



Cisco StadiumVision Director Proof of Play

First Published: November 4, 2011

Revised: November 23, 2015

Proof of play is the ability to generate a report of which advertisements were played during an event. Once a proof-of-play file has been set up, Cisco StadiumVision Director collects and collates proof-of-play data from the Cisco DMPs and displays it in a proof-of-play report on the Control Panel. You can export the data to a Tab Separated Value (TSV) file and then use a spreadsheet application such as Microsoft Excel to generate reports from these TSV files.

This document describes how to enable proof of play, create tags for proof of play content, generate reports, export TSV files, and troubleshoot proof of play processing.

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Prerequisites for Proof of Play

Before you use Proof of Play, be sure that the following requirements are met:

- You have a Cisco StadiumVision Director user account that is configured for an administrator role.
- Your content meets the requirements for support of proof of play records. See also the [“Restrictions for Proof of Play” section on page 2](#).

Restrictions for Proof of Play

When using Cisco StadiumVision Director Proof of Play, consider the following restrictions:

- Content placed in the first event state might not appear in proof of play records. Therefore, it is a good idea to have the first state in the event script be an “idle state” that serves the sole purpose of allowing the DMPs to start.
- When you use Proof of Play content in your playlist, and especially when your PoP content is included near or up to the end of the playlist, you should define a final script state (without any PoP content) that runs for at least 60 seconds so that all PoP data has time to be captured by Cisco StadiumVision Director. This last event state is commonly set up to turn off the displays in the venue.
- In previous releases of Cisco StadiumVision, proof of play for playlists of two items did not function as expected—this has been corrected in Cisco StadiumVision Release 2.4. However, there are some caveats for playlists that have items with zero duration which might still affect proof of play (see the “Limitations and Restrictions” section of the [Release Notes for Cisco StadiumVision Director Release 2.4](#)). Otherwise, typical playlists for one or more items works as expected for proof of play.
- Cisco StadiumVision Director is unable to generate proof of play for an event if proof of play is turned on for a Dynamic Menu Board playlist. Therefore, before generating a proof of play report, be sure to turn off proof of play for all Dynamic Menu Board playlists.
- After the Flash template automatically restarts, a script must run for a minimum of 90 seconds for proof of play data to be available. It can take 50 seconds to one minute for the Flash to completely restart.

Information About Proof of Play

This section includes the following topics:

- [Change Summary, page 2](#)
- [Content Naming and Tagging, page 4](#)
- [Data Storage, page 4](#)
- [Data Backup, page 5](#)
- [Summary Proof of Play Reporting, page 5](#)
- [TSV File Format, page 6](#)
- [Proof of Play Reports, page 6](#)
- [Proof of Play Workflow Overview, page 9](#)
- [Proof of Play Interface Overview, page 9](#)

Change Summary

The following changes are made to proof of play support in Cisco StadiumVision Director Release 2.4:

- The exported data files were changed from comma-delimited to tab-delimited format for support of internationalization (i18N).



Note The file names continue to use the .csv file extension, but the data is in Tab Separated Values (TSV) format.

- The names of the supported file types have been changed from “Generic” to “Detailed” and from “KORE” to “Summary.”
- The following file names have been changed:
 - detailed.csv (renamed from genData.csv for the generic report in prior releases)
 - summary.csv (renamed from koreData.csv for the KORE report in prior releases)
- The raw proof of play data gathered from devices is stored in the /var/sv/pofp/raw directory (was /var/sv/pofp/dbDump in prior releases).
- The following register changes have been made:
 - EnableProofOfPlay—Set to a value of “true,” which enables proof of play globally for the system by default.
 - PofPDaysToKeep—Obsolete.
- To support localization, the column names have been changed to the format “locale_name (English Name).”
- [Table 1](#) describes changes made to some of the proof of play report column headings by report type using the English version of the locale headings:



Note

When you have installed a supported language pack for Cisco StadiumVision Director, the heading name in the “locale_name” portion of the column heading will be shown in that language.

Table 1 Proof of Play Report Column Heading Changes in Release 2.4

Column Heading in Release 2.3 and Earlier Releases	Column Heading in Release 2.4: locale_name (English Name)	Report Type
Cluster ID	Cluster ID(Cluster_ID)	detailed
Content Tags_PoP	Content Tags_PoP(Content_Tags_PoP)	detailed, summary
Device Count	Device Count(Device_count)	summary
Device Name	Device Name(Device_Name)	detailed
Event Date	Event Date(Event_Date)	detailed, summary
MAC Address	MAC(MAC)	detailed
Playlist Name	Playlist Name(Playlist_Name)	detailed, summary
Playlist Number	Playlist Number(Playlist_Number)	detailed
PlaylistNum	Playlist Number(Playlist_Number)	summary
Receive Time	Receive Time(Receive_Time)	detailed
Script Name	Script Name(Script_Name)	detailed, summary
Seq Number	Seq Number(Seq_Number)	detailed
SeqNum	Seq Number(Seq_Number)	summary
Spot ID	Spot ID(Spot_ID)	detailed

Table 1 Proof of Play Report Column Heading Changes in Release 2.4 (continued)

Column Heading in Release 2.3 and Earlier Releases	Column Heading in Release 2.4: locale_name (English Name)	Report Type
State Name	State Name(State_Name)	detailed, summary
State Start	State Start(State_Start)	detailed, summary
Time Played	Time Played(Time_Played)	detailed, summary

Content Naming and Tagging

Use of a consistent naming strategy makes it easier to generate and manage reports. For example, prefixing region 2 content file names with “R2” (for example, R2_filename.jpg) allows you to generate reports on region 2 content since filters can be applied to look for “R2” at the head of the string. Other types of content should have unique identifiers like “FS” for full screen content, and so on.

Additionally, associating proof of play tags to content provides excellent metrics for reporting and filtering. Tag names are free-form so they can reflect an advertiser account number, campaign identifier, or other reporting metric. These tags will appear in the summary TSV file. For more information about tagging and the naming guidelines for tags, see the [“Creating Tags for Content in Proof of Play Records” section on page 14](#).

Naming of groups and zones is equally important as they will be directly reflected in the report. A zone name of “Concourses” with group names of “Main Hall” and “Section 101” make for easier reading within the report. This also makes it possible to generate a useful proof of play report without detailed knowledge of how the system is configured.

