Vantage

Workflow Designer
User's Guide

Version 1.0.1

Part No. 74-0236-00

T E L E S T R E A M

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About Vantage Workflow Designer

Version 1.0.1

CHAPTER 1

Getting Started

This chapter is organized as a series of tours, each designed to help you understand how to create, configure, and manage workflows. You'll also learn how to submit media to workflows for processing.

As you take these tours, you'll also become familiar with important Vantage concepts and how you can use them to design workflows to meet your processing requirements. The more you know about Vantage, the better it will serve your automated media transcoding requirements.

Because each tour builds on the skills and knowledge you learn in the previous tours, we recommend that you take the tours in succession.

As you gain hands-on experience creating workflows and processing media in Vantage - which leads to a working knowledge of Vantage and its components and architecture - you'll gain proficiency in using Vantage to solve your organization's media processing problems.

***Note**: Sample MPEG2 media files are provided for use in these workflows: <Install_Drive>:/Program Files/Telestream/Vantage/Store. Files: FlipDemo.wmv (48 seconds), FlipDemo_short.wmv (15 seconds), and FlipDemo.mss.*

Tours

- Tour 1: Introducing Vantage & Transcoding Workflows
- Tour 2: Transcoding Files Using Settings You Want
- Tour 3: Using Binders in Workflows
- Tour 4: Using Variables in Workflows
- Tour 5: Decision Making in Workflows
- Tour 6: Dynamic Parameters

***Note**: You can take tours 1 through 4 without a license. For tours 5 and beyond, you'll need a license to execute the workflows. Also, without a license, you can only transcode WMV files. For a demo license, contact sales@telestream.net.*

Tour 1: Introducing Vantage & Transcoding Workflows

This hands-on tour takes about an hour to an hour and a half (the longest of all the tours), and introduces you to the big picture of Vantage - the concept and process of creating a typical transcoding workflow, submitting media to transcode, monitoring your job as it executes, and viewing the results.

Tour Overview

This tour is designed to provide your first hands-on experience with Vantage Workflow Designer. In this tour, you'll learn the following:

- What is Vantage?
- Starting Vantage Workflow Designer
- Introducing Workflows
- Working with Workflows
- Setting up Actions
- Vantage Folders
- Activating Workflows
- Monitoring your Workflow Status
- Submitting Jobs
- Playing your New File
- Deactivating Workflows

What is Vantage?

Vantage is a powerful workflow design and automation product that allows you to build highly automated, adaptive media processing workflows. Vantage combines a wide range of workflow design and media processing capabilities into a single program, and allows tight coupling between components so that workflows can make decisions and execute custom rules (as necessary) to solve a broad set of operational problems.

Vantage can be installed on a single server or installed as an array of servers, all working together to provide scalability and durability. In either case, a Vantage database is used as the central point for workflow design and execution. Services execute the workflows, coordinating with each other through the Vantage database; this central database also stores job history and other information about workflows.

You configure, operate, and manage Vantage using two multi-user Vantage programs: Vantage Management Console and Vantage Workflow Designer. Both programs connect directly to the database, so they can be run on any machine that can access the Vantage database.

Vantage Domain Console

The Vantage Management Console (usually referred to as just console) is the program you use to configure and administer your Vantage domain - including Vantage services, licenses, workflow design items, and the workflows themselves.

Vantage Workflow Designer

Vantage Workflow Designer is the program that enables you to design and automate workflows to meet your organization's transcoding requirements.

Workflow Designer allows you to activate and deactivate workflows, and allows you to submit and monitor the jobs that are created as workflows perform transactions on media you've submitted for processing.

Starting Vantage Workflow Designer

To start Vantage Workflow Designer, double-click the Vantage Workflow Designer shortcut on your desktop.

Figure 1. Vantage Workflow Designer desktop shortcut

Or, select start > Programs > Telestream > Vantage > Vantage Workflow Designer.

When Vantage is installed, no categories or workflows are stored in its database. You may have to create a new category to get started. If you're being prompted to create a new category:

Figure 2. Create New Category window

1. Enter the name `<YourName> Vantage Workflows` and click OK. This allows other Vantage users to create their own Vantage Workflows category. (For tour purposes, the category is simply *Vantage Workflows*.)
2. When Workflow Designer prompts you to create a workflow, just click Cancel. You'll create your first workflow in just a moment.

Introducing Workflows

A workflow in Vantage is a series of actions - arranged and configured by you - to automate a specific task or group of tasks.

Vantage Workflow Designer is the program that enables you to design and automate workflows to meet your organization's transcoding requirements.

Vantage provides several types of actions which you can use to build a custom workflow. For example, a watch action continually polls a *hot folder* (such as a broadcast server directory or a local or network folder) for incoming media to process - which Vantage performs by automatically submitting a job to the workflow you've created.

Each action is executed by a Vantage service - for example, the watch action is executed by its companion watch service.

The Workflow Designer Window

Vantage Workflow Designer window has two panels. The left panel is the workflow panel. You organize workflows by category, in folders for easy access. The right panel includes a Workflow Design tab, a Monitor Status tab, and a Job Status tab.

The Workflow Design tab is a design space you can use to create and update your workflows. As you design (or modify) a workflow, all of the changes you make to the workflow are automatically stored in the Vantage database. You don't ever need to explicitly save your workflows - that is done automatically for you, and all others in your organization using Workflow Designer.

Once you've designed a workflow, you can activate it - starting its monitor task. When you activate a workflow, the Monitor Status tab allows you to view all of the workflow monitors - such as a watch action polling a hot folder for media files - that are active and discovering files to process as they are placed in the folder.

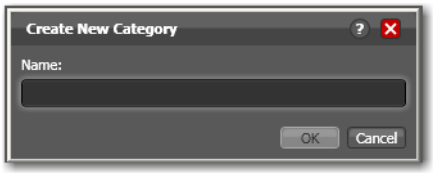
When a monitor finds a new file, it starts a job. You use the Job Status tab to view all of the running jobs for the currently selected workflow. You can view the task-by-task details of jobs, and watch them execute. Further, both the Monitor and Job status tabs allow you to see a history of previous jobs and monitor sessions.

You'll learn how to use both the Monitor Status tab and the Job Status tab in upcoming tours.

Creating a Category and a Workflow

If you haven't yet created a new category for your own use, lets create one to get started (or skip to step 3), then we'll add a workflow to it.

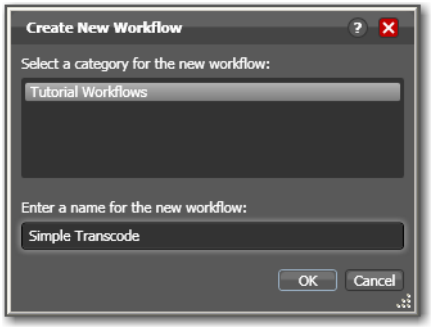
1. Select File > Create New Category to display the Create New Category window:



2. Enter `<YourName> Vantage Workflows` in the Name field and click OK. Adding your name to the category allows other Vantage users to create their own Vantage Workflows category. For tour purposes, the category is displayed simply *Vantage Workflows*.

