Cisco StadiumVision Management Dashboard Device Configuration Commands

Release 2.3

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Table of Contents

Preface

This guide describes how to use the Device Configuration drawer commands to configure and monitor StadiumVision device settings.

Document Audience

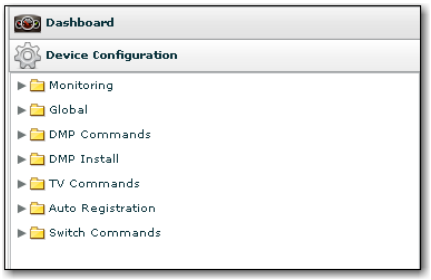
The intended audience is StadiumVision system administrators and Cisco Technical Field Engineers who are responsible for designing and deploying StadiumVision. It is expected that readers of this document are familiar with basic IP networking technology, have a general understanding of the sports and entertainment business, and understand the objectives and operations of live events.

Document History

Table 1. Revision History

Date	Revision	Author	Comments
5/18/2011	0	Trish McBride	First edition for Release 2.3

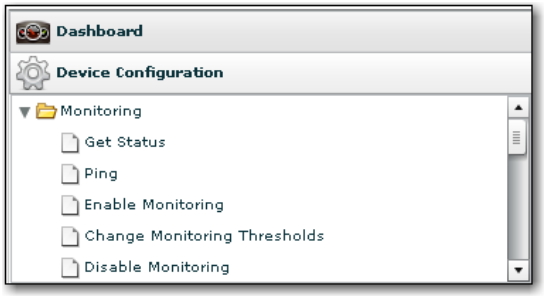
Device Configuration Commands Overview



The Device Configuration Drawer provides commands that control common registry settings so you can easily configure values via text input, drop down boxes, and sliders rather than manually editing registry settings. Device Configuration drawer includes commands for:

Commands	Description
Monitoring	Use these commands to check DMP status and connectivity, and to enable/disable monitoring services and thresholds.
Global	Use this command to sets the global MIB variables on the selected DMP(s).
DMP Commands	Use these commands to display the DMP IP address, restart Flash, enables/disable DHCP, update MIB settings, send RS-232 commands, reboot the DMP, and to control SWF and Media URL files playing on the DMP. There is also DMP command to set the alpha transparency on the DMP.
DMP Install	Use these commands to upgrade the DMP 4310G firmware, restore the DMP factory default settings, set the initial configuration to be deployed to all DMPs in the factory default state, and stage the Flash template. There are also commands to upgrade the DMP 4305G Kernel and SV Daemon.
TV Commands	Use the TV Commands in the Device Configuration drawer to send RS-232 commands that control the TV On/Off state, change the TV input and TV display banner, enable/disable closed captioning, set the TV volume and video channel, and set the SWF that displays when the TV first turns on.
Auto Registration	Use the Auto Registration commands in the Device Configuration drawer to change the DMP state and provision the DMP for auto registration.
Switch Commands	Use the Switch commands in the Device Configuration drawer to control the switch to DMP power settings, test the switch to DMP cable, send a ping to the switch, and clear the ARP cache.

Monitoring DMP Status and Alerts



Use the Monitoring commands in the Device Configuration drawer to check DMP status and connectivity, and to enable/disable monitoring services and thresholds.

Getting Status for a DMP

Send the **Get Status** command to retrieve status information for a DMP. Results are displayed in the Device Details Status window. You can execute this command on demand or according to a user-defined schedule.

To define a schedule for automatically executing the **Get Status** command:

Pinging a Device

Send the **Ping** command to perform a basic connectivity test on selected or all DMPs currently defined in the StadiumVision Director. You can execute this command on demand or according to a user-defined schedule.

To define a schedule for automatically executing the Ping command:

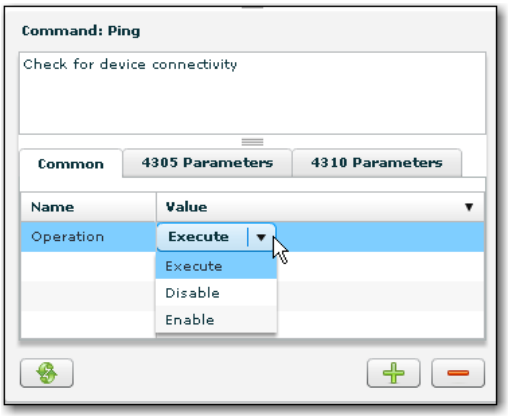
Dashboard Pings

The Dashboard “ping” is not the same as an IP utility ping (ping 10.10.10.10). The Dashboard ping gets a MIB variable from the DMP and therefore depends on IP connectivity to the DMP as well as the availability of the HTTP Web server on the DMP. Although a ping from the command line will succeed, the ping will fail if the http server and port 7777 (DMP 4305G) or port 443 (DMP 4310G) are not working.

Turning Polling On or Off on a Device by Device Basis

You can turn polling on or off on a device by device basis.

1. Select the device from the Device List.
2. Send a ping to the device using the **Ping** command in the Monitoring folder.
3. In the Operations area below the **Ping** command, click in the Value field and choose whether you want to execute, disable, or enable polling on the selected device.



4. Click the Play button in the Device List to execute the command.

Enabling Monitoring Services

Send the **Enable Monitoring** command to enable the Monitoring service on the selected DMP(s). Default values for CPU, Memory, and Disk threshold can be specified in the Director Configuration drawer. This command is only valid for a 4310 model DMP. This command will reboot the device.

Changing the Monitoring Thresholds

Send the **Change Monitoring Threshold**s command to change the CPU, Memory, and Disk threshold values. Default values for CPU, Memory, and Disk threshold can be specified in the Director Configuration drawer. This command is valid only for a 4310 model DMP.

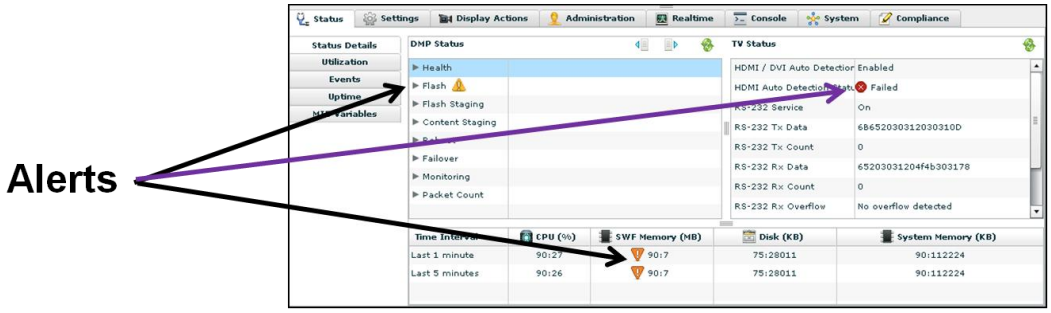
Table 1 shows the default server utilization alert thresholds.

Table 1. Server Utilization Alert Thresholds

DMP Resource	Total	Minor alert	Major alert
CPU	100%	More than 75% used	More than 90% used
System memory	228512 KB	Less than 50% free	Less than 40% free
SWF memory	228512 KB	Less than 50% free	Less than 40% free
HDD	29826 KB	Less than 50% free	Less than 40% free

In the example shown in Figure 1, the Details window is showing a major alert on the SWF Memory. This tells us that less than 40% of the available memory is free on the DMP.

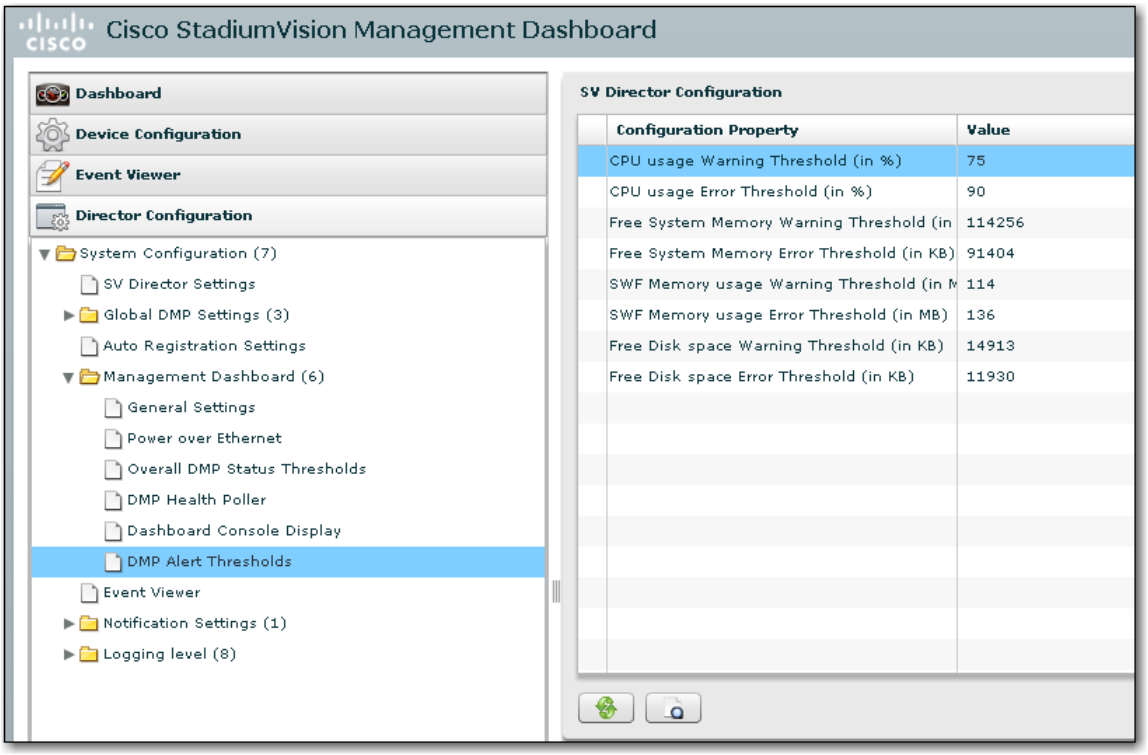
Figure 1. Dashboard Details Window Alerts



To modify the thresholds used by the Dashboard when displaying alerts for CPU, memory, and disk utilization:

1. Select a DMP from the device list.
2. In the Director Configuration drawer and click **System Configuration**.
3. Click **Management Dashboard > DMP Alert Thresholds**.

