

Using PitchBlue with Vantage

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Overview

Telestream's Vantage TrafficManager (license required) works with PitchBlue to automate the way TV stations ingest and process HD and SD syndicated programming sent from major media companies to their PitchBlue server. The Vantage workflow automation engine automates the entire process from ingest to delivery to the on-air server.

Vantage can provide a single collection point for ingest, aggregation, and review of incoming HD syndicated programming. Powerful transcoding automates direct file transfer from the PitchBlue server to the on-air server at suitable bit rates and SD or HD resolution. This eliminates dubbing to tape and the need to manually process content.

The PitchBlue server can be monitored for the arrival of new video content, the master control operator can be notified as soon as content arrives, and a low resolution proxy can be made available for preview. Incoming program content may be transcoded from H.264 into the video format supported by the broadcast server.

Audio may be either MPEG-1 Layer 2 or Dolby E and can either be passed through as a clean copy or re-encoded. VANC metadata, including captions, is preserved, and additional AFD metadata can be inserted into the output file. Notification and Format Sheet metadata can be sent to your station automation system, notifying it that content is ready for playout.

This app note describes the basics of creating a Vantage TrafficManager PitchBlue workflow, which may include SD and HD caption extraction, Dolby E decoding and pass-through, and PitchBlue monitoring with metadata extraction.

Licensing information is also provided in this app note, along with the required changes to the Windows registry on your Vantage server. Finally, a sample workflow is provided that demonstrates how to decode Dolby E and produce an HD output for deployment to a broadcast server.

Note: This app note assumes you know how to create and configure workflows in Vantage and how to submit jobs. Review the Vantage User's Guide for details.

Setting Registry Key



CAUTION: Editing the registry incorrectly may cause Vantage to fail, or your server to stop operating correctly. Back up your registry so you can restore it if you make an error. If you are unsure of how to back up the registry or perform editing correctly, check with your system administrator.

The following registry key is automatically added to your Vantage server during installation:

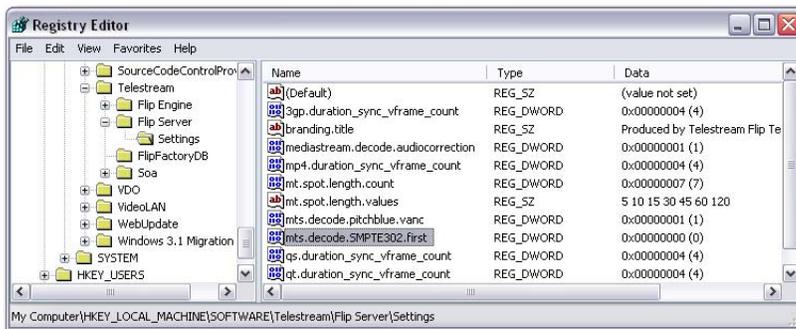
- `mts.decode.SMPTE302.first` is set to 0 (picks up MPEG1-Layer 2 audio from PitchBlue source).

To allow Dolby E audio to be picked up from the PitchBlue source, the registry key `mts.decode.SMPTE302.first` must be set to 1 on every machine that runs the Vantage Transcode Service. Follow the steps below:

1. On the Vantage server, click Start > Run. Then enter `REGEDIT` and click OK:



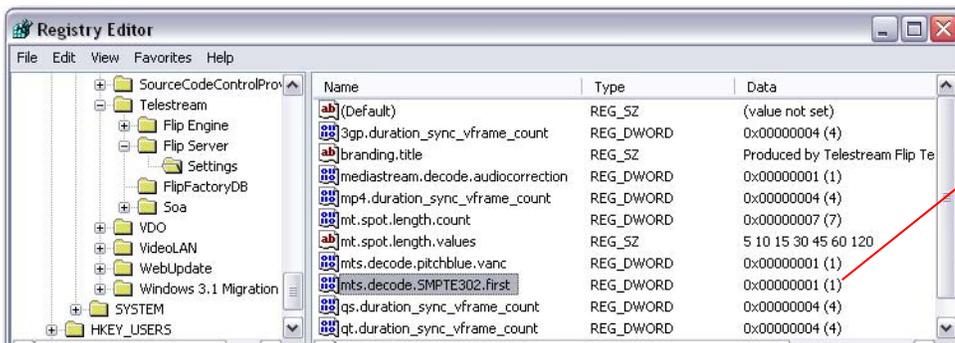
2. Navigate to `Telestream\Flip Server\Settings` directory, and find `mts.decode.SMPTE302.first`:



3. Double-click `mts.decode.SMPTE302.first`, enter 1 in the Value data field, and click OK:

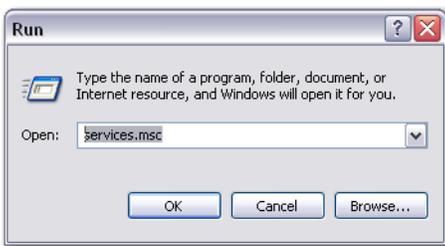


4. Verify that the `mts.decode.SMPTE302.first` REG_DWORD data is now 1:

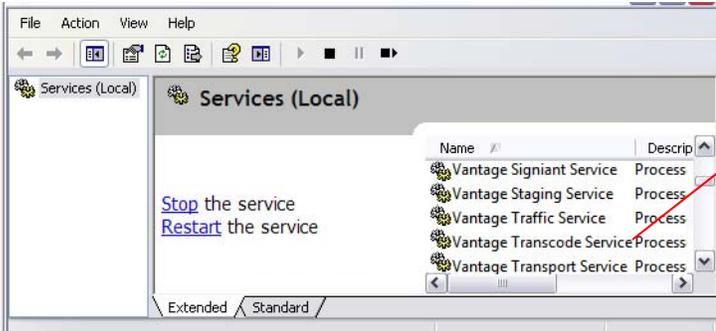


5. Close the Registry Editor window.

6. The Transcode service must be restarted to activate the registry changes. Click Start > Run, then enter *services.msc* and click OK:



7. In the Services window, select Vantage Transcode Service from the list of services and select Restart:



8. Wait for the Service Control progress window to finish:



Workflow Example

The following example workflow (Figure 1) captures and delivers Pitchblue syndicated content to an Omneon broadcast server, decoding the Dolby E audio in the process:

1. A TrafficManager Catch action monitors a PitchBlue server folder for newly-arrived content.
2. The Deploy action ingests media and sidecar metadata files from the Catch server and localizes the files.
3. A Populate action populates a TrafficManager PitchBlue metadata label with values from the sidecar file.
4. The Synchronize action brings multiple inputs together and passes them on.
5. A Flip action transcodes the PitchBlue media file and decodes Dolby E audio into the formats required by the broadcast server. Captions are included at this stage.
6. The final Deploy action sends the transcoded media to the Omneon broadcast server.

