Player, page 261

- Performing a Regular Reboot of the Digital Media Players, page 262

- Clearing the Storage on the Digital Media Players, page 262

- Clearing Registries on the Digital Media Player by Restoring Factory Defaults, page 263

- Recovering DMP Operation After Server Power Loss, page 263

Management Dashboard Commands for the Digital Media Player

This section provides a summary of the new and existing Management Dashboard commands that are supported by the digital media player.

Auto-Registration Commands for the Digital Media Players

Table 3   Management Dashboard Auto-Registration Commands

Command Name	Supported on DMPs
Change DMP State	Yes
Provision DMP	No

Performing a Regular Reboot of the Digital Media Players

IMPORTANT: The best practice for maintaining normal operation of the digital media players is to perform a **weekly** reboot of the devices. The Task Note below says the default value for DMP rebooting is 2 weeks.

Note: The Cisco Vision Director reboot task applies globally to all media player devices.

For information about how to configure the Reboot DMP system task, see the Task Note: Configure Reboot DMPs.

Clearing the Storage on the Digital Media Players

The DMPs have different capacities and types of storage. If you begin to run out of storage or otherwise need to recover the stored data, you can clear the storage on the media player. For more information, see the Release 6.2: Cisco Vision Deployment Guide for Digital Media Players: Dynamic Signage Director.

To find information about available storage, select a device in the **Management Dashboard** device list. Then, go to **Settings** > **Storage** in the device details area of the dashboard.

TIP: The HTML runtime must be running on the digital media player to use this task.

You also can find information about available storage if you view device details from thumbnail view in **Device Management.**

To clear the storage on the digital media player:

1. Go to **More > Management Dashboard**.

2. Select the devices that you want to clear.

3. Go to **DMP and TV Controls > DMP Install > Reset Storage** (Figure 7 on page 263).

Figure 7   Reset Storage Command
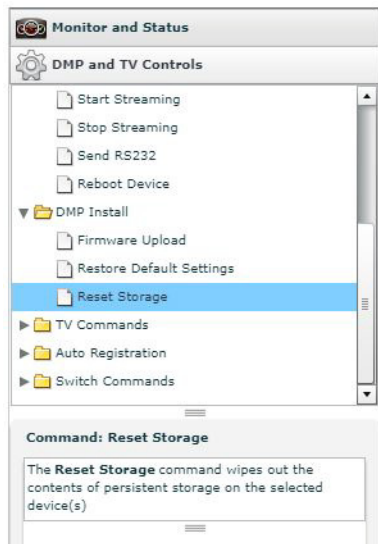
6. Click **Play**.

7. The contents of the SSD storage is removed (including the Cisco Vision Director runtime software and script contents) on the devices. The devices will not automatically reboot after this command.

8. Select **DMP and TV Controls > DMP Commands > Reboot Device**.

9. Click **Play**. The selected devices reboot and reprovision firmware and settings.

Clearing Registries on the Digital Media Player by Restoring Factory Defaults

If you need to clear the registry settings on the DMP and re-provision the device, use the **Restore Default Settings** command. Clearing the DMP registry settings does not wipe/clear the data storage.

To clear the registries on the media players:

1. Go to **More > Management Dashboard**.

2. Select the devices that you want to clear.

3. Go to **DMP and TV Controls > DMP Install > Restore Default Settings**.

4. Click **Play**.

   Any persistent device settings on the DMPs are erased and the box will be in factory default state. The DMP automatically reboots and reprovisions its firmware and settings.

Note: If you need to return the DMP to factory settings, we highly recommend performing the following in this order:

1. Perform a reset storage of the DMP. See Clearing the Storage on the Digital Media Players, page 262.

2. Perform a factory reset. See Clearing Registries on the Digital Media Player by Restoring Factory Defaults, page 263.

Recovering DMP Operation After Server Power Loss

User Role: Installer (Administrator)

If the Cisco Vision Director server should lose power while the devices remain powered, recover the devices after power is restored to the server.

