



NexGuard Watermarking Integration Guide

Vantage 8.0 Update Pack 4

GP Transcoder 2019.1

Flip64 8.0.9

IPTV VOD 8.0.6

Multiscreen 8.0.7

Post Producer 2022.1



Contacting Telestream

To obtain product information, technical support, or provide comments on this guide, contact us using our web site, email, or telephone number as listed below.

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Introduction

Nagra's NexGuard video and audio watermarking products are employed in post-production systems to provide forensic, video, and audio watermarking, making media copies traceable and secure throughout the dubbing, review, preview, and distribution processes. Embedded forensic marking deters piracy by ensuring traceability of individual copies, even during tape or DVD duplication, transfer, and transcoding.

Telestream integrates NexGuard Embedder (deprecated), NexGuard Transcoder Plugin, and NexGuard Streaming products in Vantage as an optional, licensed feature so that media owners can protect content by identifying unique copies of their material utilizing NexGuard as part of their normal workflow processing using any Vantage transcoder—on-premises and in Telestream Cloud—efficiently and flexibly.

Topics

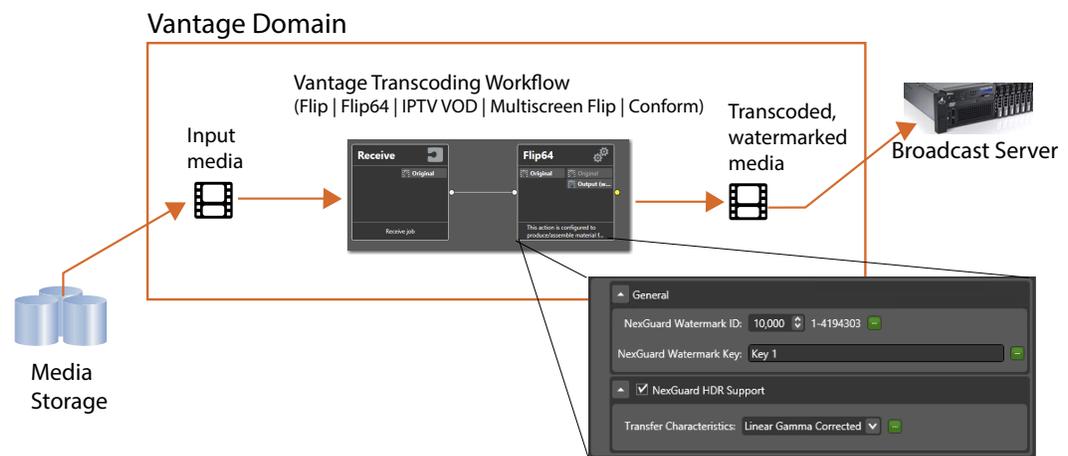
- [Overview](#)
- [NexGuard Watermarking Implementation](#)
- [Getting Started with NexGuard Watermarking](#)

Note: This guide is written for video professionals who are familiar with using Vantage. To implement media processing applications in Vantage, you should know how to create and configure workflows and submit jobs. If you aren't familiar with Vantage, Telestream suggests that you review the *Vantage User's Guide* and *Vantage Domain Management Guide* as needed.

Overview

Vantage integrates Nagra’s NexGuard Embedder (deprecated), NexGuard Transcoder Plugin, and NexGuard Streaming watermarking products in several Vantage transcoding actions. Vantage workflows using NexGuard Embedder, which is implemented in the NexGuard Watermark Filter and NexGuard Transcoder Plugin, implemented in NexGuard Watermark (JWT License) Filter, can also interact with NexGuard Manager to dynamically obtain watermark identifiers and update job status and metadata from Vantage media processing jobs.

This diagram illustrates how media is typically ingested from a media server for transcoding in Vantage using a Flip64 transcoding action, where NexGuard watermarking is applied.



The Flip64 action depicted here is configured to transcode media with the video stream watermarked by NexGuard Embedder—via the NexGuard Watermark Filter—and then delivered to a broadcast server.

Note: Whether you have a single-server Vantage domain or a multi-server Vantage domain (an array), the functionality is identical. In an array, Vantage services are deployed on multiple servers to scale concurrent job execution. You may also utilize Vantage Cloud, where supported transcoding actions can execute in the Cloud.

NexGuard Watermarking Implementation

NexGuard watermarking products are implemented in many Vantage transcoding actions, as shown in this table.

NexGuard Manager, if installed in your environment, may also be integrated into workflows and utilized by the Notify action to exchange metadata on a job-by-job basis.

Vantage NexGuard Watermarking Filters and Nagra NexGuard Products

Vantage Transcoding Actions	NexGuard Watermark Filter—NexGuard Embedder (Deprecated) (Video & Audio*)	NexGuard Watermark (JWT License) Filter—NexGuard Transcoder (Video Only)	NexGuard Streaming Watermark Filter—NexGuard Streaming (Video Only)
Flip	<input checked="" type="checkbox"/>		
Flip64	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Flip64 (Cloud Mode)		<input checked="" type="checkbox"/>	
Multiscreen			<input checked="" type="checkbox"/>
Multiscreen (Cloud Mode)			<input checked="" type="checkbox"/>
IPTV Flip	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
IPTV Flip (Cloud Mode)		<input checked="" type="checkbox"/>	
Conform	Video Only <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

In order to watermark media in a given transcoding action, the codec you select must not be operating in direct-convert mode. To perform watermarking, the media must be decoded down to digital baseband and re-encoded—*transcoded*, or *flipped*—using Vantage vernacular. Also, some video and audio formats (legacy formats, or AC-3 for example) can't be watermarked in Vantage.

NexGuard Embedder (Deprecated)

NexGuard watermarking by NexGuard Embedder was implemented in Vantage version 4.0 and continues to be included in Vantage 8.0 UP4 and later for backward compatibility. NexGuard Embedder is implemented by the NexGuard Watermark Filter in these actions:

- Flip action (video and audio)
- Flip64 action on-premises (video and audio)
- Conform action on-premises (video only)
- IPTV VOD action on-premises (video and audio)

NexGuard Embedder requires the NexGuard SafeNet license or the NexGuard SafeNet Floating license from Nagra.

NexGuard Transcoder Plugin

NexGuard Transcoder Plugin is implemented by the NexGuard Watermark (JWT License) Filter in these Vantage actions:

- Flip64 action on-premises
- Flip64 action in Cloud mode
- IPTV Flip action on-premises
- IPTV Flip action in Cloud mode
- Conform action on-premises

NexGuard Transcoder Plugin requires the NexGuard JWT license from Nagra.

NexGuard for Streaming

NexGuard for Streaming is implemented by the NexGuard Watermark (JWT License) Filter in these actions:

- Multiscreen Flip action on-premises
- Multiscreen Flip action in Cloud mode

NexGuard for Streaming requires the NexGuard JWT license from Nagra.

Getting Started with NexGuard Watermarking

Follow these guidelines to get started using NexGuard to watermark your media in Vantage:

1. Verify that Vantage is installed and meets the minimum version requirements, and update Vantage as required—proceed to [Vantage Requirements](#).
2. If you plan to use Nagra NexGuard Manager, make sure that it is installed and licensed—proceed to [Exchanging Job Metadata with NexGuard Manager](#).
3. Obtain and apply the appropriate Telestream and NexGuard licenses—proceed to [Obtaining & Applying Vantage & NexGuard Licenses](#).
4. Jump into the [Implementing NexGuard Watermarking in Workflows](#) when you're ready to start building workflows that use NexGuard to watermark your media.

Enabling NexGuard Products in Vantage

Nagra's NexGuard Embedder, Transcoder Plugin, and NexGuard for Streaming watermark products are integrated directly into Vantage and do not require installation.

You should verify that your Vantage domain meets version requirements, and obtain and apply licenses from both firms to begin watermarking your media using NexGuard.

Topics

- [Vantage Requirements](#)
- [NexGuard Manager Requirements](#)
- [Obtaining & Applying Vantage & NexGuard Licenses](#)

Vantage Requirements

Before you can use Nagra NexGuard products in your Vantage workflows, your Vantage domain should be installed and operating at these minimum version levels or later:

- Vantage 8.0
- Vantage 8.0 Update Packs
 - Update Pack 4
- GP Transcoder 2019.1—required for Flip actions
- ComponentPacs:
 - Flip64 8.0.9—required for Flip64 actions
 - IPTV VOD 8.0.6—required for IPTV Flip actions
 - Multiscreen 8.0.7—required for Multiscreen Flip actions
 - Post Producer 2022.1—required for Conform actions.

Installation instructions are included for each product, Update Pack, and ComponentPac in associated documentation.

For information about downloading Vantage installers, Update Packs and ComponentPacs, please contact Telestream Support at support@telestream.net.

You can also view Vantage support information by visiting <https://www.telestream.net/telestream-support/overview.htm>.

See [Contacting Telestream](#) for other ways to communicate with Telestream.

NexGuard Manager Requirements

NexGuard Manager Version 1 (deprecated) and Version 2 are supported in Vantage for use in NexGuard Watermark filters, which implement NexGuard Embedder, and NexGuard Watermark (JWT License) filters, which implement NexGuard Transcoder Plugin.

NexGuard Manager may be integrated into on-premises and hybrid workflows.

In a hybrid workflow, when a transcoding action is operating in Cloud mode—where the action may execute in Telestream Cloud—you can configure Notify actions on-premises to pass metadata between NexGuard Manager and the transcoder action executing in Telestream Cloud.

Note: NexGuard Manager can not be used with the NexGuard Watermark (JWT License) Filter (NexGuard Transcoder Plugin) in hosted workflows or with the NexGuard Streaming Watermark Filter (NexGuard for Streaming).

For an implementation overview, see [Exchanging Job Metadata with NexGuard Manager](#).

Version 1 (Deprecated)

To utilize NexGuard Manager Version 1, it must be licensed, and the server hosting it must be accessible by all Vantage nodes that implement NexGuard watermarking. NexGuard Manager must also be accessible from nodes in the domain where the Vantage Communicate Service executes Notify actions.

Note: For information about using NexGuard Manager V1 which is deprecated, please contact Telestream Customer Service (See [Contacting Telestream](#)).

Version 2

NexGuard Manager Version 2 must be installed on a server as a VM (independent of the Vantage domain). The VM must be accessible by each Vantage Communicate Service that executes Vantage Notify actions. The NexGuard Manager package includes a pre-installed license. For a prototype workflow and implementation details, see [Using NexGuard Manager](#).

Obtaining & Applying Vantage & NexGuard Licenses

Before you can utilize NexGuard watermarking in Vantage, you should—in this order—obtain and activate licenses from Telestream and Nagra.

Note: If you don't have a license from Telestream, the filters are disabled. If you don't have a license from Nagra, your Vantage jobs will fail.

- [Obtaining a NexGuard Forensic Watermarking License from Telestream](#)
- [Activating Telestream's NexGuard Forensic Watermarking License](#)
- [Obtaining NexGuard Licenses from Nagra](#)

Obtaining a NexGuard Forensic Watermarking License from Telestream

Utilizing NexGuard watermarking products in Vantage requires a NexGuard Forensic Watermarking license from Telestream. The Vantage filters that implement these products in supported transcode actions are disabled unless Telestream's NexGuard watermarking license is installed and active.

The NexGuard Forensic Watermarking license allows you to enable and configure all NexGuard watermarking filters in any transcoding action executing on-premises or in Telestream Cloud. This license also enables communication with NexGuard Manager.

A prerequisite to the use of this license is that you also have a Vantage Transcode | Transcode Pro or other Vantage product license that supports NexGuard watermarking.

Note: Filter execution is only enabled when you have licenses from Nagra (see [Obtaining NexGuard Licenses from Nagra](#)). If you attempt to execute a job without a license, the job fails.

Maximum On-Premise Concurrent Watermarking Jobs

Each NexGuard Forensic Watermarking license enables four concurrent sessions of NexGuard video watermarking and four concurrent sessions of audio watermarking in a Vantage domain on-premises. For Telestream Cloud execution, concurrent job limits do not apply.

You can purchase additional licenses to enable additional concurrent sessions. The Telestream license must be paired with a Nagra license, and the maximum seats in each license should match.

For example, if you have a 4-seat Telestream license (4 concurrent executions), the domain can concurrently execute 1 Flip64, 1 IPTV VOD, 1 Conform and 1 Flip action simultaneously, by any transcode service on any node (server). Vantage places jobs in a

waiting state if all seats are being used, until one becomes available or the job times out and fails.

For information about Vantage licensing, contact your Telestream representative or contact the licensing team via email at license@telestream.net. You can also obtain Vantage product support by visiting <https://telestream.net/telestream-support/overview.htm>. See [Contacting Telestream](#) for other ways to communicate with Telestream.

Activating Telestream's NexGuard Forensic Watermarking License

When you purchase a NexGuard Forensic Watermarking license, Telestream sends you a temporary license file to enable the feature immediately (see [Adding a Temporary License File](#)).

On completion of the transaction, typically your permanent license is updated and a new license file is also generated and delivered, which you use to replace your existing license file (see [Updating an Existing License File](#)).

The naming pattern for Vantage license files is `<MyDomain ID>-<Suffix ID>.xml`; for example: `99999-911111.xml`, where `99999` is the domain ID. Temporary license files repeat the domain ID, but provide a unique suffix. For example: `999999-11112.xml`.

Note: See the Vantage Domain Management Guide (Help > Contents) for detailed license-related topics as required.

To activate the license, add it to the Vantage domain using the Vantage Management Console and restart all client programs—see the following topics.

Adding a Temporary License File

1. Copy the temporary license file that you received and add it to the server and directory where you keep your Vantage license file(s).

License files (*.xml) are typically stored in a customer-created *Licenses* directory:

```
C:\Program Files (x86)\Telestream\Vantage\Licenses.
```

However, license files may be stored anywhere that the Vantage Domain Console can access them.

2. Open the Vantage Domain Console, display the Licenses tab and add the new license.

The policies in the file are imported into the Vantage domain database where they can be utilized by Vantage services as they execute actions.

Updating an Existing License File

1. Copy the license file that you received and add it to the directory where you keep your Vantage license file(s). To replace an existing license file, overwrite the existing file in the directory.

Often, license files (*.xml) are stored in a customer-created Licenses directory:
C:\Program Files (x86)\Telestream\Vantage\Licenses.

However, license files can be stored anywhere that the Vantage Domain Console can access them.

2. Open the Vantage Domain Console, display the Licenses tab and add the license. The policies in the file are imported into the Vantage domain database.
3. Open the Vantage Domain Console, display the Licenses tab and delete the license whose file you just replaced. The policies in the file are deleted from the Vantage domain database.
4. Now, add the license. The policies in the file are imported into the Vantage domain database where they can be utilized by Vantage services as they execute actions.

Restarting Vantage Services and Workflow Designer

To complete the licensing of NexGuard products in Vantage, restart these Vantage services on each node where they are installed:

1. In the Vantage Management Console, display the Services panel
2. Select each service (control-click to select multiple) to restart:
 - Vantage Transcode Service
 - Vantage Edit Service
 - Vantage Multiscreen Service
 - Vantage IPTV VOD Service.
3. Right-click and select Restart Service.

The console stops the selected services and restarts them.
4. When these services indicate Online, close and restart Vantage Workflow Designer so that you can create and execute workflows utilizing NexGuard.
5. If you are using other Vantage client programs, close and restart them as well.

Obtaining NexGuard Licenses from Nagra

SafeNet machine or floating licenses from Nagra are required to execute NexGuard Embedder (deprecated) in Vantage.

JWT machine or floating licenses are required to execute NexGuard Transcoder Plugin and NexGuard Streaming products in Vantage.

To obtain NexGuard licenses, please contact your Nagra representative directly. For NexGuard licensing or technical support, contact Nagra via email at NexGuardCustomerCare@nagra.com.

Note: For information about executing concurrent watermarking jobs, see [Maximum On-Premise Concurrent Watermarking Jobs](#).

Nagra's NexGuard licenses are not part of a Vantage domain—however, Nagra licenses must be stored in specific folders to be accessible to Vantage services using NexGuard filters to watermark media.

After purchasing the required licenses, Nagra will provide you the license files and instructions for installation. You may receive one or more license files, based on your server requirements.

Exchanging Job Metadata with NexGuard Manager

Vantage supports integration with NexGuard Manager Version 1 and NexGuard Manager Version 2. NexGuard Manager is a licensed, optional product from Nagra (see [Obtaining NexGuard Licenses from Nagra](#)).

Note: This chapter describes the use of NexGuard Manager V2. For information about using NexGuard Manager V1 which is deprecated, please contact Telestream Customer Service (See [Contacting Telestream](#)).

You can use NexGuard Manager in Vantage Flip, Flip64, IPTV Flip, and Conform workflows that utilize the NexGuard Watermark Filter (NexGuard Embedder) on premise or the NexGuard Watermark (JWT License) Filter (Transcoder Plugin) on-premises or in hybrid workflows.

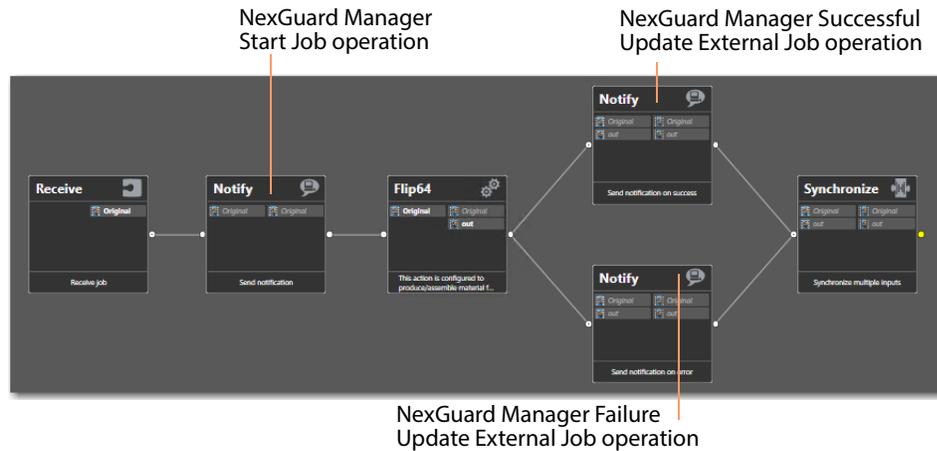
Note: NexGuard Manager can not be used with the NexGuard Watermark (JWT License) Filter (NexGuard Transcoder Plugin) in hosted workflows or with the NexGuard Streaming Watermark Filter (NexGuard for Streaming).

NexGuard Manager is used to provide unique watermark IDs and other metadata on a job-by-job basis. It is also used to update job records with metadata you supply after each job executes.

Vantage workflows communicate with NexGuard Manager via a REST interface, and uses a Notify action configured to use the NexGuard Notifier.

Using NexGuard Manager

This prototype workflow illustrates a simplified workflow demonstrating the basic use of NexGuard Manager V2. It depicts using a Flip64 action (other transcode actions, for example, can also be used). This workflow may not meet your requirements, and by necessity, should be modified to meet your requirements.



Input and output values and settings are all specified in the Notify action’s NexGuard Notifier Inspector panels; detailed explanations and control definitions are provided by context-sensitive help. Click on the M button to display the help page for each panel.

This workflow includes the following actions:

Receive—enables you to drag and drop a media file directly on the Receive action in Workflow Designer to start each job. Other origin actions can be used (Watch | Workorder, etc.), based on your job submission requirements. In particular, the first Notify (using the Start Job operation) can send a variety of metadata to NexGuard Manager, which is not described in this workflow. See [Methods for Providing Metadata](#) for details.

Notify (Start Job)—The first Notify action is configured to use the NexGuard Notifier via the REST interface and credentials. The NexGuard Notifier executes a [Start Job](#) operation to create a job record in NexGuard Manager and obtain watermark ID and job ID and stored in variables you select. The key you specified is also passed downstream for use in other actions.

Flip64—The Flip64 action is a Vantage Cloud Port-capable, 64-bit multi-core-optimized encoder running under the Vantage Transcode Service (except in Cloud mode, when it is executed by the Telestream Cloud Service, operating as a proxy of the Transcode Service). It transcodes media from one format into another format as specified by the output configuration you specify.

Notify (Update External Job)—When transcoding and watermarking is complete, one of two Notify actions execute: the upper (Perform On > Success) Notify action advises NexGuard Manager that the job completed normally, and the job is updated in its

database. In the event of a transcode action failure, the Notify at the bottom (Perform On > Failure) notifies NexGuard Manager to update the job record with an error status.