Figure 1. Example TrafficManager Pitchblue workflow



Note: Before processing Dolby E audio through a workflow, be sure to set the Registry Key settings for Dolby E (see [Setting Registry Key](#)).

Configuring the Workflow

To configure the PitchBlue workflow, follow the steps below. If you have questions about any options, click the M in the top right corner to read about the available choices.

1. Create a new workflow in Vantage Workflow Designer and start by adding a Catch action. Set the Catch action Inspector shown in Figures 2 and 3 for the following parameters (click Next to advance to each parameter):
 - Select the Catch server resource: Pitchblue.
 - Traffic file system: FTP
 - Enter connection information for the FTP server; enter the Host as a name or IP address; enter the media port number, which should be 21.
 - Enter catch server login credentials: User name: *mb* Password: *acw*
 - Set the Proxy selection to *no proxy*.
 - Select or enter the folder to monitor on the catch server.
 - Configure settings for the catch server, including the File Match Pattern, which should be set to **.mpg|*.ts*.
 - Repeat the FTP server selections, credentials, and folder selections for the sidecar file.
 - Select the sidecar file nickname and File Match Pattern, which should be set to **[Name]*.xml*.
 - Select the variables to generate from the Sidecar XML file. If the needed variables have not been created, use <<Create New Variable>> at the top of each drop-down variable selection list to create the variables you need.