***Note**: Vantage displays Welcome tips as you use it, to help you become familiar with its features. If you don't want Vantage to display them, check Don't show me this again before clicking OK.*

3. Next, create your first workflow - select File > Create New Workflow:



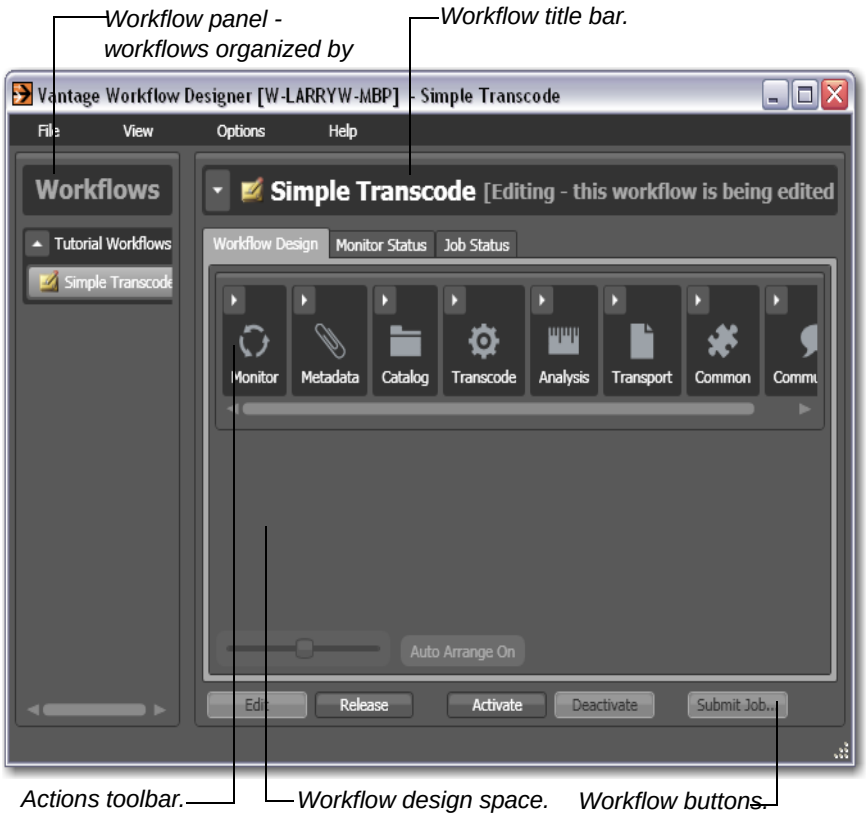
4. Enter the name `Simple Transcode` (in your *Vantage Workflows* category), and click OK.

At this point, your new workflow is automatically added to the Vantage database and to the list in the workflows panel - you can start creating its functionality.

Selecting a Workflow

You can view your categories and workflows in the workflow panel, on the left. You should have your own workflow category with one new workflow, which is currently empty (no actions):

Figure 3. Vantage Workflow Designer's design space.



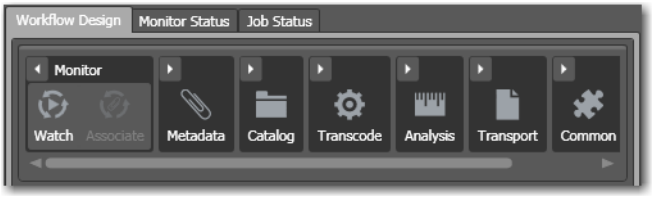
Adding Actions to a Workflow

In this tour, you're going to build a simple workflow that watches a hot folder, transcodes a media file, and copies the result to a new location.

In the Workflow Design tab, notice that a set of action groups are available in the actions toolbar at the top of the workspace.

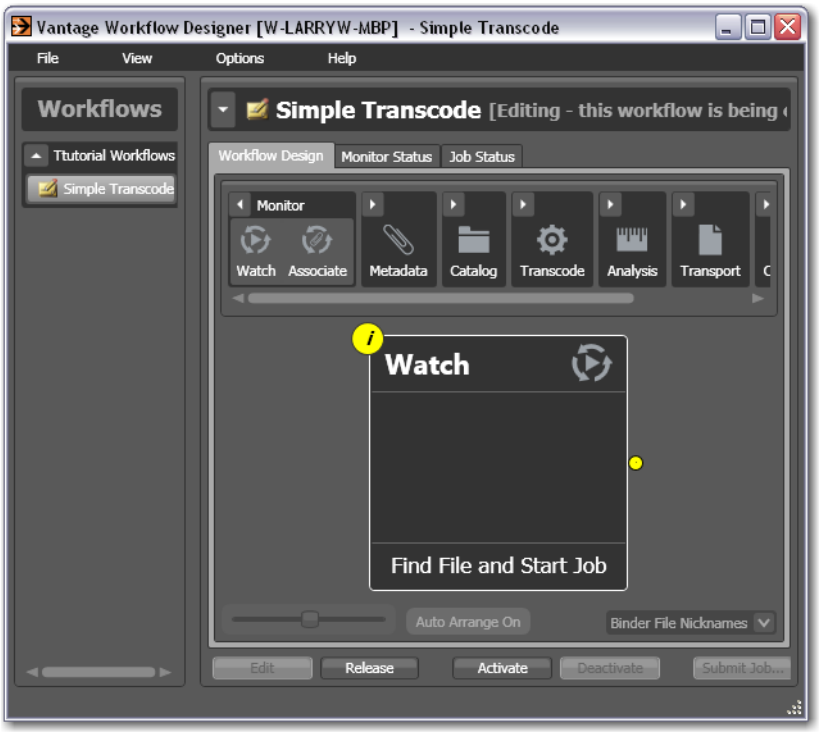
5. Open the monitor action group in the actions toolbar (by clicking the arrow in the upper left corner) to display the watch and associate actions.

Figure 4. Actions are grouped by functional category.



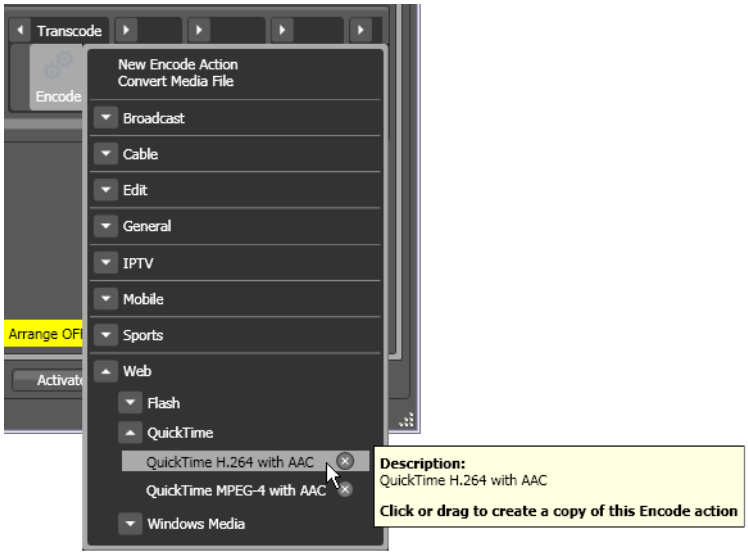
6. The watch action polls a hot folder for new media - click and drag it into the workspace to add your first action to the workflow. (Notice that it automatically centers itself - Vantage visually optimizes workflow actions automatically.)

Figure 5. Click and drag actions into your workflow.



7. Next, open the transcode action group and click the Encode action. A comprehensive list of pre-set encoding actions displays:

Figure 6. Selecting preset actions reduces configuration tasks.



8. Select Web > QuickTime > QuickTime H.264 with AAC. The new action (pre-configured) is added to the workflow and automatically displays to the right of watch.

Deleting Actions

To delete an action from a workflow, use the delete icon. At the top right of the action, a red X (delete) icon displays, which allows you to delete the action from the workflow. Don't delete any actions from this workflow!