To recover DMP operation after server power loss:

1. Restore power to the Cisco Vision Director server.

2. Reboot the devices.

IMPORTANT: If for some reason you needed to restore the DMP operation to a new Cisco Vision Director server (not a failover operation), then change the DHCP server option 43, reconfigure the new server for auto-provisioning of the DMP, and reboot the devices similar to a new deployment of the devices. For more information, see the Release 6.2: Cisco Vision Deployment Guide for Digital Media Players: Dynamic Signage Director.

Replacing a Failed Media Player While an Event Script is Running

This task describes the steps to replace a failed media player with a new device that continues to follow the same script.

After replacement, the new media player should:

- Belong to the same groups and zones.

- Respond to the zone/group state actions.

- Display the same content as the media player it replaces.

To replace a failed media player while an event script is running:

1. Unplug the failed device and replace it with a new device.

2. Wait until auto-registration and provisioning completes and the new device appears in the **Management Dashboard**.

3. From **Configuration > Groups & Zones**, un-map the failed device from its Location, and map the new device to this Location.

4. From **Script Management**, manually stage content to the new device.

5. From **Management Dashboard**, go to:

   a. **DMP and TV Controls > DMP Commands**

   b. Run the **Restart Runtime** command for the new device.

6. Verify that the new device is showing the expected content.

7. Delete the failed device from Cisco Vision Director. This device will be named in the format "Unassigned-xx-xx-xx-xx-xx-xx", where xx-xx-xx-xx-xx-xx is the MAC address.

Troubleshooting the Digital Media Players

This section includes the following topics:

- Before You Begin Troubleshooting the DMPs, page 265

- Troubleshooting PTP Operation for the Digital Media Players, page 266

- Troubleshooting DMP Hardware Operation, page 267

- Troubleshooting DMP TV and Video Display Problems, page 268

Before You Begin Troubleshooting the DMPs

Before you begin troubleshooting the DMP, follow the information in these topics:

-
-

RMA Process for the DMPs

The Return Materials Authorization (RMA) process is covered by the Cisco Solution Support Service for Cisco Vision.

Before you open a Cisco Solution Support case for the DMPs:

1. Locate your symptom in the DMP troubleshooting topics and begin to isolate the problem by following the suggested troubleshooting steps.

2. If you cannot resolve the problem with any of the recommended troubleshooting steps, open a Cisco Solution Support case to further troubleshoot and coordinate the return process with the vendor.

3. The Return Materials Authorization (RMA) process for the digital media player is covered by the Solution Support Service for Cisco Vision.

You can find warranty information here.

DMP Diagnostic URL

Some of the troubleshooting steps for the DMP recommend that you open a browser and navigate directly to the device using the following URL to further diagnose a problem:

http://dmp-ip-address

The diagnostic URL requires a password for use. The password is set in the **"defaultDmpAdminPwd"** registry key in the **Management Dashboard**. The default username is **"admin."**

Be sure to reset the password from the default value as a security best practice.

IMPORTANT: If a request to reboot the DMP fails, there is a new fallback password registry available: **defaultDmpAdminPwdBackup**. For complete details on how to set and use this new registry, see DMP Admin Password, page 19.

CAUTION: Do not manually power off the DMP after changing the password. To change the DMP password, you must use the Power Cycle DMP switch command from the Management Dashboard to restart the device properly. To use this command, be sure that you have imported the switch data first.

Note: This password is also used for the Diagnostic Web Server (DWS).

IMPORTANT:

- In Release 6.2 full installations, the DMP password is randomly generated. Look up the value in the registry value **defaultDmpAdminPwd** if you need to access DMP DWS.

- In Release 6.1 to Release 6.2 migrations, the existing DMP password is preserved.

For Release 6.2, the DWS default is disabled for the DMPs. See the Release Notes 6.2 for Cisco Vision Dynamic Signage Director for important information about enabling/disabling DWS after data migration.