Figure 2. Setting the Catch Action for PitchBlue Server Connection

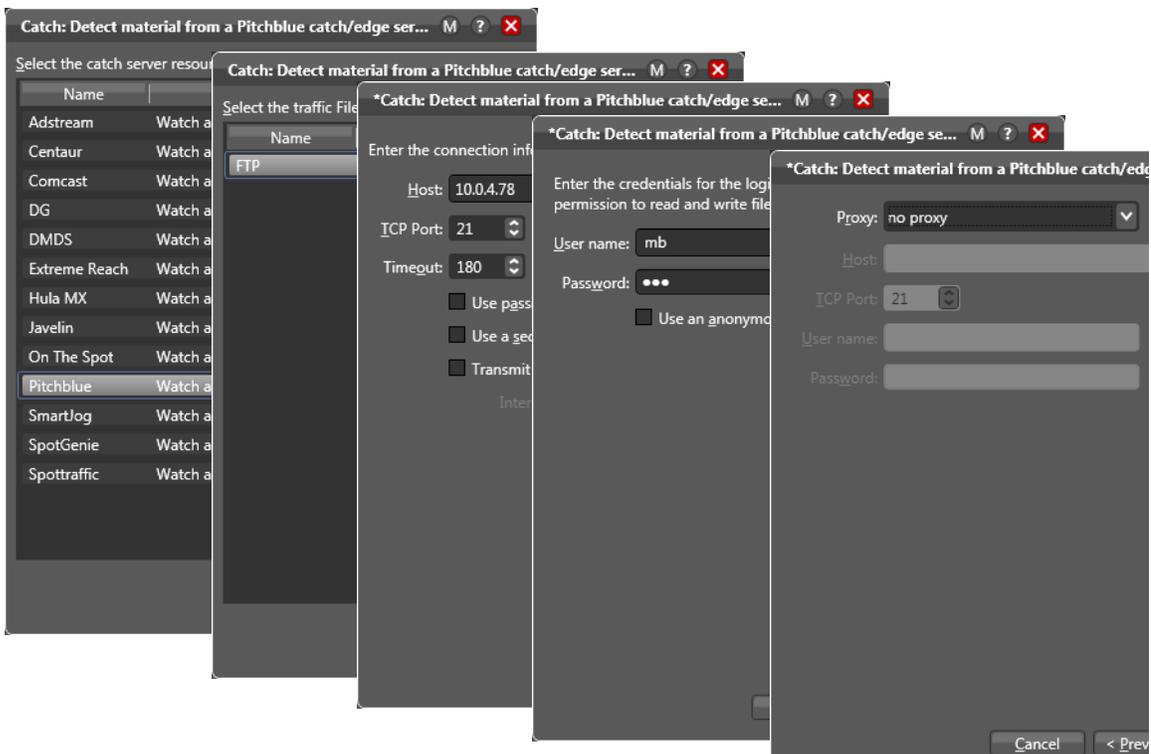
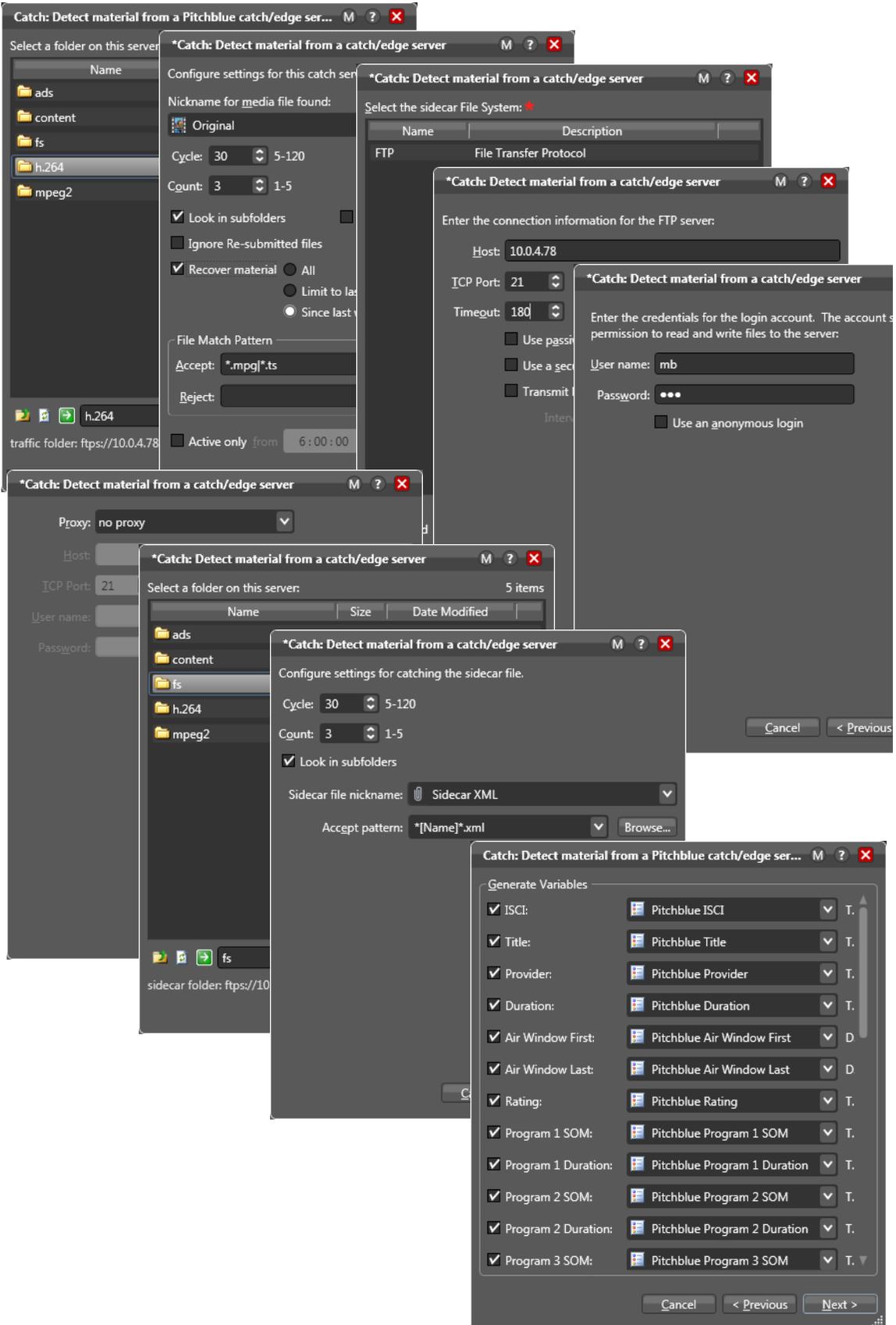
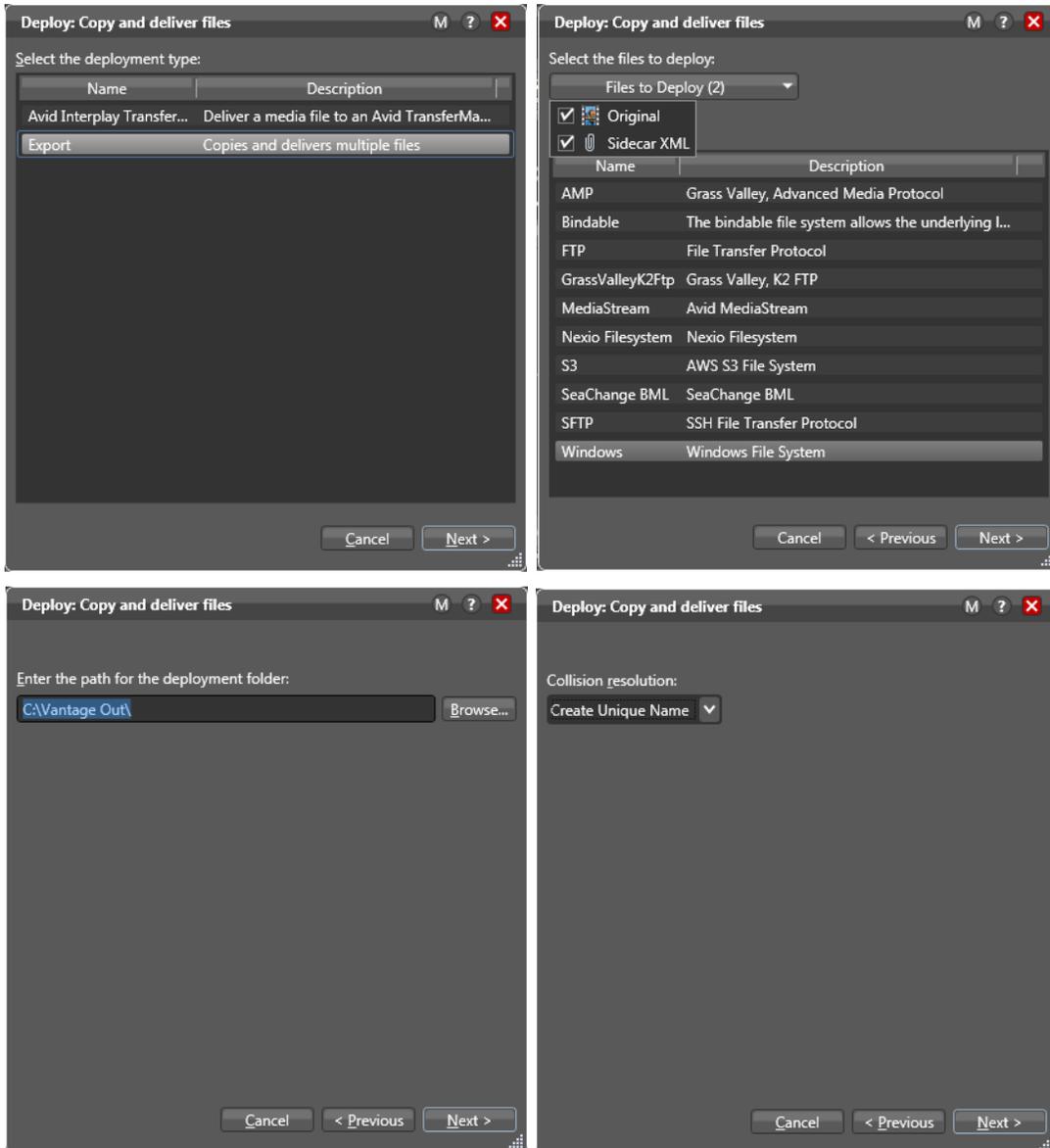


