FlipFactory®

FLIPSCAN OPTION

This App Note applies to versions 6.0 & later

Introduction

FlipScan is a powerful new automation feature you can use in FlipFactory version 6.0 and later. FlipScan enables you to configure local and network monitors to automatically scan and analyze various metrics in media files, and you can also save and view the extracted metadata.

FlipScan has filtering rules for over 20 metrics that you can set, so that FlipScan automatically submits media for processing to the correct factory, according to the rules you establish. You can use FlipScan to submit or reject media in a single factory. You can also configure FlipScan in multiple factories with a common source, to selectively submit media to appropriate factories for specific transcoding and delivery to multiple distribution platforms, for example.

FlipScan-enabled workflows are faster and more accurate. Because FlipScan doesn't decode media to extract and analyze metrics, FlipScan pre-processing occurs almost instantly.

Figure 1. FlipScan automates content scanning and analysis for vectoring to specific workflows.
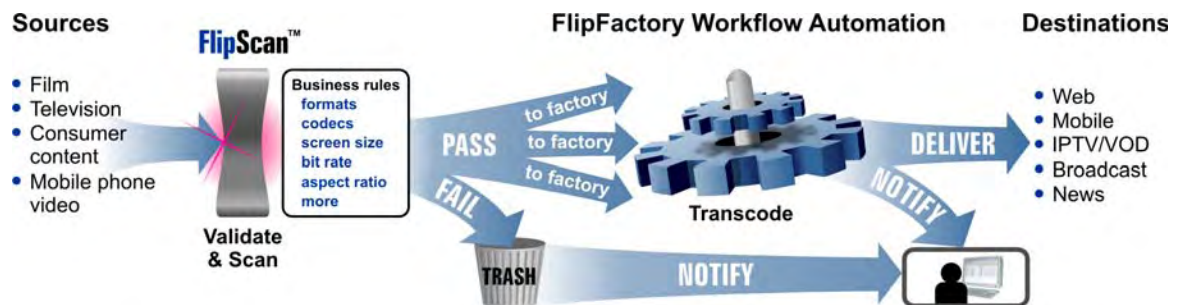
FlipScan enables you to:

- Integrate media metrics scanning and analysis into your FlipFactory workflow
- Use FlipScan to extract metrics as metadata for saving or viewing
- Define filtering rules that evaluate metrics to process media only by specific factories.

Each media file is scanned for video, audio, and related metadata in all major media formats. You can define filtering rules to accept or reject media from a wide-ranging set of characteristics including formats, codecs, screen size, bit rate, aspect ration, and many more.

For example, you can configure FlipScan so that 4:3 media is automatically submitted to a factory that crops, decodes and re-encodes media to 16:9 format, while media that is already in 16:9 aspect ratio is submitted to a factory which maintains the 16:9 aspect ratio, while transcoding the media to the required essence.

Obtaining FlipScan for FlipFactory

FlipScan is a licensed option, which may be purchased, downloaded, and installed by registered FlipFactory users via our Web site at www.telestream.net. FlipScan is available for FlipFactory version 6.0 and later.

FlipFactory 6.0. In order to add FlipScan, you must purchase and install a FlipScan license for your FlipFactory server, then download and install all Update packs, including Update Pack 4. After installation, restart the Flip Server so that FlipScan can be enabled in new Local Folder and Network monitors you create, by checking Enable FlipScan Processing.

Note: *FlipScan is not compatible with GXF or MXF files. FlipScan is also not recommended for use with Omneon files.*

Adding FlipScan to a Factory

Pre-processing Media from Sources Other than Windows

FlipScan can only be enabled in Local Folder and Network Folder monitors. If you ingest media via monitors other than Local or Network Folder monitors (Windows platforms), you should create a stage 1 factory to perform a Duplicate Original from your original monitor into a local or network folder, then implement FlipScan in a stage 2 factory, as described in the steps below.

Pre-processing Media from Local or Network Folders

Its easy to add FlipScan to any factory. First, make sure that you've correctly installed FlipScan (Obtaining FlipScan for FlipFactory on page 2).

To enable FlipScan processing of media, follow these steps to add a Local or Network monitor to your factory:

1. In Manage Factories, open the target factory and click Monitors to display the Monitors enabler panel.

2. Click Local Folder or Network Folder, and click Add. If you already have a Local Folder or Network Folder monitor, note its settings and target directory, then delete it and rebuild it.

Note: *You need to add a new monitor and configure it to enable FlipScan, because existing monitors do not display the FlipScan checkbox.*
To enable FlipScan in an existing monitor, you should create a new monitor with the same settings, then delete the old one. In the new monitor, check Enable FlipScan to configure and use it.

Figure 2. Add a Local Folder or Network Folder Monitor to your factory to use FlipScan.
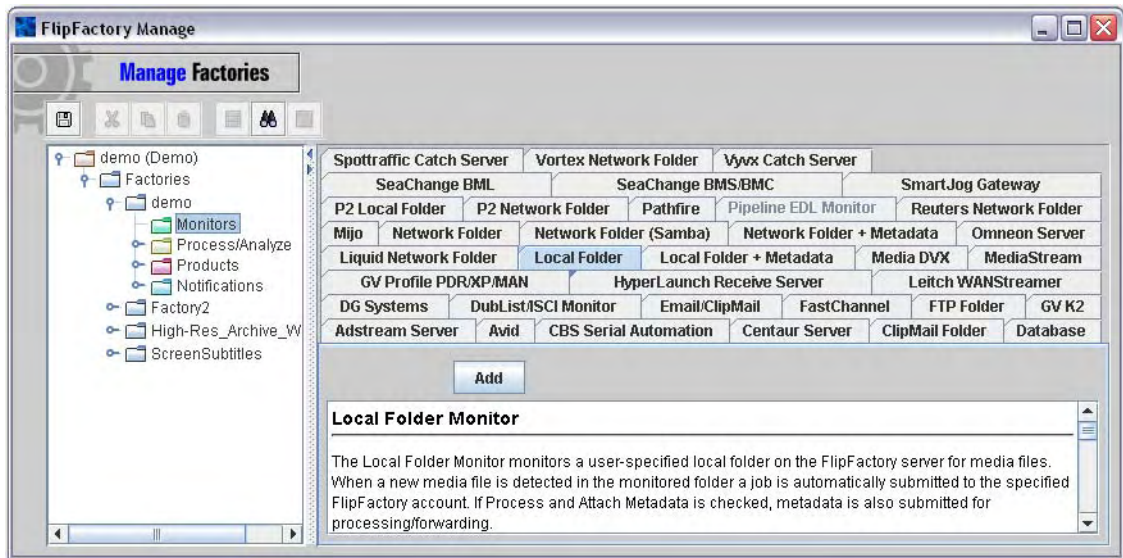
3. Open the monitor's editor panel (click the monitor icon in the factory panel on the left). The editor panel displays a checkbox labeled Enable FlipScan Processing near the bottom.