Figure 2. Changing the Management Dashboard Monitoring Thresholds

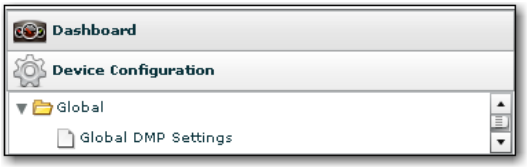


4. Select a Configuration Property from the SV Director Configuration window and set a new threshold value.
5. Click the Save button in the lower right corner of the window.

Disabling Monitoring

Send the **Disable Monitoring** command to disable the Monitoring service on the DMP. This command is valid only for a 4310 model DMP. This command will reboot the device.

Deploying Global DMP Settings



The **Global** folder contains the **Global DMP Settings** command which is used to deploy Global MIB settings to the selected DMPs on your network. Not to be confused with SNMP MIB settings, global MIB settings contain all configuration settings for the DMP. They function more like registry settings on a PC. For optimal performance of the StadiumVision system, all DMPs should conform to the global DMP settings specified in the global MIB.

There are three types of global DMP settings that correspond to MIB variables. Refer to Table 2.

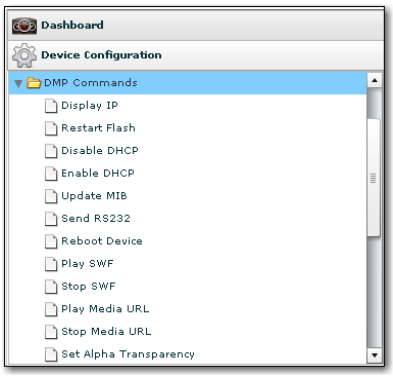
Table 2. Global DMP Settings

Global MIB Settings	Description
System Default Settings	Settings which are specified by the SV Director and cannot be modified by the end user. Examples include the "Startup URL" setting.
System Recommended Settings	Settings which have been determined to be desirable for most StadiumVision installations. These settings can be modified.
User-specified Settings	DMP settings which are customizable for the customer's site.

To deploy global MIB settings to the DMPs on your network:

1. Configure the global MIB variables using the **Director Configuration > System Configuration > Global DMP Settings** option on the Dashboard. See the *Management Dashboard Director Configuration Drawer Commands Guide* for details.
2. Select **Device Configuration > Global > Global DMP Settings**.
3. Expand the Device List and select the DMP(s) on which you want to deploy the global MIB settings.
4. Send the **Global DMP Settings** command.

Managing DMP Settings



The DMP commands in the **Device Configuration** drawer help you to manage DMP settings such as displaying the IP address of a DMP, restarting flash, enabling/disabling DHCP, updating MIB settings, and rebooting a DMP. The DMP commands also allow you to specify the SWF files and Media files the DMP plays at start up.

Displaying the DMP IP Address on the TV

Send the **DMP Commands > Display IP** command to display the DMP's IP Address on the TV attached to the DMP.

You can specify the time (in seconds) for which the IP address is displayed. The duration is only applicable for the DMP 4305G. By default, the IP address is displayed for 5 seconds.

For the DMP 4310G, the IP address is displayed for 10 seconds. This duration cannot be changed.

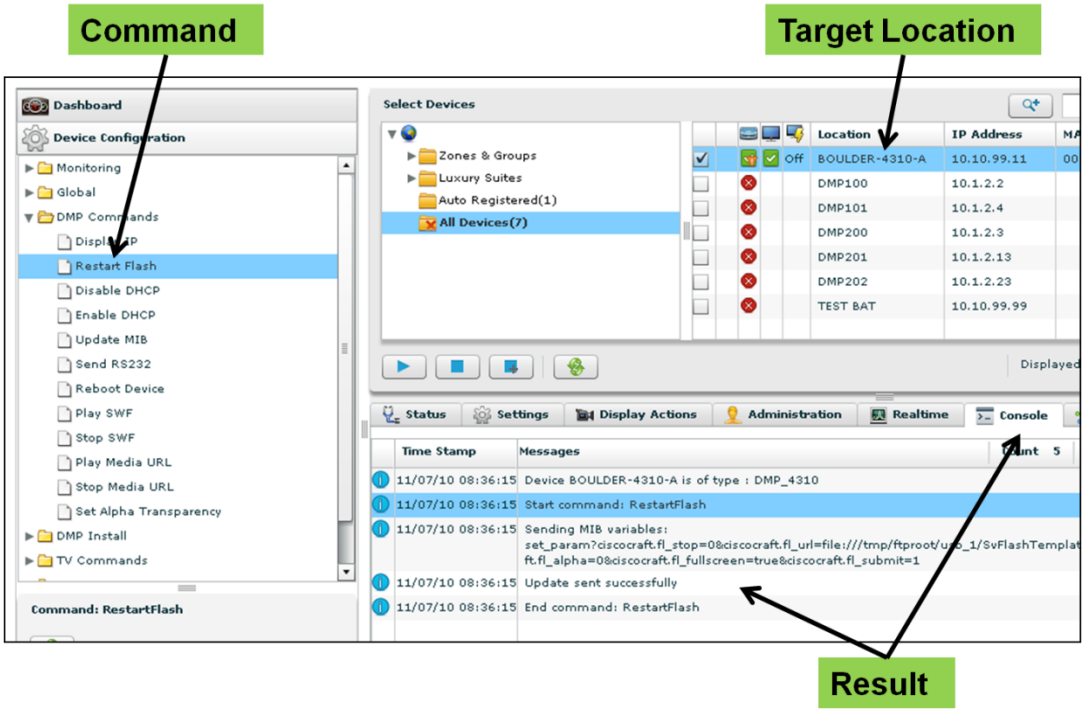
Restarting Flash on a DMP

The DMP utilizes the Adobe Flash Player or simply "Flash" software to deliver HD graphics and video. If the Adobe Flash player stops working, the DMP stops working.

When that happens, often the quickest way to recover it is to send the **DMP Commands > Restart Flash** Dashboard command to restart Flash on the DMP. The Dashboard will prompt for confirmation before restarting Flash. There are no command parameters to set for the **Restart Flash** command.

You can see feedback on what is happening in the **Console** tab in the Device Details window. This is similar to watching the console on the DMP. In the example shown in Figure 3, you can see that the **Reset Flash** command was sent and the update was successful.

Figure 3. Restarting Flash



Enabling/Disabling DHCP

Send the **DMP Commands > DHCP Enable** and **DHCP Disable** commands to enable/disable DHCP on the selected DMP(s). There are no command parameters to set for the Enable DHCP or Disable DHCP commands.

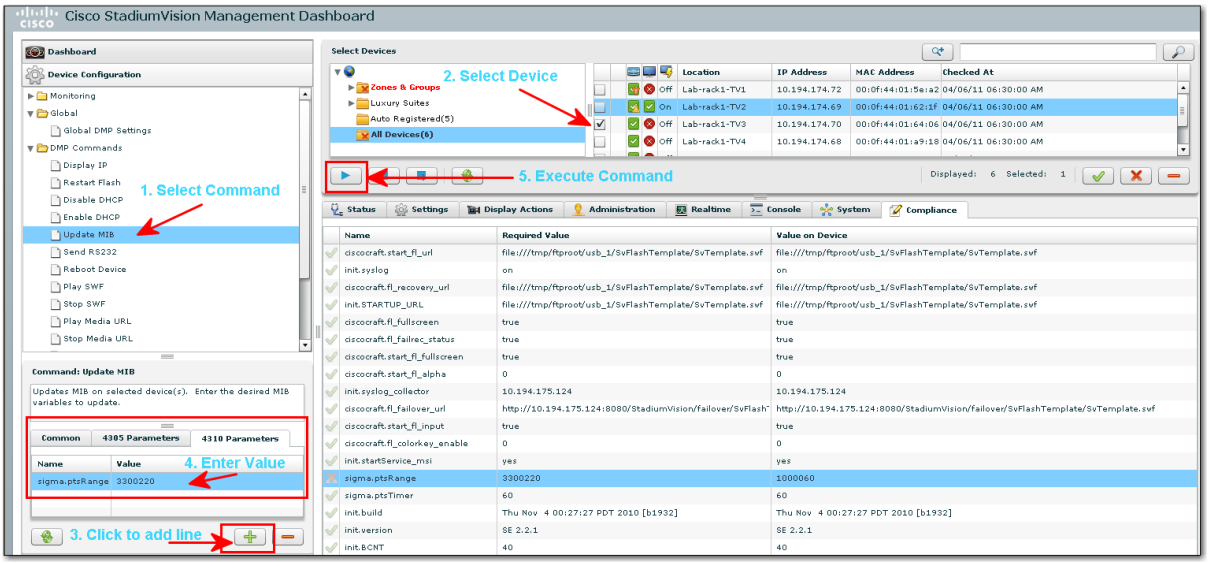
Updating MIB Settings

To update MIB settings for a DMP(s):

1. Select **DMP Commands > Update MIB**.
2. Select the DMP(s) from the Device List.
3. Click the green plus sign button at the bottom of the command parameters to add a new MIB variable.
4. Click the appropriate command parameter tab (**common**, **4305 Parameters** or **4310 Parameters**) and type the MIB variable and value.
5. Click the Play button in the Main panel to apply and update MIB values for the selected DMP(s).

   Refer to the *Management Dashboard MIB Variables Guide* for a listing of the MIB Variables modified by the Dashboard.

Figure 4. Updating the MIB



Viewing Recent RS-232 Commands

Send the **DMP Commands > Send RS232** command to view the most recently sent and received RS-232 commands for a DMP. The RS-232 commands and the current RS-232/Serial configuration are displayed in the Device Details panel under the **Display Actions > Serial Interface** tab.

