



Vantage Cloud Port User Guide



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Contacting Telestream

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

Resource	Contact Information
Telestream Technical Support	Web Site: http://www.telestream.net/telestream-support
Telestream Cloud Support	Web Site: https://cloud.telestream.net Telephone: +1 (866) 233-3187 Email: cloudsupport@telestream.net
Vantage Technical Support	Web Site: http://www.telestream.net/telestream-support/vantage/support.htm Support Web Mail: http://www.telestream.net/telestream-support/vantage/contact-support.htm US Enterprise Product Support: (877) 257-6245 International Enterprise Support: +49 228 280 9141
Telestream, LLC	Web Site: www.telestream.net Sales and Marketing Email: info@telestream.net Telestream 848 Gold Flat Road Nevada City, CA. USA 95959
International Distributor Support	See www.telestream.net for your regional authorized Telestream distributor.
Telestream Technical Writers	Email: techwriter@telestream.net If you have comments or suggestions about this guide or other Telestream guides, please email us.

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Vantage Cloud Port Overview

This chapter presents an overview of Vantage Cloud Port—its features, components, and typical applications—to help you get started, and understand how you can use Vantage Cloud Port in your Vantage-based media processing systems.

Topics

- [Getting Started](#)
- [Typical Cloud Port Applications](#)
- [Understanding the Types of Vantage Workflows](#)
- [Extending a Vantage Domain to Telestream Cloud](#)
- [Vantage Cloud Port Workflow Pricing](#)
- [Monitoring Cloud Port Billing in Telestream Cloud](#)
- [Managing Telestream Cloud Accounts and Assets](#)
- [Canceling a Telestream Cloud Account](#)

Note: This guide is written for video professionals who are familiar with using Vantage and focuses on Vantage Cloud Port features in Vantage. All other aspects of Vantage configuration and use are covered in the other Vantage user guides.

If you aren't familiar with Vantage, we suggest that you read the [Vantage User Guide](#) and [Vantage Domain Management Guide](#).

Before using Cloud Port features, you should be familiar with:

- Designing and constructing workflows in Vantage Workflow Designer, including the role and use of variables and media nicknames in workflow.
- You should be familiar with decision making and branching workflow execution.
- Vantage Secured Version Control, which maintains version integrity for workflows. For details, see the [Using Vantage Secured Version Control](#) app note.

This guide focuses on creating and using Cloud Port workflows in Telestream Cloud. All other aspects of Vantage configuration and utilization are covered in the other Vantage guides.

Getting Started

Vantage Cloud Port expands the power of your Vantage domain to include Cloud services. Whether your domain is a single-node Vantage domain or a multi-node array, with Cloud Port, you have access to flexible, scalable media processing power in Telestream Cloud.

Topics

- [Overview](#)
- [Typical Cloud Port Applications](#)
- [Use Cases Not Well-suited for Cloud Port Workflows](#)

Overview

Vantage Cloud Port is a set of features that enables—and interfaces with—Vantage services that are hosted in Telestream Cloud—and executed by cloud-capable actions in Cloud Port workflows. These actions enable Vantage domains to leverage additional Cloud processing on demand. Whenever workload peaks or other requirements demand it, using Vantage Cloud Port to extend your domain to cloud-based media processing only requires a few changes to a Vantage domain and your workflows.

Here are the key features and benefits of Vantage Cloud Port:

- Works in new or upgraded Vantage domains for workflow creation and execution
- Deploys action execution to Telestream Cloud using containerized micro-services with functionality identical to the on premises edition of the services
- Enables seamless execution of Vantage workflows wherever needed. Cloud-capable actions can run on premises or in Telestream Cloud, and workflows can be designed to shift processing to the Cloud automatically when workload exceeds a threshold.
- Workflows can be deployed on premises or in Telestream Cloud
- Enables easy modification of existing workflows to run in Telestream Cloud
- Enables easy startup and scaling of additional cloud-based Vantage resources
- Provides additional cloud processing power on demand economically.

Typical Cloud Port Applications

Vantage Cloud Port workflows (hybrid and hosted) generally, are ideally suited for Vantage users who...

- Want to leverage new or existing on premises Vantage domains and workflows
- Need to respond quickly to rapid changes in demand for Vantage processing
- Want to save money and time by accessing Vantage software as a service (SaaS) instead of investing in additional on premises hardware to meet peak demand
- Want occasional access to specialized features without requiring a license
- Want the simplicity of cloud processing that “just works” whenever you need it.

Ideal Use Cases for Hosted Workflows

Hosted Workflows—workflows specifically designed for hosting and execution directly in Telestream Cloud, are ideally suited for Vantage users who...

- Have media located on cloud storage (Amazon S3, Google Cloud Storage, Azure BLOB storage). Maintaining files in the cloud typically is not a significant operational cost. Greater costs typically arise when you move files out of the cloud. Consider designing your workflows so as to minimize the number (or frequency) of files that are downloaded.
- Primarily want to submit cloud-resident media for cloud processing via a third party program or system via an API:
- Have materially variable workload—for example, on most days you typically transcode a few hundred files; but each Thursday, you typically transcode about 1500 files for weekend consumption.
- Require dynamic scalability: efficient, concurrent processing high volumes of jobs is critical to your operation.
- Value total throughput over total transcoding time per job. For example, you need to transcode about a thousand files as a batch (potentially concurrently), but it isn't important that it takes 15 minutes longer per file, for example.

Use Cases Not Well-suited for Cloud Port Workflows

It is equally important to understand the scenarios which may not be beneficial to migrating from a Vantage on-premises workflow to a Vantage Cloud Port hybrid or hosted workflows

Vantage Cloud Port workflows are not recommended for users who...

- Are processing on-premises repositories of extremely large or highly-dense media files. The time and cost of uploading these to cloud storage may be prohibitive or offset the potential savings of cloud processing.
- Are downloading high volumes of transcoded media back on-premises—Vantage Cloud Port workflows may not be ideal due to the egress costs/fees incurred.
- Require high throughput of individual jobs—that is, highest possible entire workflow execution speed and fastest turn-around time. Cloud Port workflows typically will not match the speed that is enjoyed by GPU acceleration on a Vantage Lightspeed server. If you are required to process a particular asset in a fixed amount of time, these workflows may not be the best option when compared to processing the asset in an on-premises Vantage domain hosted on Lightspeed servers.
- Workflows which require interaction/inter-operation with fixed assets may not be candidates for Telestream Cloud hosted workflows (for example, if a workflow integrates or is tightly coupled with an on-premises Watermarking service).
- Submitting jobs the way you typically submit jobs on-premises: work orders, hot-folder ingests of local, on-premises media, drag, drop, and forget jobs, and jobs submitted via Vantage TrafficManager or other Workflow Portal applications.

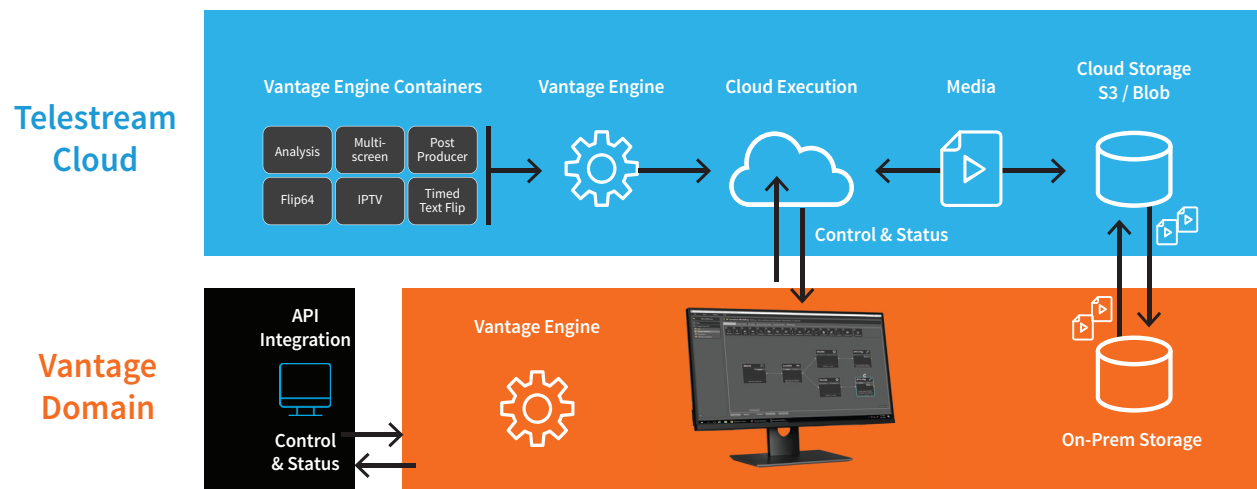
- Transcoding extremely large or 4K and higher format files which reside on premises—the cost of uploading the file to the cloud may be prohibitive.
- Delivering transcoded media back on premises—egress costs may be prohibitive.
- Individual job throughput—transcoding each job as quickly as possible is critical
- Have applications that require operator intervention. For example, paired workflows with an operator using Workflow Portal to view/trim/update metadata before submitting the media for final processing.

Understanding the Types of Vantage Workflows

Cloud Port expands the scope of a Vantage domain to include Telestream Cloud, and enables you to create two different types workflows—*hybrid workflows* and *hosted workflows*. All workflows, regardless of type, are designed in Workflow Designer. Some actions require a specific license.

Hybrid Workflows

Hybrid Workflows are workflows that are hosted directly in your on-premises Vantage domain and managed in Workflow Designer, but include one or more actions that can execute in Telestream Cloud at run time.



In addition to Vantage actions in hybrid workflows that only execute on premises, these workflows include cloud-capable actions, which may execute in Telestream Cloud when in Cloud Port mode. They may also include Cloud Flip | Cloud QC | Cloud Speech | Location actions, which only execute projects implemented in Telestream Cloud. For information on creating and using hybrid workflows, see [Creating Hybrid Workflows](#).

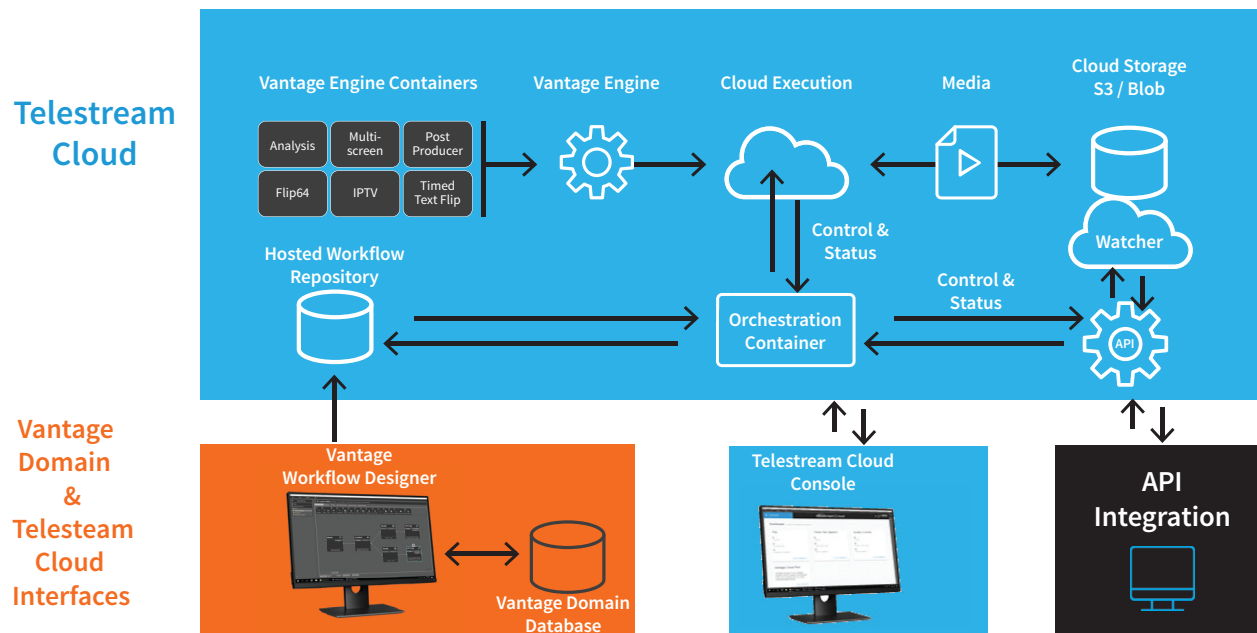
Hosted Workflows

Hosted Workflows are intended for hosting and execution directly in Telestream Cloud, without any dependencies on Vantage after the creation and configuration phase. Only certain media processing actions (see [Using Cloud-capable Media Processing Actions](#)) can be utilized in hosted workflows, and the execution of these actions is governed by your Vantage Cloud Port service contract and billing system.

Note: Before you can execute hosted workflows in Telestream Cloud, a Telestream Cloud account is required with active Cloud Port service, and a cloud storage account, registered for utilization in Telestream Cloud (See [Vantage Cloud Port Requirements](#)).

Vantage Cloud Port hosted workflows enable you to expand your on-premises Vantage solutions into intelligent, cloud-native media transformation engines. You design these powerful, automated workflows using Vantage Workflow Designer, and then export and deploy them to Telestream Cloud where they can be accessed and executed from anywhere in the world.

Decentralized access to your own cloud-based media processing applications with no single point of failure changes the game, expanding horizons for your media processing requirements.



Hosted workflows are exported to Telestream Cloud after they have been designed in Workflow Designer. Hosted workflows are a subset of hybrid workflows, where the supported set of utility actions supported is limited. See [Using Cloud-Capable General-Purpose Actions](#).

Once a workflow has been validated and exported as a Compiled Workflow Document (*.cwd) file and uploaded to Telestream Cloud; the on-premises Vantage domain is only required to modify or update the workflow or create new workflows.

Unlike hybrid workflows, hosted workflows are managed using the Telestream Cloud console.

Jobs are typically submitted via a Cloud Port API-based client program or system. They may also be submitted via the Telestream Cloud console.

Action execution occurs exclusively in Telestream Cloud. These workflows can only be comprised of cloud-capable actions, which all execute in Telestream Cloud. Hosted workflows can not include Cloud actions: Cloud Flip | Cloud QC | Cloud Speech | Location.

For details on creating and using hosted workflows, see [Creating and Deploying Hosted Workflows](#).

Extending a Vantage Domain to Telestream Cloud

With the advent of Vantage Cloud Port, the concept of a Vantage domain expands to include all Telestream Cloud components that inter-operate with an on premises Vantage domain.

- Hybrid and hosted workflows interact with Telestream Cloud to provide seamless media processing and data storage provided by supported Cloud storage vendors.
- When cloud-capable actions are in Cloud Port mode, they display pricing per content minute. When these actions execute in Telestream Cloud, you are charged for action execution by the content minute.
- Workflows can be enabled to determine automatically whether to process locally or in the cloud—based on your media location and domain utilization (workload).
- Vantage displays processing status for both on premises and cloud-based actions.

Telestream Cloud Processes and Features

- Telestream Cloud hosts version-matched Vantage services to execute these actions:
 - Analysis
 - Conform
 - Flip64
 - IPTV Flip
 - Multiscreen Flip
 - Tempo
 - Timed Text Flip.
- Media can be stored on-premises or in supported third-party Cloud storage: Amazon AWS, Microsoft Azure, and Google Cloud Storage.
- Media that is already in the cloud, stays in the cloud. Local (on premises) media is transferred automatically to the cloud for cloud-based processing.
- When activated by a workflow, Telestream Cloud rapidly spins up a Vantage Engine Container and processes the media in the cloud.
- Many jobs process simultaneously, based on dynamic Telestream Cloud scaling.

Prerequisites

Before you start designing Cloud Port hosted workflows in Vantage and deploying them to Telestream Cloud, make sure that you have met these prerequisites:

- Vantage 8.0 Update Pack 4 or later, plus any Component Pack releases must be installed and operative. A Vantage domain where hosted workflows are created and configured requires all Vantage services to be installed and running.
- Your on-premises Vantage domain must be kept up to date with the latest ComponentPacs. Cloud Port utilizes the ComponentPac revision of each cloud-capable action in a workflow to determine which version of the Telestream Cloud service to use when it executes the job in Telestream Cloud.
- A Telestream Cloud account is required to utilize Vantage Cloud Port. If you don't have one, in Chrome, go to <https://cloud.telestream.net> to create a free trial account.
- A cloud storage account is required to use any feature of Telestream Cloud. If you don't have an account with one of these cloud storage providers: Amazon S3 | Google Cloud | Microsoft Azure, create one and become familiar with using it.

Note: See *Getting Vantage Cloud Port Up and Running* in the *Cloud Port User's Guide* for a comprehensive description of all Vantage domain and Telestream Cloud requirements and configuration, and how to create cloud storage and Telestream Cloud accounts, and register them in Vantage and Telestream Cloud so that they can be accessed and utilized during workflow execution.

Vantage Cloud Port Workflow Pricing

Pricing is per-action for cloud-capable actions—those that process media essences directly (see [Using Cloud-capable Media Processing Actions](#)). Prices displayed in Workflow Designer are based on pre-discount list prices. These prices are only approximate and should not be used to calculate or estimate actual fees. Prices for data transfers are not included in these usage fees, which if applicable, will be charged by your cloud storage provider in addition to Telestream Cloud usage fees.

Telestream may change its prices at any time without prior notice. When multiple outputs are produced by a single action, actual charges for this action will be based on the longest output produced by this action. When variables have been bound to fields such as width and height, the calculated prices displayed in Vantage are based on the default value of the variable.

A number of factors affect pricing. For example, these are some Flip64 pricing factors:

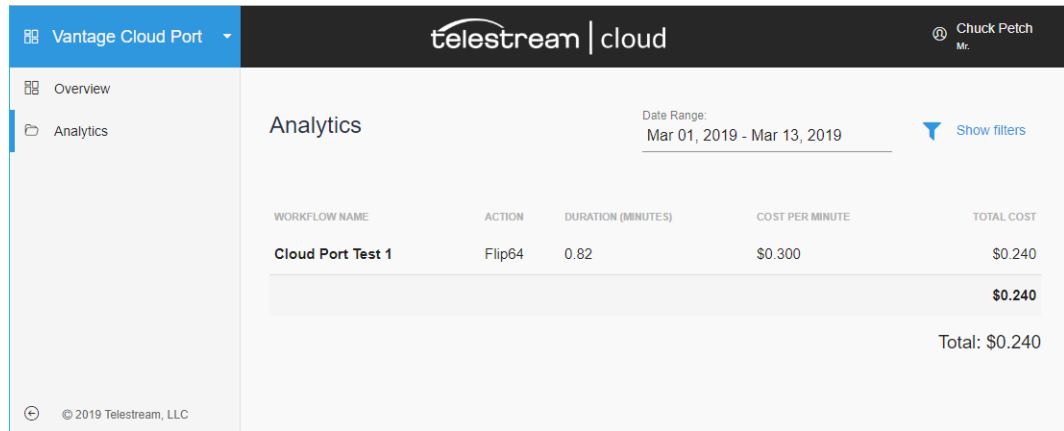
- Video Compressor or direct-conversion
 - Height, Width, Frame Rate
 - Multi-Pass encoding
 - Custom Interlacing Rules
- Certain output packagers incur an additional charge.
- Dolby encoding and decoding incurs an additional charge. (Dolby AC-3 decoding pricing does not display on the action; it is determined at runtime.)

See [Monitoring Cloud Port Billing in Telestream Cloud](#) for details on viewing Telestream Cloud billing.

Monitoring Cloud Port Billing in Telestream Cloud

Users who have Vantage Cloud Port access in Telestream Cloud can view usage and billing:

1. Log into Telestream Cloud.
2. Choose Vantage Cloud Port from the Dashboard.
3. Select Analytics. The display shows your usage for the specified time period and provides filtering to view only the data you want to see.



The screenshot shows the 'Analytics' page in the Telestream Cloud interface. The page title is 'Analytics' and the date range is 'Mar 01, 2019 - Mar 13, 2019'. A table displays the following data:

WORKFLOW NAME	ACTION	DURATION (MINUTES)	COST PER MINUTE	TOTAL COST
Cloud Port Test 1	Flip64	0.82	\$0.300	\$0.240
				\$0.240
Total:				\$0.240

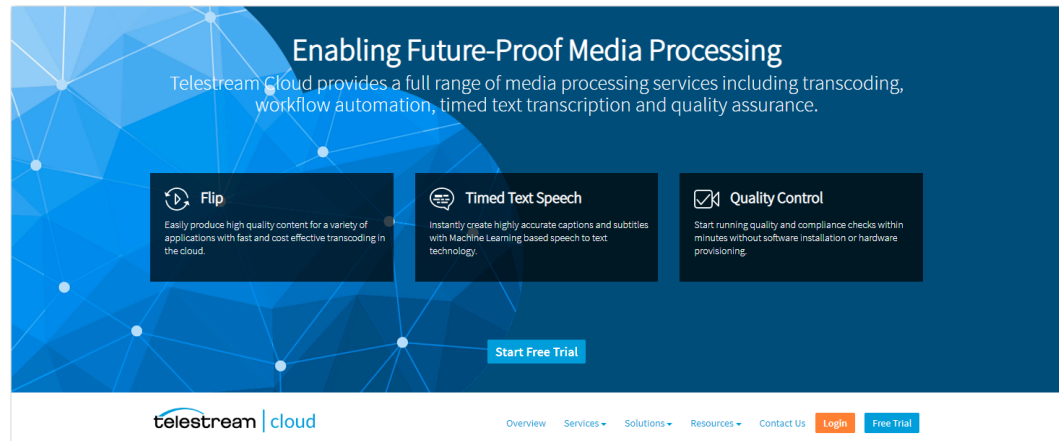
Please note that this is not a bill. It simply shows the approximate amount of charges incurred to date. You will receive a separate monthly bill or a credit card charge from Telestream.