Data Storage

StadiumVision gathers logs from all Cisco DMPs after the event. These logs contain, among other things, the content that was played during the event and when it was played for example, before the event, during the event, and after the event.

All proof of play data files are stored in the /var/sv/pofp/data/"script cookie" directory, with the following names:

- detailed.csv (renamed from genData.csv in prior releases)
- summary.csv (renamed from koreData.csv in prior releases)
- process.log
- rawData.csv
- snapshot.XML
- states.XML



Note

Although the file names use the .csv extension, the default format uses a tab delimiter for data within the file in Cisco StadiumVision Director Release 2.4.

Raw Data Files

The raw proof of play data gathered from devices is stored in the /var/sv/pofp/raw directory.

**Note**

The files in this directory are removed from the disk after 60 days.

Data Backup

**Caution**

Proof of play raw data is not part of the backup process. Only proof of play report data that has been generated to the /var/sv/pofp/data directory (indicated by the green dot icon beside the script) is backed up. Therefore, it is very important that you transfer PoP messages from the raw data directory to "data/<cookie>" directory as indicated by a green dot next to the event, before 60 days of the event, after which time PoP messages in the raw directory will be deleted.

Summary Proof of Play Reporting

This section includes information about the Summary type of proof of play reports:

- [Compatibility for KORE Processing, page 5](#)
- [Working With Summary Data, page 5](#)

Compatibility for KORE Processing

To support KORE data processing, Cisco StadiumVision Director aggregates proof of play data across DMPs and generates reports that show information based on total payout per sponsor rather than individual payouts per DMP.

Because Cisco StadiumVision Director exports data in TSV format as the default for release 2.4, you will need to either change the Cisco StadiumVision Director default configuration for proof-of-play reports, or open the data in a spreadsheet application and save it as CSV for use by KORE. For more information, see the [“TSV File Format” section on page 6](#).

**Note**

Localization data will not display well in CSV format.

Working With Summary Data

The summary file is the result of post processing the main proof of play file and condensing it by collapsing multiple entries with the same time played stamp into a single record or row. Once the data set is in this format, it is much more manageable (around 5-10 MB for the average event) and can be further manipulated in Microsoft Excel.

The advantage of using desktop software like Microsoft Excel is that it provides the ability to share, modify and distribute the information to others depending on their needs. By leveraging the inherent functionality of the Pivot Table feature in Excel, many views into the summary TSV data can be accomplished. For example you can set filters to view:

- Only the game states that represent the time period of interest.
- When and where content played by content file name and any included tags.
- The total number of plays for a piece of content throughout the venue.

- The total number of plays for a piece of content by specific Group or Zone association.
- The cumulative time a piece of content was displayed throughout the venue.
- The cumulative time a piece of content was displayed by a specific Group or Zone association.

TSV File Format

Beginning in Cisco StadiumVision Director Release 2.4, the format of the data exported for proof of play reports is formatted as tab separated values rather than comma separated values (CSVs) to support internationalization (i18N).



Note

Although the default delimiter for data within the file is a tab rather than a comma, the file name still uses the .csv extension in the file name.

If you are using a data application (such as KORE) that requires a comma-delimited format, then you can change a register in Cisco StadiumVision Director to set a comma delimiter as the default format for proof of play reports. For more information, see the [“Changing the Register to Support Comma-Delimited Data Format”](#) section on page 11.

You can also open the file in a spreadsheet as a tab-delimited file, and then save the data as a CSV file for use in another application.



Note

Localization data will not display well in CSV format.

Proof of Play Reports



Note

In Cisco StadiumVision Director Release 2.4, the names of the supported file types have been changed from “Generic” to “Detailed” and from “KORE” to “Summary.”

Cisco StadiumVision Director supports two types of file reports:

- Detailed—Creates one record for each playlist that was played on a DMP.
If a single playlist was played across 20 DMPs, the generic TSV file will show an entry for each DMP.
- Summary—Aggregates proof of play data across DMPs and generates reports that show information based on total payout per sponsor, rather than individual payouts per DMP.
If a single playlist was played across 20 DMPs, the file will show only one entry, and the Device Count field displays the number of DMPs that played that advertisement.

Report Fields for a Detailed Proof of Play File

Figure 1 shows an example of the output format for a detailed proof of play report.

Figure 1 Sample Detailed Proof of Play File

	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	
1	Script Name(Scri	Device Name(Dev	MAC(MAC)	Group(Group	Zone(Zone)	State Name(St	Action(Ac	Content(C	Playlist Name(Playl	ist N	Time Play	Content T	Airtime(A	Receive T	Region(Re	Playl
2	test_combo	my4305_207	00:0f:44:00:87:3a	4305_group	4305_zone	New State 2		011.jpg	tl_playlist_num11_20	10	11	1.32E+12			2	
3	test_combo	my4305_207	00:0f:44:00:87:3a	4305_group	4305_zone	New State 2		012.jpg	tl_playlist_num11_20	10	12	1.32E+12			2	
4	test_combo	my4305_207	00:0f:44:00:87:3a	4305_group	4305_zone	New State 2		013.jpg	tl_playlist_num11_20	10	13	1.32E+12			2	
5	test_combo	my4305_207	00:0f:44:00:87:3a	4305_group	4305_zone	New State 2		014.jpg	tl_playlist_num11_20	10	14	1.32E+12			2	
6	test_combo	my4305_207	00:0f:44:00:87:3a	4305_group	4305_zone	New State 2		015.jpg	tl_playlist_num11_20	10	15	1.32E+12			2	
7	test_combo	my4305_207	00:0f:44:00:87:3a	4305_group	4305_zone	New State 2		016.jpg	tl_playlist_num11_20	10	NA	1.32E+12			2	

Table 2 describes the fields in a generic proof of play report.

Table 2 Detailed Proof of Play Report Field Descriptions

Field	Description
Event_Date	Date of event.
State_Start	Timestamp for the start of the event.
Script_Name	Name of the script that generated the PoP report.
MAC	MAC address for the DMP that played the content.
Device_Name	Name of the DMP.
Zone	Zone in which the DMP belongs.
Group	Group in which the DMP belongs.
State_Name	Event script state when the ad played.
Action	Commands to the DMP attached display (reserved).
Content	File name of the content.
Playlist_Name	Name of playlist for the content.
Time_Played	Length of time the ad played out.
Content_Tags_PoP	Content tags assigned to the content.
Airtime	Actual time that the ad played out.
Receive_Time	Interpolated airtime timestamp by using received time (obsolete)
Region	Region info in each record of individual content play-out TemplateName plus RegionName.
Playlist_Number	Item number in the playlist.
Seq_Number	Sequence number beginning at event start increment by ad play.
Cluster_ID	Identifies the cluster of DMPs that are showing the same screen (internal use only).
Spot_ID	For internal use only.

