



FlipFactory®

USING YOUTUBE FINGERPRINTING WITH FLIPFACTORY

This App Note applies to FlipFactory versions 7.0 & later

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Synopsis

Using sophisticated audio and video fingerprinting technology, YouTube can scan user uploads to detect matches from Rights Holders' references.

Telestream customers include the largest owners of video assets in the world, many of whom have an interest in blocking, tracking, and monetizing their content on YouTube even if they didn't upload it. Integrating YouTube fingerprinting directly in FlipFactory provides users with greater control over the publication of their video content without adding any steps or costs to their workflow.

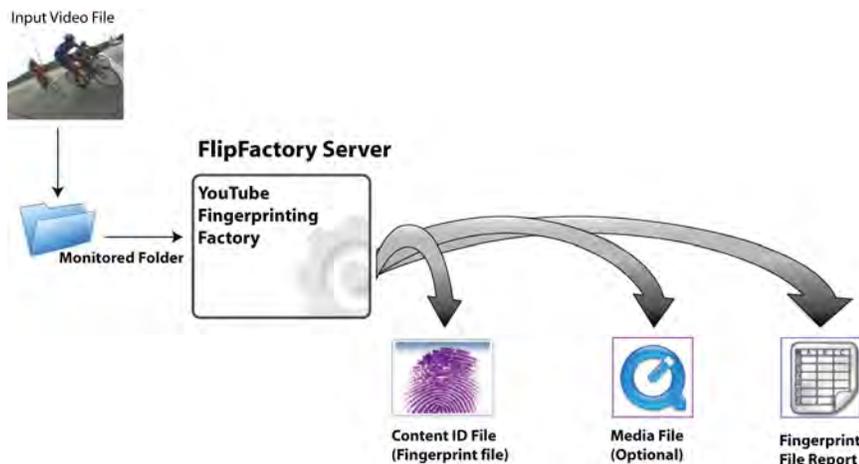
YouTube fingerprinting works with both live and file-based workflows. When a video file or a live video feed is submitted to FlipFactory, a fingerprint reference file (Content ID file) that uniquely identifies this video input is produced. Users can use FlipFactory and, optionally, Pipeline to implement YouTube fingerprinting to ensure content identification and tracking.

The YouTube fingerprinting process creates a "digital fingerprint" and saves it in a file. This fingerprint can then be compared to video on the YouTube site to block, track, or monetize media. Video can be fingerprinted by FlipFactory for any file that FlipFactory can transcode (via monitored folders or manually submitted). When combined with Pipeline, FlipFactory can fingerprint video content from an even wider variety of sources:

- Live SDI capture using crash record
- SDI capture from tape including deck control
- SDI capture on a 24-hour schedule which generates Fingerprint files periodically
- SDI capture triggered by web services API calls.

After each fingerprint file has been created, FlipFactory can:

- Deliver the fingerprint file using all types of FlipFactory delivery/notification operations including secure FTP to YouTube
- Report all fingerprint files generated for accounting purposes.



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

Establishing a Partnership with YouTube

In order to provide fingerprint files of video for YouTube, providers must first establish a partnership with YouTube. Benefits include:

- A way to discover the presence of any particular video content posted on YouTube
- Allow the original owner of any video content to request removal of the video from YouTube
- Allow, alternatively, a means for the original owner to share in revenues generated from the posting.

After establishing a partnership with YouTube content owners can obtain:

- Library to unlock fingerprinting in FlipFactory (from YouTube)
- License for YouTube Fingerprinting in FlipFactory
- FlipFactory Fingerprinting updates.

To establish a partnership with YouTube contact a Technical Account Manager at YouTube:

- New partners should go to:
http://www.youtube.com/content_id_signup
- Existing partners can contact their current partner manager or send E-mail to:
copyright@youtube.com

Installing YouTube Fingerprinting Software

Note: Make sure you are using FlipFactory version 7.0 (or later), and temporarily disable any anti-virus programs before installing YouTube Fingerprinting Software. Additionally, make certain that you obtain and install the **google_telestream.dll** (step one below) before continuing installation.

