



Cisco Hinter for RTSP

Revised: March 2015

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Note

Although visible in the Cisco DMM user interface, Release 5.5 and 5.6 software does not support Cisco Digital Signs, Cisco Digital Media Players (DMPs), Cisco Cast, Cisco Digital Media Designer, or the Cisco Digital Media Player Device Manager.

Concepts

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Overview

A streaming media framework called *RTP over RTSP* makes it possible for DMPs to play streaming video on demand through RTSP connections. This framework prevents data loss inside streams and maintains proper synchronization of audio to video, even in high-definition.

You must maintain two data files for each VoD that you will stream in this way.

- An MPEG2-TS source file, which uses the filename extension **MPG**. Its program stream might be encoded as MPEG-1, MPEG-2, or MPEG-4 Part 10 (H.264).
- A “hinted” **MOV** file, which is derived from your MPG source file and imposes order upon it.

You must use our *Cisco Hinter* utility to output each hinted MOV file.

Cisco Hinter prepares MPEG2-TS files for interleaved RTP transmission through open source software called *Darwin Streaming Server (DSS)*. Hinter adds delivery information to a media track, which tells DSS how to pack and stream (*multiplex*, or *mux*) data from the audio channel and the video channel. This method improves audiovisual synchronization because these channels traverse the network together. Your DSS can then deliver such hinted video to your DMPs upon demand, after you stage the MPG-MOV pair to its media serving directory.

Cisco Hiner versions for Windows and Linux users are downloadable from your DMM appliance.

**Note**

We do not develop, maintain, sell, or support Darwin Streaming Server. Nor do we warrant its suitability for any purpose.

Workflow

1. Download and set up Cisco Hiner.
2. Download Darwin Streaming Server (DSS).

**Note**

The official repository for DSS is <http://dss.macforge.org>. Alternatively, you can use <http://developer.apple.com/opensource/server/streaming/index.html>.

3. Install and configure DSS on **equipment other than any Cisco DMS server appliance**.
4. Process each of your MPG files with Cisco Hiner to output a small, hinted MOV file.
5. Stage your MPG and MOV files together in the DSS serving directory.
6. Request streams from **rtsp://<DSS_IP_address>:<optional_port_number>/<filename>.mov**.

In DMPDM

- a. Enter your stream's address in the URL field at Display Actions > Media URL.
- b. Click **Start**.

In Digital Signs

- a. Click the URL (recommended) radio button on the Simple property sheet in the Add Asset dialog box.
- b. Enter your stream's address in the URL field.
- c. Choose **RTSP** from the File Type list.
- d. Click **Save**.

Restrictions

RTSP Variants

- There are many variants of RTSP and **we support only one of them**. You must use *RTP over RTSP*, which is also called *RTP over TCP* or *Interleaved TCP*. In this variant, RTP, RTCP, and RTSP data stream together over one logical port—typically, port 554.
- Our RTSP does not support live streaming (multicast or unicast) in this release.
- Our RTSP does not support “trick mode.” This means that you cannot pause video during playback, fast-forward through it, or fast-rewind through it. You can merely start or stop playback.

Darwin Streaming Server

- DSS cannot read any file whose file size is greater than 2.1 GB. You must split such large files into smaller ones before you derive hinted MOV output from them. (CSCtb27324)
- Although DSS is an open source streaming media platform and available for multiple operating systems, **we have tested DSS on Linux exclusively.**

Cisco Hiner

- *Cisco Hiner* software is available for Windows and Linux, exclusively.
- We do not support any other hiner.
- We do not support playback of hinted files that you output from any other hiner.

Protocols

- We do not support *User Datagram Protocol* (UDP).
- We do not support *Session Announcement Protocol* (SAP).
- We do not support *Session Description Protocol* (SDP) or its announcements.

Procedures

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Download Cisco Hiner

Procedure

Step 1 Start DMS-Admin.

Step 2 Choose **Settings > Hiner**.



Step 3 Click to download either the Windows or the Linux version.

- **Cisco-Hinter-Windows.zip**
- **Cisco-Hinter-Linux.tar.gz**

Step 4 Decompress the archive.

Windows

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Install Cisco Hiner on Windows

Procedure

- Step 1** Open a command prompt where you decompressed the archive.
- Step 2** Type the command **cd CiscoHiner**, and then press **Enter**.
- Step 3** Type the command **install.bat**, and then press **Enter**.
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Run Cisco Hiner on Windows

Procedure

- Step 1** Open a command prompt where you decompressed the archive.
- Step 2** Type the command **runHiner.bat**, and then press **Enter**.
- Step 3** Enter the MPEG2-TS filename in the Source MPEG field.

OR

Click **Browse** or **Choose File** (depending on which browser you use) to find your MPEG2-TS file.

We populate the Output Name field automatically. It is identical to the name in the Source MPEG field, except that the filename extension is MOV and not MPG.

- Step 4** Click **Generate**, and then wait for the “Hinting finished successfully” message.
- Step 5** Find your hinted MOV output file in the **..\hinted-files** subdirectory.
- Step 6** Move or copy both the MPG file and its MOV derivative to the DSS root directory.
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Linux

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Install Cisco Hiner on Linux

Procedure

- Step 1** Open a command prompt where you decompressed the archive.
- Step 2** Type the command **run Install.sh**, and then press **Enter**.
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Run Cisco Hiner on Linux

Procedure

- Step 1** Open a command prompt where you decompressed the archive.
- Step 2** Type the command **run runHiner.sh**, and then press **Enter**.
- Step 3** Enter the MPEG2-TS filename in the Source MPEG field.

OR

Click **Browse** or **Choose File** (depending on your browser) to find your MPEG2-TS file.

We populate the Output Name field automatically. It is identical to the name in the Source MPEG field except that the filename extension is MOV and not MPG.

- Step 4** Click **Generate**, and then wait for the “Hinting finished successfully” message.
- Step 5** Find your hinted MOV output file in the **..\hinted-files** subdirectory.
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Reference

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Troubleshoot RTP Over RTSP

These general troubleshooting ideas might help you to diagnose and resolve problems with this feature.

- Verify that both the MPG source file and its hinted MOV derivative are present together in the media root directory on your DSS.

- Use a utility like openRTSP to test both the MPG source file and its hinted MOV derivative. The correct Linux command line syntax in this case is
openRTSP -V -v -t rtsp://DSS_server_IP_address/filename.mov
- Use **HexEdit**, **WinHex**, or a similar utility to open your hinted MOV file and verify that it contains:
 - An explicit reference to the full and literal filename of your MPG source.
 - The signature for MOV output from Cisco Hinter:
Hinted MPEG1 Muxed Track
 - The signature for interleaved RTP:
m=OTHER 0 RTP/AVP 96
- Check the system logs on your DSS.

**Note**

- **openRTSP**—<http://www.live555.com/openRTSP/>
- **HexEdit**—<http://hexedit.sourceforge.net/>
- **WinHex**—<http://www.winhex.com/winhex/>