Report Fields for a Summary Proof of Play File

Figure 2 shows an example of the output format for a summary proof of play report.

Figure 2 Sample Summary Proof of Play File

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	
1	Content(Co	Event Date	Event State	Script Name	Device Co	Group	Group	Zone	Zone	State Name	Action	Playlist Name	Time Played	Content Tags	Airtime	Receive Time	Region	Playlist Number	Seq Number
2	011.jpg	2011-09-15T20:11:09-1'	test_singl		1	4310_G1	all_4310_2	state1 Copy 1		tl_playlist	20	11	9/15/2011 22:29			2	0		
3	011.jpg	2011-09-15T20:11:09-1'	test_singl		1	4310_G1	all_4310_2	state1 Copy 1		tl_playlist	20	11	9/15/2011 22:33			2	0		
4	011.jpg	2011-09-15T20:11:09-1'	test_singl		1	4310_G1	all_4310_2	state1 Copy 1		tl_playlist	20	11	9/15/2011 22:36			2	0		
5	012.jpg	2011-09-15T20:11:09-1'	test_singl		1	4310_G1	all_4310_2	state1 Copy 1		tl_playlist	20	12	9/15/2011 22:30			2	1		
6	012.jpg	2011-09-15T20:11:09-1'	test_singl		1	4310_G1	all_4310_2	state1 Copy 1		tl_playlist	20	12	9/15/2011 22:33			2	1		

Table 3 describes the fields in a Summary proof of play report.

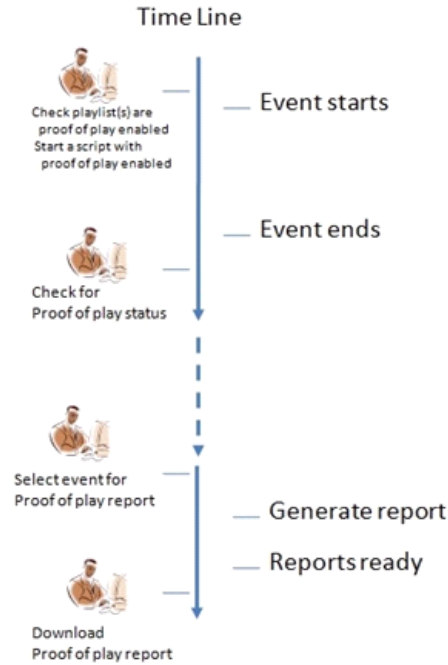
Table 3 Summary Proof of Play Field Descriptions

Field	Description
Content	File name of the content.
Event_Date	Date of event.
State_Start	Timestamp for the start of the event.
Script_Name	Name of event script that played.
Device_Count	Number of DMPs on which the content was played.
Group	Group in which the DMP belongs.
Zone	Zone in which the DMP belongs.
State_Name	Name of the event state that was active when the content was displayed.
Action	Commands to the DMP attached display (reserved).
Playlist_Name	Name of the content playlist.
Time_Played	How long the content played.
Content_Tags_PoP	Tags assigned to the content.
Airtime	Actual time that the ad played out.
Receive_Time	Interpolated airtime timestamp by using received time (obsolete).
Region	Region of the screen template where the content played.
Playlist_Number	Item number in the playlist.
Seq_Number	Sequence number beginning at event start increment by ad play.

Proof of Play Workflow Overview

Figure 3 shows the timeline for the proof of play workflow from preparing the playlists to downloading the final reports.

Figure 3 *Timeline for Proof of Play Workflow*



Proof of Play Interface Overview

The Proof of Play screen in the Cisco StadiumVision Control Panel displays the status of the collection of data required to demonstrate proof of play. Each entry in the window represents an event.

The Proof of Play screen displays the event name, the start and end time of the event, whether the event has finished, and whether the raw data was converted to a TSV file (Figure 4).

Figure 4 Proof of Play Screen

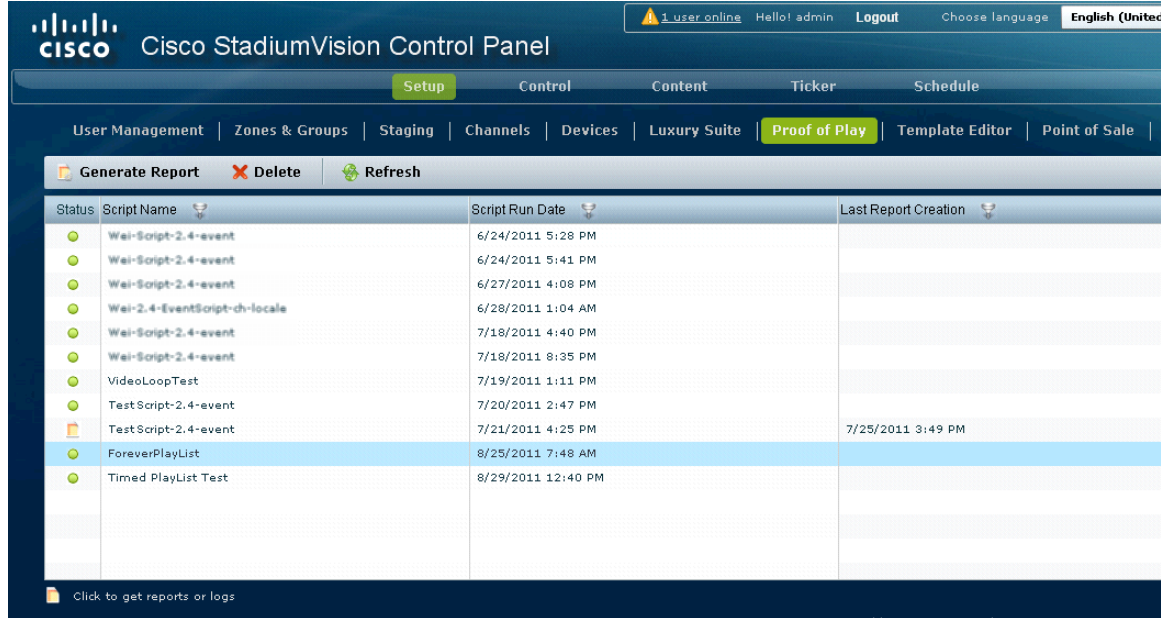




Table 4 describes the icons used to display the status of proof of play data for scripts:

Table 4 Script Status Icons for Proof of Play

Icon	Description
	Indicates that proof of play raw data is available for the script and a report can be generated.
	Indicates that the raw data has been generated into a TSV report file and is ready for download.