Synchronize—The only purpose of the Synchronize is to bring all output into a single action for reporting purposes elsewhere in Workflow Designer.

Start Job

The *Start Job* operation is always executed by the Notify action prior to the Transcode action. When *Start Job* executes, NexGuard Manager creates a new job record with the input values provided and returns a watermark ID for use in a watermark filter:

Start Job Input

The Notify action delivers this data to NexGuard Manager to create a new job record:

Job > Work Order (optional)

Job > Key: Keyword string; selected from one or more keys obtained from the license file or manually entered.

Title | Customer | Recipient fields: Recipient > Last Name is required; all other metadata fields are optional, per your requirements.

Start Job Output

NexGuard Manager returns this data to the Notify action for this job:

Watermark ID Integer value; unique watermark ID

Job ID Integer value; returned from NexGuard Manager.

Notify Action Output

The Notify action passes these variables for use downstream:

Key The specified variable is updated with the key you specified.

Watermark ID The specified variable is updated with the watermark ID returned from NexGuard Manager.

Job ID The specified variable is updated with a unique Job ID returned from NexGuard Manager.

Update External Job

The *Update External Job* operation is always executed by one of two Notify actions immediately following the Transcode action, one of which must be set to Perform On > Success, and the other to Perform On > Failure.

When *Update External Job* executes, NexGuard Manager updates the job record with the Job ID and Status provided:

On Success Update External Job Input

If the Transcode action completes normally, the Perform On > Success Notify action executes and delivers the following data to NexGuard Manager to update the specified job record:

- Job ID** (required) string in Job ID variable specified in previous Notify
- Status** keyword *Finished* (required)

On Failure Update External Job Input

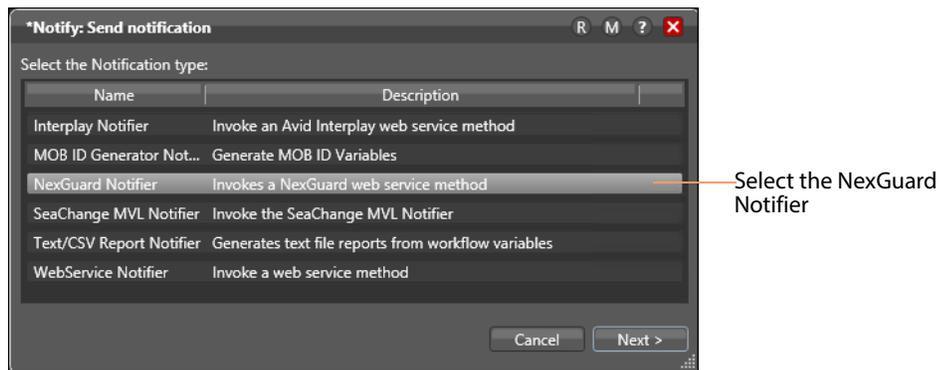
If the Transcode action fails, the Perform On > Failure Notify action executes and delivers the following data to NexGuard Manager to update the specified job record:

- Job ID** (required) string in Job ID variable specified in previous Notify
- Status** keyword *Error* (required)

Configuring a Notify Action to use NexGuard Manager

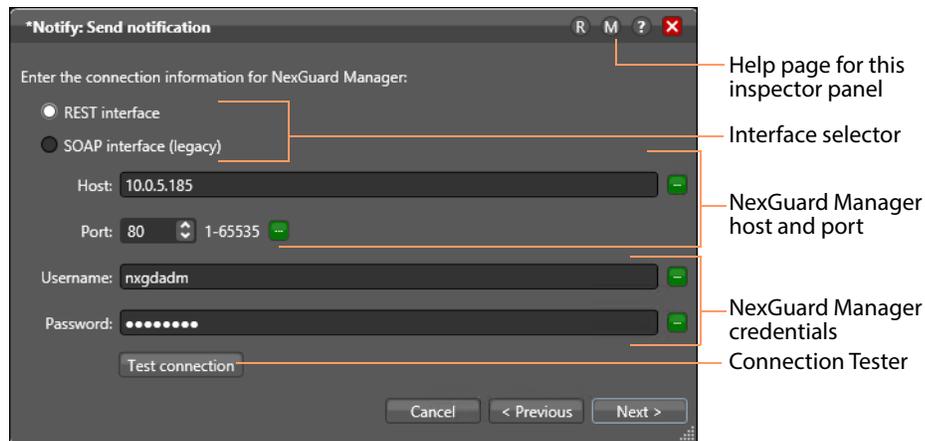
Configure each Notify action as follows:

1. Open the Notify action inspector:



2. Select the NexGuard Notifier and click Next.

Workflow Designer displays the connection information panel:

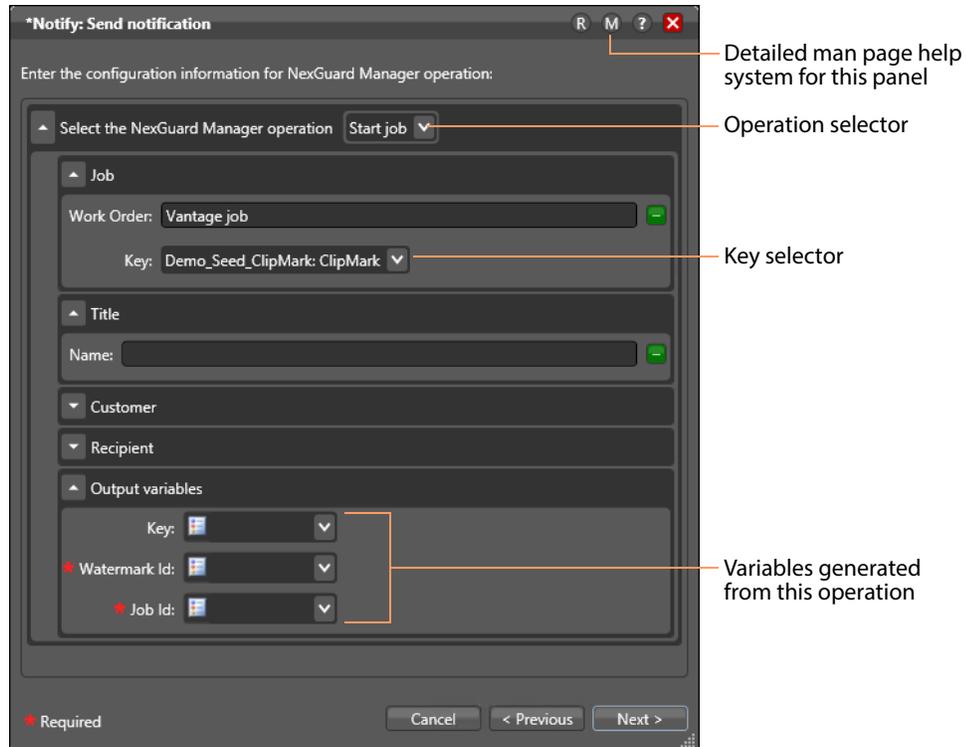


3. Select the REST interface, enter the NexGuard Manager's host IP | Windows Name, port number (typically 80), and your credentials.
4. Click Test Connection to verify that your settings are correct. If an error displays, correct the information and retry.
5. When Workflow Designer reports a successful connection, click Next.

Note: A successful connection in Workflow Designer validates the host, port, and credentials. However, the Vantage Communicate Service which executes the Notify action may not be able to connect, due to configuration errors, or based on its own Windows permissions. If you can't connect, resolve the problem and retry.

Configuring a Notify Action > Start Job Operation

Configure the NexGuard Manager Information panel as follows:



1. Select the Start Job operation.
2. In the Job category, select the key you want to use for this job. Keys are extracted from the NexGuard Manager license.
3. In Output Variables, specify the variables you want updated with the Key, Watermark ID and Job ID values. The Key is specified by you; the Job ID and Watermark ID are generated by NexGuard Manager.
4. Update job metadata controls that you want to utilize, with a static value or bind it to a variable. All of these values are sent to NexGuard Manager to start a new job record and update it with this metadata, including the key you specify.

For job metadata controls (Work Order in the Job category, and all controls in the Title, Customer, and Recipient categories), you can supply by either manually entering the value (which is static and never changes) or by binding it to a variable so that you can change values on a job-by-job basis. (See [Methods for Providing Metadata](#) for details).

5. Click Next and then click Finish to save the Notify action's configuration.

Configuring a Notify Action > Update External Job on Success

Configure the Perform On > Success Notify action after the transcode action as follows:

The screenshot shows a dialog box titled '*Notify: Send notification'. It contains the following elements:

- Operation selector:** A dropdown menu showing 'Update External job'.
- Job ID field:** A text input field with a green 'Variable Browse' button to its right.
- Status selector:** A dropdown menu showing 'Finished'.
- Buttons:** 'Cancel', '< Previous', and 'Next >'.
- Required:** A red star icon and the word 'Required' at the bottom left.

1. Select the *Update External Job* operation from the Select... menu.
2. Specify the Job ID by clicking the green Variable Browse button and selecting the variable assigned the Job ID value in the first Notify.
3. Select *Finished* from the Status menu to indicate that the transcode operation completed normally.
4. Click Next and then click Finish to save the Notify action's configuration.

Configuring a Notify Action > Update External Job Failure

Configure the Perform On > Failure Notify action after the transcode action as follows:

The screenshot shows a dialog box titled '*Notify: Send notification'. It contains the following elements:

- Operation selector:** A dropdown menu showing 'Update External job'.
- Job ID field:** A text input field with a green 'Variable Browse' button to its right.
- Status selector:** A dropdown menu showing 'Error'.
- Buttons:** 'Cancel', '< Previous', and 'Next >'.
- Required:** A red star icon and the word 'Required' at the bottom left.

1. Select the *Update External Job* operation from the Select menu.
2. Specify the Job ID by clicking the green Variable Browse button and selecting the variable assigned the Job ID value in the first Notify.
3. Select *Error* from the Status menu to indicate that the transcode operation did not complete normally.
4. Click Next and then click Finish to save the Notify action's configuration.

Implementing NexGuard Watermarking in Workflows

There are several Nagra products—and several methods and features—that you can use to watermark your media with NexGuard products in Vantage, depending on your media post-production and watermarking requirements. For example, you can watermark media in on-premise workflows as well as hybrid workflows where transcoder actions execute in Cloud mode, or in hosted workflows, where the entire workflow is exported for deployment in Telestream Cloud. In addition, you can use NexGuard Manager in workflows to improve dynamic metadata utilization.

This chapter discusses topics that apply generally to watermarking your media in Vantage using NexGuard. The remaining chapters are dedicated to the use of NexGuard watermarking in the context of specific transcoding actions.

Topics

- [Overview](#)
- [Providing Input Values Dynamically](#)
- [Methods for Providing Metadata](#)

Overview

Vantage implements NexGuard watermarking in Flip | Flip64 | Multiscreen Flip | IPTV Flip | Conform actions. For details, see [NexGuard Watermarking Implementation](#).

The minimum workflow required to utilize NexGuard products in a workflow is an origin action to suit your workflow requirements, and a transcode action that supports NexGuard—Flip | Flip64 | Multiscreen | IPTV | Conform.

When you're using NexGuard Manager, you can exchange and deliver metadata on a job-by-job basis to update your records: providing a unique watermark ID and key and returning job results to NexGuard Manager. For details, see [Exchanging Job Metadata with NexGuard Manager](#). Communication with NexGuard Manager is performed using the Notify action in on-premises and hybrid workflows.

Of practical necessity of course, your workflow should be designed and implemented to meet your operational and transcoding requirements and may include many other actions, not necessarily associated with NexGuard watermarking. In many cases, a very comprehensive (and thus, complex) workflow may simply include NexGuard watermarking as one of the many tasks being performed, not as the primary one.

The workflows in this guide use a Receive action to start each workflow, so that you can just browse for a file or drop one on the workflow to execute it. Other origin actions (for example, Watch or Workorder) may also be used, depending on your job submission requirements.

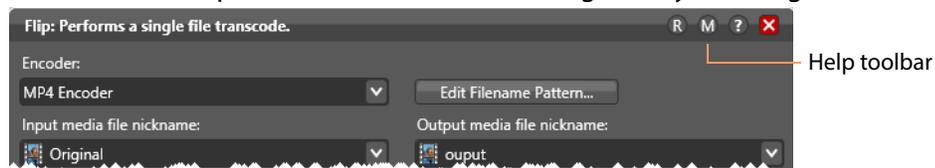
Watermarking of course, can't be performed when the transcoder is operating in direct-convert mode; the media must be decoded down to digital baseband and re-encoded to be watermarked. Downstream transcoding and other Vantage processing does not alter the watermark once it is applied to the media.

Video watermarking can be performed on media being processed by any codec which creates a series of frames in a stream or during any process where the codec is encoding new frames. For example, key frame encoding doesn't support watermarking because it is not making a series of frames in a stream.

Likewise, audio watermarking can be performed on media being processed by any codec which encodes/re-encodes a new audio stream.

Minimum time limits on media may apply; they are noted in appropriate topics.

Note: Online help is available in Workflow Designer as you configure an action.



In each action's inspector, a help toolbar displays in the upper right corner. Click the R button to locate and display a read-only reference inspector of any workflow's action. Click the M button to display context-sensitive help. The help (man) page describes

each component in detail, including controls. Click the ? icon to display the Workflow Designer User's Guide > Configuring Actions topic for general assistance.

Providing Input Values Dynamically

NexGuard Manager is used to provide watermark input parameters and receive job reports from your workflows that use the NexGuard Watermark Filter or the NexGuard Watermark (JWT License) Filter, on a job-by-job basis. The method is described in [Exchanging Job Metadata with NexGuard Manager](#).

You can provide unique watermark IDs and keys and other metadata values dynamically to the NexGuard Watermark filter and the NexGuard Watermark (JWT License) filter if you aren't using NexGuard Manager (or it is temporarily unavailable) to perform the task automatically.

NexGuard watermark filters provide controls in the action inspector to provide the required input values. If you want to use the same watermark ID or other input value for each job, you can just enter or select the value statically.

However, if the values change each job, you must manually update them in the filter each time before submitting a job. However, this manual process can be time-consuming and ineffective.

To automate providing input values, you can bind the controls to variables where values change on a job-by-job basis.

Metadata requirements for NexGuard filters are based on the implemented Nagra product and the Vantage action it's implemented in:

Flip Action

NexGuard Watermark Filter (NexGuard Embedder)—video and audio:

- Watermark ID
- Watermark Key

Flip64 Action

NexGuard Watermark Filter (NexGuard Embedder)—video and audio:

- Watermark ID
- Watermark Key

NexGuard Watermark (JWT License) Filter (NexGuard Transcoder Plugin)—video:

- Watermark ID
- Preset Name
- Watermark Strength keyword
- Cloud Deployment License string, when executing in Cloud Mode

Conform Action

NexGuard Watermark Filter (NexGuard Embedder)—video:

- Watermark ID
- Watermark Key

NexGuard Watermark (JWT License) Filter (NexGuard Transcoder Plugin)—video:

- Watermark ID
- Preset Name
- Watermark Strength keyword
- Cloud Deployment License string, when executing in Cloud Mode

Multiscreen Flip Action

NexGuard Streaming Watermark Filter (NexGuard for Streaming)—video

- Watermark ID
- Preset Name
- Watermark Strength keyword
- Cloud Deployment License string, when executing in Cloud Mode

IPTV Flip Action

NexGuard Watermark Filter (NexGuard Embedder)—video and audio:

- Watermark ID
- Watermark Key

NexGuard Watermark (JWT License) Filter (NexGuard Transcoder Plugin)—video:

- Watermark ID
- Preset Name
- Watermark Strength keyword
- Cloud Deployment License string, when executing in Cloud Mode

Methods for Providing Metadata

Here are several ways you can use variables to dynamically supply metadata values on a job-by-job basis: For these options, configure the filters to use specific variables for the watermark ID and key (and others) instead of entering static values, and then:

- **Supply values in the file name**—use a Construct action to create a string variable with the file name—for example: `CascadeSnow_12345_Key1.mov`—where the watermark ID and key are part of the name—and then use a Compute action to extract the ID (or other input value) into a variable, for use in the filter control for the corollary metadata.
- **Supply the media file and values in a workorder**—Create a workorder schema for a CSV file, where each row represents a job, and specifies the file path and other input values required, and use a Workorder action as the origin action in your workflow, to start a job for each line item and generate variables for use in the transcode action's watermark filter. (Workorders enable you to submit multiple jobs at one time.)
- **Use Workflow Portal to select media and enter values**—Create a Workflow Portal configuration that enables operators to provide input values and browse and select the media file to submit. Workflows intended for job submission via Workflow Portal must start with a Receive action.
- **Supply values in an attachment**—provide the values in a JSON or XML file and configure your workflow with a Watch configured for an attachment or a Watch with an Associate action; extract the values using an Extract action for use in the transcode action or other actions in the workflow.
- **Create your own program**—Using the Vantage SDK, create a simple job submission program, where operators select an input file, enter the required input values, and submit the job to a workflow. Workflows intended for job submission via a program must start with a Receive action. The Receive action must be configured to receive the variables you are including with the job—right-click and select Add Variables—and enter each variable you plan to supply.

Configuring Flip64 Actions for Watermarking

The Flip64 action includes filters for watermarking using two different NexGuard products—NexGuard Embedder (deprecated) which watermarks video and audio and NexGuard Transcoder Plugin—which watermarks video on-premises as well as in hybrid and hosted workflows executing in Telestream Cloud.

Before creating NexGuard watermarking workflows for a particular transcoding action, Telestream recommends that you read [Implementing NexGuard Watermarking in Workflows](#), where you'll learn about issues that apply generally to watermarking your media in Vantage using NexGuard.

Topics

- [Overview](#)
- [Creating a Prototype Workflow](#)
- [Configuring the Video NexGuard Watermark Filter](#)
- [Configuring the Audio NexGuard Watermark Filter](#)
- [Configuring the NexGuard Watermark \(JWT License\) Filter in On-Premise Workflows](#)
- [Configuring the NexGuard Watermark \(JWT License\) Filter in Hybrid Workflows](#)
- [Configuring the NexGuard Watermark \(JWT License\) Filter in Hosted Workflows](#)

Overview

The Flip64 action implements two NexGuard filters:

- NexGuard Watermark Filter—implements NexGuard Embedder (deprecated), for execution on-premises only; watermarks video and audio streams in separate filters. Supports use of NexGuard Manager.
- NexGuard Watermark (JWT License) Filter—implements the NexGuard Transcoder Plugin, executes on-premises and in hybrid when the Flip64 action is configured to operate in Cloud mode or the workflow is a hosted workflow, which executes entirely in Telestream Cloud. Supports the use of NexGuard Manager in on-premise and hybrid workflows.

Flip64 workflows with NexGuard watermarking have the following limits/requirements:

- You can't watermark media in formats that don't support watermarking.
- Watermarking can't be performed with codecs being used in Direct-Convert mode; they must decode and re-encode the video/audio.
- The video must be at least 2 1/2 minutes long for the watermark to be detected. For audio, clips must be at least 15 seconds long.
- Audio watermarking is supported for PCM and AAC audio. If you want watermarked audio in another format, first watermark PCM, then re-encode it in your required format; watermarking is preserved.

Creating a Prototype Workflow

This is a basic Flip64 workflow that you can use to watermark your media during transcoding.



This workflow includes the following actions:

Receive—enables you to drag and drop a media file directly on the Receive action in Workflow Designer to start each job. Any other origin action can be used (Watch | Workorder, etc.), based on your job submission requirements.

Flip64—the Flip64 action is a Vantage Cloud Port-capable, 64-bit multi-core-optimized encoder running under the Vantage Transcode Service (except in Cloud mode, when it is executed by the Telestream Cloud Service, operating as a proxy of the Transcode Service). It transcodes media from one format into another format as specified by the output configuration you specify.

If you use NexGuard Manager, see [Exchanging Job Metadata with NexGuard Manager](#) for implementation details.

If you are using a Nagra machine license, you should add a run-on rule to the transcoding action and configure it to execute on the server where the license is installed. See the Workflow Designer User’s Guide for details.

Note: Detailed online help is provided in Workflow Designer for use when you are configuring an action. Double-click an action to display its inspector, where you can press click the M button to display the man page, which describes each component in detail, including controls.

Follow these steps to create your prototype Flip64 workflow:

1. In Workflow Designer, create a new category to store your NexGuard workflows. For example, *NexGuard Flip64 Workflows*.
2. Create a new workflow: *Flip64 Prototype Watermark*, for example.
3. Add a Receive action, and configure it to ingest a media file—select *Original* as the nickname.