For additional information about how Vantage Cloud Port pricing is determined based on workflow execution, see [Vantage Cloud Port Workflow Pricing](#). If you have any questions or need additional details about billing, please see [Canceling a Telestream Cloud Account](#).

Managing Telestream Cloud Accounts and Assets

A Telestream Cloud account is required to utilize Vantage Cloud Port.

When you are ready to establish your Telestream Cloud account, in Chrome, go to <https://cloud.telestream.net> and start your free trial account.



Instructions later in this guide explain how to establish a Telestream Cloud account ([Creating Your Telestream Cloud Account](#)).

Canceling a Telestream Cloud Account

To cancel your Telestream Cloud account and discontinue billing, please contact Telestream Cloud Support using one of the methods in the contact list, preceding.

Getting Vantage Cloud Port Up and Running

This chapter focuses on meeting Cloud Port requirements in Vantage, creating a Cloud storage account and a Telestream Cloud account, and configuring Vantage and Telestream Cloud to utilize Cloud Port—all the tasks required to get Vantage Cloud Port up and running after you've installed or updated your Vantage domain.

Note: Utilization of Cloud Port requires Vantage 8.0 UP2 or later. Vantage installation/ updating is not described in this guide. For full details, see the [Vantage Domain Management Guide](#), which is published on the Telestream Web site.

To make best use of Cloud Port, you should frequently check for new Update Pack and ComponentPac releases and update your Vantage domain to utilize the functionality that is provided, which may lift some restrictions (see [Configuration Limitations in Cloud Port Mode](#)).

Topics

- [Vantage Cloud Port Requirements](#)
- [Creating a Cloud Storage Account](#)
- [Creating Your Telestream Cloud Account](#)
- [Configuring Vantage for Cloud Port](#)

Vantage Cloud Port Requirements

These are the accounts, services, and products you'll need in order to implement a Cloud Port-enabled Vantage domain and use it to process your media.

Note: Your Vantage domain must have high-speed Internet access (not dial-up or satellite) in order to utilize Vantage Cloud Port and Telestream Cloud.

Third Party Cloud Storage Account

Vantage Cloud Port uses your third-party cloud storage account for accessing your media and storing processed output files. You will need an account on Amazon AWS, Google Cloud Storage, or Microsoft Azure. (See [Creating a Cloud Storage Account](#).)

Telestream Cloud Account

Establish an account in [Telestream Cloud](https://cloud.telestream.net) (<https://cloud.telestream.net>). To create this account you'll need your Cloud storage account information, so create your Cloud storage account (immediately preceding) first if you haven't already done so.

Once you've created a Telestream Cloud account (see [Creating Your Telestream Cloud Account](#)) and select a billing method. You enter your storage account and credentials in Telestream Cloud so that Vantage Cloud Port can access your storage.

Vantage Domain

You can execute cloud-capable Vantage actions in Telestream Cloud from a new or an upgraded on premises Vantage 8.0 UP2 (or later) single-node domain or array. For Vantage domains platform requirements, see the [Vantage Domain Management Guide](#).

Using Vantage Cloud Port on a single-node domain requires a license Vantage Cloud Port Designer license (V-SW-VANTAGE-START) or any other license which allows workflow design and activation, such as Transcode (V-XCODE-SW) or higher. Actions placed into Cloud Port mode are licensed for per-minute cloud execution.

Note: The Utilization action, used to manage workload between the cloud and on premises actions, requires a Vantage Array Pro license.

For software or licenses, visit www.telestream.net and choose *Vantage* from the *Buy* menu.

Creating a Cloud Storage Account

A third-party cloud storage account is required to use Vantage Cloud Port. Vantage Cloud Port supports Amazon AWS, Google Cloud Storage, and Microsoft Azure.

See the instructions for a summary of how to set up an account with the supported vendor of your choice. If you need help, refer to the documentation on the vendor's web site. Instructions are also summarized on the [Telestream Cloud site](#) storage page.

Topics

- [Cloud Storage Considerations](#)
- [Creating an Amazon AWS Account](#)
- [Creating a Google Cloud Account](#)
- [Creating a Microsoft Azure Account](#)

Cloud Storage Considerations

- Performance may vary by the type of storage resource you choose. Network traffic during busy times may affect storage performance and transfer speeds.
- Virtual servers can become temporarily unavailable. If Vantage Cloud Port has trouble accessing your storage, visit your storage web site to determine whether your storage is inaccessible for some reason. Be sure to verify your credentials.
- Default storage account settings specify limits on various resources. If you bump up against the limits and need greater speed or additional storage, contact your storage provider for assistance.
- Normally, cloud-capable actions automatically transfer source media for processing up to a target cloud storage bucket. The files are placed into the *vcp-uploads* folder in your output storage bucket. However, when using Post Producer CML files or other reference sources such as IMF and using a storage bucket for input source material, you should identify the specific source input bucket used in Telestream Cloud, so that Vantage and Telestream Cloud know where to find the input media files being referenced.

Creating an Amazon AWS Account

Follow these steps to create an Amazon storage account:

1. Go to <https://aws.amazon.com> and follow the instructions in Sign Up.
2. Once your AWS account has been created, go to Amazon Simple Storage Service (S3) in the management console and sign up for the service.
3. Go to IAM Users settings (Services > IAM > Users) to create a Telestream Cloud user.
4. Copy the generated user credentials (Access Key ID and Secret Access Key). You'll need these later to configure Vantage Cloud Port in Telestream Cloud.
5. Read [Cloud Storage Considerations](#) below and continue on to [Creating Your Telestream Cloud Account](#) to enter your credentials to access your storage.

Creating a Google Cloud Account

Follow these steps to create a Google Cloud Storage account:

1. Go to the Google Console (<https://console.cloud.google.com/>) and follow the sign-up instructions to create a new account.
2. After signing into your new account, create a GCS project.
3. In the project, select APIs & AUTH in the left sidebar.
4. In the APIs list, click the button next to Google Cloud Storage to turn GCS on.
5. In the project Settings click Enable billing and follow the steps.
6. Obtain and copy your Access Key & Secret Access Key as follows:
 - a. Go to your project's Storage page.
 - b. Under Cloud Storage select Storage access from the left menu.
 - c. Click the Interoperability tab on top. You may need to click the Enable Interoperability access button to enable the tab.
 - d. On the Interoperability tab, find and copy your Access Key & Secret Access Key.
7. Read [Cloud Storage Considerations](#) and then continue on to [Creating Your Telestream Cloud Account](#), where you will enter your credentials to access your storage.

Creating a Microsoft Azure Account

Follow these steps to create a Microsoft Azure storage account:

1. Go to <https://www.azure.com> and click the green Start Free button and follow the prompts to create a new account.
2. After logging into the Azure Portal, click Storage Accounts.
3. Click Add to begin creating a new storage account.
4. Click Create Storage Account and make entries and selections in required fields.
5. Click Review + Create, and verify your selections are correct and validated.
6. Click Create. You will receive a deployment complete message.
7. Select your storage account > Overview > Access Keys.
8. Copy your access keys for use in setting up your Vantage Cloud Port account.
9. Read [Cloud Storage Considerations](#) below and then continue on to [Creating Your Telestream Cloud Account](#), where you'll enter the credentials to access your storage.

Creating Your Telestream Cloud Account

To use Vantage Cloud Port, you create a Telestream Cloud account with Vantage Cloud Port access enabled. This is where your cloud-based processing occurs. If you have an existing account, you can use that without creating a new one.

Note: Before you sign up for an account, you should have a third-party storage account that you want the Telestream Cloud account to access for storage. See the details in [Creating a Cloud Storage Account](#) to create a storage account.

Topics

- [Cloud Account Prerequisites](#)
- [Creating a Telestream Cloud Account](#)

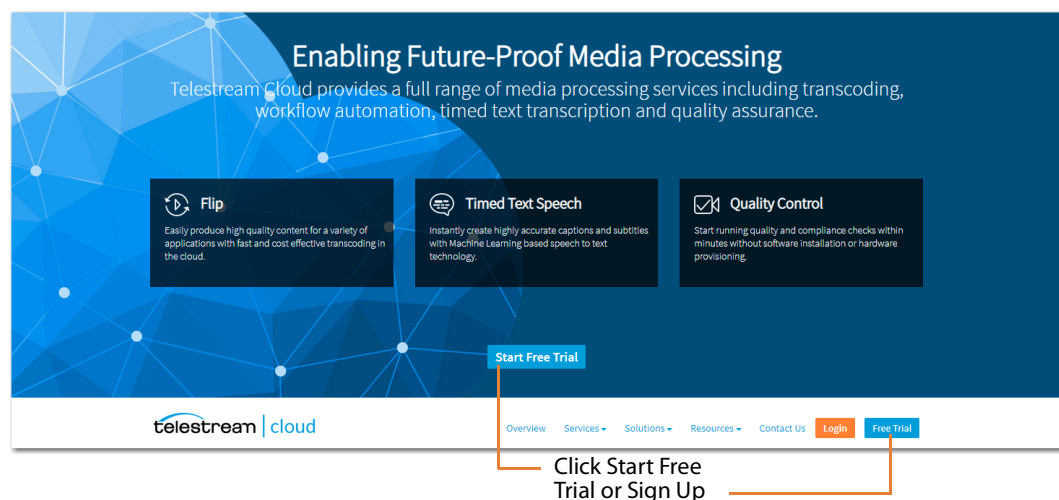
Cloud Account Prerequisites

The following prerequisites apply to setting up a Telestream Cloud account:

- A high speed Internet connection (not satellite or dial-up) to your Vantage server and to the server used to create your Telestream Cloud account.
- An Internet browser for signing up and managing Telestream Cloud.
- A third-party cloud storage account with Amazon AWS, Microsoft Azure, or Google Cloud Storage.

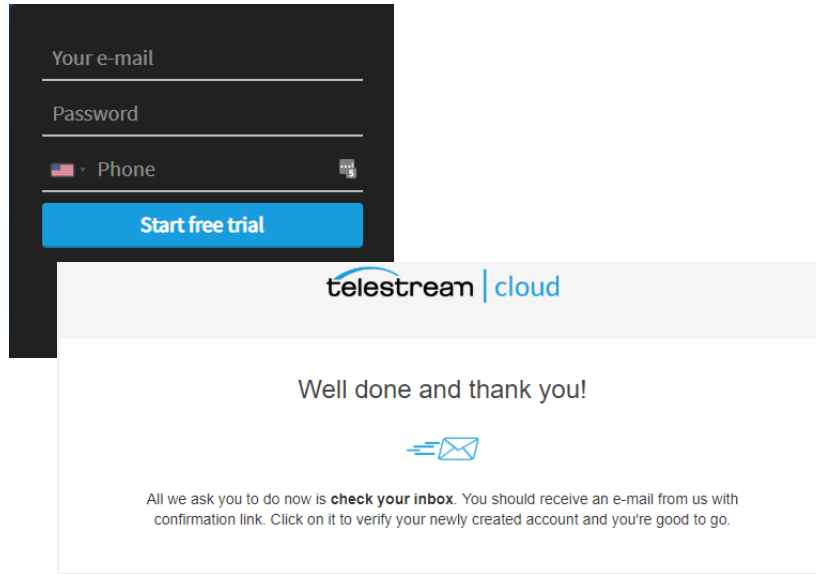
Creating a Telestream Cloud Account

1. Point your browser to <https://cloud.telestream.net>. Click *Start Free Trial* or *Sign Up*.

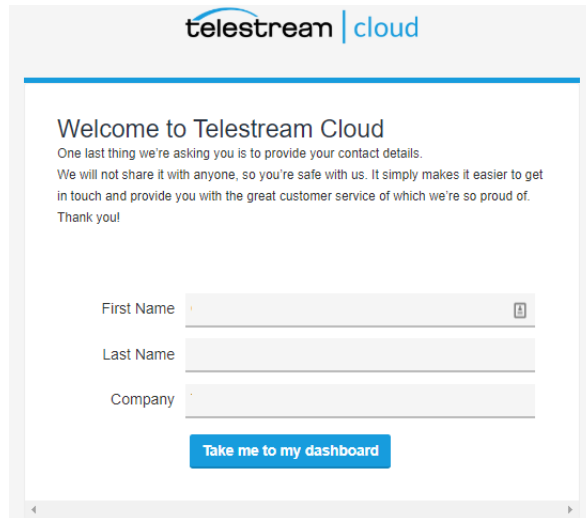


Once your account is established, you can click Login on this page to access your account.

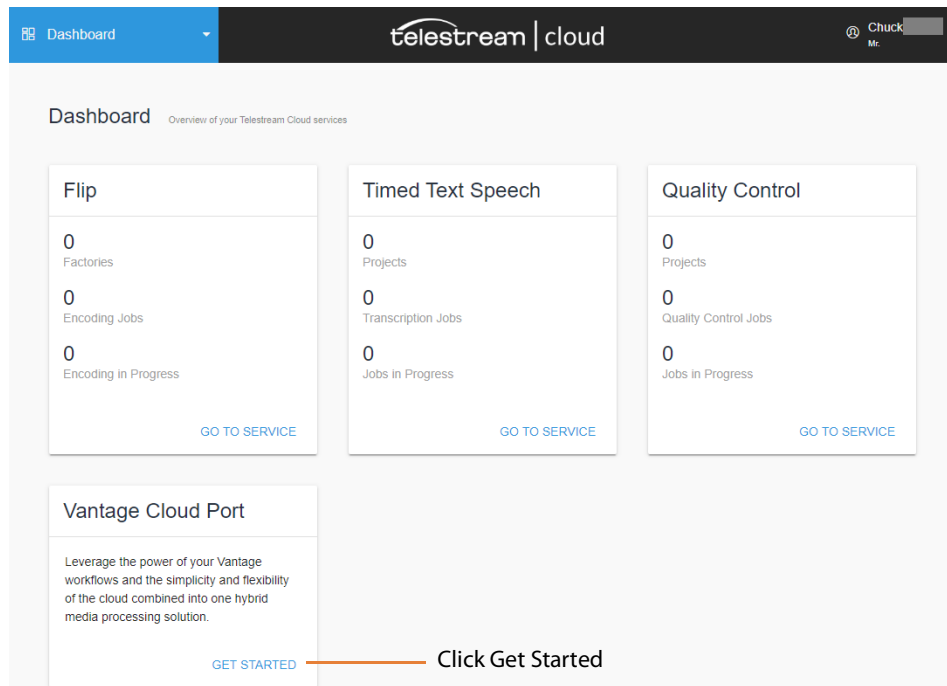
1. Fill in the form to establish an account. You will receive an email confirmation notice. Follow the instructions to verify your account by email.



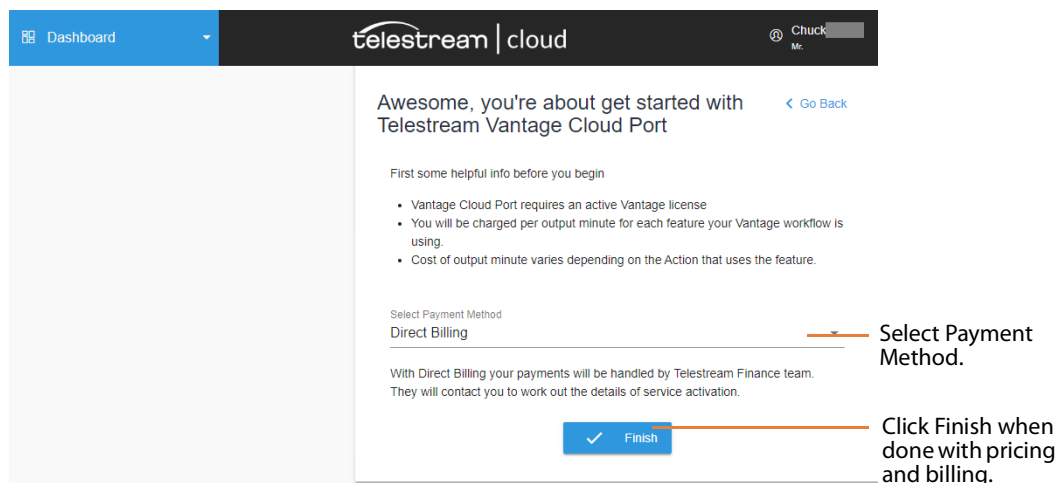
2. Fill in the Welcome form to complete your account information, and click *Take me to my dashboard*.



3. Select Dashboard in the main menu and click Get Started (bottom left).



4. A get started page indicates that you are signing up for a Telestream Vantage Cloud Port account. On this page, you can select a billing method.



5. Click *Select Payment Method* to select credit card or direct billing by Telestream.

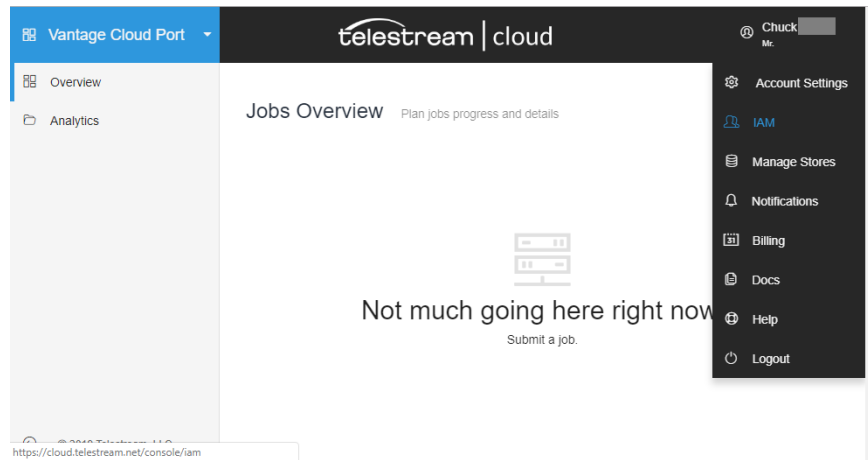
6. If you select credit card, a card details page displays. Fill in your card details, and click Finish. Wait until you are notified of service activation.

The screenshot shows the Telestream Cloud payment setup page. The header includes a 'Dashboard' dropdown, the 'telestream | cloud' logo, and a user profile for 'Chuck Mc.'. The main content area has a heading 'Awesome, you're about get started with Telestream Vantage Cloud Port' with a '< Go Back' link. Below this is a section 'First some helpful info before you begin' with three bullet points: 'Vantage Cloud Port requires an active Vantage license', 'You will be charged per output minute for each feature your Vantage workflow is using', and 'Cost of output minute varies depending on the Action that uses the feature.'. A 'Select Payment Method' section shows 'I will use my card for payments' selected. A security notice states 'Your transaction is secured with 256bit encryption. You will not be charged until you start using the service.'. There are input fields for 'First name', 'Last name', and 'Card number' (with a masked input field). A 'Finish' button with a checkmark is at the bottom.

7. When billing activation is complete, select Dashboard and Vantage Cloud Port.

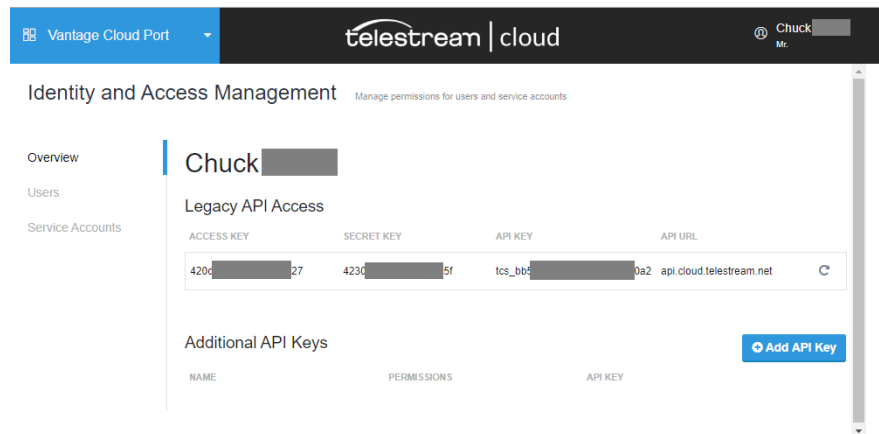
The screenshot shows the Telestream Cloud dashboard. The header includes a 'Dashboard' dropdown, the 'telestream | cloud' logo, and a user profile for 'User Telestream'. The main content area is a grid of service tiles: 'Dashboard' (Overview of all your services with summary of factories/projects and jobs in progress for each service), 'Flip' (Easily produce high quality content for a variety of applications with fast and cost effective transcoding in the cloud), 'Timed Text Speech' (Instantly create highly accurate captions and subtitles with Machine Learning based speech to text technology), 'Quality Control' (Start running quality and compliance checks within minutes without software installation or hardware provisioning), and 'Vantage Cloud Port' (Easy to use monitoring and analytics for Vantage actions executed in the cloud).

