

# Nielsen® Watermarking Integration Guide

Vantage Version 8.0 UP5 and later



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# Contents

<b>Introduction</b>	<b>13</b>
How To Use This Guide	14
Introduction	14
<a href="#">Flip64</a>   <a href="#">IPTV Flip</a>   <a href="#">Multiscreen Flip</a>   <a href="#">Flip Action Prototype Workflows</a>	14
Applying Nielsen Watermarking in Vantage	15
Nielsen Watermark Filters	16
Filter Implementation	16
Nielsen Watermarking Filters Overview	17
Nielsen Watermarking Filter	17
Nielsen Pre-rendering Watermarking Filter	17
Nielsen Watermarking V3 Filter	18
Nielsen Id3 Filter	18
Vantage Software and License Requirements	19
Vantage Software and Components	19
Vantage Transcoding License Requirements	19
Vantage Nielsen Watermarking License and Account Requirements	20
Establishing a Telestream Cloud Account	20
Nielsen Pre-Rendering Watermarking Requirements	21
Setting up Nielsen Watermarking in Your Cloud Account	21
Setting Up a Watermark	21
Utilizing Nielsen SID/TIC Servers	23
Nielsen SID/TIC Server Requirements	23
SID/TIC Server Settings	23
Delivering Job Files to the Nielsen TIC Collection Facility	24
Delivering Flip Workflow Job Files	24
Delivering Flip64   IPTV Flip Workflow Job Files	24
Automatic Zipping and Delivery	25
Workflow Independent Delivery	25
Providing Runtime Values to Workflows	26

## Flip64 Nielsen Watermarking Workflows 27

Nielsen Watermarking Job Submission	28
Nielsen Watermarking V3 Filter Commercial ID Application Workflow	29
Creating the Workflow	30
Configuring the Receive Action	30
Configuring the Flip64 Action and Watermarking Filter	30
Configuring the Commercial ID Application Settings	30
Configuring Nielsen Label and Cluster Mapping	31
Configuring the Deploy Action	32
Testing Your Workflow	32
Nielsen Watermarking V3 Filter Commercial (CC) Application Workflow	34
Creating the Workflow	35
Configuring the Receive Action	35
Configuring the Flip64 Action and Watermarking Filter	35
Configuring the Commercial (CC) Application Settings	35
Configuring Nielsen Label and Cluster Mapping	36
Configuring the Deploy Action	37
Testing Your Workflow	37
Nielsen Watermarking V3 Filter VOD (Program Content) Application Workflow	39
Creating the Workflow	40
Configuring the Receive Action	40
Configuring the Flip64 Action and Nielsen Watermarking V3 Filter	40
Configuring the VOD (Program Content) Application Settings	40
Configuring Nielsen Label and Cluster Mapping	41
Configuring the Deploy Action	42
Testing Your Workflow	42
Nielsen Watermarking V3 Filter RT VOD Application Workflow	44
Creating the Workflow	45
Configuring the Receive Action	45
Configuring the Flip64 Action and Watermarking Filter	45
Configuring the RT VOD Application Settings	45
Configuring Nielsen Label and Cluster Mapping	46
Configuring the Deploy Action	47
Testing Your Workflow	47
Nielsen Watermarking V3 Filter Linear (Pre-Render) Application Workflow	49
Creating the Workflow	50
Configuring the Receive Action	50
Configuring the Analyze Action	50
Configuring the First Utility Action	51
Configuration Parameters	51
Generating Variables for the Nielsen Watermarking V3 Filter	52
Configuring the Compute Action	52
Configuring the Flip64 Action and Watermarking Filter	52
Configuring the Linear (Pre-Render) Application Settings	53
Configuring Nielsen Label and Cluster Mapping	54
Configuring the Second Utility Action	55
Testing Your Workflow	55

## **IPTV Flip Nielsen Watermarking Workflows 57**

Nielsen Watermarking Job Submission	58
Nielsen Watermarking Filter Program Content Application Workflow	58
Creating the Workflow	59
Configuring the Receive Action	59
Configuring the Analyze Action	59
Configuring the IPTV Flip Action and Nielsen Watermarking Filter	60
Channel Setting	60
Configuring the Program Content Application Settings	60
Configuring the Deploy Action	62
Testing Your Workflow	62
Nielsen Watermarking Filter Commercial Content Application Workflow	63
Creating the Workflow	64
Configuring the Receive Action	64
Configuring the Analyze Action	64
Configuring the IPTV Flip Action and Nielsen Watermarking Filter	64
Channel Setting	65
Configuring the Commercial Content Application Settings	65
Configuring the Deploy Action	66
Testing Your Workflow	67
Nielsen Watermarking Filter RT VOD Flag Application Workflow	67
Creating the Workflow	68
Configuring the Receive Action	68
Configuring the Analyze Action	69
Configuring the IPTV Flip Action and Nielsen Watermarking Filter	69
Channel Setting	69
Configuring the RT VOD Flag Application Settings	70
Configuring the Deploy Action	70
Testing Your Workflow	71
Nielsen Pre-Rendering Watermarking Filter Workflow	71
Creating the Workflow	73
Configuring the Receive Action	73
Configuring the Analyze Action	73
Configuring the First Utility Action	73
Configuration Parameters	74
Generate Variables	74
Configuring the IPTV Flip Action and Nielsen Pre-rendering Watermarking Filter	74
Workflow Type	75
Encoding Time	76
Is Broadcast time zone different from Processing time zone	76
Check Digit Parameters	76
Configuring the Second Cloud Utility Action	76
Testing Your Workflow	77

## Multiscreen Flip Id3 Filter Watermarking Workflow 79

- Nielsen Watermarking Job Submission 79
- Multiscreen Flip Id3 Watermarking Filter Workflow 79
- Creating the Workflow 80
- Configuring the Multiscreen Flip Action and Nielsen Id3 Filter 80
  - Testing Your Workflow 81

## Flip Watermarking Workflows 83

- Nielsen Watermarking Job Submission 84
- Basic Workflow Layout 84
- Nielsen Watermarking Filter Program Content Workflow 85
  - Configuring the Receive Action 85
  - Configuring the Analyze Action 85
  - Configuring the Flip Action 85
  - Configuring the Nielsen Watermarking Filter 85
    - General 86
    - SID/TIC Server Connection 86
    - Channel Setting 86
    - Workflow Type 87
  - Testing Your Workflow 88
- Nielsen Watermarking Filter Commercial Content Workflow 89
  - Configuring the Receive Action 89
  - Configuring the Analyze Action 89
  - Configuring the Flip Action 89
  - Configuring the Nielsen Watermarking Filter 89
    - General 90
    - SID/TIC Connection 90
    - Channel Setting 90
    - Workflow Type 91
  - Testing Your Workflow 92

## Glossary 93

# Introduction

For decades, Nielsen® watermarks have played a critical role in helping media and entertainment producers, advertisers and broadcasters to understand if certain TV shows and commercials succeeded in reaching their target audience.

In the media and entertainment world, for both traditional and new media, content producers and distributors spend valuable time and resources planning media distribution strategies. The question has always been whether you are reaching the right audiences, on the right devices, at the right time. Nielsen audience measurement solutions provide a comprehensive picture of the times, places, and methods media consumers are using to connect with content and advertising.

Television viewing has advanced exponentially since measurement of audiences began. Today, the ability to watch shows at anytime, anywhere, on a multitude of devices and services magnifies the importance of understanding your audience. In the video on demand age, Nielsen watermarks are needed to get a better, more comprehensive picture of audience viewing habits, including how they accessed the content and what device was used to watch it. Was it live TV, or accessed on demand via the cable provider's set top box or DVR? Or maybe it was watched using a streaming platform. Tracking these varying types of access to collect viewer data requires inserting different types of Nielsen watermarks.

Telestream's Vantage integration with Nielsen watermarking provides the tools you need to mark your content, measure your audience, and monetize your content.

## Topics

- [How To Use This Guide](#)
- [Applying Nielsen Watermarking in Vantage](#)
- [Nielsen Watermark Filters](#)
- [Vantage Software and License Requirements](#)
- [Establishing a Telestream Cloud Account](#)
- [Nielsen Pre-Rendering Watermarking Requirements](#)
- [Utilizing Nielsen SID/TIC Servers](#)
- [Delivering Job Files to the Nielsen TIC Collection Facility](#)
- [Providing Runtime Values to Workflows](#)

## How To Use This Guide

The purpose of this guide is to make it easy to implement Nielsen watermarking in Vantage. This guide provides the information that you need to set up and configure your Vantage domain to support Nielsen watermarking in your transcoding workflows. It also provides complete, prototype workflows and the steps to create them, organized by transcoder and then, by watermarking application. Here are the chapters:

In each of these workflows, the Nielsen watermarking filter is fully-described by application, and all of its settings are defined and described as well.

Here are the chapters:

### Introduction

This chapter presents general-purpose topics you'll use to get started: an overview of Nielsen watermarking in Vantage, Nielsen Watermarking Filter overviews, software licensing and other topics related to various watermarking applications.

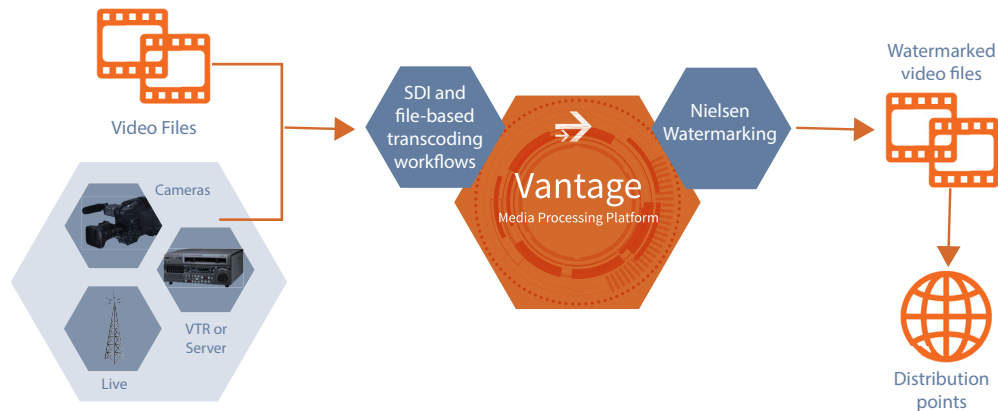
We suggest that you read this chapter first, then turn to the prototype workflow chapters that are of interest to you.

### **Flip64 | IPTV Flip | Multiscreen Flip | Flip Action Prototype Workflows**

In each of these chapters, prototype workflows for each Vantage transcoder are presented for your review, study, and usage. There is a prototype workflow for each Nielsen watermarking filter implemented in the transcoder action and watermarking applications that it supports, as appropriate.

## Applying Nielsen Watermarking in Vantage

Vantage provides several different Nielsen watermarking filters, designed to enable you to use any of our transcoder actions—[Flip](#) | [Flip64](#) | [IPTV Flip](#) | [Multiscreen Flip](#)—to build powerful, automated transcoding workflows to meet your Nielsen watermarking requirements.



Nielsen watermarking is always applied to uncompressed baseband, 48 kHz PCM audio on a track-by-track basis, during encoding. Applications for program content and commercial advertisement content include:

- Pre-rendering linear watermarking before first broadcast to speed [C3](#) | [C7](#) production time
- Watermarking program content with [NW/N2/CBET](#) watermarks
- Watermarking VOD content for [C3](#) | [C7](#) and later distribution
- Watermarking commercial/ad content prior to delivery to a commercial ad server
- Converting watermarks to ID3 metadata tags for use by ABR players which support HLS content

Both file-based and live capture workflows—which capture and ingest HD/SD-SDI and IP video from live and tape-based sources—seamlessly integrate with a Nielsen [SID/TIC Server](#) when required, to generate Nielsen-watermarked content, and automatically communicate with the Nielsen TIC Collection Facility to deliver watermark assets to Nielsen.

## Nielsen Watermark Filters

Vantage provides several different Nielsen watermarking filters to meet your watermarking requirements. These filters are implemented in Vantage transcoders to support each transcoder's functional requirements.

### Filter Implementation

Each transcoding action implements a specific set of filters, as described in this table. Where required, the [SID/TIC Server](#) version is listed, along with the implementation SDK for reference.

Vantage Transcoding Action	Nielsen Filter	Nielsen SID/TIC Server Version	Nielsen SDK
<a href="#">Flip</a>	Nielsen Watermarking Filter (Commercial, VOD)	4.0.6 or 6.0.28	3.8.3
<a href="#">Flip64</a>	Nielsen Watermarking Filter (Commercial, VOD)	4.0.6 or 6.0.28	5.3.23
Flip64	Nielsen Watermarking Filter (RT VOD)	Not used	5.3.23
Flip64	Nielsen Pre-rendering Watermarking Filter	Not used	5.3.23
Flip64	Nielsen Watermarking V3 Filter (Commercial (CC), VOD, CommID)	7.0.19	6.0.13
Flip64	Nielsen Watermarking V3 Filter (RT VOD)	Not Used	6.0.13
Flip64	Nielsen Watermarking V3 Filter (Linear—Pre-Render)	Not Used	5.3.23
<a href="#">Multiscreen Flip</a>	Nielsen Id3 Filter (AAC audio only)	Not used	2.3.2 (PCM-to-ID3)
<a href="#">IPTV Flip</a>	Nielsen Watermarking Filter (Commercial, VOD)	4.0.6 or 6.0.28	5.3.23
IPTV Flip	Nielsen Watermarking Filter (RT VOD)	Not used	5.3.23
IPTV Flip	Nielsen Pre-rendering Watermarking Filter	Not used	5.3.23

The implementation of each filter—and thus, the user interface's set of controls—varies by transcoder, based on its functionality.



## Nielsen Watermarking Filters Overview

Vantage has implemented these Nielsen watermarking filters to meet your watermarking requirements.

- [Nielsen Watermarking Filter](#)
- [Nielsen Pre-rendering Watermarking Filter](#)
- [Nielsen Id3 Filter](#)
- [Nielsen Watermarking V3 Filter](#)

### Nielsen Watermarking Filter

This is the original watermarking filter implemented in Vantage; it is implemented in the [Flip action](#), [Flip64 action](#), and [IPTV Flip action](#). In Flip64, this filter is considered legacy, for backward compatibility in existing workflows. For new workflows, Telestream recommends that you utilize the Nielsen Watermarking V3 Filter.

This filter is a non-linear watermarking filter that implements Nielsen software for watermarking program, commercial and RT-VOD content. The filter requires access to a [SID/TIC Server](#) (see [Filter Implementation](#) for details).

This filter writes metadata, log, and signature files containing information about the transcode and watermarked content for each job, for zipping and delivery to the Nielsen TIC Collection Facility. (See [Delivering Job Files to the Nielsen TIC Collection Facility](#)).

### Nielsen Pre-rendering Watermarking Filter

The Nielsen Pre-rendering Watermarking Filter is the original pre-rendering linear watermarking filter; it is implemented in [Flip64](#) and [IPTV Flip](#) transcoding actions. In Flip64, it is considered legacy, for backward compatibility in existing workflows. For new Flip64 workflows, Telestream recommends that you utilize the Nielsen Watermarking V3 Filter.

This filter implements Nielsen linear watermarking (both [CBET](#) and standard watermarks) for watermarking content prior to initial show air time. The filter pre-allocates and adds Nielsen watermarks to content which has not yet aired, using time stamps from the time and date that the content will actually go to air, using a cloud-based [SID](#) Reservation System (SRS) to generate the SID and timestamp for pre-rendered content.

The Nielsen Pre-rendering Watermarking Filter also provides broadcasters making VOD and OTT versions (including advertising) access to live content as soon as possible. The [C3 | C7](#) flag is added (using the [RT VOD](#) application in the Nielsen Watermarking Filter) to the output generated from the Nielsen Pre-rendering Watermarking Filter or generated externally to Vantage.

---

**Note:** You can also create content for [C3 | C7](#) VOD distribution by capturing a linear broadcast in near-real-time using Telestream's Lightspeed Live Capture, and generate C3 | C7 VOD files for VOD distribution. See [Program Content—C3 | C7 RT VOD](#).

---

This filter writes metadata, log, and signature output files containing information about the transcode and the watermarked content. These files are automatically zipped for delivery to the Nielsen TIC Collection Facility. (See [Delivering Job Files to the Nielsen TIC Collection Facility](#)).

## Nielsen Watermarking V3 Filter

The Nielsen Watermarking V3 Filter combines the functionality of the original Nielsen Watermarking Filter and the Nielsen Pre-Rendering Watermarking Filter into one filter. It is implemented in the [Flip64](#) action.

This filter supports both linear and non-linear watermarking. The Nielsen V3 filter utilizes a [SID/TIC Server](#) when you are producing VOD, Commercial (CC), and Commercial ID content.

In the linear, pre-render application, you can use this filter to watermark content prior to initial show air time. The filter pre-allocates and adds Nielsen watermarks to content using time stamps from the time and date that the content will actually go to air, using the cloud-based SRS (SID Reservation System) to generate the [SID](#) and timestamp for pre-rendered content.

In non-linear applications, this filter watermarks program content and commercial content using a local [SID/TIC Server](#). RT VOD ([C3 | C7](#)) watermarks are only applied to pre-watermarked media. RT VOD flags cannot be applied to any of the following:

- Clean (non-watermarked) content
- Fully-encoded content (where all Nielsen Watermarks slots are filled)
- Content with pre-existing RT VOD flags

This filter writes metadata, log, and signature files containing information about the transcode and watermarked content. These files are automatically bundled into a zip file and processed externally to Vantage, according to the application type specified. (See [Delivering Job Files to the Nielsen TIC Collection Facility](#)).

## Nielsen Id3 Filter

The Nielsen Id3 Filter processes files that have existing Nielsen audio watermarks embedded in the audio stream and converts the embedded watermarks to ID3 metadata tags on the output audio track, for use by adaptive bit-rate players which support reading Nielsen metadata.

The Nielsen Id3 Filter is implemented in the [Multiscreen Flip](#) action. It does not utilize a [SID/TIC Server](#).

# Vantage Software and License Requirements

This topic identifies the Vantage software you should have installed and operational, and the license requirements for watermarking media with Nielsen watermarking.

## Vantage Software and Components

You require a minimum Vantage installation and minimum [ComponentPac](#) versions of transcoders you have licensed to meet your transcoding requirements, in order to utilize certain Nielsen filters or sets of filters:

- Vantage version 8.0 UP5 or later with Flip64 8.0.9 ComponentPac
  - Nielsen Watermarking Filter
  - Nielsen Pre-Rendering Watermarking Filter
- Vantage version 8.0 UP5 or later with Flip64 2022.2 ComponentPac or later
  - Nielsen Watermarking V3 Filter
- Vantage version 8.0 with Telestream Media Transcoding and Analysis 2019.1 or later
  - Nielsen Watermarking Filter
- Vantage version 8.0 UP5 or later with IPTV Flip 8.0.5 ComponentPac or later
  - Nielsen Watermarking Filter
  - Nielsen Pre-Rendering Watermarking Filter
- Vantage version 8.0 UP5 or later with Multiscreen Flip 8.0.0 ComponentPac or later
  - Nielsen Id3 Filter

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**Note:** For minimum platform and Windows OS version requirements, please refer to the Vantage Domain Management Guide 's *Before You Install Vantage* chapter for the Vantage version you are using or are installing.

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## Vantage Transcoding License Requirements

Transcoding in Vantage is enabled via specific licenses:

- Vantage Transcode
- Vantage Transcode Pro
- Vantage Transcode Connect
- Vantage Transcode Pro Connect
- Vantage Transcode IPTV VOD
- Vantage Transcode Multiscreen.

For details about the features each of these licenses enable, see the [Vantage Licenses](#) page on the Telestream web site.

If you don't already have the transcoding licenses you require, contact Telestream (see [Contacting Telestream](#)).

## Vantage Nielsen Watermarking License and Account Requirements

All Nielsen watermarking filters are enabled via the Nielsen Watermarking license. If you don't already have the Nielsen Watermarking license, contact Telestream (see [Contacting Telestream](#)). Use of the Pre-Rendering Watermarking filter or the Nielsen Watermarking V3 filter for pre-render watermarking requires a Telestream Cloud account.

---

**Note:** You do not require any license from Nielsen in order to watermark your media in Vantage.

---

## Establishing a Telestream Cloud Account

In order to watermark your media using the Nielsen Pre-Rendering Watermarking filter or the Nielsen Watermarking V3 Filter linear (pre-render) application, you require a Telestream Cloud account. If you do not have a Telestream Cloud account, contact Telestream Customer Service to establish one (see [Contacting Telestream](#)).

For information on setting up Vantage to use Telestream Cloud and the cloud-based SID Reservation System (SRS) to generate the SID and timestamp for pre-rendered content, see the [Vantage Cloud Port User Guide](#) and *Configuring Telestream Cloud Settings* in the Vantage Domain Management Guide.

# Nielsen Pre-Rendering Watermarking Requirements

Cloud Utility action operations in your pre-rendering workflow interact with the Cloud-based SID Reservation System (SRS) to generate the SID and timestamp for pre-rendered content for each Nielsen watermarking job.

In your Telestream Cloud account, Nielsen watermarking must be enabled in Telestream Cloud by Telestream Customer Service.

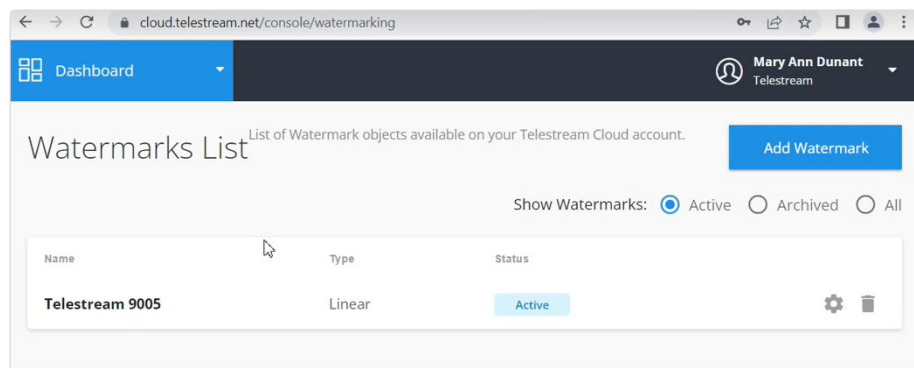
## Setting up Nielsen Watermarking in Your Cloud Account

The Watermarking feature must be enabled in your Telestream Cloud account. To enable watermarking in Telestream Cloud, send an email request to [cloudsupport@telestream.net](mailto:cloudsupport@telestream.net) and provide your Cloud account email address and your Vantage Domain ID.

## Setting Up a Watermark

You must have one or more watermark sets up in your account. If you do not have any watermark sets created in your Telestream Cloud account, or you are adding one or more watermarks to use, follow these steps to add a watermark:

1. Contact Nielsen Customer Service and obtain a SID and optional CBET SID and check digits (you may have more than SID, and it need not be unique to the Telestream Cloud account) for your Telestream Cloud watermark.
2. In a web browser, log into your Telestream Cloud account.
3. Select Watermarking from the main menu (far right) to display the watermarks tab:



4. Click Add Watermark (far right) to display the Add Watermark panel.

The screenshot shows the 'Add watermark' panel in the Nielsen Pre-Rendering Watermarking interface. The panel is titled 'Add watermark' and contains several input fields and a button. The fields are: 'Watermark name', 'Type' (set to 'Linear'), 'Watermark SID', 'Check digits for SID', 'CBET SID (optional)', and 'Check digits for CSID (optional)'. Each field has an information icon (i) to its right. At the bottom of the panel is a blue button labeled 'Add Watermark'.

5. Watermark Name—Enter a practical name for this watermark.

6. Type—Select Linear.

7. Watermark SID | Check Digits | CBET SID (optional) | Check Digits—Enter the values provided to you by Nielsen in their respective fields.

8. Click Add Watermark to save this watermark in your account.

9. Log out and continue configuring/using your Pre-Rendering Watermarking workflow.

10. For each job that you run, a reservation is created and an entry is made in your Telestream Cloud account's Watermark tab:

The screenshot shows the 'Reservations' table in the Nielsen Pre-Rendering Watermarking interface. The table has four columns: 'Token', 'Start time', 'Duration (s)', and 'Created At'. There are three rows of data, each with a trash icon to its right.

Token	Start time	Duration (s)	Created At
4f9a59fb375fa644e8a95245385b372d	Nov 11, 2022 23:00	3600	Not available
f6e956f250ff162f61cbb14ad9a1044b	Nov 10, 2022 23:00	3600	Not available
bdc0f3e728e1f9d6d1490c9c2b656bcd	Nov 01, 2022 19:00	151	Not available

# Utilizing Nielsen SID/TIC Servers

Specific Nielsen [SID/TIC Server](#) versions are required for utilization with each transcode action and filter (and settings as well) in your workflow. You may have more than one SID/TIC server in your environment—for example, you may want to use SID/TIC redundancy, or to improve workflow management.

If SID/TIC servers/WRRs are configured as redundant then they will each have the same SID values, but the full TIC range is split between the two WRRs. If additional WRRs are implemented for workflow management, then the SIDs are different on each WRR.

## Nielsen SID/TIC Server Requirements

Specific SID/TIC server versions are required for use by these filters and applications:

- SID/TIC Server version 4.0.6 or later—required for use in:
  - [Flip](#) action and [IPTV Flip](#) action Nielsen Watermarking Filter for watermarking Program and commercial ad content.
  - [Flip64](#) action Nielsen Watermarking Filter VOD (Program Content) and Commercial (CC).
- SID/TIC Server version up to but not including 7.0—required for use in:
  - [Flip64](#) action Nielsen Watermarking V3 Filter Commercial ID, Commercial (CC), VOD (Program Content) applications. It is not used for [RT VOD](#) or Linear (Pre-Render) workflows.

See also [Nielsen Watermark Filters](#).

## SID/TIC Server Settings

These are minimum requirements for the SID/TIC server; confer with Nielsen for details.

On the [SID/TIC Server](#) host, the Nielsen VOD File Trigger Service should be disabled.

File Transfer Manager version 6.0.x only supports ZIP file transfers—not individual XML files. However, the older version of File Transfer Manager, which is 4.x, can be used for XML file transfers, for use in [Flip](#) action workflows.

In [Flip](#), [IPTV Flip](#), and [Flip64](#) action Nielsen Watermarking and Nielsen Watermarking V3 filters, you can specify IP address 255.255.255.255 to search your network for all SID/TIC servers. This is used when a site has redundant SID/TIC servers; the first SID/TIC server to respond is utilized.

Port 6543 is used for communication with the Discovery Service and port 7999 is used for communication with the SID/TIC server. These ports must be open and the port opening protocol applied:

```
nnetsh firewall set portopening protocol = TCP port = 7999 name =  
Nielsen_STS mode = ENABLE scope = ALL
```

```
nnetsh firewall set portopening protocol = UDP port = 6543 name =  
Nielsen_DISCOVERY mode = ENABLE scope = ALL
```

## Delivering Job Files to the Nielsen TIC Collection Facility

All watermarking filters—except for the Nielsen Watermarking Filter in the [Flip](#) action—can automatically create a ZIP file for each watermarking job you execute. The ZIP file contains the metadata and log files from the job, which you can deliver to the Nielsen TIC CF (Collection Facility) server via SFTP.

Zip files are automatically created when you select File Nickname to identify the metadata and logging output files in the filter.

---

**Note:** On the Vantage server, port 22 (or other specified port) must be open on the server hosting the file transfer action, so that ZIP files can be sent to the TIC CF server.

---

There are three ways that you can deliver these ZIP files:

- Utilizing the Nielsen File Transfer Manager program
- Using your own custom or commercial file transfer program
- Using a [Deploy action](#) in a Vantage workflow to automatically deliver the ZIP file as part of the job.

The first two methods are independent of and external to Vantage.

## Delivering Flip Workflow Job Files

The Nielsen Watermarking Filter in the [Flip](#) action writes job files to a location specified by you in the Nielsen Watermarking Filter > General > Metadata/Logging Output Directory control. See [Configuring the Flip Action](#).

To deliver these files to the Nielsen TIC Facility Collection server, modify your workflow following these steps:

1. Add a Gather action after the transcoding action and configure it to collect your job files into an attachment.
2. Add an Archive action after Gather and configure it create a zip file from the files in the attachment.
3. Next, add a [Deploy action](#) and configure it to deliver the ZIP file to the Nielsen TIC CF server via SFTP.

## Delivering Flip64 | IPTV Flip Workflow Job Files

There are two ways to configure watermarking filters to deliver job files in [Flip64](#) and [IPTV Flip](#) actions.



## Automatic Zipping and Delivery

Automatic zipping and delivery is the preferred method. Select the File Nickname option in the Metadata and Logging Output control—the filter automatically creates a zip file, which is referenced as an attachment and the zip file is written to a Vantage Store folder. To deliver these files to the Nielsen TIC Facility Collection server, add a [Deploy action](#) and configure it to deliver the target ZIP file (by nickname) to the Nielsen TIC CF server via SFTP.

See prototype workflows for details.

## Workflow Independent Delivery

If you require access to these files locally, use this method to ZIP and deliver them to the Nielsen TIC CF server. Write the individual files to a specific directory using the File Path option in the Metadata and Logging Output control.

To deliver these files to the Nielsen TIC Facility Collection server, modify the workflow (or create a separate workflow) with these actions:

1. Add a Gather action after the transcoding action and configure it to collect your job files into an attachment.
2. Add an Archive action after Gather and configure it create a zip file from the files in the attachment.
3. Next, add a [Deploy action](#) and configure it to deliver the ZIP file to the Nielsen TIC CF server via SFTP.

## Providing Runtime Values to Workflows

Nielsen watermarking filters require several input parameter values and metadata to execute. You can supply these values in any way that suits your requirements:

- Manually enter the values directly in the filter's controls. Use this method when you are in a low-volume job environment and entering the data manually on a job-by-job basis is effective, or the data you entered does not change on a job-by-job basis.
- Use the Submit Job button directly in [Workflow Designer](#), where you select your input media to process and then identify each variable required and manually enter the value for this job. This is an easy way to perform one-off job submission or perform workflow testing before going into production.
- Configure the filter to use variables for parameters whose values change on a job-by-job basis and supply the required values using one of these methods:
  - Use a [Workorder action](#) as the [origin action](#) in the workflow; supply a CSV file with the values required. You can organize the values line by line, one for each input media so that you can submit several jobs at one time.
  - Use [Workflow Portal](#) to customize data entry and job submission for operator-driven media processing.
  - Create XML or other files associated with each media file being converted, and modify the workflow to use an Associate action which ingests the metadata file. Then use other actions in the workflow to extract the required metadata and update a variable.

---

**Note:** Describing how to implement each of these methods is beyond the scope of this guide. For details, see the Vantage User's Guide and other related guides as appropriate.

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# Flip64 Nielsen Watermarking Workflows

The [Flip64 action](#) implements three Nielsen watermarking filters. Each filter is implemented in all media formats transcoded by Flip64, except for watermarking MPEG-2 Program Stream media.

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**Note:** This chapter provides prototype workflows for the Nielsen Watermarking V3 filter. Other filters are legacy filters in the context of Flip64 to support existing workflows, and are documented elsewhere.

---

Each filter's user interface is specific to the Flip64 action implementation, and the interface may vary in other transcode actions.

**Nielsen Watermarking V3 Filter**—This filter combines the functionality and features of the Nielsen Watermarking Filter and the Nielsen Pre-rendering Watermarking Filter, supporting both non-linear and linear watermarking. When configured for non-linear watermarking, it requires a [SID/TIC Server](#) (see [Utilizing Nielsen SID/TIC Servers](#)).


**Nielsen Watermarking Filter (Legacy)**—This is the original watermarking filter. This filter is a non-linear, [NW](#) | [N2](#) | [CBET](#) watermarking filter for both program content and commercial content and [RT VOD](#); included in Flip64 for backward compatibility. For new workflows, Telestream recommends that you utilize the Nielsen Watermarking V3 Filter. For details regarding the use of this filter, see the app note titled [Using Nielsen Watermarking with Vantage](#).

**Nielsen Pre-rendering Watermarking Filter (Legacy)**—This filter watermarks content prior to initial show air time. It does not utilize a SID/TIC server. For details regarding the use of this filter in Flip64, contact Telestream (see [Contacting Telestream](#)).

## Topics

- [Nielsen Watermarking Job Submission](#)
- [Nielsen Watermarking V3 Filter Commercial ID Application Workflow](#)
- [Nielsen Watermarking V3 Filter Commercial \(CC\) Application Workflow](#)
- [Nielsen Watermarking V3 Filter VOD \(Program Content\) Application Workflow](#)
- [Nielsen Watermarking V3 Filter RT VOD Application Workflow](#)
- [Nielsen Watermarking V3 Filter Linear \(Pre-Render\) Application Workflow](#)

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**Note:** Each action in [Workflow Designer](#) supports context-sensitive help. Click the man page  button in the upper right corner of the [inspector](#) window to display the man page, which provides detailed information about the panel you are viewing.

---

## Nielsen Watermarking Job Submission

Each of these prototype workflows begin with a [Receive action](#), to facilitate manual job submission for testing, which is described at the end of each workflow topic. However, a Receive action may not meet your production workflow requirements. Nielsen watermarking workflows require many input values supplied by variables, complicating job submission. For details about submitting jobs and implementing the appropriate [origin action](#) for your requirements, see [Providing Runtime Values to Workflows](#).

# Nielsen Watermarking V3 Filter Commercial ID Application Workflow

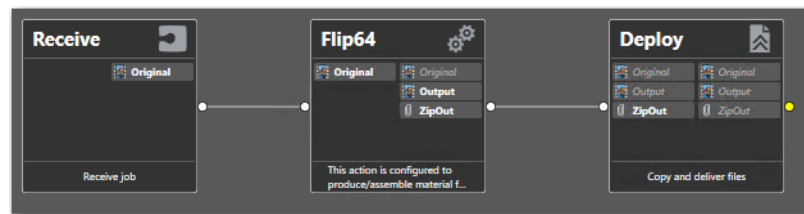
This is a prototype Flip64, Comm ID application workflow you can use to watermark your commercial ad content with N2HF-RS, NWCC-RS, and CBET-RS watermarks, using the Nielsen Watermarking V3 Filter. The Nielsen Watermarking V3 Filter is provided in all output formats supported by the Flip64 action except for MPEG-2 Program Stream.

The Nielsen Watermarking V3 Filter requires a [SID/TIC Server](#) when configured for this workflow. For details, see [Nielsen Watermark Filters](#) and [Utilizing Nielsen SID/TIC Servers](#).

The Nielsen Watermarking V3 filter generates metadata, log, and signature output files, optionally adding them to a ZIP file for each job. You can review these files and deliver them to the Nielsen TIC Collection Facility. See [Delivering Job Files to the Nielsen TIC Collection Facility](#).

The filter's interface is specific to the Flip64 action, and the interface may vary from other transcode actions.

These actions constitute the minimum workflow for the Comm ID application.



This workflow includes these actions:

**Receive**—Enables you to manually select a media file and the required variables directly in [Workflow Designer](#) to start each job. Any other [origin action](#) can be used ([Watch](#) | [Workorder action](#), etc.), based on your job submission requirements (see [Providing Runtime Values to Workflows](#)).

**Flip64**—The Flip64 action transcodes the media as specified and applies watermarks to the media using the Nielsen Watermarking V3 filter. The filter requires a media duration, as well as a SID/TIC server identity, a Nielsen client ID and metadata, which may be supplied in a variety of ways.

**Deploy**—The [Deploy action](#) delivers the zipped job file to the Nielsen TIC CF via SFTP (See [Delivering Job Files to the Nielsen TIC Collection Facility](#)).

---

**Note:** You can modify workflows by adding other actions to suit your media processing requirements. For example, you can use a [workorder file](#) to supply all input values and submit multiple jobs simultaneously, or you can create a [Workflow Portal](#) application for use by operators to submit jobs. (See [Providing Runtime Values to Workflows](#)).

---

## Creating the Workflow

Follow these steps to create this workflow:

1. In [Workflow Designer](#), create a new workflow with the name of your choice.
2. Add the Receive, Flip64, and [Deploy actions](#) and connect them as shown.

## Configuring the Receive Action

Follow these steps to configure the [Receive action](#):

1. Open the Receive action [inspector](#) and check *Original* from the Media Files menu to ingest a media file and assign it the nickname *Original*.
2. Click Save to update the Receive action and close the inspector.

## Configuring the Flip64 Action and Watermarking Filter

Here, you'll configure the Flip64 action and the Nielsen Watermarking V3 Filter for this prototype workflow.

---

**Note:** Only tasks directly related to filter configuration are included; you should complete the Flip64 configuration with an output component to suit your media transcoding requirements before testing your workflow.

---

1. Open the Flip64 action [inspector](#) and in the Input panel, add an Auto input to ingest the *Original* media.
2. In the Outputs panel, add an MPEG-4 output and configure it—provide a nickname for the media you're generating.
3. Add the Nielsen Watermarking V3 Filter—select the Output Audio Track, and in the Audio configuration panel on the right, enable the Nielsen Watermarking V3 Filter.
4. Select Commercial ID from the filter's Application Type menu and configure its controls to meet your requirements:

## Configuring the Commercial ID Application Settings

**Client ID.** Nielsen-assigned 4-digit integer identifier for commercial identification. This is utilized in place of the SID in Commercial (CC) application watermarks.

**Nielsen SID/TIC Server IP Address.** The IP address of the computer hosting the Nielsen SID/TIC server. Use 255.255.255.255 to search for all SID/TIC servers. This is used when a site has redundant SID/TIC servers; the first SID/TIC server to respond is utilized.

**TIC Duration.** The SID/TIC Server uses the duration to allocate the proper range of TICs. When enabled, specifies the duration (as an integer value, in seconds) of the source audio. When disabled, the Nielsen Watermarking V3 filter automatically calculates the duration value. You should enable this control when you want to supply the duration to the job, calculate it using an Analyze action, or need to utilize the duration in other actions downstream.

**Metadata Fields (multiple).** Optional, free-form text. Specifies the value of each metadata item.

**Metadata and Logging Output.** Select File Nickname | File Path:

- **File nickname:** Use when you want to use a Deploy action in this workflow to deliver the file to the Nielsen TIC Collection Facility, for example. Select a File nickname for a metadata attachment file. Vantage creates a ZIP file containing metadata, log, and signature output files to a Vantage store (from the perspective of the Vantage domain server). The File nickname specifies the nickname to assign the ZIP file created as an attachment to the binder. Downstream file operation actions can access and operate on the file based on this nickname.
- **File path:** Use when you plan to utilize these files and/or deliver the file to the Nielsen TIC Collection Facility externally or separate from this workflow. Enter or browse to select the directory path—usually a share—which is required if you have a distributed (multi-server) domain. Vantage requires write permission for this directory. The filter generates individual files if you select File path.

The resulting ZIP file can be delivered to the Nielsen TIC Collection Facility via SFTP using the Nielsen File Transfer Manager program, your own custom or commercial file transfer program, or utilizing a Vantage workflow to automate delivery directly in the context of the job.

## Configuring Nielsen Label and Cluster Mapping

**Nielsen Label and Cluster Mapping.** Select the desired labeling and cluster mapping method:

- **Auto.** Used when the input audio stream has 8 channels or less and all channels are in the same cluster. There are no user-configurable controls. Channels 4, 5, and 6 are not watermarked with N6 or CBET watermarks.
- **Manual.** Specify when the input audio stream has more than 8 channels—and thus, requires more than one cluster—or you require multiple clusters even if there are 8 channels or less. For example, your source files may have 4 stereo pairs and each stereo pair is in its own cluster. Or, a 12-channel stream containing three separate audio programs can be organized into 3 clusters.

You can create multiple audio clusters with a maximum of 8 channels to support different types of audio channel layouts in input source content. Create and configure each channel with a label and a cluster number.

**Add New Item.** When method is set to Manual, click Add New Item for each channel, and configure it:

**Channel Number.** Identifies the channel number being mapped for this item.

**Label.** Specifies the channel label to use for this channel during watermarking.

**Cluster Number.** Specifies the watermark cluster number for this channel. Do not assign more than 8 channels to a given cluster.

### Cluster Mapping Guidelines

- Clusters may only contain 1, 2, 6, or 8 channels. In order to watermark four channels (for example, a pair of stereo channels) use two clusters of two channels each. Clusters consisting of 3, 4, 5, or 7 channels are not supported.
- When watermarking 6 or 8 channels, channels 4, 5 and 6 (Low Frequency Effects, Left Surround and Right Surround) are not watermarked with N6 or CBET watermarks. This is true for both Auto and Manual mapping. In Manual mode, changing label names will not cause channels 4, 5 and 6 to be watermarked, either.

When you're done, click Save to update the action and close the inspector.

## Configuring the Deploy Action

Finally, configure the [Deploy action](#) to deliver the zipped job files to the Nielsen TIC Collection Facility. Follow these steps:

1. Open the Deploy action [inspector](#).
2. Select Export and click Next.
3. In the Select Files to Deploy panel's Files to Deploy menu, check the nickname you used to identify the job's ZIP file generated in the Flip64 action.
4. Select SFTP as the target file system, and click Next.
5. In the SSH Server panel, specify the name | IP address and port of the target Nielsen TIC Collection Facility server and click Next.
6. In the SSH User Credentials panel, enter your authorized user name and authentication type (password | SSH key) and credentials, and click Next.
7. In the Select a Folder panel, select the target folder and click Next.
8. In the Collision Resolution panel, configure the settings to meet your requirements and click Next.
9. Click Save to update the action and close the [inspector](#).

## Testing Your Workflow

When you are done designing or editing a workflow in [Workflow Designer](#) and you want to test it or submit production jobs, select the workflow and click Activate.

When the workflow is activated, you can submit media to it, following these steps:

1. In [Workflow Designer](#), select the workflow.
2. Click Submit Job.
3. In the Submit Job window, select the file system and click Next.
4. Browse the file system and select the media to process and click Next.
5. At the bottom left corner of the window, click the Variables button.
6. In the Variables window, for each variable you have used (bound to a control), select it and then enter the value for this job.



7. When you're done selecting all variables and providing them with values, click OK.
8. To submit the media you've selected along with all the variables, click Submit.

Monitor the job in the Job Status window and review your results when the job completes. If the workflow fails or the media is not properly watermarked, determine the problem and retry.

To learn about each of the methods you can use to submit jobs, see [Providing Runtime Values to Workflows](#).

## Nielsen Watermarking V3 Filter Commercial (CC) Application Workflow

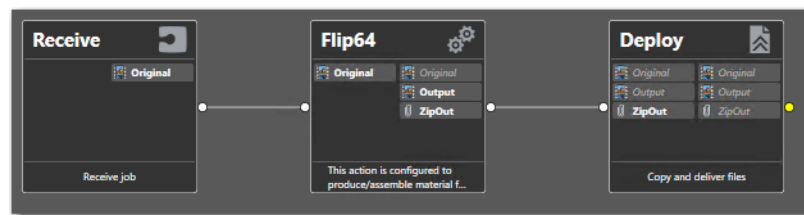
This is a prototype Flip64, Comm (CC) application workflow you can use to add standard, legacy commercial (CC) watermarks to your media using the Nielsen Watermarking V3 Filter. The Nielsen Watermarking V3 filter is provided in all output formats supported by the Flip64 action except for MPEG-2 Program Stream.

The Nielsen Watermarking V3 Filter requires a [SID/TIC Server](#) when configured for this workflow. For details, see [Nielsen Watermark Filters](#) and [Utilizing Nielsen SID/TIC Servers](#).

The filter generates metadata, log, and signature output files, optionally adding them to a ZIP file for each job. You can review these files and deliver them to the Nielsen TIC Collection Facility. See [Delivering Job Files to the Nielsen TIC Collection Facility](#).

The filter's interface is specific to the Flip64 action, and the interface may vary from other transcode actions.

These actions constitute the minimum workflow you can use to watermark your media:



This workflow includes these actions:

**Receive**—Enables you to manually select a media file and required variables directly in [Workflow Designer](#) to start each job. Any other [origin action](#) can be used ([Watch](#) | [Workorder action](#), etc.), based on your job submission requirements (see [Providing Runtime Values to Workflows](#)).

**Flip64**—The Flip64 action transcodes the media as specified and applies watermarks to the media using the Nielsen Watermarking V3 filter. The filter requires a media duration, as well as a SID/TIC server identity, and metadata, which may be supplied in a variety of ways.

**Deploy**—The [Deploy action](#) delivers the zipped job file to the Nielsen TIC CF via SFTP (See [Delivering Job Files to the Nielsen TIC Collection Facility](#)).

---

**Note:** You can modify workflows by adding other actions to suit your media processing requirements. For example, you can use a [Workorder action](#) to supply all input values and submit multiple jobs simultaneously, or you can create a [Workflow Portal](#) application for use by operators to submit jobs. (See [Providing Runtime Values to Workflows](#)).

---

## Creating the Workflow

Follow these steps to create this workflow:

1. In [Workflow Designer](#), create a new workflow with the name of your choice.
2. Add the Receive, Flip64, and [Deploy actions](#) and connect them as shown.

## Configuring the Receive Action

Follow these steps to configure the [Receive action](#):

1. Open the Receive action [inspector](#) and check *Original* from the Media Files menu to ingest a media file and assign it the nickname *Original*.
2. Click Save to update the Receive action and close the inspector.

## Configuring the Flip64 Action and Watermarking Filter

Here, you'll configure the Flip64 action and the Nielsen Watermarking V3 Filter for prototype purposes.

---

**Note:** Only tasks directly related to filter configuration are included; you should complete the Flip64 configuration with an output component to suit your media transcoding requirements before testing your workflow.

---

1. Open the Flip64 action [inspector](#) and add an Auto Input to ingest the *Original* media.
2. Add an MPEG-4 output and configure it—provide a nickname.
3. Add the Nielsen Watermarking V3 Filter—select the Output Audio Track, and in the Audio configuration panel on the right, enable the Nielsen Watermarking V3 Filter.
4. Select Commercial (CC) SID TIC from the Application Type menu and configure it:

### Configuring the Commercial (CC) Application Settings

**Source ID.** Nielsen-assigned 4-digit integer source identifier for commercial identification and encoding.

**Nielsen SID/TIC Server IP Address.** The IP address of the computer hosting the Nielsen SID/TIC server. Use 255.255.255.255 to search for all SID/TIC servers. This is used when a site has redundant SID/TIC servers; the first SID/TIC server to respond is utilized.

**Process Type.** Specifies that N2+NW Nielsen technology, including the frequency spectrum, is utilized when inserting watermarks. Not user-configurable.

**TIC Duration.** The SID/TIC Server uses the duration to allocate the proper range of TICs. When enabled, specifies the duration (as an integer value, in seconds) of the source audio. When disabled, the Nielsen Watermarking V3 filter automatically calculates the duration value. You should only enable this control when you want to supply the

duration to the job, calculate it using an Analyze action, or need to utilize the duration in other actions downstream.

**Metadata Fields (multiple).** Optional, free-form text. Specifies the value of each metadata item.

**Metadata and Logging Output.** Select File Nickname | File Path:

- **File nickname:** Use when you want to use a Deploy action in this workflow to deliver the file to the Nielsen TIC Collection Facility, for example. Select a File nickname for a metadata attachment file. Vantage creates a ZIP file containing meta-data, log, and signature output files to a Vantage store (from the perspective of the Vantage domain server). The File nickname specifies the nickname to assign the ZIP file created as an attachment to the binder. Downstream file operation actions can access and operate on the file based on this nickname.
- **File path:** Use when you plan to utilize these files and/or deliver the file to the Nielsen TIC Collection Facility externally or separate from this workflow. Enter or browse to select the directory path—usually a share—which is required if you have a distributed (multi-server) domain. Vantage requires write permission for this directory. The filter generates individual files if you select File path.

The resulting ZIP file can be delivered to the Nielsen TIC Collection Facility via SFTP using the Nielsen File Transfer Manager program, your own custom or commercial file transfer program, or utilizing a Vantage workflow to automate delivery directly in the context of the job.

## Configuring Nielsen Label and Cluster Mapping

**Nielsen Label and Cluster Mapping.** Select the desired labeling and cluster mapping method:

- **Auto.** Used when the input audio stream has 8 channels or less and all channels are in the same cluster. There are no user-configurable controls. Channels 4, 5, and 6 are not watermarked with N6 or CBET watermarks.

- **Manual.** Specify when the input audio stream has more than 8 channels—and thus, requires more than one cluster—or you require multiple clusters even if there are 8 channels or less. For example, your source files may have 4 stereo pairs and each stereo pair is in its own cluster. Or, a 12-channel stream containing three separate audio programs can be organized into 3 clusters.

You can create multiple audio clusters with a maximum of 8 channels to support different types of audio channel layouts in input source content. Create and configure each channel with a label and a cluster number.

**Add New Item.** When method is set to Manual, click Add New Item for each channel, and configure it:

**Channel Number.** Identifies the channel number being mapped for this item.

**Label.** Specifies the channel label to use for this channel during watermarking.

**Cluster Number.** Specifies the watermark cluster number for this channel. Do not assign more than 8 channels to a given cluster.

### Cluster Mapping Guidelines

- Clusters may only contain 1, 2, 6, or 8 channels. In order to watermark four channels (for example, a pair of stereo channels) use two clusters of two channels each. Clusters consisting of 3, 4, 5, or 7 channels are not supported.
- When watermarking 6 or 8 channels, channels 4, 5 and 6 (Low Frequency Effects, Left Surround and Right Surround) are not watermarked with N6 or CBET watermarks. This is true for both Auto and Manual mapping. In Manual mode, changing label names will not cause channels 4, 5 and 6 to be watermarked, either.

When you're done, click Save to update the action and close the inspector.

## Configuring the Deploy Action

Finally, configure the [Deploy action](#) to deliver the zipped job files to the Nielsen TIC Collection Facility. Follow these steps:

1. Open the Deploy action [inspector](#).
2. Select Export and click Next.
3. In the Select Files to Deploy panel's Files to Deploy menu, check the nickname you used to identify the job's ZIP file generated in the Flip64 action.
4. Select SFTP as the target file system, and click Next.
5. In the SSH Server panel, specify the name | IP address and port of the target Nielsen TIC Collection Facility server and click Next.
6. In the SSH User Credentials panel, enter your authorized user name and authentication type (password | SSH key) and credentials, and click Next.
7. In the Select a Folder panel, select the target folder and click Next.
8. In the Collision Resolution panel, configure the settings to meet your requirements and click Next.
9. Click Save to update the action and close the inspector.

## Testing Your Workflow

When you are done designing or editing a workflow in [Workflow Designer](#) and you want to test it or submit production jobs, select the workflow and click Activate.

When the workflow is activated, you can submit media to it, following these steps:

1. In [Workflow Designer](#), select the workflow.
2. Click Submit Job.
3. In the Submit Job window, select the file system and click Next.
4. Browse the file system and select the media to process and click Next.
5. At the bottom left corner of the window, click the Variables button.

- 6.** In the Variables window, for each variable you have used (bound to a control), select it and then enter the value for this job.
- 7.** When you're done selecting all variables and providing them with values, click OK.
- 8.** To submit the media you've selected along with all the variables, click Submit.

Monitor the job in the Job Status window and review your results when the job completes. If the workflow fails or the media is not properly watermarked, determine the problem and retry.

To learn about each of the methods you can use to submit jobs, see [Providing Runtime Values to Workflows](#).

# Nielsen Watermarking V3 Filter VOD (Program Content) Application Workflow

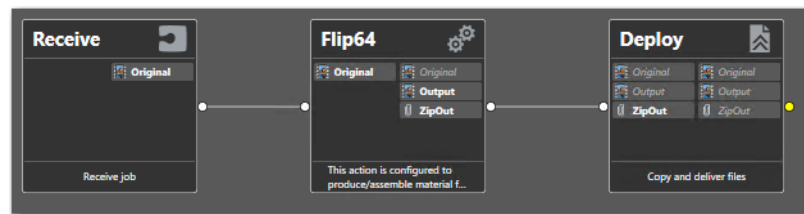
This is a prototype, Flip64 workflow you can use to watermark your media using the Nielsen Watermarking V3 Filter's VOD Program application. The Nielsen Watermarking V3 Filter is provided in all output formats supported by the Flip64 action except for MPEG-2 Program Stream.

The Nielsen Watermarking V3 Filter requires a [SID/TIC Server](#) when configured for watermarking VOD (Program Content) media. For details, see [Nielsen Watermark Filters](#) and [Utilizing Nielsen SID/TIC Servers](#).

The filter generates metadata, log, and signature output files, optionally adding them to a ZIP file for each job. You can review these files and deliver them to the Nielsen TIC Collection Facility. See [Delivering Job Files to the Nielsen TIC Collection Facility](#).

The filter's interface is specific to the Flip64 action, and the interface may vary from other transcode actions.

These actions constitute the minimum workflow you can use to watermark your media.



This workflow includes these actions:

**Receive**—Enables you to manually select a media file and required variables directly in [Workflow Designer](#) to start each job. Any other [origin action](#) can be used ([Watch](#) | [Workorder action](#), etc.), based on your job submission requirements (see [Providing Runtime Values to Workflows](#)).

**Flip64**—The Flip64 action transcodes the media as specified and applies watermarks to the media using the Nielsen Watermarking V3 filter. The filter requires a media duration, as well as a SID/TIC server identity, and metadata, which may be supplied in a variety of ways.

**Deploy**—The [Deploy action](#) delivers the zipped job file to the Nielsen TIC CF via SFTP (See [Delivering Job Files to the Nielsen TIC Collection Facility](#)).

---

**Note:** You can modify workflows by adding other actions to suit your media processing requirements. For example, you can use a [workorder file](#) to supply all input values and submit multiple jobs simultaneously, or you can create a [Workflow Portal](#) application for use by operators to submit jobs. (See [Providing Runtime Values to Workflows](#)).

---

## Creating the Workflow

Follow these steps to create this workflow:

1. In [Workflow Designer](#), create a new workflow with the name of your choice.
2. Add the Receive, Flip64, and [Deploy actions](#) and connect them as shown.

## Configuring the Receive Action

Follow these steps to configure the [Receive action](#):

1. Open the Receive action [inspector](#) and check *Original* from the Media Files menu to ingest a media file and assign it the nickname *Original*.
2. Click Save to update the Receive action and close the inspector.

## Configuring the Flip64 Action and Nielsen Watermarking V3 Filter

Here, you'll configure the Flip64 action and the Nielsen Watermarking V3 Filter for prototype purposes.

---

**Note:** Only tasks directly related to filter configuration are included; you should complete the Flip64 configuration with an output component to suit your media transcoding requirements before testing your workflow.

---

1. Open the Flip64 action [inspector](#) and add an Auto input to ingest the *Original* media.
2. Add an MPEG-4 output and configure it—provide a nickname and configure it.
3. Add the Nielsen Watermarking V3 Filter—select Audio Track 1, and in the configuration panel on the right, enable the Nielsen Watermarking V3 Filter.
4. Select VOD (Program Content) from the Application Type menu and configure its controls:

### Configuring the VOD (Program Content) Application Settings

**Source ID.** Nielsen-assigned 4-digit integer source identifier for identification and encoding.

**CBET Source ID (Optional).** Specifies the hexadecimal, Nielsen-assigned 4-digit CBET source identifier. For example: 112B. Do not prefix with 0x when manually supplying a value.

To bind this control to a variable, modify the origin action in your workflow to utilize a text variable and supply the hex CBET source ID value, prefixed with 0x. For example: 0x112B. Add a Compute action and configure it to convert the text string to an integer, saving it in an integer variable. The filter automatically converts the integer variable back to hex for utilization.



**Nielsen SID/TIC Server IP Address.** The IP address of the computer hosting the Nielsen SID/TIC server. Use 255.255.255.255 to search for all SID/TIC servers. This is used when a site has redundant SID/TIC servers; the first SID/TIC server to respond is utilized.

**TIC Duration.** When enabled, specifies duration (in seconds) of the source audio. The SID/TIC Server uses the duration to allocate the proper range of TICs. If disabled, the duration of the source audio is automatically calculated.

**Process Type.** Specifies which Nielsen technology, including the frequency spectrum, utilized when inserting watermarks. Options are N2 + NW | CBET | N2 + NW + CBET.

**Metadata Fields (multiple).** Optional, free-form text. Specifies the value of each metadata item.

**Metadata and Logging Output.** Select File Nickname | File Path:

- **File nickname:** Use when you want to use a Deploy action to deliver the file to the Nielsen TIC Collection Facility via a Deploy action, for example. Select a File nickname for a metadata attachment file. Vantage creates a ZIP file containing metadata, log, and signature output files to a Vantage store (from the perspective of the Vantage domain server). The File nickname specifies the nickname to assign the ZIP file created as an attachment to the binder. Downstream file operation actions can access and operate on the file based on this nickname.
- **File path:** Enter or browse to select the directory path—usually a share—which is required if you have a distributed (multi-server) domain. Vantage requires write permission for this directory. The filter generates individual files if you select File path.

The resulting ZIP file can be delivered to the Nielsen TIC Collection Facility via SFTP using the Nielsen File Transfer Manager program, your own custom or commercial file transfer program, or utilizing a Vantage workflow to automate delivery directly in the context of the job.

## Configuring Nielsen Label and Cluster Mapping

**Nielsen Label and Cluster Mapping.** Select the desired labeling and cluster mapping method:

- **Auto.** Used when the input audio stream has 8 channels or less and all channels are in the same cluster. There are no user-configurable controls. Channels 4, 5, and 6 are not watermarked with N6 or CBET watermarks.

- **Manual.** Specify when the input audio stream has more than 8 channels—and thus, requires more than one cluster—or you require multiple clusters even if there are 8 channels or less. For example, your source files may have 4 stereo pairs and each stereo pair is in its own cluster. Or, a 12-channel stream containing three separate audio programs can be organized into 3 clusters.

You can create multiple audio clusters with a maximum of 8 channels to support different types of audio channel layouts in input source content. Create and configure each channel with a label and a cluster number.

**Add New Item.** When method is set to Manual, click Add New Item for each channel, and configure it:

**Channel Number.** Identifies the channel number being mapped for this item.

**Label.** Specifies the channel label to use for this channel during watermarking.

**Cluster Number.** Specifies the watermark cluster number for this channel. Do not assign more than 8 channels to a given cluster.

#### **Cluster Mapping Guidelines**

- Clusters may only contain 1, 2, 6, or 8 channels. In order to watermark four channels (for example, a pair of stereo channels) use two clusters of two channels each. Clusters consisting of 3, 4, 5, or 7 channels are not supported.
- When watermarking 6 or 8 channels, channels 4, 5 and 6 (Low Frequency Effects, Left Surround and Right Surround) are not watermarked with N6 or CBET watermarks. This is true for both Auto and Manual mapping. In Manual mode, changing label names will not cause channels 4, 5 and 6 to be watermarked, either.

When you're done, click Save to update the action and close the inspector.

## **Configuring the Deploy Action**

Finally, configure the [Deploy action](#) to deliver the zipped job files to the Nielsen TIC Collection Facility. Follow these steps:

1. Open the Deploy action [inspector](#).
2. Select Export and click Next.
3. In the Select Files to Deploy panel's Files to Deploy menu, check the nickname you used to identify the job's ZIP file generated in the Flip64 action.
4. Select SFTP as the target file system, and click Next.
5. In the SSH Server panel, specify the name | IP address and port of the target Nielsen TIC Collection Facility server and click Next.
6. In the SSH User Credentials panel, enter your authorized user name and authentication type (password | SSH key) and credentials, and click Next.
7. In the Select a Folder panel, select the target folder and click Next.
8. In the Collision Resolution panel, configure the settings to meet your requirements and click Next.
9. Click Save to update the action and close the inspector.

## **Testing Your Workflow**

When you are done designing or editing a workflow in [Workflow Designer](#) and you want to test it or submit production jobs, select the workflow and click Activate.

When the workflow is activated, you can submit media to it, following these steps:

1. In Workflow Designer, select the workflow.

2. Click Submit Job.
3. In the Submit Job window, select the file system and click Next.
4. Browse the file system and select the media to process and click Next.
5. At the bottom left corner of the window, click the Variables button.
6. In the Variables window, for each variable you have used (bound to a control), select it and then enter the value for this job.
7. When you're done selecting all variables and providing them with values, click OK.
8. To submit the media you've selected along with all the variables, click Submit.

Monitor the job in the Job Status window and review your results when the job completes. If the workflow fails or the media is not properly watermarked, determine the problem and retry.

To learn about each of the methods you can use to submit jobs, see [Providing Runtime Values to Workflows](#).

## Nielsen Watermarking V3 Filter RT VOD Application Workflow

This is a prototype Flip64 workflow you can use to watermark previously-watermarked media using the Nielsen Watermarking V3 Filter configured to use the [RT VOD](#) application, which inserts [C3](#) | [C7](#) watermarks to produce non-linear, VOD content.

RT VOD flags (C3 | C7) are only applied to pre-watermarked media. RT VOD flags cannot be applied to any of the following:

- Clean (non-watermarked) content
- Fully-encoded content (where all Nielsen Watermarks slots are filled)
- Content with pre-existing RT VOD flags

---

**Note:** The Nielsen Watermarking V3 Filter is provided in all output formats supported by the Flip64 action except for MPEG-2 Program Stream.

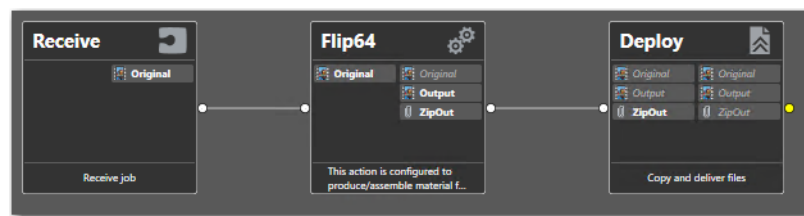
---

The filter generates metadata, log, and signature output files, optionally adding them to a ZIP file for each job. You can review these files and deliver them to the Nielsen TIC Collection Facility. See [Delivering Job Files to the Nielsen TIC Collection Facility](#).

The filter's interface is specific to the Flip64 action, and the interface may vary from other transcode actions.

The Nielsen Watermarking V3 Filter does not require a [SID/TIC Server](#) when configured for watermarking RT VOD media.

These actions constitute the minimum workflow (the [Receive action](#) can be substituted by another [origin action](#) to ingest media) you can implement to watermark your media. You can modify the workflow by adding other actions to suit your media processing requirements.



This workflow includes these actions:

**Receive**—Enables you to manually select a media file and required variables directly in [Workflow Designer](#) to start each job. Any other [origin action](#) can be used ([Watch](#) | [Workorder action](#), etc.), based on your job submission requirements (see [Providing Runtime Values to Workflows](#)).

**Flip64**—The Flip64 action transcodes the media as specified and executes the Nielsen Watermarking Filter to watermark the media.

*Deploy*—The [Deploy action](#) delivers the zipped job file to the Nielsen TIC CF via SFTP (See [Delivering Job Files to the Nielsen TIC Collection Facility](#)).

---

**Note:** You can modify workflows by adding other actions to suit your media processing requirements. For example, you can use a [workorder file](#) to supply all input values and submit multiple jobs simultaneously, or you can create a [Workflow Portal](#) application for use by operators to submit jobs. (See [Providing Runtime Values to Workflows](#)).

---

## Creating the Workflow

Follow these steps to create this workflow:

1. In [Workflow Designer](#), create a new workflow with the name of your choice.
2. Add the Receive, Flip64, and Deploy actions and connect them as shown.

## Configuring the Receive Action

Follow these steps to configure the [Receive action](#):

1. Open the Receive action [inspector](#) and check *Original* from the Media Files menu to ingest a media file and assign it the nickname *Original*.
2. Click Save to update the Receive action and close the inspector.

## Configuring the Flip64 Action and Watermarking Filter

Here, you'll configure the Flip64 action and the Nielsen Watermarking V3 Filter for prototype purposes.

---

**Note:** Only tasks directly related to filter configuration are included; you should complete the Flip64 configuration with an output component to suit your media transcoding requirements before testing your workflow.

---

1. Open the Flip64 action [inspector](#) and add an Auto input to ingest the *Original* media. By default, it uses the *Original* source.
2. Add an MPEG-4 output and configure it—provide a nickname—*Output*, for example.
3. Add the Nielsen Watermarking V3 Filter—select the Output Audio Track, and in the Audio configuration panel on the right, check the Nielsen Watermarking V3 Filter to enable it.
4. Select RT-VOD from the Application Type menu and configure it, as follows:

### Configuring the RT VOD Application Settings

**RT-VOD Watermark Type.** RT-VOD specific watermark type. Select C3 | C7.

**Metadata Fields.** Optional, free-form text. Specifies the value of each metadata item.

**Metadata and Logging Output.** Select File Nickname | File Path:

- **File nickname:** Use when you want to use a Deploy action in this workflow to deliver the file to the Nielsen TIC Collection Facility, for example. Select a File nickname for a metadata attachment file. Vantage creates a ZIP file containing metadata, log, and signature output files to a Vantage store (from the perspective of the Vantage domain server). The File nickname specifies the nickname to assign the ZIP file created as an attachment to the binder. Downstream file operation actions can access and operate on the file based on this nickname.
- **File path:** Use when you plan to utilize these files and/or deliver the file to the Nielsen TIC Collection Facility externally or separate from this workflow. Enter or browse to select the directory path—usually a share—which is required if you have a distributed (multi-server) domain. Vantage requires write permission for this directory. The filter generates individual files if you select File path.

The resulting ZIP file can be delivered to the Nielsen TIC Collection Facility via SFTP using the Nielsen File Transfer Manager program, your own custom or commercial file transfer program, or utilizing a Vantage workflow to automate delivery directly in the context of the job.

## Configuring Nielsen Label and Cluster Mapping

**Nielsen Label and Cluster Mapping.** Select the desired labeling and cluster mapping method:

- **Auto.** Used when the input audio stream has 8 channels or less and all channels are in the same cluster. There are no user-configurable controls. Channels 4, 5, and 6 are not watermarked with N6 or CBET watermarks.

- **Manual.** Specify when the input audio stream has more than 8 channels—and thus, requires more than one cluster—or you require multiple clusters even if there are 8 channels or less. For example, your source files may have 4 stereo pairs and each stereo pair is in its own cluster. Or, a 12-channel stream containing three separate audio programs can be organized into 3 clusters.

You can create multiple audio clusters with a maximum of 8 channels to support different types of audio channel layouts in input source content. Create and configure each channel with a label and a cluster number.

**Add New Item.** When method is set to Manual, click Add New Item for each channel, and configure it:

**Channel Number.** Identifies the channel number being mapped for this item.

**Label.** Specifies the channel label to use for this channel during watermarking.

**Cluster Number.** Specifies the watermark cluster number for this channel. Do not assign more than 8 channels to a given cluster.

### Cluster Mapping Guidelines

- Clusters may only contain 1, 2, 6, or 8 channels. In order to watermark four channels (for example, a pair of stereo channels) use two clusters of two channels each. Clusters consisting of 3, 4, 5, or 7 channels are not supported.
- When watermarking 6 or 8 channels, channels 4, 5 and 6 (Low Frequency Effects, Left Surround and Right Surround) are not watermarked with N6 or CBET watermarks. This is true for both Auto and Manual mapping. In Manual mode, changing label names will not cause channels 4, 5 and 6 to be watermarked, either.

When you're done, click Save to update the action and close the inspector.

## Configuring the Deploy Action

Finally, configure the [Deploy action](#) to deliver the zipped job files to the Nielsen TIC Collection Facility. Follow these steps:

1. Open the Deploy action [inspector](#).
2. Select Export and click Next.
3. In the Select Files to Deploy panel's Files to Deploy menu, check the nickname you used to identify the job's ZIP file generated in the Flip64 action.
4. Select SFTP as the target file system, and click Next.
5. In the SSH Server panel, specify the name | IP address and port of the target Nielsen TIC Collection Facility server and click Next.
6. In the SSH User Credentials panel, enter your authorized user name and authentication type (password | SSH key) and credentials, and click Next.
7. In the Select a Folder panel, select the target folder and click Next.
8. In the Collision Resolution panel, configure the settings to meet your requirements and click Next.
9. Click Save to update the action and close the inspector.

## Testing Your Workflow

When you are done designing or editing a workflow in [Workflow Designer](#) and you want to test it or submit production jobs, select the workflow and click Activate.

When the workflow is activated, you can submit media to it, following these steps:

1. In Workflow Designer, select the workflow.
2. Click Submit Job.
3. In the Submit Job window, select the file system and click Next.
4. Browse the file system and select the media to process and click Next.
5. At the bottom left corner of the window, click the Variables button.
6. In the Variables window, for each variable you have used (bound to a control), select it and then enter the value for this job.

7. When you're done selecting all variables and providing them with values, click OK.
8. To submit the media you've selected along with all the variables, click Submit.

Monitor the job in the Job Status window and review your results when the job completes. If the workflow fails or the media is not properly watermarked, determine the problem and retry.

To learn about each of the methods you can use to submit jobs, see [Providing Runtime Values to Workflows](#).



# Nielsen Watermarking V3 Filter Linear (Pre-Render) Application Workflow

This is a prototype Flip64 workflow you can use to watermark your media using the Nielsen Watermarking V3 Filter's Linear (Pre-Render) application.

This filter does not require a [SID/TIC Server](#) when configured for linear watermarking media, but it does require a Telestream Cloud account ([Vantage Nielsen Watermarking License and Account Requirements](#)).

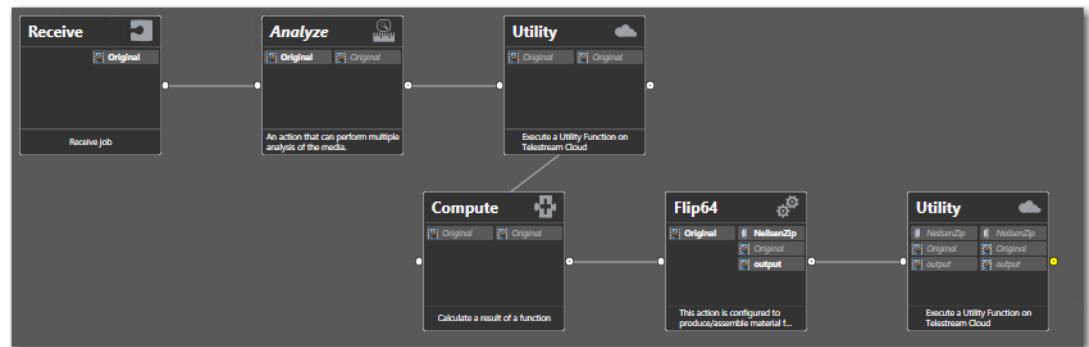
The Nielsen Watermarking V3 Filter inserts content or final-distributor watermarks into the audio stream. If the file that is being watermarked already has final-distributor codes in it, they are overwritten.

---

**Note:** The Nielsen Watermarking V3 Filter is provided in all output formats supported by the Flip64 action except for MPEG-2 Program Stream.

---

These actions constitute the minimum workflow (the [Receive action](#) can be substituted by another [origin action](#) to ingest media) you can implement to watermark your media. You can modify the workflow by adding other actions to suit your media processing requirements.



This workflow includes these actions:

**Receive**—Enables you to manually select a media file and required variables directly in [Workflow Designer](#) to start each job. Any other [origin action](#) can be used ([Watch | Workorder action](#), etc.), based on your job submission requirements (see [Providing Runtime Values to Workflows](#)).

**Analyze**—The Analyze action is used to determine the duration of the source file, for use by the Utility action when requesting a set of TICs. You may also provide the workflow a duration variable calculated externally (or in a separate workflow), eliminating the need for an Analyze action in this workflow.

**Utility**—The first Utility action calls the watermarking service in the specified account, passing in:

- Watermark to apply

- Timestamp for the future air-time
- Air-time (specified as UTC)
- Duration, which it receives from the Analyze action.

The watermark and the timestamp value must be entered manually when you submit a job or entered in the control or supplied via a variable, in which case the workflow must be modified to provide the variables. See [Providing Runtime Values to Workflows](#).

These values are returned from the Utility action which are used by the filter:

- SID as a text string) and SID Check Digits
- CSID (as a text string) and CSID Check Digits (optional)
- Timestamp
- Reservation Token—which is used by the second Utility action if the Flip64 action fails for any reason, so that the reservation can be released from the SRS.

*Compute*—Used when the Utility action publishes a CSID text variable, converting the CSID hex value returned to it by the Nielsen Linear Reservation operation. However, the watermark filter in Flip64 requires an integer. This action makes the conversion.

*Flip64*—The Flip64 action transcodes the media as specified and executes the Nielsen Watermarking Filter to watermark the media.

*Utility*—In the event that the Flip4 action fails, the second Utility action calls the Cloud service, passing in the Reservation Token, to cancel the reservation from the SID reservation table.

## Creating the Workflow

Follow these steps to create this workflow:

1. In [Workflow Designer](#), create a new workflow with the name of your choice.
2. Add the Receive, Analyze, Utility, Compute, and Flip64 actions and connect them as shown.

## Configuring the Receive Action

Follow these steps to configure the [Receive action](#):

1. Open the Receive action [inspector](#) and check *Original* from the Media Files menu to ingest a media file and assign it the nickname *Original*.
2. Click Save to update the Receive action and close the inspector.

## Configuring the Analyze Action

Follow these steps to extract the duration of the submitted media, and pass it to the Utility action for acquiring TICs:

1. In the Analyze action [inspector](#), specify *Original* as the input media file.

2. In the left panel, click the Plus icon and add a Duration tool.
3. Check the Content Duration in the Seconds control and select (or create) an integer variable suitably named (*Duration*, for instance). This value is passed to the Flip64 action and applied to the watermarking filter's **TIC** duration.
4. Click Save to update the action and close the inspector.

## Configuring the First Utility Action

Here, you'll configure the first Utility action to use the Telestream Cloud's Nielsen reservation system.

1. Open the Utility action [inspector](#).
2. In the Operation panel, select the *Create Linear Reservation* operation and click Next. The Create Linear Reservation operation allows you to reserve an existing linear watermark as defined in your Telestream Cloud account.

---

**Note:** Your Vantage domain must have connectivity to your Telestream Cloud account in order to configure this action. If these operations aren't selectable, check your license in the Vantage Management Console (VMC). Your license should include the Telestream Cloud Watermark Reservations policy.

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3. In the Telestream Cloud Account panel, select the Telestream Cloud account that you are using for this workflow. This account must have access to the SID Reservation System for creating and releasing watermark reservations. These accounts are enumerated here from the account(s) defined in the Vantage Management Console (see [Establishing a Telestream Cloud Account](#)). Click Next to log into the account and display the configuration panel.
4. In the Configuration Parameters panel, specify values for these controls. For details on providing these values dynamically, see [Providing Runtime Values to Workflows](#).

## Configuration Parameters

**Watermark Name:** Specify the name of the linear watermark to reserve as defined in your Telestream Cloud account.

**Requested Timestamp:** The Requested Timestamp is the time that the show will air. It represents the beginning of the TIC range and must not be in the past—it must be later than the time when the action runs. And, it must be unique for the specified watermark.

The Requested Timestamp must follow this syntax: `yyyy-MM-ddTHH:mm:ss`.

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**Note:** The character *T* is a constant; it indicates that the hour value is based on a 24-hour clock. For example, 19:00:00 means 7 pm.

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**Requested Duration:** Specifies duration of the watermark reservation in seconds. Default is 3600 seconds. Typically this value represents the duration of the media so

that the full duration is watermarked. The duration value is the length of the requested reservation, so if a show starts at 1 pm and is an hour long, the SID Reservation System reserves 1 hour starting at 1 pm, for example. Bind the Duration variable from the Analyze action to the Requested Duration.

## Generating Variables for the Nielsen Watermarking V3 Filter

You can generate these variables to pass downstream, so that they can be used in the watermarking filter in Flip64, by binding its controls to the variables you specify here:

**CSID Variable.** Optional; specifies CBET SID value as returned by the watermarking service.

**CSID Check Digits Variable.** Optional; specifies CBET SID check digit value as returned by the watermarking service.

**SID Variable.** Required; specifies the SID value as returned by the watermarking service.

**SID Check Digits Variable.** Required; specifies SID check digit value as returned by the watermarking service.

**Timestamp.** Specifies beginning of TIC watermark range as returned by the watermarking service.

**Reservation Token.** Specifies the unique reservation token assigned by the watermarking service.

5. Click Next and then click Finish to update the action and save it.

## Configuring the Compute Action

The first Utility action publishes a **CSID** text variable containing the CSID hex value returned to it by the Nielsen Linear Reservation operation. However, the watermark filter in Flip64 uses this variable for the CBET Source ID, but requires it in integer format.

Open the **inspector** and follow these steps to convert the string to an integer:

1. **Select the Function.** Set this control to Convert.
2. **Select a value type.** Set this control to Text.
3. **Conversion Source.** Specify the CSID text variable from the Utility action.
4. **Result.** Specify the CSID integer variable to generate.
5. Click Save to update the action and close the inspector.

## Configuring the Flip64 Action and Watermarking Filter

Here, you'll configure the Flip64 action and the Nielsen Watermarking V3 Filter for prototype purposes.

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**Note:** Only tasks directly related to filter configuration are included; you should complete the Flip64 configuration with an output component to suit your media transcoding requirements before testing your workflow.

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1. Open the Flip64 action [inspector](#) and add an Auto input to ingest the *Original* media.
2. Add an MPEG-4 output and configure it—provide a nickname.
3. To enable the Nielsen Watermarking V3 Filter, select the Output Audio Track.
4. In the Audio configuration panel on the right, check the Nielsen Watermarking V3 Filter to enable it.
5. Select the Pre-Render application from the Application Type and configure its controls as described following.

## Configuring the Linear (Pre-Render) Application Settings

The Source ID, Check Digits, [CBET](#) Source ID and CBET Check Digit, and Time Stamp controls should be configured using the variables generated by the Utility action.

**Source ID.** Nielsen-assigned 4-digit integer source identifier for identification and encoding.

**Check Digits.** Corresponds to the Source ID. If the check digit string does not match the SID, the authenticator does not permit watermarking with the SID.

**CBET Source ID (Optional).** Specifies the Nielsen-assigned 4-digit integer CBET source identifier, in hex format; prefixed with a Level identifier (1-5). For example, 2112B is a Level 2, 112B CBET Source ID. Do not prefix with 0x when manually supplying a value.

To bind this control to a variable, modify the origin action in your workflow to utilize a text variable and supply the hex CBET source ID value, prefixed with 0x. For example: 0x2112B. Add a Compute action and configure it to convert the text string to an integer, saving it in an integer variable. The filter automatically converts the integer variable back to hex for utilization.

**CBET Check Digits.** Corresponds to the CBET Source ID. If the check digit string does not match the CBET Source ID, the authenticator does not permit watermarking with the CBET Source ID.

**Broadcast Start UTC Date/Time.** UTC formatted date/time in yyyy-mm-ddThh:mm:ss format, where T is a constant. For example, 2020-06-15T19:45:22.

**Time Offset Hours.** Allows specification of positive or negative time zone offset. This feature is used when the time zone for broadcast is different than the time zone where the file was processed. For example, if a file is intended for broadcast in New York (UTC - 4) but was processed in San Francisco (UTC -7), a +3 hour value must be applied. If the value is 0, no offset is applied.

**Enable Daylight Savings Time.** When enabled, specifies that seasonal Daylight Savings time is in effect at the Broadcast location. Disabled by default.

**Disable CBET EAS Detection.** When checked, CBET watermarking engine will not decode Emergency Alert System (EAS) alerts. Enabled (unchecked) by default.

**Enable CBET Step Aside.** When checked, will NOT overwrite previous encoding on the same layer. Disabled (unchecked) by default.

**Process Type.** Specifies which Nielsen technology, including the frequency spectrum, is utilized when inserting watermarks: N2 + NW | CBET | N2 + NW + CBET. N2 represents an NAES II watermark; NW represents NAES VI. CBET is Critical Band Encoding Technology.

**Distribution Type.** Specifies watermarking level: Program Content (PC) | Final Distributor (FD).

**Metadata Fields.** Optional, free-form text. Specifies the value of each metadata item.

**Metadata and Logging Output.** Specifies File Nickname | File Path:

- **File nickname:** Use when you want to use a Deploy action in this workflow to deliver the file to the Nielsen TIC Collection Facility, for example. Select a File nickname for a metadata attachment file. Vantage creates a ZIP file containing metadata, log, and signature output files to a Vantage store (from the perspective of the Vantage domain server). The File nickname specifies the nickname to assign the ZIP file created as an attachment to the binder. Downstream file operation actions can access and operate on the file based on this nickname.
- **File path:** Use when you plan to utilize these files and/or deliver the file to the Nielsen TIC Collection Facility externally or separate from this workflow. Enter or browse to select the directory path—usually a share—which is required if you have a distributed (multi-server) domain. Vantage requires write permission for this directory. The filter generates individual files if you select File path.

The resulting ZIP file can be delivered to the Nielsen TIC Collection Facility via SFTP using the Nielsen File Transfer Manager program, your own custom or commercial file transfer program, or utilizing a Vantage workflow to automate delivery directly in the context of the job.

## Configuring Nielsen Label and Cluster Mapping

**Nielsen Label and Cluster Mapping.** Select the desired labeling and cluster mapping method:

- **Auto.** Used when the input audio stream has 8 channels or less and all channels are in the same cluster. There are no user-configurable controls. Channels 4, 5, and 6 are not watermarked with N6 or CBET watermarks.
- **Manual.** Specify when the input audio stream has more than 8 channels—and thus, requires more than one cluster—or you require multiple clusters even if there are 8 channels or less. For example, your source files may have 4 stereo pairs and each stereo pair is in its own cluster. Or, a 12-channel stream containing three separate audio programs can be organized into 3 clusters.

You can create multiple audio clusters with a maximum of 8 channels to support different types of audio channel layouts in input source content. Create and configure each channel with a label and a cluster number.

**Add New Item.** When method is set to Manual, click Add New Item for each channel, and configure it:

**Channel Number.** Identifies the channel number being mapped for this item.

**Label.** Specifies the channel label to use for this channel during watermarking.

**Cluster Number.** Specifies the watermark cluster number for this channel. Do not assign more than 8 channels to a given cluster.

#### Cluster Mapping Guidelines

- Clusters may only contain 1, 2, 6, or 8 channels. In order to watermark four channels (for example, a pair of stereo channels) use two clusters of two channels each. Clusters consisting of 3, 4, 5, or 7 channels are not supported.
- When watermarking 6 or 8 channels, channels 4, 5 and 6 (Low Frequency Effects, Left Surround and Right Surround) are not watermarked with N6 or CBET watermarks. This is true for both Auto and Manual mapping. In Manual mode, changing label names will not cause channels 4, 5 and 6 to be watermarked, either.

When you're done, click Save to update the action and close the inspector.

## Configuring the Second Utility Action

The second Utility action is configured to execute only if a previous action fails, to release the reservation from the reservation table, in case the Flip64 watermarking operation fails.

Follow these steps to configure it:

1. Right-click on the action and select Perform On > Failure.
2. Open the [inspector](#) and select the Release Linear Reservation operation, so that this time slot can be re-used when you re-run the job.
3. Select the Telestream Cloud Account.
4. Assign the Reservation Token variable defined in the first Utility action to the Watermark Token control.
5. Click Next and then click Finish to save the configuration.

## Testing Your Workflow

When you are done designing or editing a workflow in [Workflow Designer](#) and you want to test it or submit production jobs, select the workflow and click Activate.

When the workflow is activated, you can submit media to it, following these steps:

1. In Workflow Designer, select the workflow.
2. Click Submit Job.

- 3.** In the Submit Job window, select the file system and click Next.
- 4.** Browse the file system and select the media to process and click Next.
- 5.** At the bottom left corner of the window, click the Variables button.
- 6.** In the Variables window, for each variable you have used (bound to a control), select it and then enter the value for this job.
- 7.** When you're done selecting all variables and providing them with values, click OK.
- 8.** To submit the media you've selected along with all the variables, click Submit.

Monitor the job in the Job Status window and review your results when the job completes. If the workflow fails or the media is not properly watermarked, determine the problem and retry.

To learn about each of the methods you can use to submit jobs, see [Providing Runtime Values to Workflows](#).



# IPTV Flip Nielsen Watermarking Workflows

The [IPTV Flip](#) action implements two Nielsen watermarking filters. These filters can be used to watermark all output media formats.


Each filter's user interface is specific to the IPTV Flip action, and the interface may vary from other transcode actions.

**Nielsen Watermarking Filter**—This is the original watermarking filter. This filter is a non-linear, [NW](#) | [N2](#) | CBET watermarking filter for VOD program content, commercial content and [RT VOD](#) content. The filter requires access to a [SID/TIC Server](#) (see [Filter Implementation](#) for details) when watermarking program and commercial content.

This filter writes metadata, log, and signature files containing information about the transcode and watermarked content for each job, for zipping and delivery to the Nielsen TIC Collection Facility. (See [Delivering Job Files to the Nielsen TIC Collection Facility](#)).

**Nielsen Pre-rendering Watermarking Filter**—This filter implements Nielsen linear watermarking prior to initial show air time, utilizing Telestream Cloud. It does not utilize a [SID/TIC Server](#).

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**Note:** Each action in [Workflow Designer](#) supports context-sensitive help. Click the man page  button in the upper right corner of the [inspector](#) window to display the man page, which provides detailed information about the panel you are viewing.

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## Topics

- [Nielsen Watermarking Job Submission](#)
- [Nielsen Watermarking Filter Program Content Application Workflow](#)
- [Nielsen Watermarking Filter Commercial Content Application Workflow](#)
- [Nielsen Watermarking Filter RT VOD Flag Application Workflow](#)
- [Nielsen Pre-Rendering Watermarking Filter Workflow](#)

## Nielsen Watermarking Job Submission

Each of these prototype workflows begin with a [Receive action](#), to facilitate manual job submission for testing, which is described at the end of the topic. However, a Receive action may not meet your production workflow requirements. Nielsen watermarking workflows require many input values supplied by variables, complicating job submission. For details about submitting jobs and implementing the appropriate [origin action](#) for your requirements, see [Providing Runtime Values to Workflows](#).

## Nielsen Watermarking Filter Program Content Application Workflow

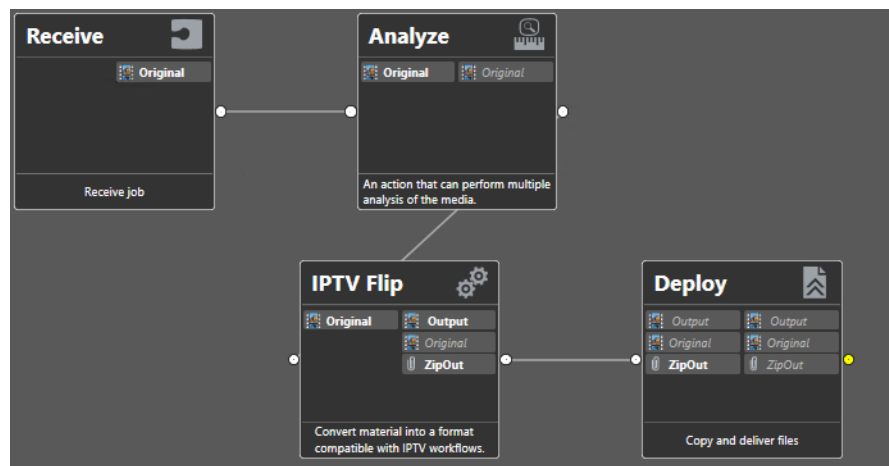
This is a prototype IPTV Flip workflow you can use to watermark the audio in your VOD program content using the Nielsen Watermarking Filter's Program Content application. The Nielsen Watermarking Filter is provided in all output formats supported by the IPTV Flip action.

The Nielsen Watermarking Filter operating in Program Content mode implements non-linear audio watermarking and requires a [SID/TIC Server](#) (see [Nielsen Watermark Filters](#)).

The filter generates metadata, log, and signature output files, optionally adding them to a ZIP file for each job. You can review these files and deliver them to the Nielsen TIC Collection Facility. See [Delivering Job Files to the Nielsen TIC Collection Facility](#).

The filter's interface is specific to the IPTV Flip action, and its interface may vary in other transcode actions.

These four actions constitute the minimum workflow (the [Receive action](#) can be substituted by another [origin action](#) to ingest media) you can implement to watermark your media. You can modify the workflow by adding other actions to suit your media processing requirements.



This workflow includes these actions:

*Receive*—Enables you to manually select a media file and required variables directly in [Workflow Designer](#) to start each job. Any other [origin action](#) can be used ([Watch](#) | [Workorder action](#), etc.), based on your job submission requirements (see [Providing Runtime Values to Workflows](#)).

*Analyze*—The Analyze action is used to determine the duration of the source file. You may also provide the workflow a duration variable calculated externally (or in a separate workflow), eliminating the need for an Analyze action in this workflow.

*IPTV Flip*—The IPTV Flip action transcodes the media as specified and watermarks the audio using the Nielsen Watermarking Filter, implemented in the transcoder's audio container.

*Deploy*—The [Deploy action](#) delivers the zipped job file to the Nielsen TIC CF via SFTP (See [Delivering Job Files to the Nielsen TIC Collection Facility](#)).

## Creating the Workflow

Follow these steps to create this workflow:

1. In [Workflow Designer](#), create a new workflow with the name of your choice.
2. Add the Receive, Analyze, and IPTV Flip actions and connect them as shown.

## Configuring the Receive Action

1. Open the [Receive action inspector](#) and check *Original* from the Media Files menu to ingest a media file and assign it the nickname *Original*.
2. Click Save to update the Receive action and close the inspector.

## Configuring the Analyze Action

The Nielsen Watermarking Filter requires a media duration value to perform its task. Follow these steps to extract the duration of the submitted media and pass it to the IPTV Flip action:

1. Open the Analyze action [inspector](#).
2. In the Input Media File Nickname menu, select *Original*.
3. Click the Plus button in the Analysis panel and add a Duration tool.
4. In the Duration panel on the right, check the Content Duration in Seconds control and select a suitably named integer variable (*Duration*, for instance). This variable is passed to the IPTV Flip action and the value applied to the [TIC](#) duration in the Nielsen Watermarking Filter.
5. Click Save to update the action and close the inspector.

## Configuring the IPTV Flip Action and Nielsen Watermarking Filter

Here, you'll configure the IPTV Flip action and the Nielsen Watermarking Filter for prototype purposes.

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**Note:** Only tasks directly related to filter configuration are included; you should complete the IPTV Flip configuration with an output component to suit your media transcoding requirements before testing your workflow.

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1. Open the IPTV Flip action [inspector](#) and add an Auto Input to ingest the *Original* media.
2. In Transcoders, add an AAC audio transcoder.
3. Select the AAC transcoder, and in the configuration panel to the right, check the Nielsen Watermarking Filter to enable it.
4. Select Program Content from the filter's Workflow Type menu and configure it to meet your requirements:

### Configuring the Channel Setting

**Channel Setting.** Select the type of audio you are watermarking to specify which channels are watermarked:

*Stereo:* Requires 2 channels - for example: 1, 2. If you are generating a signature file, channel 1 is used.

*AC-3 5.1:* Requires either 5 or 6 channels. If you are generating a signature file, specify one channel number for LEFT (typically FRONT LEFT) and one for the CENTER channel. For example: 1, 3 or 3, 4. These two channels are mixed and used.

*Quad Stereo:* Requires 8 channels. If you are generating a signature file, specify one channel number for LEFT (typically FRONT LEFT) and one for the CENTER channel. For example: 1, 3 or 3, 4. These two channels are mixed and used.

*Other:* 1 to 8 channels required. The first channel in the list is used.

### Configuring the Program Content Application Settings

**Watermark SID.** Nielsen assigns one or more source IDs to each content provider or distribution source. The SID uniquely identifies the distribution source and is included as a component of each watermark.

**Nielsen SID/TIC Server IP Address.** The IP address of the computer running the Nielsen licensing SID/TIC server system, which is required to run the Nielsen Watermarking. Nielsen must be contacted in order to obtain their licensing SID/TIC server system.

**Connection Failure Sleep Time.** Retry delay value (in milliseconds) for the connection to the Nielsen SID/TIC server. If a connection attempt fails, Vantage waits the prescribed

time until it attempts another connection. Upon failing a second time, the transcode aborts.

**TIC Duration.** Duration (in seconds) of the source audio. The SID/TIC Server uses the duration to allocate the proper range of TICs.

**Nielsen Param Type.** Nielsen Watermark Engine. This value can not be changed.

**Nielsen Timecode Type.** Inserter TIC. This value can not be changed.

**Content Type.** Program Content, set as specified by Workflow Type selection.

**Process Type.** Specifies which watermarking process is implemented.

**CBET Source ID.** Only used when Process Type is set to include the CBET process type. Manually enter a single digit Level Number and 4-digit CBET source ID in hex format with 0x prefix - 0xLXXXX. For example: 0x2123B for Level 2, 123B CBET source ID. The level number and source ID are separated by the filter for utilization. To bind this control to a variable, utilize a String variable and supply the value in the same format: 0xLXXXX - 0x prefix, single digit level, and 4 digit hex source ID.

**EAS Flag.** When enabled, allows user to set EAS Flag. Disabled by default.

**Distribution Type.** Program content codes. Set as specified by Workflow Type selection.

**Metadata Fields.** Optional, free-form text. Specifies the value of each metadata item.

**Decode and Signature.** Check to generate signature files (DNA, PAS or both, depending on settings and content). Log files and decode files are also generated. These files are written to the Metadata/Logging Output Directory, specified below.

**Metadata and Logging Output.** Specifies File Nickname | File Path:

- **File nickname:** Use when you want to use a Deploy action in this workflow to deliver the file to the Nielsen TIC Collection Facility, for example. Select a File nickname for a metadata attachment file. Vantage creates a ZIP file containing metadata, log, and signature output files to a Vantage store (from the perspective of the Vantage domain server). The File nickname specifies the nickname to assign the ZIP file created as an attachment to the binder. Downstream file operation actions can access and operate on the file based on this nickname.
- **File path:** Use when you plan to utilize these files and/or deliver the file to the Nielsen TIC Collection Facility externally or separate from this workflow. Enter or browse to select the directory path—usually a share—which is required if you have a distributed (multi-server) domain. Vantage requires write permission for this directory. The filter generates individual files if you select File path.

The resulting ZIP file can be delivered to the Nielsen TIC Collection Facility via SFTP using the Nielsen File Transfer Manager program, your own custom or commercial file transfer program, or utilizing a Vantage workflow to automate delivery directly in the context of the job.

## Configuring the Deploy Action

Finally, configure the [Deploy action](#) to deliver the zipped job files to the Nielsen TIC Collection Facility. Follow these steps:

1. Open the Deploy action [inspector](#).
2. Select Export and click Next.
3. In the Select Files to Deploy panel's Files to Deploy menu, check the nickname you used to identify the job's ZIP file generated in the Flip64 action.
4. Select SFTP as the target file system, and click Next.
5. In the SSH Server panel, specify the name | IP address and port of the target Nielsen TIC Collection Facility server and click Next.
6. In the SSH User Credentials panel, enter your authorized user name and authentication type (password | SSH key) and credentials, and click Next.
7. In the Select a Folder panel, select the target folder and click Next.
8. In the Collision Resolution panel, configure the settings to meet your requirements and click Next.
9. Click Save to update the action and close the inspector.

## Testing Your Workflow

When you are done designing or editing a workflow in Workflow Designer and you want to test it or submit production jobs, select the workflow and click Activate.

When the workflow is activated, you can submit media to it, following these steps:

1. In Workflow Designer, select the workflow.
2. Click Submit Job.
3. In the Submit Job window, select the file system and click Next.
4. Browse the file system and select the media to process and click Next.
5. At the bottom left corner of the window, click the Variables button.
6. In the Variables window, for each variable you have used (bound to a control), select it and then enter the value for this job.
7. When you're done selecting all variables and providing them with values, click OK.
8. To submit the media you've selected along with all the variables, click Submit.

Monitor the job in the Job Status window and review your results when the job completes. If the workflow fails or the media is not properly watermarked, determine the problem and retry.

To learn about each of the methods you can use to submit jobs, see [Providing Runtime Values to Workflows](#).

# Nielsen Watermarking Filter Commercial Content Application Workflow

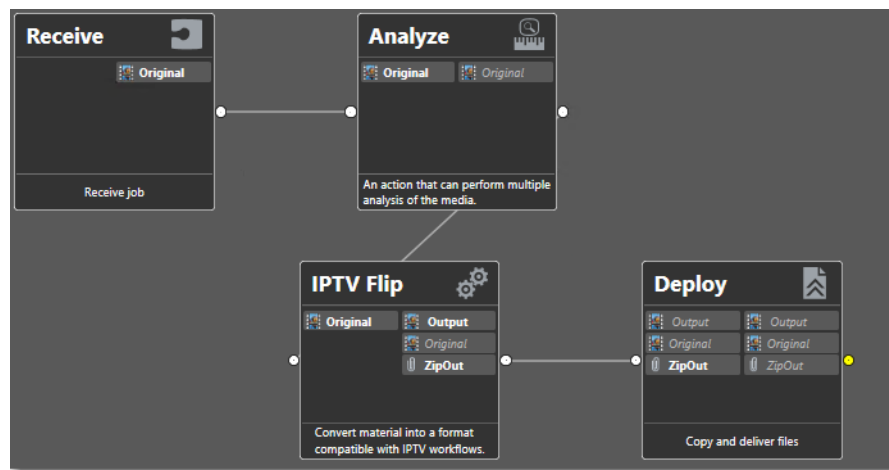
This is a prototype IPTV Flip workflow you can use to watermark the audio in your VOD commercial ad content, using the Nielsen Watermarking Filter's Commercial Content application. The Nielsen Watermarking Filter is provided in all output formats supported by the IPTV Flip action.

When operating in Commercial Content mode, the Nielsen Watermarking Filter implements non-linear watermarking and requires a [SID/TIC Server](#) (see [Nielsen Watermark Filters](#)).

The filter generates metadata, log, and signature output files, optionally adding them to a ZIP file for each job. You can review these files and deliver them to the Nielsen TIC Collection Facility. See [Delivering Job Files to the Nielsen TIC Collection Facility](#).

The filter's interface is specific to the IPTV Flip action, and the interface may vary from other transcode actions.

These four actions constitute the minimum workflow (the [Receive action](#) can be substituted by another [origin action](#) to ingest media) you can implement to watermark your media. You can modify the workflow by adding other actions to suit your media processing requirements.



This workflow includes these actions:

**Receive**—Enables you to manually select a media file and required variables directly in [Workflow Designer](#) to start each job. Any other [origin action](#) can be used ([Watch](#) | [Workorder action](#), etc.), based on your job submission requirements (see [Providing Runtime Values to Workflows](#)).

**Analyze**—The Analyze action is used to determine the duration of the source file. You may also provide the workflow a duration variable calculated externally (or in a separate workflow), eliminating the need for an Analyze action in this workflow.

*IPTV Flip*—The IPTV Flip action transcodes the media as specified and watermarks the audio using the Nielsen Watermarking Filter, implemented in the transcoder's audio container.

*Deploy*—The [Deploy action](#) delivers the zipped job file to the Nielsen TIC CF via SFTP (See [Delivering Job Files to the Nielsen TIC Collection Facility](#)).

## Creating the Workflow

Follow these steps to create this workflow:

1. In [Workflow Designer](#), create a new workflow with the name of your choice.
2. Add the Receive, Analyze, and IPTV Flip actions and connect them as shown.

## Configuring the Receive Action

1. Open the [Receive action inspector](#) and check *Original* from the Media Files menu to ingest a media file and assign it the nickname *Original*.
2. Click Save to update the Receive action and close the inspector.

## Configuring the Analyze Action

The Nielsen Watermarking Filter requires a media duration value to perform its task. Follow these steps to extract the duration of the submitted media and pass it to the IPTV Flip action:

1. Open the Analyze action [inspector](#).
2. In the Input Media File Nickname menu, select *Original*.
3. Click the Plus button in the Analysis panel and add a Duration tool.
4. In the Duration panel on the right, check the Content Duration in Seconds control and select a suitably named integer variable (*Duration*, for instance). This variable is passed to the IPTV Flip action and the value applied to the [TIC](#) duration in the Nielsen Watermarking Filter.
5. Click Save to update the action and close the inspector.

## Configuring the IPTV Flip Action and Nielsen Watermarking Filter

Here, you'll configure the IPTV Flip action and the Nielsen Watermarking Filter for prototype purposes.

---

**Note:** Only tasks directly related to filter configuration are included; you should complete the IPTV Flip configuration with an output component to suit your media transcoding requirements before testing your workflow.

---



1. Open the IPTV Flip action [inspector](#) and add an Auto Input to ingest the *Original* media.
2. In Transcoders, add an AAC audio transcoder.
3. Select the AAC Output Audio Track, and in the configuration panel to the right, check the Nielsen Watermarking Filter to enable it.
4. Select Commercial Content from the filter's Workflow Type menu and configure its controls to meet your requirements:

## Configuring the Channel Setting

**Channel Setting.** Select the type of audio you are watermarking to specify which channels are watermarked:

*Stereo:* Requires 2 channels - for example: 1, 2. If you are generating a signature file, channel 1 is used.

*AC-3 5.1:* Requires either 5 or 6 channels. If you are generating a signature file, specify one channel number for LEFT (typically FRONT LEFT) and one for the CENTER channel. For example: 1, 3 or 3, 4. These two channels are mixed and used.

*Quad Stereo:* Requires 8 channels. If you are generating a signature file, specify one channel number for LEFT (typically FRONT LEFT) and one for the CENTER channel. For example: 1, 3 or 3, 4. These two channels are mixed and used.

*Other:* 1 to 8 channels required. The first channel in the list is used.

## Configuring the Commercial Content Application Settings

**Watermark SID.** Nielsen assigns one or more source IDs to each content provider or distribution source. The SID uniquely identifies the distribution source and is included as a component of each watermark.

**Nielsen SID/TIC Server IP Address.** The IP address of the computer hosting the Nielsen SID/TIC server. Use 255.255.255.255 to search for all SID/TIC servers. This is used when a site has redundant SID/TIC servers; the first SID/TIC server to respond is utilized.

**Connection Failure Sleep Time.** Retry delay value (in milliseconds) for the connection to the Nielsen SID/TIC server. If a connection attempt fails, Vantage waits the prescribed time until it attempts another connection. Upon failing a second time, the transcode aborts.

**TIC Duration.** Duration (in seconds) of the source audio. The SID/TIC Server uses the duration to allocate the proper range of TICs.

**Nielsen Param Type.** Nielsen Watermark Engine. This value can not be changed.

**Nielsen Timecode Type.** Inserter TIC. This value can not be changed.

**Content Type.** Commercial Content, set as specified by Workflow Type selection. N2HF/NWCC codes are inserted into the program band.

**Process Type.** Specifies which watermarking process is implemented.

**EAS Flag.** When enabled, allows user to set EAS Flag. Disabled by default.

**Distribution Type.** Commercial content codes. Set as specified by Workflow Type selection.

**Metadata Fields.** Optional, free-form text. Specifies the value of each metadata item.

**Decode and Signature.** Check to generate signature files (DNA, PAS or both, depending on settings and content). Log files and decode files are also generated. These files are written to the Metadata/Logging Output Directory, specified below.

**Metadata and Logging Output.** Specifies File Nickname | File Path:

- **File nickname:** Use when you want to use a Deploy action in this workflow to deliver the file to the Nielsen TIC Collection Facility, for example. Select a File nickname for a metadata attachment file. Vantage creates a ZIP file containing metadata, log, and signature output files to a Vantage store (from the perspective of the Vantage domain server). The File nickname specifies the nickname to assign the ZIP file created as an attachment to the binder. Downstream file operation actions can access and operate on the file based on this nickname.
- **File path:** Use when you plan to utilize these files and/or deliver the file to the Nielsen TIC Collection Facility externally or separate from this workflow. Enter or browse to select the directory path—usually a share—which is required if you have a distributed (multi-server) domain. Vantage requires write permission for this directory. The filter generates individual files if you select File path.

The resulting ZIP file can be delivered to the Nielsen TIC Collection Facility via SFTP using the Nielsen File Transfer Manager program, your own custom or commercial file transfer program, or utilizing a Vantage workflow to automate delivery directly in the context of the job.

## Configuring the Deploy Action

Finally, configure the [Deploy action](#) to deliver the zipped job files to the Nielsen TIC Collection Facility. Follow these steps:

1. Open the Deploy action [inspector](#).
2. Select Export and click Next.
3. In the Select Files to Deploy panel's Files to Deploy menu, check the nickname you used to identify the job's ZIP file generated in the Flip64 action.
4. Select SFTP as the target file system, and click Next.
5. In the SSH Server panel, specify the name | IP address and port of the target Nielsen TIC Collection Facility server and click Next.
6. In the SSH User Credentials panel, enter your authorized user name and authentication type (password | SSH key) and credentials, and click Next.
7. In the Select a Folder panel, select the target folder and click Next.
8. In the Collision Resolution panel, configure it to meet your requirements; click Next.
9. Click Save to update the action and close the inspector.

## Testing Your Workflow

When you are done designing or editing a workflow in Workflow Designer and you want to test it or submit production jobs, select the workflow and click Activate.

When the workflow is activated, you can submit media to it, following these steps:

1. In Workflow Designer, select the workflow.
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4. Browse the file system and select the media to process and click Next.
5. At the bottom left corner of the window, click the Variables button.
6. In the Variables window, for each variable you have used (bound to a control), select it and then enter the value for this job.
7. When you're done selecting all variables and providing them with values, click OK.
8. To submit the media you've selected along with all the variables, click Submit.

Monitor the job in the Job Status window and review your results when the job completes. If the workflow fails or the media is not properly watermarked, determine the problem and retry.

To learn about each of the methods you can use to submit jobs, see [Providing Runtime Values to Workflows](#).

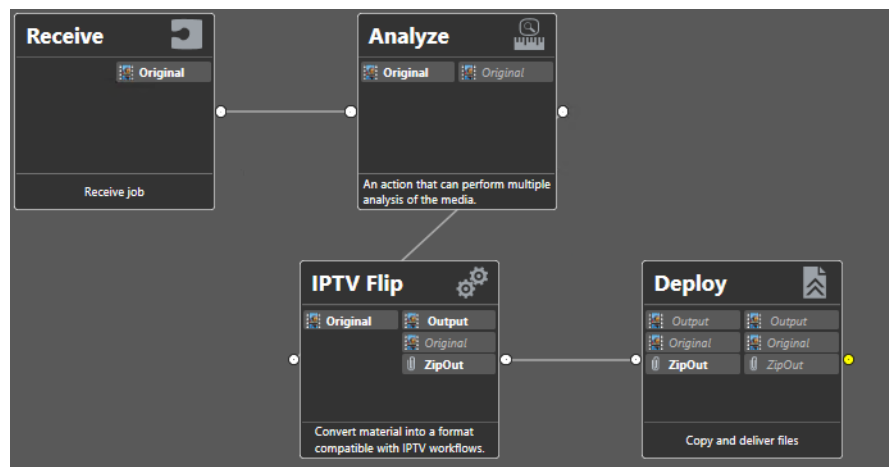
## Nielsen Watermarking Filter RT VOD Flag Application Workflow

Use this prototype IPTV Flip workflow to apply [C3 | C7](#) watermarks to your VOD program using the Nielsen Watermarking Filter's [RT VOD](#) Flag application. The Nielsen Watermarking Filter is provided in all output formats supported by the IPTV Flip action.

The filter's interface is specific to the IPTV Flip action, and the interface may vary from other transcode actions.

The Nielsen Watermarking Filter generates metadata, log, and signature output files, optionally adding them to a ZIP file for each job. You can review these files and deliver them to the Nielsen TIC Collection Facility. See [Delivering Job Files to the Nielsen TIC Collection Facility](#).

These four actions constitute the minimum workflow (the [Receive action](#) can be substituted by another [origin action](#) to ingest media) you can implement to watermark your media. You can modify the workflow by adding other actions to suit your media processing requirements.



This workflow includes these actions:

**Receive**—Enables you to manually select a media file and required variables directly in [Workflow Designer](#) to start each job. Any other [origin action](#) can be used ([Watch | Workorder action](#), etc.), based on your job submission requirements (see [Providing Runtime Values to Workflows](#)).

**Analyze**—The Analyze action is used to determine the duration of the source file. You may also provide the workflow a duration variable calculated externally (or in a separate workflow), eliminating the need for an Analyze action in this workflow.

**IPTV Flip**—The IPTV Flip action transcodes the media and watermarks the audio using the Nielsen Watermarking Filter, implemented in the transcoder's audio container.

**Deploy**—The [Deploy action](#) delivers the zipped job file to the Nielsen TIC CF via SFTP (See [Delivering Job Files to the Nielsen TIC Collection Facility](#)).

## Creating the Workflow

Follow these steps to create this workflow:

1. In [Workflow Designer](#), create a new workflow with the name of your choice.
2. Add the Receive, Analyze, and IPTV Flip actions and connect them as shown.

## Configuring the Receive Action

1. Open the [Receive action inspector](#) and check *Original* from the Media Files menu to ingest a media file and assign it the nickname *Original*.
2. Click Save to update the Receive action and close the inspector.

## Configuring the Analyze Action

The Nielsen Watermarking Filter requires a media duration value to perform its task. Follow these steps to extract the duration of the submitted media and pass it to the IPTV Flip action:

1. Open the Analyze action [inspector](#).
2. In the Input Media File Nickname menu, select *Original*.
3. Click the Plus button in the Analysis panel and add a Duration tool.
4. In the Duration panel on the right, check the Content Duration in Seconds control and select a suitably named integer variable (*Duration*, for instance). This variable is passed to the IPTV Flip action and the value applied to the [TIC](#) duration in the Nielsen Watermarking Filter.
5. Click Save to update the action and close the inspector.

## Configuring the IPTV Flip Action & Nielsen Watermarking Filter

Here, you'll configure the IPTV Flip action and the Nielsen Watermarking Filter for prototype purposes.

---

**Note:** Only tasks directly related to filter configuration are included; you should complete the IPTV Flip configuration with an output component to suit your media transcoding requirements before testing your workflow.

---

1. Open the IPTV Flip action [inspector](#); add an Auto Input to ingest the *Original* media.
2. In Transcoders, add an AAC transcoder.
3. Select the AAC Output Audio Track, and in the configuration panel to the right, check the Nielsen Watermarking Filter to enable it.
4. In the Workflow Type menu, select [RT VOD](#) Flag and configure it:

## Configuring the Channel Setting

**Channel Setting.** Select the type of audio you are watermarking to specify which channels are watermarked:

*Stereo:* Requires 2 channels - for example: 1, 2. If you are generating a signature file, channel 1 is used.

*AC-3 5.1:* Requires either 5 or 6 channels. If you are generating a signature file, specify one channel number for LEFT (typically FRONT LEFT) and one for the CENTER channel. For example: 1, 3 or 3, 4. These two channels are mixed and used.

*Quad Stereo:* Requires 8 channels. If you are generating a signature file, specify one channel number for LEFT (typically FRONT LEFT) and one for the CENTER channel. For example: 1, 3 or 3, 4. These two channels are mixed and used.

*Other:* 1 to 8 channels required. The first channel in the list is used.

## Configuring the RT VOD Flag Application Settings

**Nielsen Param Type.** Nielsen Watermark Engine. This value can not be changed.

**Nielsen Timecode Type.** Inserter TIC. This value can not be changed.

**Content Type.** Offline Content, set as specified by Workflow Type selection. C3/C7 codes are inserted into the program band.

**Watermark Type.** C3 | C7. Specifies which watermark flag is implemented.

**Metadata Fields.** Optional, free-form text. Specifies the value of each metadata item.

**Duration.** Specifies the duration of the media, in seconds.

**Decode and Signature.** Check to generate signature files (DNA, PAS or both, depending on settings and content). Log files and decode files are also generated. These files are written to the Metadata/Logging Output Directory, specified below.

**Metadata and Logging Output.** Specifies File Nickname | File Path:

- **File nickname:** Use when you want to use a Deploy action in this workflow to deliver the file to the Nielsen TIC Collection Facility, for example. Select a File nickname for a metadata attachment file. Vantage creates a ZIP file containing metadata, log, and signature output files to a Vantage store (from the perspective of the Vantage domain server). The File nickname specifies the nickname to assign the ZIP file created as an attachment to the binder. Downstream file operation actions can access and operate on the file based on this nickname.
- **File path:** Use when you plan to utilize these files and/or deliver the file to the Nielsen TIC Collection Facility externally or separate from this workflow. Enter or browse to select the directory path—usually a share—which is required if you have a distributed (multi-server) domain. Vantage requires write permission for this directory. The filter generates individual files if you select File path.

The resulting ZIP file can be delivered to the Nielsen TIC Collection Facility via SFTP using the Nielsen File Transfer Manager program, your own custom or commercial

file transfer program, or utilizing a Vantage workflow to automate delivery directly in the context of the job.

## Configuring the Deploy Action

Finally, configure the [Deploy action](#) to deliver the zipped job files to the Nielsen TIC Collection Facility. Follow these steps:

1. Open the Deploy action [inspector](#).
2. Select Export and click Next.
3. In the Select Files to Deploy panel's Files to Deploy menu, check the nickname you used to identify the job's ZIP file generated in the Flip64 action.
4. Select SFTP as the target file system, and click Next.
5. In the SSH Server panel, specify the name | IP address and port of the target Nielsen TIC Collection Facility server and click Next.
6. In the SSH User Credentials panel, enter your authorized user name and authentication type (password | SSH key) and credentials, and click Next.
7. In the Select a Folder panel, select the target folder and click Next.
8. In the Collision Resolution panel, configure it to meet your requirements; click Next.
9. Click Save to update the action and close the inspector.

## Testing Your Workflow

When you are done designing or editing a workflow in Workflow Designer and you want to test it or submit production jobs, select the workflow and click Activate.

When the workflow is activated, you can submit media to it, following these steps:

1. In Workflow Designer, select the workflow. and click Submit Job.
2. In the Submit Job window, select the file system and click Next.
3. Browse the file system and select the media to process and click Next.
4. At the bottom left corner of the window, click the Variables button.
5. In the Variables window, for each variable you have used (bound to a control), select it and then enter the value for this job.
6. When you're done selecting all variables and providing them with values, click OK.
7. To submit the media you've selected along with all the variables, click Submit.

Monitor the job in the Job Status window and review your results when the job completes. If the workflow fails or the media is not properly watermarked, determine the problem and retry.

To learn about each of the methods you can use to submit jobs, see [Providing Runtime Values to Workflows](#).

## Nielsen Pre-Rendering Watermarking Filter Workflow

This is a prototype IPTV Flip workflow you can use to watermark linear media using the Nielsen Pre-Rendering Watermarking filter. The Nielsen Pre-Rendering Watermarking filter is provided in all audio transcoders supported by the IPTV Flip action.

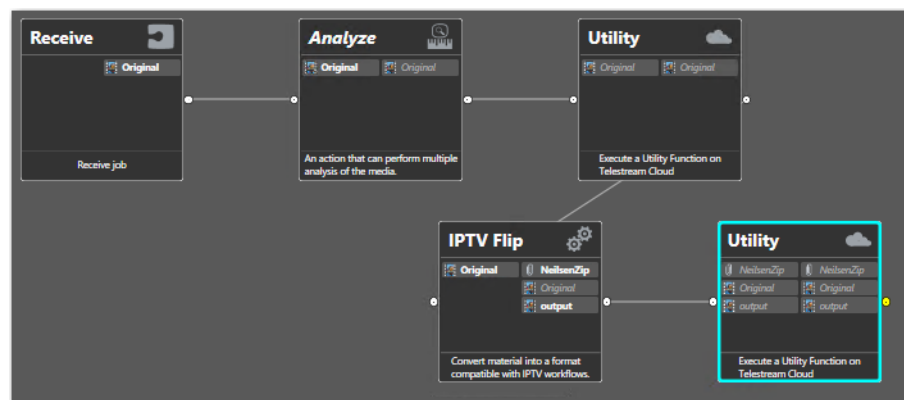
This filter implements Nielsen linear audio watermarking (both [CBET](#) and standard watermarks) prior to initial show air time. The filter pre-allocates and inserts Nielsen watermarks to content which has not yet aired, using time stamps from the time and date that the content will actually go to air, using the Telestream's cloud-based SRS (SID Reservation System) to generate the SID and timestamp for pre-rendered content.

The Nielsen Pre-rendering Watermarking Filter also provides broadcasters making VOD and OTT versions (including advertising) access to live content as soon as possible. The C3 | C7 flag is added (using the Nielsen Watermarking Filter's [RTVOD](#) application) to the output generated from the Nielsen Pre-rendering Watermarking Filter or generated externally to Vantage.

This filter generates metadata, log, and signature output files, optionally adding them to a ZIP file for each job. You can review these files and deliver them to the Nielsen TIC Collection Facility. See [Delivering Job Files to the Nielsen TIC Collection Facility](#).

The filter's interface is specific to the IPTV Flip action, and the interface may vary from other transcode actions.

These actions constitute the minimum workflow (the [Receive action](#) can be substituted by another [origin action](#) to ingest media) you can implement to watermark your media. You can modify the workflow by adding other actions to suit your media processing requirements.



This workflow includes these actions:

*Receive*—Enables you to manually select a media file and required variables directly in [Workflow Designer](#) to start each job. Any other [origin action](#) can be used ([Watch | Workorder action](#), etc.), based on your job submission requirements (see [Providing Runtime Values to Workflows](#)).



*Analyze*—The Analyze action is used to determine the duration of the source file. You may also provide the workflow a duration variable calculated externally (or in a separate workflow), eliminating the need for an Analyze action in this workflow.

*Utility*—The Utility action enables you to establish and release watermark reservations to obtain TICs for your content. Configure this action to create a linear reservation operation for the pre-rendering filter.

*IPTV Flip*—The IPTV Flip action transcodes the media as specified and watermarks the media using the Nielsen Pre-rendering Watermarking filter.

*Utility*—Configure this action to release the linear reservation operation you previously created, in case of a workflow failure.

## Creating the Workflow

Follow these steps to create this workflow:

1. In [Workflow Designer](#), create a new workflow with the name of your choice.
2. Add the Receive, Analyze, Utility and Flip64 actions and connect them as shown.

## Configuring the Receive Action

The Nielsen Watermarking Filter requires a media duration value to perform its task. Follow these steps to extract the duration of the submitted media and pass it to the Flip action:

1. Open the [Receive action inspector](#) and check *Original* from the Media Files menu to ingest a media file and assign it the nickname *Original*.
2. Save the Receive action.

## Configuring the Analyze Action

The Nielsen Watermarking Filter requires a media duration value to perform its task. Follow these steps to extract the duration of the submitted media and pass it to the IPTV Flip action:

1. Open the Analyze action [inspector](#).
2. In the Input Media File Nickname menu, select *Original*.
3. Click the Plus button in the Analysis panel and add a Duration tool.
4. In the Duration panel on the right, check the Content Duration in Seconds control and select a suitably-named integer variable (*Duration*, for instance). This variable is passed to the IPTV Flip action and the value applied to the [TIC](#) duration in the Nielsen Watermarking Filter.
5. Click Save to update the action and close the inspector.

## Configuring the First Utility Action

Here, you'll configure the first Utility action.

1. Open the Utility action [inspector](#) and select *Create Linear Reservation* operation.

---

**Note:** If these operations are not selectable, check your License in the Vantage Management Console (VMC). Your license should include the Telestream Cloud Watermark Reservations policy.

---

2. Select the Telestream Cloud account that you are using for this workflow.
3. Here, you'll specify the Watermark name ([Nielsen Pre-Rendering Watermarking Requirements](#)) for the start time you are reserving for this job or bind the appropriate variable, both for requested Timestamp and Requested Duration variables. For details on providing both of these values dynamically, see [Providing Runtime Values to Workflows](#). Here are control details:

### Configuration Parameters

**Watermark Name:** The watermark name.

**Requested Timestamp:** The Requested Timestamp is the time that the show will air. It represents the beginning of the TIC range and must not be in the past—it must be later than the time when the action runs. And, it must be unique for the specified watermark.

The Requested Timestamp must follow this syntax: `yyyy-MM-ddTHH:mm:ss`.

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**Note:** T is a constant; it indicates that the hour value is based on a 24-hour clock. For example, 19:00:00 means 7 pm.

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**Requested Duration:** The duration value is the length of the requested reservation, so if a show starts at 1 pm and is an hour long, the SID Reservation System reserves 1 hour starting at 1 pm, for example. Bind the Duration variable from the Analyze action to the Requested Duration.

### Generate Variables

All of these variables can be used in the watermarking filter by binding its controls to the variables you specify here:

**CSID Variable:** Optional, specifies [CBET](#) SID value as returned by the watermarking service.

**CSID Check Digits Variable:** When [CSID](#) specified, specifies CBET SID check digit value as returned by the watermarking service.

**SID Variable:** Required; specifies the SID value as returned by the watermarking service.

**SID Check Digits Variable:** Specifies SID check digit value as returned by the watermarking service.

**Timestamp:** Specifies beginning of TIC watermark range as returned by the watermarking service.

**Reservation Token:** Specifies the unique reservation token assigned by the watermarking service.

## Configuring the IPTV Flip Action and Nielsen Pre-rendering Watermarking Filter

Here, you'll configure the IPTV Flip action and the Nielsen Pre-Rendering Watermarking Filter for prototype purposes.

---

**Note:** Only tasks directly related to filter configuration are included; you should complete the IPTV Flip configuration with an output component to suit your media transcoding requirements before testing your workflow.

---

1. Open the IPTV Flip action [inspector](#) and add an Auto input to ingest the *Original* media.
2. Add an AAC Transcoder output and configure it—provide a nickname.
3. To add the Nielsen Pre-rendering Watermarking Filter, select the AAC transcoder component.
4. In the Transcoder configuration panel on the right, check the Nielsen Pre-Rendering Watermarking Filter to enable it.
5. Enter all parameter settings as they apply to your desired workflow:

### Configuring the Pre-Encode Application Settings

**Workflow Type.** Specifies the type of watermarking to apply. Pre-Encode is the only option.

**Nielsen Param Type.** This value can not be changed. The default selection is Nielsen Watermark Engine.

**Process Type.** Choose N2 and NW (default) | CBET | N2, NW, and CBET. Specifies the Nielsen technology, including the frequency spectrum, utilized when inserting watermarks.

**Distribution Type.** Specifies watermarking level. Options are Program-content codes (default) | Final-distributor codes.

**Insertion Type.** This value can not be changed. The default selection is Watermark Insert.

**CBET EAS Off.** When enabled, CBET watermarking engine will not encode Emergency Alert System (EAS) alerts. Disabled by default.

**CBET Step Aside.** When enabled, will NOT overwrite previous encoding on the same layer. Disabled by default.

**Metadata Fields.** Optional, free-form strings. Specifies the value of each metadata item. OEM Application Name should be *Vantage*, and OEM Application Version should be the version of Vantage you are using.

**Decode and Signature.** Select to generate signature files (DNA, PAS or both, depending on settings and content). Log files and decode files are also generated. These files are written to the specified Metadata/Logging Output Directory.

**Metadata/Logging Output Directory.** Select File Nickname | File Name:

- **File nickname:** Use when you want to use a Deploy action to deliver the file to the Nielsen TIC Collection Facility via a Deploy action, for example. Select a File nickname for a metadata attachment file. Vantage creates a ZIP file containing metadata, log, and signature output files to a Vantage store (from the perspective of the Vantage domain server). The File nickname specifies the nickname to assign the ZIP file created as an attachment to the binder. Downstream file operation actions can access and operate on the file based on this nickname.
- **File path:** Enter or browse to select the directory path—usually a share—which is required if you have a distributed (multi-server) domain. Vantage requires write permission for this directory. The filter generates individual files if you select File path.

The resulting ZIP file can be delivered to the Nielsen TIC Collection Facility via SFTP using the Nielsen File Transfer Manager program, your own custom or commercial file transfer program, or utilizing a Vantage workflow to automate delivery directly in the context of the job.

## Encoding Time

**Broadcast UTC Date/Time.** UTC Date/Time in yyyy-MM-ddTHH:mm:ss format. For example, 2020-06-15T19:45:22.

## Is Broadcast Time Zone Different from Processing Time Zone

When enabled, allows specification of positive or negative timecode offset. This feature is used when the time zone for broadcast is different than the time zone where the file was processed. For example, if a file is intended for broadcast in New York (UTC -4) but was processed in San Francisco (UTC -7), a +3 hour value must be applied. Disabled by default.

**Daylight Savings in Effect in Broadcast Location.** When enabled, specifies that seasonal Daylight Savings time is in effect at the Broadcast location. Disabled by default.

## Check Digit Parameters

**SID.** Nielsen assigns one or more SIDs to each content provider or distribution source. The SID uniquely identifies the content provider / distribution source and is included as a component of each watermark. Default value is 0.

**SID Check digit.** Corresponds to the SID. If the check digit string does not match the SID, the authenticator does not permit watermarking with the SID.

**CBET ID.** Optional - unique Nielsen CBET source ID.

**CBET Check Digit.** Corresponds to the CBET ID. If the check digit string does not match the CBET ID, the authenticator does not permit watermarking with the CBET ID.

## Configuring the Second Cloud Utility Action

Follow these steps to configure the Utility action to perform on Failure and delete the reservation, in case the Flip64 watermarking operation fails:

1. Right-click on the action and select Perform On > Failure.
2. Open the [inspector](#) and select Release Linear Reservation, so that the time slot can be re-used when you re-run the job.
3. Select the job reservation variable that was defined in the first Utility action.
4. Click Save to update the action in the Vantage database.

## Testing Your Workflow

When you are done designing or editing a workflow in Workflow Designer and you want to test it or submit production jobs, select the workflow and click Activate.

When the workflow is activated, you can submit media to it, following these steps:

1. In Workflow Designer, select the workflow.
2. Click Submit Job.
3. In the Submit Job window, select the file system and click Next.
4. Browse the file system and select the media to process and click Next.
5. At the bottom left corner of the window, click the Variables button.
6. In the Variables window, for each variable you have used (bound to a control), select it and then enter the value for this job.
7. When you're done selecting all variables and providing them with values, click OK.
8. To submit the media you've selected along with all the variables, click Submit.

Monitor the job in the Job Status window and review your results when the job completes. If the workflow fails or the media is not properly watermarked, determine the problem and retry.

To learn about each of the methods you can use to submit jobs, see [Providing Runtime Values to Workflows](#).



# Multiscreen Flip Id3 Filter Watermarking Workflow

## Nielsen Watermarking Job Submission


This prototype workflow begins with a [Receive action](#), to facilitate manual job submission for testing, which is described at the end of the workflow topic. However, a Receive action may not meet your production workflow requirements. Nielsen watermarking workflows require many input values supplied by variables, complicating job submission. For details about submitting jobs and implementing the appropriate [origin action](#) for your requirements, see [Providing Runtime Values to Workflows](#).

## Multiscreen Flip Id3 Watermarking Filter Workflow

The [Multiscreen Flip](#) action implements the Nielsen Id3 Filter. The Nielsen Id3 Filter processes files with pre-existing watermarks and converts them to ID3 metadata tags in the AAC audio of adaptive bit rate Apple HLS output files, for use by ABR players which support reading Nielsen metadata.

The Nielsen Id3 Filter does not utilize a [SID/TIC Server](#).

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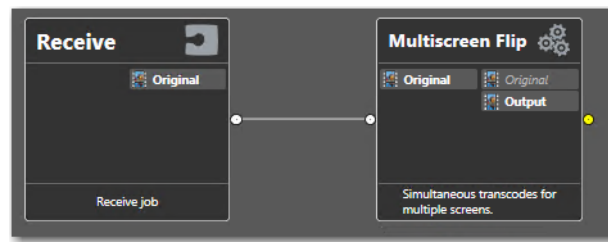
**Note:** Each action in [Workflow Designer](#) supports context-sensitive help. Click the man page  button in the upper right corner of the [inspector](#) window to display the man page, which provides detailed information about the panel you are viewing.

---

This is a prototype, Multiscreen Flip Nielsen ID3 tag workflow you can use to convert Nielsen watermarks to ID3 metadata tags in HLS media.

These two actions constitute the minimum workflow (the [Receive action](#) can be substituted by another [origin action](#) to ingest media) you can implement to watermark

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




This workflow includes these actions:

*Receive*—Enables you to manually select a media file and required variables directly in [Workflow Designer](#) to start each job. Any other [origin action](#) can be used ([Watch | Workorder action](#), etc.), based on your job submission requirements (see [Providing Runtime Values to Workflows](#)).

*Multiscreen Flip*—The Multiscreen Flip action transcodes the media into HLS as specified and converts the Nielsen watermarks into ID3 metadata tags using the Nielsen Id3 filter.

---

**Note:** Each action in [Workflow Designer](#) supports context-sensitive help. Click the man page  button in the upper right corner of the [inspector](#) window to display the man page, which provides detailed information about the panel you are viewing.

---

## Creating the Workflow

Follow these steps to create this workflow:

1. In [Workflow Designer](#), create a new workflow with the name of your choice.
2. Add the Receive and Multiscreen Flip action and connect them as shown.
3. Open the [Receive action](#) and configure it to ingest a file with the nickname *Original*.

## Configuring the Multiscreen Flip Action and Nielsen Id3 Filter

Here, you'll configure the Multiscreen Flip action and the Nielsen Id3 Filter for prototype purposes.

---

**Note:** Only tasks directly related to filter configuration are included; you should complete the IPTV Flip configuration with an output component to suit your media transcoding requirements before testing your workflow.

---

1. Open the Multiscreen Flip action [inspector](#) and add an Auto input to ingest the *Original* media.



2. In the Transcoder panel, add an x265 video transcoder and configure it.
3. Add an AAC audio transcoder and configure it.
4. Enable the Nielsen Id3 Filter—select the AAC transcoder and in the Audio configuration panel on the right, enable the Nielsen Id3 Filter.
5. Configure these controls and then click Save to update the action and close the inspector:

**Watermark Channel.** Specifies the audio channel of the incoming media to examine for Nielsen watermarks.

**Device ID.** Free-form metadata; identifies the program that performed this conversion, or the identity (serial number, domain name or other practical identifying information) of the device/platform/computer that is hosting the conversion process. Example: Vantage, OR NYCStudio\_Jupiter\_17.

**Audio Codec.** Free-form metadata; the name of the audio codec used to perform the conversion. For example, Multiscreen\_Flip\_AAC.

**Distributor ID.** Free-form metadata; the DNS of the MVPD/CDN distributor you are delivering this media to. For example: `www.neptunemusic.com`.

## Testing Your Workflow

When you are done designing or editing a workflow in [Workflow Designer](#) and you want to test it or submit production jobs, select the workflow and click Activate.

When the workflow is activated, you can submit media to it, following these steps:

1. In Workflow Designer, select the workflow.
2. Click Submit Job.
3. In the Submit Job window, select the file system and click Next.
4. Browse the file system and select the media to process and click Next.
5. At the bottom left corner of the window, click the Variables button.
6. In the Variables window, for each variable you have used (bound to a control), select it and then enter the value for this job.
7. When you're done selecting all variables and providing them with values, click OK.
8. To submit the media you've selected along with all the variables, click Submit.

Monitor the job in the Job Status window and review your results when the job completes. If the workflow fails or the media is not properly watermarked, determine the problem and retry.

To learn about each of the methods you can use to submit jobs, see [Providing Runtime Values to Workflows](#).



# Flip Watermarking Workflows


This chapter describes how to create and configure a prototype [Flip](#) action workflow using the Nielsen Watermarking Filter to add watermarks to the media being transcoded by the Flip action. The Nielsen Watermarking Filter is the original Nielsen watermarking filter in Vantage. The Nielsen Watermarking Filter is provided in all output formats supported by the Flip action.

Nielsen watermarks are added to the audio stream as the Flip action transcodes the media into a new file, and generates metadata, log, and signature output files for each job. These files can be reviewed by you and separately packaged for delivery to the Nielsen TIC Collection Facility.

In the Flip action, the Nielsen Watermarking Filter implements non-linear [NW](#) | [N2](#) watermarking for both VOD program content and commercial content, and requires a [SID/TIC Server](#). See [Utilizing Nielsen SID/TIC Servers](#) for version details.

This chapter provides prototype workflows for each application type: Program and Commercial. The filter's interface is specific to the Flip action, and the interface may vary from other transcode actions.

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**Note:** Each action in [Workflow Designer](#) supports context-sensitive help. Click the man page  button in the upper right corner of the [inspector](#) window to display the man page, which provides detailed information about the panel you are viewing.

---

## Topics

- [Nielsen Watermarking Job Submission](#)
- [Basic Workflow Layout](#)
- [Nielsen Watermarking Filter Program Content Workflow](#)
- [Nielsen Watermarking Filter Commercial Content Workflow](#)

## Nielsen Watermarking Job Submission

Each of these prototype workflows begin with a [Receive action](#), to facilitate manual job submission for testing, which is described at the end of each workflow topic. However, a Receive action may not meet your production workflow requirements. Nielsen watermarking workflows require many input values supplied by variables, complicating job submission. For details about submitting jobs and implementing the appropriate [origin action](#) for your requirements, see [Providing Runtime Values to Workflows](#).

## Basic Workflow Layout

This is the minimum Flip action workflow required to watermark program or commercial content:



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

This prototype workflow includes these actions:

*Receive*—Enables you to manually select a media file and the required variables directly in [Workflow Designer](#) to start each job. Any other [origin action](#) can be used ([Watch](#) | [Workorder action](#), etc.), based on your job submission requirements (see [Providing Runtime Values to Workflows](#)).

*Analyze*—The Analyze action is used to determine the duration of the source file. You may also provide the workflow a duration variable calculated externally (or in a separate workflow), eliminating the need for an Analyze action in this workflow.

*Flip*—The Flip action transcodes media and uses the Nielsen Watermarking Filter to apply Nielsen watermarking in the process.

# Nielsen Watermarking Filter Program Content Workflow

Follow these steps to create this prototype workflow:

1. In [Workflow Designer](#), create a new workflow with the name of your choice.
2. Add the Receive, Analyze, and Flip actions and connect them as shown above.

## Configuring the Receive Action

1. Open the [Receive action inspector](#) and check *Original* from the Media Files menu to ingest a media file and assign it the nickname *Original*.
2. Click Save to update the Receive action and close the inspector.

## Configuring the Analyze Action

The Nielsen Watermarking Filter requires a media duration value to perform its task. Follow these steps to extract the duration of the submitted media and pass it to the Flip action:

1. Open the Analyze action [inspector](#).
2. In the Input Media File Nickname menu, select *Original*.
3. Click the Plus button in the Analysis panel and add a Duration tool.
4. In the Duration panel on the right, check the Content Duration in Seconds control and select a suitably named integer variable (*Duration*, for instance). This variable is passed to the IPTV Flip action and the value applied to the [TIC](#) duration in the Nielsen Watermarking Filter.
5. Click Save to update the action and close the inspector.

## Configuring the Flip Action

Here, you'll configure the Flip action for prototype purposes.

1. Open the Flip action [inspector](#) and configure these controls:
  - a. **Encoder.** Select a transcoder. For example, *MP4 Encoder*.
  - b. **Input Media File Nickname.** Select *Original*.
  - c. **Output Media File Nickname.** Select *Output* as the output file's nickname.

## Configuring the Nielsen Watermarking Filter

Now, you'll add the Nielsen Watermarking Filter to the Flip action and configure it:

1. Select the Audio Stream.
2. Select Nielsen Watermarking from the Audio Filters menu to add the filter to the audio stream.

3. Select the Nielsen Watermarking Filter to display its configuration panel below.
4. There are four categories, each in separate panels. For each category, specify the settings as they apply to your desired workflow.

## General

**Decode and Signature:** When selected, the transcoder decodes specific channels and Nielsen Watermarking generates signature files. You can bind this setting to a Boolean variable to enable or disable it dynamically, at run time. See the Channel Setting control, following.

**Metadata/Logging Output Directory:** Specify a fully-qualified directory (from the perspective of the Vantage domain server) where Vantage writes the metadata, log, and signature output files containing information about the transcode and the watermarked content. Enter or browse to select the directory path—usually a share—which is required, if you have a distributed (multi-server) domain. The Vantage Transcode Service requires write permission for this directory.

You can send the resulting metadata files to the Nielsen TIC Collection Facility using the Nielsen secure delivery application. Or, you can create a Vantage workflow to create a zip file and send it. See [Delivering Job Files to the Nielsen TIC Collection Facility](#).

## SID/TIC Server Connection

**SID/TIC Connection:** Specifies the Connect to [SID/TIC Server](#) operation. No other options are available.

**Watermark SID:** Nielsen assigns one or more SIDs to each content provider or distribution source. The SID uniquely identifies the distribution source and is included as a component of each watermark.

**Nielsen SID/TIC Server IP Address:** The IP address of the computer hosting the target SID/TIC server. In a Flip action Nielsen Watermarking Filter, you can specify IP address 255.255.255.255 to use the Discovery service to search the network for all SID/TIC servers. This is used when a site has more than one SID/TIC server, and the first SID/TIC server to respond is utilized. See [Utilizing Nielsen SID/TIC Servers](#) for configuration details.

**If Nielsen Server connection failure, sleep for:** Retry delay value (in milliseconds) for the connection to the SID/TIC server. If a connection attempt fails, Vantage waits the prescribed time until it attempts another connection. Upon failing a second time, the transcode action aborts.

**TIC Duration:** Manually enter or select the variable you created in the Analysis action to provide the audio duration in seconds as an integer. This provides the duration of the source media file. The SID/TIC server uses the duration to allocate the proper range of TICs.

## Channel Setting

**Channel Setting:** Select the type of audio you are watermarking.

**Legend:**

L = Left; R = Right; C = Center, S = surround (mono); Ls = Left Surround; Rs = Right Surround; Lc = Left Center; Rc = Right Center; Cs = Center Surround; Lr = Left Rear; Rr = Right Rear; LFE = Low Frequency Effects (handled by a sub-woofer or bass management systems)

- *Stereo*: Requires 2 channels—for example 1,2. If you are generating a signature file, channel 1 is used.
- *AC-3 5.1*: Requires either 5 or 6 channels (L, R, C, Ls, Rs) or (L, R, C, LFE, Ls, Rs). When selected, down mixed left and center channels will be decoded if applied.
- *Quad Stereo*: Requires 8 channels. When selected, left channel will be decoded if applied.
- *Other*: 1 to 8 channels required. The first channel is LEFT. When selected, the left channel will be decoded if applied.
- *All*: 1 to 8 channels (first channel is LEFT). When selected, all audio channels will be decoded if applied.

## Workflow Type

**Workflow Type:** Choose Program Content to apply watermarking to a program.

**Nielsen Param Type | Nielsen Timecode Type | Content Type.** Not user configurable.

**Process Type:** [N2](#) | [NW](#) | Both. Specifies the Nielsen technology, including the frequency spectrum, utilized when inserting watermarks:

- N2—Nielsen Audio Encoder System II (also known as NAES2) SID (Nielsen source identifier) and time stamp.
- NW—Nielsen Watermarks audio watermarking.
- Both—Encodes both N2 and NW watermarks in the audio stream.

**DsrcId:** Distribution Source ID.

**DsrcName:** Distribution Source Name.

**AssetId:** The asset ID to be reported in the metadata file for the clip that is being encoded.

**AssetName:** The asset name reported in the metadata file for the clip that is being encoded.

**EpisodeId:** The optional episode ID written to the feed-point metadata file.

**HDContent:** True or False; True if and only if content is high definition.

**ApplicationName:** Enter *Vantage*. This parameter is written to the metadata file for the clip that is being encoded.

**ApplicationVersion:** Enter the Vantage version currently installed. This parameter is written to the metadata file for the clip that is being encoded.

Now that you're done configuring the Flip action and the filter, click Save to update it in the Vantage database.

## Testing Your Workflow

When you are done designing or editing a workflow in Workflow Designer and you want to test it or submit production jobs, select the workflow and click Activate.

When the workflow is activated, you can submit media to it, following these steps:

1. In Workflow Designer, select the workflow.
2. Click Submit Job.
3. In the Submit Job window, select the file system and click Next.
4. Browse the file system and select the media to process and click Next.
5. At the bottom left corner of the window, click the Variables button.
6. In the Variables window, for each variable you have used (bound to a control), select it and then enter the value for this job.
7. When you're done selecting all variables and providing them with values, click OK.
8. To submit the media you've selected along with all the variables, click Submit.

Monitor the job in the Job Status window and review your results when the job completes. If the workflow fails or the media is not properly watermarked, determine the problem and retry.

To learn about each of the methods you can use to submit jobs, see [Providing Runtime Values to Workflows](#).



# Nielsen Watermarking Filter Commercial Content Workflow

Follow these steps to create this prototype workflow:

1. In [Workflow Designer](#), create a new workflow with the name of your choice.
2. Add the Receive, Analyze, and Flip actions and connect them as shown above.

## Configuring the Receive Action

1. Open the [Receive action inspector](#) and check *Original* from the Media Files menu to ingest a media file and assign it the nickname *Original*.
2. Click Save to update the Receive action and close the inspector.

## Configuring the Analyze Action

The Nielsen Watermarking Filter requires a media duration value to perform its task. Follow these steps to extract the duration of the submitted media and pass it to the Flip action:

1. Open the Analyze action [inspector](#).
2. In the Input Media File Nickname menu, select *Original*.
3. Click the Plus button in the Analysis panel and add a Duration tool.
4. In the Duration panel on the right, check the Content Duration in Seconds control and select a suitably named integer variable (*Duration*, for instance). This variable is passed to the IPTV Flip action and the value applied to the TIC Duration in the Nielsen Watermarking Filter.
5. Click Save to update the action and close the inspector.

## Configuring the Flip Action

Here, you'll configure the Flip action for prototype purposes.

1. Open the Flip action [inspector](#) and configure these controls:
  - a. **Encoder.** Select a transcoder. For example, *MP4 Encoder*.
  - b. **Input Media File Nickname.** Select *Original*.
  - c. **Output Media File Nickname.** Select *Output* as the output file's nickname.

## Configuring the Nielsen Watermarking Filter

Now, you'll add the Nielsen Watermarking Filter to the Flip action and configure it:

1. Select the Audio Stream.
2. Select Nielsen Watermarking from the Audio Filters menu to add the filter to the audio stream.

6. Select the Nielsen Watermarking Filter to display its configuration panel below:
7. There are four categories, each in separate panels. For each category, specify the settings as they apply to your desired workflow.

## General

**Decode and Signature:** When selected, the transcoder decodes specific channels and Nielsen Watermarking generates signature files. You can bind this setting to a Boolean variable to enable or disable it dynamically, at run time. See the Channel Setting control, following.

**Metadata/Logging Output Directory:** Specify a fully-qualified directory (from the perspective of the Vantage domain server) where Vantage writes the metadata, log, and signature output files containing information about the transcode and the watermarked content. Enter or browse to select the directory path—usually a share—which is required, if you have a distributed (multi-server) domain. The Vantage Transcode Service requires write permission for this directory.

You can send the resulting metadata files to the Nielsen TIC Collection Facility using the Nielsen secure delivery application. Or, you can create a Vantage workflow to create a zip file and send it. See [Delivering Job Files to the Nielsen TIC Collection Facility](#).

## SID/TIC Connection

**SID/TIC Connection:** Specifies the Connect to SID/TIC Server operation. No other options are available.

**Watermark SID:** Nielsen assigns one or more SIDs to each content provider or distribution source. The SID uniquely identifies the distribution source and is included as a component of each watermark.

**Nielsen SID/TIC Server IP Address:** The IP address of the computer hosting the target SID/TIC server. In a Flip action Nielsen Watermarking Filter, you can specify IP address 255.255.255.255 to use the Discovery service to search the network for all SID/TIC servers. This is used when a site has more than one SID/TIC server, and the first SID/TIC server to respond is utilized. See [Utilizing Nielsen SID/TIC Servers](#) for configuration details.

**If Nielsen Server connection failure, sleep for:** Retry delay value (in milliseconds) for the connection to the SID/TIC server. If a connection attempt fails, Vantage waits the prescribed time until it attempts another connection. Upon failing a second time, the transcode action aborts.

**TIC Duration:** Manually enter or select the variable you created in the Analysis action to provide the audio duration in seconds as an integer. This provides the duration of the source media file. The SID/TIC server uses the duration to allocate the proper range of TICs.

## Channel Setting

**Channel Setting:** Select the type of audio you are watermarking.

**Legend:**

L = Left; R = Right; C = Center, S = surround (mono); Ls = Left Surround; Rs = Right Surround; Lc = Left Center; Rc = Right Center; Cs = Center Surround; Lr = Left Rear; Rr = Right Rear; LFE = Low Frequency Effects (handled by a sub-woofer or bass management systems)

- *Stereo*: Requires 2 channels—for example 1,2. If you are generating a signature file, channel 1 is used.
- *AC-3 5.1*: Requires either 5 or 6 channels (L, R, C, Ls, Rs) or (L, R, C, LFE, Ls, Rs). When selected, down mixed left and center channels will be decoded if applied.
- *Quad Stereo*: Requires 8 channels. When selected, left channel will be decoded if applied.'
- *Other*: 1 to 8 channels required. The first channel is LEFT. When selected, the left channel will be decoded if applied.
- *All*: 1 to 8 channels (first channel is LEFT). When selected, all audio channels will be decoded if applied.

## Workflow Type

**Workflow Type:** Choose Commercial Content to apply watermarking to commercial/ad content.

**Nielsen Param Type | Nielsen Timecode Type | Content Type.** Not user configurable.

**Process Type:** Nielsen Watermark Commercial Code (NWCC), N2HF, or Both. Specifies the Nielsen technology, including the frequency spectrum, utilized when inserting watermarks.

**Distribution Type.** Not user configurable.

**AdvertiserName:** Advertiser's Name to be reported in the metadata file.

**AdvertiserID:** Advertiser ID to be reported in the metadata file.

**AgencyName:** Ad Agency Name to be reported in the metadata file.

**AgencyId:** Ad Agency ID to be reported in the metadata file.

**AssetId:** Asset ID to be reported in the metadata file.

**BrandName:** Brand Name of the advertised item to be reported in the metadata file.

**BrandId:** Brand ID to be reported in the metadata file.

**ClientMediaName:** Client Media Name to be reported in the metadata file.

**ClientId:** Client ID to be reported in the metadata file.

**CommercialDistributor:** Commercial Distributor of the advertised item to be reported in the metadata file.

**CommercialType:** Commercial Type to be reported in the metadata file.

**Duration:** Duration (in seconds) of the source media file. The duration can be extracted and assign to a variable by using an upstream Analysis action (see [Configuring the Analyze Action](#)).

**IntendedUse:** The Intended Use to be reported in the metadata file.

**LanguageTypePrimary:** The Primary Language to be reported in the metadata file.

**LanguageTypeSecondary:** The Secondary Language to be reported in the metadata file.

Now that you're done configuring the Flip action and the filter, click Save to update it in the Vantage database.

## Testing Your Workflow

When you are done designing or editing a workflow in Workflow Designer and you want to test it or submit production jobs, select the workflow and click Activate.

When the workflow is activated, you can submit media to it, following these steps:

1. In Workflow Designer, select the workflow.
2. Click Submit Job.
3. In the Submit Job window, select the file system and click Next.
4. Browse the file system and select the media to process and click Next.
5. At the bottom left corner of the window, click the Variables button.
6. In the Variables window, for each variable you have used (bound to a control), select it and then enter the value for this job.
7. When you're done selecting all variables and providing them with values, click OK.
8. To submit the media you've selected along with all the variables, click Submit.

Monitor the job in the Job Status window and review your results when the job completes. If the workflow fails or the media is not properly watermarked, determine the problem and retry.

To learn about each of the methods you can use to submit jobs, see [Providing Runtime Values to Workflows](#).

# Glossary

## **CBET**

Nielsen Critical Band Encoding Technology (CBET) codes, which broadcasters can embed into audio, allowing measurement devices to passively detect each participant's exposure to encoded content.

## **CSID**

CBET Source Identifier (CSID) is a 20-bit value that identifies the content provider or distribution source.

## **C3 | C7**

The terms *C3* and *C7* refer to codes in media played during the *C3* and *C7* rating windows for time of broadcast after the initial airing.

## **Cloud Port mode**

*Cloud Port mode* is an execution option that you can enable in Cloud-capable Vantage actions to enable processing in Telestream Cloud (enabled by configuring your Vantage domain with a valid Telestream Cloud account). When supported actions execute in the Cloud Port mode, they are executed by the Telestream Cloud Service.

## **ComponentPac**

Vantage *ComponentPacs* are version-controlled Vantage components, such as an updated Capture action. ComponentPac versions are managed using Telestream's Secure Version Control. For details, see the [Secured Version Control application note](#) on the Telestream web site.

Secured Version Control provides the ability to update Vantage—and create or update workflows that utilize new versions of actions—while keeping existing workflows untouched and operating using existing versions of actions. When you want to upgrade an action in a workflow, you can do so at a convenient time.

## **Deploy action**

The *Deploy action* is executed by the Vantage Transport Service, and is used to deliver the specified file(s) to a destination outside the Vantage domain. Unlike Delete, Move, or Copy actions, Deploy actions allow multiple files to be operated on

simultaneously, and do not maintain a reference to those files in the job binder in your Vantage domain after completion.

### **Flip | Flip action**

A *Flip action* is executed by the Vantage Transcode Service, and implements the specified codec, which is used to transcode decoded digital baseband media into another media encoding format. The Telestream Media Transcode and Analysis Engine performs the transcode on behalf of Vantage. The Flip action has an Export command, which allows you to save the configured Flip action as an XML file, for use in Vantage SDK applications.

### **Flip64 | Flip64 action**

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

### **inspector**

An *inspector* is a series of wizard-style panels in Vantage Workflow Designer that facilitate action setup and configuration. Inspectors are unique to each action—for example, configuring a Watch action is very different than configuring a Flip action—it requires different controls and control organization.

### **IPTV Flip | IPTV Flip action**

The *IPTV Flip action* is included with the Cable / IPTV version of TrafficManager. IPTV Flip actions are Cloud Port capable, and are executed by the Vantage IPTV VOD Transcode service except when operating in Cloud Port mode, when the Telestream Cloud service executes it as a proxy for Telestream Cloud. IPTV Flip can optionally run on a Lightspeed Server for GPU-enhanced x264/x265 encoding and video processing. The IPTV Flip action and IPTV VOD Service 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. This action is Open Workflow capable except when executing in Cloud Port mode.

### **N2**

The term *N2* refers to the Nielsen Audio Encoder System (NAES) II watermark algorithm, which inserts N2 codes in the audio stream during watermarking.

### **NW**

The term *NW* (synonymous with N6) refers to the Nielsen Audio Encoder System (NAES) IV watermark algorithm, which inserts N6 codes in the audio stream during watermarking.

## Multiscreen Flip | Multiscreen Flip action

The *Multiscreen Flip action* is an optional, licensed feature. Multiscreen Flip actions are Cloud Port actions; executed by the Vantage Multiscreen Service in Vantage or by the Telestream Cloud Service, operating as a proxy, when executed in Telestream Cloud. The Multiscreen Service performs adaptive bit-rate encoding and simultaneous packaging of decoded digital baseband media into multiple bit-rate variants of H.264/HEVC video and containers in adaptive rate streaming formats, including Adobe HDS, Apple HLS, Microsoft HSS, and players the support MPEG DASH. You can configure the Multiscreen action to perform transcoding on a standard Vantage server or on a Lightspeed Server. This action is Open Workflow capable except when executing in [Cloud Port mode](#).

### origin action

An origin action is a specific type of action, which must be used to start a workflow. A workflow without an [origin action](#) as its first action is not properly designed, and cannot be activated. The [origin actions](#) include the Capture action, [Watch action](#), [Workorder action](#), and [Receive action](#), as well as the Catch action and Dublist actions (optional TrafficManager actions).

### Receive action

The *Receive action* is an [origin action](#) which is implemented in every Vantage service. Receive actions are designed to receive files from other systems: workflows, SDK-based applications, and Workflow Portal, for example. Files can also be automatically submitted to a workflow starting with a Receive action from another workflow using the Forward action.

### RT VOD

*RT VOD—Recently Televised Video On Demand*—identifies previously-watermarked linear media watermarked with C3 | C7 codes to produce VOD content aired during the C3 | C7 air-time window.

### SID

A SID (Source ID) is 16-bit value that uniquely identifies the content provider or distribution source within the watermark. Two fixed SID values are reserved to represent the C3 (32755) and C7 (32756) rating windows.

### SID/TIC Server

A Nielsen SID/TIC server is a Windows program that allocates TIC values for a given SID for use in your Program and Commercial content. It is not utilized for linear workflows.

One or more SID/TIC servers may be installed in an environment. SID/TIC servers are customer-installed in conjunction with Nielsen and provided WRR files and authentication credentials. SID/TIC servers are accessed by the Nielsen watermarking filter executing in Vantage to obtain unique SID/TIC values for watermarking.

## TIC

A TIC (Time in Content) is a 32-bit value representing the time stamp of the watermark within the content. For linear content—live TV broadcast, when the Nielsen watermark timestamp matches the time of live broadcast—this is the standard Unix time (for example, seconds since 00:00 01 -01 -1970 UTC). For non-linear content, this is a value (or range of values) uniquely assigned to the content, by the SID/TIC server.

## Watch | Watch action

A *Watch action* is an [origin action](#); it uses the Vantage Monitor Service to regularly poll a target location (a directory, for example) on a device or file system (FTP, Windows network folder, etc.) to discover new files. This action is Open Workflow capable.

When a new file is discovered, the Watch action submits a job for the workflow which it is part of, for processing the file—typically, a media file.

## Workflow Designer

*Vantage Workflow Designer* is a client program that enables you to create and edit workflows, activate and deactivate workflows, monitor job status, and review and delete jobs that have completed.

## Workflow Portal

*Workflow Portal* is a client program that features a customizable set of functionality to support various operator-related tasks: selecting media and submitting jobs, updating variables and metadata, forwarding jobs, creating EDL-based jobs, etc.

Customization is implemented in the Vantage Management Console, when Vantage administrators construct the user interface and functionality they want for a given task, then save it. When operators launch Workflow Portal, they select the configuration appropriate to the task at hand, and Workflow Portal dynamically displays the user interface components specified in the configuration file.

## Workorder action

A *Workorder action* is an [origin action](#); it uses the Vantage Monitor Service to regularly poll a target Windows directory for new [workorder files](#) to process. The Workorder action provides a simple and highly effective method of submitting multiple similar jobs without using the SDK.

When a new file is discovered, the Workorder action submits one job for each row in the file.

## workorder file

A *workorder file* is a comma-separated value (CSV) text file containing one or more work orders, or job descriptions. Each row in the CSV file specifies a job, and each column specifies either an input file for the job, or value for run-time use; typically assigned to a variable in the workflow. Workorder file configurations are specified in the Domain Management Console. At least one workorder scheme must be created in order to use a Workorder action.