4. Now, add a Flip64 action and configure these settings:
 - Inputs: Add an Auto input and select *Original* as the source file to ingest.
 - Converters: No converters are required.
 - Outputs: Add an MPEG-4 container and specify the output nickname as *Out*. For video, specify the x264 codec, and for audio, the AAC codec.
5. Optionally, configure remaining settings—other than the NexGuard Watermark filters—as desired.

When you are using a machine license from Nagra, you should add a run-on rule to the transcoding action and configure it to execute on the server where the license is installed. See the *Workflow Designer User's Guide* for details.

Now, you can use this prototype workflow as a starting point to implement watermarking in Flip64, executing on-premises, in hybrid, and in hosted workflows, as described in the following topics.

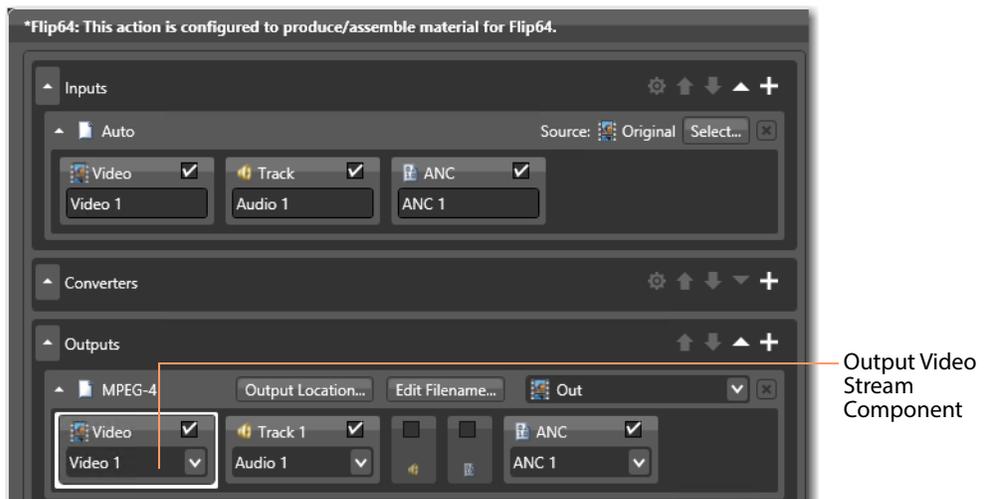
In production, you can use any supported input you require, add converters, and generate output using any supported container/codec. The prototype is just an example—you can modify the workflow by adding other actions to suit your media processing requirements.

Configuring the Video NexGuard Watermark Filter

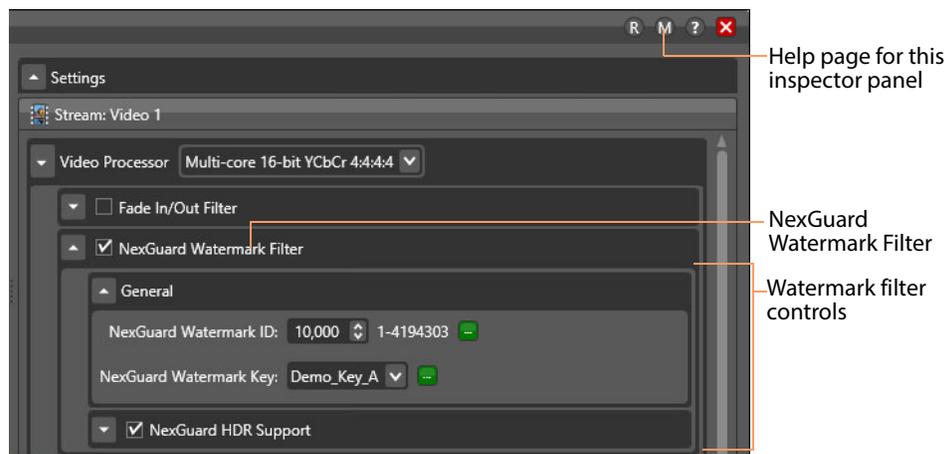
The NexGuard Watermark Filter implements NexGuard Embedder in the Flip64 output video component for watermarking to the video stream, when executing on-premises.

Follow these steps to enable and configure it:

1. First, duplicate the Flip64 Prototype Watermark workflow, renaming it as *Flip64 Video Watermark*, for example. Workflow Designer selects and opens it.
2. Open the Flip64 action's inspector and select the MPEG-4 (or other) output's video component:



The inspector displays its configuration panel to the right.



3. In the Video Processor settings, enable the NexGuard Watermark Filter:

The filter requires a watermark ID and watermark key. There are three ways to provide these values:

- Statically, by specifying them manually, which remain the same for every job.
- Dynamically, via variables—see [Providing Input Values Dynamically](#).
- Using NexGuard Manager—see [Exchanging Job Metadata with NexGuard Manager](#).

4. Configure these settings:

NexGuard Watermark ID. Specifies the watermark (payload) ID that NexGuard should use to generate the watermark. If you aren't using NexGuard Manager or it is temporarily unavailable, provide the watermark ID statically or populate and select the variable.

NexGuard Watermark Key. Specifies the key to use when NexGuard applies the watermark. Select from the list in the menu.

Note: When you are using a machine license in the *\Vantage* directory on one server in an array, a race condition may occur where an unlicensed transcode service updates the Vantage database with licensing information after the licensed transcoder service has already done so. In this situation, the NexGuard Watermark filter won't be able to populate the Watermark Key field, requiring you to add it manually.

If the NexGuard Watermark Key is a text field displaying the value *Key 1*, it means that the service was unable to access the license file or that the license information was updated by an unlicensed transcode service. Verify that the license file is valid and in the correct directory, restart the transcode service, and then retry.

NexGuard HDR Support. When checked, enables High Dynamic Range support.

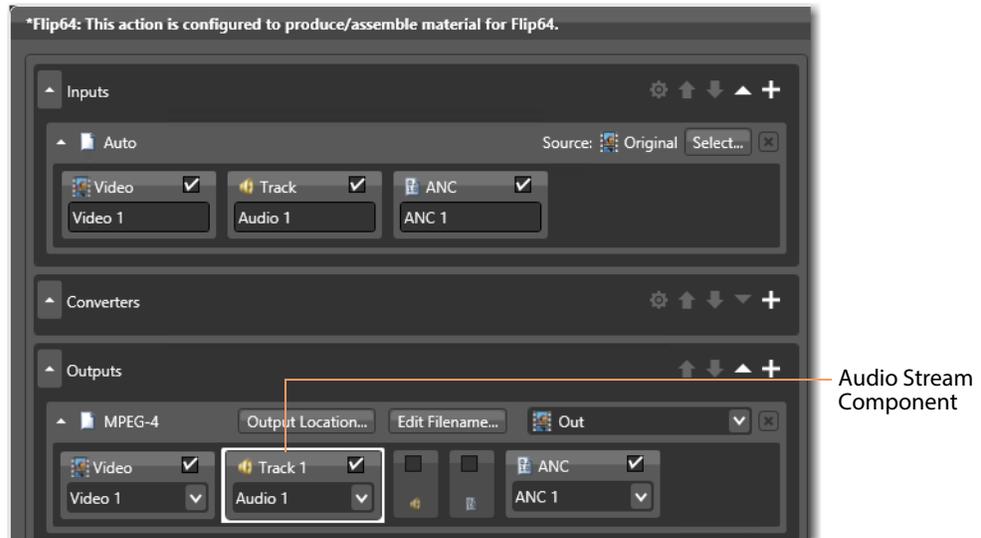
Transfer Characteristics. Specifies [Linear Gamma Corrected | DPX Cineon | Hybrid Log Gamma | Perceptual Quantizer]. DPX Cineon can only be used with an RGB10 stream.

- 5.** Now that you've configured the NexGuard Watermark Filter, close the inspector to update the action.
- 6.** Activate the workflow, and submit a test file to start a job.
- 7.** When the job completes, display the Job Status tab and select the job to play and test your watermarked media.

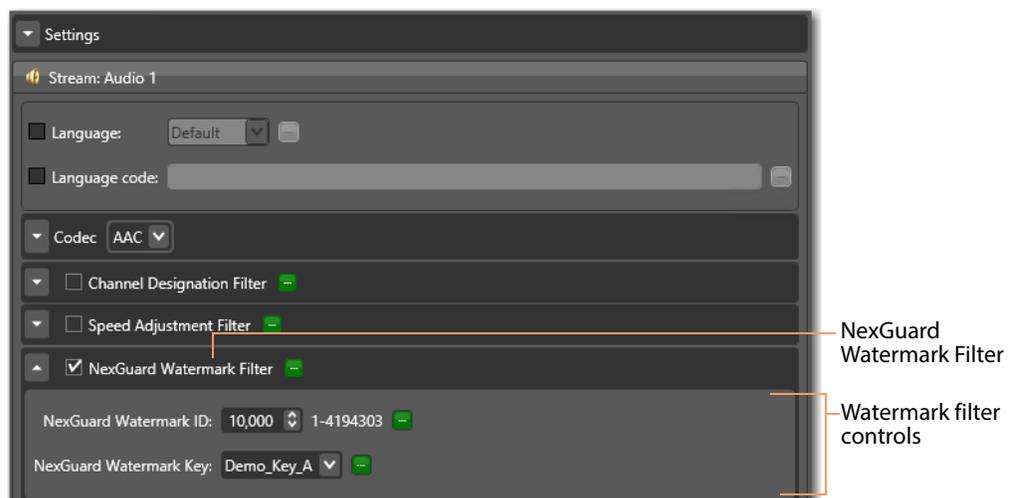
Configuring the Audio NexGuard Watermark Filter

The NexGuard Watermark Filter implements NexGuard Embedder in the Flip64 output audio component to watermark the audio stream, when executing on-premises:

1. First, duplicate the Flip64 Prototype Watermark workflow, renaming it as *Flip64 Audio Watermark*, for example. Workflow Designer selects and opens it.
2. Open the Flip64 action inspector and select the MPEG-4 (or other) output's audio component:



The inspector displays its configuration panel to the right.



3. In the Settings panel, enable the NexGuard Watermark Filter:

The filter requires a watermark ID and watermark key. There are three ways to provide these values:

- Statically, by specifying them manually, which remain the same for every job.
- Dynamically, via variables—see [Providing Input Values Dynamically](#).
- Using NexGuard Manager—see [Exchanging Job Metadata with NexGuard Manager](#).

4. Configure these settings:

NexGuard Watermark ID. Specifies the payload ID that NexGuard should use to generate the watermark. If you aren't using NexGuard Manager or it is temporarily unavailable, provide the watermark ID statically or populate and select the variable.

NexGuard Watermark Key. Specifies the key to use when NexGuard applies the watermark. You must provide the key statically or populate and select the variable.

Note: When you are using a machine license in the *\Vantage* directory on one server in an array, a race condition may occur where an unlicensed transcode service updates the Vantage database with licensing information after the licensed transcoder service has already done so. In this situation, the NexGuard Watermark filter won't be able to populate the Watermark Key field, requiring you to add it manually.

5. Now that you've configured the NexGuard Watermark Filter, close the inspector.

6. Activate the workflow, and submit a test file to start a job.

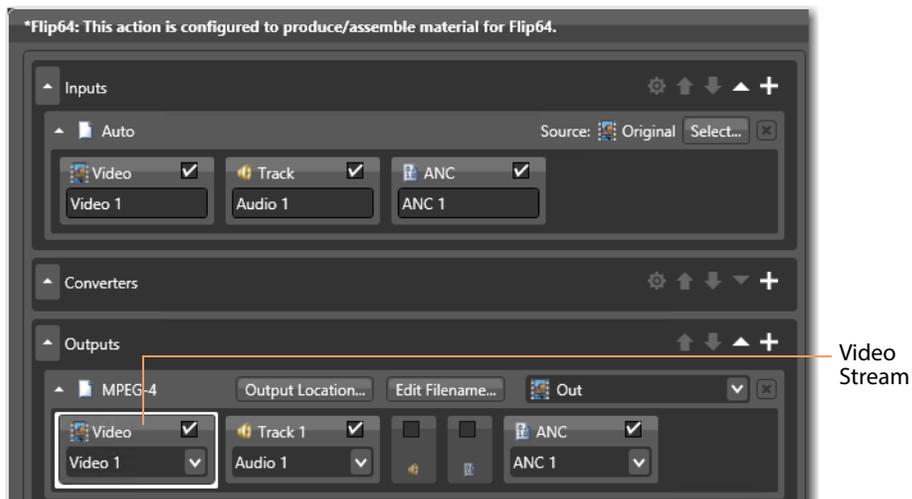
7. When the job completes, display the Job Status tab and select the job to play and test your watermarked media.

Configuring the NexGuard Watermark (JWT License) Filter in On-Premise Workflows

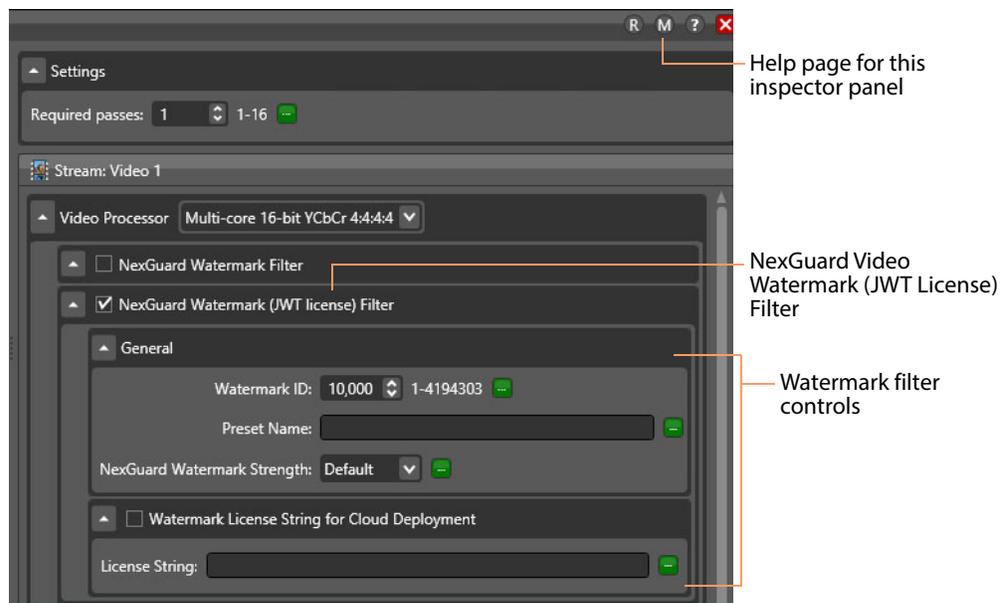
The NexGuard Watermark (JWT License) Filter implements NexGuard Transcoder Plugin in the Flip64 output video component to watermark the video stream.

Follow these steps to enable and configure the filter:

1. First, duplicate the Flip64 Prototype Watermark workflow, renaming it as *Flip64 Transcoder JWT Watermark*, for example. Workflow Designer selects and opens it.
2. Open the Flip64 action inspector and select the MPEG-4 output video component:



The inspector displays its configuration panel to the right.



3. In the Settings panel, enable the NexGuard Watermark (JWT License) Filter.

The filter requires a watermark ID, preset name, and NexGuard watermark strength value. There are three ways to provide these values:

- Statically, by specifying them manually, which remain the same for every job.
- Dynamically, via variables—see [Providing Input Values Dynamically](#).
- Using NexGuard Manager—see [Exchanging Job Metadata with NexGuard Manager](#).

4. Configure these settings:

NexGuard Watermark ID. Specifies the payload ID that NexGuard should use to generate the watermark. If you aren't using NexGuard Manager or it is temporarily unavailable, provide the watermark ID statically or populate and select the variable.

Note: If your preset name (key) is a clip mark key, the value range for watermark ID is 1-1024. If you supply a key larger than 1024, the job fails with an out of range error.

Preset Name. Specifies the preset name to use when NexGuard applies the watermark. Provide the name statically or dynamically. The preset name (key) is provided to you by Nagra when you obtain a license.

NexGuard Watermark Strength. Specifies the level of watermarking to apply.

Note: Nagra recommends leaving the watermark strength level set to *Default* unless otherwise instructed. Application of modified values requires licensing updates and specific, case-by-case instructions from Nagra.

Watermark License String for Cloud Deployment. Disabled by default for execution on-premises.

5. Now that you've configured the NexGuard Watermark (JWT) Filter, close the inspector.
6. Activate the workflow, and submit a test file to start a job.
7. When the job completes, display the Job Status tab and select the job to play and test your watermarked media.

Configuring the NexGuard Watermark (JWT License) Filter in Hybrid Workflows

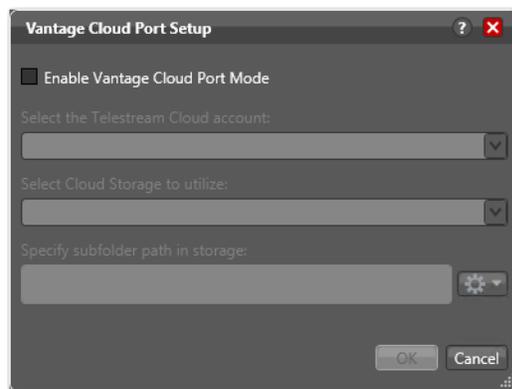
The NexGuard Watermark (JWT License) Filter in the Flip64 output video component implements the NexGuard Transcoder Plugin for watermarking the video stream.

The NexGuard Watermark (JWT License) Filter may be executed in on-premise workflows and in transcoding actions operating in Cloud mode. You can't execute the Notify action in Cloud mode, but you can execute it on-premises to interchange metadata with NexGuard Manager.

Note: If you haven't set up your Vantage domain for operating in Telestream Cloud, you should do so before proceeding. For Telestream Cloud and Vantage integration guidance, licensing, and details on using hybrid and hosted workflows in Telestream Cloud, refer to the [Vantage Cloud Port User Guide](#) on our web site.

With your Vantage domain configured to integrate with Telestream Cloud, follow these steps to configure Flip64 to execute in Cloud mode:

1. First, duplicate the Flip64 Prototype Watermark workflow, renaming it as *Flip64 Cloud Watermark*, for example. Workflow Designer selects and opens it.
2. Right-click on the Flip64 action and select Cloud Mode > Configure Cloud Mode. Workflow Designer displays the Configure Cloud Mode dialog:



Note: If Workflow Designer displays a Cloud Mode error dialog, verify that workflows can operate as hybrid or hosted workflows. Also make sure you have added a Vantage Cloud Port account in the Vantage Management Console—Settings & Options > Telestream Cloud—and retry.

3. Configure the following settings:

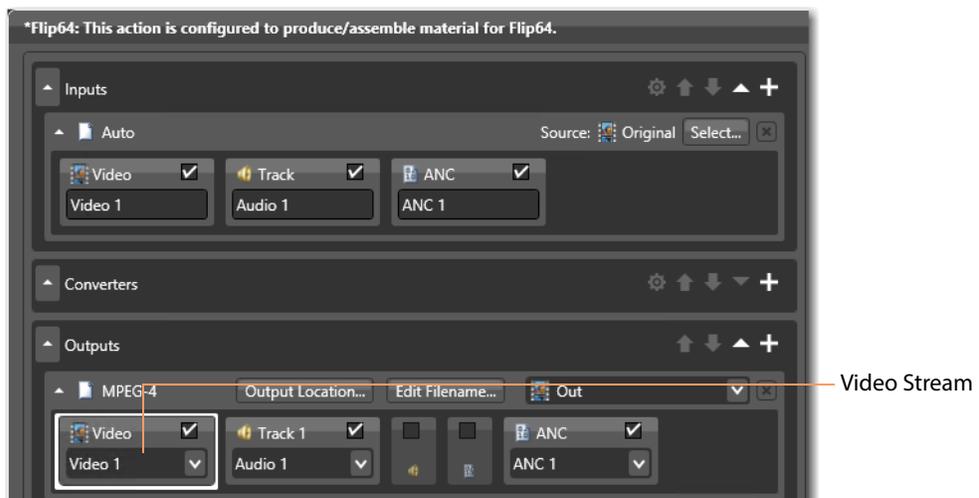
Enable Vantage Cloud Port Mode. Check to enable this action to execute in Telestream Cloud, independently of other actions in the workflow.

Select the Telestream Cloud Account. Specifies the Telestream Cloud account to utilize, which must be specified in the Vantage Management Console (Settings & Options > Telestream Cloud).