How to Configure Proof of Play

This section includes the following tasks:

- [Changing the Register to Support Comma-Delimited Data Format, page 11](#) (optional)
- [Enabling Proof of Play, page 11](#) (required)
- [Creating Tags for Content in Proof of Play Records, page 14](#) (optional)
- [Generating a Proof of Play Report, page 16](#) (required)
- [Downloading Proof of Play Reports, page 17](#) (required)

Changing the Register to Support Comma-Delimited Data Format

By default, Cisco StadiumVision Director Release 2.4 exports data in tab-delimited format even though the filenames still use the .csv extension. If you have other data application requirements where comma-delimited values must be supported, you can change the register to support comma-delimited format globally in Cisco StadiumVision Director.

To change the register to support comma-delimited data format, complete the following steps:

-
- Step 1** Log into Cisco StadiumVision Director as an administrator.
- Step 2** From the Cisco StadiumVision Director main menu, click **Management Dashboard**.
The Cisco StadiumVision Management Dashboard is opened in a new window.
- Step 3** From the Dashboard drawers, select **Tools > Advanced > Registry**.
- Step 4** In the Registry Data box, go to the “pop.useCommaDelimiter” register.
- Step 5** If the value is “false” (default), select the box and type **true**.
- Step 6** Click **Apply**.
-

Enabling Proof of Play

This section includes the following topics:

- [Enabling Proof of Play Globally, page 11](#) (as required)
- [Enabling a DMP to Generate Proof of Play Messages, page 12](#) (required)
- [Enabling Proof of Play for a Playlist, page 12](#) (as required)
- [Enabling Proof of Play for a Script, page 13](#) (required)

Enabling Proof of Play Globally

By default in Cisco StadiumVision Director Release 2.4, proof of play support is enabled globally for the system with the EnableProofOfPlay register set to a value of “true.” If this register has been changed from the default, then you need to enable proof of play globally.

To enable proof of play globally in Cisco StadiumVision Director, complete the following steps:

-
- Step 1** Log into Cisco StadiumVision Director as an administrator.
- Step 2** From the Cisco StadiumVision Director main menu, click **Management Dashboard**.
The Cisco StadiumVision Management Dashboard is opened in a new window.
- Step 3** From the Dashboard drawers, select **Tools > Advanced > Registry**.
- Step 4** In the Registry Data box, go to the EnableProofOfPlay register.
- Step 5** If the value is “false,” select the box and type **true**.
- Step 6** Click **Apply**.

Step 7 Restart Cisco StadiumVision Director.

Enabling a DMP to Generate Proof of Play Messages

To use Proof of Play, you need to enable the Syslog for the DMP and also set the Syslog Collector IP Address. This address is typically the IP address of Cisco StadiumVision Director. By default, Syslog is disabled.

To verify DMP configuration for proof of play messages, complete the following steps:

- Step 1** Log into Cisco StadiumVision Director as an administrator.
 - Step 2** From the Cisco StadiumVision Director main menu, click **Management Dashboard**.
The Cisco StadiumVision Management Dashboard is opened in a new window.
 - Step 3** From the Dashboard drawers, select **Monitor and Status > All Devices**.
 - Step 4** Select a DMP from the device list.
 - Step 5** At the bottom of the box, click the **Settings** tab.
 - Step 6** To view the current syslog configuration for the selected DMP, click **Syslog**.
For proof of play support, the configuration should be “Enabled” and the IP address should match the IP address of Cisco StadiumVision Director.
-

To enable a DMP to generate proof of play messages, complete the following steps:

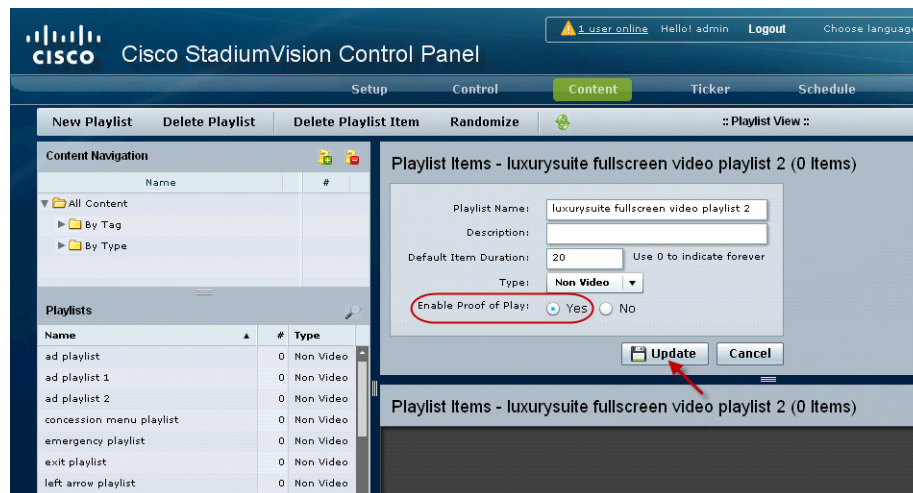
- Step 1** Log into Cisco StadiumVision Director as an administrator.
 - Step 2** From the Cisco StadiumVision Director main menu, click **Management Dashboard**.
The Cisco StadiumVision Management Dashboard is opened in a new window.
 - Step 3** From the Dashboard drawers, select **DMP and TV Controls > DMP Commands > Update MIB**.
 - Step 4** In the Update MIB command parameters box, add the following Name:Pair values:
 - init.syslog: on
 - init.syslog_collector: <IP address of Cisco StadiumVision Director server>
 For more information about updating MIB settings, see the [Cisco StadiumVision Management Dashboard Device Configuration Commands](#) guide.
 - Step 5** Select the checkboxes for the DMPs that you want to enable.
 - Step 6** Click the play button to send the command to the selected DMPs.
 - Step 7** Verify the DMP configuration to see that the appropriate values are set.
-

Enabling Proof of Play for a Playlist

Proof of play for each playlist is enabled by default. If the playlist default has been changed, you need to re-enable it to support proof of play.