***Note**: Remember that actions are automatically re-arranged as you make changes. If you delete a connector or action, re-arranging may make a mess of things! Consider temporarily suspending auto-arrange by holding down the Control key (note the yellow button at the bottom highlights) until you've got all your actions in the workflow and connected.*

Connecting Actions

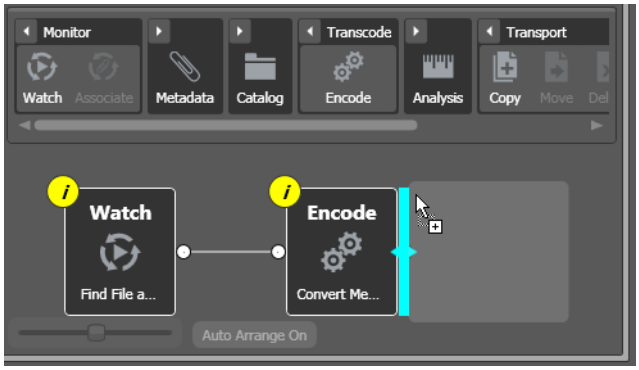
Now, you can connect the two actions together.

9. Click and drag a connector line from the yellow connector pin on the right side of the watch action to the yellow connector pin on the left side of the encode action. (Connector pins display in yellow until they're connected.)

Actions connect automatically when you drag them into a workflow and bump them up to an existing action.

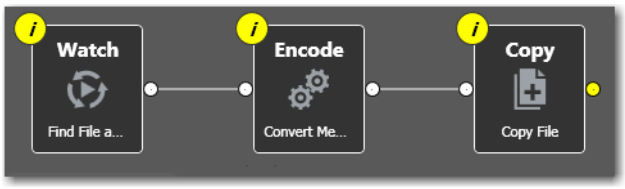
10. Open the transport action group and drag the copy action so that your cursor is directly over the right side pin of the encode action (it highlights blue, as shown below).

Figure 7. Bump the new action right up to another action.



When the blue bar displays, release the mouse - the copy action automatically connects to the encode action.

Figure 8. Release the mouse to auto-connect actions.



Working with Workflows

Lets take a moment to learn some techniques for working with workflows, before we continue to make changes.

Some workflows – like *Simple Transcode* – have only a few actions in them; others may have dozens of actions. Sometimes you're working on the big picture of a workflow – laying out actions and connecting them together. Other times, you're working on action details – configuring the details of a transcode task, for example.

In each case, you may want to zoom in or out, or scroll around – or center – the work area, to help you focus directly on the work you're performing at the moment.

Zooming In and Out on a Workflow

The zoom slider bar at the bottom left corner enables you to zoom in and out to suit your needs.

Figure 9. You can zoom in and out to display workflow details.

Use the zoom slider bar to zoom your workflow in and

There are three ways to zoom in and out on a workflow:

- Drag the zoom slider bar at the bottom left of the workflow
- Repeatedly press Control-+/- (the plus and minus keys)
- Use the scroll wheel on your mouse while pressing the control key.

Moving the Workflow in the Design Space

A workflow with many actions may be larger than you can view effectively in your workspace, when viewed at the zoom level you're currently using. To move the workflow around in the workspace, click anywhere on the workflow canvas itself (don't click on an action). The cursor becomes a compass – now, you can drag the workflow in the appropriate direction.

Centering a Workflow

To center a workflow in your workspace, right-click in the workspace and select Recenter Workflow from the context menu. Alternatively, you can press Control-R on the keyboard.

Before you continue, take a few moments to practice zooming, moving, and centering the workflow – you'll use these features frequently, and becoming familiar with them now will make it easier to focus on the design process.

Setting up Actions

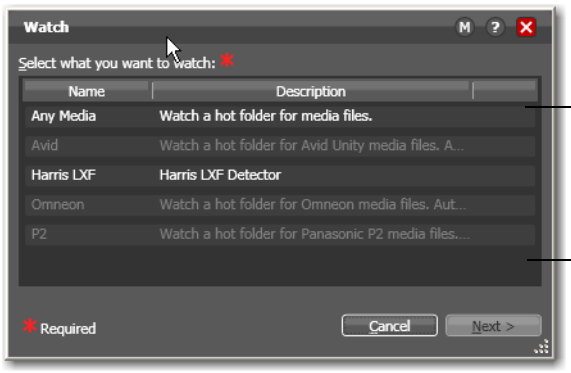
Each actions performs a specific function - but each action must be set up (configured) to perform the task specifically the way you want for a given workflow. (Graphics in the section have been shortened in the interest of improving readability.)

Each action displays a yellow I (for *inspector*) icon in the top left corner, indicating that it needs to be configured.

11. Click on the I icon to open the action inspector for watch actions, which allows you to set up the action the way you want.

Vantage Designer displays the first panel of the inspector:

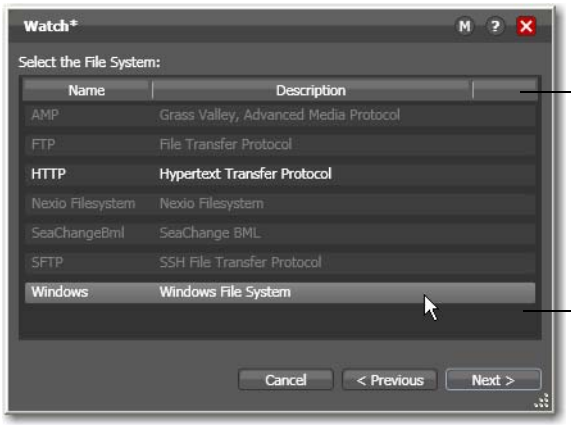
Figure 10. Select the type of file you want to poll for.



Vantage intelligently handles several complex media types such as Avid reference movies, or P2 camera files.

12. Select *Any Media* to simply watch for a single media file - click Next to continue.
    Vantage displays the next panel in the inspector:

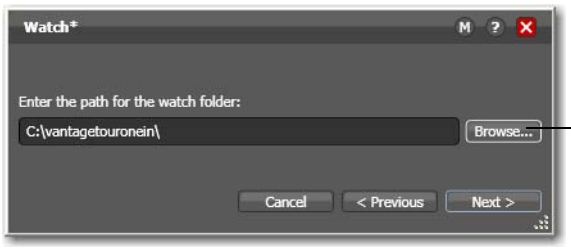
Figure 11. Select the file system you want to poll.



13. Note the comprehensive list of file systems that Vantage can access. Select Windows as the file system for this watch action, and click Next

to continue.
Vantage displays the next panel:

Figure 12. Enter the fully-qualified path to the hot folder.

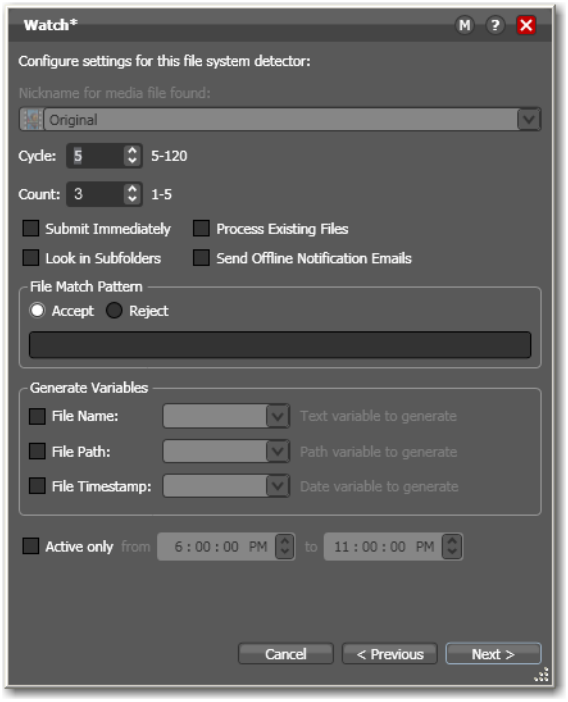


Click Browse to navigate to and select your hot folder.