Figure 3. Configuring the Catch Action for Media and Sidecar XML File Detection



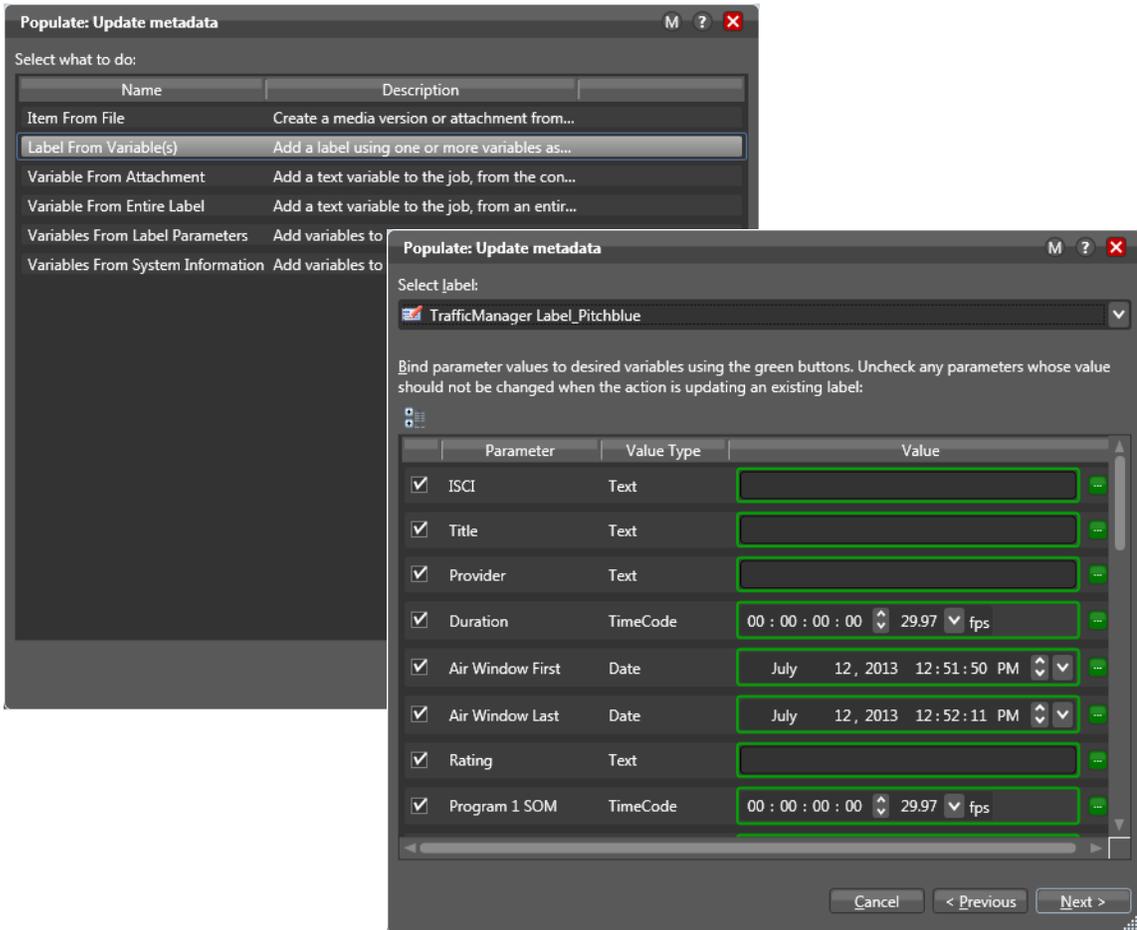
2. Drag a Deploy action onto the workflow and make the following selections in the Inspector.
 - Select Export.
 - Select Files to Deploy: Original and Sidecar XML.
 - Select the Windows File System.
 - Enter a path to the local storage folder where you want ingested files to be copied.
 - Set Collision Resolution as desired for duplicate file names; you can uniquely name each file, overwrite duplicate names, or set a failure state if a duplicate is encountered.

Figure 4. Deploy Action Inspector Selections



3. Use a Populate action to enter metadata from the ingested sidcar XML file into label. Configure the Inspector as shown below.
 - Select to create a Label from Variable(s).
 - Select the TrafficManager Label PitchBlue. You may need to have this label created for you by an administrator using the Vantage Management Console > Workflow Design Items > Metadata Labels. (If you need guidance in creating a label, navigate to that location in the VMC, and then click the ? in the upper right corner to access context-sensitive help.)
 - Select and assign parameters and values to the label. Values should be bound to the variables previously defined when setting up the catch monitor.

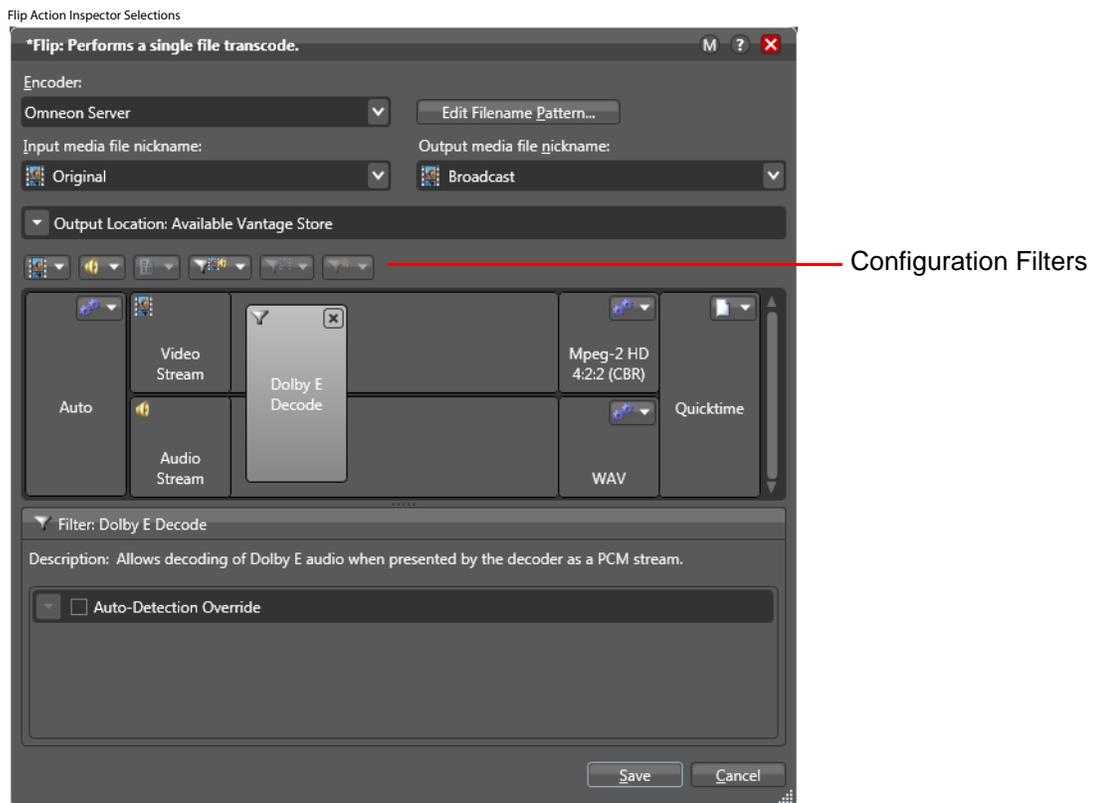
Figure 5. Populate Action Inspector Selections