To enable proof of play for a playlist, complete the following steps:

- Step 1** Log into Cisco StadiumVision Director as an administrator.
- Step 2** From the Cisco StadiumVision Director main menu, click **Control Panel**.
The Cisco StadiumVision Control Panel is opened in a new window.
- Step 3** Click **Content**.
- Step 4** Select the playlist that you want to enable.
- Step 5** Select **Yes** for the “Enable Proof of Play” setting, as shown in the following example:



- Step 6** Click **Update**.

To support proof of play for a playlist, the associated script must also be enabled for proof of play. For more information, see the [“Enabling Proof of Play for a Script”](#) section on page 13.

Enabling Proof of Play for a Script

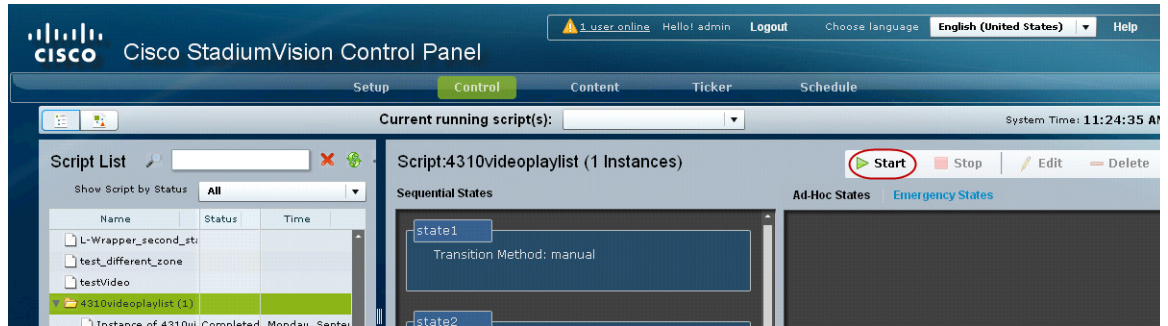
To limit the amount of data gathered by Cisco StadiumVision Director, proof of play is enabled by default for each playlist, but it is disabled for event scripts. To generate proof of play data, you must enable it at both levels.

For more information about playlist proof of play, see the [“Enabling Proof of Play for a Playlist”](#) section on page 12.

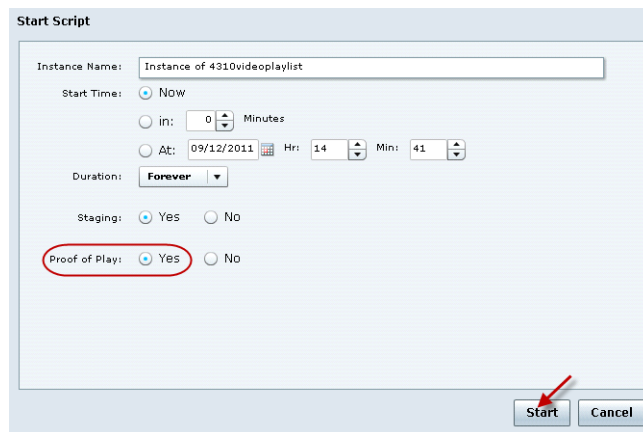
To enable proof of play for a script, complete the following steps:

- Step 1** Log into Cisco StadiumVision Director as an administrator.
- Step 2** From the Cisco StadiumVision Director main menu, click **Control Panel**.
The Cisco StadiumVision Control Panel is opened in a new window.
- Step 3** Click **Control**.

Step 4 Select the script that you want to enable and click **Start**, as shown in the following example:



Step 5 In the Start Script dialog box, select **Yes** for the “Proof of Play” setting, as shown in the following example:



Step 6 Click **Start**.

Creating Tags for Content in Proof of Play Records

Creating tags for content in proof of play records allows you to attach a label to a proof of play record that can be used to identify that record. For example, you can tag the records with a label that identifies the advertiser or sponsor.

Guidelines

Tags must be created according to the following guidelines:

- The name uses the following naming convention: `<tag name>_PoP`, where `<tag name>` is the name for your proof of play label, and the “_PoP” suffix is required to designate the label for proof of play processing.



Note The “_PoP” suffix does not appear in any proof of play reports. Only the `<tag name>` is shown.

- The following characters are not supported in tag names: / ? < > \ : * | "
- Content in multiple playlists can use the same tag. The number of playlists that have content assigned to a tag displays under the # column in the Content Navigation window next to the tag name.



Tip You can display the playlists that have content assigned to a tag, by clicking the tag name in the Content Navigation box.

To create tags for proof of play records, complete the following steps:

- Step 1** Log into Cisco StadiumVision Director as an administrator.
- Step 2** From the Cisco StadiumVision Director main menu, click **Control Panel**.
The Cisco StadiumVision Control Panel is opened in a new window.
- Step 3** Click **Content**.
- Step 4** In the Playlist box, select the playlist that has the content that you want to tag.
- Step 5** In the Content Navigation box, click the arrow next to the All Content folder to display its sub-folders.
- Step 6** Click the arrow next to the By Tag folder to open it.
- Step 7** Click the Add New Tag icon (folder with green plus sign), as shown in the following example:

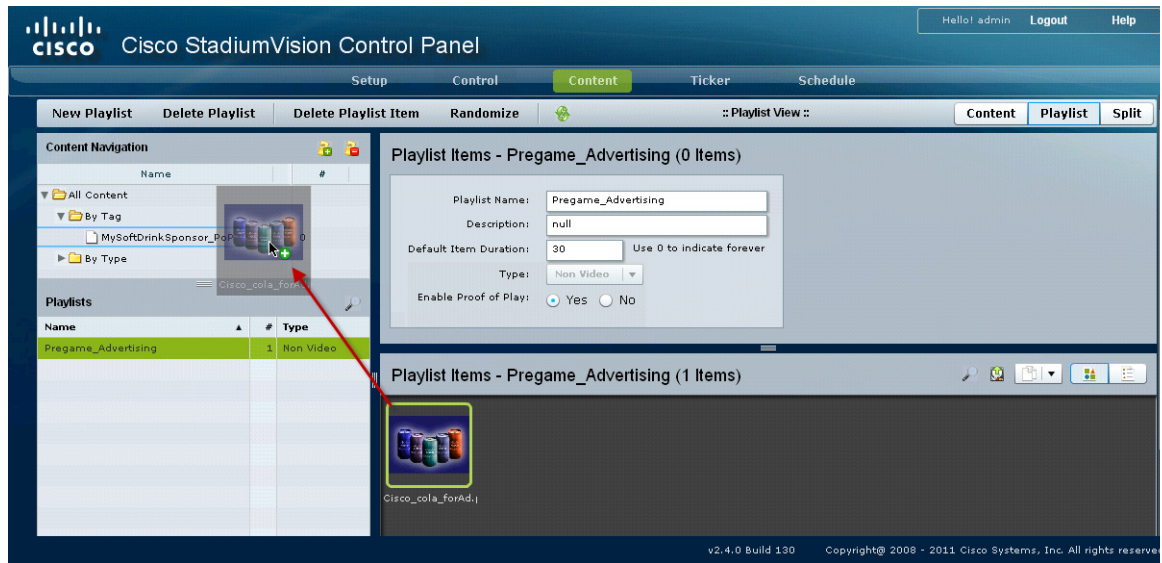
A New Tag entry displays under the By Tag folder.

- Step 8** Type a name according to the guidelines for proof of play tags.



Tip Be sure to include the “_PoP” suffix in your tag name.

- Step 9** From the Playlist items window, click and drag the content you want to assign onto the tag you just created in the Content Navigation window, as shown in the following example:



The content in the playlist is now labeled with the tag and the number in the # column increments.

Generating a Proof of Play Report

A green status icon is displayed beside the script name when proof of play raw data is available for report generation.

Guidelines

Before you generate a proof of play report, consider the following guidelines:

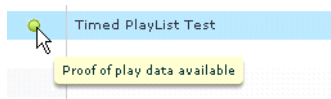
- It is recommended that you generate Proof of Play reports within 14 days of an event.
- Proof of play records are not available until the script completes.
- While the proof of play report is processing, there is a delay between the end of an event and the availability of the reports in the Proof of Play screen. Click the refresh button before generating and viewing a proof of play report to be sure the latest report status is displayed.
- Depending upon the amount of data you have in the script, it may take from 10 seconds to several minutes to generate the report.
- For zero-duration non-video items in a playlist, the proof of play record will show the airtime when the item started to play and the Duration as 0 (zero).
- Cisco StadiumVision Director is unable to generate proof of play for an event if proof of play is turned on for a Dynamic Menu Board playlist. Therefore, before generating a proof of play report, be sure to turn off proof of play for all Dynamic Menu Board playlists.

To generate a proof of play report, complete the following steps:

- Step 1** From the Cisco StadiumVision Control Panel, click **Setup > Proof of Play**, as shown in the following example:

Status	Script Name	Script Run Date	Last Report Creation
●	Wei-Script-2.4-event	6/24/2011 5:28 PM	
●	Wei-Script-2.4-event	6/24/2011 5:41 PM	
●	Wei-Script-2.4-event	6/27/2011 4:08 PM	
●	Wei-2.4-EventScript-ch-locale	6/28/2011 1:04 AM	
●	Wei-Script-2.4-event	7/19/2011 4:40 PM	
●	Wei-Script-2.4-event	7/18/2011 8:35 PM	
●	VideoLoopTest	7/19/2011 1:11 PM	
●	TestScript-2.4-event	7/20/2011 2:47 PM	
●	TestScript-2.4-event	7/21/2011 4:25 PM	7/25/2011 3:49 PM
●	ForeverPlayList	8/25/2011 7:48 AM	
●	Timed PlayList Test	8/29/2011 12:40 PM	

Step 2 Select an event script with a green status icon indicating that proof of play raw data is available.



Step 3 Click **Generate Report**.

The date and time of the report generation will display in the Last Report Creation column. Also, the Generate Report icon will display in the Status column while the file is being generated.

For long events (several hours), it may take a few moments to finish compiling the report. Click **Refresh** to get the latest update.

Downloading Proof of Play Reports

A yellow report status icon is displayed beside the script name when proof of play raw data has been generated into a TSV report file and is ready for download.



Note

In Cisco StadiumVision Director Release 2.4, proof of play reports use tab-delimited format but still use the .csv file extension.

To download proof of play reports, complete the following steps:

Step 1 From the Cisco StadiumVision Control Panel, click **Setup > Proof of Play**.

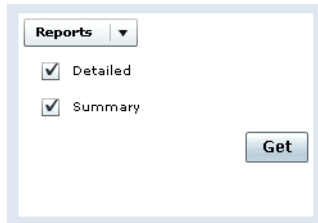
Step 2 Click the yellow report icon beside the script whose proof of play report has been generated, and that you want to download.

Step 3 In the Proof of Play report generation confirmation box, click **Yes**.

- Step 4** In the script report selection dialog, select the checkbox for the type of report that you want to download and click **Get** as shown in the following example.



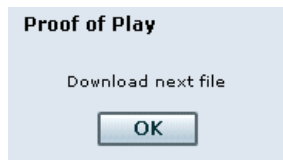
Tip You can select both Detailed and Summary report types at the same time.



- Step 5** In the “Select location for download” dialog box, select the location and file name that you want to use to save the Detailed report. Click **Save**.

If you have downloaded more than one report type, the Detailed report will be downloaded first and then a dialog box will appear for you to confirm download of the Summary report.

- Step 6** Click **OK** when prompted to download the next file:



- Step 7** In the “Select location for download” dialog box, select the location and file name that you want to use to save the Summary report. Click **Save**.

- Step 8** Go to your local drive, navigate to the location where you saved the reports, and open the tab-delimited files with .csv extension in Microsoft Excel.

For information about how to open these tab-delimited .csv files in Microsoft Excel, see the [“Converting a Tab-Delimited Proof of Play Report to Columns in Microsoft Excel”](#) section on page 19.