Troubleshooting PTP Operation for the Digital Media Players

This section identifies some of the symptoms related to problems with PTP operation:

- Symptom: Local PNGs are not synchronized across devices, page 266

- Symptom: Playlists do not advance to the next content item on the DMPs, page 266

Note: We recommend designating an in-house PTP server, especially when deploying in a single virtual local area network (VLAN).

Symptom: Local PNGs are not synchronized across devices

Troubleshooting steps:

1. Verify the PTP configuration on your devices: Go to **Management Dashboard > Dynamic Signage Director Configuration > System Configuration > Global DMP Settings > Time Source.**

   Verify that the PTP domain and PTP master candidates property configuration is correct for your network.

2. Open your browser and navigate to one of the devices:

   http://dmp-ip-address/ptp.html

3. Enter the username and password.

   Note: The password policies changed. Follow the rules to log in to Cisco Vision Director. See the Cisco Vision Administration Guide: Dynamic Signage Director, 6.2.

4. Look for the message "PTP is not enabled."

   This message might mean that the device was not rebooted after changes to the **Management Dashboard** settings.

5. If the message appears, reboot the device.

Symptom: Playlists do not advance to the next content item on the DMPs

If the current PTP master becomes unreachable (shuts down, or becomes unreachable on the network), the PTP members will be unable to update their clocks and this condition will occur.

Troubleshooting steps:

1. Verify the PTP configuration on your devices: Go to **More > Management Dashboard > Dynamic Signage Director Configuration > Global DMP Settings > Time Source.**

2. Verify that the PTP domain and PTP master candidates property configuration is correct for your network.

3. Open your browser and navigate to one of the devices:

   http://dmp-ip-address/ptp.html

4. Enter the username and password.

   Note: The password policies changed. Follow the rules to log in to Cisco Vision Director. See the Cisco Vision Administration Guide: Dynamic Signage Director, 6.2.

5. Identify the PTP master (Figure 8 on page 267) by finding the unit that has an "offsetFromMaster" value of 0.0.

Figure 8   Identify the PTP Master

6. Ping the master PTP device.

7. If the master is not reachable and you have configured alternate masters but they are not reported as master after waiting for a minute, reboot one of the reachable PTP master candidates.

Note: Identifying the alternate master for this step can more easily be done if you are explicitly identifying the IP address of alternate masters, and not using the "*" wildcard to specify possible election of any device on the network.

8. If a device shows that it has not synchronized, reboot the device to force synchronization.

Troubleshooting DMP Hardware Operation

This section identifies some of the symptoms related to problems with the digital media player hardware:

■ Symptom: "Please Insert Card" message on SV-4K or DMP-2K startup screen, page 267

■ Symptom: Pwr and Eth LEDs are not lit and no signs of activity on the device, page 267

■ Symptom: Device Err or Err/Upd LEDs blinking, page 268

■ Symptom: DMP rebooting automatically after startup, page 268

Symptom: "Please Insert Card" message on SV-4K or DMP-2K startup screen

Troubleshooting steps:

1. Verify that an IP address is assigned to the device.

2. Verify proper DHCP Option 43 configuration.

3. Verify that the Cisco Vision Director server is running and reachable.

4. Contact Cisco Technical Support to do further troubleshooting and proceed with RMA process.

Symptom: Pwr and Eth LEDs are not lit and no signs of activity on the device

Troubleshooting steps:

1. Verify any visible damage to the Ethernet port on the device.

2. If there is not any visible port damage on the device:

   a. Connect a 12V 5A power supply to the media player to confirm startup and normal operation.

b. Replace the Ethernet cable.

c. Connect the media player to a known-working switch port for another device.

d. Verify the POE+ settings on the switch.

TIP: If you have imported the switch settings to Cisco Vision Director, you can view the POE+ settings.

Go to **More > Management Dashboard > Tools** drawer **> Settings** tab **> Switch Management > View Switch Details.**

Power normally displays "29.5" for the device after LLDP negotiation with the switch.

e. If none of these steps locate the problem, contact Cisco Technical Support to proceed with the RMA process.