4. Add a Synchronize action to ensure incoming files and data are synchronized.
5. Add a Flip action to transcode the media to the format required by the broadcast server.
 - Select the Encoder, in this case, Omneon Server.
 - Select the Original file as the input.
 - Select Broadcast (or whatever nickname you prefer) for the broadcast output.
 - Select the output location for the transcoded media.
 - Select and configure the video stream, audio stream, Dolby E decoding, and the transcoded outputs. The filter selections allow you to customize many aspects of the video and audio processing and transcoding, including the format selections for re-encoding the media as well as vertical data and caption handling. View the manual pages (M) for details about each selection.

Note: If your source and output parameters are identical (for example, 1080i 60 to 1080i 60), you can use the video filter called Disable All Video Processing to improve transcoding performance.

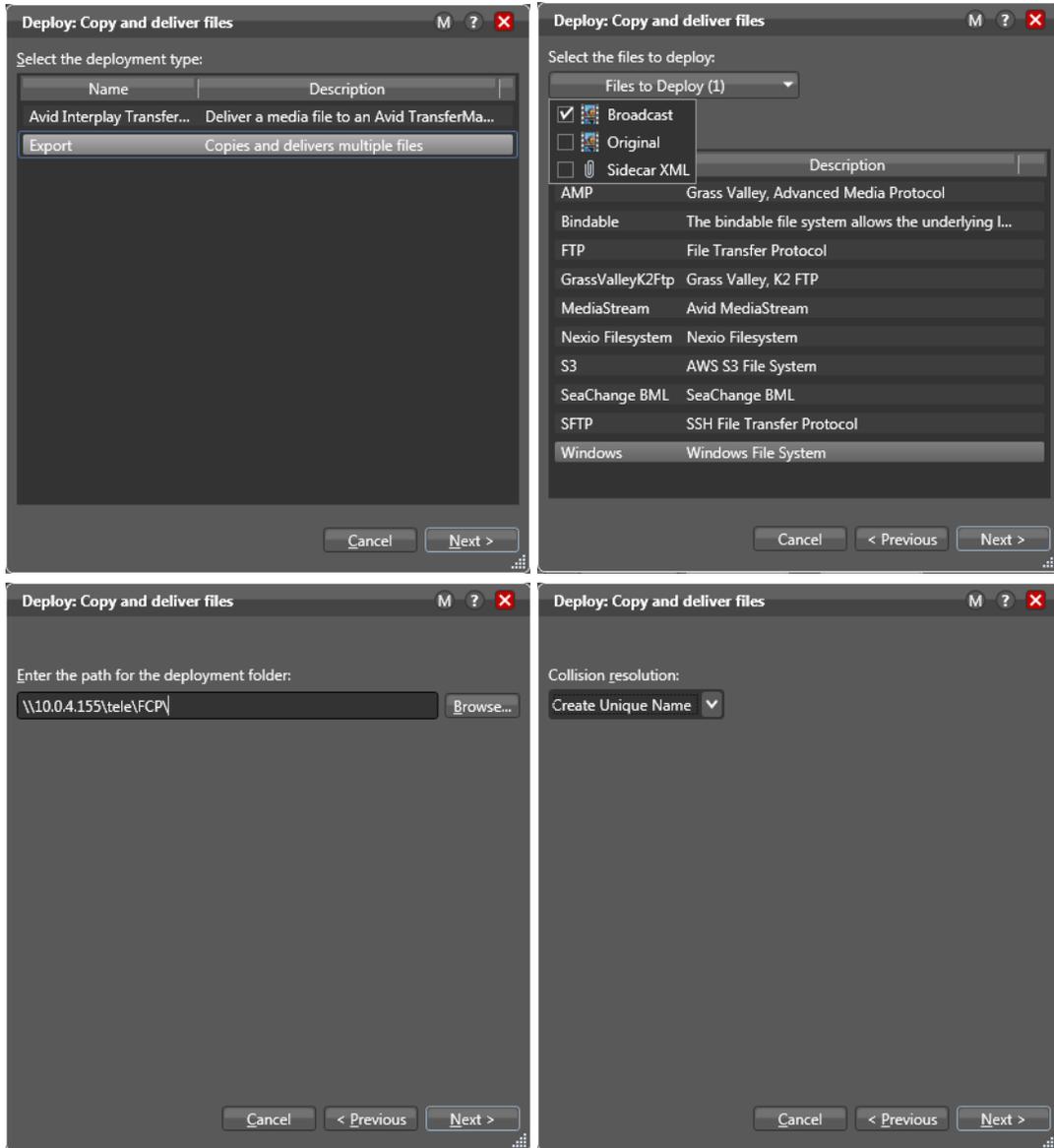
Figure 6.



Note: Additional Flip action settings are required for caption handling. These settings are covered in another topic later in this app note: [Captioning Setup](#).

6. Add a Deploy action as the final action in the workflow to send the files to the broadcast server. Configure the Inspector as follows.
- Select Export.
 - Select the Broadcast file nickname for deployment.
 - Select the Windows file system or whatever file system is used by the broadcast server.
 - Enter the path to the folder on the broadcast server where you want the files placed.
 - Choose the Collision Resolution option to use in the event of duplicate file names.

Figure 7. Deploy Action Selections



Captioning Setup

The table below summarizes how to set captions for the servers listed. Caption handling is set up using the Flip action configuration filters as shown in the following steps.