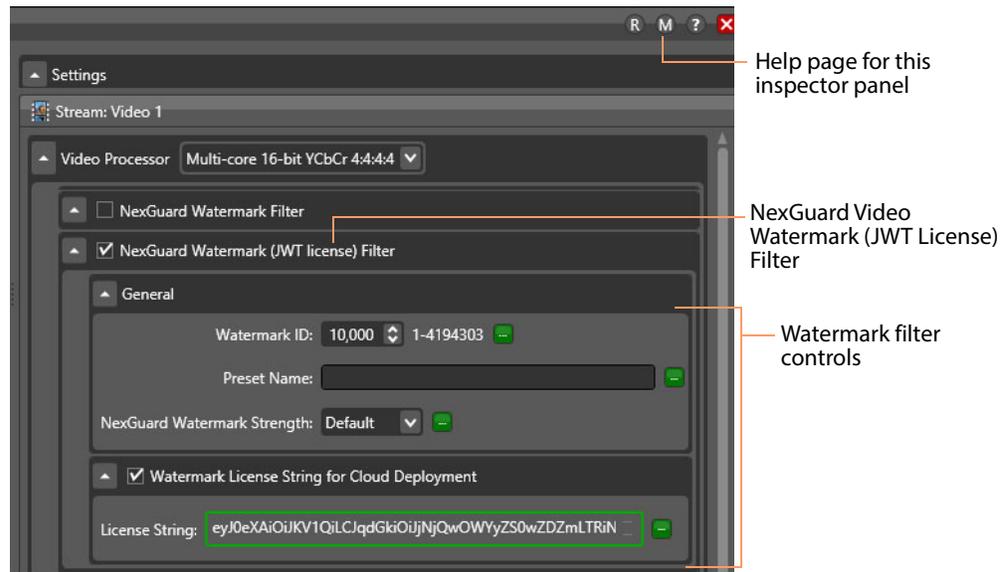
Select Cloud Storage to Utilize. Specifies the cloud storage bucket to utilize, which must be specified as an address in the Vantage Folder Address Book.

Note: The folder you create in the Vantage Folder Address Book must use exactly the same name as the storage you identify in the Telestream Cloud account. This is required to provide translation of the signed URL specifying the location of the cloud-stored media to a Vantage native URL usable by the subsequent action. If matching entries are not included in the Vantage Folder Address Book, the URL translation does not occur, and downstream actions may fail. See [Adding your Cloud Storage Account to the Vantage Folder Address Book](#) for additional configuration details.

Specify Subfolder Path in Storage. Specifies an optional subfolder (bucket) path to use when writing files. May be statically specified and/or variables, date and time tokens may be applied.

4. Now, enable and configure the filter—open the Flip64 action inspector and select the MPEG-4 output's video component:

The inspector displays its configuration panel to the right.



5. In the Settings panel, enable the NexGuard Watermark (JWT License) Filter:

The filter requires a watermark ID, preset name, NexGuard watermark strength value, and a license string—here shown bound to a variable. There are three ways to provide these values:

- Statically, by specifying them manually, which remain the same for every job.
- Dynamically, via variables—see [Providing Input Values Dynamically](#).
- Using NexGuard Manager—see [Exchanging Job Metadata with NexGuard Manager](#).

6. Configure these settings:

NexGuard Watermark ID. Specifies the payload ID that NexGuard should use to generate the watermark. If you aren't using NexGuard Manager or it is temporarily unavailable, provide the watermark ID statically or populate and select the variable.

Note: If your preset name (key) is a clip mark key, the value range for watermark ID is 1-1024. If you supply a key larger than 1024, the job fails with an out of range error.

Preset Name. Specifies the preset name to use when NexGuard applies the watermark. Provide the name statically or dynamically. The preset name (key) is provided to you by Nagra when you obtain a license.

NexGuard Watermark Strength. Specifies the level of watermarking to apply.

Note: Nagra recommends leaving the watermark strength level set to *Default* unless otherwise instructed. Application of modified values requires licensing updates and specific, case-by-case instructions from Nagra.

Watermark License String for Cloud Deployment. Enable this control to execute in Telestream Cloud and supply a license string. Open the cloud license file provided by Nagra in a text editor: Select All > Copy > Paste the license string into the field. Alternatively, bind to a variable. For efficiency, you can create a variable in the Vantage Management Console, update it with the license string, and then assign the variable to this control. Do not use the cloud license when executing the transcode action on-premises.

7. Now that you've configured the NexGuard Watermark (JWT) Filter, close the inspector.
8. Activate the workflow, and submit a test file to start a job.
9. When the job completes, display the Job Status tab and select the job to play and test your watermarked media.

Configuring the NexGuard Watermark (JWT License) Filter in Hosted Workflows

The NexGuard Watermark (JWT License) Filter in the Flip64 output video component implements the NexGuard Transcoder Plugin to watermark the video stream.

Watermarking with the NexGuard Transcoder Plugin may be performed in on-premise workflows, and it may also be performed in transcoding actions executing in Telestream Cloud.

This topic describes configuring the action and the filter to execute in a hosted workflow—where the workflow is created and configured in Workflow Designer—then exported as a CWD file and then imported into Telestream Cloud for execution.

It isn't necessary to enable Cloud mode on the transcoding/media processing actions. The entire workflow (when imported) executes in Telestream Cloud and the Cloud mode settings are configured directly in Telestream Cloud, instead of the action itself.

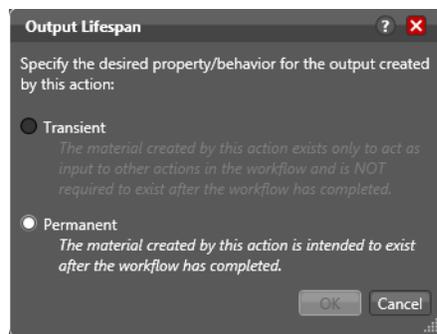
Changes you make to the prototype workflow must be made within the limits of hosted workflow restrictions.

Note: Unlike the hybrid workflow requirement, you are not required to set up your Vantage domain for integration with Telestream Cloud to create and export hosted workflows. For Telestream Cloud and Vantage integration guidance, licensing, and limits and details on creating and configuring hybrid and hosted workflows, refer to the [Vantage Cloud Port User Guide](#) on the web site.

Follow these steps to configure Flip64 to execute in a hosted workflow:

1. First, duplicate the Flip64 Prototype Watermark workflow, renaming it as *Flip64 Hosted Watermark*, for example. Workflow Designer selects and opens it.
2. Because this is a hosted workflow, in order to delete temporal files, right-click on the action and choose Cloud Mode > Output Lifespan.

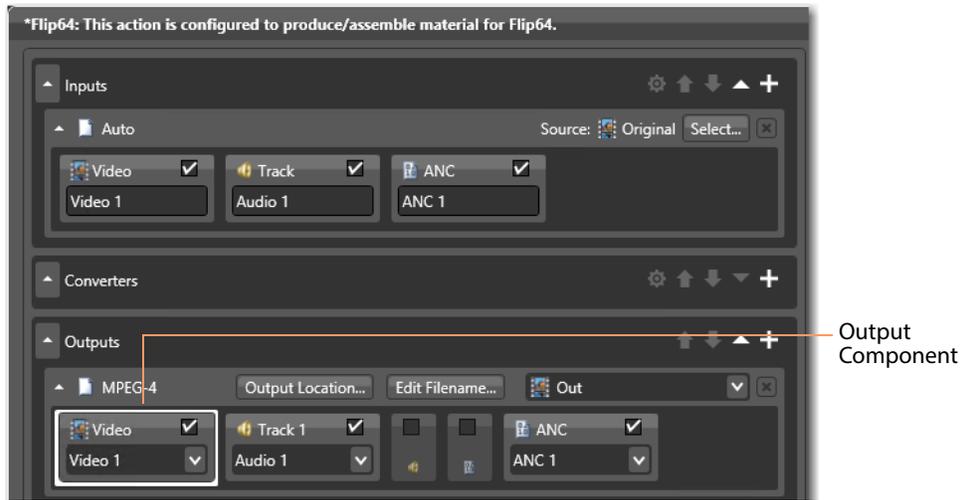
Workflow Designer displays this dialog:



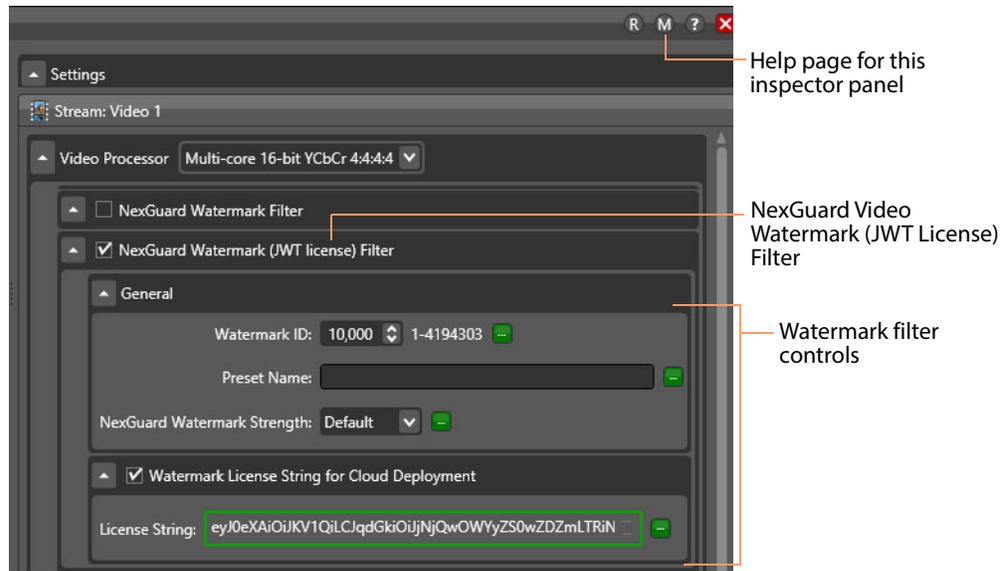
3. Select Permanent to preserve the encoded output, and close the dialog.

Now, enable and configure the filter:

4. Open the Flip64 action inspector and select the MPEG-4 output's video component:



The inspector displays its configuration panel to the right.



5. In the Settings panel, enable the NexGuard Watermark (JWT License) Filter:
The filter requires a watermark ID, preset name, NexGuard watermark strength value, and a license string—here shown bound to a variable. There are two ways to provide these values:
 - Statically, by specifying them manually, which remain the same for every job.
 - Dynamically, via variables—see [Providing Input Values Dynamically](#).

6. Configure these settings:

NexGuard Watermark ID. Specifies the payload ID that NexGuard should use to generate the watermark. Provide the watermark ID statically or populate and select the variable.

Note: If your preset name (key) is a clip mark key, the value range for watermark ID is 1-1024. If you supply a key larger than 1024, the job fails with an out of range error.

Preset Name. Specifies the preset name to use when NexGuard applies the watermark. Provide the name statically or dynamically. The preset name (key) is provided to you by Nagra when you obtain a license.

NexGuard Watermark Strength. Specifies the level of watermarking to apply.

Note: Nagra recommends leaving the watermark strength level set to *Default* unless otherwise instructed. Application of modified values requires licensing updates and specific, case-by-case instructions from Nagra.

Watermark License String for Cloud Deployment. Enable this control to execute in Telestream Cloud and supply a license string. Open the cloud license file provided by Nagra in a text editor: Select All > Copy > Paste the license string into the field. Alternatively, bind to a variable. For efficiency, you can create a variable in the Vantage Management Console, update it with the license string, and then assign the variable to this control. Do not use the cloud license when executing the transcode action on-premises.

7. Now that you've configured the NexGuard Watermark (JWT) Filter, close the inspector to update the action.

8. Export the workflow from Workflow Designer—File > Export for Cloud.

When you export a workflow from Workflow Designer, two processes are initiated automatically: first, the workflow is audited to insure that it meets the criteria for a hosted workflow, and second, it is converted to a Compiled Workflow Document and saved on your local file system with a CWD extension.

With the workflow exported, your work in Vantage is complete. Follow these steps to import your workflow into your Telestream Cloud and process media using it:

- 1.** Log into your Telestream Cloud account to import the CWD file and prepare it for deployment and execution in Telestream Cloud.
- 2.** Using your custom submission program, submit a test file to start a job, where the Flip64 action executes in Telestream Cloud.
- 3.** When the job completes, you can play and test your watermarked media.

58 | **Configuring Flip64 Actions for Watermarking**

Configuring the NexGuard Watermark (JWT License) Filter in Hosted Workflows

Configuring Multiscreen Flip Actions for Watermarking

The Multiscreen Flip action implements the NexGuard Streaming Watermark Filter, for watermarking video using NexGuard for Streaming. You can watermark media with NexGuard for Streaming in Vantage workflows executing on-premises and in Telestream Cloud, when the Multiscreen Flip action is executing in Telestream Cloud—when configured for Cloud mode or as part of a hosted workflow.

Before creating NexGuard watermarking workflows for a particular transcoding action, Telestream recommends that you read [Implementing NexGuard Watermarking in Workflows](#), where you'll learn about issues that apply generally to watermarking your media in Vantage using NexGuard.

Topics

- [Overview](#)
- [Creating a Prototype Workflow](#)
- [Configuring the NexGuard Streaming Watermark Filter in On-Premise Workflows](#)
- [Configuring the NexGuard Streaming Watermark Filter in Hybrid Workflows](#)
- [Configuring the NexGuard Streaming Watermark Filter in Hosted Workflows](#)

Overview

The NexGuard Streaming Watermark Filter requires an on-premise Nagra JWT license to execute on-premises, and a cloud-based Nagra JWT license to execute in Telestream Cloud.

Nagra's NexGuard for Streaming does not support the use of NexGuard Manager.

Multiscreen Flip action workflows with NexGuard watermarking have the following limits/requirements:

- You can't watermark media in formats that don't support watermarking.
- Watermarking can't be performed with codecs being used in Direct-Convert mode; they must decode and re-encode the video.
- The minimum length of video for watermark detection varies by algorithm, as noted in your key name.
 - Algorithm 1 - 20 minute source required
 - Algorithm 2 - 10 minute source required
 - Algorithm 3 (live) and Algorithm 4(VOD) - 5 minute source required.

Note: Detailed online help is provided in Workflow Designer for use when you are configuring an action. Double-click an action to display its inspector, where you can press click the M button to display the man page, which describes each component in detail, including controls.

Creating a Prototype Workflow

This is a basic Multiscreen Flip workflow that you can use to transcode, watermark and simultaneously package decoded digital baseband media into multiple bit-rate variants of H.264 and H.265/HEVC video and containers in adaptive rate streaming formats, including Apple HLS, Microsoft Smooth Streaming, and players that support MPEG DASH.

You can modify the workflow by adding other actions to suit your media processing requirements.



This workflow includes the following actions:

Receive—enables you to drag and drop a media file directly on the Receive action in Workflow Designer to start each job. Any other origin action can be used (Watch | Workorder, etc.), based on your job submission requirements.

Multiscreen Flip—The Multiscreen Flip action is executed by the Vantage Multiscreen Service, which is used to produce high quality, industry-standard, adaptive rate streaming formats, including digital rights management (DRM).

Follow these steps to create your prototype Multiscreen Flip workflow:

1. In Workflow Designer, create a new category to store your test workflows. For example, *NexGuard Multiscreen Flip Workflows*.
2. Create a new workflow in this category: *Multiscreen Prototype Watermark*, for example.
3. Add a Receive action, and configure it to ingest one media file—select *Original* as the nickname.
4. Now, add a Multiscreen Flip action and configure these general settings:
 - Inputs: Add an Auto input and select *Original* as the file to ingest.
 - Converters: No converters are required.
 - Transcoders: Select x264.
 - Outputs: Add an Apple HLS container and specify the output nickname as *out*. Add a Fragmented MPEG-4 variant, and supply a variant name: *FragMP4*.
5. Optionally, configure remaining settings—other than the NexGuard Streaming Watermark filter—as desired.

When you are using a machine license from Nagra, you should add a run-on rule to the transcoding action and configure it to execute on the server where the license is installed. See the *Workflow Designer User's Guide* for details.

Now, you can use this prototype workflow as a starting point to implement watermarking in Multiscreen Flip, executing on-premises, in hybrid, and in hosted workflows, as described in their respective topics.

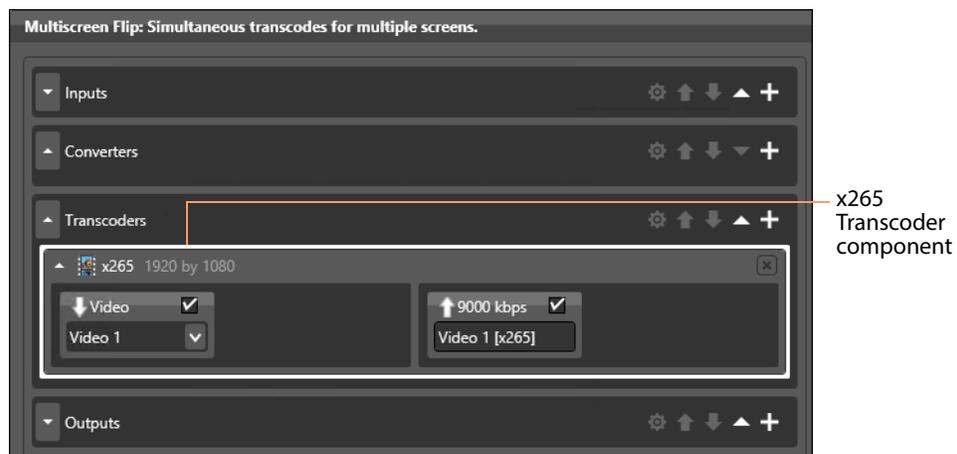
In production, you can use any supported input you require, add converters, and generate output using any supported container/codec. The prototype is just an example—you can modify the workflow by adding other actions to suit your media processing requirements.

Configuring the NexGuard Streaming Watermark Filter in On-Premise Workflows

The *NexGuard Streaming Watermark Filter* implements NexGuard for Streaming in the Multiscreen Flip transcoder component to apply a watermark to the video streams.

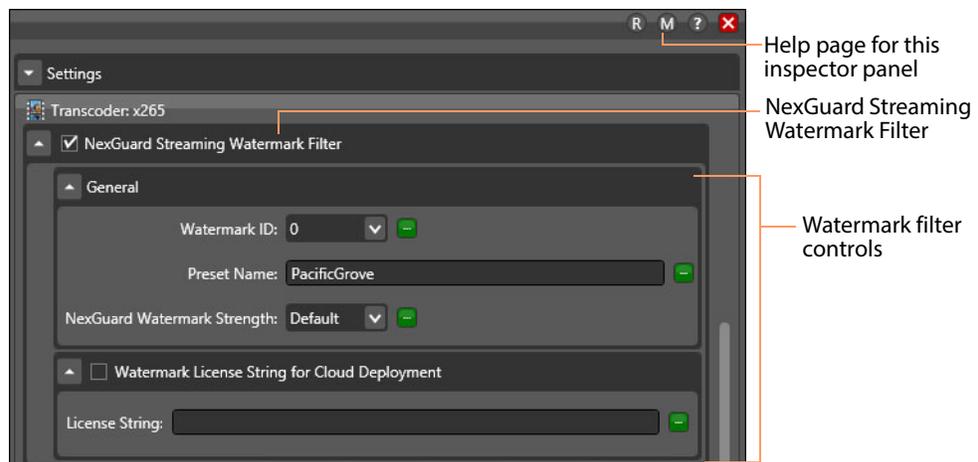
Follow these steps to enable and configure it:

1. First, duplicate the Multiscreen Prototype Watermark workflow, renaming it as *Multiscreen Streaming Watermark*, for example. Workflow Designer selects and opens it.
2. Open the Multiscreen Flip inspector—select the x265 transcoder component:



The inspector displays its configuration panel to the right.

3. In the Settings panel, enable the NexGuard Streaming Watermark Filter:



The filter requires a watermark ID, preset name, and NexGuard watermark strength value. There are two ways to provide these values:

- Statically, by specifying them manually, which remain the same for every job.
- Dynamically, via variables—see [Providing Input Values Dynamically](#).

4. Configure these settings:

NexGuard Watermark ID. Specifies the payload ID (0 or 1) that NexGuard should use to generate the watermark. Provide the watermark ID statically or populate and select the variable.

Preset Name. Specifies the preset name to use when NexGuard applies the watermark. Provide the name statically or dynamically. The preset name (key) is provided to you by Nagra when you obtain a license.