How to Work With Proof of Play Reports

This section includes the following tasks:

- [Converting a Tab-Delimited Proof of Play Report to Columns in Microsoft Excel, page 19](#)
- [Working With Pivot Tables, page 19](#)

Converting a Tab-Delimited Proof of Play Report to Columns in Microsoft Excel

To convert a tab-delimited proof of play report to columns in Microsoft Excel, complete the following steps:

-
- Step 1** Open the .csv proof of play report file in Microsoft Excel.
- Step 2** Click the top of the first column of data to select that column of cells.
- Step 3** From the menu bar, click the **Data** tab.
- Step 4** Click **Text to Columns**.
The Convert Text to Columns Wizard - Step 1 of 3 dialog box opens.
- Step 5** With the Delimited option selected (default), click **Next**.
The Convert Text to Columns Wizard - Step 2 of 3 dialog box opens.
- Step 6** With the Tab checkbox selected in the Delimiters box (default), click **Next**.
The Convert Text to Columns Wizard - Step 3 of 3 dialog box opens .
- Step 7** With the General checkbox selected in the Column Data Format box (default), click **Finish**.
-

Working With Pivot Tables

This section describes some advanced reporting features that you can use to work with your proof of play data in Pivot Tables in Microsoft Excel.

It includes the following sections:

- [Generating Pivot Table Reports, page 19](#)
- [Applying Filters to Pivot Tables, page 20](#)

Generating Pivot Table Reports

To extract some meaningful information from the proof of play data, you can create a PivotTable® report in Microsoft® Excel. A PivotTable is an interactive table that automatically extracts, organizes, and summarizes your data. You can control how Microsoft Excel summarizes the data—for example, by sum, average, or count—without entering a single formula.

In a PivotTable report, you can quickly:

- Add or remove categories of data.
- Rearrange the data.
- View a subset of the data.
- Show the details you want.

The example_pivot.xlsx at the link below provides an example of a proof of play file that was created using the PivotTable® report functionality in Microsoft® Excel:

https://dl.dropboxusercontent.com/u/15928784/PoP/example_pivot.xlsx

When you open the `example_pivot.xlsx` file, there are four tabs:

- Total Plays in Venue tab—Displays a basic play count of each ad listed by content filename and any associated content tags, detailed by group and zone.
- Summarized Play Time tab—Adds a “Played ...” column to each group and zone. This column takes the number of plays and multiplies it by the length of time the content played to establish a total amount of time the content aired per group and zone.
- Content Time Stamps tab—Lists all the timestamps of proof of play per content filename.
- Example Data Set tab—Default view which shows the entire proof of play data set.



Note The sample data in this file is from an earlier Cisco StadiumVision Director release.

Applying Filters to Pivot Tables

This section describes how you can adjust the proof of play reporting view by applying filters to a PivotTable. It includes the following sections:

- [Timestamp Filtering, page 20](#)
- [Content Filtering, page 21](#)
- [Group and Zone Filtering, page 21](#)

Timestamp Filtering

Proof of play reporting starts when the event script begins—usually before the event—and ends well after the event. Therefore, you might need to make some adjustments to the data to retrieve an accurate accounting of plays during the actual event versus the timeframe the event script was running. You can do this by setting a filter in the PivotTable so that the proof of play report displays only proof of play data for content that displayed during the actual event. In the `example_pivot.xlsx` file, you can set this filter in cell B2.

In [Figure 5](#), the filter is has been adjusted to remove play information outside the duration of the game. Clearing the “Daily” checkbox for the event script activities causes matching proof of play entries to drop from the report.

Figure 5 *Timestamp Filtering Example*

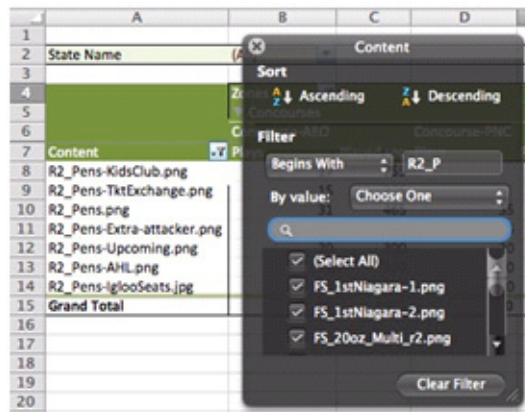


Content Filtering

In the *example_pivot.xlsx* file, cell A7 contains a content filter to trim the entire list of content filenames to just the “what” items you are interested in. Individual content items can be selected for the report, or a standing pattern matching filter can be established for the report.

In this example, the content filenames that start with “R2” detail the region 2 advertising content. By setting up a “Begins With” filter in the “By label:” filter space with a value of “R2_P,” the report will list only region 2 content. In this example, the region 2 content is the team's self-promotion advertisements.

Figure 6 Content Filtering Example



Group and Zone Filtering

In the *example_pivot.xlsx* file, cell B4 contains the Group and Zone filter. This filter can have two different standing sets of matches to truly refine the “where” of the reporting. They can be used singularly or in combination to refine the detail of the report.

Choose Zone from the “Select field” pull down menu to set a filter that displays only the zones of interest in the report. If you check only “Concourses,” all other zones in the data set will not be listed in the report.

Choose Group from the “Select field” pull down menu to set a separate filter that displays a subset of the concourse groups of interest in the report. The Groups filter is used in conjunction with the Zones filter.

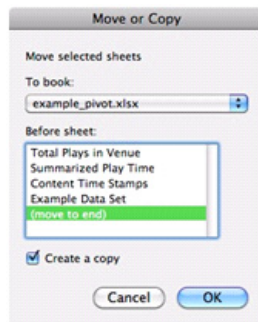
Figure 7 Group and Zone Filtering Example

Content	Plays	Played sec	Plays	Played sec	Plays	Played sec
R2_CONSOL-1.png	20	300	20	300	40	600
R2_CONSOL-2.png	17	255	18	270	35	525
R2_Pens-KidsClub.png	17	255			17	255
R2_Pens-TxtExchange.png	15	225			15	225
R2_Pens.png	31	465	35	525	66	990
R2_Pens-Extra-attacker.png	14	210	15	225	29	435
R2_Pens-Upcoming.png	20	300	20	300	40	600
R2_Pens-AHL.png	20	300	20	300	40	600
R2_Pen-GameDayAuctions.jpg	16	240	16	240	32	480
R2_Pens-IglooSeats.jpg	20	300	20	300	40	600
Grand Total	190	2850	164	2460	354	5310