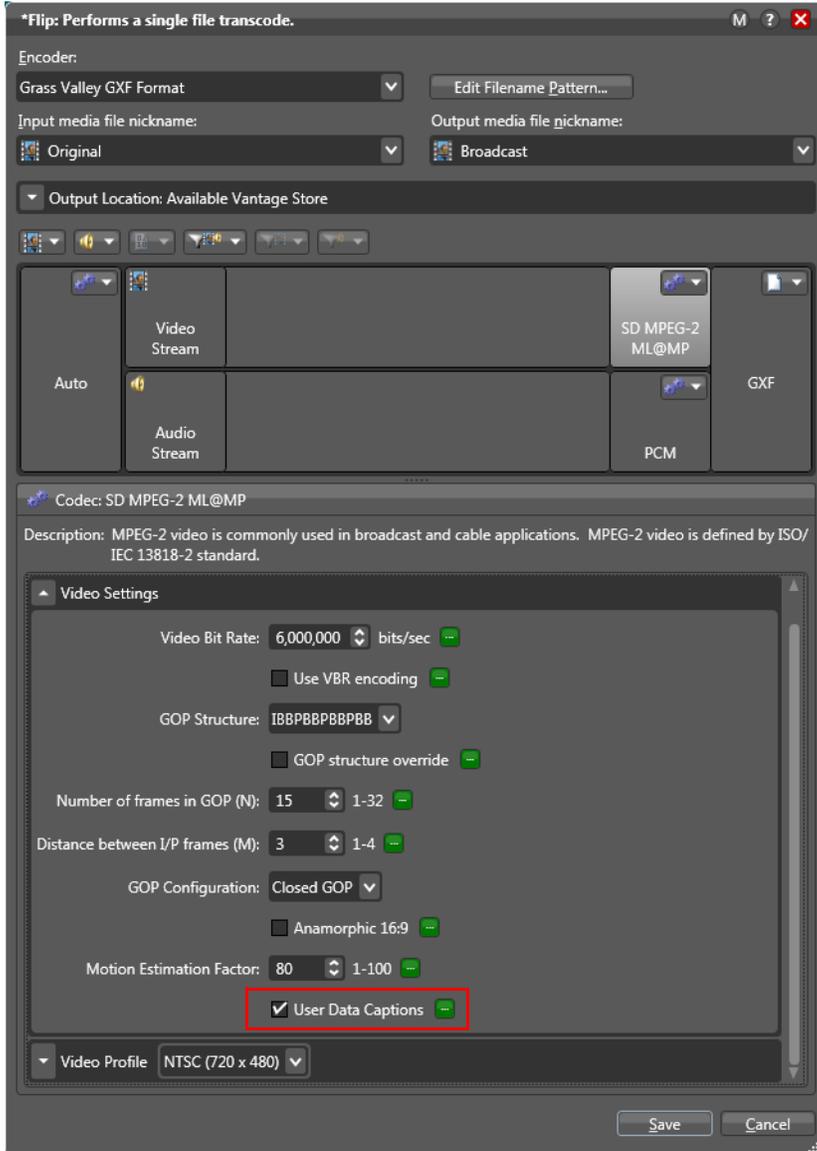
| Server | Caption Settings in the Flip Action |
|--|--|
| Caption Settings for GV K2 SD | Enable User Data Captions |
| Caption Settings for GV K2 HD and GV Profile HD | Enable Preserve VANC |
| Caption Settings for GV Profile SD and Harris SD | 720x512 Video Profile & Vertical Blanking Synthesis Filter |
| Caption Settings for Harris HD | Enable VANC Insertion |
| Caption Settings for Omneon SD/HD | Enable Omneon User Data Creation |
| Caption Settings for Avid MediaStream SD/HD | Enable Insert ATSC Captions |
| Seachange BML SD/HD | (no requirements) |

Caption Settings for GV K2 SD

Set the Flip action inspector as listed and shown in the figure below.

- Encoder: Grass Valley GXF Format
- Video Stream: SD MPEG-2 ML@MP (or other available SD selections)
- Video Settings: Enable User Data Captions

Figure 8. Caption Settings for GV K2 SD

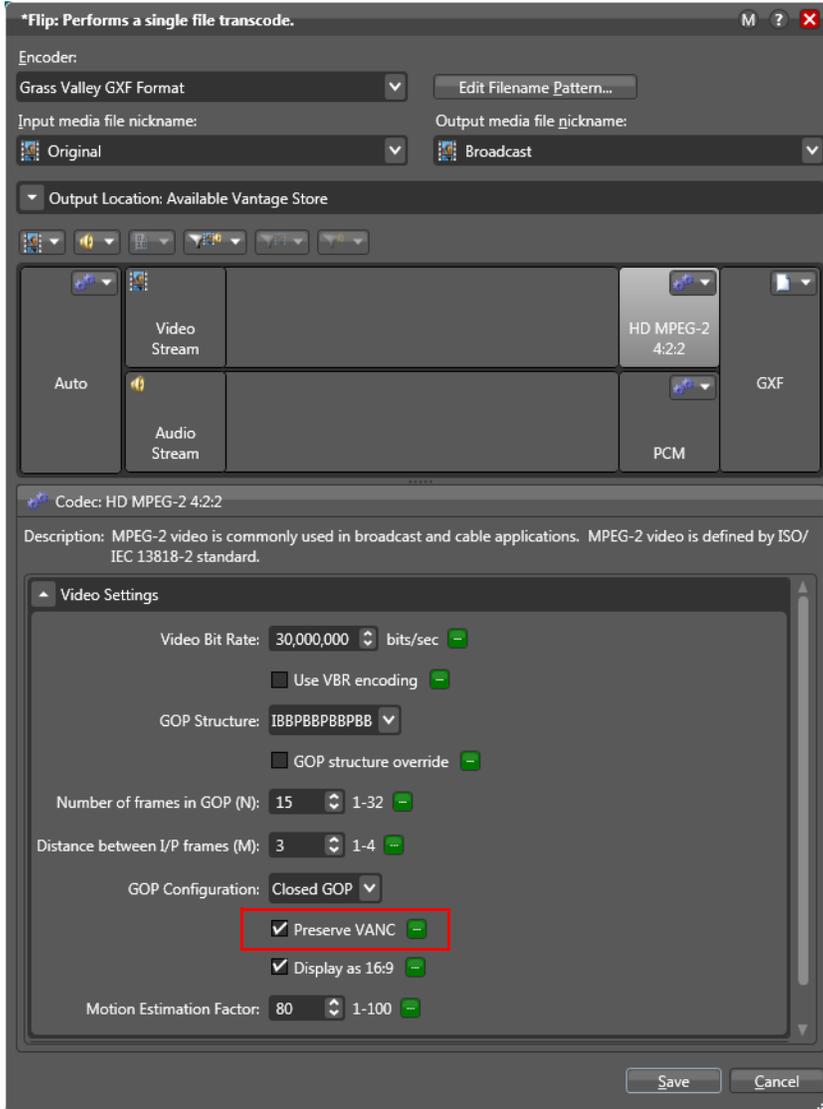


Caption Settings for GV K2 HD and GV Profile HD

Set the Flip action inspector as listed and shown in the figure below.