NexGuard Watermark Strength. Specifies the level of watermarking to apply.

Note: Nagra recommends leaving the watermark strength level set to *Default* unless otherwise instructed. Application of modified values requires licensing updates and specific, case-by-case instructions from Nagra.

Watermark License String for Cloud Deployment. Disabled by default for execution on-premises.

- 5.** Now that you've configured the NexGuard Streaming Watermark Filter, close the inspector to update the action.
- 6.** Activate the workflow, and submit a test file to start a job.
- 7.** When the workflow completes, display the Job Status tab and select the job to play and test your watermarked media.

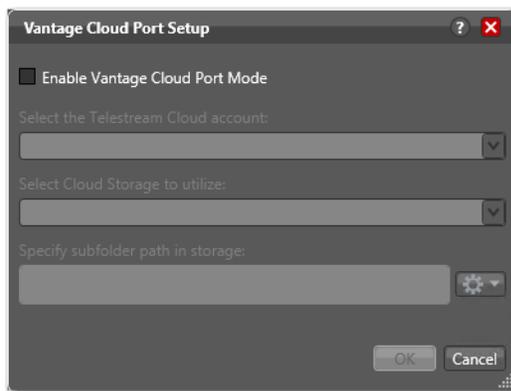
Configuring the NexGuard Streaming Watermark Filter in Hybrid Workflows

The *NexGuard Streaming Watermark Filter* implements the NexGuard Transcoder Plugin in the Multiscreen output video component for watermarking video streams.

Note: If you haven't set up your Vantage domain for operating in Telestream Cloud, you should do so before proceeding. For guidance and details, refer to the [Vantage Cloud Port User Guide](#) on the Telestream website.

With your Vantage domain configured to support hybrid and hosted workflows, follow these steps to configure Multiscreen Flip to execute in Cloud mode:

1. First, duplicate the Multiscreen Flip Prototype Watermark workflow, renaming it as *Multiscreen Flip Cloud Watermark*, for example. Workflow Designer selects and opens it.
2. To enable Cloud mode, right-click on the Multiscreen Flip action and select Cloud Mode > Configure Cloud Mode. Workflow Designer displays the Configure Cloud Mode dialog:



Note: If Workflow Designer displays a Cloud Mode error dialog, verify that workflows can operate as hybrid or hosted workflows. Also make sure you have added a Vantage Cloud Port account in the Vantage Management Console—Settings & Options > Telestream Cloud—and retry.

3. Configure the following settings:

Enable Vantage Cloud Port Mode. Check to enable Cloud mode for this action.

Select the Telestream Cloud Account. Specifies the Telestream Cloud account to utilize, which must be specified in the Vantage Management Console (Settings & Options > Telestream Cloud).

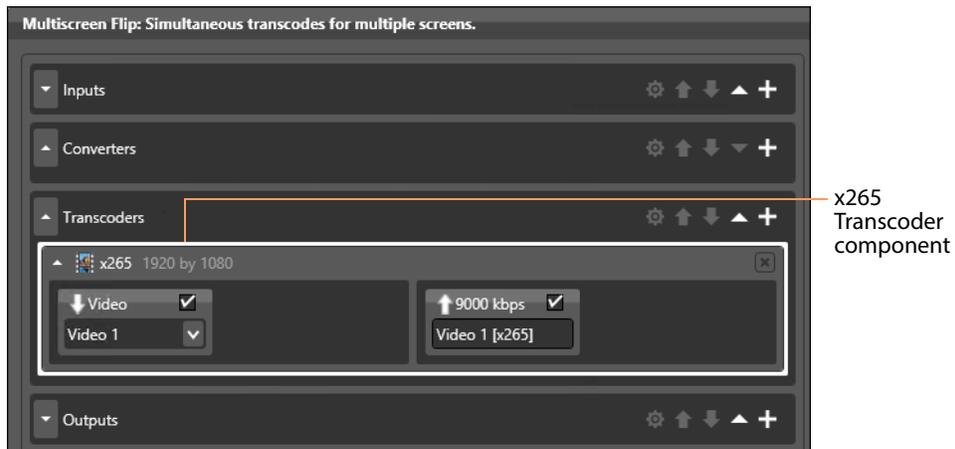
Select Cloud Storage to Utilize. Specifies the cloud storage bucket to utilize, which must be specified as an address in the Vantage Folder Address Book.

Note: The folder you create in the Vantage Folder Address Book must use exactly the same name as the storage you identify in the Telestream Cloud account. This is required to provide translation of the signed URL specifying the location of the cloud-stored media to a Vantage native URL usable by the subsequent action. If matching entries are not included in the Vantage Folder Address Book, the URL translation does not occur, and downstream actions may fail. See [Adding your Cloud Storage Account to the Vantage Folder Address Book](#) for additional configuration details.

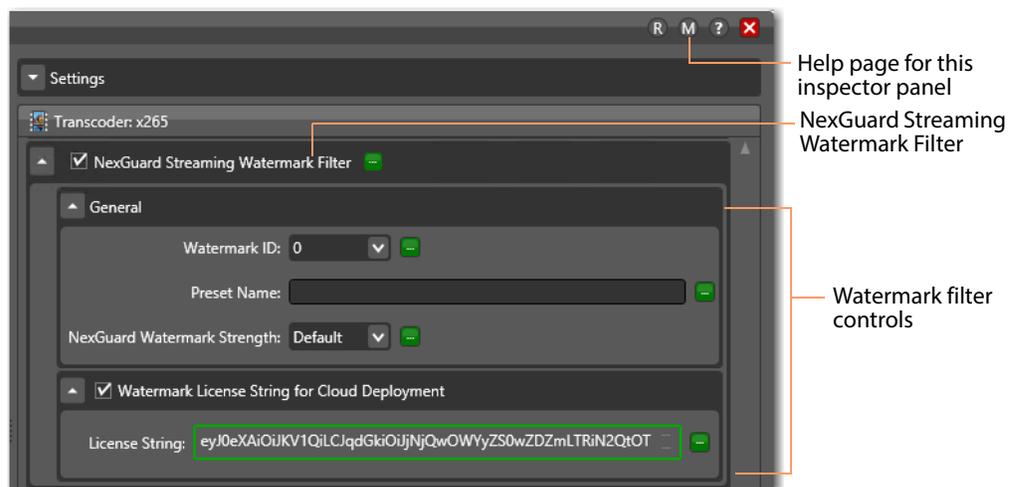
Specify Subfolder Path in Storage. Specifies an optional subfolder (bucket) path to use when writing files. May be statically specified and/or variables, date and time tokens may be applied.

Now, follow these steps to enable and configure the filter:

4. Open the Multiscreen Flip action inspector and select the x265 transcoder (or other transcoder) component:



The inspector displays its configuration panel to the right.



5. In the Settings panel, enable the NexGuard Watermark (JWT License) Filter:

The filter requires a watermark ID, preset name, NexGuard watermark strength value, and a license string—here shown bound to a variable. There are two ways to provide these values:

- Statically, by specifying them manually, which remain the same for every job.
- Dynamically, via variables—see [Providing Input Values Dynamically](#).

6. Configure these settings:

NexGuard Watermark ID. Specifies the payload ID (0 or 1) that NexGuard should use to generate the watermark. Provide the watermark ID statically or populate and select the variable.

Preset Name. Specifies the preset name to use when NexGuard applies the watermark. Provide the name statically or dynamically. The preset name (key) is provided to you by Nagra when you obtain a license.

NexGuard Watermark Strength. Specifies the level of watermarking to apply.

Note: Nagra recommends leaving the watermark strength level set to *Default* unless otherwise instructed. Application of modified values requires licensing updates and specific, case-by-case instructions from Nagra.

Watermark License String for Cloud Deployment. Enable this control to execute in Telestream Cloud and supply a license string. Open the cloud license file provided by Nagra in a text editor: Select All > Copy > Paste the license string into the field. Alternatively, bind to a variable. For efficiency, you can create a variable in the Vantage Management Console, update it with the license string, and then assign the variable to this control. Do not use the cloud license when executing Multiscreen Flip workflows on-premises.

7. Now that you've configured the NexGuard Watermark (JWT) Filter, close the inspector.
8. Activate the workflow, and submit a test file to start a job.
9. When the job completes, display the Job Status tab and select the job to play and test your watermarked media.

Configuring the NexGuard Streaming Watermark Filter in Hosted Workflows

The *NexGuard Streaming Watermark Filter* in the Multiscreen Flip Transcoder component implements NexGuard for Streaming to watermark the video stream.

This topic describes configuring the action and the filter to execute in a hosted workflow—where the workflow is created and configured in Workflow Designer—then exported as a CWD file and then imported into Telestream Cloud for execution.

It isn't necessary to enable Cloud mode on the transcoding/media processing actions. The entire workflow (when imported) executes in Telestream Cloud and the Cloud mode settings are configured directly in Telestream Cloud, instead of the action itself.

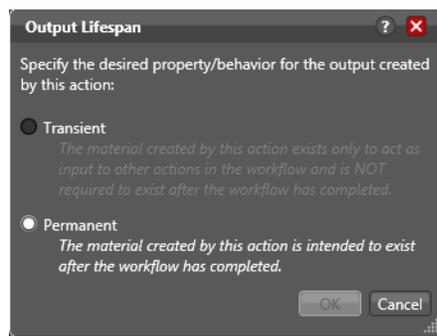
Changes you make to the prototype workflow must be made within the limits of hosted workflow restrictions.

Note: Unlike the hybrid workflow requirement, you are not required to set up your Vantage domain for integration with Telestream Cloud to create and export hosted workflows. For Telestream Cloud and Vantage integration guidance, licensing, and limits and details on creating and configuring hybrid and hosted workflows, refer to the [Vantage Cloud Port User Guide](#) which is published on the Telestream web site.

Follow these steps to enable and configure the filter:

1. First, duplicate the Multiscreen Flip Prototype Watermark workflow, renaming it as *Multiscreen Flip Hosted Watermark*, for example. Workflow Designer selects and opens it.
2. Because this is a hosted workflow, in order to delete temporal files, right-click on the action and choose Cloud Mode > Output Lifespan.

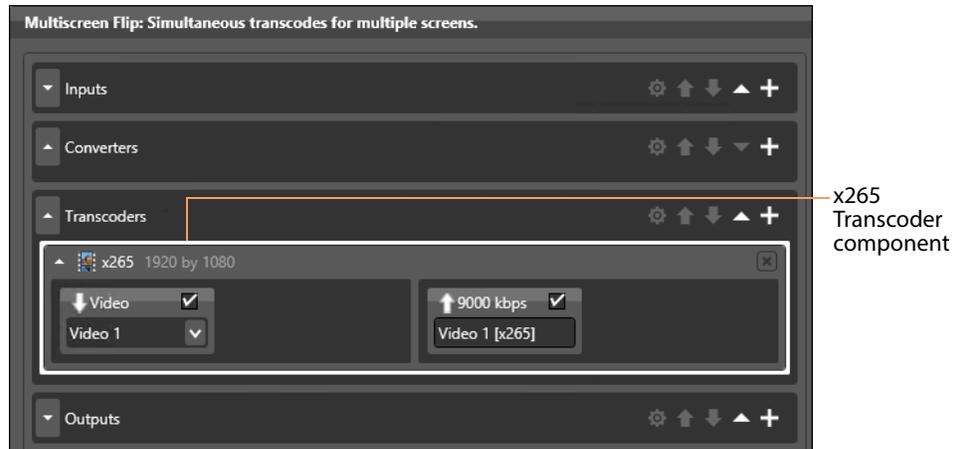
Workflow Designer displays this dialog:



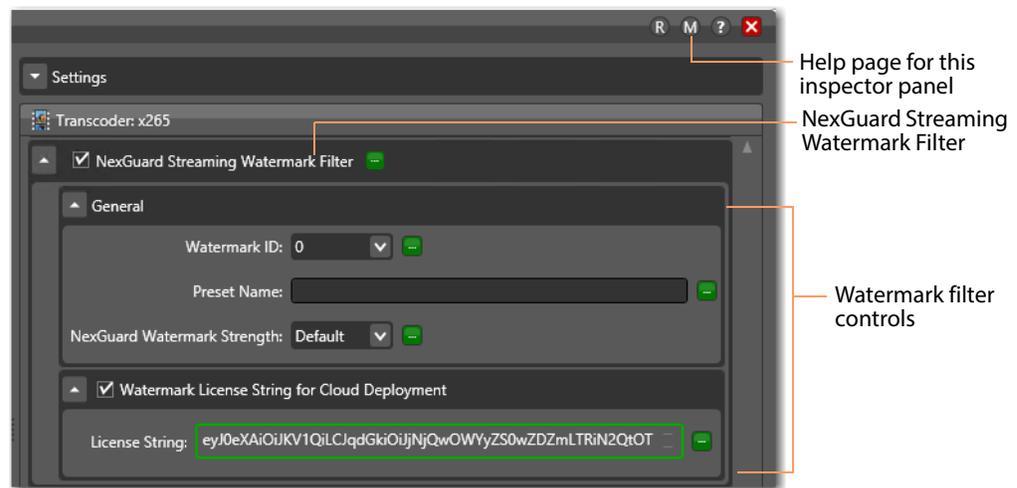
3. Select Permanent to preserve the encoded output, and close the dialog.

Now, enable and configure the filter:

4. Open the Multiscreen Flip action inspector and select the x265 (or other) transcoder component:



The inspector displays its configuration panel to the right.



The filter requires a watermark ID, preset name, NexGuard watermark strength value, and a license string—here shown bound to a variable. There are two ways to provide these values:

- Statically, by specifying them manually, which remain the same for every job.
- Dynamically, via variables—see [Providing Input Values Dynamically](#).

5. Configure these settings:

NexGuard Watermark ID. Specifies the payload ID (0 or 1) that NexGuard should use to generate the watermark. Provide the watermark ID statically or populate and select the variable.

Preset Name. Specifies the preset name to use when NexGuard applies the watermark. Provide the name statically or dynamically. The preset name (key) is provided to you by Nagra when you obtain a license.

NexGuard Watermark Strength. Specifies the level of watermarking to apply.

Note: Nagra recommends leaving the watermark strength level set to *Default* unless otherwise instructed. Application of modified values requires licensing updates and specific, case-by-case instructions from Nagra.

Watermark License String for Cloud Deployment. Enable this control to execute in Telestream Cloud and supply a license string. Open the cloud license file provided by Nagra in a text editor: Select All > Copy > Paste the license string into the field. Alternatively, bind to a variable. For efficiency, you can create a variable in the Vantage Management Console, update it with the license string, and then assign the variable to this control. Do not use the cloud license when executing Multiscreen Flip workflows on-premises.

6. Now that you've configured the NexGuard Watermark (JWT) Filter, close the inspector to update the action.
7. Export the workflow from Workflow Designer—File > Export for Cloud.

When you export a workflow from Workflow Designer, two processes are initiated automatically: first, the workflow is audited to insure that it meets the criteria for a hosted workflow, and second, it is converted to a Compiled Workflow Document and saved on your local file system with a CWD extension.

Configuring IPTV Flip Actions for Watermarking

The IPTV Flip action includes filters for watermarking using two different NexGuard products—NexGuard Embedder (deprecated) which watermarks video and audio and NexGuard Transcoder Plugin—which watermarks video on-premises as well as in hybrid and hosted workflows executing in Telestream Cloud.

Before creating NexGuard watermarking workflows for a particular transcoding action, Telestream recommends that you read [Implementing NexGuard Watermarking in Workflows](#), where you'll learn about issues that apply generally to watermarking your media in Vantage using NexGuard.

Topics

- [Overview](#)
- [Creating a Prototype IPTV Flip Workflow](#)
- [Configuring the Video NexGuard Watermark Filter](#)
- [Configuring the Audio NexGuard Watermark Filter](#)
- [Configuring the NexGuard Watermark \(JWT License\) Filter in On-Premise Workflows](#)
- [Configuring the NexGuard Watermark \(JWT License\) Filter in Hybrid Workflows](#)
- [Configuring the NexGuard Watermark \(JWT License\) Filter in Hosted Workflows](#)

Overview

The IPTV Flip action implements two NexGuard filters:

- *NexGuard Watermark Filter*—implements NexGuard Embedder (deprecated), for execution on-premises only; watermarks video and audio streams in separate filters. Supports use of NexGuard Manager.
- *NexGuard Watermark (JWT License) Filter*—implements the NexGuard Transcoder Plugin, executes on-premises and when the IPTV Flip action is configured to operate in Cloud mode or the workflow is a hosted workflow, which executes entirely in Telestream Cloud. Supports the use of NexGuard Manager in on-premises and hybrid workflows.

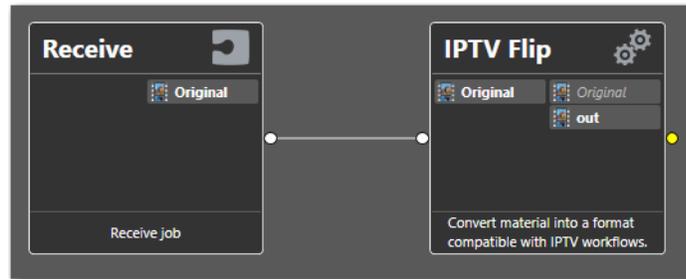
IPTV Flip workflows with NexGuard watermarking have the following limits/requirements:

- Watermarking can't be performed with codecs being used in Direct-Convert mode; they must decode and re-encode the video.
- The video must be at least 2 1/2 minutes long for the watermark to be detected. For audio, clips must be at least 15 seconds long.
- Using the NexGuard Watermark (JWT License) Filter, if your preset name (key) is a short form, ClipMark key, the video must be at least 30 seconds long for the watermark to be detected.
- Audio watermarking is supported for PCM and AAC audio. If you want watermarked audio in another format, first watermark PCM, then re-encode it in your required format; watermarking is preserved.
- You can't watermark media in formats that don't support watermarking, including those marked as Legacy.

Note: Detailed online help is provided in Workflow Designer for use when you are configuring an action. Double-click an action to display its inspector, where you can press click the M button to display the man page, which describes each component in detail, including controls.

Creating a Prototype IPTV Flip Workflow

This is a basic IPTV workflow that you can use to watermark your media during transcoding.



This workflow includes the following actions:

Receive—enables you to drag and drop a media file directly on the Receive action in Workflow Designer to start each job. Any other origin action can be used (Watch | Workorder, etc.), based on your job submission requirements.

IPTV Flip—The IPTV Flip action is executed by the Vantage IPTV VOD Service. The IPTV Flip action is included with the Cable / IPTV version of TrafficManager. IPTV Flip can optionally run on a Lightspeed Server for GPU-enhanced x264/x265 encoding and video processing. The IPTV Flip action supports the features required to handle varying IPTV, set-top box and cable encoding requirements, and ancillary metadata specific to cable ad splicing and cable/IPTV set-top box environments.

If you use NexGuard Manager, see [Exchanging Job Metadata with NexGuard Manager](#) for implementation details.

When you are using a machine license from Nagra, you should add a run-on rule to the transcoding action and configure it to execute on the server where the license is installed. See the Workflow Designer User’s Guide for details.

Note: Detailed online help is provided in Workflow Designer for use when you are configuring an action. Double-click an action to display its inspector, where you can press click the M button to display the man page, which describes each component in detail, including controls.

Follow these steps to produce your prototype IPTV Flip workflow:

1. In Workflow Designer, create a new category to store your test workflows. For example, *NexGuard IPTV Flip Workflows*.
2. Create a new workflow in this category: *IPTV Prototype Watermark*, for example.
3. Add a Receive action, and configure it to ingest one media file—select *Original* as the nickname.

4. Now, add an IPTV Flip action and configure these settings:
 - Inputs: Add an Auto input and select *Original* as the file to ingest.
 - Converters: No converters are required.
 - Transcoders: Add an x265 video codec and AAC audio codec.
 - Outputs: Add an MPEG-4 container and specify the output nickname as *out*.
5. Optionally, configure remaining settings—other than the NexGuard Streaming Watermark filter—as desired.

When you are using a machine license from Nagra, you should add a run-on rule to the transcoding action and configure it to execute on the server where the license is installed. See the *Workflow Designer User's Guide* for details.

Now, you can use this prototype workflow as a starting point to implement watermarking in IPTV Flip, using each of the NexGuard products and executing on-premises, in hybrid, and in hosted workflows, as described in the following topics.