To install YouTube Fingerprinting software for FlipFactory, follow these steps:

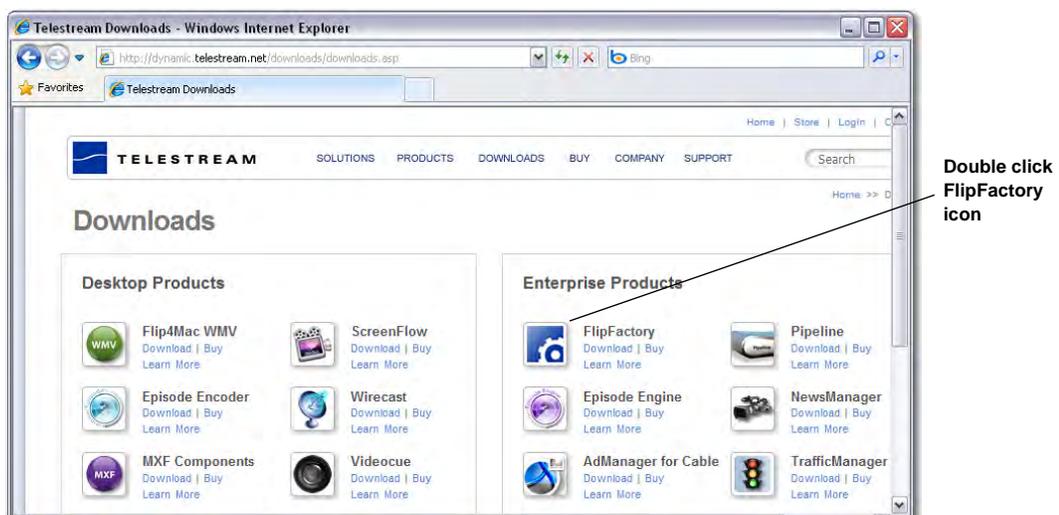
1. Obtain the *google_telestream.dll* from your YouTube Technical Account Manager and copy it into the *c:\program files\telestream\flipfactory\bin* directory.

CAUTION: The *google_telestream.dll* **must** be installed first. Failure to do so will prevent YouTube Fingerprinting from operating correctly in FlipFactory. If you install the *YouTube Fingerprinting* patch first (step two below) you must uninstall it and proceed from step one above.

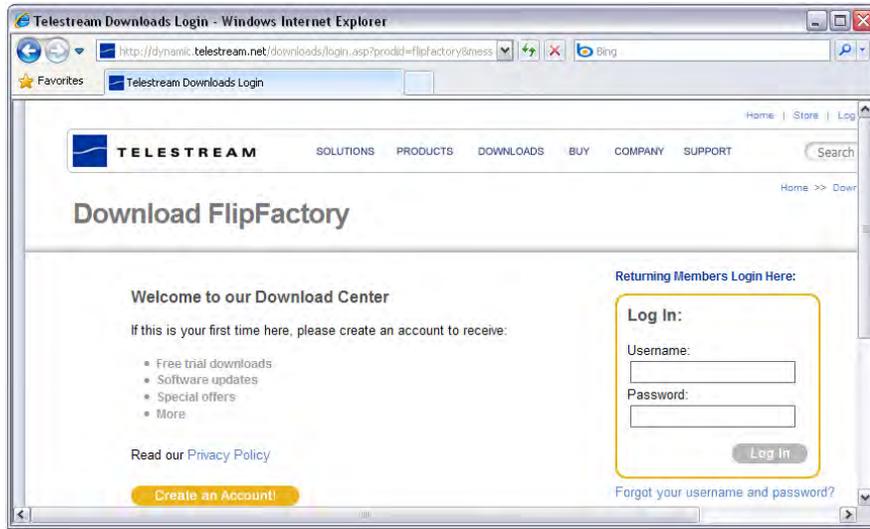
2. To download the YouTube Fingerprinting patch from Telestream go to <http://www.telestream.net> and click *Downloads*:



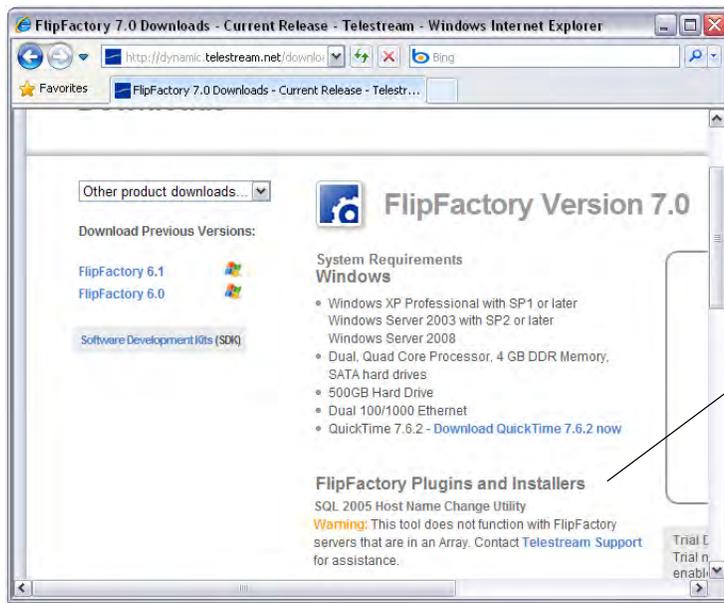
3. Double click on the FlipFactory icon:



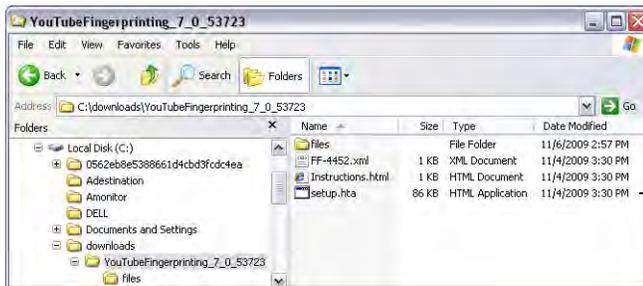
4. Log In using your user name and password. If you do not have a Telestream account, click *Create an Account* to create a new account:



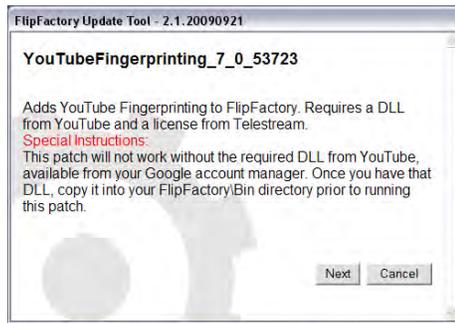
5. Once in the download page, find the YouTube Fingerprinting patch under *FlipFactory Plugins and Installers* and double click it to start the download (download the installer zip file to a known location):



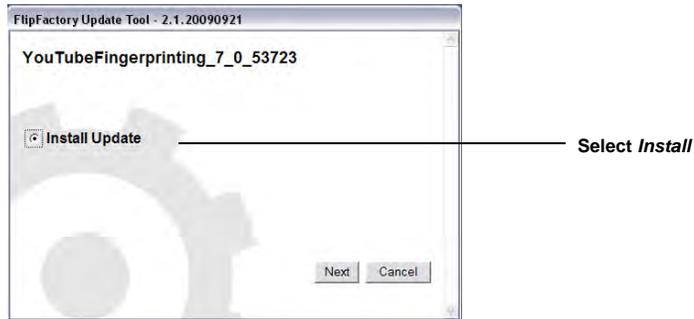
6. Unzip the installer file and double click on *setup.hta* to execute the installer:



7. Click *Next* when the dialog box is displayed:



8. Select *Install* then click *Next*:



9. Click *Finish*:



Note: You must obtain and install a License from Telestream to activate the FlipFactory YouTube Fingerprinting option.

Creating Fingerprints of Video Files

This example uses FlipFactory to create a fingerprint of a video file. In a new or existing FlipFactory workflow, automatic fingerprinting can be added to production media being transcoded for publication.