- Encoder: Grass Valley GXF Format
- Video Stream: HD MPEG-2 4:2:2 (or other available HD selections)
- Video Settings: Enable Preserve VANC

Figure 9. Caption Settings for GV K2 and GV Profile HD

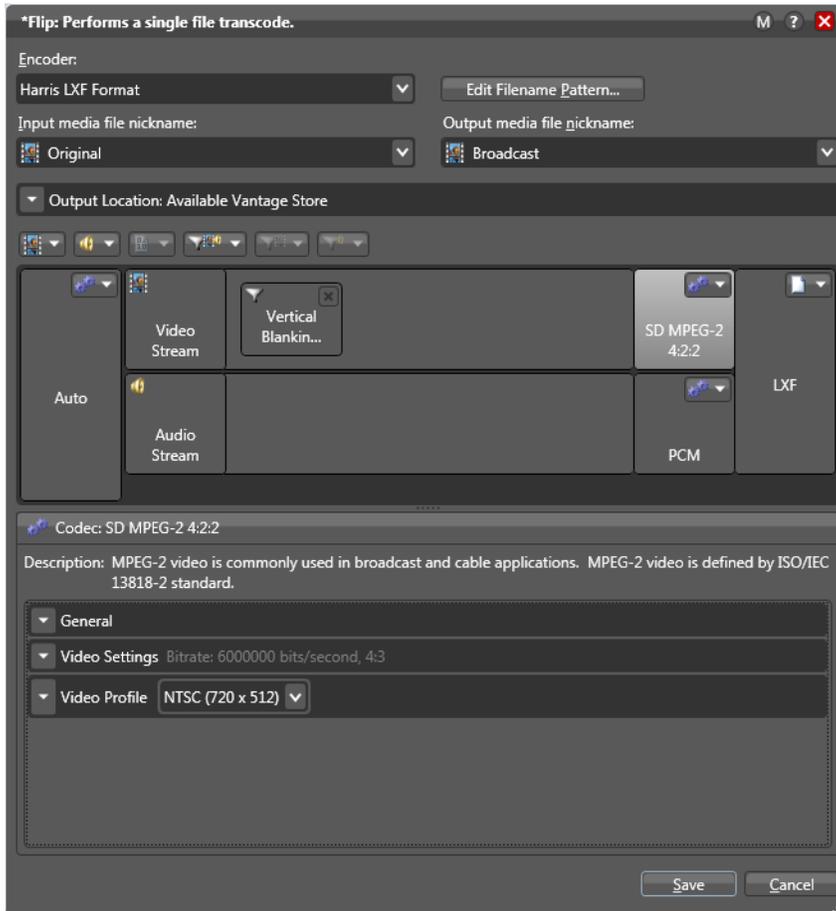


Caption Settings for GV Profile SD and Harris SD

Set the Flip action inspector as listed and shown in the figure below.

- Encoder: Harris LXF Format
- Video Stream: SD MPEG-2 4:2:2 (choose Video Profile NTSC 720 x 512)
- Video Filter: Vertical Blanking Synthesis filter

Figure 10. Caption Settings for Profile SD and Harris SD

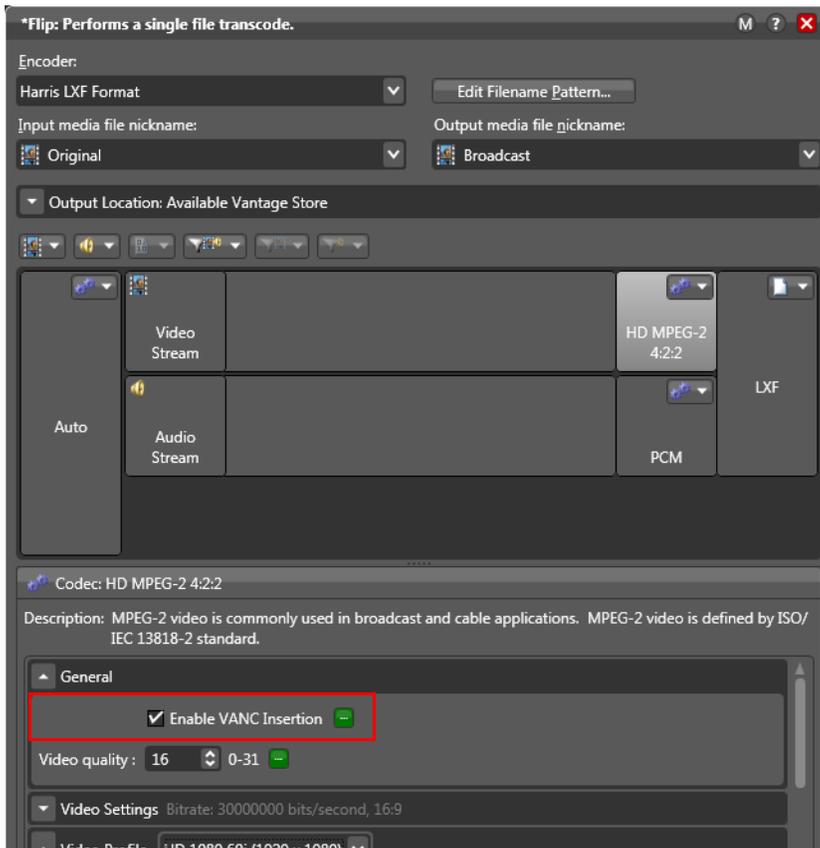


Caption Settings for Harris HD

Set the Flip action filter as listed in the preceding table and the figure below.