Contact your StadiumVision representative for a list of RS-232 commands for selected TV models. If you are a Cisco StadiumVision deployment engineer, see the following link on the StadiumVision Sharepoint site for a listing of RS-232 codes:

http://team.cisco.com/sites/stadiumvision/svfield/Reference Information/Screen RS-232 Control Docs

Figure 5. Send RS232 Command

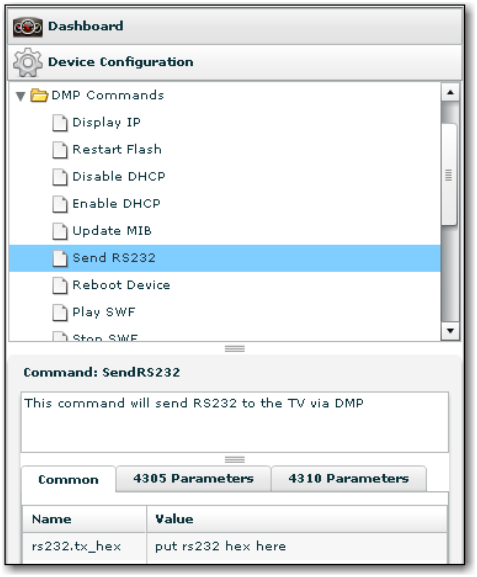
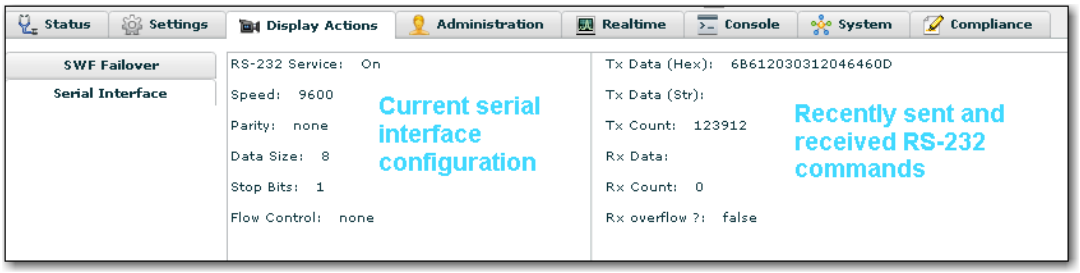


Figure 6. Viewing Recent RS-232 Commands



Rebooting a DMP

Send the **DMP Commands > Reboot Device** command to reboot the selected DMP(s) on demand. A circular green arrow will briefly display next to the DMP(s) that you are rebooting. When the reboot is complete, the green arrow will disappear. The Dashboard will prompt for confirmation before rebooting the DMP.

Setting the Startup URL

When the DMP 4310G starts up and the TV is turned on, the TV will display the startup URL that is stored in Flash on the DMP. There are two types of startup URLs you can configure on the DMP 4310G:

- Startup SWF: The DMPs play a flash .swf file at startup.
- Startup Media URL: The DMPs play a multicast video channel at startup. This is convenient when you have yet to configure content and want a few DMPs to power up and show a video channel.

Both startup URLs can be active simultaneously; however, the typical StadiumVision installation will use only the Play SWF setting.

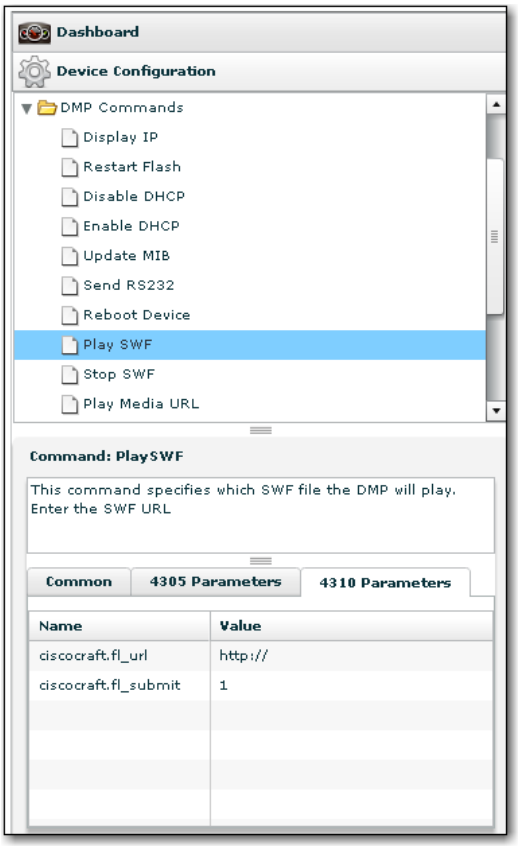
For the DMP 4305G, the TV displays an html file stored in flash on the DMP. To specify the start up HTML file for the DMP 4305G, use the **Device Configuration > Global DMP Settings > 4305 command.**

Setting a SWF File to Play at Start Up

The DMP 4305G cannot play a SWF file at startup.

1. Select DMPs from the Device List.
2. Select the **DMP Commands > Play SWF** command to specify the URL of the .swf file you want the DMP to play at startup. The screen shown in Figure 7 displays.

Figure 7. Specifying the SWF File to Display at Startup



3. Click the **4310 Parameters** tab.
4. Type the name and value of the URL for the .swf file you want the DMPs to display at start up.
5. Click the Play button. A confirmation dialog box will display so you can confirm whether to send the command.

Stopping the SWF File

To stop the SWF file that is currently displaying, send the **Device Configuration > DMP Commands > Stop SWF** command.

Setting a Media URL to Play at Start Up

You can play the following types of media upon DMP 4310G start up:

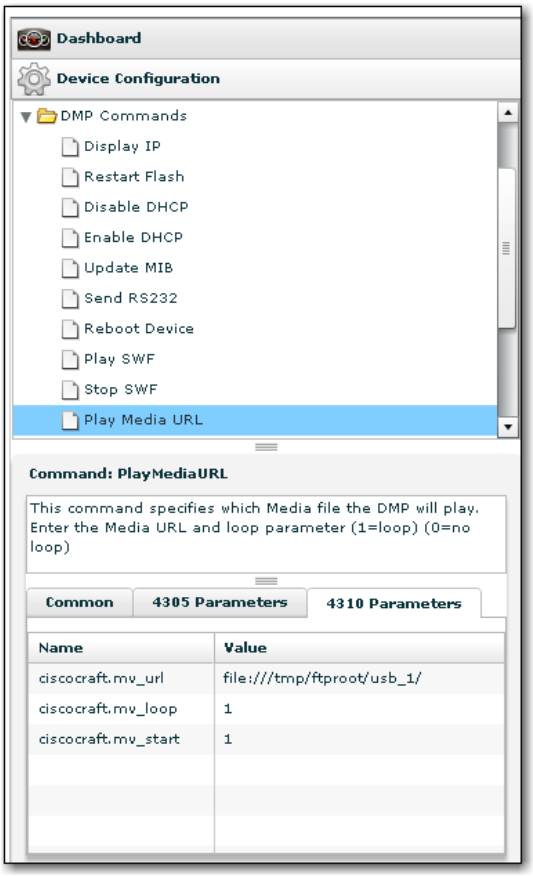
- Multicast video stream (i.e.: “udp://239.192.1.180:4000”)
- Video file (i.e.: http://server/file.mpg)

To set the Media URL:

1. Select DMPs from the Device List.

2. Select the **Device Configuration > DMP Commands > Play Media URL** command. The screen shown in Figure 8 displays.

Figure 8. Specifying the Startup URL for a Media file

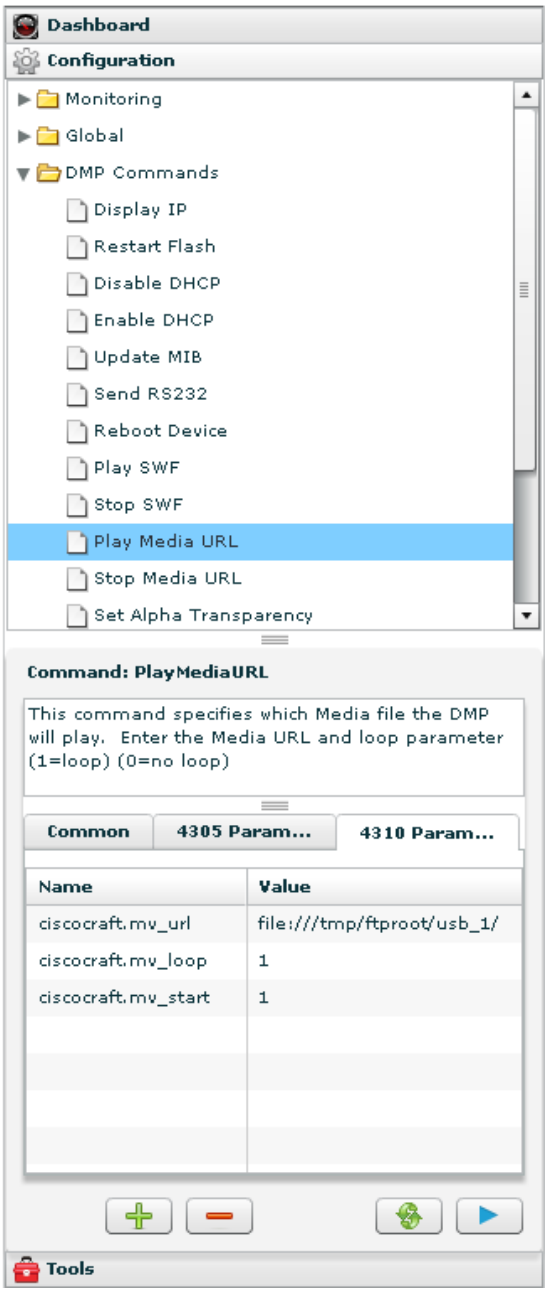


3. Click the appropriate DMP model tab.
4. Enter the Media URL and loop parameter in the command parameters table (1=loop) (0=no loop).
5. Click the Play button. A confirmation dialog box will display for you to confirm whether you want to send the command.

Stopping the Media URL File

To stop the media file that is currently playing, send the **Device Configuration > DMP Commands > Stop Media URL** command.

Figure 9. Specifying the Media URL



Setting the Alpha Transparency

The DMP 4310G supports graphics with transparency/opacity allowing a non-video region to overlap a video region. It uses the alpha-channel of the graphics plane (png, swf file types) to allow the background video to show through.

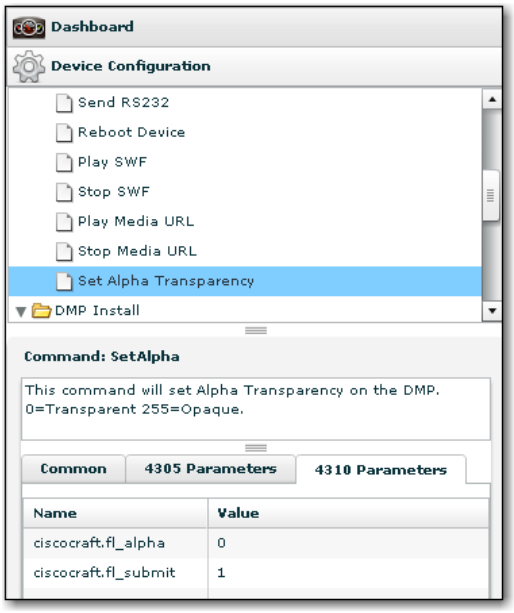
Transparency is supported by use of chroma-keying where the background video can be seen through a particular color in the graphics.