If you installed Vantage on a single machine, you can specify a local folder (for example, *C:\vantagetouronein*). In a multi-server array (a distributed Vantage domain) however, this should be a shared Windows network folder (for example, \\<*machinename*>*vantagetouronein*).

14. In either case, create a hot folder for this workflow and then click Browse to navigate and select the fully-qualified path in this field. Or, enter it manually.
15. Click Next to continue.
Vantage displays the next panel:

Figure 13. Watch action's polling details.



Take a moment to review the comprehensive settings related to directory polling. Place your mouse cursor over the settings to display tooltips which tell you the function of each setting. Also, you can click the M

button in the top right of the Inspector to open documentation for this action.

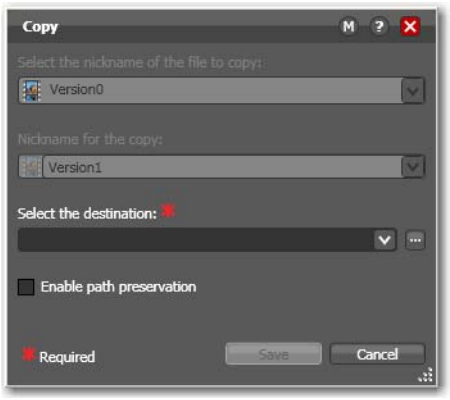
16. Click Next and then Finish to complete configuration of the watch action.

Now that you've configured the action, notice that the inspector icon is hidden to let you know that it has been configured. Move your mouse back over the action - Vantage displays the inspector icon again. You can always click it to re-open the action inspector to review or change its settings.

Vantage Folders

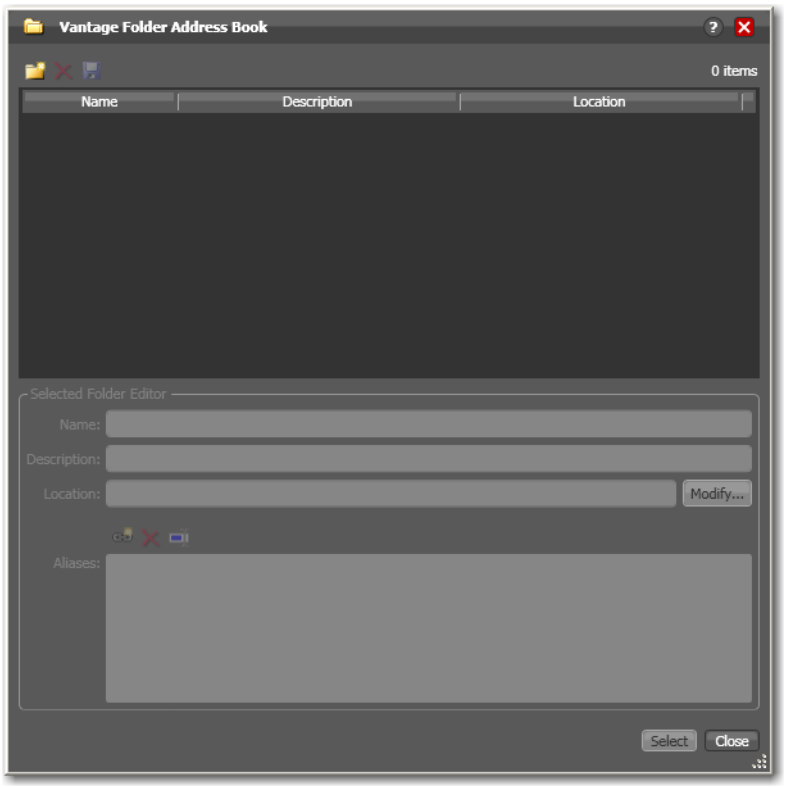
17. Open the copy action inspector.
    Here, you'll configure the destination for the file that the encode action creates as it transcodes the incoming file to the new format.

Figure 14. Copy action inspector (prior to configuration).



18. Click on the Browse (… (ellipses)) button to the right of the Destination field.
    Vantage displays the Vantage Folder address book:

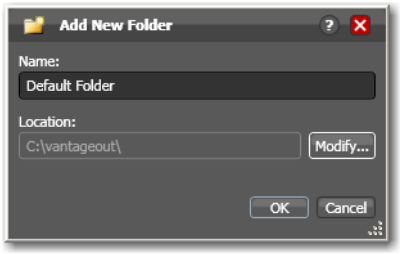
Figure 15. Vantage Folder Address Book.



Vantage Folders enable you to name and define specific destinations in the Vantage database, for use in other workflows, simply by using their name. This greatly simplifies directory referencing.

19. Create a new Vantage folder - click the Add Folder toolbar icon (the new folder icon at far left):

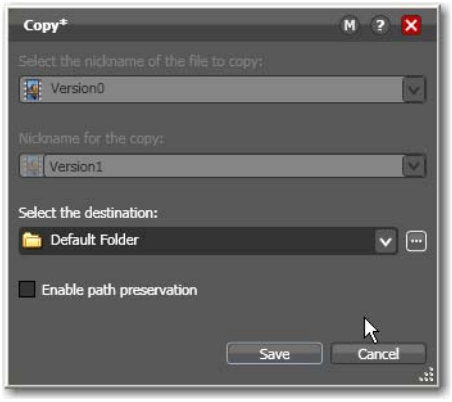
Figure 16. Vantage Folder - Add New Folder dialog.



20. Enter the folder in the Name field: `Default Folder`.
21. Next, click Modify to specify the directory that this Vantage folder points to.

22. Vantage folders can be on any supported file system; for this tour, choose Windows File System and click Browse to select a directory of your choice (for example, in Windows Explorer make a folder named *C:\vantageout*) for the output media file to be copied, and click OK.
23. Click Next to close the Folder Location Editor dialog. (You may have to click OK on the local folder warning dialog.)
24. Click OK to add this new Vantage folder to the domain and close the Add New Folder dialog.
25. Now, with the Vantage folder you just created selected, click Select to specify the folder as the destination for the copy action.

Figure 17. Copy action inspector - complete.



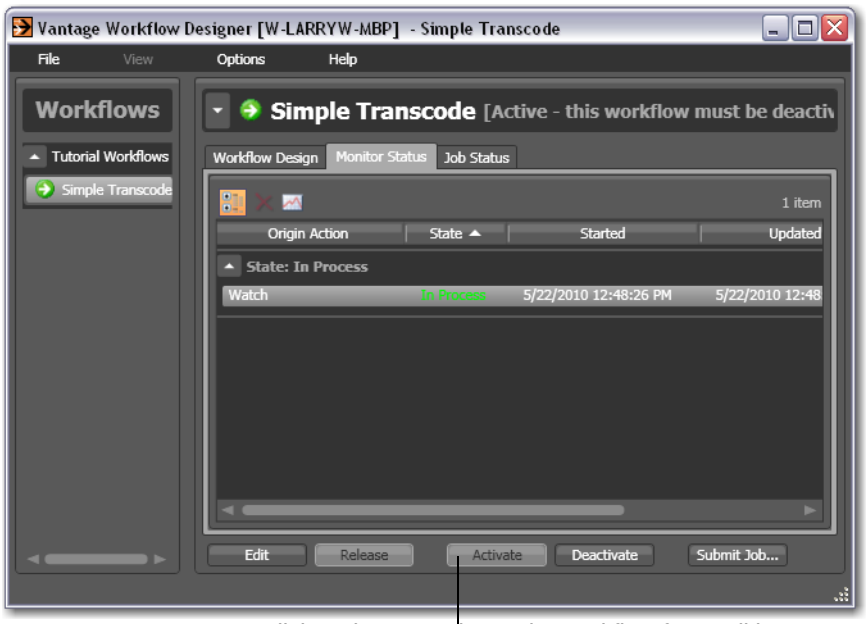
26. Finally, click Save to save these Copy action settings and close the inspector.