Note: *If the Enable FlipScan checkbox displays (near the bottom of the panel) in this new monitor, FlipScan is installed. If not, resolve the problem by contacting your support organization or Telestream customer service before continuing.*

Figure 3. Check Enable FlipScan Processing to enable FlipScan and display options.
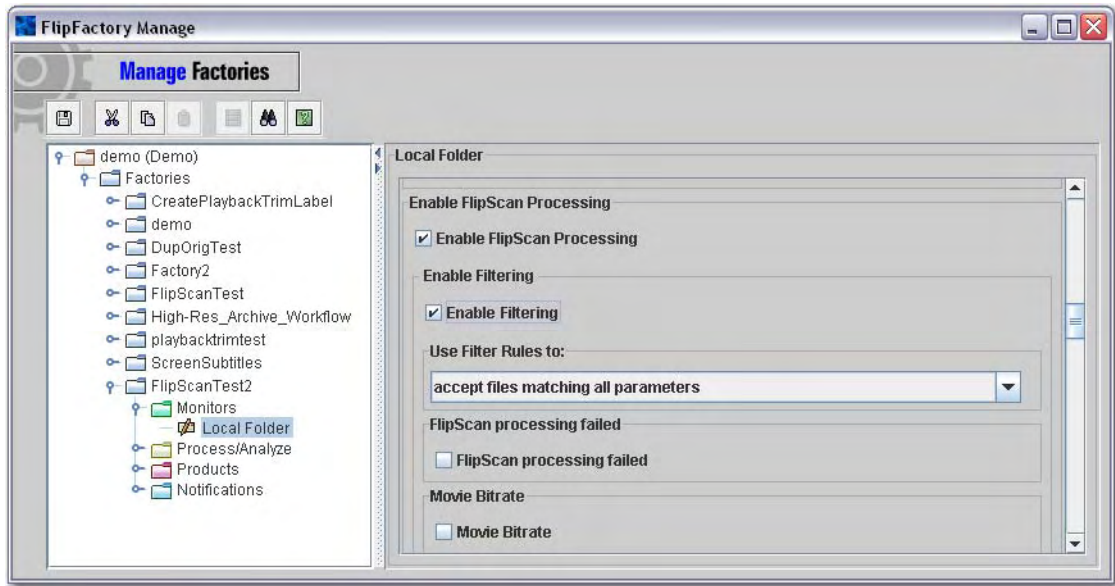
4. Check Enable FlipScan Processing to pre-process files submitted to the monitor.

5. Typically, you should enable and set up filtering rules by checking Enable Filtering and then select and configure your rules according to your processing or workflow requirements. (See "Implementing FlipScan Filtering Rules" on page 11.) If you enable FlipScan, but don't enable filtering, metadata will be extracted (which you can view in the Message Viewer window), but the media will be processed unconditionally by this factory.

6. Save the factory settings (click the disk icon in the Manage Factories window's toolbar) to save your factory settings.

Now, when you add media to the target directory specified in the Local Folder or Network Folder monitor, FlipScan pre-processes and extracts the metadata.

When filtering rules are enabled, FlipScan uses the rules you've configured to analyze the metadata values extracted from the file and determines whether or not to submit the job or reject it.

Viewing FlipScan Metadata

When FlipScan pre-processes a file, it extracts video, audio, and other metrics from the media, and adds a FlipScan label to the FlipFactory job ticket (an MDML message) to hold this metadata. If extraction fails, instead of displaying the metadata, FlipScan displays information in the Message Viewer regarding the extraction failure.

If FlipScan extraction fails and filtering rules are enabled and configured in a manner that rejects the file, the media is ignored, the job is not submitted, and an error is written to the FlipFactory job log. See Detecting & Reviewing Extraction Failures on page 15 for details.

When the job has completed, you can view the extracted metadata in the Message Viewer window. FlipScan may not always be able to extract specific types of metadata. This situation is different from extraction failure. In the case where an individual element of metadata is invalid or unknown, this error is displayed in the Message Viewer window along with all of the other metadata values.

For jobs that have completed normally, open the Job Status window, select the job line you want to view, then click Open (the folder icon in the toolbar). FlipFactory displays the Message Viewer window, with the extracted metadata elements and values in the Metadata tab:

Figure 4. Message Viewer displays extracted metadata after the job is complete.
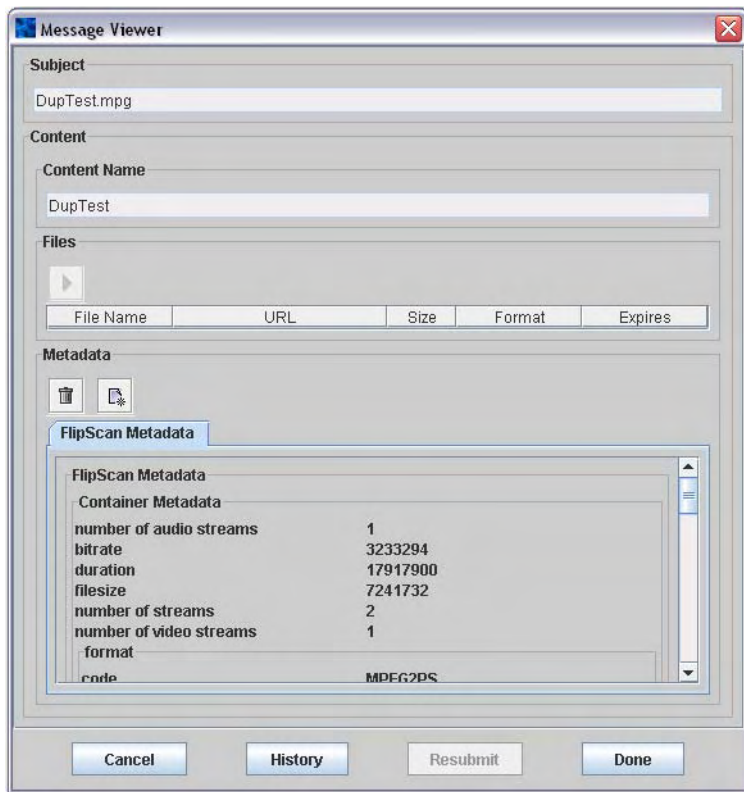
This list displays each metric that was extracted, along with its value (or unknown or invalid). These are the values that are used to compare against the formulas you've configured in the business rules, to accept or reject media.

Saving Metadata in XML Format

In addition to viewing metadata that FlipScan has extracted in the Message Viewer window, you can also save it as a file in an XML format, using the XSL Transform Notification with a stylesheet.

To save FlipScan metadata in XML, follow these steps to add and configure an XSL Transform Notification:

1. In Manage Factories, open the factory and click Notifications to display the Notifications enabler panel.

2. Click XSL Transform, and click Add.

3. Open the Notifications folder and click the XSL Transform you just created, to display its editor panel.

Figure 5. XSL Notification panel
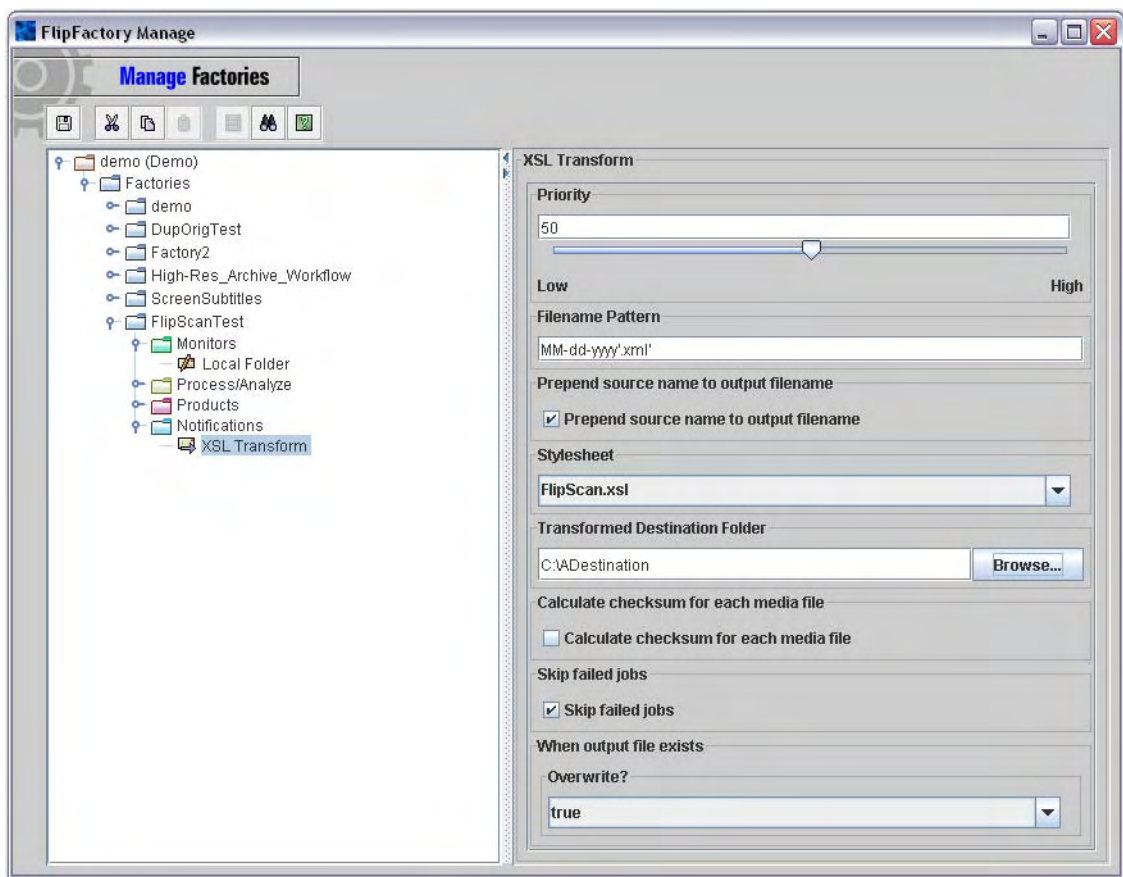
4. Adjust the Notification priority, if necessary.

5. Enter a filename pattern to generate the correct file name for the XML file. Add the literal '.xml' to the end of the string, to create the proper suffix. For example, MM-dd-yyyy'.xml'. If you want the file named the same as the media, just enter '.xml' and check Prepend Source Name.

   Prepend Source Name. Also, choose prepend file name if you want to place the file name as the first part of the xml file that is saved each time this factory processes a job.

   **Stylesheet.** Select FlipScan.xsl from the stylesheet dropdown menu.

Transformed Destination Folder. Select the destination folder where you want the XML file placed. In many cases, you should choose the same destination folder as the output media from the factory.

When Output File Exists. Typically, select True to over-write the file, so that it always matches the output.

Note: *Online help is available for this and all other editor panels. To display online help, which describes each control item in the editor panel in detail, click the Help button (far right icon) in the Manage Factories window.*

When you're done, click the Save icon in the toolbar to save the settings in your factory. Now, when you drop media into the monitored folder, FlipFactory uses the FlipScan stylesheet to save all of the extracted metadata in an XML file, which you can pass to other systems.