Refer to the *StadiumVision Content Creation Guidelines* for more information about opacity, transparency, and chroma-keying.

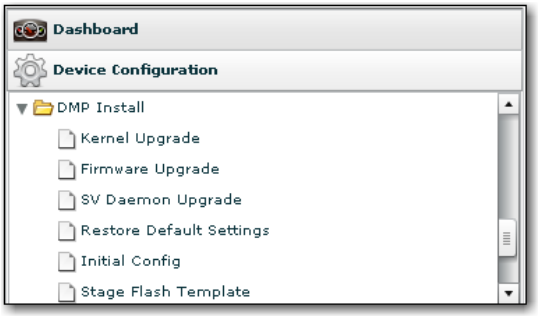
To set the alpha transparency parameters:

1. Select the **DMP Commands > Set Alpha Transparency** command.
2. Enter values for the name and value fields. The name field is the name of the MIB variable that will be modified by the Dashboard. Values are 0=Transparent 255=Opaque. Refer to Figure 10.
3. Send the command.

Figure 10. Setting the Alpha Transparency



Updating DMP Installation Settings



Use the DMP install commands to upgrade the DMP 4310G firmware, restore the DMP factory default settings, set the initial configuration to be deployed to all DMPs in the factory default state, and to stage the Flash template. There are also DMP Install commands to upgrade the DMP 4305G Kernel and SV Daemon.

Upgrading the Kernel

Use the **DMP Install > Kernel Upgrade** command to update the kernel image and firmware image on the DMP 4305G. The upload operation uploads the kernel image file from your local machine to the SV Director server, and places the image in the correct location on the SV Director server.

The Dashboard will prompt for confirmation before upgrading the kernel. The DMP reboots after you apply the command.

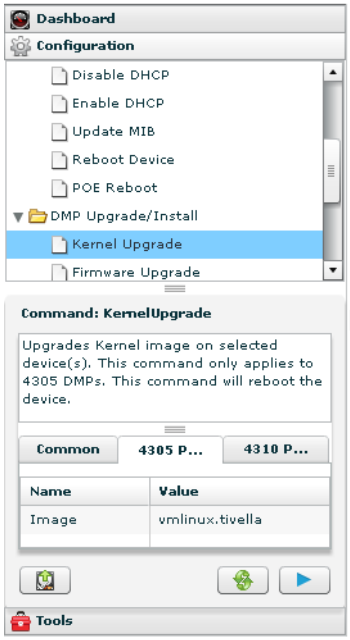
1. Download the kernel image to the local PC.
2. Select **DMP Install > Kernel Upgrade**.
3. Click the **4305 Parameters** tab.
4. In the Command parameters area do the following:

   a. Click the Upload button. A file dialog displays.
   b. Select the kernel downloaded in step 1.
   c. Click the **Open** button. The selected file will be uploaded to the server.
   d. Click the Refresh button.
5. Reselect **DMP Install > Kernel Upgrade**.
6. Select the **4305 Parameters** tab in the Command Parameters panel.
7. Click on the kernel image you uploaded in step 4.
8. In the Device List, select the DMP(s) on which you want to upgrade the kernel. If you want to upgrade the kernel on all DMPs, skip this step.
9. Click the Play button on the Configuration panel to upgrade the kernel on all DMPs. A confirmation dialog is displayed.
10. Press **OK** to proceed or press **Cancel** to cancel the operation.
11. Click the Play button to send the command and upgrade the kernel on the selected devices.

While the upgrade is in progress, the upgrade icon displays next to the selected DMP(s) and the progress bar for the DMP(s) indicates the current progress of the operation. The DMP will reboot after it is upgraded. The process takes about 3-4 minutes. However, the system may take longer to upgrade depending on the number of DMPs. DMPs are upgraded in groups. A rough calculation would be the total quantity of DMPs divided by 10 then multiplied by 2-3 minutes.

Any DMP 4310Gs that are selected will be ignored during the kernel upgrade. The Skipped Devices icon is displayed next to the DMP status list for skipped DMPs.

Figure 11. Upgrading the Kernel



12. Update the MIB Variables for the kernel.

After upgrading the kernel, you may need to perform the following procedures:

Upgrading the SV Daemon

Upgrading the Firmware Image

Deploying the Initial Configuration

Deploying Global MIB Settings

Upgrading the SV Daemon for the DMP 4305G

Upgrading the DMP Firmware Image

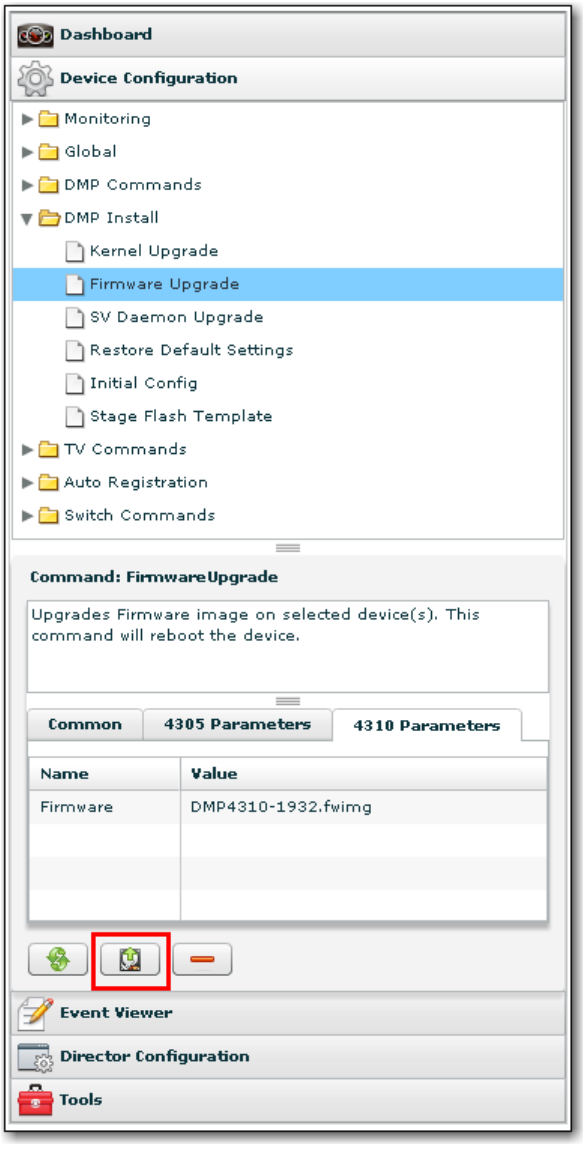
Use the **DMP Install > Firmware Upgrade** command to upgrade the DMP firmware image. The **Firmware Upgrade** command applies to both the DMP 4310G and the

DMP 4305G. The Dashboard will prompt for confirmation before upgrading the firmware image. The DMP reboots after you send the command.

The upload operation uploads the firmware from your local machine to the SV Director server and places the image in the correct location on the server.

1. Download the desired firmware image to the local PC.
2. Select **DMP Install > Firmware Upgrade**.
3. Click the **4305 Parameters** tab or the **4310 Parameters** tab in the Command parameters area.
4. Click the Upload button. A file selection dialog displays. Refer to Figure 12.

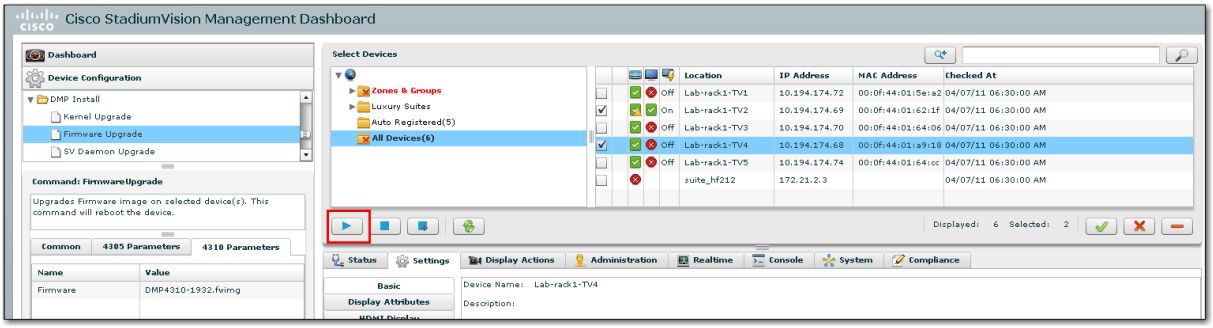
Figure 12. Selecting the Firmware Image



5. Browse to the firmware image you downloaded in step 1 and click **Open** to upload the selected file to the SV Director server.