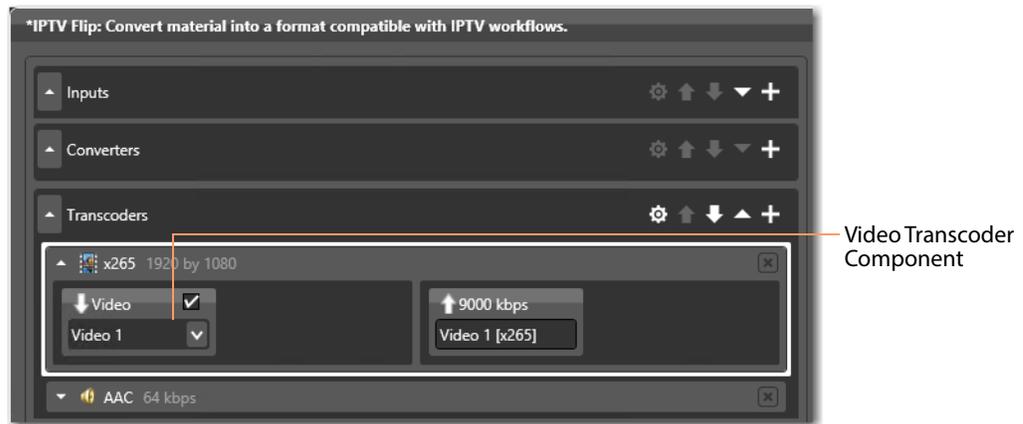
In production, you can use any supported input you require, add converters, and generate output using any supported container/codec. The prototype is just an example—you can modify the workflow by adding other actions to suit your media processing requirements.

Configuring the Video NexGuard Watermark Filter

The *NexGuard Watermark Filter* implements NexGuard Embedder in the IPTV Flip video transcoder component, when executing on-premises.

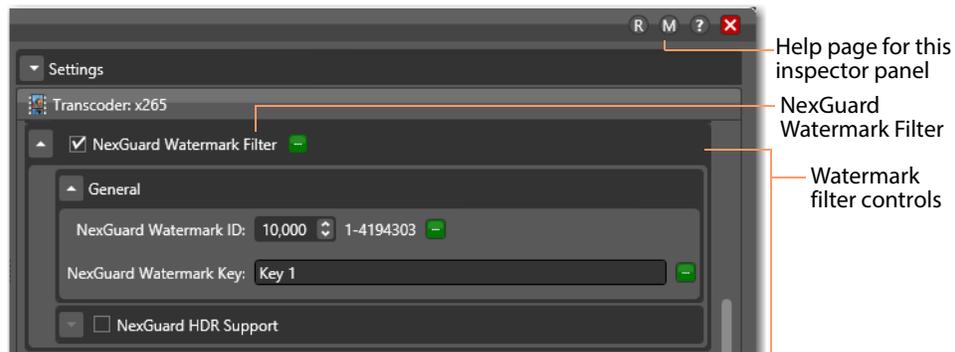
Follow the steps to enable and configure it:

1. First, duplicate the IPTV Prototype Watermark workflow, renaming it as *IPTV Video Watermark*, for example. Workflow Designer selects and opens it.
2. Open the IPTV Flip action inspector and select the x265 (or other) component:



The inspector displays its configuration panel to the right.

3. In the Settings panel, enable the NexGuard Watermark Filter:



The filter requires a watermark ID and watermark key. There are three ways to provide these values:

- Statically, by specifying them manually, which remain the same for every job unless edited here prior to submitting a new job.
- Dynamically, via variables—see [Providing Input Values Dynamically](#) for details.
- Using NexGuard Manager—see [Exchanging Job Metadata with NexGuard Manager](#) for details.

4. Configure these settings:

NexGuard Watermark ID. Specifies the watermark (payload) ID that NexGuard should use to generate the watermark. If you aren't using NexGuard Manager or it is temporarily unavailable, provide the watermark ID statically or populate and select the variable.

NexGuard Watermark Key. Specifies the key to use to apply the watermark. You must specify the watermark ID statically or populate and select the variable.

When you are using a machine license in the *Vantage* directory on one server in an array, a race condition may occur where an unlicensed transcode service updates the Vantage database with licensing information after the licensed transcoder service has already done so. In this situation, the NexGuard Watermark filter won't be able to populate the Watermark Key field, requiring you to add it manually.

If the NexGuard Watermark Key is a text field displaying the value *Key 1*, it means that the service was unable to access the license file or that the license information was updated by an unlicensed transcode service. Verify that the license file is valid and in the correct directory, restart the transcode service, and then retry.

NexGuard HDR Support. When checked, enables High Dynamic Range support.

Transfer Characteristics. Specifies [Linear Gamma Corrected | DPX Cineon | Hybrid Log Gamma | Perceptual Quantizer]. DPX Cineon can only be used with an RGB10 stream.

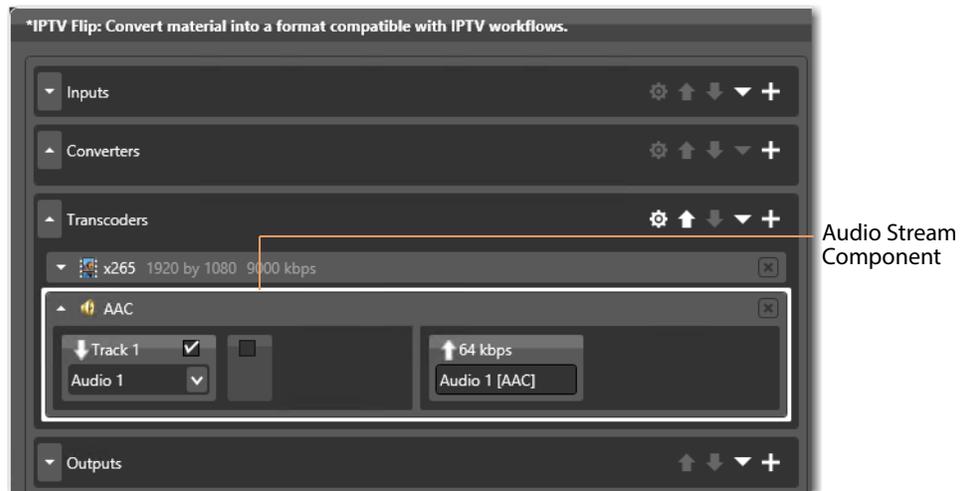
5. Now that you've configured the NexGuard Watermark Filter, close the inspector to update the action.
6. Activate the workflow, and submit a test file to start a job.
7. When the job completes, display the Job Status tab and select the job to play and test your watermarked media.

Configuring the Audio NexGuard Watermark Filter

The NexGuard Watermark Filter implements NexGuard Embedder in the IPTV Flip transcoder's audio component to watermark the audio track, executing on-premises.

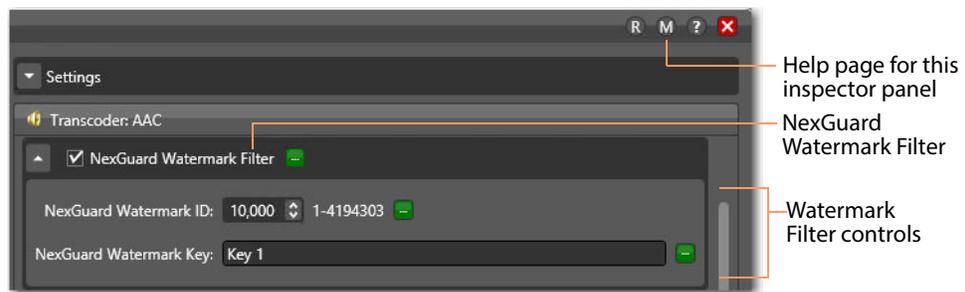
Follow the steps to enable and configure it:

1. First, duplicate the IPTV Flip Prototype Watermark workflow, renaming it as *IPTV Flip Audio Watermark*, for example. Workflow Designer selects and opens it.
2. Open the IPTV Flip action inspector and select the AAC output component:



The inspector displays its configuration panel to the right.

3. In the configuration panel, enable the NexGuard Watermark Filter:



The filter requires a watermark ID and watermark key. There are three ways to provide these values:

- Statically, by specifying them manually, which remain the same for every job unless edited here prior to submitting a new job.
- Dynamically, via variables—see [Providing Input Values Dynamically](#) for details.
- Using NexGuard Manager—see [Exchanging Job Metadata with NexGuard Manager](#) for details.

4. Configure these settings:

NexGuard Watermark ID. Specifies the payload ID that NexGuard should use to generate the watermark. If you aren't using NexGuard Manager or it is temporarily unavailable, provide the watermark ID statically or populate and select the variable.

NexGuard Watermark Key. Specifies the key to use when NexGuard applies the watermark. You must provide the key statically or populate and select the variable.

Note: The IPTV Flip action's transcode service accesses the NexGuard license file immediately on startup to obtain the watermark keys. When you enable the filter, Workflow Designer requests the keys from the transcode service. If the Watermark Key control displays as a menu with key selections, you know that the transcode service accessed the license file and keys were extracted.

However, if the NexGuard Watermark Key is a text field displaying the value *Key 1*, it means that service was unable to access the license file. Verify that the license file is valid and in the correct directory, restart the transcode service, and retry.

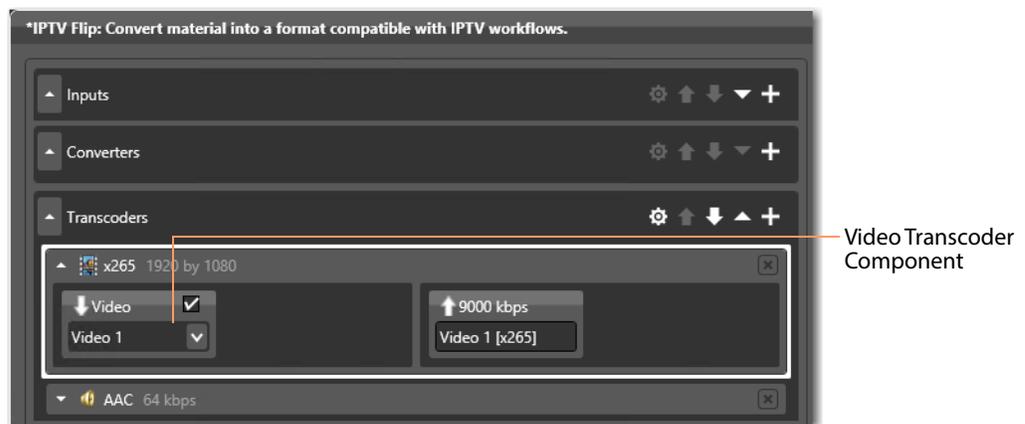
5. Now that you've configured the NexGuard Watermark Filter, close the inspector.
6. Activate the workflow, and submit a test file to start a job.
7. When the job completes, display the Job Status tab and select the job to play and test your watermarked media.

Configuring the NexGuard Watermark (JWT License) Filter in On-Premise Workflows

The NexGuard Watermark (JWT License) Filter in the IPTV Flip output video component implements NexGuard Transcoder Plugin to watermark the video stream, executing on-premises.

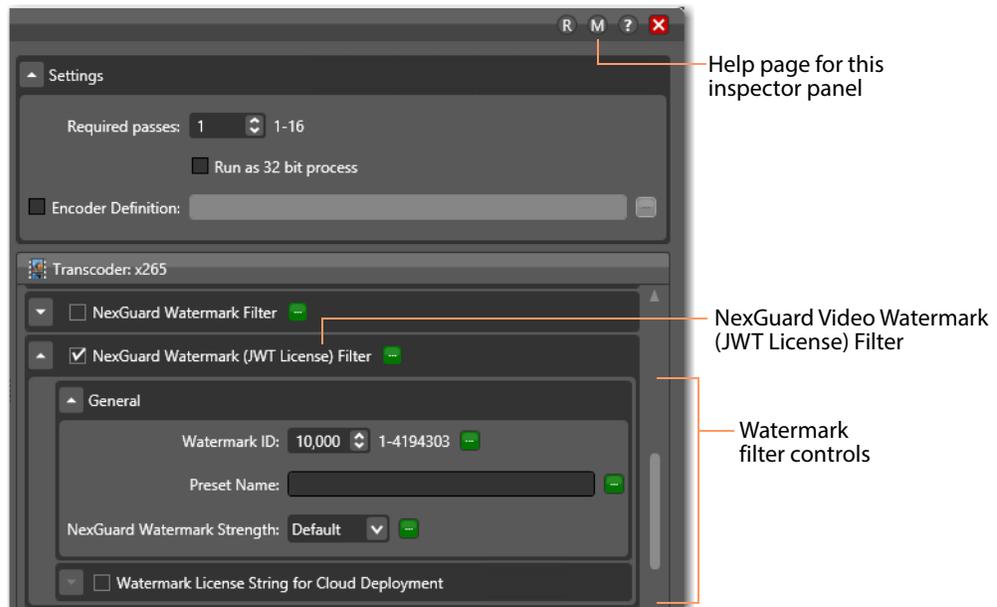
Follow these steps to enable and configure the filter:

1. First, duplicate the IPTV Flip Prototype Watermark workflow, renaming it as *IPTV Flip Transcoder JWT Watermark*, for example. Workflow Designer selects and opens it.
2. Open the IPTV Flip action inspector and select the x265 (or other) Transcoder component:



The inspector displays its configuration panel to the right.

3. Enable the NexGuard Watermark (JWT License) Filter:



The filter requires a watermark ID, preset name, and NexGuard watermark strength value. There are three ways to provide these values:

- Statically, by specifying them manually, which remain the same for every job unless edited here prior to submitting a new job.
- Dynamically, via variables—see [Providing Input Values Dynamically](#) for details.
- Using NexGuard Manager—see [Exchanging Job Metadata with NexGuard Manager](#) for details.

4. Configure these settings:

NexGuard Watermark ID. Specifies the payload ID that NexGuard should use to generate the watermark. If you aren't using NexGuard Manager or it is temporarily unavailable, provide the watermark ID statically or populate and select the variable.

Note: If your preset name (key) is a short form, Clip Mark key, the value range for watermark ID is 1-1024. If you supply a value larger than 1024, the job fails with an out of range error.

Preset Name. Specifies the preset name to use when NexGuard applies the watermark. Provide the name statically or dynamically. The preset name (key) is provided to you by Nagra when you obtain a license.

NexGuard Watermark Strength. Specifies the level of watermarking to apply.

Note: Nagra recommends leaving the watermark strength level set to *Default* unless otherwise instructed. Application of modified values requires licensing updates and specific, case-by-case instructions from Nagra.

Watermark License String for Cloud Deployment. Disabled by default for execution on-premises.

5. Now that you've configured the NexGuard Watermark (JWT) Filter, close the inspector.
6. Activate the workflow, and submit a test file to start a job.
7. When the job completes, display the Job Status tab and select the job to play and test your watermarked media.

Configuring the NexGuard Watermark (JWT License) Filter in Hybrid Workflows

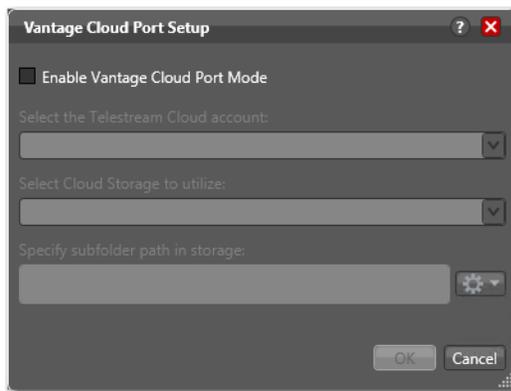
The NexGuard Watermark (JWT License) Filter in the IPTV Flip Transcoder component implements NexGuard Transcoder Plugin to watermark the video stream.

The NexGuard Watermark (JWT License) Filter may be executed in on-premise workflows and in transcoding actions operating in Cloud mode. You must execute Notify action on-premises to interchange metadata with NexGuard Manager.

Note: If you haven't set up your Vantage domain for operating in Telestream Cloud, you should do so before proceeding. For Telestream Cloud and Vantage integration guidance, licensing, and details on using hybrid and hosted workflows in Telestream Cloud, refer to the [Vantage Cloud Port User Guide](#) on our web site.

With your Vantage domain configured to integrate with Telestream Cloud, follow these steps to configure IPTV Flip to execute in Cloud mode:

1. First, duplicate the IPTV Flip Prototype Watermark workflow, renaming it as *IPTV Flip Cloud Watermark*, for example. Workflow Designer selects and opens it.
2. Right-click on the IPTV Flip action and select Cloud Mode > Configure Cloud Mode. Workflow Designer displays the Configure Cloud Mode dialog:



Note: If Workflow Designer displays a Cloud Mode error dialog, verify that workflows can operate as hybrid or hosted workflows. Also make sure you have added a Vantage Cloud Port account in the Vantage Management Console—Settings & Options > Telestream Cloud—and retry.

3. Configure the following settings:

Enable Vantage Cloud Port Mode. Check to enable this action to execute in Telestream Cloud, independently of other actions in the workflow.

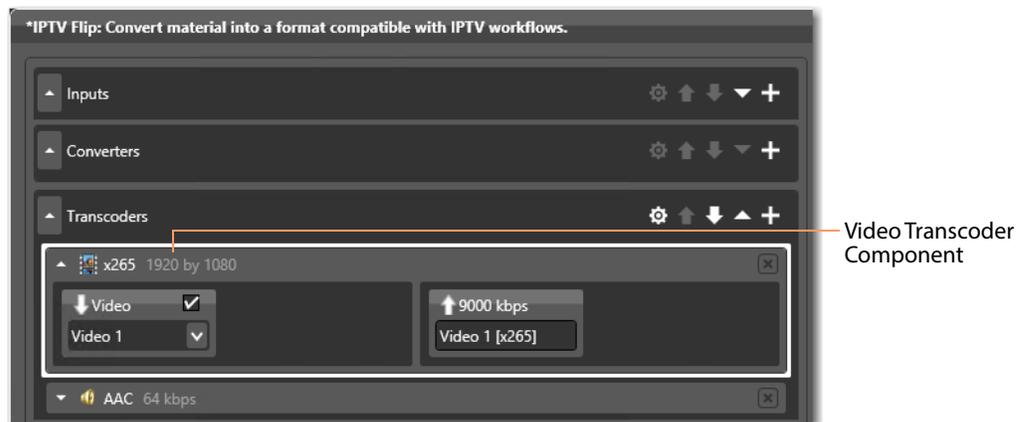
Select the Telestream Cloud Account. Specifies the Telestream Cloud account to utilize, which must be specified in the Vantage Management Console (Settings & Options > Telestream Cloud).

Select Cloud Storage to Utilize. Specifies the cloud storage bucket to utilize, which must be specified as an address in the Vantage Folder Address Book.

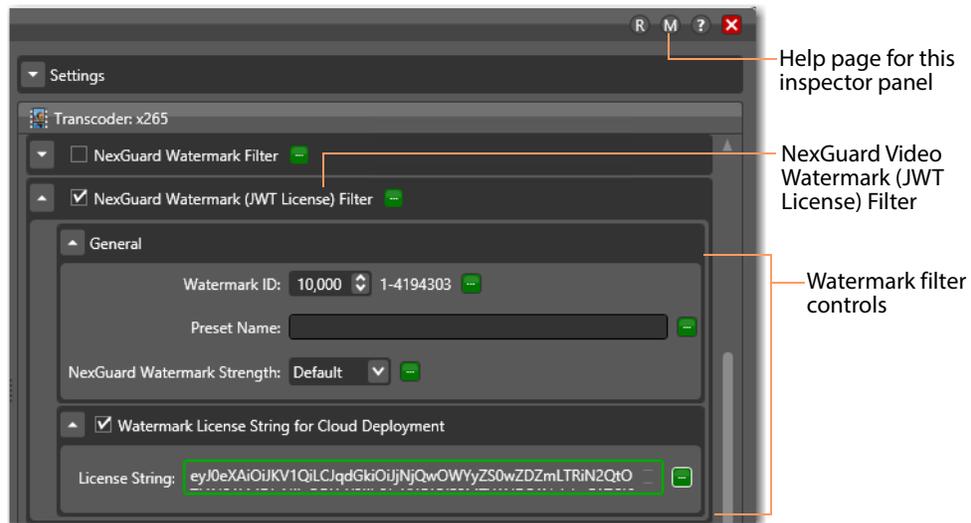
Note: The folder you create in the Vantage Folder Address Book must use exactly the same name as the storage you identify in the Telestream Cloud account. This is required to provide translation of the signed URL specifying the location of the cloud-stored media to a Vantage native URL usable by the subsequent action. If matching entries are not included in the Vantage Folder Address Book, the URL translation does not occur, and downstream actions may fail. See [Adding your Cloud Storage Account to the Vantage Folder Address Book](#) for configuration details.

Specify Subfolder Path in Storage. Specifies an optional subfolder (bucket) path to use when writing files. May be statically specified and/or variables, date and time tokens may be applied.

4. Now, enable and configure the filter—open the IPTV Flip action inspector and select the x265 Transcoder component:



The inspector displays its configuration panel to the right.



5. In the Settings panel, enable the NexGuard Watermark (JWT License) Filter.

The filter requires a watermark ID, preset name, NexGuard watermark strength, and a license string for Telestream Cloud (shown here bound to a variable) value. There are three ways to provide these values:

- Statically, by specifying them manually, which remain the same for every job.
- Dynamically, via variables—see [Providing Input Values Dynamically](#) for details.
- Using NexGuard Manager—see [Exchanging Job Metadata with NexGuard Manager](#) for details.

6. Configure these settings:

NexGuard Watermark ID. Specifies the payload ID that NexGuard should use to generate the watermark. If you aren't using NexGuard Manager or it is temporarily unavailable, provide the watermark ID statically or populate and select the variable.

Note: If your preset name (key) is a clip mark key, the value range for watermark ID is 1-1024. If you supply a key larger than 1024, the job fails with an out of range error.

Preset Name. Specifies the preset name to use when NexGuard applies the watermark. Provide the name statically or dynamically. The preset name (key) is provided to you by Nagra when you obtain a license.

NexGuard Watermark Strength. Specifies the level of watermarking to apply.

Note: Nagra recommends leaving the watermark strength level set to *Default* unless otherwise instructed. Application of modified values requires licensing updates and specific, case-by-case instructions from Nagra.

Watermark License String for Cloud Deployment. Enable this control to execute in Telestream Cloud and supply a license string. Enable this control to execute in Telestream Cloud and supply a license string. Open the cloud license file provided by Nagra in a text editor: Select All > Copy > Paste the license string into the field. Alternatively, bind to a variable. For efficiency, you can create a variable in the Vantage Management Console, update it with the license string, and then assign the variable to this control. Do not use the cloud license when executing IPTV Flip on-premises.

7. Now that you've configured the NexGuard Watermark (JWT) Filter, close the inspector.
8. Activate the workflow, and submit a test file to start a job.
9. When the job completes, display the Job Status tab and select the job to play and test your watermarked media.

Configuring the NexGuard Watermark (JWT License) Filter in Hosted Workflows

The NexGuard Watermark (JWT License) Filter implements the NexGuard Transcoder Plugin in the IPTV Flip Transcoder component to watermark the video stream.

Watermarking with the NexGuard Transcoder Plugin may be performed in on-premise workflows, and it may also be performed in transcoding actions executing in Telestream Cloud.

This topic describes configuring the action and the filter to execute in a hosted workflow—where the workflow is created and configured in Workflow Designer—then exported as a CWD file and then imported into Telestream Cloud for execution.

It isn't necessary to enable Cloud mode on the transcoding/media processing actions. The entire workflow (when imported) executes in Telestream Cloud and the Cloud mode settings are configured directly in Telestream Cloud, instead of the action itself.

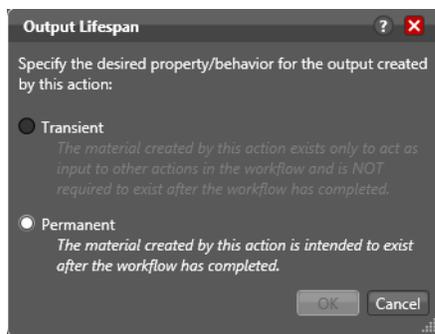
Changes you make to the prototype workflow must be made within the limits of hosted workflow restrictions.

Note: Unlike the hybrid workflow requirement, you are not required to set up your Vantage domain for integration with Telestream Cloud to create and export hosted workflows. For Telestream Cloud and Vantage integration guidance, licensing, and limits and details on creating and configuring hybrid and hosted workflows, refer to the [Vantage Cloud Port User Guide](#) on the web site.

Follow these steps to configure IPTV Flip to execute in a hosted workflow:

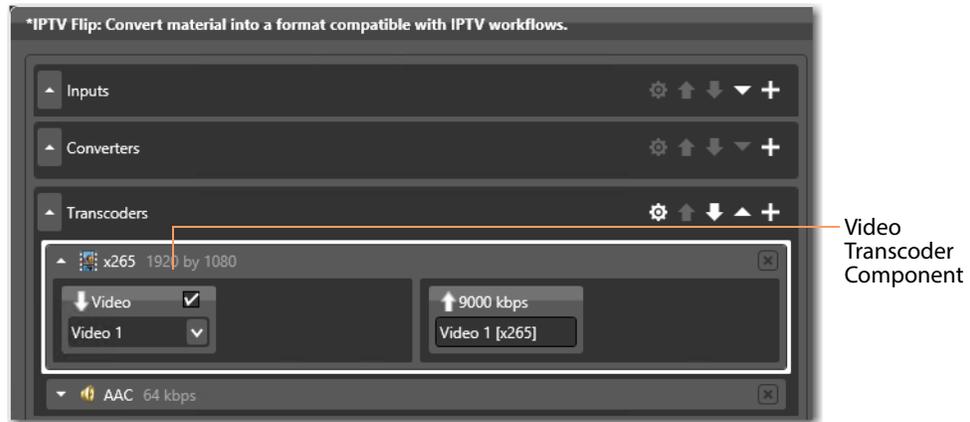
1. First, duplicate the IPTV Flip Prototype Watermark workflow, renaming it as *IPTV Flip Hosted Watermark*, for example. Workflow Designer selects and opens it.
2. Because this is a hosted workflow, in order to delete temporal files, right-click on the action and choose Cloud Mode > Output Lifespan.

Workflow Designer displays this dialog:

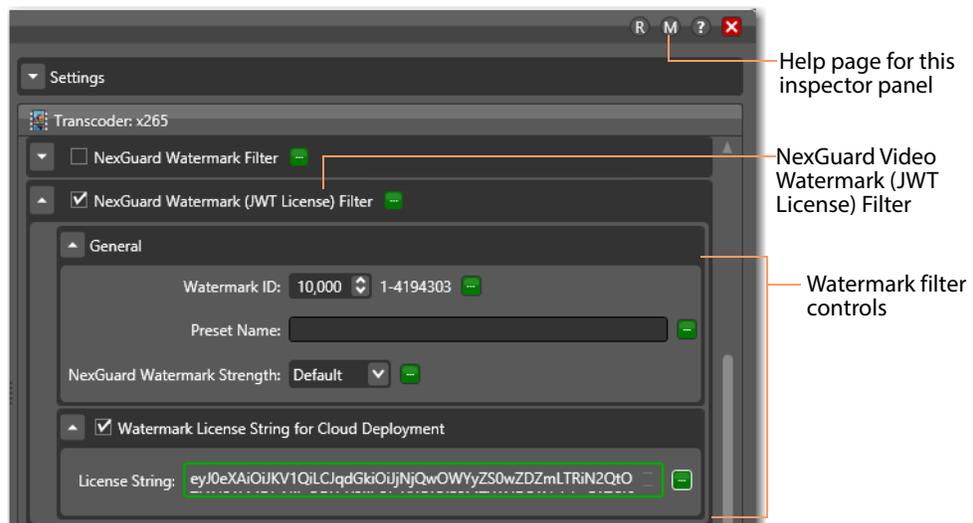


3. Select Permanent to preserve the encoded output, and close the dialog.

- Now, enable and configure the filter—open the IPTV Flip action inspector and select the x265 Transcoder component:



The inspector displays its configuration panel to the right.



- In the Settings panel, enable the NexGuard Watermark (JWT License) Filter.

The filter requires a watermark ID, preset name, NexGuard watermark strength, and a license string for Telestream Cloud (shown here bound to a variable) value. There are two ways to provide these values:

 - Statically, by specifying them manually, which remain the same for every job.
 - Dynamically, via variables—see [Providing Input Values Dynamically](#) for details.
- Configure these settings:

NexGuard Watermark ID. Specifies the payload ID that NexGuard should use to generate the watermark. If you aren't using NexGuard Manager or it is temporarily unavailable, provide the watermark ID statically or populate and select the variable.

Note: If your preset name (key) is a clip mark key, the value range for watermark ID is 1-1024. If you supply a key larger than 1024, the job fails with an out of range error.

Preset Name. Specifies the preset name to use when NexGuard applies the watermark. Provide the name statically or dynamically. The preset name (key) is provided to you by Nagra when you obtain a license.

NexGuard Watermark Strength. Specifies the level of watermarking to apply.

Note: Nagra recommends leaving the watermark strength level set to *Default* unless otherwise instructed. Application of modified values requires licensing updates and specific, case-by-case instructions from Nagra.

Watermark License String for Cloud Deployment. Enable this control to execute in Telestream Cloud and supply a license string. Open the cloud license file provided by Nagra in a text editor: Select All > Copy > Paste the license string into the field. Alternatively, bind to a variable. For efficiency, you can create a variable in the Vantage Management Console, update it with the license string, and then assign the variable to this control. Do not use the cloud license when executing Multiscreen Flip on-premises.

7. Now that you've configured the NexGuard Watermark (JWT) Filter, close the inspector.
8. Export the workflow from Workflow Designer—File > Export for Cloud.

When you export a workflow from Workflow Designer, two processes are initiated automatically: first, the workflow is audited to insure that it meets the criteria for a hosted workflow, and second, it is converted to a Compiled Workflow Document and saved on your local file system with a CWD extension.

With the workflow exported, your work in Vantage is complete. Follow these steps to import your workflow into your Telestream Cloud and process media using it:

1. Log into your Telestream Cloud account to import the CWD file and prepare it for deployment and execution in Telestream Cloud.
2. Using your custom submission program, submit a test file to start a job in Telestream Cloud.
3. When the job completes, you can play and test your watermarked media.

Configuring Conform Actions for Watermarking

The Conform action includes filters for watermarking using two different NexGuard products—NexGuard Embedder (deprecated) which watermarks video and audio and NexGuard Transcoder Plugin—which watermarks video on-premises as well as in hybrid and hosted workflows executing in Telestream Cloud.

Before creating NexGuard watermarking workflows for a particular transcoding action, Telestream recommends that you read [Implementing NexGuard Watermarking in Workflows](#), where you'll learn about issues that apply generally to watermarking your media in Vantage using NexGuard.

Topics

- [Overview](#)
- [Creating a Prototype Workflow](#)
- [Configuring the Video NexGuard Watermark Filter](#)
- [Configuring the NexGuard Watermark \(JWT License\) Filter in On-Premise Workflows](#)

Overview

The Conform action renders multi-layer video compositions (as defined in a Composition XML file which it is passed) with transition and image effects and graphic overlays and conformed audio, applying option filters as appropriate, encoding the output video in the specified format.

The Conform action includes filters for watermarking using two different NexGuard products:

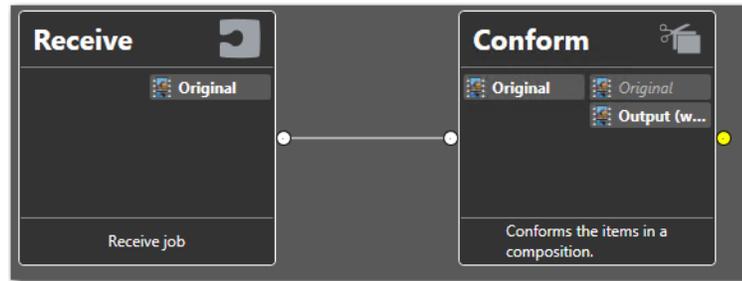
- NexGuard Watermark Filter—implements NexGuard Embedder (deprecated), for execution on-premises only; watermarks video streams only. Supports use of NexGuard Manager.
- NexGuard Watermark (JWT License) Filter—implements the NexGuard Transcoder Plugin, executes on-premises. Supports the use of NexGuard Manager.

Conform action workflows with NexGuard watermarking have the following limits/requirements:

- Watermarking can't be performed with codecs being used in Direct-Convert mode; they must decode and re-encode the video.
- The video must be at least 2 1/2 minutes long for the watermark to be detected. For audio, clips must be at least 15 seconds long.
- You can't watermark media in formats or containers that don't support watermarking, including those marked as Legacy.

Creating a Prototype Workflow

This is a basic Conform workflow that you can use to watermark your media during transcoding.



This workflow includes the following actions:

Receive—enables you to drag and drop a media file directly on the Receive action in Workflow Designer to start each job. Any other origin action can be used (Watch | Workorder, etc.), based on your job submission requirements.

Conform—the Conform action is a Vantage Cloud Port-capable, 64-bit multi-core-optimized encoder running under the Vantage Edit Service (except in Cloud mode, when it is executed by the Telestream Cloud Service, operating as a proxy of the Edit Service). It transcodes media from one format into another format as specified by the output configuration you specify. Resolutions extend from SD to UltraHD and 4K in a broad range of file formats, from QuickTime to MPEG-4 and TIFO, and including encoding for x264, x265 (H.265 HEVC), MXF, and more.

If you use NexGuard Manager, see [Exchanging Job Metadata with NexGuard Manager](#) for implementation details.

When you are using a machine license from Nagra, you should add a run-on rule to the transcoding action and configure it to execute on the server where the license is installed. See the Workflow Designer User’s Guide for details.

Note: Detailed online help is provided in Workflow Designer for use when you are configuring an action. Double-click an action to display its inspector, where you can press click the M button to display the man page, which describes each component in detail, including controls.

Follow these steps to create your prototype Conform workflow:

1. In Workflow Designer, create a new category to store your test workflows. For example, *NexGuard Conform Workflows*.
2. Create a new workflow in this category: *Conform Prototype Watermark*, for example.
3. Add a Receive action, and configure it to ingest one media file—select *Original* as the nickname.
4. Now, add a Conform action and configure these general settings:
 - Input File Nickname: Select *Original* as the nickname to ingest.
 - Generate Composition Chronicle: none are required in the prototype.
 - Transcoders: Add an x265 video transcoder and AAC audio transcoder.
 - Outputs: Add an MPEG-4 container and specify the output nickname as *Out*.
 - Processors: none are required in the prototype.
5. Optionally, configure remaining settings—other than the NexGuard Watermark filters—as desired.

When you are using a machine license from Nagra, you should add a run-on rule to the transcoding action and configure it to execute on the server where the license is installed. See the Workflow Designer User's Guide for details.

Now, you can use this prototype workflow as a starting point to implement watermarking in Conform, executing on-premises, in hybrid, and in hosted workflows, as described in the following topics.

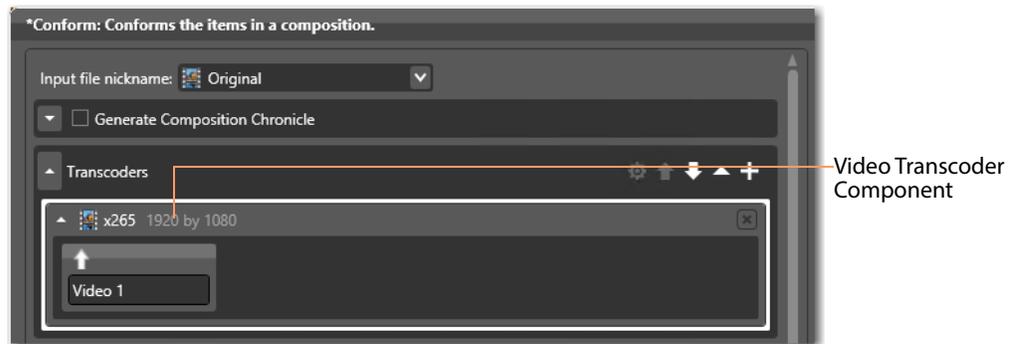
In production, you can add processors, and make other changes as required. The prototype is just an example—you can modify the workflow by adding other actions to suit your media processing requirements.

Configuring the Video NexGuard Watermark Filter

The NexGuard Watermark Filter in the Conform video transcoder component implements NexGuard Embedder for watermarking the video, executing on-premises.

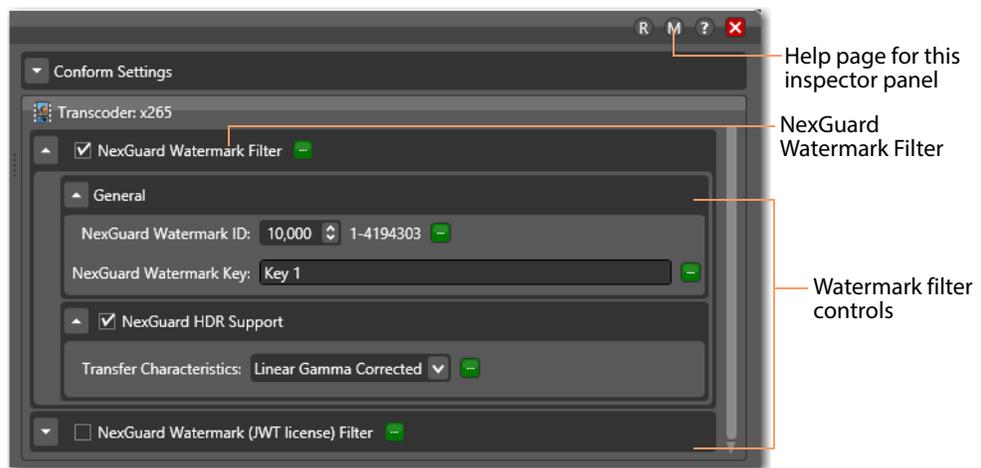
Follow these steps to enable and configure it:

1. First, duplicate the Conform Prototype Watermark workflow, renaming it as *Conform Video Watermark*, for example. Workflow Designer selects and opens it.
2. Open the Conform action inspector and select the x265 transcoder component:



The inspector displays its configuration panel to the right.

3. In the Video Processor settings, enable the NexGuard Watermark Filter:



The filter requires a watermark ID and watermark key. There are three ways to provide these values:

- Statically, by specifying them manually, which remain the same for every job.
- Dynamically, via variables—see [Providing Input Values Dynamically](#).
- Using NexGuard Manager—see [Exchanging Job Metadata with NexGuard Manager](#).

4. Configure these settings:

NexGuard Watermark ID. Specifies the watermark (payload) ID that NexGuard should use to generate the watermark. If you aren't using NexGuard Manager or it is temporarily unavailable, provide the watermark ID statically or populate and select the variable.

NexGuard Watermark Key. Specifies the key to use when NexGuard applies the watermark. You must specify the watermark ID statically or populate and select the variable.

Note: When you are using a machine license in the *Vantage* directory on one server in an array, a race condition may occur where an unlicensed transcode service updates the Vantage database with licensing information after the licensed transcoder service has already done so. In this situation, the NexGuard Watermark filter won't be able to populate the Watermark Key field, requiring you to add it manually.

NexGuard HDR Support. When checked, enables High Dynamic Range support.

Transfer Characteristics. Specifies [Linear Gamma Corrected | DPX Cineon | Hybrid Log Gamma | Perceptual Quantizer]. DPX Cineon can only be used with an RGB10 stream.

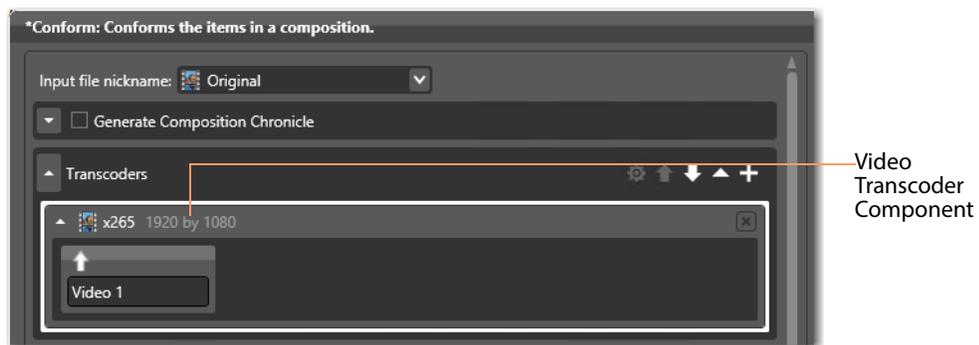
5. Now that you've configured the NexGuard Watermark Filter, close the inspector.
6. Activate the workflow, and submit a test file to start a job.
7. When the job completes, display the Job Status tab and select the job to play and test your watermarked media.