8. Your Vantage Cloud Port Overview page displays. Click the user menu in the upper right corner and select IAM.



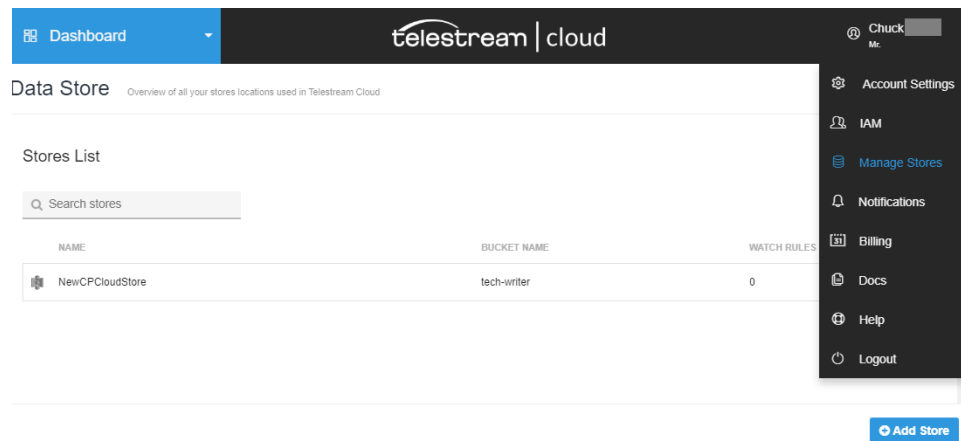
9. The IAM page shows your Telestream Cloud Access Key, Secret Key, and API Key under Legacy API Access.

If you have multiple users, you can create multiple keys, one for each user, using the Add API Key button.



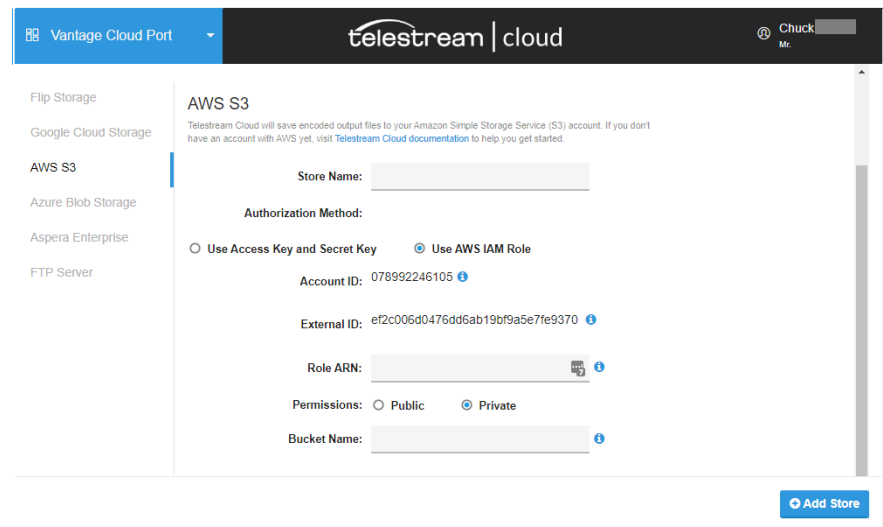
10. Note these keys for use in configuring Vantage.

11. Click your user name in the upper right corner, and select *Manage Stores* to open the Data Store page.



12. On the Data Store page, click *+Add Store* to open the Add New Store page.

13. On the left side of the page, select the type of store you plan to use with Vantage Cloud Port (Google, AWS, etc.).

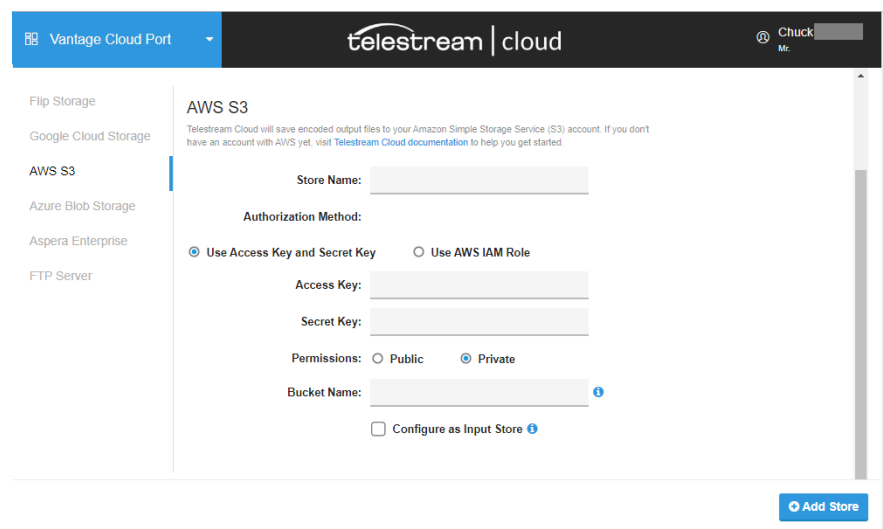


14. If using AWS, select *Use Access Key and Secret Key* or *Use AWS IAM Role*. (The *Use AWS IAM Role* page is shown above, and the *Use Access Key and Secret Key* page is shown below.)

Note: You must grant some form of cloud storage access so that Telestream Cloud can read and write media and other files to and from your storage.

If you choose *Use Access Key and Secret Key*, you must fill in your AWS keys. These keys are used only once to modify the AWS Access Control List (ACL) to enable Telestream Cloud access to your bucket as needed.

As an alternative if you prefer not to supply your keys, choose *Use AWS IAM Role*, which allows Telestream to use the AWS STS service to create temporary credentials to access your store each time. If you choose this method, you must also configure Telestream Cloud access using the AWS Security Token Service. See this AWS help link for details: <https://docs.aws.amazon.com/STS/latest/APIReference/Welcome.html>.



15. Fill in your store account information so that Vantage Cloud Port can access your account to read and write files. The information fields requested vary depending on the selected store. For information about a field, hover over the blue “i”.

16. Click Add Store to complete storage setup.

This completes Vantage Cloud Port configuration in the Telestream Cloud. Go to the next topic to configure Vantage and create workflows.

Configuring Vantage for Cloud Port

This topic describes how to add your Telestream Cloud account to Vantage, so it can integrate with it, and adding your cloud storage account to Vantage, so that it can read and write in it.

Topics

- [Vantage Installation and Licensing](#)
- [Adding your Telestream Cloud Account to Vantage](#)
- [Adding your Cloud Storage Account to the Vantage Folder Address Book](#)

Vantage Installation and Licensing

1. If you haven't yet installed Vantage and licensed it, install and license it now, so that you can configure it for Vantage Cloud Port operation. Install or upgrade to a licensed Vantage 8.0 UP2 or later installation as explained in the [Vantage Domain Management Guide](#).

During installation or upgrade, ensure that the Vantage domain includes the Cloud Service, all services corresponding to the cloud-capable actions, and the latest ComponentPacs.

These are the Vantage services required on Vantage Cloud Port. Be sure each is selected (checked) for installation when you run the Vantage installer:

- Cloud Service
- Transcode Service
- Timed Text Service
- Analysis Service
- Multiscreen Service
- IPTV VOD Transcode Service
- Edit Service

Note about the Cloud Service: In a Vantage array, each node that has Vantage's Telestream Cloud Service and at least one other Vantage service which also installs a ComponentPac (such as the Vantage Transcode Service) can process Cloud jobs.

2. Verify that all the services are running (Online) in the Vantage Management Console > *Services*. If not, right-click and select *Restart Service*.

Notes: While examining the Vantage Services in the Vantage Management Console, pay particular attention to the Cloud Service Setup.

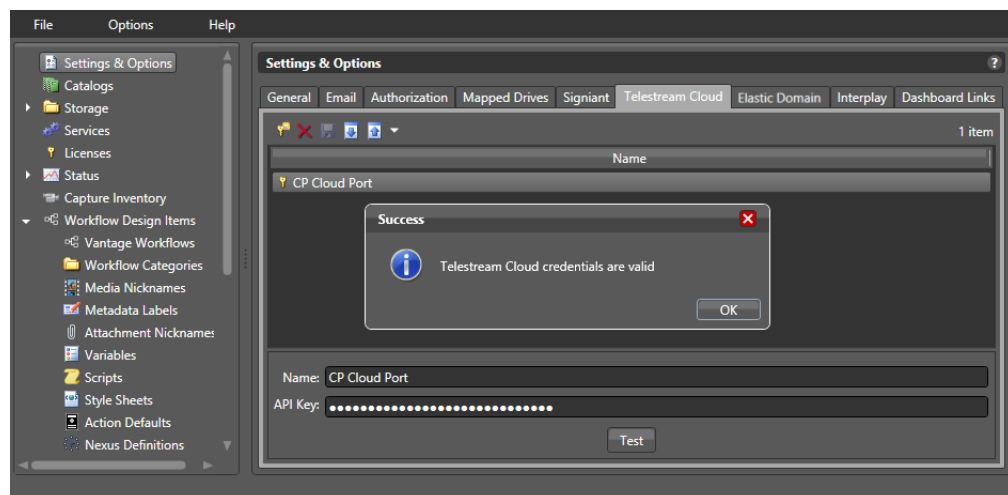
The Cloud Service includes an Upload Limit that throttles concurrent cloud file uploads to prevent overloading your cloud storage. The default is four concurrent files. You can set the service to maintenance mode and then display the Cloud service Setup tab to change the Upload Limit value.

The Cloud Service also has unique Session Limit requirements. It should be set equal to the number of concurrent jobs allowed for Telestream Cloud. For example, if your Telestream Cloud account is set to a limit of 30 jobs (the default) and the Vantage domain consists of 2 nodes, the session limits of the Cloud services in each Vantage array node should be set to 15. If the Cloud service is set to a session limit higher than the capacity of the Telestream Cloud account, the jobs will be shown as in process in Vantage and queued in Telestream Cloud. If you need a higher concurrent jobs limit, contact Telestream Cloud Support and request an increase.

3. If a license is not available, contact [Telestream Sales](#) for licensing and install the license as explained in the *Vantage Domain Management Guide*.

Adding your Telestream Cloud Account to Vantage

1. Open the Vantage Management Console > Settings & Options > Telestream Cloud tab.
2. Click the yellow key icon to add a new Telestream Cloud account.
3. Enter a name (such as the authorized user name) for the Telestream Cloud account.
4. Enter the Telestream Cloud API Key you noted previously on the Telestream Cloud IAM page (see [Creating a Telestream Cloud Account](#)).
5. Click *Test* to make sure your connection to your Cloud account is operational.
6. Click *Save* to update your Telestream Cloud account credentials in Vantage.



Adding your Cloud Storage Account to the Vantage Folder Address Book

In order for Vantage and Telestream Cloud to inter-operate with your cloud storage, the storage location and credentials must be entered into Telestream Cloud > Cloud Store and in the Vantage Folder Address Book. If you use more than one cloud storage site, make a separate entry for each in Telestream Cloud and in the address book.

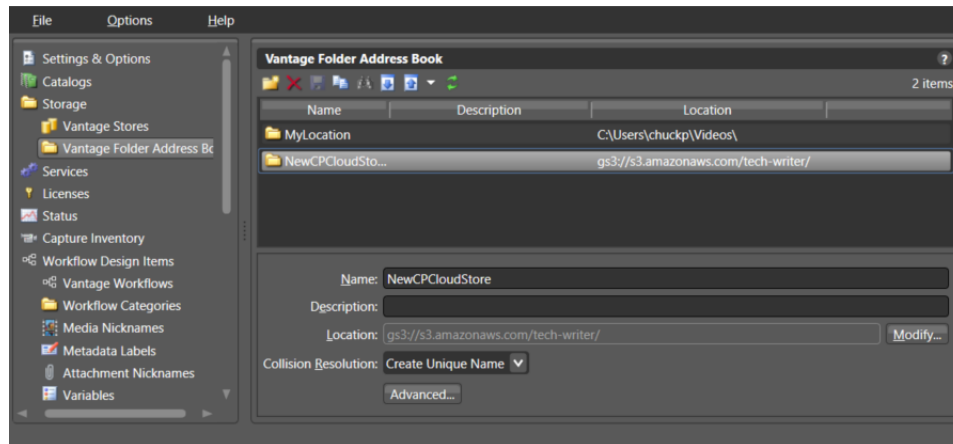
Additional Notes on the Vantage Folder Address Book


When Cloud Port mode is enabled in a workflow action, you should specify which cloud storage account to use, and Vantage will automatically access the address book entry instead of using a local Vantage Store. The cloud storage location is then used both for copying the source file to the cloud prior to processing and for storing transcoded output files after processing.

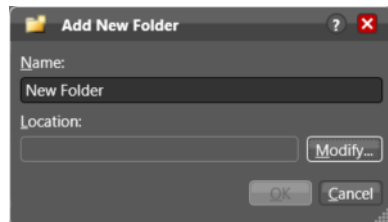
The Vantage Folder Address Book is used by Vantage Cloud Port to ensure URL compatibility between Telestream Cloud and Vantage. When Telestream Cloud places material in cloud storage, it refers to the material using a signed URL, which is typically a secure HTTP link that expires within 24 hours. These references must be translated to a native Vantage URL to allow downstream Vantage actions to perform all of the required native file system operations on the media reference. The Vantage Folder Address Book entry enables this translation for a Cloud Port mode enabled action. Without the Vantage Folder Address Book entry and associated translation, the interaction among Vantage, Telestream Cloud, and cloud storage may not work.

To add your cloud storage to the Vantage address book, follow these steps:

1. In the Vantage Management Console, select Storage > *Vantage Folder Address Book*.

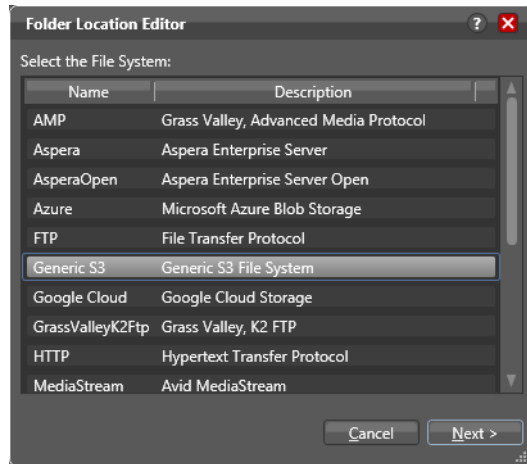


2. Click the *Add Folder* icon 
3. Give the folder exactly the same name as the name you used for your cloud storage in your Telestream Cloud account Data Store.



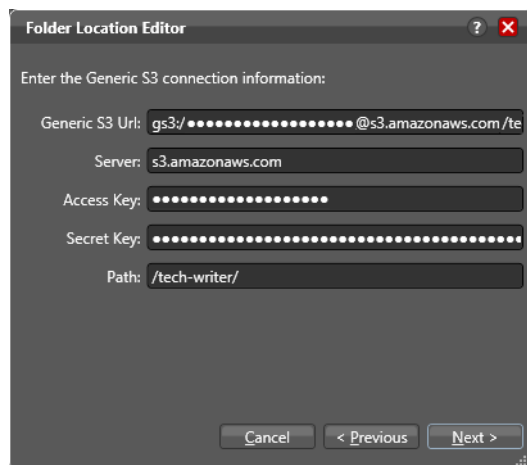
4. Click *Modify...* to specify the Location.

5. Select the type of cloud storage (file system) from the Folder Location Editor window.

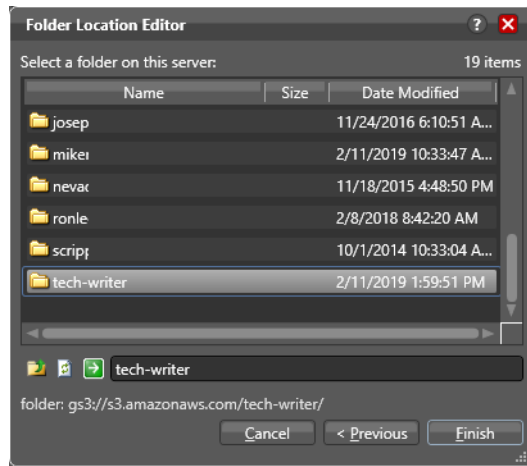


6. Enter your cloud storage account information, such as access keys and bucket name.

Important: The credentials used in the Vantage address book entry **MUST** match exactly the credentials used to access your third-party storage location and the credentials used in Telestream Cloud > Cloud Store for that storage location. As an example, for S3, you must use the same Access Key ID, the same Secret Access Key, and the same bucket reference in all three locations. If there is a credential mismatch in any of these locations, Vantage Cloud Port will not work.



7. Enter the folder location on the cloud server. Your default location is already noted, or you can browse or enter a UNC path to another folder.



8. Click Finish to complete the address book entry.

Designing Cloud Port Workflows

This chapter explains how to design and deploy Vantage Cloud Port workflows. This identifies cloud-capable actions, and focuses on creating hybrid and hosted workflows, and exporting workflows for execution in Telestream Cloud.

Topics

- [Using Cloud-capable Media Processing Actions](#)
- [Using Cloud-Capable General-Purpose Actions](#)
- [Creating Hybrid Workflows](#)
- [Creating and Deploying Hosted Workflows](#)
- [Troubleshooting](#)

Using Cloud-capable Media Processing Actions

Cloud-capable actions are transcoding or other media processing actions that are implemented to execute in Telestream Cloud in the same manner as they do in a Vantage domain. Due to cloud platform constraints, there are some limits when configured to execute in Cloud Mode.

Note: If you modify workflows that were created in a version of Vantage that is not capable of—or licensed for—Cloud Port and Telestream Cloud, you will be reminded when you try to enable Cloud Port mode to upgrade the action first. To upgrade all of your workflows and actions at once, in Workflow Designer select File > Batch Workflow Operations > Check for Upgrades, and then choose Upgrade.

Vantage services that implement Cloud-capable actions are configured in the Vantage Management Console > Services panel > Setup tab. In particular, the Cloud Service Upload Limit controls the number of concurrent cloud file uploads and the total of this number for all nodes should be set to match the concurrent job limit set by Telestream Cloud (30 is the default).

Vantage Cloud Port tracks source files that have been uploaded for Cloud-capable actions to prevent the same file from being uploaded multiple times. For example, if you have a file at a given location, such as `D:\Folder1\foo.mpg`, and you submit this file to a cloud-capable action twice, the file will only be uploaded once.

If the file is deleted from cloud storage and it is submitted to Vantage again, it will be uploaded a second time.

If the file is submitted to a cloud-capable action that targets a different cloud store, the file will be uploaded to the second store.

If the file is submitted from a different location (for example, `D:\Folder2\foo.mpg`), the file will be uploaded again.

To upload the same file for each job, use a Copy action in the workflow preceding the cloud-capable action, for example: Receive > Copy (to a specific bucket) > Flip64 (same bucket).

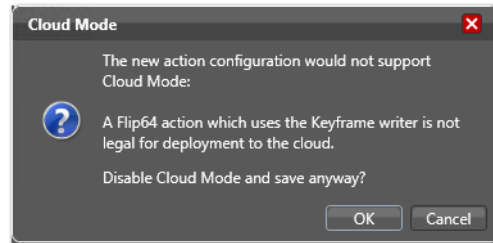
- [Configuration Limitations in Cloud Port Mode](#)
- [Media Transcoding and Processing Actions](#)

Configuration Limitations in Cloud Port Mode

During the design phase, once you enable at least one Cloud-capable action to operate in cloud mode, each time you save an action or export the workflow (as a hosted workflow), the workflow is automatically verified to operate in Telestream Cloud.

Note: To make best use of Cloud Port, you should frequently check for new ComponentPac releases and update your Vantage domain to utilize the functionality that is provided, which may lift some restrictions.

If unsupported actions are added to the workflow or an action is configured in a way that violates the limits imposed by being a Cloud-capable workflow, Workflow Designer displays an error. For example:



These features and configurations are not compatible with cloud-capable media processing actions:

- H264 or H265 presets slower than Medium
- Encoded frame sizes greater than DCI 4K
- Multi-pass encoding
- The Camera decoder
- Microsoft Smooth Streaming Packager
- Adobe HTTP Dynamic Streaming Packager
- Analysis action outputs for WebVTT, SCC, and SMPTE 2051 TTML.
- Analysis of Omneon User Data
- VP9 Video encoding
- Keyframe (.jpg) encoding
- Advanced Title Processor (Conform action)
- Watermarking: Nielsen, Kantar, Teletrax, NexGuard
- Actions which make use of static resources or reference on-premises resources.

You should ensure that all references to resources are either removed, modified to use cloud-hosted resources, or replaced by variables. You should make sure that actions are configured in a valid configuration which allows Cloud Port mode.

For example, a workflow with a Flip64 action which references a static overlay file (*D:\MyImages\myfile.png* for example), will obviously not execute beyond the specific, on-premises environment in which it was built.

Actions which reference specific on-premises locations (for example, a Flip64 action configured to write output to a network folder) are also invalid.

- Some containers and formats supported in Vantage actions executed on premises may not be available in Cloud Port mode. If you select a container or format not supported in Cloud Port mode, an error message informs you that it is unavailable.
- Actions in Cloud Port mode should be configured to use the Multi-core Video Processor.

Media Transcoding and Processing Actions

The following media processing actions may be executed on-premises in your Vantage domain or in Telestream Cloud. You can use these cloud-capable actions in both hybrid and hosted workflows:

- [Analyze Action](#)
- [Cloud Flip Action](#)
- [Cloud QC Action](#)
- [Cloud Speech Action](#)
- [Conform Action](#)
- [DPP Validate Action](#)
- [Flip64 Action](#)
- [IPTV Flip Action](#)
- [Multiscreen Flip Action](#)
- [Tempo Action](#)
- [Timed Text Flip Action](#)

Cloud-capable media processing actions are charged by the media minute. See [Vantage Cloud Port Workflow Pricing](#) for details.

Note: The following are general action descriptions. Some action features executable on premises may not be executable in Telestream Cloud. Workflow Designer displays a message if you try to use an action feature that is not available. For full operational and configuration details, see the man page for the target action.