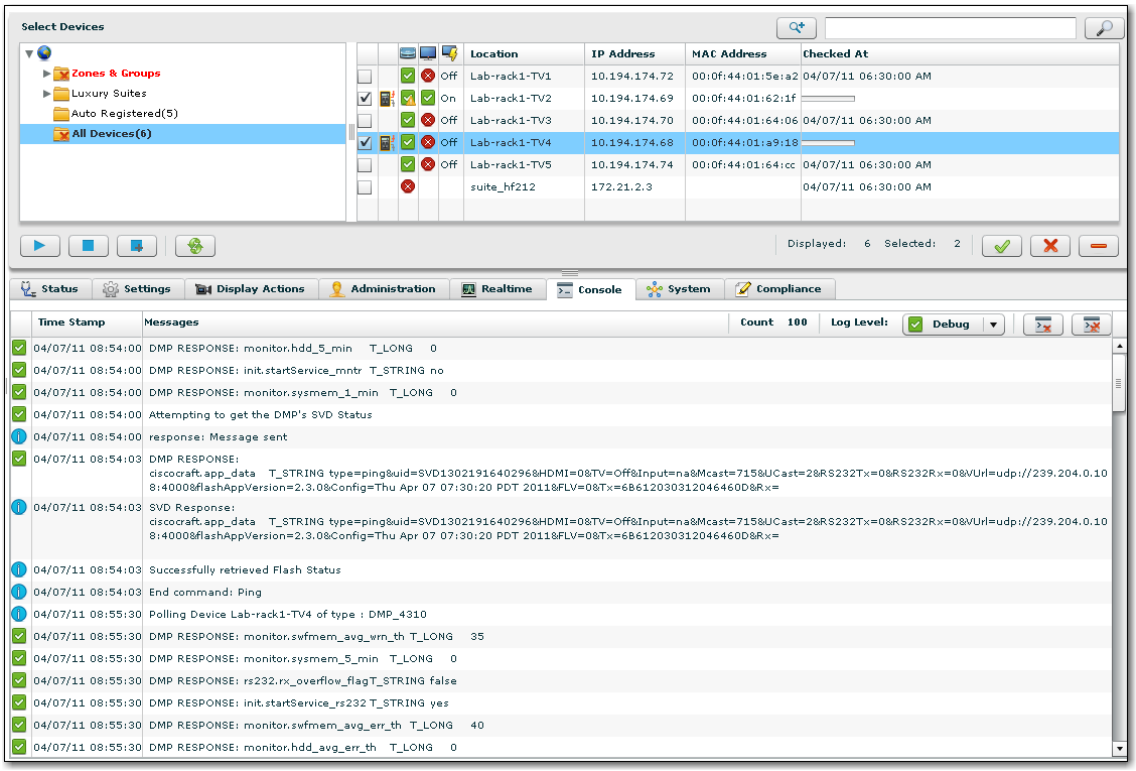
6. Click the Refresh button.
7. Select **DMP Install > Firmware Upgrade**.
8. From the Device List, select the DMPs on which you want to upgrade the firmware. If you want to update the firmware on all DMPs, skip this step.
9. In the Command Parameters area, click the **4305 Parameters** tab or the **4310 Parameters** tab. The list of firmware images will display.
10. Select the firmware image you want downloaded to the DMP. If there are both DMP 4305Gs and DMP 4310Gs in your network, select both types of DMPs for this command.
11. Click the Play button to upgrade the firmware on the selected DMPs. See Figure 13.

Figure 13. Upgrading the Firmware Image (DMP 4310G)



12. Select the **Console** tab in the Device Details panel to view the firmware upgrade progress. Refer to Figure 14. The DMP will reboot about 20 minutes after you apply the **Firmware Upgrade** command.

Figure 14. Viewing Firmware Upgrade Status



13. After you upgrade the DMP firmware, do the following:
    a. Update the Firmware Version and Build Date in the Registry.
    b. Update the init.FAILOVER_URL MIB.
    c. Send the **Global DMP Settings** command to the device.
    d. Stage the flash template and content (via the Control Panel). See the *Staging Content and Staging Flash Guide* for details.

The above steps need to be done after a firmware upgrade since the device may return to the factory default setting. If you do not update the registry entries, the Dashboard will flag the DMP as non-compliant.

Updating the Firmware Version and Build Date in the Registry

After you upgrade to release 2.3, you need to manually update the firmware and build date in the registry. Otherwise, the DMP will be in a non-compliant state.

1. Open the Digital Media Device Manager (DMPDM) interface for a DMP that has the new firmware version installed.
2. Select **About > Hardware and Firmware Version**.
3. Copy (exactly) the values of the ‘Firmware Release Version’ and ‘Build Date and Time’, and paste them in the following registry values:
   - Globaldmpsetting.4310.info.init.build = Thu Nov 4 00:27:27 PDT 2010 [b1932]

- Globaldmpsetting.4310.info.init.version = SE 2.2.1

4. Push the Global DMP Settings to the DMPs. This will bring the DMPs back to the compliant state.

Updating the init.FAILOVER_URL MIB

After you update the firmware to Release 2.3, set the init.FAILOVER_URL MIB as follows:

1. cd /opt/apache-tomcat-6.0.18/webapps/StadiumVision/WEB-INF/classes/
2. sudo vi application.properties
3. Search for "4310.deploy.init.FAILOVER" and comment out the following line:

   ```
   Globaldmpsetting.4310.deploy.init.FAILOVER_URL=<4310_FAILOVER_URL>
   ```

4. Restart tomcat.

Upgrading the SV Daemon for the DMP 4305G

After you have upgraded the kernel and firmware for the DMP 4305G, you need to upgrade the SV Daemon image. This is done by sending the Dashboard **DMP Install > SVD Upgrade** command. The SV Daemon is supplied on the SV Director Server.

The SV Daemon is not needed on the DMP 4310G.

When you upgrade the SV Daemon:

- The Dashboard will prompt for confirmation before upgrading the SV Daemon.
- The DMP will automatically reboot.
- The COMMAND_MULTICAST_SERVER_ADDRESS and COMMAND_MULTICAST_SERVER_PORT variables in the svd.conf file will be updated to match the values set for the MulticastHostPort variable in the registry. See Changing the Multicast Address and Port for StadiumVision Director for details on how to edit the registry to change this setting.

To upgrade the SV Daemon on the DMP 4305G:

1. Select **DMP Install > SV Daemon Upgrade**.
2. In the Device List, select the DMPs on which you want to upgrade the SV Daemon.
3. Click the Play button on the Device List to upgrade the SV Daemon on the selected DMPs.
4. While the image is downloading, a download icon will display next to the selected DMP. The DMP will reboot.
5. Deploy Global DMP Settings to the DMP.

Restoring Default Settings

1. Select **DMP Install > Restore Default Settings**.
2. In the Device List, select the DMPs on which you want to restore the default settings.
3. Click the Play button in the Device List to restore the default settings on selected DMPs. The Dashboard will prompt for confirmation before restoring the default settings. The DMP reboots after you execute the command.
4. Once the reboot is complete, send the **Monitoring > Get Status** command to verify that the DMP is back online. The DMP will be in the factory default state when this command is successful.

Deploying the Initial Configuration

When you first add a DMP to the SV Director database, it is automatically placed in the factory default state. Before you can proceed with upgrading the firmware and bringing the DMP online, you need to execute the **DMP Install > Initial Config** command. This command moves the DMP out of the factory default state and into the initial state to enable further operations.

You must execute the **Initial Config** command on all DMPs in the factory default state (a.k.a. the initial state).

Some commands cannot be executed on a DMP that is in the factory default state. If you try to execute a command to a DMP in the factory default state, an error message will be displayed on the **Console** tab in the Device Details panel. Refer to Figure 15.

Figure 15. Factory Default State Error Screen

The DMP Summary panel on the Dashboard shows the number of DMPs in the factory default state.

Setting Initial Config Command Parameters

Before you send the Initial Config command, you need to set the Initial Configuration parameters through the registry as follows:

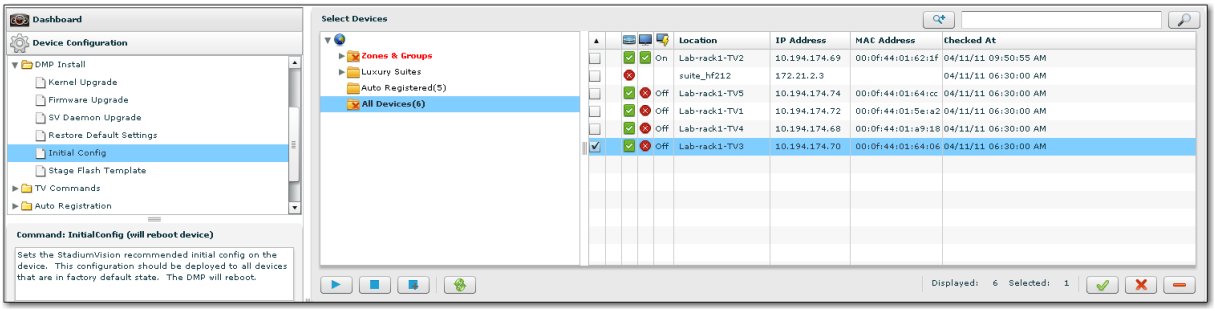
1. Select **Tools > Advanced > Registry**.
2. Scroll down to the defaultDmpAdminPwd parameter.
3. Click on the Value field and specify the password. The password must be a secure password with the following characteristics. The DMP will silently fail if the password is not secure.
   - At least 8 characters (i.e.: ‘Cisco123’)
   - Contains at least 1 capital letter (i.e.: ‘C’)
   - Contains at least 1 number (i.e.: ‘1’)
4. Click **Apply**.

You should only set these values once per installation as subsequent password changes are not easy to do.

Sending the Initial Config Command

1. Select **DMP Install > Initial Config**.

Figure 16. Executing the Initial Config Command



5. Select the DMPs which are in the Not Ready state.
6. Click the Play button in the Device List to send the command to the selected DMPs.

Once the command has successfully completed, the Not Ready icon will no longer display next to the selected DMPs in the Device List.

When you send the **Initial Config** command, each of the parameters listed in Table 3 are set to the value specified for defaultDmpAdminPwd. Users will not see these MIB variables and cannot assign values to them. However, as the system administrator, you can assign values to them in the registry.

Table 3. Initial Config Command Parameters

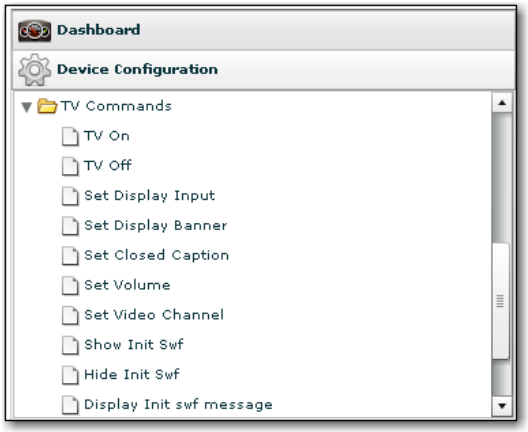
Parameter	Description
init.FTP_password	Sets the FTP password
init.ROOT_password	Sets the root password
init.WEB_password	Sets the web password
init.SYSMNG_password	Sets the SYSMNG password

Staging the Flash Template

Send the Stage Flash Template command to stage/copy the Flash Template on the selected device(s).

You must stage the Flash template when new Cisco DMPs are installed or when the Flash template application is modified. The Flash template application is the Flash .swf file that runs on all Cisco StadiumVision DMPs (this is different from the screen templates used on a Cisco DMP and also distinct from any .swf files the user has created as content).

Sending RS-232 Commands for TV Control



Use the TV Commands in the Device Configuration drawer to send RS-232 commands that control the TV On/Off state, change the TV input and TV display banner, enable/disable closed captioning, set the TV volume and video channel, and set the SWF that displays when the TV first turns on.