The *Simple Transcode* workflow now has three actions: watch action, encode action, and copy action, all of which have been configured. The watch action polls the hot folder for new media. The transcode action decodes and re-encodes the incoming media to QuickTime format using H264 and AAC codecs, and the copy action duplicates the file into the output folder as specified by the Vantage folder you selected.

Activating Workflows

27. Lets activate the workflow now - click Activate at the bottom of the window.

Figure 18. Workflow Status tab.



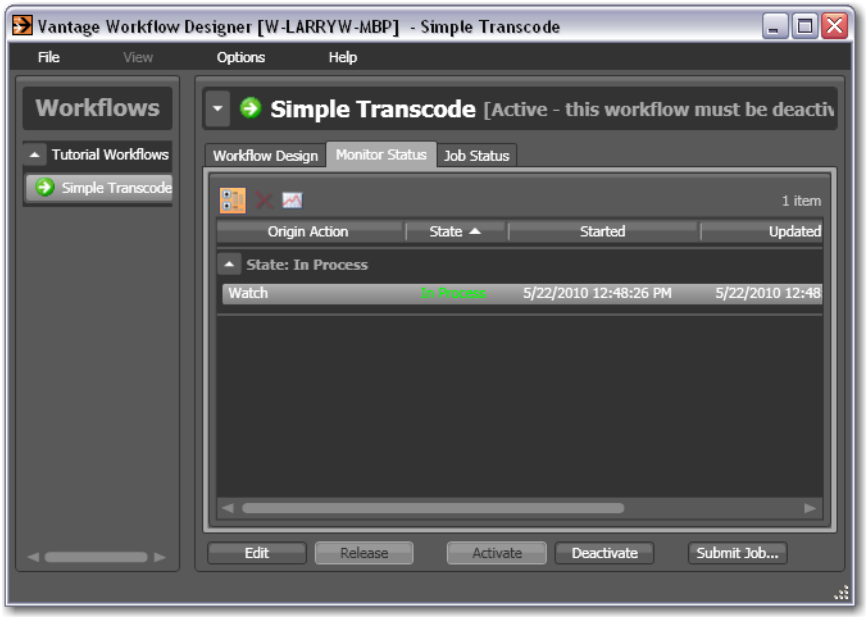
Click Activate to release the workflow from editing, save it, and activate it to start the watch action.

The Vantage monitor service starts executing your workflow. Specifically, the monitor service starts running the watch action in your workflow, polling the hot folder you specified for new media to process. No job is started until a new file is identified and submitted.

Monitoring your Workflow Status

When you activate this workflow, Designer displays the Monitor Status tab (see the top of the window) to display the status of the watch action:

Figure 19. Workflow Monitor Status tab.

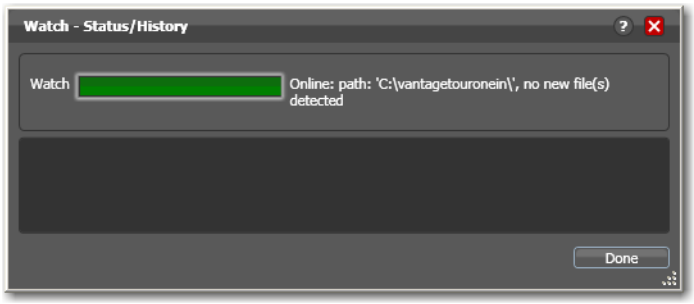


Notice that the watch action states is listed as *In Process*, which indicates it has started executing, and it is polling for new files. When a new file is discovered, a job is created that executes the *Simple Transcode* workflow.

Actions may also be in Waiting state - the state that the transaction enters while Vantage is determining which service should process it. A transaction remains in Waiting state until it is accepted by a service for processing.

You can also double-click the watch entry in the table to display more detailed information about the watch. You can confirm that is polling the directory that you specified, and that no new files are detected.

Figure 20. Workflow Monitor Status Details.



Submitting Jobs

You can start a job for this workflow in one of two ways:

- Place a media file in a hot folder that is being watched to submit a job automatically
- Click the Submit Job button (at the bottom of the window) and select the file to submit a job manually. Just follow the steps in each panel.

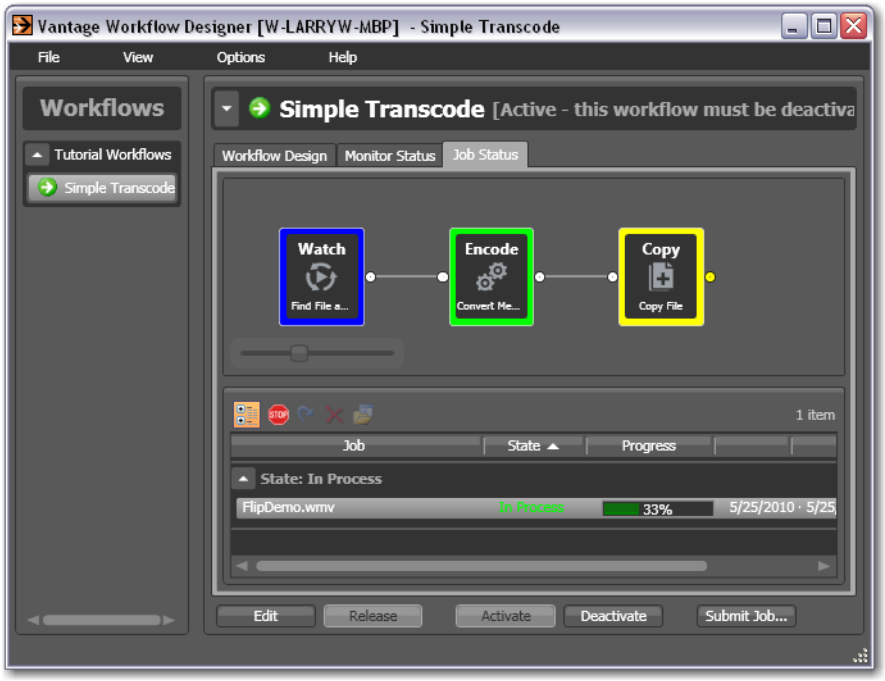
Take time now to use both methods to submit a file to start a job with this workflow.

We suggest that you use one of the sample wmv media files we provide, located at *<InstallDrive>:\Program Files\Telestream\Vantage\Store*.

After you submit a job, click the Job Status tab to display the status of running jobs.

28. Click on the new job entry in the table, and observe each action change color as the entire job executes each task specified by the actions in the workflow.

Figure 21. Activated actions display a green border

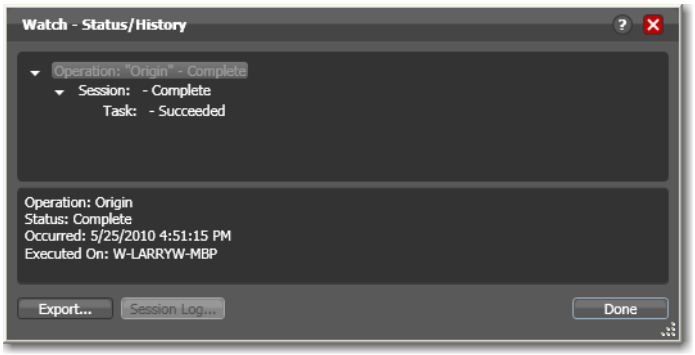


Workflows display specific border colors to identify their current state in this job:

- Yellow indicates the action hasn't started executing yet
- Green indicates the action is currently executing
- Blue indicates the action has completed without errors
- Red indicates the action has completed with errors.