Analyze Action

The Analyze action (in the Analysis category) is Cloud Port capable. It is executed by the Analysis service on-premises or the Telestream Cloud Service in hosted workflows. It can perform many kinds of analysis on media using a variety of analysis tools, and populate variables for use downstream. For example, the action can detect black, color levels, interlacing, letterbox, slate, scene changes, audio levels, and much more.

Cloud Flip Action

The Cloud Flip action is Cloud Port capable. It is executed by the Vantage Cloud service on-premises or the Telestream Cloud Service in hosted workflows. The Cloud Flip action submits media from Vantage workflows via the Telestream Cloud Service and the Telestream Cloud API to the Telestream Cloud for transcoding. To use the Cloud Flip action you must have a Telestream Cloud account and enter the account credentials in the Vantage Management Console Settings to enable Vantage to access the account. When the Cloud Flip action executes, the input file is uploaded and processed according to the Cloud Flip factory chosen in the Cloud Flip action, and the results are returned to the workflow for downstream use.

Cloud QC Action

The Cloud QC action is Cloud Port capable. It is executed by the Vantage Cloud service on-premises or the Telestream Cloud Service in hosted workflows. The Cloud QC action submits media from Vantage workflows via the Telestream Cloud Service and the Telestream Cloud API to the Telestream Cloud for quality checking. To use the Cloud QC action you must have a Telestream Cloud account and enter the account credentials in the Vantage Management Console Settings to enable Vantage to access the account. When the Cloud QC action executes, the input file is uploaded and processed according to the Cloud Quality Control project chosen in the Cloud QC action, and the results are returned to the workflow for downstream use.

Cloud Speech Action

The Cloud QC action is Cloud Port capable. It is executed by the Vantage Cloud service on-premises or the Telestream Cloud Service in hosted workflows. The Cloud Speech action submits media from Vantage workflows via the Telestream Cloud Service and the Telestream Cloud API to the Telestream Cloud for speech-to-text conversion. To use the Cloud Speech action you must have a Telestream Cloud account and enter the account credentials in the Vantage Management Console Settings to enable Vantage to access the account. When the Cloud Speech action executes, the input file is uploaded and processed according to the Cloud Timed Text Speech project chosen in the Cloud Speech action, and the results are returned to the workflow for downstream use.

Conform Action

The Post Producer Conform action (in the Edit category) is executed by the Edit service. This action assembles and optionally transcodes multiple video and still image files into a single output file, applying filters you specify. The input files and related instructions for the output file are all defined in a Composition XML file.

Note: Because of font rendering differences between Windows and Linux, if a Cloud Port mode Conform action CML specifies a text shadow or over-line effect, these effects are ignored and are not rendered in the output. Font information included in the Timed Text Flip description also applies to fonts specified in a Conform CML.

When the Conform action is in Cloud Port mode, the source CML file may reference media in cloud storage only if the following conditions are true:

- The Vantage Folder Address Book must have an entry for the bucket/blob container containing the media.
- The Telestream Cloud account must have a store for the bucket/blob container containing the media.
- The CML file must be submitted to the Conform action from a UNC or local Windows path (for example, `D:\source.cml` or `\\server\source.cml`).

The CML may refer to a file in storage by the nickname, short URL, or long URL.

Example 1 refers to a media file nicknamed *Original*:

```
<File location="{ $#Original}"/>
```

Example 2 refers to a media file nicknamed *Image*:

```
<Image layer="1" align="both" adjust="body" location="{ $#Image}"  
fill="loop" duration="00:00:02.000">
```

Example 3 refers to the short URL of a media file in S3 cloud storage. In the third example, *s3://ts-us-east-2-ohio* is an S3 bucket, *oes-sources* is a folder within the bucket, and *1min.mov* is the media file name:

```
<File location="s3://ts-us-east-2-ohio/oes-sources/1min.mov"/>
```

Example 4 refers to *vantageblobstore* as the Azure storage account name, *ts-cloud-test* as the blob container name, and *2min.mov* as the file name.

```
<File location="azure://vantageblobstore.blob.core.windows.net/  
2min.mov?containerName=ts-cloud-test"/>
```

Example 5 refers to *ts-vantage* as the Google bucket name, and *2min.mov* is the file name.

```
<File location="gcs://ts-vantage/2min.mov"/>
```

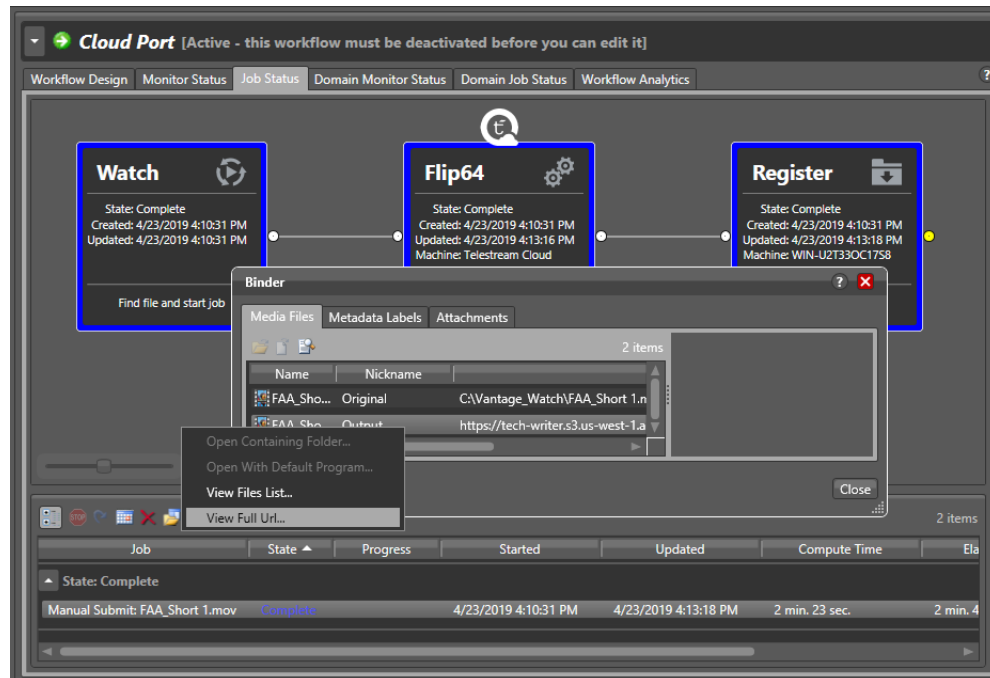
Example 6 shows the case where you may need to use the full URL to the file.

```
https://accountname.s3.us-west-1.amazonaws.com/FAA_Short_1.mp4?X-  
Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Content-Sah256=UNSIGNED-  
PAYLOAD&X-Amz-Credential=AKIAIYVKOY43MTXXXXXX%2F20190423%2Fus-  
west-1%2Fs3%2Faws4_request&X-Amz-Date=20190423T231319Z&X-Amz-  
Expires=7200&X-Amz-SignedHeaders=host&X-Amz-  
Signature=9bac488f32ab94ffe88c096962f6cdcf2c04845d8a18df0bd4abfe
```

To view and copy the full URL in Workflow Designer:

1. View the job output that produced the file in Job Status Views.
2. Double-click the job to open the binder.
3. Right-click the Output.
4. Select View Full URL.
5. Click in the URL and use Ctrl-A or scroll and highlight to select all.
6. Right-click Copy to put the URL into the clipboard for pasting to another location.

Note: If a reference file or CML file that references more than 32 files is submitted to a cloud-capable action, the job will fail at run time, indicating that this is not supported.



DPP Validate Action

The DPP Validate action is Cloud Port capable. It is executed by the on-premises or the Telestream Cloud Service in hosted workflows. You can use the DPP Validate action to confirm compliance of a DPP metadata XML file. If the XML file passes validation, TRUE is generated; otherwise FALSE is generated. You can test the results of the action downstream to change the workflow's actions based on the validation results. Optionally, you can also generate a report when executing on-premises.

Flip64 Action

The Flip64 action (in the Transcode category) is executed by the Vantage Transcode service and is a 64-bit multi-core-optimized encoder that transcodes media from one or more input files into another format as specified by the output configuration. Available resolutions extend from SD to UltraHD and 4K in a broad range of file formats.

IPTV Flip Action

The IPTV Flip action (in the IPTV/VOD category), is executed by the Vantage IPTV/VOD service. This action is designed to generate MPEG2 Transport Stream files and meet multiplexing requirements. The IPTV Flip action and IPTV VOD Service support 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.

Multiscreen Flip Action

The Multiscreen Flip action (in the Multiscreen category) is executed by the Vantage Multiscreen Service and is designed for encoding and packaging decoded digital baseband media into industry-standard adaptive rate streaming formats, including Adobe HDS, Apple HLS, Microsoft HSS, and others.

Tempo Action

The Tempo action is part of the Edit group and executed by the Vantage Edit Service. The Tempo action is included in Tempo, a time-adjusting encoding solution built on the Vantage platform. The Tempo action uses the Edit Service for re-timing file-based content and intelligently decreasing or increasing the running time of shows and segments.

Timed Text Flip Action

The Timed Text Flip action (in the Timed Text category) is executed by the Vantage Timed Text service to automate caption file-type conversions, embed captions, extract captions from media containing embedded captions, create subtitle overlay graphics, and manipulate the timecode of caption data to match media.

Supported Fonts

These fonts may be used with the Timed Text Flip action in Cloud Port mode. If you select a font that is unavailable in Cloud Port mode, you will not be able to enable Cloud Port mode and an error message will explain that the selected font is not available.

- Andale_Mono.ttf—Regular, Mono
- Arial.ttf—Regular, Black, Bold, Italic, Bold Italic
- Comic_Sans_MS.ttf—Regular, Bold
- Courier_New.ttf—Regular, Bold, Italic, Bold Italic
- Georgia.ttf—Regular, Bold, Italic, Bold Italic
- Impact.ttf
- Times_New_Roman.ttf—Regular, Bold, Italic, Bold Italic
- Trebuchet_MS.ttf—Regular, Bold, Italic, Bold Italic
- Verdana.ttf—Regular, Bold, Italic, Bold Italic
- Webdings.ttf

Fonts render differently in Windows vs. Linux operating systems. Subtitles or other on-screen print renderings that use the fonts built into the OS may result in print output from the cloud (Linux) that differs from the same output on Windows. In particular, font size, font spacing, font effects and anti-aliasing may have subtle differences on the two platforms. If you require a specific font style with Cloud Port, Telestream recommends waiting until NewBlue support is added to Linux.

Using Cloud-Capable General-Purpose Actions

A subset of general-purpose/utilitarian actions are implemented in Telestream Cloud. These actions execute in Telestream Cloud in the same way as they do in an on-premise domain. There is no per-action charge for executing these actions in Telestream Cloud. These actions are not explicitly configured to run in Cloud mode; they do not display the Cloud mode badge, either.

The following actions are supported in hosted workflows:

- Compute
- Construct
- Decide
- Extract
- Multi-Decide
- Notify with HTTP Notifier
- Receive
- Synchronize

Note: When you utilize these actions in a hybrid workflow, they automatically execute on premises; in hosted workflows they of course execute in Telestream Cloud.

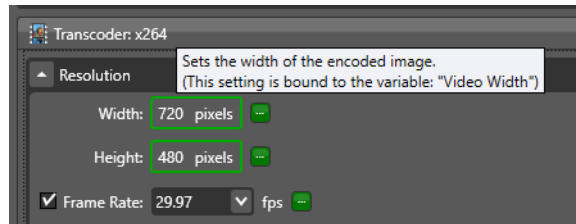
Using Variables and Parameters in Cloud Port Workflows

Cloud Port workflows can utilize variables in the same manner as on-premises workflows. Workflows that use *expected* variables—variables that are not created or updated internally upstream—can only be used by a job submission method that is capable of supplying values for these variables (parameters in the case of API submission) at run time.

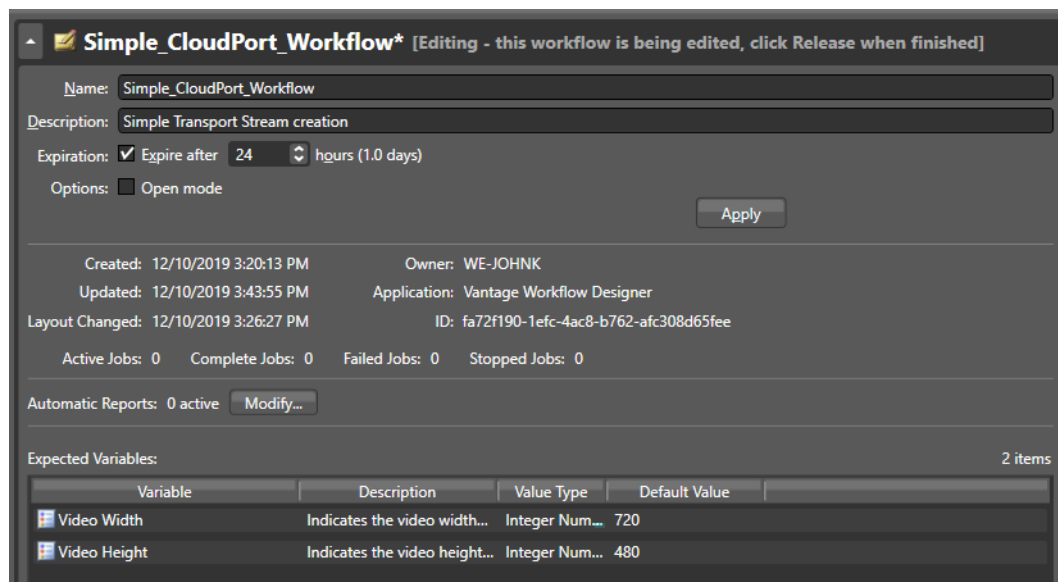
For hybrid workflows, you can submit jobs from another workflow, a work order, from Workflow Portal, or from a third party program using the Vantage API. For hosted workflows, you can only submit jobs via an API-based program or system.

Note: Detailed information about parameter binding and variable manipulation is provided in the [Vantage User Guide](#) and Vantage Rest API Guide.

For example, here is an IPTV/VOD action where the x264 codec’s resolution is being set by variables instead of constants:



To view *expected variables*—variables that are utilized in a workflow but are not set by default or set within the workflow, expand the Properties of the workflow panel (using the open/close arrow just to the left of the workflow title).



In this case, two variables are expected (these correspond to the two variables which were bound to the Width/Height parameters of the IPTV action).

To submit a job to this workflow, the job-submission program must be designed to obtain these two values, update variables and submit them with the job request.

Creating Hybrid Workflows

This topic explains how to design hybrid workflows in Workflow Designer to use Cloud Port features.

Note: Before you can process media in Telestream Cloud, you must have set up your Telestream Cloud account, a third-party cloud storage account, and your Vantage domain settings for Cloud Port operation as explained previously.

- [Hybrid Workflow Restrictions](#)
- [Monitoring Utilization to Design Effective Hybrid Workflows](#)
- [Creating a Prototype Hybrid Workflow](#)
- [Verifying and Using Hybrid Workflows](#)

Hybrid Workflow Restrictions

A hybrid workflow is one that contains cloud-capable media processing actions, but remains hosted directly in an on-premises Vantage domain and is managed in Workflow Designer. Hybrid workflows have the following characteristics and limits:

- Hybrid workflows—unlike hosted workflows—can start with any origin action.
- In addition to containing Vantage actions that only execute on premises, a hybrid workflow must include at least one cloud-capable action.
- Cloud-based output files generated from cloud-capable actions can be operated on using Vantage Transport Service actions: Copy | Move | Delete | Deploy.
- Cloud-capable or Telestream Cloud action, and Cloud Port mode must be enabled.
- Certain configuration limitations apply to cloud-capable actions. See [Configuration Limitations in Cloud Port Mode](#).
- Hybrid workflows may include Telestream Cloud actions—Cloud Flip | Cloud QC | Cloud Speech | Location actions—which always execute projects implemented in Telestream Cloud.
- Files uploaded to cloud storage for transcoding are stored in the *vcp-uploads* folder in your cloud storage account. This enables you to easily track uploaded files and delete them after you no longer need them. Files in this folder must be managed manually.

Monitoring Utilization to Design Effective Hybrid Workflows

The Vantage Utilization action (in the Common group in Workflow Designer) is an optional feature which requires an Array Pro license. It enables you to determine the current utilization of the Vantage domain or transcoding actions and report the results in a variable, one for each metric being tested.

The variable emitted by the Utilization action represents the percentage of utilization for each checked metric. The variable can be used in downstream Decide actions to control the flow of work through the workflow. The variable can also be passed out of the job as well, for external recording or reporting, for example.

These metrics can be used to determine how to efficiently handle the workload by directing the workflow to execute one branch or another, including routing to a branch with actions are configured to execute in Telestream Cloud, when on premises services approach saturation

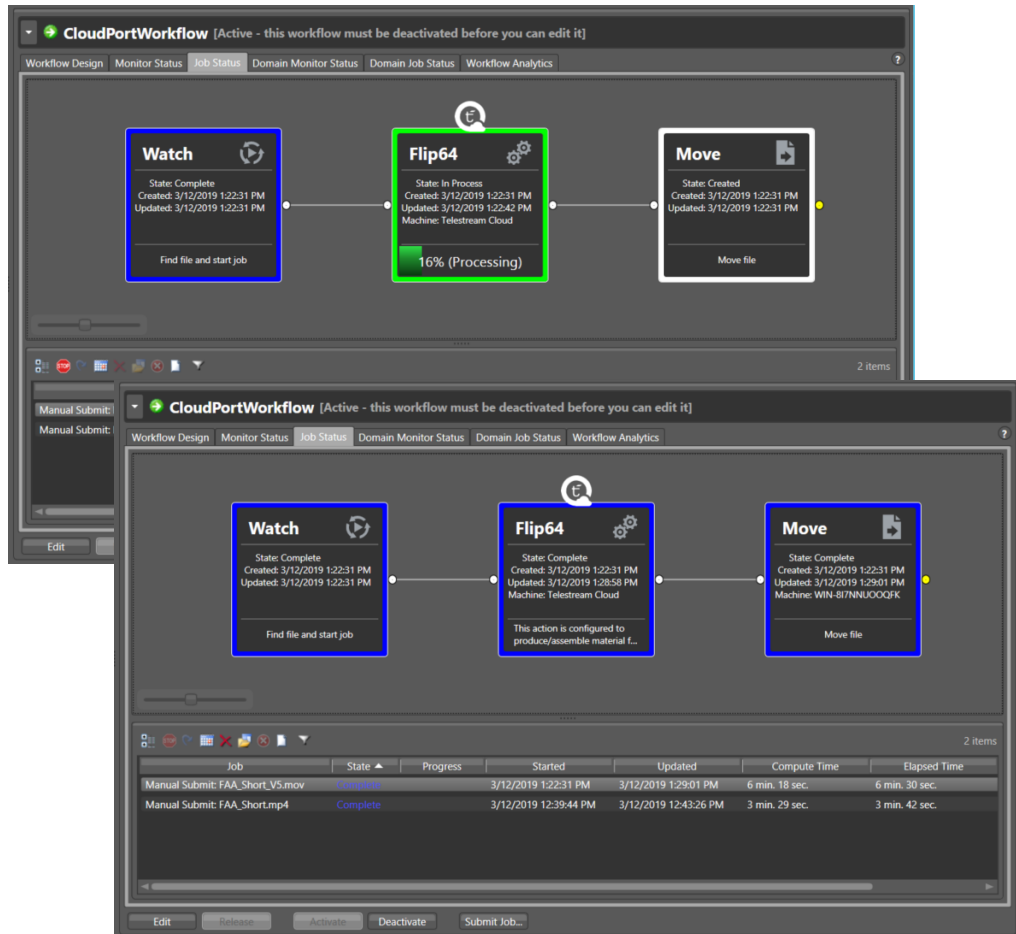
The following figures show Utilization action configuration and an example workflow.



For example, if you want to route IPTV VOD actions based on current resource utilization to an on premises domain server running the IPTV VOD service or to a cloud-based IPTV VOD resource, you can submit a job to a workflow that executes a Utilization action to test the IPTV VOD load.

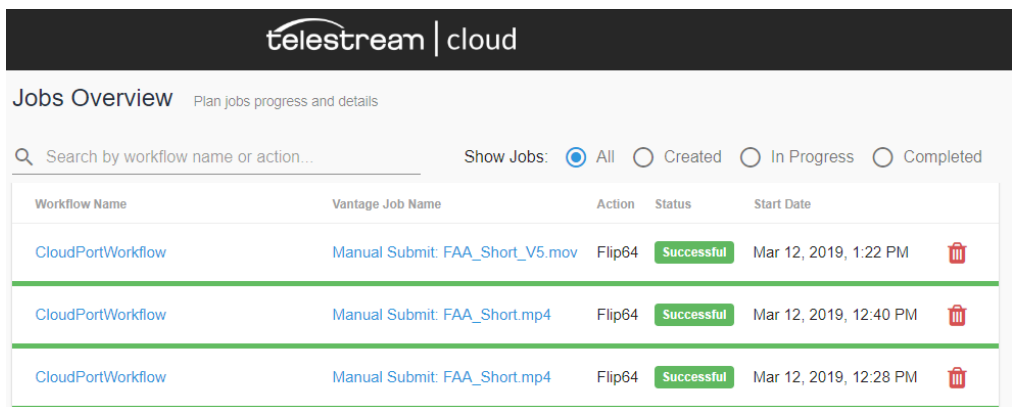
If the result is lower than the maximum workload threshold, the workflow can trigger the on premises IPTV VOD action. However, if the load is higher than the threshold, the workflow can trigger a cloud-mode-enabled IPTV VOD action that transcodes the media in Telestream Cloud.