StadiumVision Director sends TV control commands to the StadiumVision Flash application on the DMP via RS-232 codes. The TV must be suitably equipped and connected to the DMP. These codes are centrally administered in the SV Director Control Panel.

If you are an internal Cisco StadiumVision administrator, information on the tested and untested RS-232 commands is posted on the internal Sharepoint site at:

http://team.cisco.com/sites/stadiumvision/svfield/Reference Information/Screen RS-232 Control Docs

Refer to the *StadiumVision Video Endpoint Delivery DIG* for details on how to set RS-232 commands.

Turning a TV On/Off

Send the **TV On** or **TV Off** TV command to turn a TV controlled by the selected DMP on or off.

Setting the TV External Display Inputs

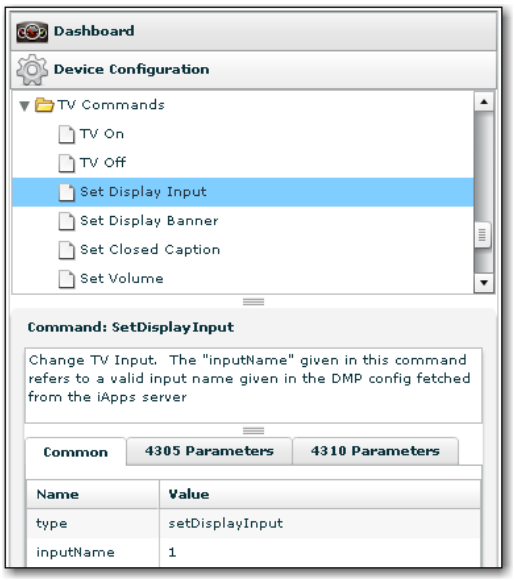
In a luxury suite, guests can use the Cisco IP Phone to change the TV input to an external device, such as a DVD player. To make it easier for the guest to select the input, you can label the TV's external inputs 1, 2, 3, or 4. This label will appear on the IP phone when a user selects TV/Volume. This label also appears on the TV in the TV identification banner.

Note: The identification banner is set in the DMP upon boot-up. Therefore, changing the label requires a restart of the DMP to take effect.

Send the **TV Commands > Select Display Input** command to change the TV display input to the value set in the Control Panel. The "inputName" parameter refers to the input name configured for the DMP when it was added in the Control Panel. Once this value is set in the Control Panel, you must set the inputName parameter and then send this command. Refer to Figure 17.

See the *StadiumVision Video Endpoint Delivery DIG* for details on how to configure the TV Display Input in the Control Panel.

Figure 17. Configuring the TV Display Input



Setting the Display Banner

Send the **TV Commands > Set Display Banner** command to display a graphical banner on the top of the TV screen output. This banner is used to give the user feedback by identifying which DMP's / TV's received the command. There are different "Mode" options: Active, Inactive, None. Refer to Figure 18.

Figure 18. TV Banner Display

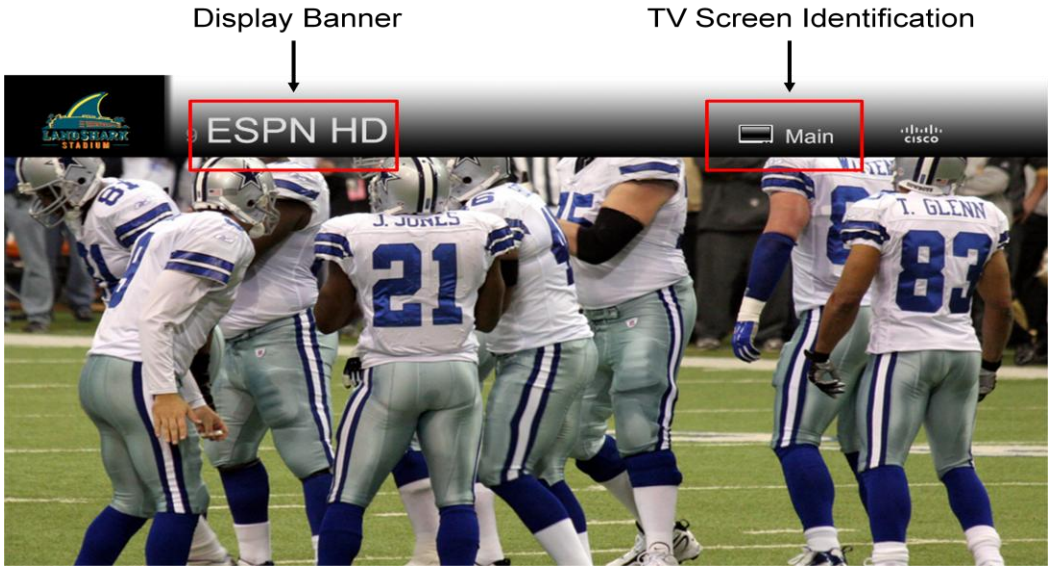
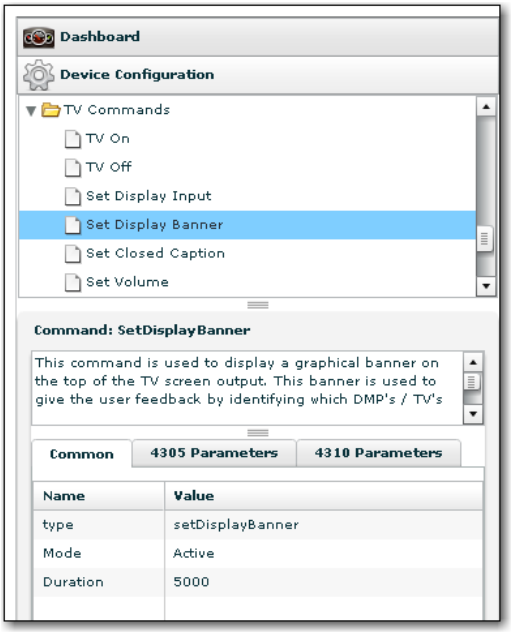


Figure 19. Setting the Display Banner



For details on how to use the Control Panel to configure the display banner, see the *StadiumVision Local Area Control Design and Implementation Guide*.

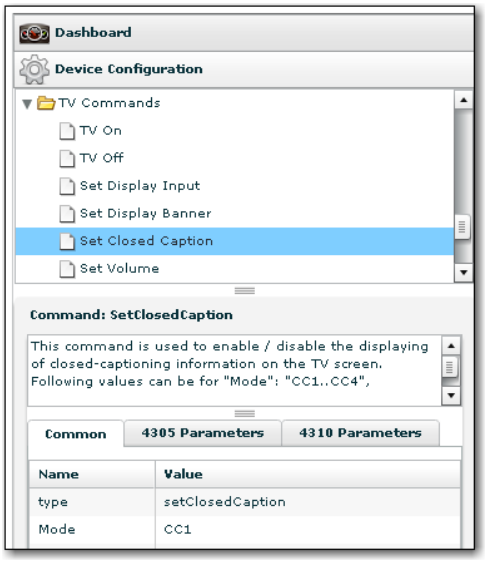
Enabling/Disabling Closed Captioning

If the video feed includes closed captions, guests in the luxury suite can turn the display of these captions on or off using their Cisco IP Phone (as well as the IR Remote). Support for closed captioning requires the Cisco DMP 4310.

Send the **TV Commands > Set Closed Caption** command to enable or disable closed captioning on a TV controlled by the selected DMP. The following values can

be specified for Mode: CC1, CC2, CC3, CC4 or CS1, CS2, CS3, CS4. Set the Mode to "OFF" to turn off closed caption. Refer to Figure 20.

Figure 20. Setting Closed Captioning Parameters



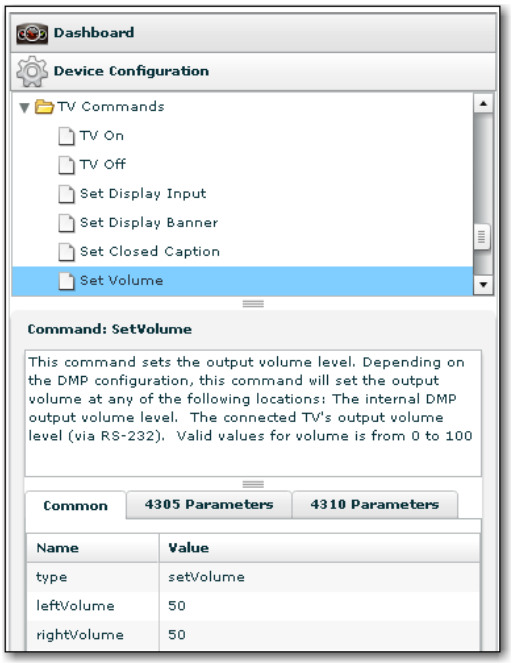
Setting the TV Output Volume Level

Send the **TV Commands > Set Volume** command to set the output volume level on the TV controlled by the selected DMP(s). Depending on the DMP configuration, this command will set the output volume at any of the following locations:

- The internal DMP output volume level.
- The connected TVs' output volume level (via RS-232).
- The volume for the TVs' left speaker (leftVolume). Valid value is from 0 to 100.
- The volume for the TVs' right speaker (rightVolume). Valid value is from 0 to 100.

You can configure the volume granularity in the Control Panel. Refer to the *StadiumVision Video Delivery Endpoints Design and Implementation Guide*.

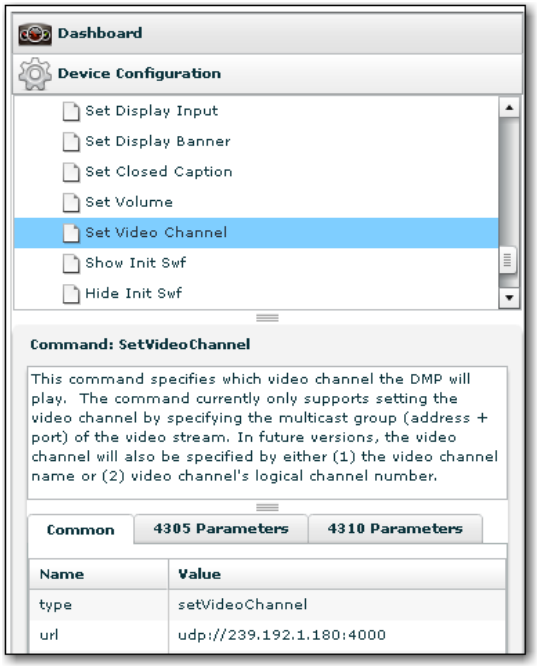
Figure 21. Setting Parameters for the TV Volume



Setting the Video Channel

Send the **TV Commands** > **Set Video Channel** command to set the video channel you want to play on the TV controlled by the selected DMP. To set the video channel, specify the multicast group (address + port) of the video stream. Refer to Figure 22.