Symptom: Device Err or Err/Upd LEDs blinking

Troubleshooting steps:

1. Refer to the LED documentation. See Release 6.2: Cisco Vision Deployment Guide for Digital Media Players: Dynamic Signage Director.

2. Troubleshoot according to the description of the problem.

Symptom: DMP rebooting automatically after startup

Troubleshooting steps:

1. Verify whether multiple devices are doing an auto-reboot.

2. If multiple devices are automatically rebooting at startup:

a. Verify that the devices are obtaining an IP address. If the devices are not getting an IP address ("Unable to get IP address" message on the TV display), verify communication to the DHCP server.

b. Verify proper DHCP Option 43 configuration.

3. If the DMP stays at the loading screen with the progress bar, verify communication with the Cisco Vision Director server.

4. (Advanced) Verify that an HTTP request comes in to the /var/log/httpd/access_log (use the System State Report [SSR]).

Look for a message like the following:

10.194.169.242 - - [13/Oct/2014:13:10:05 -0700] "GET /CiscoVision/dmp_v4/scripts/boot.brs HTTP/1.1" 200 89403 "-" "-"

Note: If the Auto Registration parameters are not exact, that will cause constant rebooting, too.

Troubleshooting DMP TV and Video Display Problems

This section identifies some of the symptoms related to problems with the DMP displays:

■ Symptom: Distorted display when DMP in Portrait Mode and default multicast video streaming, page 269

■ Symptom: Distorted display when DMP in Portrait Mode and default multicast video streaming, page 269

■ Symptom: No local control when external volume strategy configured, page 270

Symptom: Distorted display when DMP in Portrait Mode and default multicast video streaming

Troubleshooting steps:

1. Verify if portrait display is distorted.

2. If display is distorted, check the following:

    a. Go to **More > Management Dashboard > Tools** drawer **> Advanced** tab **> Registry**.

    b. Find **scaleToFitvideo** in the Registry Data.

    c. If **scaleToFitvideo** is not present (default), click **Add Row**. Scroll to bottom of list.

    d. Type **scaleToFitvideo** in the Key field and **true** for the Value.

    Note: If there is a need to set this value to "false," the display becomes distorted. In that case, use a web page for the default portrait mode URL instead of multicast video streaming.

    e. Set a separate default portrait content URL for portrait displays. See Configuring the Default Content Channel, page 111.

Symptom: Black screen on the DMP TV display/no multicast video stream

Troubleshooting steps:

1. Verify if multiple TV displays are showing a black screen for the same multicast video stream.

2. If multiple TV displays are showing a black screen for the same multicast stream:

    a. Verify the media player LEDs.

    b. If the LEDs are in normal state, verify that the Cisco Vision Director server has power and is reachable.

    c. If all TV displays are the same and/or new model, test with a different, known-working TV display model.

    d. (Advanced) Test with laptop connected to the same switch port/interface as the device with a problem, and see if the problematic video stream can be displayed using the open source VLC player.

    e. Test a different multicast video stream.

    f. Test with local video content. If local video works, troubleshoot video headend and/or other network problems.

    g. Confirm video output setting on the DMP using a browser to go to: **http://sv4k-ip-address.**

3. If the problem can be isolated to a DMP device:

    a. Verify that the Pwr/Eth LEDs are on.

    b. Try a different HDMI cable.

    c. Test a different TV display.

    d. (Advanced) Test with laptop connected to the same switch port/interface as the DMP with a problem, and see if the problematic video stream can be displayed using the open source VLC player.

Symptom: No local control when external volume strategy configured

Troubleshooting steps:

1. Is the RS-232 cable connected? Verify the cable connections.

2. Verify the serial cable type being used against the RS-232 requirements for the TV display (null modem [crossover] or straight through).

3. Verify that the external output strategy works on other TV displays.

4. Verify the RS-232 codes from the manufacturer against the TV display specifications in Cisco Vision Director.