Figure 6. Typical XML file from FlipScan, processed by XSL Notify and saved.
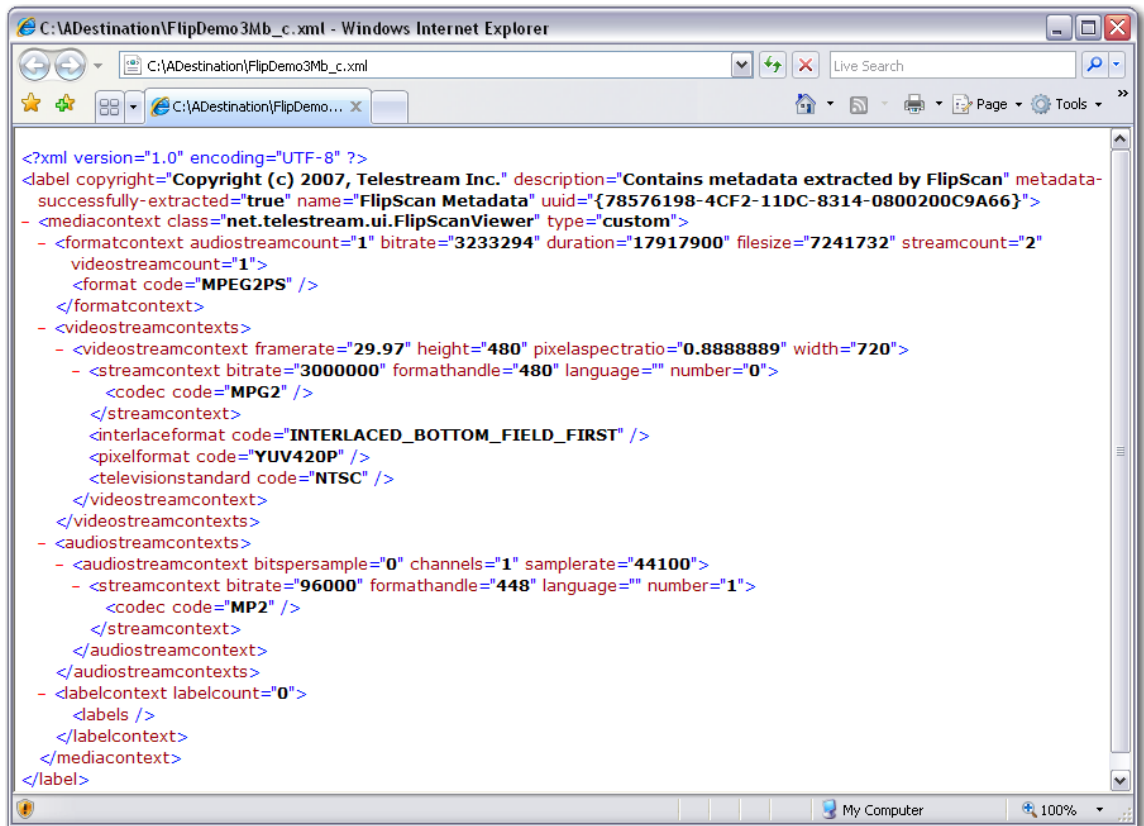
In this example, opened in a Web browser, you can see each element and value that was extracted by FlipScan for this media. By using another XSL stylesheet, you can manipulate these XML files for processing in external systems – for example, adding records to a database or updating an image or document retrieval system. Or, you can extract the metadata labels and values, and write them to a comma-delimited values file for opening in a spreadsheet program.

Creating a Simple FlipScan Workflow

You can approach the process of configuring FlipScan filtering rules in various ways, depending on your workflow and production requirements. For example, you can configure filtering rules to submit media when it meets certain criteria. Or, you can configure filtering rules to reject media that does not meet specific criteria.

Generally, the decision to focus on submitting or rejecting media should be based on a) the frequency of the exception to the rule, and b) how clearly you can define the metrics under which media is acceptable for processing.

Typical Single Factory FlipScan Processing

You can set up a single factory with Flipscan, and configure a simple accept/reject set of filtering rules. As shown in the figure below, this single factory has a Local Folder or Network Folder monitor, with FlipScan enabled and filtering rules enabled.

Figure 7. When using FlipScan in a single factory, media is accepted or rejected for processing.
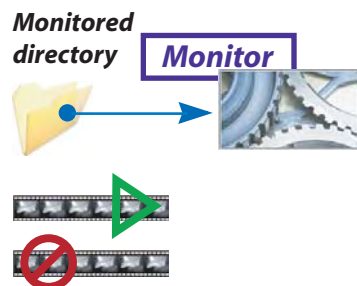
As media is dropped into the monitored folder, it is pre-processed by its monitor with FlipScan, and accepted or rejected based on the comparison of the filtering rules to its metrics. If the file passes FlipScan's rule processing, it is submitted for processing through the factory in its various steps. However, if the file is rejected, it is not submitted for processing.

Single-factory workflows with FlipScan perform well when there are clearly-defined metrics for determining which media to process, and accepted media is used to produce all products (whether one or many) and rejected media can be also handled in the same way – deleted, for example.

For example, consider a broadcaster workflow that is processing high-volume, short-duration clips (commercials and promos, for example) that are accepted from known vendors and only a very small percent of files fail. Additionally, the metrics for acceptable media are clear, and the transcoded product's specifications are equally clear and uniform.

In this example workflow, filtering rules can be configured to submit media (accept) that is DV25, DVCPRO25, or IMX 30/40/50 with two-channel audio, under 60 seconds long. Media whose metrics fall outside these value limits is rejected, and a notification alerts someone to manually examine the media and take appropriate steps.

Creating a Multi-Factory FlipScan Workflow

You can also create an unlimited number of factories with FlipScan to pre-process the same media file and conditionally submit the media only to specific factories.