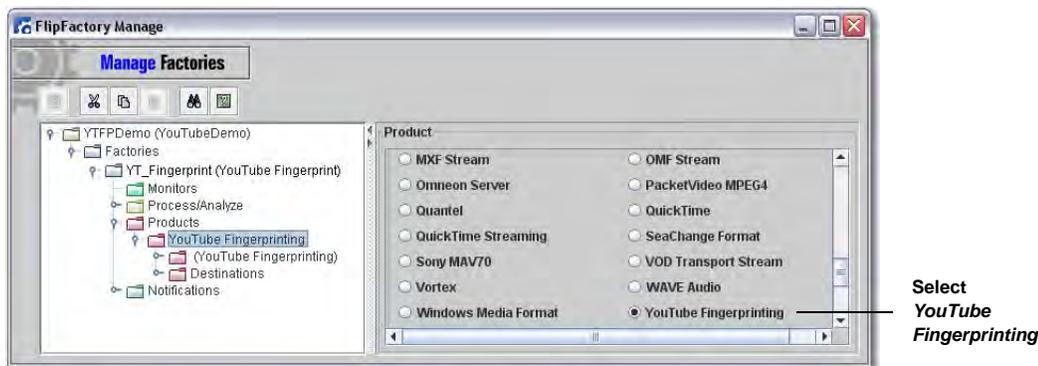
Typical Fingerprinting Factory Settings

- Monitor: Local or Network Folder (optional)
- Product 1: Content ID (Fingerprint) Reference File
- Destination: YouTube Content ID System via SFTP
- Product 2: Media to publish (optional, format per your requirement)
- Destination: YouTube Content System via SFTP
- Notification: XSL Transform - Report of fingerprint files produced by FlipFactory.

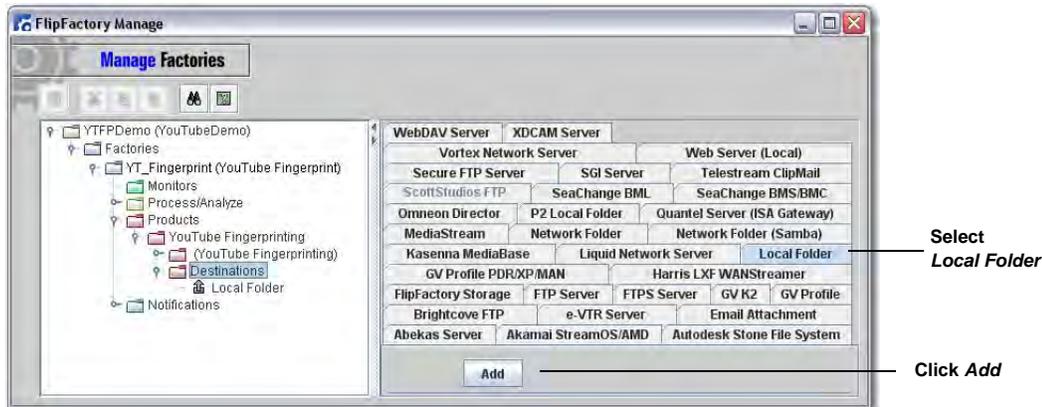
Follow these steps to add YouTube fingerprinting to a new or existing FlipFactory factory:

Note: This app note assumes that you know how to create and configure factories in FlipFactory and how to submit jobs. Refer to the *FlipFactory User's Guide* for details.

1. Add a new YouTube Fingerprinting product to your factory by selecting *YouTube Fingerprinting* from the list of products:

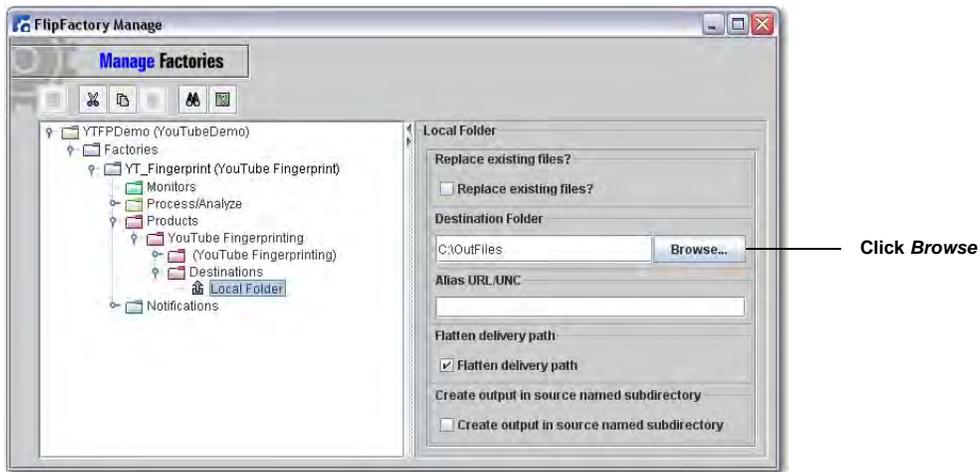


2. To save a fingerprint file locally, click *Destinations*, select the *Local Folder* tab, and click the *Add* button. This creates a *Local Folder* icon under *Destinations*:

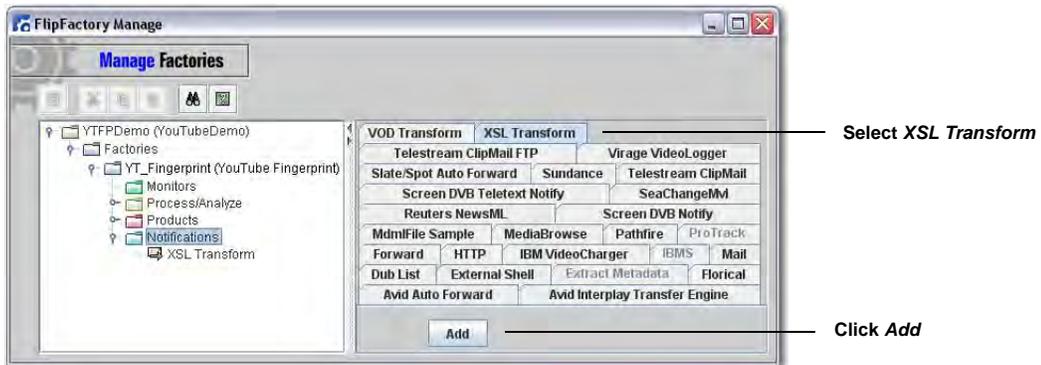


Note: In this example a local folder is used as a destination. In production you will specify an SFTP server on YouTube's Content ID System. Credentials are supplied by Google.

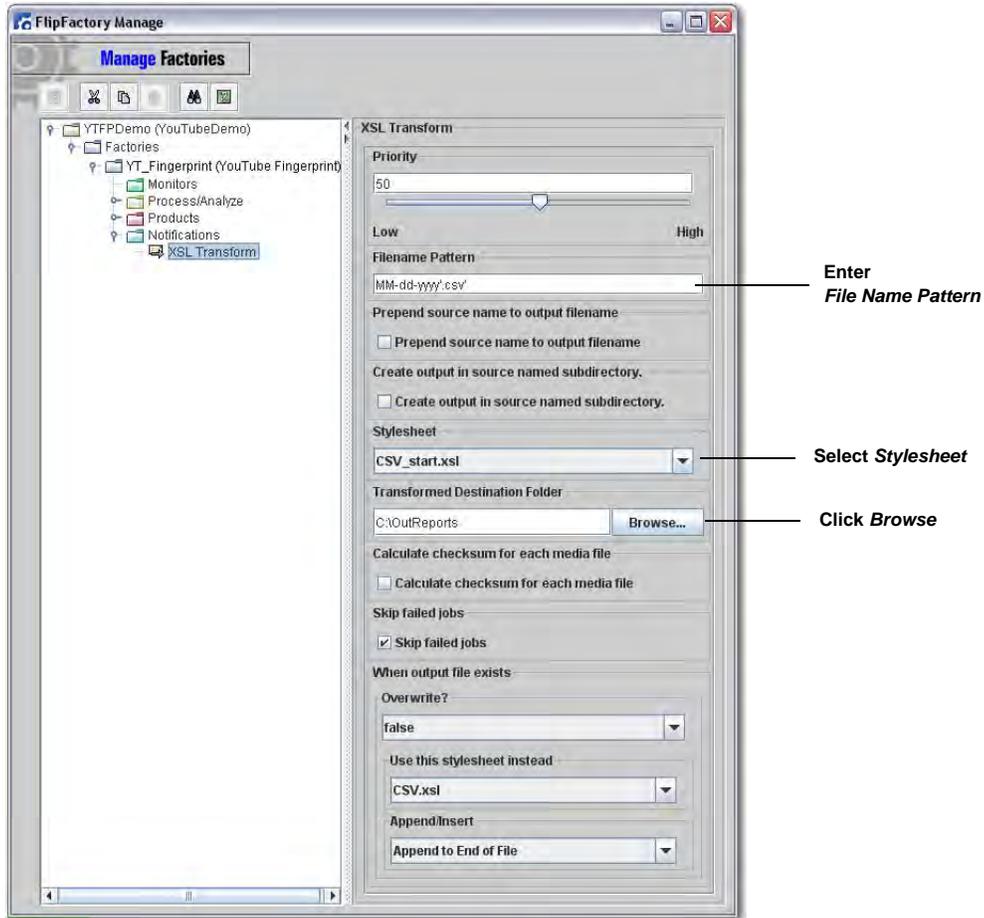
3. Click *Browse* and select the destination folder where fingerprint files will be placed:



4. To produce an audit report of the fingerprint files that have been generated by FlipFactory, add a notification. Click *Notifications*, select the *XSL Transform* tab, and click the *Add* button. This creates an *XSL Transform* icon under Notifications:



5. Click *XSL Transform* and configure the *File Name Pattern* to specify the file name (see on-line help for details). Select *CSV_start.xml* from the *stylesheet* pull-down menu. Click *Browse* and select the destination folder where reports will be placed:



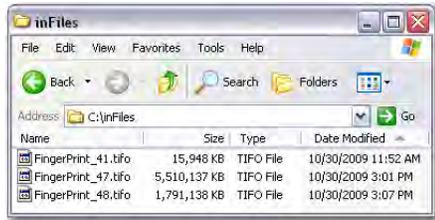
6. Click the Save icon to save the factory settings:



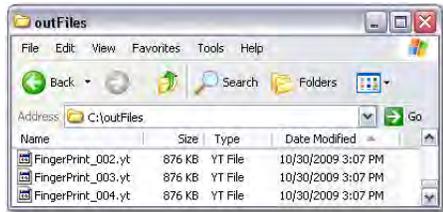
Testing Your Fingerprint Workflow

Now that you have created or updated your factory to produce YouTube fingerprinting, it should be tested to ensure that fingerprinting has been successful:

1. Submit several video files to be fingerprinted by placing them in the monitored folder (or they can be submitted manually):



2. After FlipFactory completes transcoding, examine the destination folder to ensure that the YouTube fingerprint files have been created:



3. Open the output report (.csv file placed by the XSL Transform) using Microsoft Excel to ensure all files submitted were reported:



Fingerprinting Live Feeds

This example sets up a 24-hour feed using Pipeline and schedules video clips to be created every thirty minutes with one minute overlaps. These video clips are published for FlipFactory to create YouTube fingerprint files. This process is demonstrated in the first example, [Creating Fingerprints of Video Files](#).

The video clips are saved and automatically delivered to FlipFactory to create YouTube fingerprint files and production media for publication in the same factory. Unique file names are automatically generated in this scenario to avoid overlap. Additionally, FlipFactory creates a report of the file names for reporting purposes, enabling partners to reconcile the fingerprints with their schedule.

Note: *This example assumes you have already reviewed [Creating Fingerprints of Video Files](#), and know how to create video feeds using Pipeline **Scheduled Capture**.*

Follow these steps to create a 24-hour scheduled feed using Pipeline to produce TIFO source files for YouTube fingerprinting in FlipFactory:

1. Create a “Scheduled Capture” Pipeline to feed video into FlipFactory using TIFO outputs.

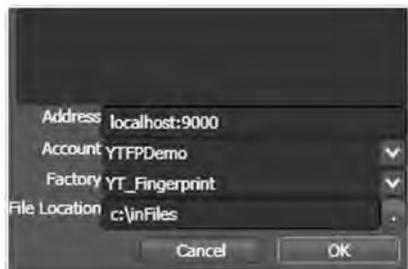
Configuring Your Wrapper and File Storage Location

2. Using the pull-down menu next to *Wrapper*, select *TIFO* from the list. In the dialog box displayed, click the Browse button and navigate to the location where you want Pipeline to store the video clips it creates:

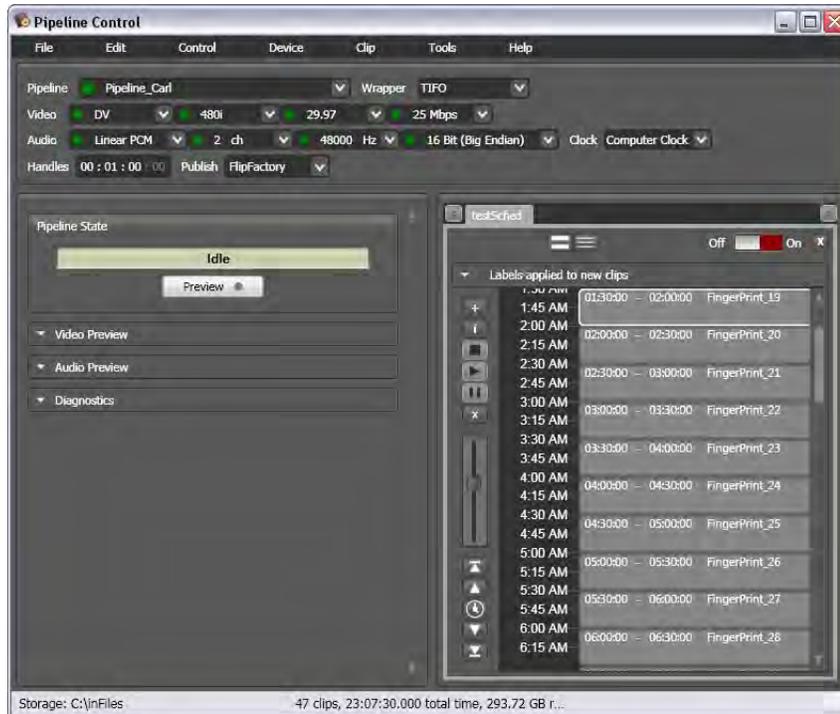


3. Using the pull-down menu next to *Publish*, select *FlipFactory* from the list. In the dialog box displayed enter the *Address* where the FlipFactory is located. From the pull-down menu next to *Account*, select the name of the account in FlipFactory that does YouTube fingerprinting. From the pull-down menu next to *Factory*, select the factory that performs the YouTube fingerprinting.

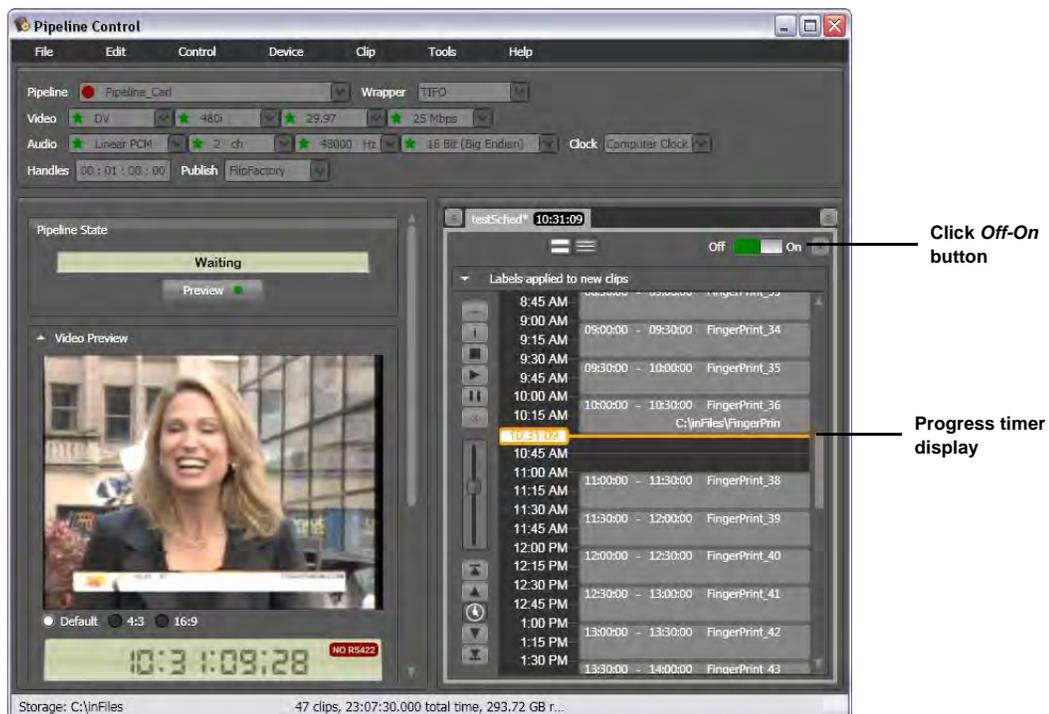
Finally, from the pull-down menu next to *File Location*, enter the location where FlipFactory must look to find video clips to be fingerprinted. This should be the same location identified for *Storage* in the previous step:



- Select *File > New Schedule* from the menu bar. Create a 24-hour schedule of 30-minute video clips. Change the minutes field in the *Handles* text box to “:01” to provide 1-minute overlaps:

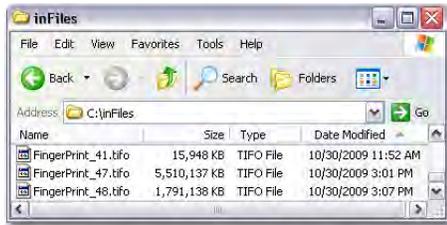


- Click the red *Off-On* button to activate the video feed. The *Off-On* button becomes green and live video is displayed on the left side of the panel. The right side of the panel indicates a video clip being created by displaying an orange progress timer:

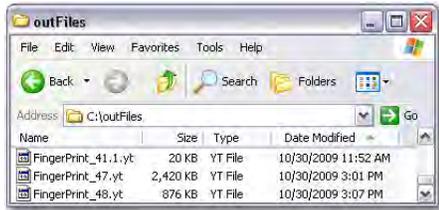


- Now that you have created a pipeline that produces scheduled video clips, you need to ensure that FlipFactory has processed them and successfully created fingerprint files.

7. Navigate to the TIFO file location to ensure that the files created by Pipeline are present:



8. Navigate to the FlipFactory output file location to ensure that the fingerprint files are present:



9. Make sure the *Job Status* window in FlipFactory reports the jobs as "Complete".

Fingerprinting a Video Clip from Tape

This example sets up a Pipeline feed from video tape and creates video clips used by FlipFactory to create YouTube fingerprint files.

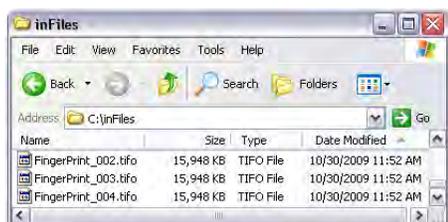
Note: This example assumes you have already reviewed [“Creating Fingerprints of Video Files”](#) and can create video feeds using [“Log and Capture”](#) in Pipeline.

Follow these steps to create video clips from tape for YouTube fingerprinting in FlipFactory:

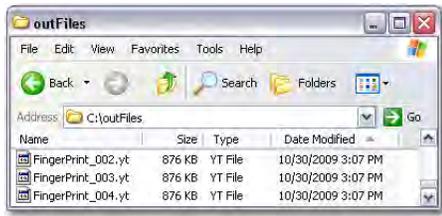
1. Create a “Log and Capture” document in Pipeline Control and configure it to feed video into FlipFactory.
2. Set up the selected wrapper and FlipFactory publisher as described in [Configuring Your Wrapper and File Storage Location on page 11](#).
3. Capture video clips using the *Mark In* and *Mark Out* buttons on the right side of the panel:



4. Click the red *Off-On* button to capture the video clips from the tape. The *Off-On* button displays green during the capture process.
5. Now that you have produced video clips, ensure that FlipFactory processed them and successfully created fingerprint files.
6. Navigate to the TIFO file location to ensure that the files created by Pipeline are present:



7. Navigate to the FlipFactory output file location to ensure that the fingerprint files are present:



8. Make sure the *Job Status* window in FlipFactory reports the jobs as "Complete".

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The software will operate in substantial conformance with its specifications as set forth in the applicable product user's guide/published specifications/product description. Telestream does not warrant that operation of the software will be uninterrupted or error-free, will meet your requirements, or that software errors will be corrected. Telestream's sole liability under Section 1 of this Limited Warranty shall be to use reasonable commercial efforts to bring the Software's performance into substantial conformance with the specifications in the applicable product user's guide/ published specifications/product description.

FlipFactory 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 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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