1. When the workflow completes, check Vantage Job Status for success or failure. If there is a failure, Vantage Job Status and your Telestream Cloud account provide details about what happened.

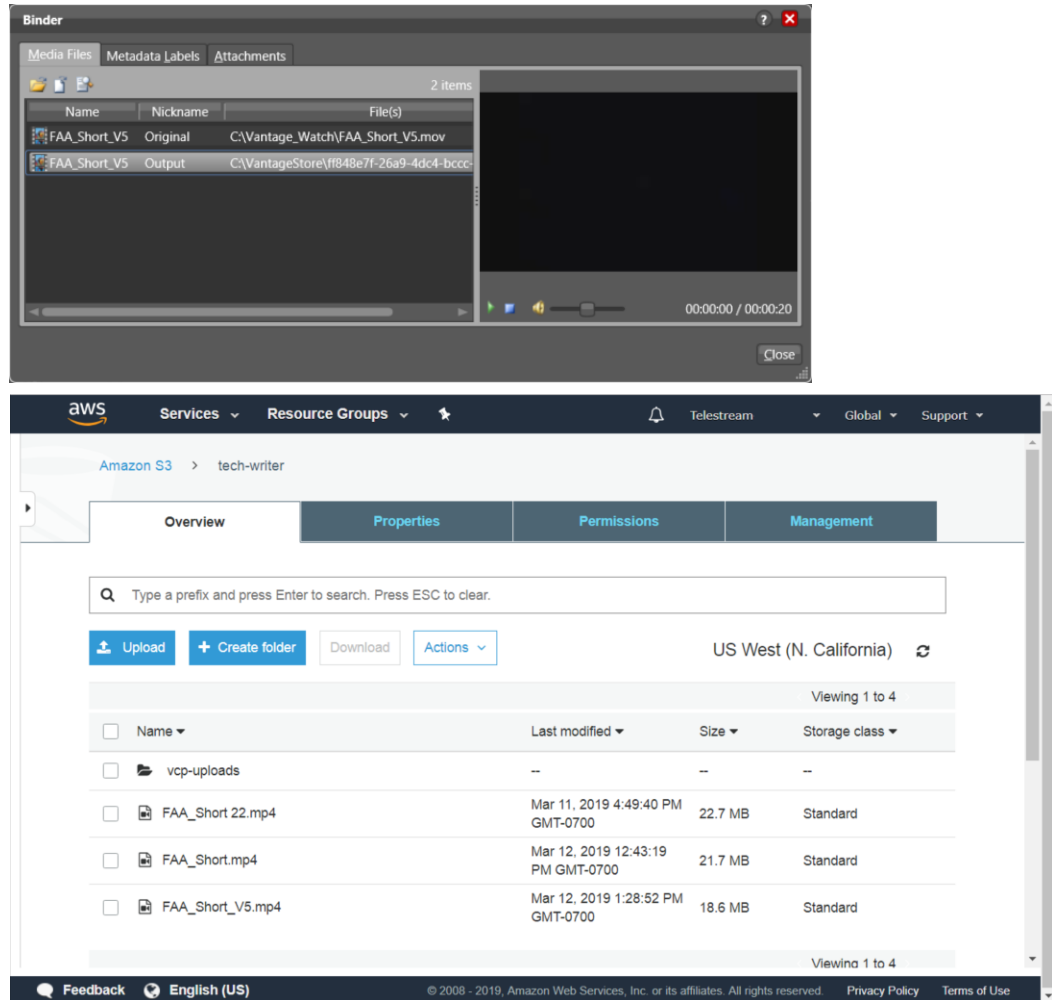


2. If you have access to the Vantage Cloud Port account in Telestream Cloud, click Dashboard > Vantage Cloud Port.

The Jobs Overview displays each job and its status details:



3. Click the Workflow Name or Vantage Job Name to see details about the job.
4. Finally, check the binder (right-click the job and select View Binder) and the cloud storage for expected output files (AWS S3 example shown).



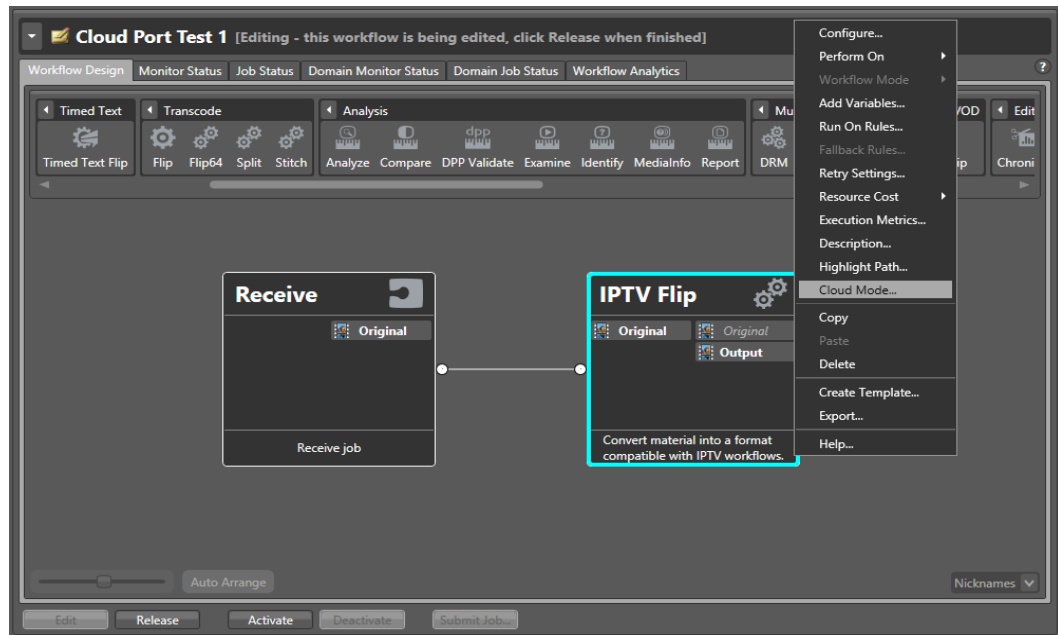
Creating a Prototype Hybrid Workflow

To create a hybrid workflow, in Workflow Designer, follow these steps:

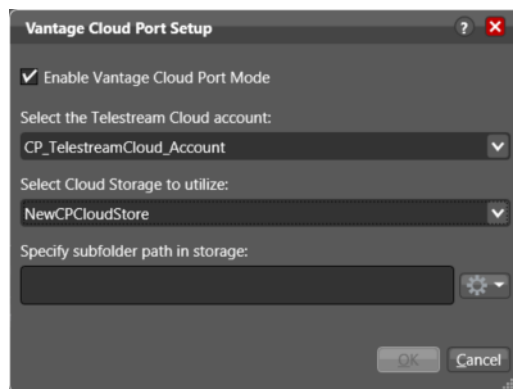
1. Create a new workflow.
2. Include one or more cloud-capable | Telestream Cloud actions to execute in Telestream Cloud.

Note: The Output Location for a cloud-based media processing action is not used and is disabled. The output always is written to a cloud location (specified in Cloud Port mode).

3. Enable cloud processing for a cloud-capable action: right-click the action and select *Cloud Mode* > *Configure Cloud Mode*.



4. In the Vantage Cloud Port Setup dialog, check *Enable Vantage Cloud Port Mode* to activate cloud execution for this action. Configure the fields:



After media is processed, the output file is pushed to the target cloud storage location. To prevent output file names from colliding in the target cloud store, use *Specify subfolder path in storage* to specify a unique location.

5. Select your Telestream Cloud account, select your cloud storage, and specify a subfolder path, if any, where you want the output file to be stored. Click the drop-down menu and select any variables to include for automatic subfolder naming.
6. Click OK to save your entries and close the window.

Important: For a cloud-capable action to execute, the required accounts and credentials must be correct in all of these locations:

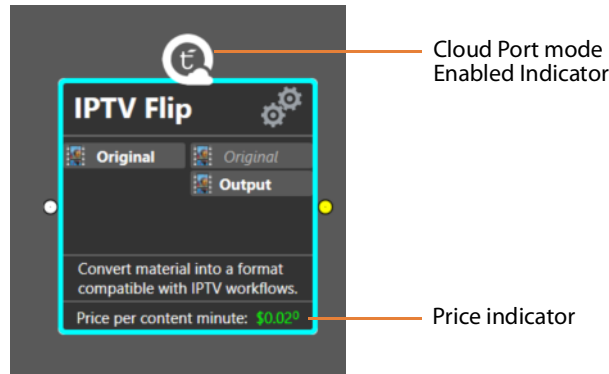
- Telestream Cloud—You must have a valid Vantage Cloud Port account, and you must include correct third-party storage credentials on the Data Store page.
- Third party cloud storage—You must have at least one valid cloud storage account.
- Vantage Management Console > Settings & Options > Telestream Cloud—You must enter the name of your Telestream Cloud account and its API key.
- Vantage Management Console > Vantage Folder Address Book—You must enter the exact name and keys for your third-party cloud storage accounts.
- Action Cloud Port mode—You must select your Telestream Cloud account and your cloud storage account from the drop-down menus in the Vantage Cloud Port Setup dialog.

Verify your credentials carefully in all places. If credentials are entered incorrectly in any of these locations, Vantage Cloud Port may not function properly.

To review your cloud storage and Telestream Cloud configurations, see [Creating a Cloud Storage Account](#) and [Creating a Telestream Cloud Account](#).

To review your Vantage settings, see [Adding your Telestream Cloud Account to Vantage](#) and [Adding your Cloud Storage Account to the Vantage Folder Address Book](#) for details.

When Cloud Port mode is set up correctly, the cloud-enabled action shows a Cloud Port mode indicator and the price per content minute. (Actions in Cloud Port mode are billed on *output* media duration, except for Analyze, which is billed on *source* media duration.)



This example is simplified to present just the basics of Vantage Cloud Port workflows. However, these workflows can be as complex as you need, including analysis, decision-making, and branching. You can include any action or number of actions downstream of the cloud-capable action. For example, you can use a Copy action to localize a transcoded file out of the cloud, or use a Deploy action to send the file to another server or storage location. Because Vantage knows file locations based on nicknames, subsequent actions only require the nicknames to find and process cloud files.

Verifying and Using Hybrid Workflows

When workflow design is complete, follow these steps to verify operation:

1. Activate the workflow, submit a job, and monitor the job in the Job Status tab.
2. Vantage receives the source file, and the cloud-capable action copies it to the cloud storage location you specified when you configured Cloud Port mode, placing the source file into a *vcp-uploads* folder.
3. From the *vcp-uploads* folder, the cloud-capable action processes the source file and places the output file in the cloud storage location.
4. Any actions downstream of the cloud-capable action operate as they normally would do. These actions use the nickname to find the processed file in the cloud and continue processing.
5. Use the Job Status tab to monitor processing status: Uploading (input to cloud storage), Queued, Processing, and Pushing (output to cloud storage). Note that actions cannot be paused, even though Vantage may indicate that you can do so.

Creating and Deploying Hosted Workflows

This topic explains how to design hosted workflows in Workflow Designer and deploy them to Telestream Cloud for execution independent of Vantage, using Telestream Cloud's Cloud Port service.

Note: Before you can process media in Telestream Cloud, you must have set up your Telestream Cloud account, a third-party cloud storage account, and your Vantage domain settings for Cloud Port operation as explained previously.

- [Hosted Workflow Restrictions](#)
- [Creating a Prototype Hosted Workflow](#)
- [Deploying Hosted Workflows to Telestream Cloud](#)

Hosted Workflow Restrictions

A hosted workflow is one that is designed in Workflow Designer, validated and exported as a CWD file, and deployed to Telestream Cloud for complete execution with no dependency on your Vantage domain.

It is managed in the Telestream Cloud console. Often, jobs are submitted and also managed via a Cloud Port API-based program.

Hosted workflows differ from hybrid workflows in that they have a more restricted set of actions that are supported, and also have the following characteristics and limits:

- Hosted workflows can only start with a Receive origin action.
- They must be able to execute successfully on-premises (in your Vantage domain). Testing on premises requires that you change the location of output files, of course.
- Use only cloud-capable actions:
 - Cloud-capable transcoding actions, which must be configured to meet Telestream Cloud service capabilities. See [Using Cloud-capable Media Processing Actions](#).
 - A limited set of utility actions that have been implemented in Telestream Cloud. See [Using Cloud-Capable General-Purpose Actions](#).
- You do not (should not, for consistency sake) enable Cloud mode on the transcoding/media processing actions; the entire workflow (when imported) executes in Telestream Cloud and the Cloud mode settings must be configured directly in Telestream Cloud.
- All the same configuration limitations apply to cloud-capable actions used in hybrid workflows. See [Configuration Limitations in Cloud Port Mode](#).
- Hosted workflows can not include Cloud actions (Cloud Flip | Cloud QC | Cloud Speech | Location). Unsupported (and incorrectly configured) actions are flagged when you export your workflow.

- Actions (transcoders, for example) that generate files require you to configure the lifespan of the output file, because the workflow is executing outside the context of Vantage, which has automatic file lifespan management, whereas Telestream Cloud does not.
When Telestream Cloud (not Vantage) is executing the workflow, a Delete action can't be used to delete files created by action in the workflow. When Telestream Cloud executes workflow jobs, it uses the output lifespan setting to delete all transient files at the end of the workflow execution. (Lifespan settings are ignored when workflows execute locally, whether the Cloud-capable actions execute locally or in Telestream Cloud.)
 - *Transient*—choose when the media created by this action is temporal—it is only used by other actions in this workflow, and should be automatically deleted immediately after the workflow (the job) has completed.
 - *Permanent*—choose when the media should be retained (not deleted) after the workflow has completed. In this case, file management is beyond the scope of the workflow, Vantage, or Telestream Cloud.
- An action can't generate multiple files with different Output Lifespan settings. For example, an IPTV/OVD action can't generate one file which is *Permanent* and another which is *Transient*. If you require multiple outputs with different lifespans, add an action for each, and set this action's output lifespan accordingly.

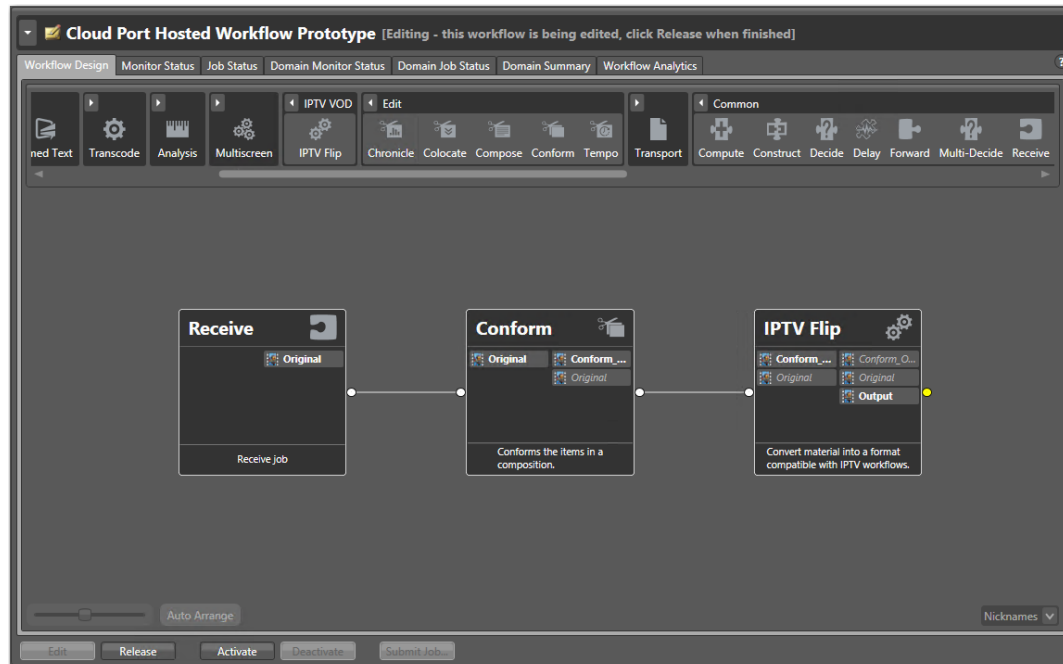
Creating a Prototype Hosted Workflow

In this prototype, the Conform action ingests the CML file, performs the requisite transformation from CML and produces an intermediate version, passing it to IPTV Flip. Using the IPTV Flip action, a cable-compliant media version is generated as the target output.

To create a hosted workflow, follow these steps, using this prototype as an example:

1. Open Workflow Designer and create a new workflow within the limits of [Hosted Workflow Restrictions](#).

2. Add a Receive action (the only origin action permitted for hosted workflows) to start the workflow, and configure it with the nickname to use for accessing your source media version.

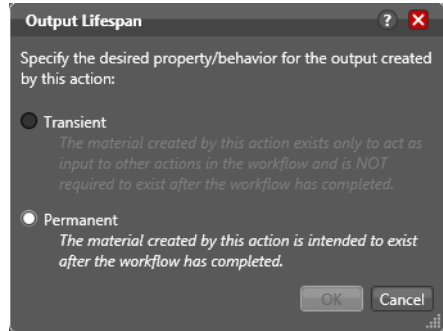


3. Add a Conform action and configure it.

The purpose of this workflow is to produce a Cable-compliant version of the media as defined by the incoming CML file, nicknamed *Original*. The generated output of the Conform action (nicknamed *Transient*) only has a useful lifespan within the context of this workflow, as input to IPTV Flip. As such, the intermediary file *Transient* isn't useful once this workflow job is complete. (A file with this temporal characteristic is referred to as being *transient*.)

Contrast this to the generated output of the IPTV Flip action. This action emits an output file nicknamed *Cable*. This the version of the media that you intend to utilize in production for example, or have an indefinite lifespan beyond job execution. A file of this temporal characteristic is referred to as *Permanent*.

4. Because this is a hosted workflow executing in Telestream Cloud, in order to delete the temporal file, right-click on the action and choose Cloud Mode > Output Lifespan.



5. In the Output Lifespan dialog, select Transient and close the dialog.
6. Finally, add an IPTV Flip action and configure it.

The purpose of this action is to produce a Cable-compliant version of the media as defined by the incoming CML file, nicknamed *Original*. The generated output of the IPTV/VOD action (nicknamed *Permanent*) in contrast, has a useful lifespan within the context of this workflow, as input to IPTV Flip.

7. Specify the Output Lifespan as Permanent.

Summary

This prototype is simplified to present just the basics of Vantage Cloud Port hosted workflows. However, these workflows can be as complex as you require, including analysis, decision-making, and branching.

You can include any action or number of actions upstream or downstream of cloud-capable actions. For example, you can use a Copy action to localize a transcoded file out of the cloud, or use a Deploy action to send the file to another server or storage location. Because Vantage identifies file locations based on nicknames, subsequent actions only require nickname to identify, locate, and process cloud-resident files.

Important: For a cloud-capable action to execute successfully, the required accounts and credentials must be correct in all of these platforms and programs:

- Telestream Cloud—You must have a valid Vantage Cloud Port account, and you must include correct third-party storage credentials on the Data Store page.
- Third party cloud storage—You must have at least one valid cloud storage account.
- Vantage Management Console > Settings & Options > Telestream Cloud—You must enter the name of your Telestream Cloud account and its API key.
- Vantage Management Console > Vantage Folder Address Book—You must enter the exact name and keys for your third-party cloud storage accounts.

- Action Cloud Port mode—You must select your Telestream Cloud account and your cloud storage account from the drop-down menus in the Vantage Cloud Port Setup dialog.

Verify your credentials carefully in all places. If credentials are entered incorrectly in any of these locations, Vantage Cloud Port may not function properly.

To review your cloud storage and Telestream Cloud configurations, see [Creating a Cloud Storage Account](#) and [Creating a Telestream Cloud Account](#).

To review your Vantage settings, see [Adding your Telestream Cloud Account to Vantage](#) and [Adding your Cloud Storage Account to the Vantage Folder Address Book](#) for details.

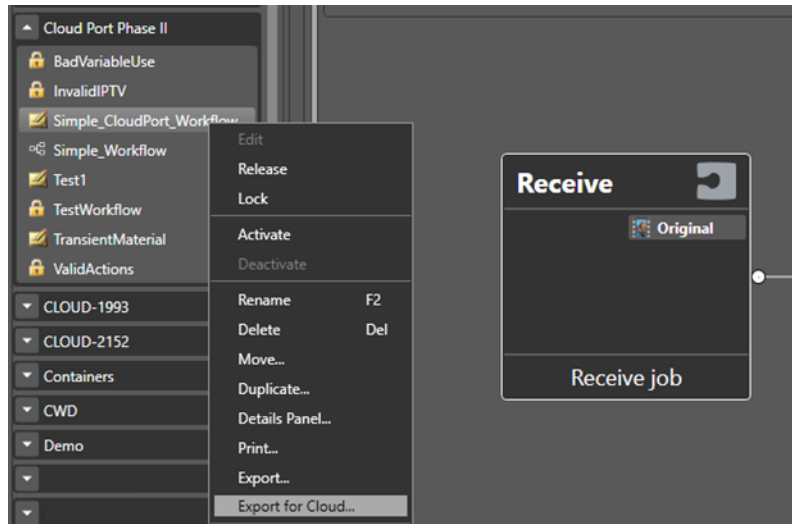
Deploying Hosted Workflows to Telestream Cloud

Deploying hosted workflows to your account in Telestream cloud is a two-step process. First, you validate and export it from Vantage using Workflow Designer; next, you import it into Telestream Cloud. This topics describes how to validate and export the workflow. Importing a hosted workflow into Telestream Cloud’s Cloud Port web app is described in [Importing New Workflows into Telestream Cloud](#).