Multi-factory FlipScan workflows are ideal when you are processing media with wide-ranging metrics – shot or obtained from a variety of sources – and you want these metrics determined automatically to reduce cost and time. When variances in the metrics require a unique factory configuration to produce the correct product, or multiple products for multiple delivery platforms, you should consider multi-factory FlipScan workflows.

For example, you might create two factories with FlipScan. One factory processes media that is lower-field first; the second factory processes media that is upper-field first. Two factories are required, because you need to implement a Frame Mode filter to indicate that lower-field first video will be supplied to a factory to properly process the input video.

Typical Multi-Factory FlipScan Workflows

Multi-factory workflows are established by creating factories or multi-factory workflows to process media with various video, audio, and metadata metrics. With the factories created or with the workflows already in place, you add a Local Folder (or Network Folder) monitor to the stage 1 factory in each workflow to ingest media from a common monitored local or network folder. Then implement specific FlipScan filtering rules in each stage 1 factory monitor to only accept media with metrics for that workflow.

This creates an automatic, cascading workflow that effectively vectors media to one or more factories in a large set of potential factories and workflows, from a common media ingest monitor.

Figure 8. Use Flipscan in multiple factories to vector media to appropriate factory workflows.
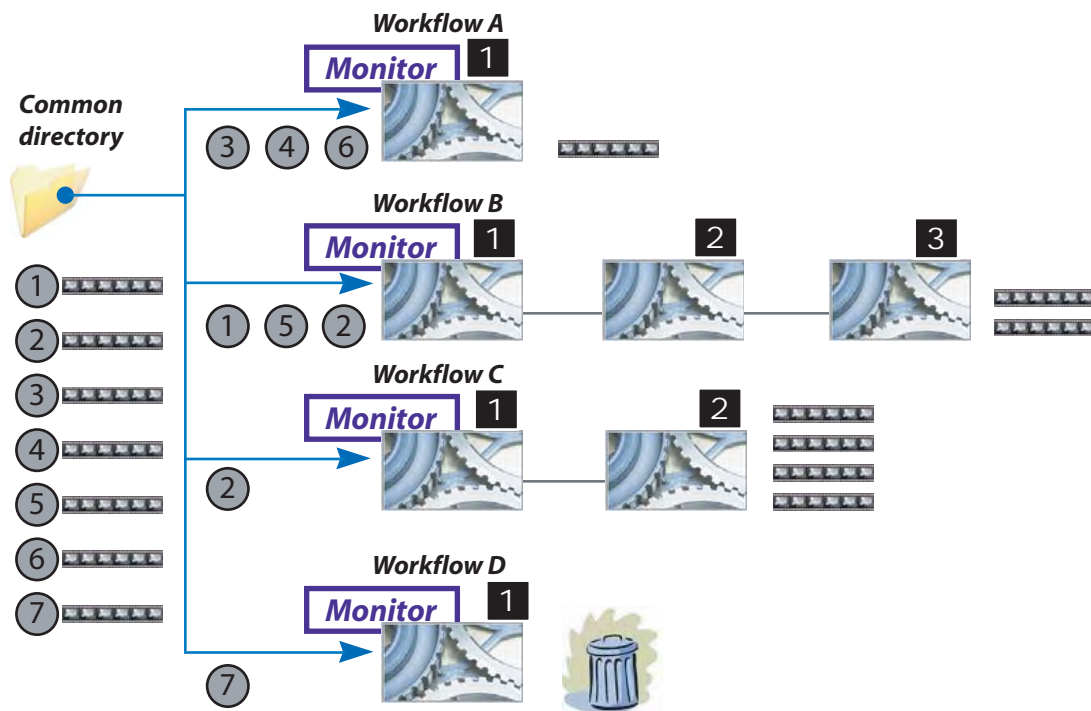
Now, when you drop a file into the monitored folder, each stage 1 factory pre-processes the file with FlipScan. Each factory accepts or rejects the media for transcoding based on its filtering rules.

The stage 1 factories that perform FlipScan processing may in fact be part of a multi-factory workflow, but that is not a relevant factor in this discussion.

In the example depicted in the figure above, there are four separate and unique workflows (the number of actual workflows is unlimited). Some workflows have a single factory; others have several, each performing a different task. Each stage 1 factory has a Local Folder monitor with FlipScan enabled, and filtering rules enabled.

Each monitor is configured to monitor a common folder, where all media for these workflows is dropped when it is ready for processing. However, unlike the common monitored folder, the filtering rules are configured *differently* in each monitor. This means that during pre-processing by FlipScan, some factories may reject media, others may accept the same media. It is also possible that for a given file, all factories may accept it, and all factories may reject it – it's entirely dependent on how you configure each set of filtering rules.

It is also important to note that stage 2 (and following) factories in a given workflow do not utilize FlipScan. (However, you could chain a new set of factories following any specific workflow, creating a further cascade of workflows, like a set of tree roots, growing in complexity.

In this example, seven media files have been dropped in the monitored folder. Each of the four stage 1 factories detects the new media as it is dropped in. Each is pre-processed with FlipScan, using unique filtering rules that only this monitor has. Notice that each of the files are accepted only in factories where the characteristics of the file pass filtering rule processing.

Also note that some files (file 2 in this example) are processed in more than one workflow, and the bottom workflow (workflow D) accepts a file, only to discard it as unusable. In this workflow, a notification could also be sent, to alert a production person that a file was deemed unusable and should be reviewed.

FlipScan pre-processing happens almost instantaneously, because FlipScan doesn't need to decode the media to extract metrics for use by your filtering rules. FlipScan automatically controls which of your factories should process incoming media, speeding the start of transcoding tasks by eliminating manual analysis, reducing errors and wasted transcodes, adding significant value without adding significant time to your workflows.

Implementing FlipScan Filtering Rules

In addition to extracting the metadata for viewing and/or saving with FlipScan, you can optionally enable and set up a specific set of filtering rules by checking Enable Filtering, under Enable FlipScan Processing, in the monitor's editor panel.

When you enable filtering, FlipScan filters the media's characteristics according to the rules you've established. Based on the results, FlipScan can submit or reject the media for this factory.