- Encoder: Harris LXF Format
- Video Stream: HD MPEG-2 4:2:2 (or other available HD selections)
- General Settings: Enable VANC Insertion and select preferred video quality

Figure 11. Caption Settings for Harris HD

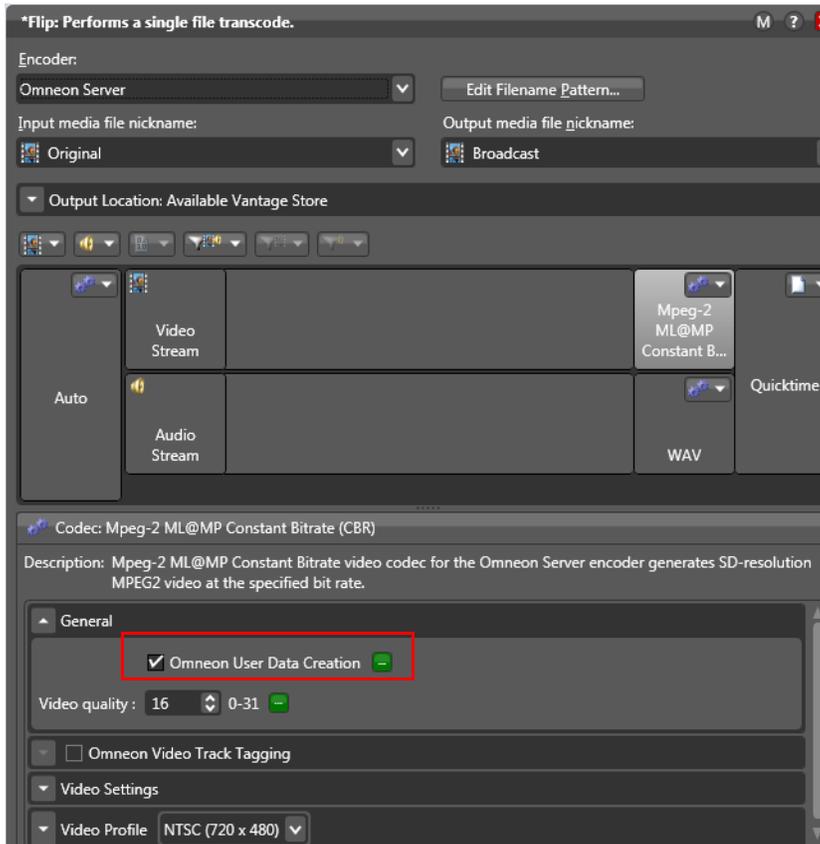


Caption Settings for Omneon SD/HD

Set the Flip action filter as listed in the preceding table and the figure below.

- Encoder: Omneon Server
- Video Stream: SD MPEG-2 ML@MP or HD MPEG-2 4:2:2 (or other SD/HD selections)
- General Settings: Enable Omneon User Data Creation

Figure 12. Caption Settings for Omneon SD/HD

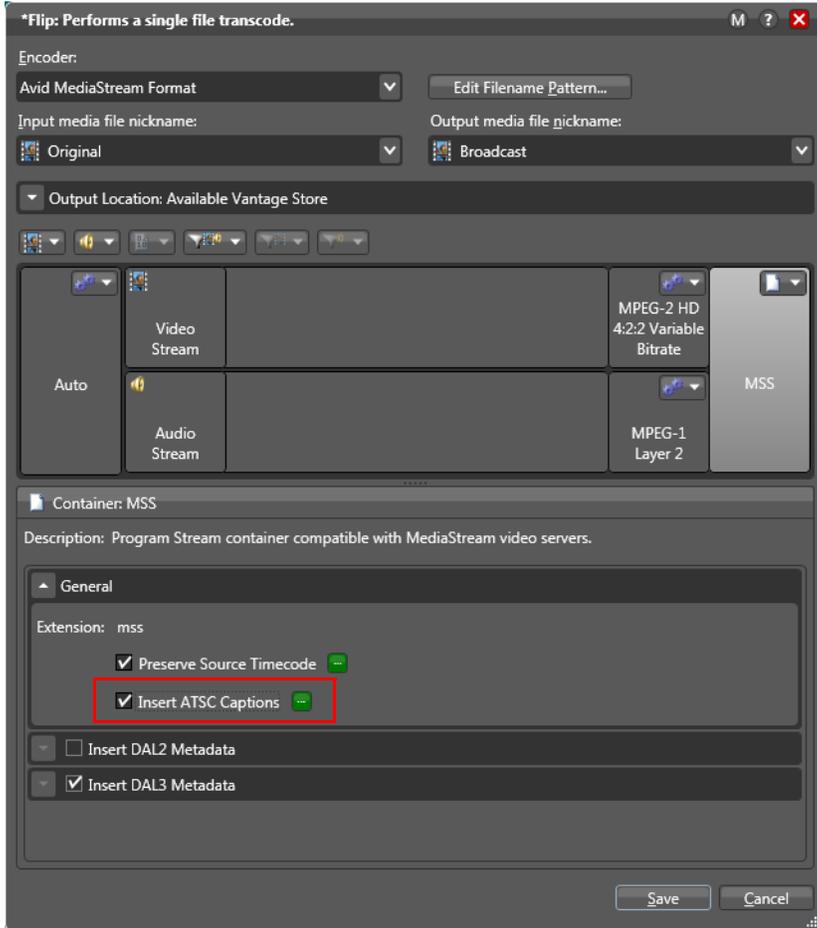


Caption Settings for Avid MediaStream SD/HD

Set the Flip action filter as listed in the preceding table and the figure below.

- Encoder: Avid MediaStream Format
- Video Stream: HD MPEG-2 4:2:2 (or other SD/HD selections)
- General & MSS Extension Settings: Enable Insert ATSC Caption and Insert DAL3 Metadata

Figure 13. Caption Settings for Avid MediaStream SD/HD



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Vantage has been designed for professionals skilled in the art of digital media transformation and workflow automation, to facilitate the automation of complex media operations and workflow that require a multitude of input and output media formats, delivery to numerous types of media devices and file systems, and notification of media systems including broadcast automation systems and media asset management systems.

The Vantage architecture and user interface is designed to provide maximum flexibility in the setup and configuration of these complex media transformations and workflows. In providing this high degree of flexibility, it is possible for media transformation and workflow processes to be configured that are impractical, likely to result in unexpected or unintended results, or beyond the limits of Vantage to perform satisfactorily. Additionally, Vantage may be executed on a platform that lacks the performance or capacity to perform the media transformations and workflows you've configured, which is your responsibility to specify. Telestream has chosen to implement Vantage to provide the greatest flexibility without limiting its functionality to only those transformations and workflows that are known with certainty to be within its performance capabilities, including those limits imposed by the platform upon which you have installed Vantage.

Therefore, you acknowledge that you may create transformations and workflows that are impractical or beyond your Vantage installation's limits, and Telestream does not warrant that each transformation or workflow you specify or use will complete without error.

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