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

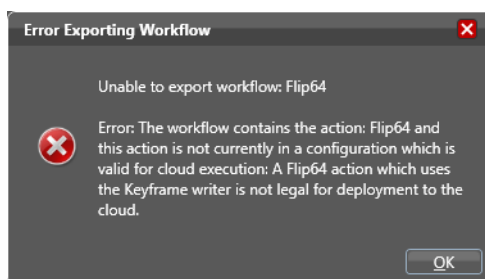
Here are the steps:

1. After creating (or updating) your workflow and testing it for proper execution, choose File > Export Workflow for Cloud or right-click the workflow and choose Export for Cloud.



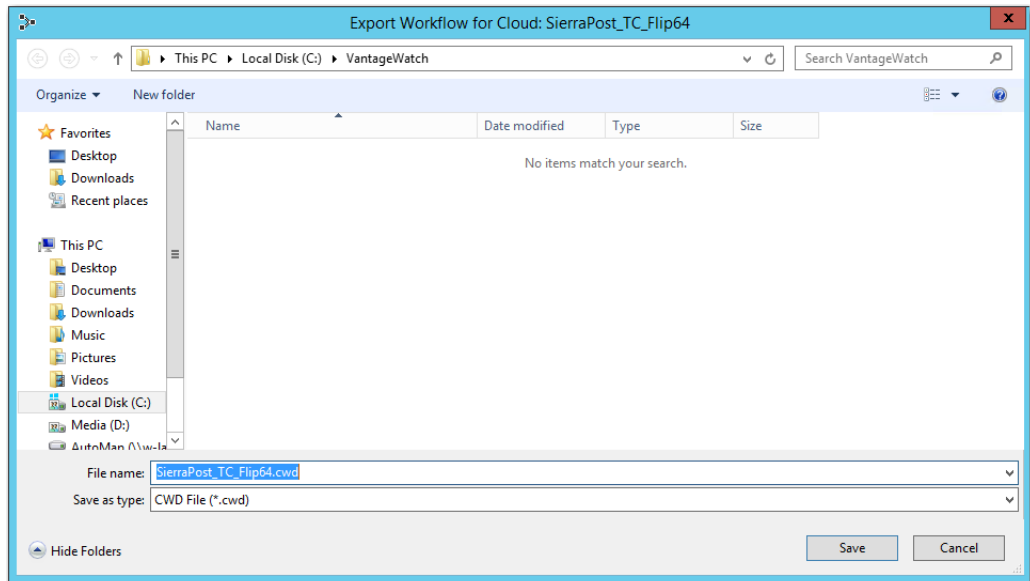
Workflow Designer automatically audits the workflow to determine if the actions and their configurations are supported for use in a hosted workflow.

If it discovers an error, Workflow Designer displays an error message identifying the problem:



Fix the problem and retry.

When the workflow passes the hosted workflow audit and is validated for hosting and execution in Telestream Cloud, Workflow Designer displays a File Save dialog:



2. Browse to the local or network location you want the file exported to, name the file (with the CWD) extension and click Save.

Note: When the export is complete, your work in Vantage is complete. Log into your Telestream Cloud account to import the CWD file and prepare it for deployment and utilization in Telestream Cloud.

Troubleshooting

The following tips may help you resolve issues with using Cloud Port features. If you cannot resolve a problem on your own, please contact Telestream Support for assistance (see [Contacting Telestream](#)).

Errors When Enabling Cloud Port Mode on an Action

If Vantage displays an error message when trying to select Cloud Port mode in a cloud-capable action, the likely cause is that your Telestream Cloud account has not been entered in the Vantage Management Console > Settings & Options > Telestream Cloud tab. If you have entered the account, click the Test button to verify that your account credentials are correct and retry.

Connection Failures

An easy way to recognize if Vantage is connecting with Telestream Cloud and accessing third-party storage is that the white cloud logo and the green price indicator both show up on the action. If Vantage fails to connect with Telestream Cloud or your cloud storage, as indicated by the absence of the logo and price on the action, check your credentials in every location where they are entered.

Cloud-capable actions require credentials in all of these locations:

- Telestream Cloud
- Third party cloud storage
- Vantage Management Console > Settings & Options > Telestream Cloud
- Vantage Management Console > Vantage Folder Address Book
- Action Cloud Port mode > Vantage Cloud Port Setup selections.

Cloud and Storage Performance Considerations

If you have intermittent slow performance issues, consider these suggestions:

- Performance may vary by the type of storage resource you choose.
- Network traffic during busy times of day may affect cloud and storage performance and transfer speeds.
- Cloud storage can become temporarily unavailable. If Cloud Port has trouble accessing your storage, visit your storage web site to determine whether your storage is inaccessible for some reason. Also be sure to verify your credentials.
- Default storage account settings specify limits on various available resources. If you bump up against the limits and need greater speed or additional storage, contact your storage provider for assistance.

Cloud Storage Is Overloaded by Uploads

The Telestream Cloud Service Upload Limit throttles concurrent uploads to prevent overloading cloud storage (default: 4 concurrent files). Use the Vantage Management Console > Services panel to select the service, put it into maintenance mode. Now, display the Cloud service Setup tab to access and change the Upload Limit value.

The total of this number for all nodes should be set to match the concurrent job limit set by Telestream Cloud (30 is the default).

Also, if a large file fails to upload automatically, try this workaround: Use a Copy action before the cloud-capable action to manually copy the file to the cloud.

Monitoring Job Status

You can manage hybrid workflow jobs in all of the same ways you normally would in Vantage. Use the Workflow Designer Job Status tab to get error messages and use the controls to Stop, Restart, or Delete jobs.

You can also view job status in the Telestream Cloud dashboard. Log in and click the Dashboard > Vantage Cloud Port to see the hybrid jobs action list and hosted jobs list. Click on any job for details. Error messages in the status details will give you clues as to faulty workflow or action settings.

Font Issues in Subtitles

Cloud-capable actions render fonts differently than actions executing on premises, because Cloud servers use Linux instead of Windows. Subtitles or other on-screen print renderings that use the fonts built into on premises Vantage OS may result in print output from the cloud (Linux) that differs from the same output on Windows. In particular, font size, font spacing, font effects and anti-aliasing may have subtle differences between the two platforms. If you require a specific font style with Vantage Cloud Port, Telestream recommends waiting until NewBlue support is added to Linux.

Pausing Actions in Cloud Port Mode not Supported

Actions operating in Cloud Port mode can not be paused and will not respond to a Pause command.

Processing Time-Outs

Cloud-capable actions are optimized for execution efficiency in Telestream Cloud. However, if you have unusually large files or other factors that require heavy resource usage, it is possible that processing may time out after an extended time period. If this happens, please contact Telestream Support for assistance (see [Contacting Telestream](#)).

Reference and CML File Limits

If a reference or CML file that references more than 32 files is submitted to a cloud-capable action, the job will fail at run time, indicating that this is not supported.

Managing and Using Workflows in Telestream Cloud

This chapter describes how to use the Cloud Port service via the Cloud Port web app to import workflows into Telestream Cloud and manage revisions. This chapter also describes how to submit jobs to hosted workflows, monitor cloud based actions and workflows, monitor analytics, and set up job notifications.

While most of the tasks you need to perform when utilizing Cloud Port workflows are implemented in the Cloud Port web app, they are also implemented in the Cloud Port API, enabling you to implement Cloud Port workflow processing in your own systems or programs.

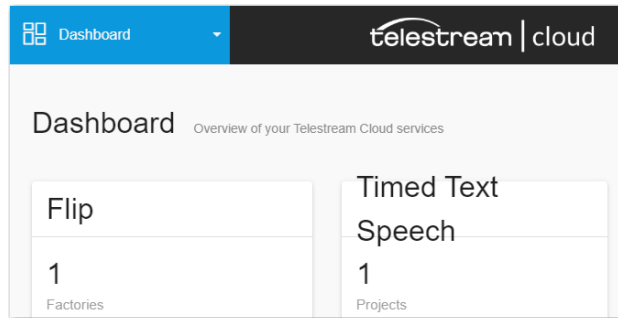
Topics

- [Logging in to the Cloud Port Web App](#)
- [Importing New Workflows into Telestream Cloud](#)
- [Managing Hosted Workflow Revisions](#)
- [Submitting Jobs to a Hosted Workflow](#)
- [Monitoring and Managing Action Jobs](#)
- [Monitoring and Managing Hosted Workflow Jobs](#)
- [Monitoring Financial Information](#)
- [Managing Notifications](#)
- [Troubleshooting](#)

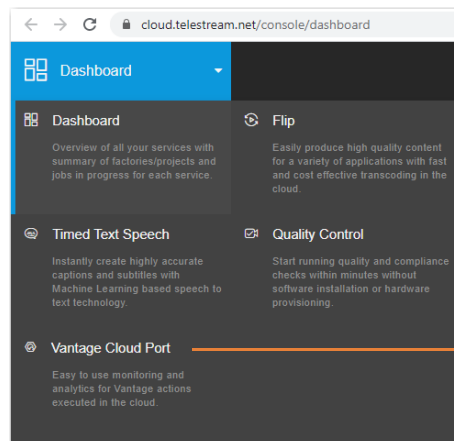
Note: Before you can process media in Telestream Cloud, you must have set up your Telestream Cloud account, a third-party cloud storage account, and your Vantage domain settings for Cloud Port operation as explained in [Getting Vantage Cloud Port Up and Running](#).

Logging in to the Cloud Port Web App

To use the Cloud Port web app, open the Chrome web browser and log into your [Telestream Cloud](#) account to display the dashboard:



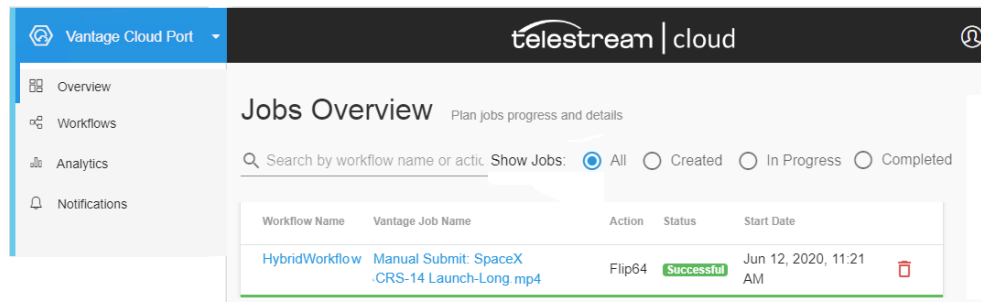
In the dashboard menu (blue, in the upper left corner), choose *Vantage Cloud Port*:



Choose Vantage Cloud Port to display the Cloud Port Web app.

Or, on the dashboard, locate the Vantage Cloud Port panel and click *Go To Service*.

Telestream Cloud displays the Cloud Port web app's menu on the left, and the default, Jobs Overview panel, to the right:



Use the Cloud Port menu (top left) to display each of the main panels where you perform all of your tasks in the Cloud Port web app.

Importing New Workflows into Telestream Cloud

Deploying hosted workflows in Telestream cloud is a two-step process. First, you create and export the workflow from Vantage, using Workflow Designer (see [Creating and Deploying Hosted Workflows](#)). Next, you import it into Telestream Cloud, where it is referred to as a *hosted* workflow. The original workflow (which is not referred to as *hosted*) can continue to be utilized directly in Vantage as well, if required.

Topics

- [Creating a Hosted Workflow](#)
- [Hosted Workflow Tutorial](#)

Note: This topic describes how to import *new* workflows—not workflows that have been *revised*. When you revise an existing workflow and export the new version, if you were to import it using this method, it would be treated as a separate workflow—which may, in fact, be exactly what you want to do. However, if you want to associate the revision(s) with the original so that you can manage them collectively, you should import it as a *revision*. To learn how to import and manage workflow revisions, see [Managing Hosted Workflow Revisions](#).

Creating a Hosted Workflow

To import a CWD workflow file, perform these steps:

1. In the Cloud Port web app, display the Workflows panel.
2. Click *New Workflow*.
3. Configure the following fields (all are required):

Workflow Name (max. 255). Descriptive name for this workflow.

Workflow Document (max. 255). Enter the fully-qualified file path (in UNC | drive letter format) or *Browse* to locate and choose the on-premises CWD file.

Default Store. Specifies the store where source media is located. Workflows exported from Workflow Designer for hosting in Telestream Cloud don't include the storage location or subfolder, since they are independent of Telestream Cloud.

Stores are managed at the Telestream Cloud level. To view and manage stores, choose *Manage Stores* from the Telestream Cloud main menu.

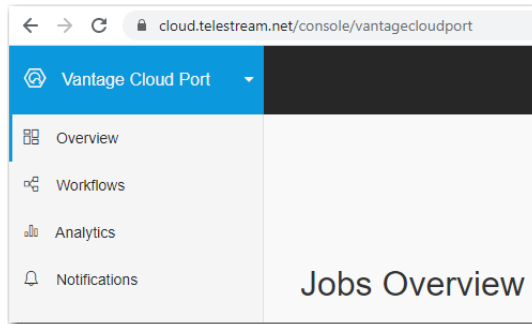
Note: Optionally, specify a subfolder/folder offset and modify the default store. After creating a hosted workflow, you can modify the default store and add a subfolder offset: Click *Workflows* > (Target Workflow) > *Details* tab. Click the Gear icon for the Store to update the default store. Click the Gear icon for the Folder Offset to specify an optional subfolder string.

4. When the file has been uploaded, click *Create Workflow* to validate it and activate it for use.

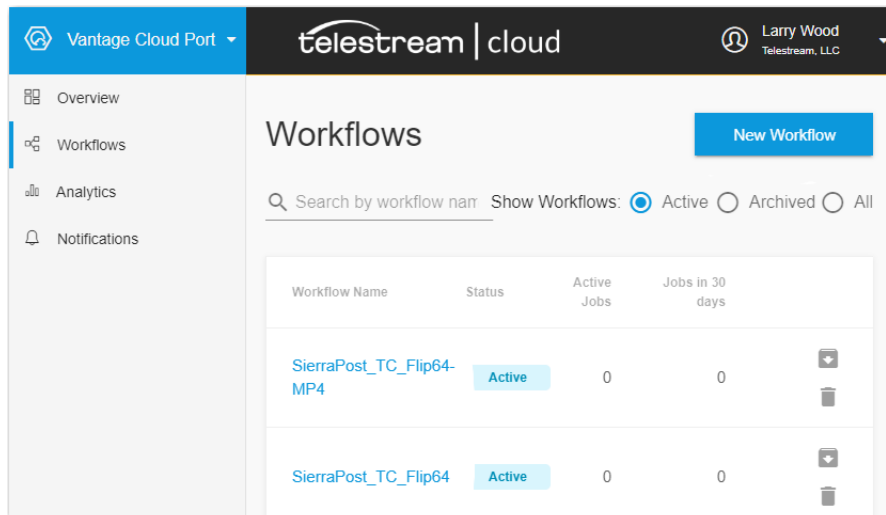
Hosted Workflow Tutorial

This tutorial describes how to import CWD files that have been exported from Vantage Workflow Designer to an on-premises location on your network.

1. On the Dashboard, choose Vantage Cloud Port from the menu to display the Vantage Cloud Port web app:



2. In the Vantage Cloud Port panel, choose Workflows to display the Workflows panel:



This panel displays workflows that have already been deployed, and enables you to add new ones to your account.

3. Click *New Workflow* to display the New Workflow panel:

4. Configure the following fields (all are required):

Workflow Name (max. 255). Enter the descriptive, display name for this workflow. Workflow names must be unique within the Cloud Port service, but the name you enter does not have to match the name used in Vantage Workflow Designer. This name is displayed anywhere that this workflow or its jobs are referenced in the web app.

Workflow Document (max. 255). Manually enter the fully-qualified file path and name in Windows UNC or drive letter format, or click *Browse* to locate and choose the on-premises CWD file you exported from Workflow Designer. CWD files must be local or network accessible.

Default Store. Name of the store where source media for this workflow is located.

Note: If no stores are available, it indicates that no cloud storage locations have been defined in your Telestream Cloud account. You must add at least one cloud storage location in order to utilize hosted workflows.

To create a new store, choose *Add New Store*. Select the platform for the store, configure it and click *Add Store* at the bottom of the panel.)

5. Next, click *Create Workflow* to upload it into Telestream Cloud.

Telestream Cloud uploads the file to the target store. Progress is indicated to the right of the Workflow Document field.

6. When uploading is complete, click *Create Workflow* to deploy it for use:

Workflows > New Workflow

New Workflow

Cancel

Please note: all fields are required (unless stated otherwise).

Workflow Name: SierraPost_TC_Flip64-MP4

Workflow Document: SierraPost_TC_Flip64.cwd (100%)

Default store: Choose Store (Store1)

CREATE WORKFLOW CANCEL

Telestream Cloud notifies you when deployment is complete and displays the new workflow in the Workflows table:

Workflows

New Workflow

Search by workflow name.. Show Workflows: Active Archived All

Workflow Name	Status	Active Jobs	Jobs in 30 days		
SierraPost_TC_Flip64MP4	Active	0	0		
LookingAtVariables	Active	0	1		
Flip64_Overlay	Active	0	3		

Summary

You've now completed the second half of the hosted workflow Design and Export / Import and Deploy process. Your hosted workflow is now ready to go to work!

Managing Hosted Workflow Revisions

During the life cycle of a workflow, modifications are often made to adapt it to changing requirements. Cloud Port supports *workflow versioning*; enabling you to import multiple revisions of the same workflow, and activate a specific version at any point in time. The active version is always utilized when you interact with the workflow.

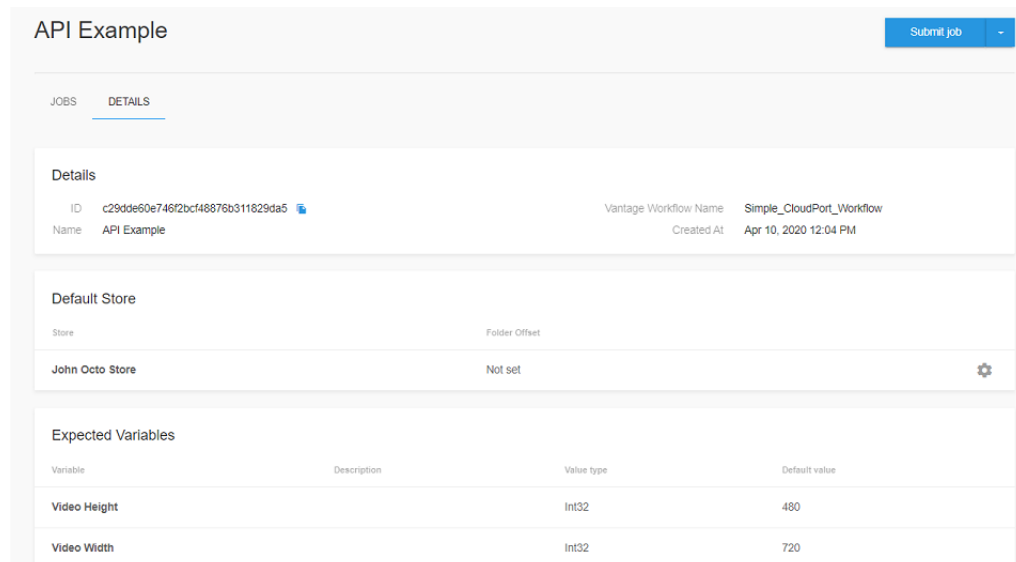
Note: This topic describes how to import *modified* workflows—workflows that have been modified and a new version exported. Telestream suggests importing updated workflows as a *revision*, so that they are directly associated with the original and you can manage the revisions effectively. Telestream does not recommend proliferating workflow revisions by the method described in [Importing New Workflows into Telestream Cloud](#), as each revision would be a separate, independent workflow.

Using workflow revisions in Cloud Port may be very useful. However, Workflow Designer does not support revisions. Therefore, before revising a workflow for use in Cloud Port as a hosted workflow, best practice suggests that you duplicate the workflow in Workflow Designer and then make changes to the duplicated version, to maintain previous versions that are still deployed in Telestream Cloud.

Importing a Revised Workflow

To import a new version of an existing workflow, follow these steps:

1. Click Workflows and then choose the workflow you want to revise. Cloud Port displays its workflow panel:

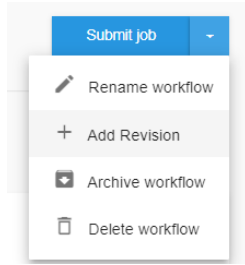


The screenshot shows a workflow details panel for 'API Example'. It includes a 'Submit job' button and tabs for 'JOBS' and 'DETAILS'. The 'DETAILS' tab is active, showing the following information:

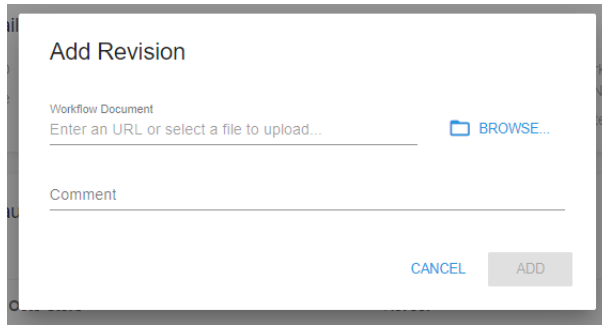
- Details:** ID: c29dde60e746f2bcf48876b311829da5, Name: API Example, Vantage Workflow Name: Simple_CloudPort_Workflow, Created At: Apr 10, 2020 12:04 PM.
- Default Store:** Store: John Octo Store, Folder Offset: Not set.
- Expected Variables:**

Variable	Description	Value type	Default value
Video Height		Int32	480
Video Width		Int32	720

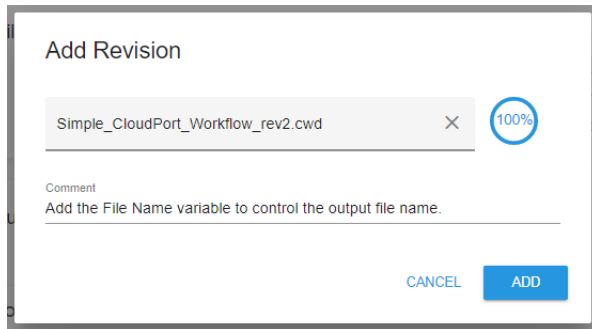
2. Choose *Add Revision* from the menu (upper right corner):



3. Choose *Add Revision* to display the Add Revision dialog:

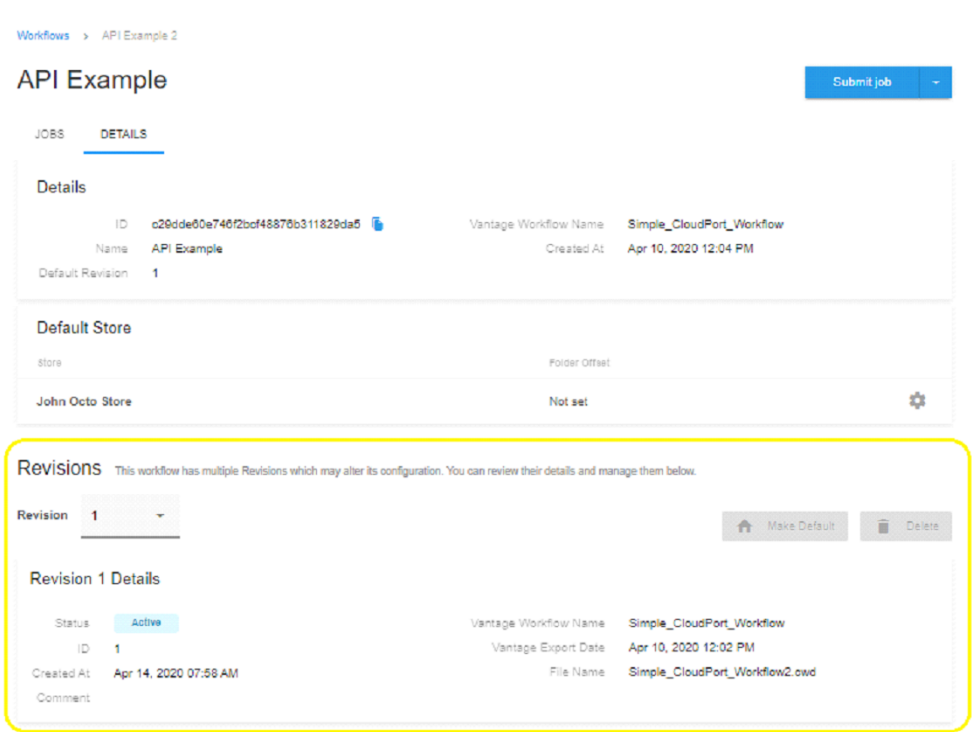


4. Click *Browse* to navigate to and choose the CWD file and import it as a version of the original workflow. Optionally, enter a comment to provide a description of the revised workflow:



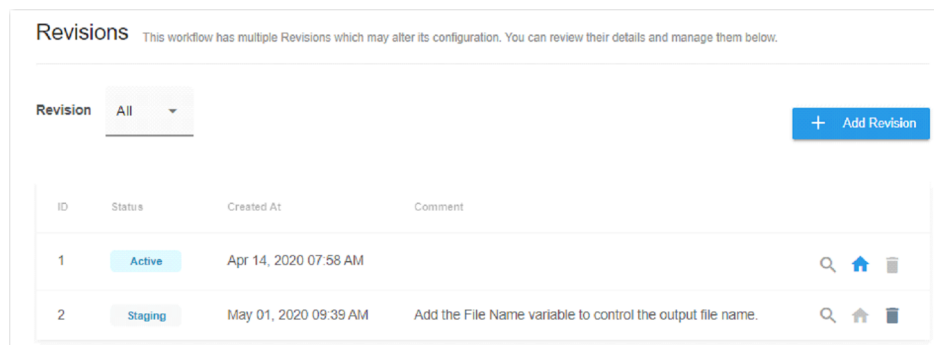
5. When upload is complete, click *Add* to deploy the revised workflow.

6. Click the Details tab to display all revisions of this workflow:



The Revisions table displays the new version Cloud Port just created. Click Make Default to make this the active revision. Use the Revision menu to display details about a given revision or set it to All to display all revisions of this workflow.

Here are the workflow revisions following the upload of a new revision:



In this example, the original (ID 1) version (uploaded on April 14th) is currently active. The new (ID 2) version's status is *Staging* to indicate that it is not currently in use.

Note: The comment entered when this revision was added explains what changed.

Switching Between Workflow Revisions

When a workflow has multiple revisions, you can switch between them, making any revision active at any time. The active revision may have different variables and expected inputs that are used in the workflow.

For example, when the original revision (Revision ID 1) is selected, the details of this workflow are displayed:

Revision 1

Make Default Delete

Revision 1 Details

Status: Active

Vantage Workflow Name: Simple_CloudPort_Workflow

ID: 1

Vantage Export Date: Apr 10, 2020 12:02 PM

Created At: Apr 14, 2020 07:58 AM

File Name: Simple_CloudPort_Workflow2.cwd

Comment:

Expected Variables

Variable	Description	Value type	Default value
Video Height		Int32	480
Video Width		Int32	720

If you select the 2nd revision, then the new changes (for example, the newly added variable) display:

Revision 2

Make Default Delete

Revision 2 Details

Status: Staging

Vantage Workflow Name: Simple_CloudPort_Workflow

ID: 2

Vantage Export Date: May 01, 2020 09:24 AM

Created At: May 01, 2020 09:39 AM

File Name: Simple_CloudPort_Workflow_rev2.cwd

Comment: Add the File Name variable to control the output file name.

Expected Variables

Variable	Description	Value type	Default value
File Name		String	
Video Height		Int32	480
Video Width		Int32	720

The variable which was added to this version of the workflow is now displayed. Also note that the Make Default and Delete buttons are now enabled:

These controls are only enabled for revisions which are not currently active.

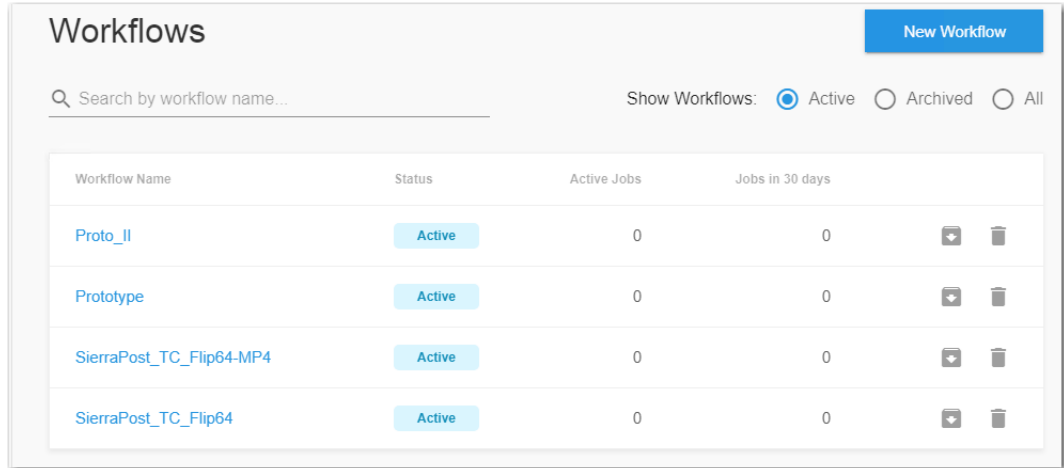
Make Default. This revision is made the default or active revision of the workflow. Any API-based interaction with this workflow or any job submission via the Cloud Port web app will use this revision of the workflow, including expected variables and sources particular to this revision.

Delete. This workflow revision is permanently removed from Telestream Cloud.

Submitting Jobs to a Hosted Workflow

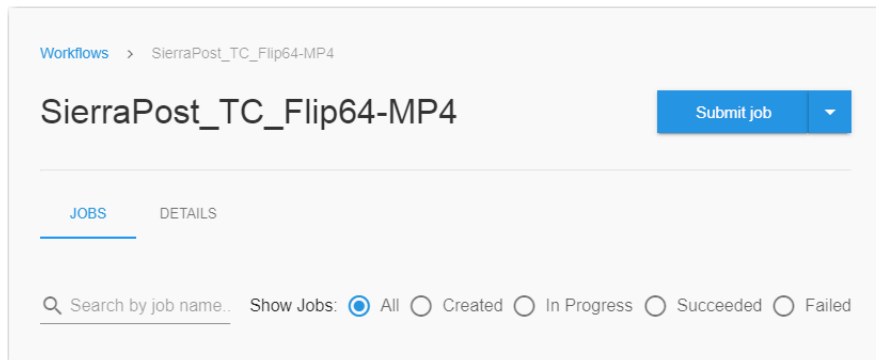
To submit a job to a hosted workflow, follow these steps:

1. To submit a job to a hosted workflow, display the Workflows panel:



2. Choose the workflow to which you want to submit a job.

Cloud Port displays the Workflow panel for the selected workflow:



3. Click *Submit Job* to display the New Job panel, to configure the job requirements:

Workflows > SierraPost_TC_Flip64-MP4 > Submit New Job

New Job for SierraPost_TC_Flip64-MP4 Cancel

Details

Job Name (Optional)

Variables

No expected variables defined for this workflow.

Source

Original BROWSE...

Storage

Flip64 /

SUBMIT JOB CANCEL

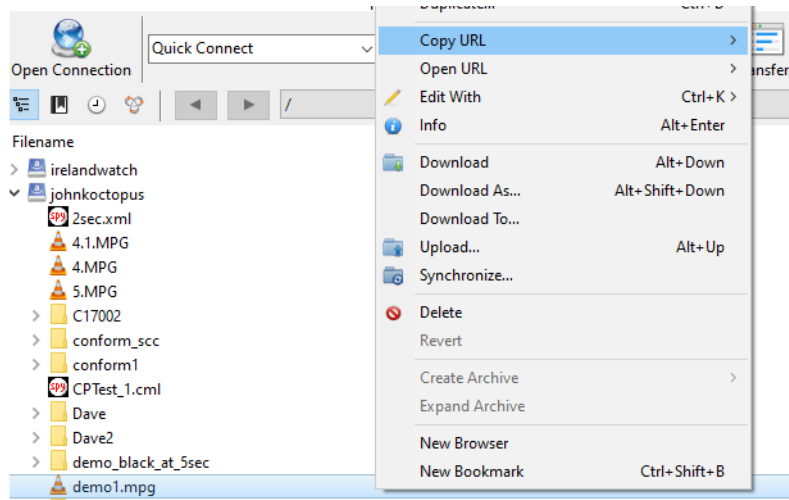
4. Complete the following controls:

Job Name (optional). Enter a text string to display in the job list for this workflow. If blank, the job name is derived from the file name of the first source.

Variables. For each expected variable in your workflow, specify values for this job. ([Using Variables and Parameters in Cloud Port Workflows](#)).

Source. For each nickname in this workflow, manually enter or click *Browse* to choose a locally-stored file. Or, use a cloud storage browser utility to choose the cloud-stored file and enter a Signed URL to access it. A Signed URL is a special URL which enables access to a file located in supported cloud storage (Google Cloud Storage | Amazon S3 | Azure BLOB Storage).

The easiest way to obtain a signed URL is to use a network file utility such as Cyberduck to generate a signed URL for the file. For example:

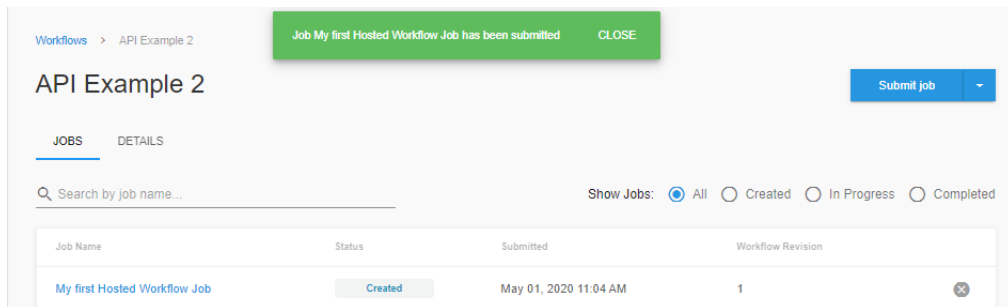


Browse to a specific bucket in your storage and select the target file. Choose Copy URL > Pre-signed URL and paste the URL into the nickname’s Source field.

Storage. Choose the storage (with a manually entered optional subfolder offset/qualifier) for the output generated by any transcoding actions or other actions that require storage in this workflow.

Note: The Storage entry specification also defines the Provider and Region where this process should execute. See [Creating a Cloud Storage Account](#) for details.

5. Click *Submit Job* to create a new job for this workflow and begin execution:

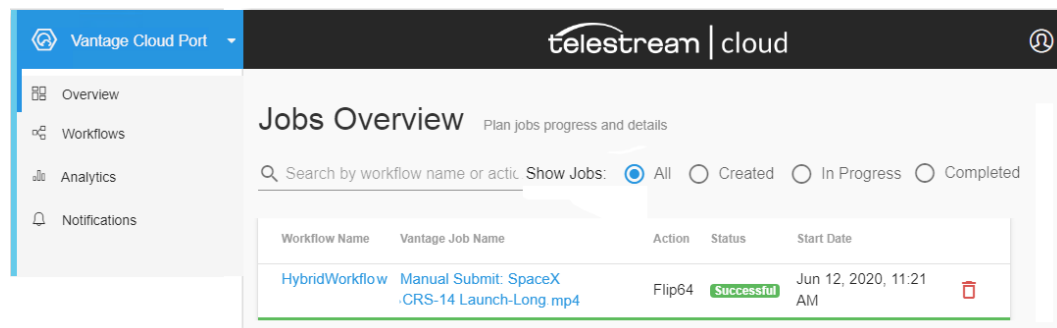


Now that you have submitted a job to this hosted workflow, you can monitor its progress in the Jobs Overview panel.

Monitoring and Managing Action Jobs

Hybrid workflows that submit actions to Telestream Cloud for execution are called action jobs. Action jobs can be monitored and managed in both Vantage and Telestream Cloud. In Vantage, you can focus on the workflow at the workflow level; in Cloud Port, you can focus on each Cloud-capable action that executed in Telestream Cloud. For information about monitoring jobs in Vantage, read the appropriate topics in the Vantage User's Guide.

To view and manage action jobs—Cloud-capable actions—that have been submitted for execution in Telestream Cloud (from both hybrid and hosted workflows), click Overview to display the Jobs Overview panel.



The Jobs Overview panel displays action jobs for all actions that are queued, running, or complete (in any state). If you have multiple Cloud-capable actions in a single workflow, Cloud Port displays a separate entry for each one in the workflow.

As jobs execute, the action status for each Cloud-capable action in that job updates in real time.

The action table displays each action job's Telestream Cloud workflow name, job name, the action itself, plus status and start date/time stamp.

Note: The date/time stamp is in UTC; it displays the UTC value adjusted by the browser time zone value, based on the time zone set on your computer. If your computer timezone is set to auto-adjust, the displayed value will vary based on your location at the time of the inquiry.

You can use the action jobs table to:

- Search for actions—in the search field, enter the workflow or action string and the table updates automatically. Clear the field to return to the full list.
- Filter jobs—choose All | Created | In Progress | Completed
- Delete jobs—remove jobs that have completed; click on the trash icon associated with the job entry
- Cancel executing actions—click on the trash icon associated with the job entry
- Display action job details—click on the workflow name or Vantage job name to display the Job Details panel ([Viewing Action Job Details](#)).

Viewing Action Job Details

Choose a job in the Jobs table to display the Job Details panel for this action:

Job Details: 834cc4562ed0882cff2409a797ba5929
[← Back to Jobs List](#)

Workflow Name: HybridWorkflow Job Name: Manual Submit: Seagulls on Bea ch-1029.m4v Started: Jun 16, 2020, 7: 57 AM Output Store: AWS S3 (u s-east-1)	1 → 1 Inputs → Outputs	Flip64 8.0.0.276247 Action	00:00:25.6 Processing Time	\$0.01 Estimated Cost
---	----------------------------------	--	--------------------------------------	---------------------------------

Job Id: 834cc4562ed0882cff2409a797ba5929 Successful

INPUTS OUTPUTS RELATED JOBS ⁰

Nickname	File Size	Duration	URL
Original	15.24 MB	00:00:15.0	Original

The Job Details panel displays the following information:

Workflow Name. The Vantage name of the workflow that contains this action.

Job Name. The display name of the job that was submitted in Vantage for execution.

Started. The date/time stamp when the action began execution in Telestream Cloud.

Output Store. The cloud location where the output is written to.

Inputs—Outputs. The number of input files and output files defined in this action.

Action. The Vantage display name of this action, including the version number.

Processing Time. The elapsed time of execution.

Estimated Cost. The estimated cost of execution, in US dollars. The estimated cost is based on the duration of the output media and the features used in the action.

Job ID. The UUID assigned for this action job.

Note: Use the action job ID when utilizing this job via the API. You should also include the action job ID when a problem is being reported to Telestream Customer Service. Click the Copy icon to copy the job ID to the clipboard for use elsewhere.

Status. The status of the action:

Queued—Telestream Cloud is waiting for cloud resources on which to execute the job.

Downloading—The cloud server running the execution container is acquiring the source files required to start the job.

Processing—The job is being executed.

Uploading—The output from the job is being uploaded back to your specified cloud storage location.

Successful—The job completed successfully.

Failed—The job encountered a problem during execution. See details of the job for error messages.

Inputs Tab

The Inputs tab lists each input file utilized by this action. The input is listed by nickname, and includes file size, duration, and link to a signed URL, which you can copy (click on the copy icon) for use in accessing this file.

If the signed URL is current, the link is the file name and you can click it to view the file. If the URL has expired, the filename is replaced by the nickname.

Output Tab

The Outputs tab conversely, lists each output file created by this action. The output is listed by nickname, and includes file size, duration, and URL, which you can copy (click on the copy icon) for use in accessing this file.

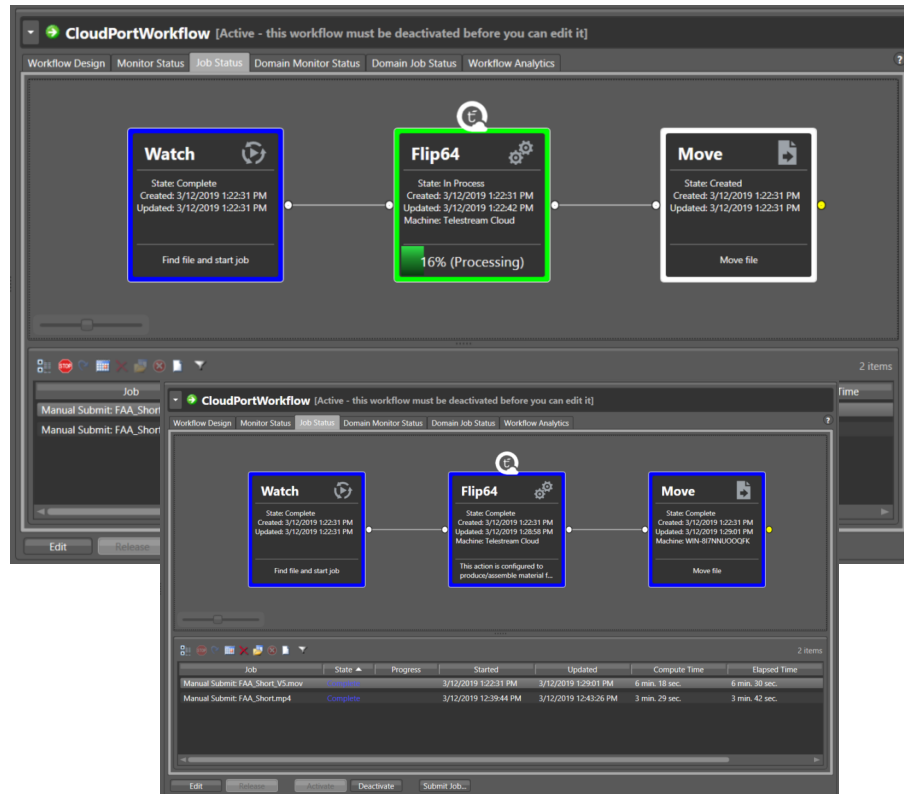
If the signed URL is current, the link is the file name and you can click it to view the file. If the URL has expired, the filename is replaced by the nickname.

Related Jobs

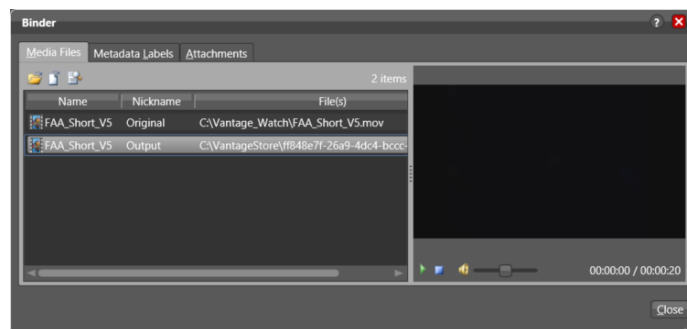
The Related Jobs tab displays other jobs that have the same Vantage job ID when the job was submitted. The jobs are listed by job name, and include the action and status.

Reviewing Completed Hybrid Workflow Jobs

When the job completes, check Vantage Job Status for success or failure. If there is a failure, Vantage Job Status and your Telestream Cloud account provide details about what happened.

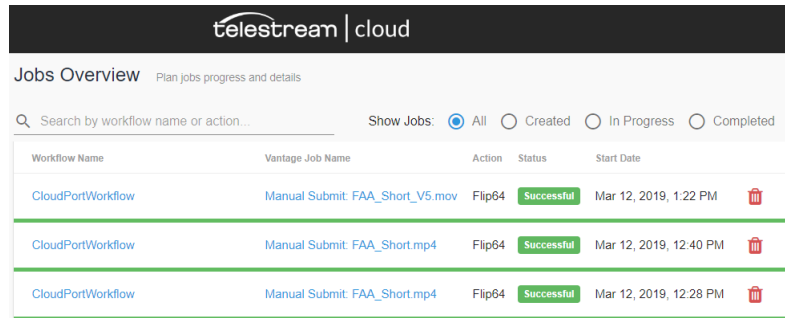


1. Finally, check the binder (right-click the job and select View Binder) and the cloud storage for expected output files (AWS S3 example shown).



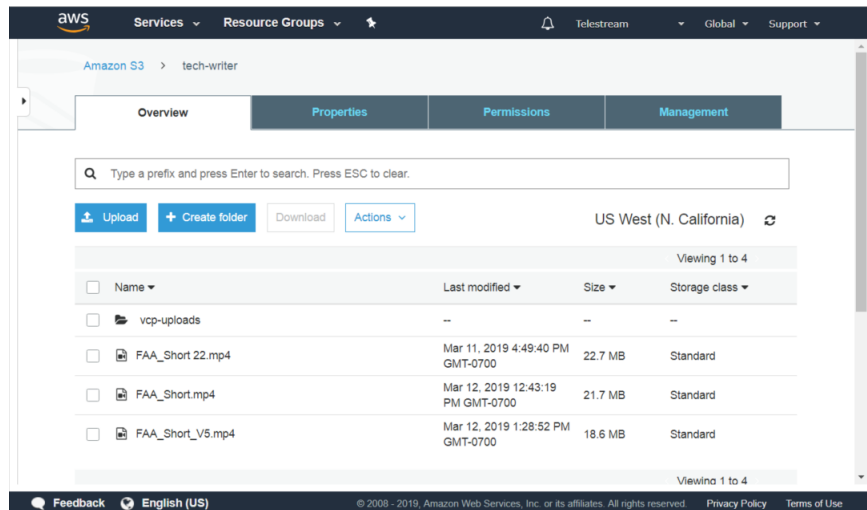
2. In Telestream Cloud, open the Cloud Port web app.

3. Click Overview to display the Jobs Overview panel and all action jobs.



4. Click the Workflow Name or Vantage Job Name to view job details for the target action.

5. Finally, check the cloud storage for expected output files (AWS S3 example shown).



Monitoring and Managing Hosted Workflow Jobs

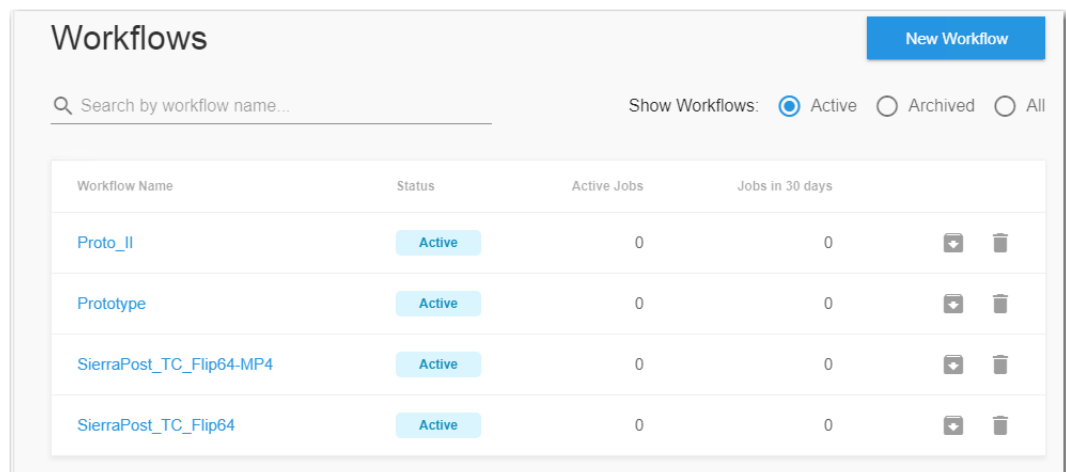
Hosted workflows can only be monitored in Telestream Cloud or via an API-based program. Jobs for hosted workflows are referred to as workflow jobs in the context of Cloud Port.

Topics

- [Overview](#)
- [Viewing Hosted Workflow Details and Jobs](#)
- [Displaying Workflow Details](#)

Overview

To view and manage hosted workflows, click Vantage Cloud Port > Workflows to display the Workflows panel:



The Workflows panel displays a table of workflows.

Importing a New Workflow—To import and deploy a hosted workflow after its been exported from Vantage Workflow Designer, click *New Workflow* (see [Importing New Workflows into Telestream Cloud](#)).

Using the Workflows Table—This table displays hosted workflows that have been deployed in Telestream Cloud. Workflows are listed by workflow name, and include status, number of active jobs, and number of jobs in the last 30 days.

Use the workflows table to:

- Search for workflows—in the search field, enter workflow or action string.
- Filter workflows—choose Active | Archived | All
- Monitor the number of active jobs—the value displayed represents the number of jobs concurrently running in this workflow.
- View workflow status—Invalid | Active | Staging | Archived.

- Archive | Unarchive a workflow—click on the Down arrow icon associated with the workflow to archive it. Click on the Up arrow icon to unarchive it. When a workflow has been archived, you can not submit jobs to it or its active revision.
- Delete a workflow—click on the trash icon associated with the workflow entry to permanently remove it.
- Display related jobs and details—click on the workflow name to display jobs and details for this workflow. See [Viewing Hosted Workflow Details and Jobs](#).

Viewing Hosted Workflow Details and Jobs

Cloud Port provides details similar to Vantage related to jobs it has processed.

Displaying Workflow Details

To display a workflow’s details, display the Details tab:

The screenshot shows the 'API Example' workflow details page. At the top right is a 'Submit job' button. Below it are two tabs: 'JOBS' and 'DETAILS'. The 'DETAILS' tab is active. The 'Details' section contains the following information:

ID	c29dde60e746f2bc48876b311829da5	Vantage Workflow Name	Simple_CloudPort_Workflow
Name	API Example	Created At	Apr 10, 2020 12:04 PM

The 'Default Store' section contains the following information:

Store	Folder Offset
John Octo Store	Not set

The 'Expected Variables' section contains the following table:

Variable	Description	Value type	Default value
Video Height		Int32	480
Video Width		Int32	720

Metadata in the details pane applies to the workflow generally, and its revisions, if any.

ID. The workflow ID is used to identify and reference the workflow in all API operations. Click *Copy* to copy the workflow ID for use in API-based programs.

Name. The display name of the workflow, assigned when the workflow was imported.

Vantage Workflow Name. Display name of the workflow in Vantage Workflow Designer.

Created at. Date/time stamp when the workflow was imported into Telestream Cloud.

It also provides other details by category: the default store, expected variables, sources, and storage references. All of this information is extracted from the Vantage workflow configuration.

Expected Variables				
Variable	Description	Value type	Default value	
Video Height		Int32	480	
Video Width		Int32	720	

Sources	
Name	Description
Original	The original version of content encountered or created by Vantage.

Storage References				
Name	Description	Lifecycle	Default Store	Default folder offset
IPTV Flip	IPTV with variables	Permanent	Not set	Not set

Setting the Default Store

The default store pane displays the store and subfolder/offset, if any, used by this workflow.

Store. Choose the store to use for actions in this workflow that generate files. (The Cloud Storage and subfolder path defined in Vantage for this workflow are not valid in Telestream Cloud and must be specified when you import a workflow (see [Creating a Hosted Workflow](#)).

Folder Offset. Choose the store to use for actions in this workflow that generate files. (The Cloud Storage and subfolder path defined in Vantage for this workflow are not valid in Telestream Cloud and must be specified when you import a workflow (see [Creating a Hosted Workflow](#)).

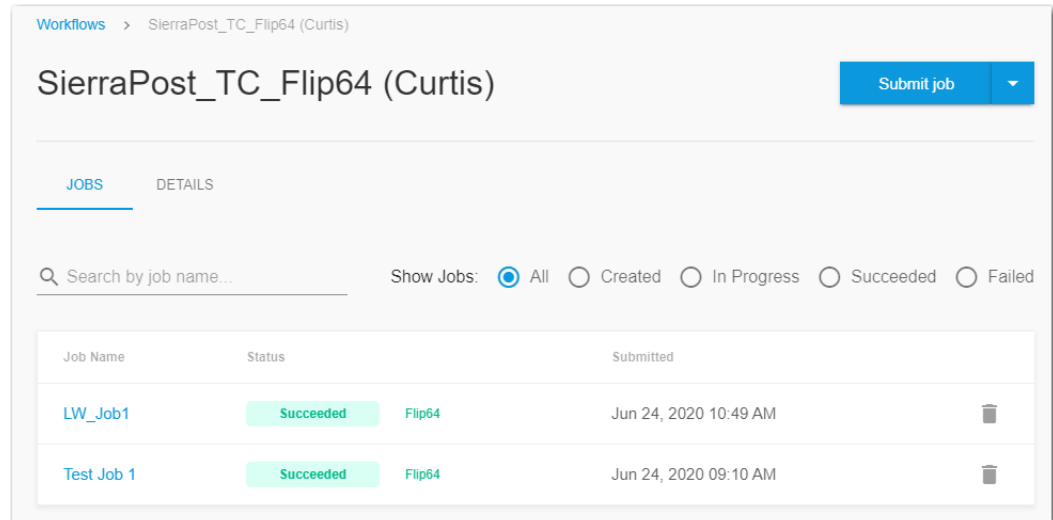
Expected Variables. Variables utilized in the workflow whose value is not provided by the workflow itself or by the default value of the variable. Provide default values here. You can override them when you submit a job.

Sources. Displays the sources defined in this workflow, by nickname and description. To change source definitions, edit the workflow in Workflow Designer and re-import it as a new workflow or as a workflow revision.

Storage References. For each action in the workflow, you can define a separate storage location and offset.

Displaying Workflow Jobs Details

To display jobs associated with a hosted workflow, display its Jobs tab:



The Job tab displays a list of jobs associated with this workflow by job name, plus status, cloud action, and a time stamp.

You can use the table to:

- Search for jobs—in the search field, enter a string to search in the job name
- Filter jobs—choose All | Created | Created | In Progress | Succeeded | Failed
- Check cloud action status—during execution, click on the action name to display a progress bar
- Delete a job—click on the trash icon associated with the job entry
- Display jobs and details—click on the job name. For information, see [Viewing Hosted Workflow Details and Jobs](#) and [Displaying Workflow Details](#).

Renaming a Workflow

Renaming a workflow simply changes its display name. It has no other effect.

To rename a workflow, follow these steps:

1. Click Workflows and then choose the workflow you want to revise.
Cloud Port displays its workflow panel.
2. In the Workflows menu, select Rename Workflow.
3. In the Rename Workflow dialog, enter the new name for this workflow and click Save.

Archiving and Unarchiving Workflows

Archiving a hosted workflow renders it—or its active revision, in the case of a workflow with revision—unable to accept new jobs. If you only want to deactivate a revision of a workflow, use [Switching Between Workflow Revisions](#) instead.

Unarchiving a workflow returns it (or its active revision) to a normal state where it can accept jobs and execute.

Archiving a Workflow

To archive a workflow, follow these steps:

1. Click Workflows to display the Workflows panel.
2. Choose the workflow you want to archive. Cloud Port displays its panel.
3. In the Workflows menu, select Archive Workflow.
4. In the Rename Workflow dialog, enter the new name for this workflow and click Save.
5. When you archive a workflow, its panel is bannered with an Archive notice.

Unarchiving a Workflow

To unarchive a workflow, follow these steps:

1. Click Workflows to display the Workflows panel.
2. Show archived workflows to view only workflows that have been archived.
3. Choose the workflow you want to return to use. Cloud Port displays its panel.
4. In the Workflows menu, select Un-archive Workflow.
5. When you un-archive a workflow, the Archived banner is removed and the workflow can now execute jobs.

Deleting a Workflow

Deleting a workflow permanently removes it and all revisions from Telestream Cloud.

To delete a workflow, choose one:

Display the Workflows click the trash icon for workflow you want to delete, and confirm your decision in the dialog.

—OR—

In the selected workflow's panel choose Delete Workflow from the menu and confirm your decision in the dialog.

Exporting a Hosted Workflow

You can export a hosted workflow in CWD format; returning it to the same format exported by Vantage Workflow Designer.

Among other purposes, you can use CWD files for:

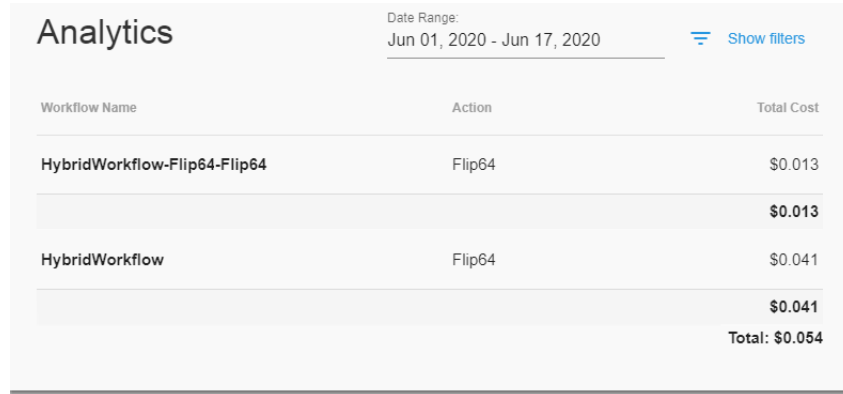
- External archiving
- Transfer to other Telestream Cloud accounts
- Importing into Vantage

To export a hosted workflow, follow these steps:

1. Click Workflows to display the Workflows panel.
2. Choose the workflow you want to export. Cloud Port displays its panel.
3. In the Workflows menu, select *Download CWD*.
4. Chrome downloads the workflow file in Vantage CWD format as a JSON file and stores it in your Downloads location (Settings > Advanced > Downloads). When the process completes, displays an entry at the bottom of the window. Click on it to open the file or show it in its folder.

Monitoring Financial Information

The Analytics panel provides you a financial breakdown of the cost of Cloud Port workflow processing by workflow and action. (Due to rounding of display values, the sum may vary slightly from the Total Cost entries.)



The screenshot shows the 'Analytics' panel with a date range of 'Jun 01, 2020 - Jun 17, 2020' and a 'Show filters' button. The table below lists workflow names, actions, and total costs.

Workflow Name	Action	Total Cost
HybridWorkflow-Flip64-Flip64	Flip64	\$0.013
		\$0.013
HybridWorkflow	Flip64	\$0.041
		\$0.041
		Total: \$0.054

The Analytics table displays workflows and cloud actions, and the cost associated with its usage.

On this panel you can:

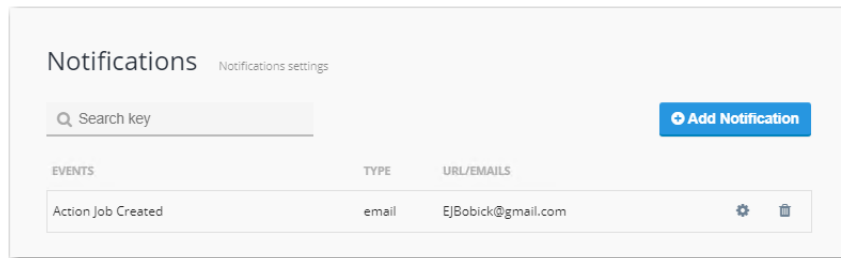
- Change the Date Range—click in the Date Range field, then select the Period Begin date and the Period End date and click OK.
- Organize line items—click Show Filters and group them by Action | Filter | Domain ID.
- Organize line items—click Show Filters and filter them by Workflow Name | Action Name | Features Name | Domain ID.

The Feature value is the SKU of the Telestream Cloud component utilized. The Domain ID is the numeric identity of the Vantage domain from which the workflow originated.

Managing Notifications

Notifications enable Cloud Port—and other Telestream Cloud services—to send alerts when certain events occur.

Note: Notifications can also be viewed and managed at the Telestream Cloud level by selecting Notifications from the main menu. The table displays notifications at this level for all services in Telestream Cloud.



The Notification panel displays a table of notifications that have been created. Each entry is listed by event, deliver method (type), and end point (for example, email address or URL).

On this panel you can:

- Create new notifications—click [Add Notification](#) to create a new one.
- View and update notification settings—click the [Gear icon](#) for the target notification.
- Delete Notifications—click the trash icon of the target notification to permanently remove it.

Adding Notifications

To add a new notification, perform these steps:

1. To add a notification—on the Notifications panel, click *Add Notification*.
2. On the Add Notification panel, complete these fields:
 - **Service.** Defaults to Vantage Cloud Port.
 - **Store.** Specifies which store (or all stores) this notification is intended for. (Stores are created and managed in Telestream Cloud via the main menu > Manage Stores).
 - **Delivery Method.** Choose the delivery method: webhook | email | Amazon Simple Notification Service (SNS) | Azure Event Grid | Google Cloud Pub/Sub. Based on the delivery method, configure the notification to function as required.
 - **Available Events.** Check one or more events to trigger the notification.
3. Click *Create* to save the notification you just configured and activate it.

Editing Notification Method Settings

Changes to an existing notification are limited to configuration settings of the specified delivery method—you can't change the service, store, or delivery method.

To edit an existing notification, perform these steps:

1. On the Notifications panel, click the [Gear icon](#) for the target notification.for the target notification.
2. On the Add Notification panel, make changes to the delivery method's configuration controls and field:
3. Click *Save* to update the notification and re-activate it.

Troubleshooting

The following tips may help you resolve issues with using Cloud Port features. If you cannot resolve a problem on your own, please contact Telestream Cloud Support for assistance (see [Contacting Telestream](#)).

Connection Failures

An easy way to recognize if Vantage is connecting with Telestream Cloud and accessing third-party storage is that the white cloud logo and the green price indicator both show up on the action. If Vantage fails to connect with Telestream Cloud or your cloud storage, as indicated by the absence of the logo and price on the action, check your credentials in every location where they are entered.

For a cloud-capable action to work, the required credentials must be correct in all of these locations:

- Telestream Cloud
- Third party cloud storage
- Vantage Management Console > Settings & Options > Telestream Cloud
- Vantage Management Console > Vantage Folder Address Book
- Action Cloud Port mode > Vantage Cloud Port Setup selections.

Cloud and Storage Performance Considerations

If you have intermittent slow performance issues, consider these suggestions:

- Performance may vary by the type of storage resource you choose.
- Network traffic during busy times of day may affect cloud and storage performance and transfer speeds.
- Cloud storage can become temporarily unavailable. If Cloud Port has trouble accessing your storage, visit your storage web site to determine whether your storage is inaccessible for some reason. Also be sure to verify your credentials.
- Default storage account settings specify limits on various available resources. If you bump up against the limits and need greater speed or additional storage, contact your storage provider for assistance.

Cloud Storage Is Overloaded by Uploads

The Cloud Service has an Upload Limit that throttles concurrent cloud file uploads to prevent overloading your cloud storage. The default is four concurrent files.

To view or change the upload limit, follow these steps:

1. Open the Vantage Management Console
2. Choose Services from the Component panel on the left.
3. In the Services panel, choose the Cloud Service and set it to maintenance mode.
4. Display the Setup tab and change the Upload Limit value and click Apply.
5. Bring the Cloud Service back online.

If a large file fails to upload automatically, try this workaround: Use a Copy action before the cloud-capable action to manually copy the file to the Cloud before processing it.

Font Issues in Subtitles

Cloud-capable actions render fonts differently than actions executing on premises, because Cloud servers use Linux instead of Windows. Subtitles or other on-screen print renderings that use the fonts built into on premises Vantage OS may result in print output from the cloud (Linux) that differs from the same output on Windows.

In particular, font size, font spacing, font effects and anti-aliasing may have subtle differences between the two platforms. If you require a specific font style with Vantage Cloud Port, Telestream recommends waiting until NewBlue support is added to Linux.

Processing Time-Outs

Cloud-capable actions are optimized for execution efficiency in Telestream Cloud. However, if you have unusually large files or there are other factors that cause significant resource usage, it is possible that processing may time out after an extended period. A job that self-terminates displays an error message.

If this happens, contact Telestream Support for assistance (see [Contacting Telestream](#)).