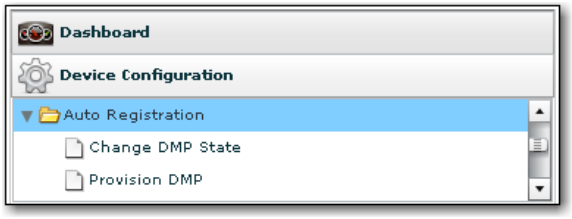
Figure 22. Setting Parameters for the Video Channel



Showing, Hiding, and Displaying the Initial SWF Message

Send the **Show Init** and **Hide Init Swf** commands to display or hide the Init SWF application on the DMP. Send the **Initial SWF Message** command display the specified message in the Init Swf application on the DMP. Message text is specified in the appOptionsXML variable.

Auto Registering and Provisioning a DMP



Use the Auto Registration commands in the Device Configuration drawer to change the DMP state and provision the DMP for auto registration.

Auto Registration	
Change DMP State	Changes the state of the selected DMPs. Accepted values are 'Not Ready' or 'Ready' or Production'.
Provision DMP	Provisions a DMP for use in StadiumVision. This command will send the **Initial Config**, **Upgrade Firmware**, **Stage Flash Template** and the **Global DMP Settings** command on selected DMPs. Executing this command will change the DMP state to "Not Ready". Upon successful completion the DMP state will be set to "Ready".

Changing the DMP State for Auto Registration

The Provision DMP operation will be skipped if the DMP is in the 'Ready' or 'In Production' state. To change the state of the selected DMPs to 'Not Ready' or 'Ready' or 'Production' set the auto provisioning and auto registration values for the **DMP State** command to 'true'.

Provisioning a DMP

When you send the **Provision DMP** command, the Provision DMP Operation begins. The Provision DMP Operation is a collection of Dashboard commands that are sent in sequence to provision the DMP. The commands use dependency checking. That is, the commands are executed only if the previous command was successful. Table 4 defines the sequence and purpose of the commands that are executed for the Provision DMP operation.

The Provision DMP operation can be initiated automatically or manually. While a DMP is being provisioned, it transitions through three states:

Not Ready -> Ready -> Production

- **Not Ready:** The DMP is registered in SV Director but has not been provisioned.

- **Ready:** The DMP is provisioned in SV Director but has not been assigned to a Location. Note that all scripting is done on Locations and not on DMPs.
- **In Production:** The DMP is registered, provisioned and assigned to a Location in SV Director.

As the DMP transitions through these states, you can view the progress on the Management Dashboard and Control Panel.

Table 4 lists the Provision DMP command sequence. If any step fails, the overall Provision DMP operation fails.

Refer to the *StadiumVision Video Endpoints Design and Implementation Guide* for more details about auto registering and provisioning a DMP.

Table 4. Provision DMP Command Sequence

Order	Command	Description
1	GetStatus	Retrieves the current settings on the DMP
2	StateTransition	Changes the DMP State to 'Not Ready'
3	InitialConfig	Executes the InitialConfig command on the DMP. This command sets the credentials in the DMP and is executed only if the DMP is in the Factory Default state. The DMP is rebooted as part of this command execution. A subsequent DMP registration message will trigger the Workflow to advance to the next step.
4	GetStatus	Retrieves the most current configuration on the DMP. The GetStatus command is executed at various points of the Provision DMP workflow and is intended to refresh the DMP state in SV Director so that the execution of previous workflow steps are reflected correctly in the SV Director Database.
5	Firmware Upgrade	The SV Director will upgrade the firmware on the DMP, if required. A DMP reboot will trigger the workflow to advance to the next step.
6	GlobalMIB	Deploys the Global DMP Settings on the DMP. This step is performed only if the device is not conforming with the current Global DMP Settings
7	GetStatus	Retrieves the most current configuration on the device. Note that a previously executed Firmware Upgrade would have changed the version and build strings to match the currently running firmware on the DMP
8	StageTemplate	The Flash Template is staged on the DMP.
9	GetStatus	Retrieves the current configuration from the DMP and saves in the SV Director Database
10	StateTransition	Sets the DMP State to Ready
11	GetStatus	This final GetStatus is issued to get the most current DMP configuration. It is not necessary to issue this final GetStatus. However, this command has been placed in the Provision DMP workflow to work around certain timing issues that may arise when retrieving the Flash Template status

You can see more detail about the steps and sub steps being performed by viewing the status messages on the **Console** tab in the Device Details panel.

Automatically Executing the Provision DMP Command

The **Provision DMP** operation is automatically initiated if the Enable Auto Provisioning and Enable Auto Registration keys are set to true in the Dashboard. The **Provision DMP** will be skipped if the DMP is in the “Ready” or “In Production” state. Whenever a registration message is received from the DMP, a new instance of this workflow command is created or a previously running instance is advanced. The DMP sends a registration request to the SV Director every time it is rebooted, assuming that DHCP is enabled and the DHCP Server is appropriately configured. Several of the commands in the Provision DMP workflow require the DMP to be rebooted. Such commands will automatically reboot the DMP as needed.

Preparing SV Director and the DHCP Server for auto registration and provisioning is described in the *StadiumVision Video Endpoints Design and Implementation Guide*.

Auto Registering and Auto Provisioning Multiple DMPs

StadiumVision Director can auto register approximately 200 DMPs at the same time. As registrations come in, up to 50 auto-registered DMPs can be provisioned in parallel. The remaining DMPs are queued for provisioning and as DMPs complete the provisioning process, new DMPs are provisioned.

Manually Executing the Provision DMP Command

As an alternative to using auto provisioning, you can manually execute the **Provision DMP** operation to provision one or more DMPs. This operation is executed from the Dashboard just like any of the other Dashboard commands.

Figure 23 illustrates the **Provision DMP** in the Dashboard Device Configuration drawer.

Figure 23. Manually Executing the Provision DMP Command

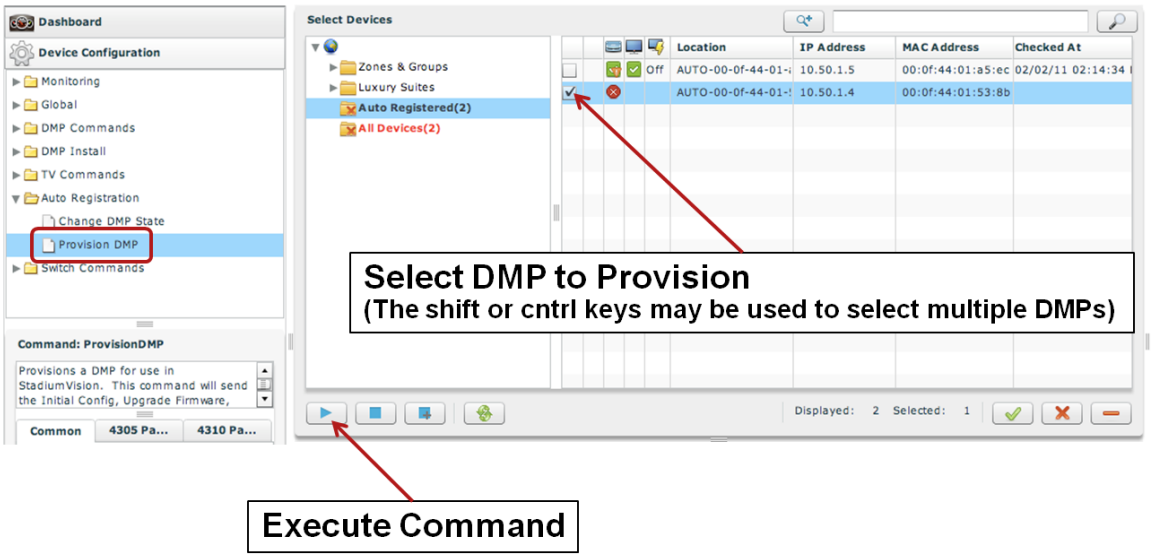
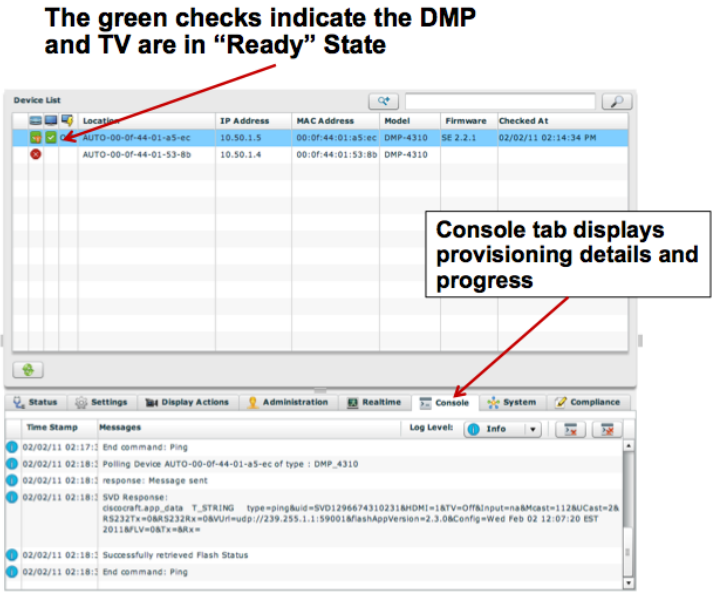