Displaying Proof of Play Data in Seconds

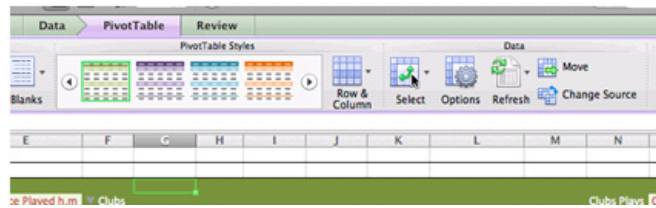
To display proof of play data in seconds, complete the following steps:

- Step 1** Copy data from the new report (*your_summary_report.csv*) to the example worksheet containing the PivotTables (*example_pivot.xlsx*):
- Open the example PivotTable file named *example_pivot.xlsx*.
 - Open the new data file *your_summary_report.csv*.
 - Right-click on the *your_summary_report.csv* tab in the same window and choose “Move or Copy...”. The Move or Copy dialog box displays:



- In the To book: drop down box, select **example_pivot.xlsx**.
 - Select the Create a copy checkbox and click **OK**.
- Step 2** Find the last cell data in the *your_summary_report.csv* tab in the example *_pivot.xlsx* file:
- In the *example_pivot.xlsx* window with the *your_summary_report.csv* tab being shown, scroll down to the last row of data. The column will be “Q.” (CTL+q is the shortcut).
 - Locate the last row that contains data and make note of it. In this example, it is 28263.
- Step 3** Reset the PivotTable data range to the new sheet, by completing the following steps:
- In the *example_pivot.xlsx* window click the desired tab: **Total Plays in Venue**, **Summarized Play Time**, or **Content Time Stamps**.

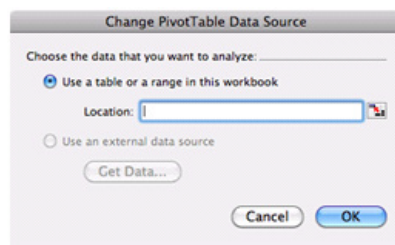
- b. Select the rows that you want to include in the PivotTable. This updates the Microsoft Excel toolbar.
- c. Select **Insert > PivotTable** from the tool bar. The Data > PivotTable toolset displays in the ribbon menu:



- d. Click on the “Change Source” tool in the ribbon. The Change PivotTable Data Source dialog box displays.



Note The information displayed in the dialog box will be incorrect as it will reference the Example Data Set tab.



- e. Type the Location for the data set. Follow this string format with the tab that contains the data set and the row value obtained in Step 2b:

`'your_summary_report.csv'!A1:Q28263`

- f. Click **OK**.

- Step 4** Repeat Step 3 to update the other sheets within the PivotTable file.
- Step 5** Save the modified template *example_pivot.xlsx* file as a .xlsx formatted file with a new name so that you do not overwrite the example.
- Step 6** You can delete the sample Example Data Set tab to reduce the file size. Simply right click on the tab and choose **Delete**.

Cleaning Up Proof of Play Data

You should clean up proof of play data at the end of the season, or at another time when it is appropriate to remove event-related proof of play data from Cisco StadiumVision Director to help maintain the availability of your server storage.

This section includes the following tasks:


- [Removing Proof of Play Data in the Disk Directories, page 24](#)
- [Removing Proof of Play Entries From the Control Panel, page 24](#)

Removing Proof of Play Data in the Disk Directories

To remove proof of play data in the disk directories, complete the following steps:

-
- Step 1** Clean up proof of play data in the disk directories by referring to [Table 5](#), which describes the directories where proof of play data is stored and can be removed.

Table 5 *Disk Directories for Proof of Play Data*

Directory	Description
/var/sv/pofp/data	This is the actual data for each game. You might want to keep a backup copy.
/var/sv/pofp/raw	This is raw files from devices and does not need to be saved.
	 Caution Do not delete the directory itself.

Removing Proof of Play Entries From the Control Panel

To save disk space on the server, you can periodically remove old proof of play entries that are no longer needed. The delete operation will fail if you attempt to remove a proof of play entry while an event script is running or while a TSV report is processing; however, if you delete an entry before generating the raw data into a report, all of the proof-of-play data will be lost.



Caution

Removing proof of play entries is *irreversible* and must be executed with caution.

To remove proof of play entries from the Control Panel, complete the following steps:

-
- Step 1** From the Cisco StadiumVision Control Panel, click **Setup > Proof of Play**.
- Step 2** Select the script proof of play entry that you want to remove.
- Step 3** Click **Delete**.
-

Troubleshooting Proof of Play

This section provides information to help troubleshoot proof of play operations in Cisco StadiumVision Director.

It includes the following section:

- [Registers for Proof of Play, page 25](#)

Registers for Proof of Play

[Table 6](#) describes the Cisco StadiumVision Director registers related to proof of play and their default values.

Table 6 List of Related Registers for Proof of Play

Register	Description
EnableProofOfPlay	Enables the proof of play module. Requires restart tomcat for changes to take effect.
pop.tool	Link to the external report processing tool.
pop.useCommaDelimiter	Specifies whether a comma or tab delimiter is used to separate the raw proof of play data. The default is false, meaning that tab-delimited format is used.

Feature Information for Cisco StadiumVision Director Server Proof of Play

[Table 7](#) lists the release history for this feature.

Table 7 Feature Information for Cisco StadiumVision Director Server Redundancy

Date	Releases	Feature Information
November 23, 2015	All releases	The following changes were made: <ul style="list-style-type: none"> • The link to the example_pivot_table is updated. • Topics for the example_min_pivot spreadsheet are removed because they were only created in support of Cisco StadiumVision Director Release 2.3.
August 5, 2014	Release 3.2.0-518 (SP1)	Clarified guideline about the use of the last event state to allow full processing of the PoP content in the “Restrictions for Proof of Play” section on page 2.
August 28, 2013	Release 3.1.0-787	Added restriction for the minimum script runtime of 90 seconds for proof of play data to be available.
November 4, 2011	Release 2.4.0-147	Initial release for Cisco StadiumVision Director Release 2.4. For a list of changes in this release, see the “Change Summary” section on page 2.

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