When you check Enable Filtering, the editor panel expands to display the entire list of value comparison choices for each metric that FlipScan can process (shown side by side, below):

Figure 9. FlipScan metadata values you can test and compare in your filtering rules.

Regardless of the workflows you create using FlipScan – a single factory with a simple accept/reject workflow – or multiple factories with a common monitor target and unique FlipScan filtering rules to filter and vector media into the correct factory – you always set up your filtering rules for media submission using these value comparison choices.

Note: *If you do not have any rules checked, be sure to uncheck Enable Filtering. Otherwise, it may lead to unexpected results.*

Setting Up Accept/Reject Logic

Before setting up individual filtering rules to check a given metadata value against your comparison value, you need to set up the kind of logic to use.

You can select from 4 choices, using the Use Filter Rules to dropdown menu:

Accept files matching all parameters. Select this choice when you have more than one rule checked and each checked filtering rule must pass in order for this file to be processed by this factory. This is a form of AND logic. For example: accept this file if rule 1 passes AND rule 2 passes, for example. (When you only have one rule selected (Movie Duration, for example), this selection is the same as Accept files matching any one parameter.)

Accept files matching any one parameter. Select this choice when you want any of the checked rules to pass to cause this file to be processed by this factory. This is a form of OR logic: For example: accept this file if either rule 1 passes OR rule 15 passes.

Reject files matching all parameters. Select this choice when all checked rules must pass to cause this file to be rejected by this factory. This is a form of AND logic. For example: reject this file if rule 1 passes AND rule 2 passes. (When you only have one rule selected (Movie Duration, for example), this selection is the same as Reject files matching any one parameter.)

Reject files matching any one parameter. Select this choice when any checked rule that passes should cause this file to be rejected by this factory. This is a form of OR logic. For example: reject this file if rule 3 passes OR rule 7 passes.

Unchecked rules are not considered when FlipScan whether to accept or reject a file.

Using Accept and Reject Logic for Filtering Rules

If you are using a single factory to process media that meets certain criteria (the media is in MPEG2 format and is less than 22 minutes long, for example), consider using Accept logic, because positive (Accept) logic is often easier to configure and understand.

When you are setting up a complex set of workflows, where a given file must be examined by multiple factories for processing, you might consider using Reject Logic for all factories that should *not* process the file, and accept logic for the single factory that *should* process the file. However, this precludes you from creating the logic once and copying the FlipScan-configured monitor from factory to factory, and reject logic may be confusing to some users.

Setting Up Individual Value Comparisons

Before setting up individual filtering rules to check a given metadata value against your comparison value, you need to set up the kind of logic to use.

For each metadata value you want to test, check the box. The editor panel expands to display a data entry or selection control, along with a comparison selector, as appropriate. Details for each value you can compare are described below, and also in online help page for this editor panel.

For example, you might set up a factory on a dedicated server with a high-volume SAN to transcode media files that are in HD format (720p and higher) and are 22 minutes (a half-hour TV show) or longer in length.

In this example, check the Frame Width rule, enter 1280, and select Greater than or equal as a comparator. You should also check the Frame Height rule, enter 720, and again, select the Greater than or equal comparator. Finally, check Movie Duration, enter 00:22:00:00 time code, and select the Greater than or equal comparator. (Always be sure to check the Save icon – the far left disk icon – in the toolbar at the top of the Manage Factories window, to save your factory settings.)

FlipScan Filtering Rules

Use the settings in the editor panel to configure FlipScan according to your requirements. For each comparison choice, check the box to enable this rule. Then, enter or select one or more values (as appropriate) and select a comparison choice from the dropdown menu.

When you select more than one value choice from a group of checkbox choices, they are compared in an OR manner. That is, If you check both MPEG2 and WMV from formats, you are in effect specifying that either MPEG2 or WMV satisfy the format requirement.

FlipScan Processing Failed. Check to Enable. This rule is treated like all other rules, and enables you to specifically accept or reject the media for this factory when extraction fails.

Movie Bitrate. Check to Enable. Enter the bitrate to compare, in bits per second. For example, 60,000. Select a comparison value from the dropdown menu.

Movie Filesize. Check to Enable. Enter the file size to compare, in bytes. Select a comparison value from the dropdown menu.

Movie Duration. Check to Enable. Enter the duration to compare, in timecode or seconds. Select a comparison value from the dropdown menu.

Container Format. Check to Enable. Select the container formats from the list - multiple checks are allowed.

Frame Rate. Check to Enable. Enter the frame rate to compare, in seconds. Select a comparison value from the dropdown menu.

Frame Width. Check to Enable. Enter the frame width to compare, in pixels. Select a comparison value from the dropdown menu.

Frame Height. Check to Enable. Enter the frame height to compare, in pixels. Select a comparison value from the dropdown menu.

Pixel Aspect Ratio. Check to Enable. This metric defines the shape of individual pixels. Enter the pixel aspect to compare, in the form of a decimal number that is derived from the pixel width / height, or in the form of an unresolved comparison in the form X:Y. For example: 1.333 or 4:3. Select a comparison value from the dropdown menu. Pixel aspect ratios are compared with exact values; there is no rounding effect.

Display Aspect Ratio. Check to Enable. This metric defines the shape of the video as it is intended to be displayed, based on the number of horizontal and vertical pixels, and their shape. Enter the display aspect ratio to compare, in the form of a decimal number that is derived from the pixel width / height, or in the form of an unresolved comparison in the form X:Y. For example: 1.333 or 4:3. Select a comparison value from the dropdown menu. Pixel aspect ratios are compared with exact values; there is no rounding effect.

Video Bitrate. Check to Enable. Enter the video bitrate to compare, in bytes per second. Select a comparison value from the dropdown menu.

Video Codec. Check to Enable. Select the codec to compare, from the list of checkbox items.

Video Interlacing. Check to Enable. Select the interlace format to compare, from the list of checkbox items.

Pixel Format. Check to Enable. Select the pixel format to compare, from the list of checkbox items.

Television Standard. Check to Enable. Select the television standard to compare, from the list of checkbox items. Note: 640 x 480, 320 x 240, and 720 x 486 are not recognized as NTSC standard.