Figure 24. Provisioned DMPs in the Dashboard

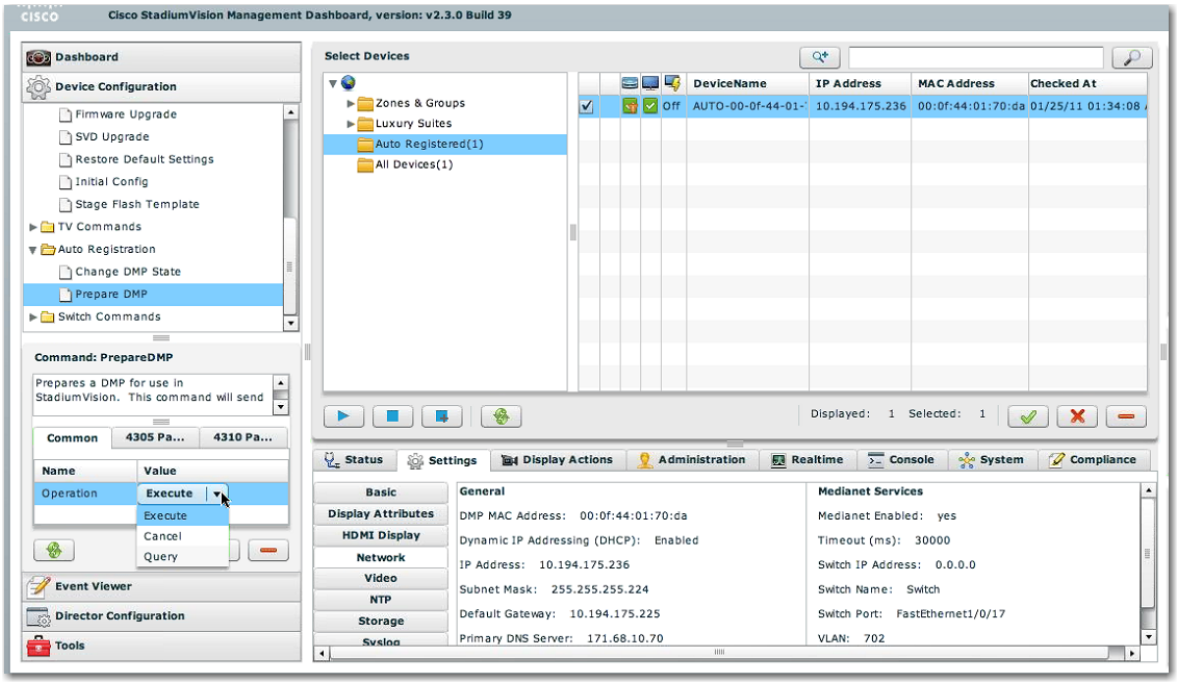


You can view detailed DMP Status on the **Status** tab in the Device Details Status window.

Querying the Auto Provisioning Status

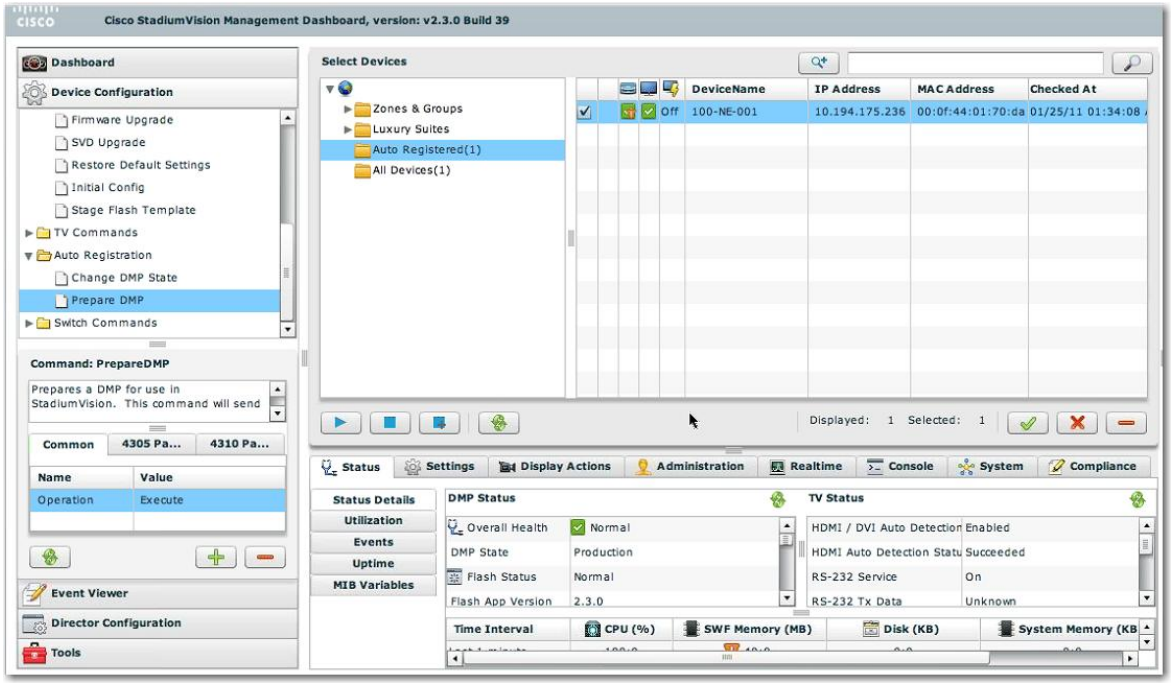
1. Select **Device Configuration > Auto Registration**.
2. Click **Provision DMP**.
3. In the command parameters area, click on Value and select Query from the Value drop down menu.

Figure 25. Querying the Auto Provisioning Status

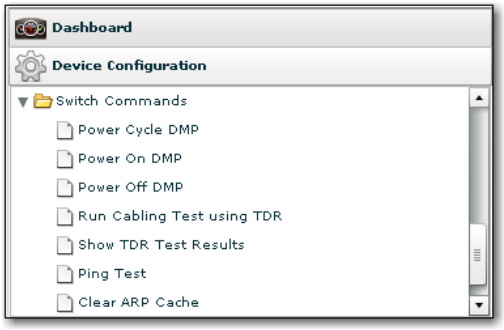


When you run the Query command on a device, the **Console** tab will display which provisioning step has been completed for the selected device.

Figure 26. Viewing the DMP State (Production)



Managing Switch-to-DMP Connections



The **Switch Commands** in the Device Configuration drawer help you manage switch-to-DMP connections. These commands operate on the selected DMP(s) but are executed on the Layer 2 switch to which the DMPs are connected. This is in contrast to the other Dashboard commands which are sent directly to the selected DMPs.

Using the Switch commands on the Dashboard you can:

- Identify a switch port and invoke a TDR test for that port to confirm the integrity of the port and cable.
- Retrieve the status for a specific switch port and confirm the administrative and operational state.
- Cycle PoE power on a specific switch port and reboot a DMP that is not responding.
- Clear the ARP table for a specific IP address and restore connectivity to a DMP that was recently replaced.
- Ping a DMP from the switch to which it is directly connected. This helps you to determine if there are any local connectivity issues.

The Dashboard will attempt to process the Switch Commands only to those DMPs for which the Dashboard can determine a switch-to-DMP connection. If this connection cannot be determined, an error message displays on the **Console** tab in the Device Details panel.

Switch CLI Commands

When you send a switch command, the Dashboard uses the mapping information to send the CLI commands to the switch to which the selected DMP is connected.

Table 5 the CLI commands sent by the Dashboard to the switch for each of the Switch Commands. In this example the DMP is connected to interface Gi2/17 on switch sjc_29_lab_gw1.

DMP Name = Test_DMP

DMP IP Address = 10.10.1.1

Switch connection = sjc_29_lab_gw1

Interface = Gi2/17,

Note: The Dashboard uses Telnet protocol to connect to the switch with the supplied credentials.

Table 5. CLI Commands sent by the Dashboard

Command	CLI Commands Sent to Switch sjc_29_lab_gw1
Power Cycle DMP interface	Gi2/17 shutdown no shutdown
Run cabling Test	using TDR test cable-diagnostics TDR interface Gi2/17
Show TDR Test Results	show cable-diagnostics TDR interface Gi2/17
Ping Test ping	10.10.1.1
Clear ARP Cache	clear arp-cache interface Gi2/17

Power Cycling a DMP

Send the **Power Cycle DMP** switch command to cycle PoE (Power over Ethernet) on the switch port to which the DMP is connected. This will reboot the DMP. The DMP power cycle uses PoE and sends the shut CLI command to the appropriate switch / port based on selected DMP(s).

DMP 4305Gs require a special adapter to enable them to properly process the PoE command.

Power On/Power Off the DMP

Send the Power On or Power Off command to turn the power on or off on the selected DMP(s). These commands use Power over Ethernet and send the shut CLI command to the appropriate Switch / port based on selected DMP(s).

Running a Cable Test Using TDR

Send the **Run Cable Test Using TDR** switch command to invoke a Time Domain Reflectometer (TDR) test for a specific switch port. This test helps you to confirm the integrity of the port and cable connection to the DMP. Suitable CLI is sent to the switch to which the DMP is connected.

Showing TDR Test Results

Send the **Show TDR Test Results** switch command to display the results of the previously executed TDR Test command.

Sending a Ping from the Switch to the DMP

Send the **Ping Test** switch command to send a ping to a DMP from the switch to which it is directly connected. The output from the switch as a result of the ping test is displayed on the **Console** tab below the DMP Details window.

The ping test results display information about the DMP-to-switch interface. This helps you determine if there are any local connectivity issues.

Clearing the ARP Cache

Send the **Clear ARP Cache** switch command to clear the entire ARP cache on the interface to which the DMP is connected. This is useful to restore connectivity to a DMP that was recently replaced. This command sends the Clear ARP Cache interface CLI to the switch to which the DMP is connected.

Adding a Command to the Device Configuration Drawer in the Management Dashboard

1. SSH into the SVD and go to directory:

   ```
   /opt/apache-tomcat-6.0.18/webapps/StadiumVision/WEB-INF/classes
   ```

2. Open the file with : sudo vim HPMCommands.xml
3. Search for : "TV Commands", and add your command xml syntax.

For example: If you would like to make a “hardcoded” volume command for 10% you would add the following:

```
       <command name="SetVolume10" category="TV Commands"
commandGroup="SVCommand"
                     authorities="ROLE_ADMINISTRATOR, ROLE_SUPPORT"
              commandDisplayName="Set Volume 10" hasArgs="0"
              requiresReboot="0"
              requiresSave="0">
              <description>This command sets the output volume level to
10%. </description>
              <argument type="common" readOnly="true">
                            <name>type</name>
                            <value>setVolume</value>
              </argument>
              <argument type="common" readOnly=”true”>
                            <name>leftVolume</name>
                            <value>10</value>
              </argument>
              <argument type="common" readOnly=”true”>
                            <name>rightVolume</name>
                            <value>10</value>
              </argument>
       </command>
```

If you want Volume 80%, change the value from 10 to 80 in the above.

Important! Restart the Tomcat server after you have made changes in the HPMCommands.xml file.

Here is an example of the **Device Configuration > TV commands** list after adding the new command: