

Vantage Open Workflows

Accelerate workflows by beginning actions before others complete

The **Open Workflows** option provides a new way to gain greater processing efficiency and speed from Vantage workflows. Using Open Workflows can significantly speed up Vantage workflows—on the same hardware—due to concurrent processing

Introduction

Vantage Open Workflows enhance the processing speed of Vantage workflows by enabling many Actions to begin processing before the previous Action has completed. Specifically, Open Workflows are designed to remove the inherent latency that exists between actions within a Vantage workflow. For example, during a Watch Action, a Copy Action can begin to localize the content as it is received and not wait for the entire file to be received.

By reducing the latency between actions within a workflow, more jobs can be submitted to the domain in the same period of time, thus providing greater utilization of Vantage nodes.

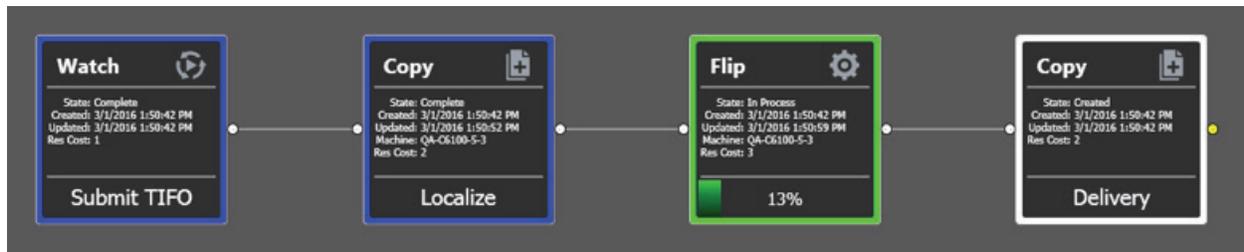
Features and Benefits:

- Reduce the time it takes to make content available to your customers.

Open Workflows are a must when getting content on-air as fast as possible. By eliminating the latency between Actions, Open Workflows enable News, Sports and other time-sensitive media workflows to make content available to your customers faster.

- Process more workflow jobs in a domain with existing resources.

With Open Workflows reducing the elapsed time of the job, more workflows can be submitted to the same Vantage domain. This provides a better utilization of existing resources, since more workflows can be completed with the same server hardware.



Workflow without Open Workflows

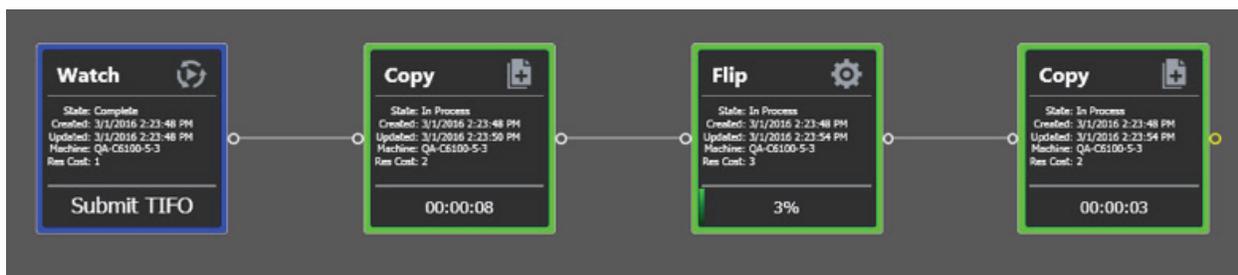
Open Workflow Processing

The current processing of Actions within Vantage is characterized as closed, meaning that each Action cannot begin processing until the previous Action has completed. A closed workflow enables the user to systematically control the processing flow, especially when utilizing Service Limits and when explicit control over Vantage nodes is desired. In the diagram above, the blue Actions have completed and the Flip64 Action has begun working, and the subsequent Copy Action is waiting for the Flip64 Action to complete. With Open Workflows, certain actions may begin to operate concurrently, removing the inherent latency associated with the discrete steps of a traditional closed workflow.

In Open Workflows, many Actions are able to be performed while the previous and subsequent Actions are also being executed. In the above example, just by enabling Open Workflows, the Job Status now looks as shown below.

You can see that the Copy, Flip64 and the final Copy are all working at the same time. Once the media blocks have been written to disk in the first Copy, the Flip64 Action is able to read these media blocks and begin the transcode process.

Subsequently, when the Flip64 Action completes the processing and writes the resultant transcoded media blocks to disk, the final Copy Action moves them to the appropriate destination.



Workflow with Open Workflows

Supported Actions

Many Actions can execute in Open mode—but not all. Additionally, in some instances, the inbound processing to the Action can be Open but the outbound is closed, and vice versa. The following table summarizes the Actions that are supported by Open Workflows.

Also, only file formats that are able to be read while being written (aka growing files) can be supported by Open Workflows. This is fundamentally controlled by both the file wrapper and the codec selected for transcoding operations.

Choosing an appropriate file wrapper will greatly enhance the speed of execution for an Open Workflow. The Telestream Intermediary Format (TIFO) is a good choice for file wrapping as it supports Open Workflows and all codecs. When capturing live content from a Telestream Lightspeed Live Capture, the media can be a TIFO wrapped file that can immediately be consumed by a Vantage Open Workflow—for extremely fast live content deployment.

If additional speed is desired, adding a Telestream Lightspeed Server will even further enhance the processing speed and thus reduce the time to produce media assets.

Open Workflows are ideally suited for Vantage workflows in which one action is creating a mezzanine file for the purpose of a second action creating a specific rendition. For example, Post Producer creating a high resolution mezzanine file followed by the Cable IPTV Flip being utilized to produce a vendor specific Transport Stream.

Applications for Open Workflows

Telestream developed Vantage Open Workflows in response to increased demand among news and sports broadcasters for OTT services to support multi-screen media distribution. The goal was to provide the news at the same lightning fast speed across a range of devices outside of traditional TV. Within a file-based workflow this presents a challenge since the core data file must be transcoded into several formats in order to be distributed across this broad and ever increasing range of mobile devices.

Open Workflows reduces processing time and empowers broadcasters to automatically access content as soon as it starts to enter the file-based workflow and before file ingest is completed. Consequently, the ability to deliver TV broadcasts and multiscreen content simultaneously becomes an achievable, cost-effective task.

For applications where speed is not the primary driver, Open Workflows can still bring significant benefits. The ability to orchestrate files and conversion actions sequentially while the initial data ingest is still happening increases efficiency in operations throughout a facility.

An important feature of Vantage Open Workflows is its ability to integrate seamlessly alongside third party systems, supporting existing file-based workflow operations. For example, many news broadcasters utilize Vantage as the primary ingest channel into their Avid newsroom system.

Service	Actions	Open Inbound	Open Outbound	Notes
Monitor	Watch only	N/A	Yes	Only the Windows file system plug-in can be used to monitor and submit a growing, open file
Live	Capture	No	Yes	TIFO and MXF Op1a
Transport	Copy	Yes	Yes	Input and output may be TIFO, Transport Stream or Program Stream files; only valid when targeting a Windows file system.
Transcode	Flip, Flip64	Yes	Yes	Only for supported file formats (see below)
Multiscreen	Multiscreen Flip	Yes	No	Only for supported file formats (see below)
IPTV	IPTV Flip	Yes	Yes	Only for supported file formats (see below)
Edit	Tempo, Conform	No	Yes	Only for supported file formats (see below)
Metadata	All Actions	Yes	No	Instantaneous, no media dependency
Common	Compute/Construct/Decide	Yes	Yes	Instantaneous, no media dependency, actions will not run until input variables are all available

Open File Formats:

- All actions that are open capable support open TIFO for inbound, outbound, or both depending on the action
- Open Transport Stream is only supported for IPTV Flip and Flip actions outbound
- Open Program Stream is only supported for Flip actions outbound
- Flip actions only support PCM audio for inbound
- Flip64 actions support inbound open MXF, and both inbound or outbound open TIFO.

Please note that in order for a transcode-type action to consume an input in open fashion, the decoder must be set to/configured for a format that supports open mode.



Summary

- Open Workflows produce lower latency workflows than non-open workflows
- Open Workflows allow you to begin delivering output before source media ingest or transcoding are complete, meaning you can deliver content faster
- Open Workflows yield better utilization of hardware resources
- Open Workflows can generate more content than non-open workflows when using the same hardware resources

Best in Class Customer Support

You can rest assured that our highly-skilled technical team will be available to provide the quick and comprehensive support and guidance you need to fully leverage the power of your Telestream product.

Technical Specifications

Notes on Speed Improvement

Open Workflow speed improvement is drive dependent. On slow disk subsystems or when employing external networking connections such as FTP, the speed improvement is greater. On very fast SAN or NAS systems, the speed improvement isn't quite as dramatic.

Note: in order to localize a file from a non-Windows file system in open fashion, the file must already be complete. For example, if you have the following workflow;

Watch (FTP) -> Copy (local Vantage store) -> Flip

In order for the Copy and Flip actions in the workflow above to run in open fashion, the source file on the FTP server must be a complete file and must be TIFO (since the Flip action only supports TIFO open inbound).

System Requirements

Licenses are required for Open Workflows and are enabled for an entire domain, or for individual nodes within a Vantage array. If Open Workflow licenses are acquired for specific nodes, then Workflow jobs that need to take advantage of Open Workflow processing can be submitted to these specific nodes.

Vantage:

Operating System: Windows Server 2016 (Standard or Data Center Edition)

Minimum Server: Dual, Six Core Processors - or better (a total of 12 cores or more is recommended), with 16 GB DDR Memory

Recommended Server: Telestream Lightspeed Server with GPU acceleration; High-Speed NAS or SAN storage recommended; GigE Ethernet adapter

SQL Database Dedicated Server:

Operating System: Windows Server 2016 (Standard or Data Center Edition)

Minimum Server: Four Core Processor - or better with 16 GB DDR required memory. 32 GB DDR is recommended for Domains with high job volume.

Database: SQL 2014 Standard or Enterprise, SQL 2016 Standard or Enterprise, SQL Express 2016

Client OSs: Windows 10 or Server 2016 (Standard or Data Center Edition)

¹SQL enterprise installation may require Professional Services, contact Telestream for details.