Configuring the NexGuard Watermark (JWT License) Filter in On-Premise Workflows

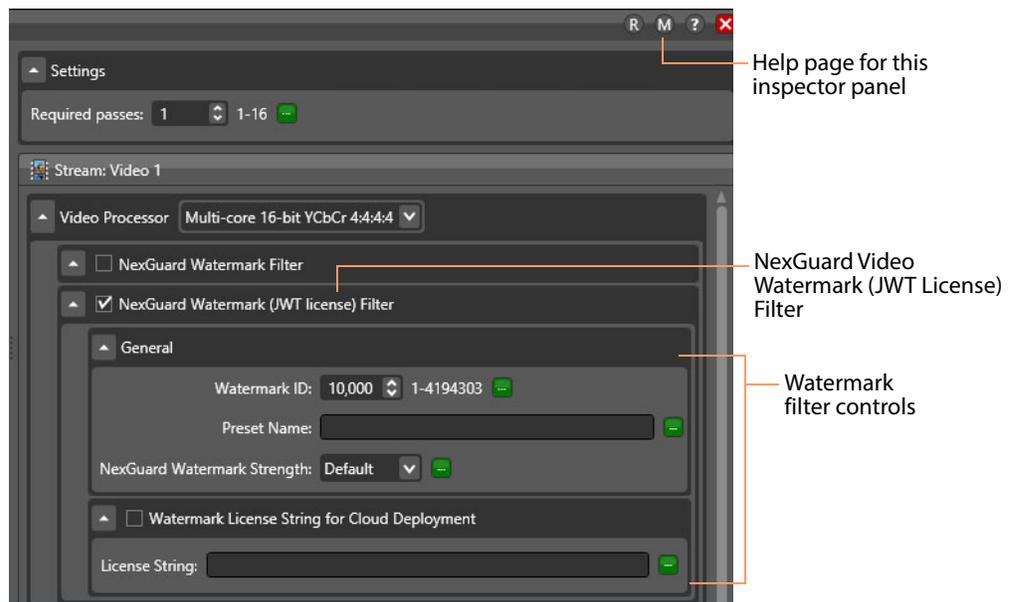
The *NexGuard Watermark (JWT License) Filter* in the Conform action's transcoder component implements the NexGuard Transcoder Plugin to apply a watermark to the video stream.

Follow these steps to configure it for use in on-premise workflows:

1. First, duplicate the Conform Prototype Watermark workflow, renaming it as *Conform JWT Watermark*, for example. Workflow Designer selects and opens it.
2. Open the Conform action inspector and select the x265 (or other) transcoder:



3. The inspector displays its configuration panel to the right.



4. In the Settings > Video Processor panel, enable the NexGuard Watermark (JWT License) Filter:

The filter requires a watermark ID, preset name, and NexGuard watermark strength value. There are three ways to provide these values:

- Statically, by specifying them manually, which remain the same for every job.
- Dynamically, via variables—see [Providing Input Values Dynamically](#).
- Using NexGuard Manager—see [Exchanging Job Metadata with NexGuard Manager](#).

5. Configure these settings:

NexGuard Watermark ID. Specifies the payload ID that NexGuard should use to generate the watermark. If you aren't using NexGuard Manager or it is temporarily unavailable, provide the watermark ID statically or populate and select the variable.

Note: If your preset name is a clip mark key, the value range for watermark ID is 1-1024. If you supply a key larger than 1024, the job fails with an out of range error.

Preset Name. Specifies the preset name to use when NexGuard applies the watermark. Provide the name statically or dynamically. The preset name (key) is provided to you by Nagra when you obtain a license.

NexGuard Watermark Strength. Specifies the level of watermarking to apply.

Note: Nagra recommends leaving the watermark strength level set to *Default* unless otherwise instructed. Application of modified values requires licensing updates and specific, case-by-case instructions from Nagra.

Watermark License String for Cloud Deployment. Disabled by default for execution on-premises.

6. Now that you've configured the NexGuard Watermark (JWT) Filter, close the inspector.
7. Activate the workflow, and submit a test file to start a job.
8. When the job completes, display the Job Status tab and select the job to play and test your watermarked media.

Configuring Flip Actions for Watermarking

The Flip action includes NexGuard filters for watermarking video and audio, using NexGuard Embedder (deprecated). The Flip action executes only in on-premise Vantage domains—it does not execute in Telestream Cloud.

Before creating NexGuard watermarking workflows for a particular transcoding action, Telestream recommends that you read [Implementing NexGuard Watermarking in Workflows](#), where you'll learn about issues that apply generally to watermarking your media in Vantage using NexGuard.

Topics

- [Overview](#)
- [Creating a Prototype Workflow](#)
- [Configuring the Video NexGuard Watermark Filter](#)
- [Configuring the Audio NexGuard Watermark Filter](#)

Overview

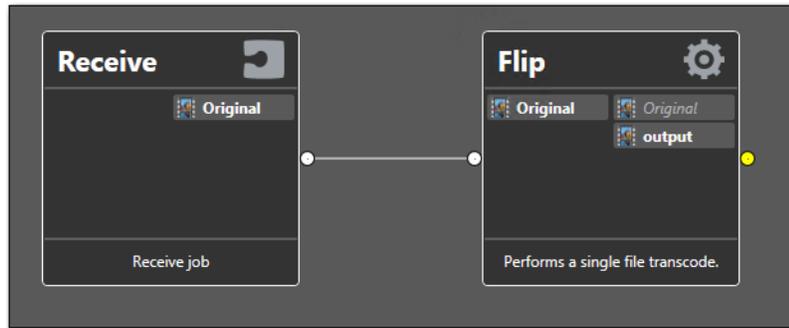
The Flip action implements NexGuard Embedder (deprecated) in NexGuard Watermark Filters for both audio and video, for execution on-premises.

Flip workflows with NexGuard watermarking have the following limits/requirements:

- You can't watermark media in formats that don't support watermarking, including those marked as *Legacy*.
- Watermarking can't be performed with codecs being used in Direct-Convert mode; they must decode and re-encode the video.
- The video must be at least 2 1/2 minutes long for the watermark to be detected. For audio, clips must be at least 15 seconds long.
- The video must be encoded with Multi-core or Lightspeed Accelerated processors.
- Audio watermarking is supported for PCM and AAC audio. If you want watermarked audio in another format, first watermark PCM, then re-encode it in your required format; watermarking is preserved.

Creating a Prototype Workflow

This is a basic Flip workflow that you can use to watermark your media during transcoding. You can modify the workflow by adding other actions to suit your media processing requirements.



This workflow includes the following actions:

Receive—enables you to drag and drop a media file directly on the Receive action in Workflow Designer to start each job. Any other origin action can be used (Watch | Workorder, etc.), based on your job submission requirements.

Flip—The Flip action is executed by the Transcode Service, which implements a broad range of codecs to transcode decoded digital baseband media into another media encoding format.

If you use NexGuard Manager, see [Exchanging Job Metadata with NexGuard Manager](#) for implementation details.

If you are using a Nagra machine license, you should add a run-on rule to the transcoding action and configure it to execute on the server where the license is installed. See the Workflow Designer User’s Guide for details.

Note: Detailed online help is available in Workflow Designer for use when you are configuring an action. Double-click an action to display its inspector, where you can press click the M button to display the man page, which describes each component in detail, including controls.

Follow these steps to create your prototype Flip workflow:

1. In Workflow Designer, create a new category to store your NexGuard workflows. For example, *Flip NexGuard Workflows*.
2. Create a new workflow: *Flip Prototype Watermark*, for example.
3. Add a Receive action, and configure it to ingest a media file—select *Original* as the nickname.
4. Now, add a Flip action and configure these settings:
 - Encoder: Select MXF Encoder or other encoder that includes PCM audio.
 - Input Media File Nickname: Select *Original* as the source file to ingest.
 - Output Media File Nickname: Select *out* as the output file.
 - Configure the video stream to use the Multi-core or Lightspeed Accelerated processor.
 - Configure the Audio Stream to use the PCM codec.
5. Optionally, configure remaining settings—other than the NexGuard Watermark filters—as desired.

When you are using a machine license from Nagra, you should add a run-on rule to the transcoding action and configure it to execute on the server where the license is installed. See the Workflow Designer User's Guide for details.

Now, you can use this prototype workflow as a starting point to implement watermarking in Flip, executing on-premises, as described in the following topics.

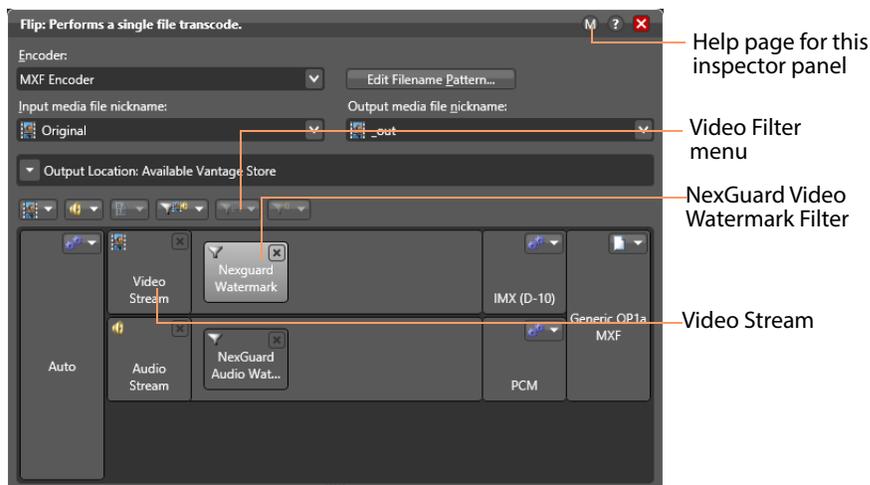
In production, you can use any supported input you require, add converters, and generate output using any supported container/codec. The prototype is just an example—you can modify the workflow by adding other actions to suit your media processing requirements.

Configuring the Video NexGuard Watermark Filter

The NexGuard Watermark Filter implements NexGuard Embedder in the Flip Video Stream component to watermark the video stream, when executing on-premises.

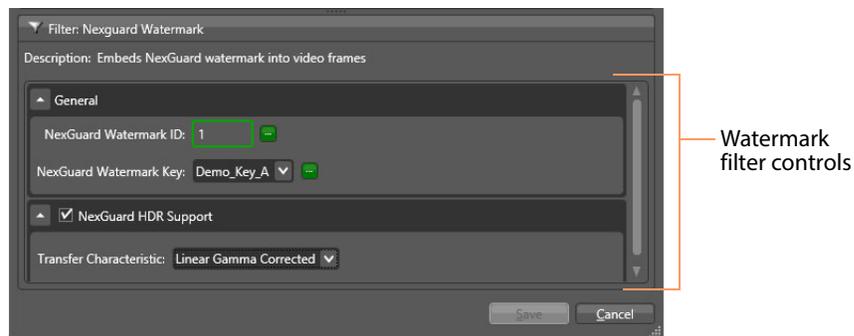
Follow these steps to enable and configure it:

1. First, duplicate the Flip Prototype Watermark workflow, renaming it as *Flip Video Watermark*, for example. Workflow Designer selects and opens it.
2. Open the Flip action inspector and select the Video Stream component.



3. Now, add the NexGuard Watermark filter—select NexGuard Watermark from the Video Filter menu.

The inspector displays its configuration panel below.



The filter requires a watermark ID and watermark key. There are three ways to provide these values:

- Statically, by specifying them manually, which remain the same for every job.
- Dynamically, via variables—see [Providing Input Values Dynamically](#).
- Using NexGuard Manager—see [Exchanging Job Metadata with NexGuard Manager](#).

4. Configure these settings:

NexGuard Watermark ID. Specifies the watermark (payload) ID that NexGuard should use to generate the watermark. If you aren't using NexGuard Manager or it is temporarily unavailable, provide the watermark ID statically or populate and select the variable.

NexGuard Watermark Key. Specifies the key to use when NexGuard applies the watermark. Select from the list in the menu.

Note: When you are using a machine license in the *Vantage* directory on one server in an array, a race condition may occur where an unlicensed transcode service updates the Vantage database with licensing information after the licensed transcoder service has already done so. In this situation, the NexGuard Watermark filter won't be able to populate the Watermark Key field, requiring you to add it manually.

NexGuard HDR Support. When checked, enables High Dynamic Range support.

Transfer Characteristics. Specifies [Linear Gamma Corrected | DPX Cineon | Hybrid Log Gamma | Perceptual Quantizer]. DPX Cineon can only be used with an RGB10 stream.

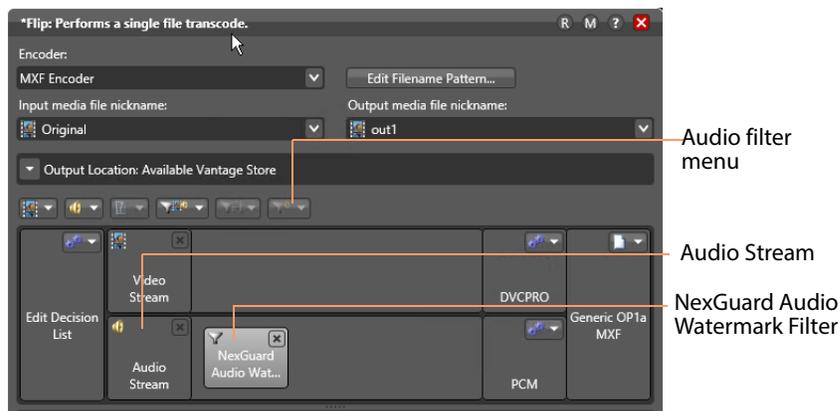
- 5.** Now that you've configured the NexGuard Watermark Filter, close the inspector to update the action.
- 6.** Activate the workflow, and submit a test file to start a job.
- 7.** When the job completes, display the Job Status tab and select the job to play and test your watermarked media.

Configuring the Audio NexGuard Watermark Filter

The NexGuard Watermark Filter implements NexGuard Embedder in the Flip Audio Stream component to watermark the audio track, when executing on-premises.

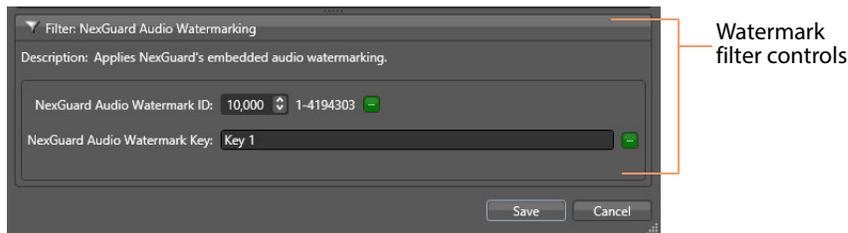
Follow these steps to enable and configure it:

1. First, duplicate the Flip Prototype Watermark workflow, renaming it as *Flip Audio Watermark*, for example. Workflow Designer selects and opens it.
2. Open the Flip action inspector and select the Audio Stream component.



3. Now, add the NexGuard Watermark filter—select NexGuard Watermark from the Audio Filter menu.

The inspector displays its configuration panel below:



The filter requires a watermark ID and watermark key. There are three ways to provide these values:

- Statically, by specifying them manually, which remain the same for every job.
- Dynamically, via variables—see [Providing Input Values Dynamically](#).
- Using NexGuard Manager—see [Exchanging Job Metadata with NexGuard Manager](#).

4. Configure these settings:

NexGuard Watermark ID. Specifies the watermark (payload) ID that NexGuard should use to generate the watermark. If you aren't using NexGuard Manager or it is

temporarily unavailable, provide the watermark ID statically or populate and select the variable.

NexGuard Watermark Key. Specifies the key to use when NexGuard applies the watermark. Select from the list in the menu.

Note: When you are using a machine license in the *Vantage* directory on one server in an array, a race condition may occur where an unlicensed transcode service updates the Vantage database with licensing information after the licensed transcoder service has already done so. In this situation, the NexGuard Watermark filter won't be able to populate the Watermark Key field, requiring you to add it manually.

5. Now that you've configured the NexGuard Watermark Filter, close the inspector to update the action.
6. Activate the workflow, and submit a test file to start a job.
7. When the job completes, display the Job Status tab and select the job to play and test your watermarked media.

Troubleshooting

These topics describe common problems you may face, with likely causes and suggested resolutions.

For further assistance, contact Telestream Customer Service (See [Contacting Telestream](#)).

Topics

- [Vantage Licensing Issues](#)
- [NexGuard Licensing Issues](#)
- [NexGuard Notifier Connection Issues](#)
- [Transcode Action Issues](#)

Vantage Licensing Issues

Issue: You open a Flip | Flip64 | Conform | Multiscreen Flip action inspector, and no NexGuard filters display.

Likely Causes:

- The service that executes this action could not identify the appropriate Vantage NexGuard Filter license, and thus, did not display the NexGuard filter panel.
- You're attempting to watermark video or audio, but the action you're using does not support video watermarking for the chosen codec, or does not support audio watermarking for the chosen codec, or does not support it at all.

Resolution: Verify that (see [Obtaining & Applying Vantage & NexGuard Licenses](#)):

- You have obtained and installed the Vantage license.
- Verify that you have placed the license(s) on the appropriate server, path and folder.
- Restart the Vantage services and retry.

For further assistance, contact Telestream Customer Service (See [Contacting Telestream](#)).

NexGuard Licensing Issues

Issue: A Flip-based workflow attempts to apply a NexGuard watermark. In the Job Status tab, the Flip action in the job displays 0% completion continuously.

Likely Cause: The transcoder attempted to watermark the media without identifying the appropriate NexGuard license or there are no seats available.

Resolution: Stop the job and view the *LicError.log* files in *C:\Program Files (x86)\Telestream\Vantage\NexGuard Audio Watermarking License* and *C:\Program Files (x86)\Telestream\Vantage\NexGuard Video Watermarking License*.

Read the error and fix the problem, then retry the workflow.

The NexGuard license determines how many concurrent watermarks a Vantage machine can do at a given time. These are referred to as *seats*. If the license has fewer seats than the number of concurrently running transcoding actions with the NexGuard Watermark filter, some of the transcoding actions will idle at 0% until a seat becomes available. If a transcoding action is unable to acquire a seat due to all the seats continually being in use, it will eventually time out as specified by the timeout value of the service.

Verify that you have...

- obtained and installed the NexGuard license
- entered the correct IP | Name in the license files to identify the server where the license is located
- successfully PINGed the server you are targeting

- placed the float license(s) on the appropriate server, path and folder.

Restart the Vantage Transcode service and retry.

For further assistance, contact Telestream Customer Service (See [Contacting Telestream](#)).

If Vantage attempts to apply a NexGuard Watermark without a license, it displays this error message:

An error occurred during execution of the Transcode Task: Process Id = #### An unrecoverable error has been encountered within the Transcoder. The transcode process has stopped responding as a result of a crash. Please attempt to re-run the transcode.

NexGuard Notifier Connection Issues

Issue: You are configuring the Notify action’s NexGuard Notifier to communicate with NexGuard Manager. When you click Test or Next, Vantage displays the error “Connection failed...” or “Unable to retrieve the list of keys from NexGuard Manager” or similar.

Likely Causes:

- The host name | IP address or port number (default 80) is incorrect.
- The credentials are incorrect.
- You are using an incorrect interface for this version of NexGuard Manager.

Resolution: Verify the information, update the configuration and try again.

Note: A successful connection in Workflow Designer validates the host, port, and credentials. However, the Vantage Communicate Service which executes the Notify action may not be able to connect, based on its own Windows permissions.

Transcode Action Issues

Issue: Transcode actions idle at 0% completion.

Likely Cause: The NexGuard license you have specifies how many watermark operations a Vantage service can perform simultaneously. These are referred to as *seats*. If a license has fewer seats than the number of concurrently-running transcoding actions, some will idle at 0% until a seat becomes available. If an action is unable to acquire a seat due to all seats continually being in use, it will eventually time out, as specified by the timeout value of the Transcode (or other) service.

Resolution: Wait until workflows complete before starting new jobs to reduce seat overload. Or, add more seats to your license.

Issue: Flip action fails: “An error occurred during execution of the Transcode Task... RenderSession Configuration Error, message: Encoder Setup Rejected due to the configuration of a video filter is invalid”.

Likely Cause: The Key you provided is not valid.

Resolution: Validate your license key, update, and retry.

Issue: Workflow fails on Transcode action.

Likely Cause: In Workflow Manager, select the offending workflow and right-click on the transcode action displayed in red to display the Status/History dialog and review details.

Resolution: For example, your Vantage domain may be missing a NexGuard license—remedy and retry.