Audio Sample Rate. Check to Enable. Enter the audio sample rate to compare, in Hertz. Select a comparison value from the dropdown menu.

Number of Audio Channels. Check to Enable. Enter the number of audio channels to compare. Select a comparison value from the dropdown menu.

Audio Bits per Sample. Check to Enable. Enter the audio bits per sample to compare, in number of bits (integer). Select a comparison value from the dropdown menu.

Audio Stream Bitrate. Check to Enable. Enter the audio stream bit rate to compare, in bits per second. Select a comparison value from the dropdown menu.

Audio Channel Language. Check to Enable. Enter the language to compare.

Audio Codec. Check to Enable. Select the audio codec to compare, from the list of items.

Streaming Label. Check to Enable. Select Any or All from the dropdown menu, then enter the value to filter in the available metadata labels.

Saving Filtering Rules

When ever you change settings in the monitor's editor panel (or any other factory settings) – adjusting filtering rules, for example – be sure to save these new factory settings by clicking the Save icon in the Manage Factory window's toolbar. When you save changes to a factory, including FlipScan filtering rules, these changes go into effect immediately.

Deployment Recommendations

Because FlipScan may not be able to pre-process all types of media or accurately extract each metric from files, Telestream recommends that you test your factory workflows with several typical and non-typical production files before deploying FlipScan-enabled workflows in production.

This testing process assures that you are obtaining the expected results from the rules you've established (indicating that you've configured FlipScan rules correctly in one or more factories), and that FlipScan is reliably extracting the required metadata and pre-processing it correctly.

Note: *Some variants of video incorrectly report some fields. For example, FlipScan is not compatible with GXF or MXF files. FlipScan is not recommended for use with Omneon files. To be sure of your results, always test before deploying.*

Detecting & Reviewing Extraction Failures

FlipScan may not be able to successfully extract metrics from all files submitted to FlipFactory. Additionally, FlipScan may return invalid or unknown values from one or more metrics from pre-processing. (Returning invalid or unknown values is not considered an extraction error.)

Note: *There is an important distinction between extraction failure, and successful extraction that returns invalid or unknown values. FlipScan behaves differently in each case. Also note that FlipScan Processing Failed is a filter rule, just like all of the others, even though its value is not extracted from the file itself.*

How FlipScan Handles Extraction Errors

When FlipScan encounters an extraction error, it operates differently based on how you configured it, when Filter Rules is checked (and at least one rule other than Extraction Failed is enabled):

- **Use Filter Rules is set to Accept All parameters AND the Extraction Failed rule is unchecked**. The job fails – no rules can pass – because extraction failed. Therefore, the file is rejected by the factory, and you can't view the job in the Message window.

To process this failed file, temporarily uncheck the other rules that are checked – or, disable FlipScan processing entirely. Now submit this file again, and the job will be processed.

- **Use Filter Rules is set to Accept ALL parameters AND the Extraction Failed rule is checked**. This condition also fails, because even though the Extraction Rule is accepted (because extraction failed), none of the other rules can pass, precisely because extraction failed. Either uncheck all other rules or change Use Filter Rules to Accept Any Parameters so that the job can be accepted on the basis that the Extraction Failed rule passed, satisfying the Accept Any Parameters condition.

When FlipScan extraction fails, review the error and the file to correct it. By default, monitors look for new files once each minute. So, you should wait two minutes or more after submitting a file to the monitor before checking on the file in the Job Status window.

If your filtering rules are configured to use the specific metric that was extracted with an invalid or unknown value, the rule automatically fails.

Note: *Advanced Users: If monitor logging (*Page 17*) is set to fine, you can view the job log and look for detailed evidence of failure for this file.*

If you suspect that metadata extraction has failed, open the monitor's editor panel and uncheck Enable Filtering, then re-submit the file for processing. Now, display the Job Status window. When the job completes, double-click the job entry to display the Message Viewer window:

Figure 10. FlipFactory Message Viewer, with metadata extraction message for the failed job.
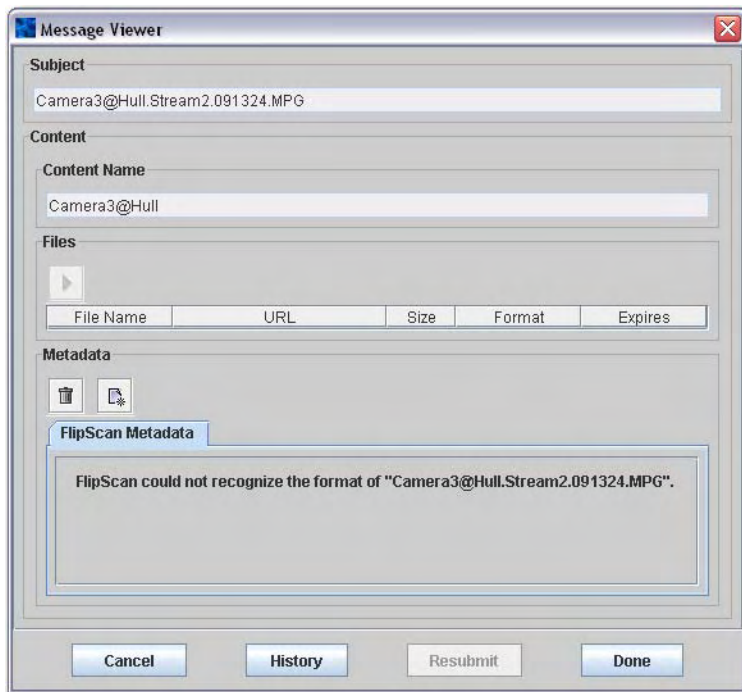
When FlipScan extraction fails, it displays an error message in the Metadata tab window, describing the problem.

Dealing with Failed Media

Note: *In a complex, multi-factory workflow utilizing FlipScan, you can set up a specific factory to process only those files that FlipScan metadata extraction fails with. Check Enable Filter Rules, set Use Filter Rules to Accept Any Parameter, and check only one rule: FlipScan Extraction Failed.*

You can configure this factory to perform the task you want. How you deal with media that FlipScan can't extract metrics from, depends on your workflow requirements. For example, this factory might be configured to transcode the media or it might be configured to delete the media from the input server's directory.

Or, you can configure the factory with a Duplicate Original product, to drop the media into a monitor in another factory, that does not have FlipScan enabled. Also, consider creating an email notification for user intervention, so that someone can review failed files on a case-by-case basis.

Examining Engine Log FlipScan Entries

If you're having problems with FlipScan and you want FlipScan to log details in the engine log, you need to change the logging level. With the logging level set correctly, you can determine if FlipScan failed to extract metadata, and how FlipScan rules pre-processed metadata.

Note: *You can only modify the trace level at run time. When you restart the Flip Engine service, the trace level is set to the default info level. You must re-enter the Telnet trace command to set it to fine after you start the Flip Engine service to report FlipScan messages.*

FlipFactory, by default, performs monitor logging at the *info* level, and FlipScan does not log entries at this level. To change the logging level to *fine*, use the Command window (start > run > cmd) to Telnet into *localhost* and log in as *administrator*, with no password (this is the default FlipFactory logon; it may be different in your installation).

Text you type is in `Courier`; text displayed by Telnet is in **bold**:

```
Telnet localhost
```
Username: administrator:
Password:
```
Console ready...
```

Now, enter this command and press return: `trace monitor fine`

(You can chose from these trace level options: SEVERE | WARNING | INFO | FINE | OFF | NULL).

Setting the monitor log value to *fine* causes FlipFactory to log details about monitor processes including FlipScan operations when filtering rules are enabled and at least one rule is enabled. If FlipScan can't extract the metadata successfully, the media file is ignored by this factory (a job is not submitted), and an error is written to the FlipFactory job log.

Make changes to your FlipScan monitor if you need to. When you're done, save your changes and submit test media. After the job has processed (or FlipScan has processed the media and rejected it – in about 1 or 2 minutes in most cases), you can view the log file.

To view the Flip Engine log, go to Program Files\Telestream\FlipFactory. Logs are named *engineX.log,* where X is the edition of the file – engine0.log is always the newest. Other engine logs may exist, numbered from 1 upward. You can open log files with Notepad or other text editor.

Figure 11. Flip engine log with FlipScan entries for accepted job.

```
INFO: Remote manager bound to: //w-larryw:1099/FlipEngine
Dec 19, 2007 9:47:05 AM net.telestream.flip.engine.MonitorManager log
INFO: FlipScanTest, validate: path is: C:\AMonitor
Dec 19, 2007 10:00:05 AM net.telestream.flip.engine.MonitorManager debug
FINE: demo.FlipScanTest.Local Folder.processNode: Added child node.
C:\AMonitor\ABC_0000_00F.mpg
Dec 19, 2007 10:00:05 AM net.telestream.flip.engine.MonitorManager debug
FINE: demo.FlipScanTest.Local Folder.fileDetected: new file(s) detected
Dec 19, 2007 10:00:05 AM net.telestream.flip.engine.MonitorManager debug
FINE: demo.FlipScanTest.Local Folder.updateStatus: new action detail
FINE: demo.FlipScanTest.Local Folder.isReady(): C:\AMonitor\ABC_0000_00F.mpg node is
ready because counter = 0
Dec 19, 2007 10:02:04 AM net.telestream.flip.engine.MonitorManager debug
FINE: demo.FlipScanTest.Local Folder.updateState: C:\AMonitor\ABC_0000_00F.mpg file is
being submitted
```

Supported Metadata, Formats, & Codecs

File Format Information

File format type	Number of video streams
Number of audio streams	Video bit rate
File size	Duration

Descriptive Metadata

Author	Copyright
Description	All extension Fields

Time-based Stream Information

Closed Captions	Image thumbnails

General Stream Information

Stream Number	Codec
Language	Bitrate

Video Stream Information

Interlace Format	Pixel format
Aspect ratio	Frame size
Frame rate	Television standard

Supported File Formats

MPEG-1 System Stream	RealMedia
MPEG-2 Program Stream	QuickTime
MPEG-2 Transport Stream	FLT
MPEG-4	DV
ASF	3GPP
AVI	3gpp2

Supported Streaming Formats

RealMedia/QuickTime SMIL Metafile	ASX Metafile

Video Codecs

MPEG-1 Video	H.264 (Adv. Video Coding)
MPEG-2 Video	MJPEGA/B
Windows Media Video 7/8/9	On2 (VP6 Flash Video 8)
WVC-1 (SMPTE VC-1)	DV25 (DVCPRO)
DivX	DVSD (Digital Video)
Real Video 5/G2/8/9	Sorenson Video Quantizer 3
ITU H.263 VIdeo	Photo JPEG
MPEG-4	Motion JPEG A/B

Audio Codecs

MP2 (MPEG-1 AUdio Layer II)	MP3 (MPEG1 AUdio Layer III)
AC3 (Dolby Digital)	Windows Media Audio 7/8/9
PCM (Raw Audio)	ATRC (Sony ATRAC3)
Cook (RealAudio Cook)	AAC (MPEG-4 Advanced Audio)
AMR (Adaptive Multi-Rate))	

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FlipFactory has been designed for professionals skilled in the art of digital media transformation & workflow automation, to facilitate the automation of complex media operations & workflow that require a multitude of input & 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 FlipFactory architecture and user interface is designed to provide maximum flexibility in the setup and configuration of these complex media transformations and workflow. 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 FlipFactory to perform satisfactorily. Additionally, FlipFactory may be executed on a platform that lacks the performance or capacity to perform the media transformations and workflow you've configured, which is your responsibility to specify. Telestream has chosen to implement FlipFactory to provide the greatest flexibility without limiting its functionality to only those transformations and workflow that are known with certainty to be within its performance capabilities, including those limits imposed by the platform upon which you have installed FlipFactory.

Therefore, you acknowledge that you may create transformations and workflow that are impractical or beyond your FlipFactory 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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March, 2008   **P/N 74-0103-00**