29. Move your mouse over actions in the Monitor Status panel to display the i (inspector) icon in the top left corner. Click the icon to display runtime information about the action in the Status/History window:

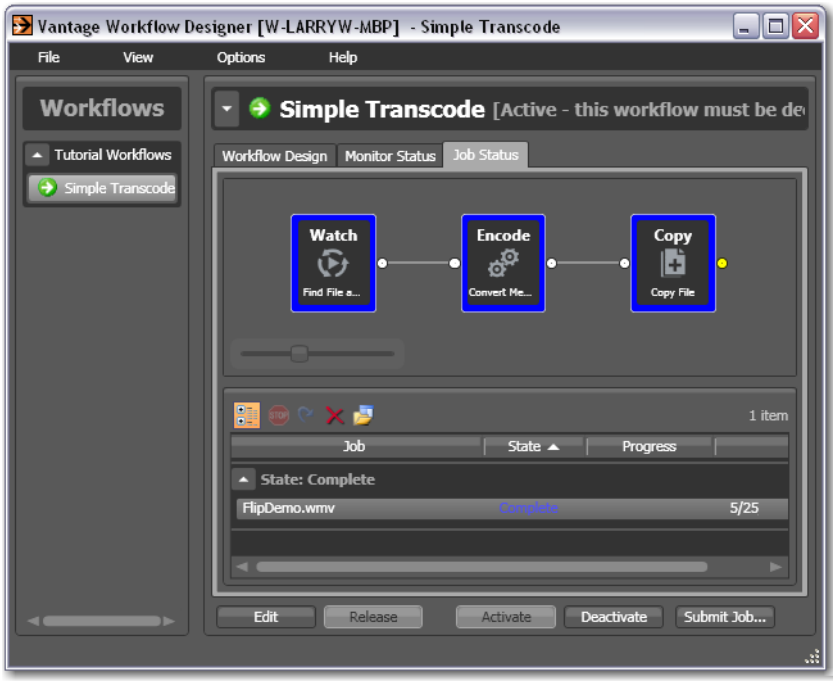
Figure 22. Status/History window displays action details.



30. Click on each succeeding status line in the Status/History window to display details about the action. Close this window when you're done.

When all actions are outlined in blue, the job has completed successfully:

Figure 23. Completed actions display a blue border.



Playing your New File

Now, in Windows Explorer, navigate to the copy destination folder you set up in your workflow (for example, *C:\vantageout)*.

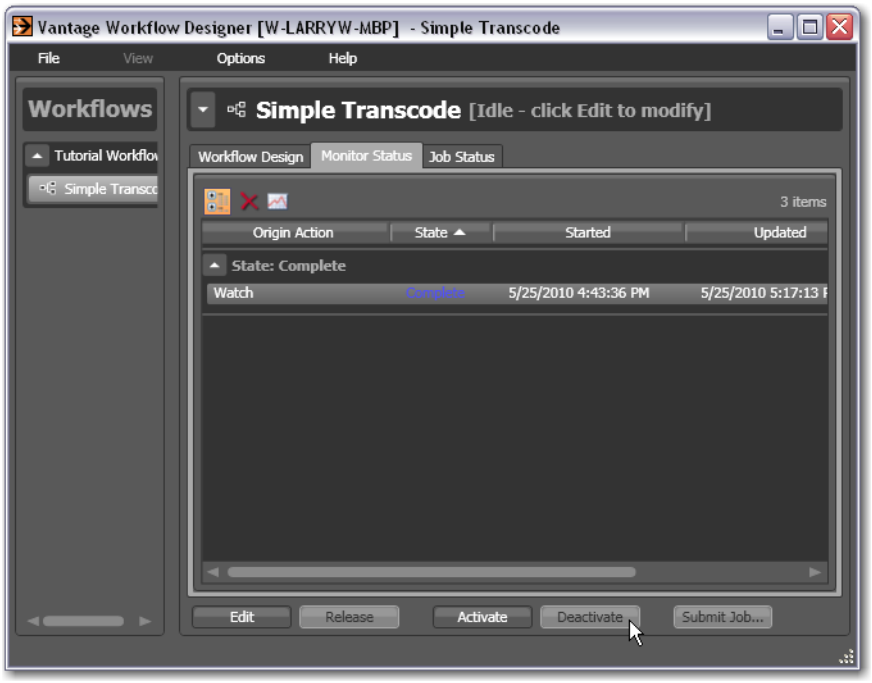
Double-click the new file which your workflow transcoded into QuickTime to play it!

Deactivating Workflows

In the next tour, you'll use a copy of this same workflow. You should deactivate this workflow so that you can use the same hot folder in the next workflow, without the *Simple Transcode* workflow ingesting new media you add to the hot folder.

31. Select the *Simple Transcode* workflow in the workflows panel, and click Deactivate at the bottom of the window.

Figure 24. Select a workflow and click Deactivate to stop its watch.



If you want to edit the workflow again, click Edit at the bottom of the window. When you're done editing a workflow, you should click Release it so that it can be edited or executed by others in the organization.

Conclusion

Congratulations! You've just learned about the key features of Vantage Workflow Designer. Now you know how to create and activate a basic transcoding workflow. You've also learned how to submit media to a workflow, monitor its execution, and view the transcoded media file.

In the next tutorial, you will explore transcoding settings to transcode a media file into the format that you want.

Tour 2: Transcoding Files Using Settings You Want

This hands-on tour takes about 30 minutes and introduces you to Vantage transcoding.

Tour Overview

This tour is designed to add to your workflow management and creation skills, and your first in-depth look at how effectively Vantage deals with the complexities of media transcoding. In this tour, you'll learn about the following:

- Duplicating a Workflow
- Adding Branches to a Workflow
- Configuring the Transcode Action

Starting Workflow Designer

If you quit Workflow Designer after the last tour, start it again:

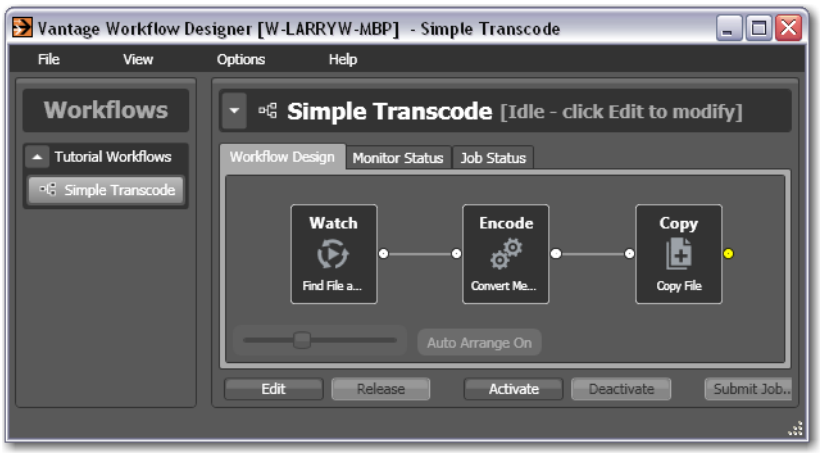
Double-click the Vantage Workflow Designer shortcut on your desktop or select start > Programs > Telestream > Vantage > Vantage Workflow Designer.

Duplicating a Workflow

In the Workflows panel (left), select the workflow you want to duplicate.

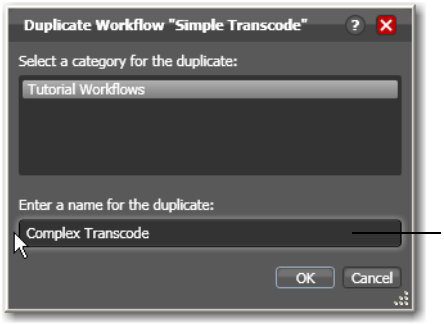
1. Open (click) the *Vantage Tours* category and select the *Simple Transcode* workflow by clicking on it.

Figure 25. Duplicating a workflow.



2. Now, select Workflow > Duplicate Workflow (or right-click and select Duplicate Workflow). Vantage displays the Duplicate Workflow dialog:

Figure 26. Enter the name for the duplicate workflow.



Enter the name of the new workflow you want to create.

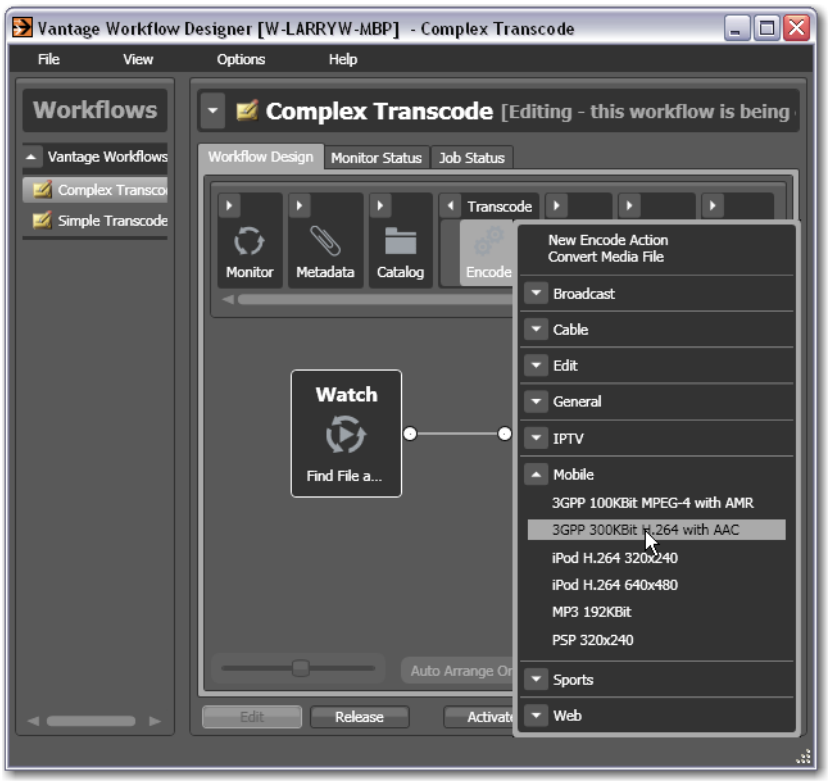
3. Enter the name of the new workflow: *Complex Transcode*. Click OK to save the workflow with the new name and dismiss the dialog. Vantage automatically selects the new workflow, places it in edit mode and displays it in the Workflow Design tab.

Adding Branches to a Workflow

Now, lets add a second, pre-configured transcode to this new workflow in a manner that enables Vantage to encode two separate output files simultaneously, from a single workflow - by creating a branch, with parallel actions. Creating branches for multiple, parallel encoding is an important part of Vantage scalability and high-volume transcoding.

4. Open the transcode action group on the action toolbar.

Figure 27. Click the Encode action to select a preset action.



5. Click on the Encode action, and select the Mobile > 3GPP 300KB H.264 with AAC preset to add it to the workflow.
6. Next, drag from the out connect pin on the right side of the watch action to the in connect pin (left side) to connect the new Encode into the workflow - this creates a new branch in the workflow.

Note*: This encode action is the only action in this branch - you haven't added a copy action. So, if you executed this workflow now, where would the new 3GPP file be saved? The short answer: it is written to a default store - a pre-determined Vantage directory created for saving files when there is no explicit directory specified - more on stores later.*

When a workflow has multiple branches, actions in those branches can execute simultaneously. In this case, once a file has been discovered and a job has been created (or a job has been manually submitted), both encodes will execute at approximately the same time, resulting in faster throughput.

Activating the Workflow and Submitting a Job

7. Now, lets activate this workflow and submit another job. If you don't remember how to submit a job, refer to Tour 1, Submitting Jobs.

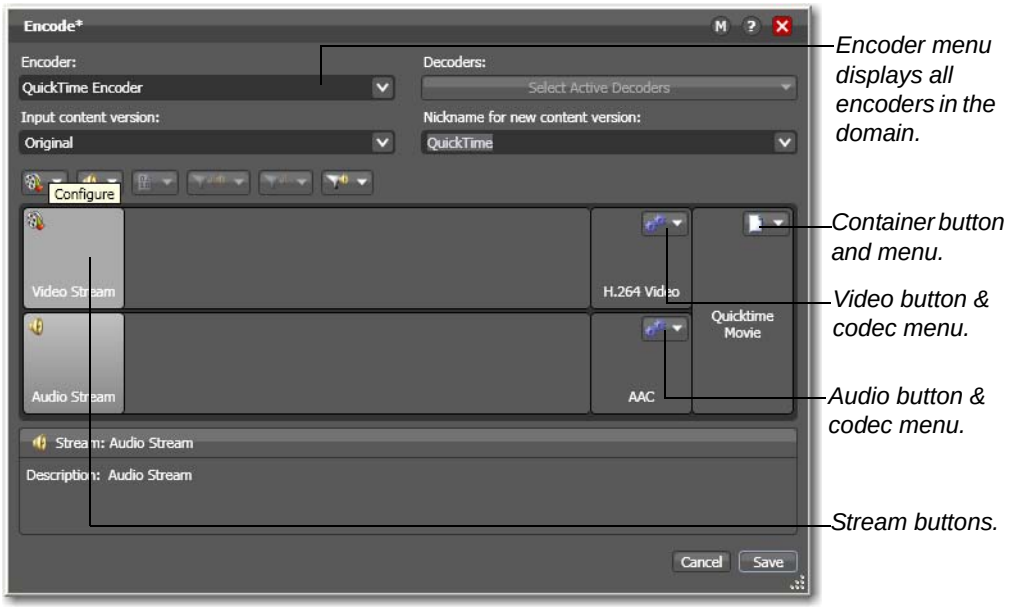
As the job executes, notice in the Job Status window the simultaneous execution of both transcode actions.

Configuring the Transcode Action

Now, let's look at the original QuickTime transcode action you added in Tour 1 in more detail, and learn how to change encoder settings.

8. Click Edit to deactivate the workflow and enter editing mode.
9. Next, mouse over the QuickTime encode action you created in tour 1 to display the inspector icon (the *i* icon at the upper left corner) of the encode action and click it to display the encode action inspector:

Figure 28. Encode action inspector.



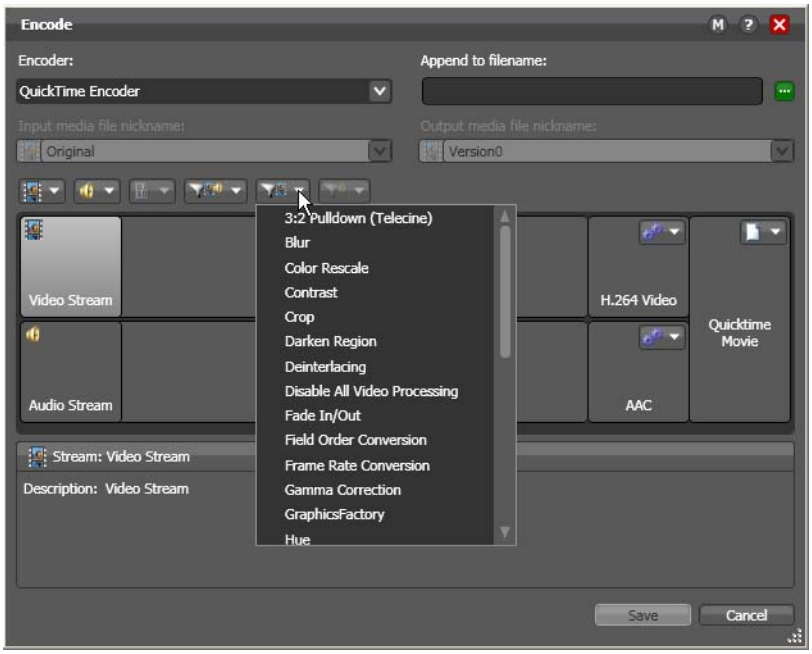
10. Click the Encoder dropdown menu to display the list of encoders you can assign to this action.
11. To the right of the video stream, click the Video Codec dropdown menu to display the video codecs that are available with this encoder.
12. To the right of the audio stream, click the Audio Codec dropdown menu to display the audio codecs that are available with this encoder.
13. At the far right of the video and audio streams, click the Container dropdown menu to display the containers that are available with this encoder.

Note: *As you click on the video codec, audio codec, and container buttons to select them, configuration details display in the configuration panel at the bottom of the window. For example, the Video Codec configuration panel enables you to set frame width, height, and bitrate for the video in the QuickTime file.*

When you select a stream (by clicking the audio or video stream buttons, far left), you can also add processing filters.

14. Select the video stream button in the toolbar and click on the Video Filter dropdown menu to display a list of video filters.

Figure 29. Encode action inspector.



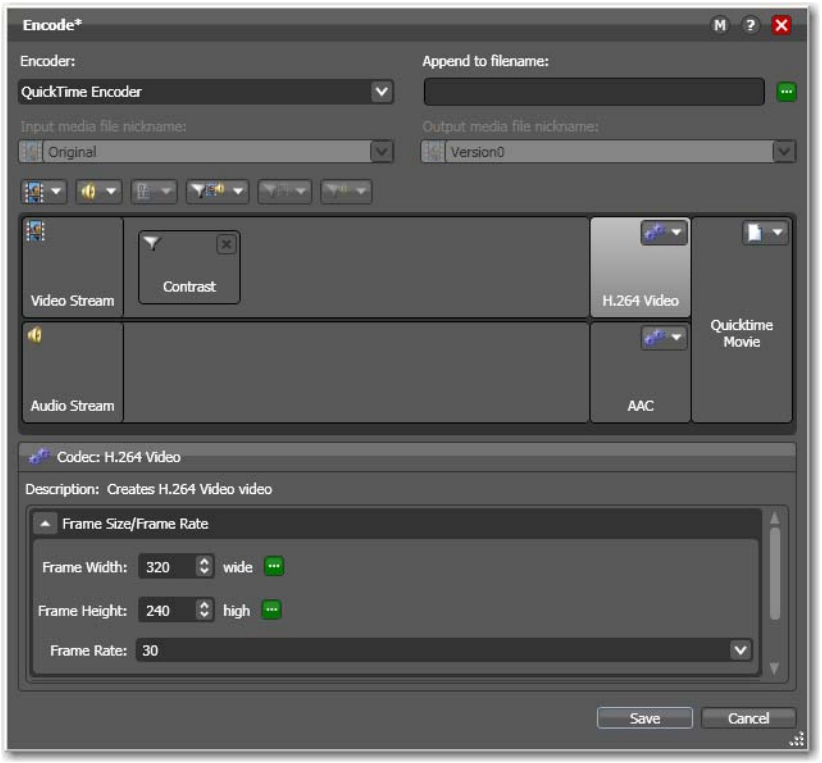
15. Select the Contrast filter - Workflow Designer adds it to the video stream.

Figure 30. Adding filters to video and audio streams.

16. These filters are applied during a transcode, and provide you a great deal of control over how the transcode functions.

17. Next, click on the Video Codec at the far right to display the codec settings at the bottom of the window:

Figure 31. Select a component of media to view details.



18. Open Frame Size/Frame Rate and change the frame size to 640x360.
19. Finally, click the Encoder dropdown menu at the top to display the encoders that you can select. When configuring a given encoder, you can select it and configure it from scratch, or you can select and use a pre-existing template for this encoder (which you did earlier when you added the 3GPP encode action).
20. Click Cancel to close the inspector without making any changes to the encoder.

Note*: Encode actions name output files they create using the same root name as the original media file's name, with an appropriate suffix, based on the encoder. For example, a new QuickTime movie from FlipDemo.MSS is named FlipDemo.mov.*

Conclusion

You've just learned how to duplicate an existing workflow, how Vantage performs multiple simultaneous encodes, and you've been introduced to the basics of configuring encode actions to perform encoding tasks the way you want them to.

Tour 3: Using Binders in Workflows

This hands-on tour takes about 30 minutes and introduces you to the concept of a binder in Vantage and how they enable you to easily track and manage multiple files during a workflow, simplifying workflow design.

Tour Overview

In this tour, we explore a key and powerful feature in Vantage - binders. Binders enable you to simplify complex workflows, and organize all of the assets for a given version of media in a centrally-accessible manner. In this tour, you'll learn the following:

- Introduction to Binders
- File Mode vs. Binder Mode
- Nicknames
- Adding a Delete Action
- Tracking Nicknames in a Workflow
- Attachment Files and the Associate Action

Introduction to Binders

A binder is a collection of media files, attachment files, metadata tracks, and metadata labels. Binders are not an actual physical location; rather, they are a collection of references to files and labels in the database. Binders provide Vantage with the mechanism for tracking multiple assets as a workflow executes. This allows you to design very complicated workflows – that can deal with dozens of files simultaneously – and separates your workflow design from the underlying files themselves.

File Mode vs. Binder Mode

By default, Vantage initially starts in *file mode*, a simplified mode designed for transcoding workflows. In file mode, Vantage automatically assumes that each action operates upon the media file created (or otherwise processed) by the previous action. This makes workflow design easier, particularly for simple transcoding workflows.

However, many actions are not suitable for - or available - in file mode. For example, the delete action is not available – it requires that you identify a specific file - how would you convey to the action *which* file to delete? Or, if you deleted the only file in the workflow, what file would following actions use?

Further, although file mode allows you to create workflow branches, it doesn't allow you to merge the branches. That's because, in file mode, each line represents the flow of a file through the workflow - thus, when the two branches merge, which file would the merged actions operate on?

While the file-based workflow concept is straight-forward and enables fast and easy workflow design, file-based workflow design has some inherent limitations.

To overcome these limitations, Vantage introduces *binder mode.* In binder mode, workflow lines represent do not represent the movement of a file - they only represent the order of the execution of actions. This key

difference separates the files being processed from the design of the workflow itself; instead, the files are tracked in a binder as the workflow executes. As the workflow executes it utilizes the files in the binder, but the files do not *flow* through the workflow along the connecting lines.

Now, lets get some hands-on experience with binders.

1. If you quit Workflow Designer after the last tour, start it again.
2. Before you switch Workflow Designer to binder mode, take a minute to open the action groups in the actions toolbar and note those actions that are deactivated and display dark gray. These are the actions that are not accessible in file mode workflows.
3. Now, switch to binder mode - select Options > Application Mode> Binder. (You can also return to file mode: select Options > Application Mode> File.) In binder mode, all actions are available for use in your workflows.

***Note**: If you edit a workflow you created in file mode when Workflow Designer is in binder mode, the workflow is converted to a binder mode workflow and you can't convert it back.*

Nicknames

Another key, time-saving feature of Vantage that is the notion of nicknames. A *nickname* in Vantage is a convenient means of referencing a file within a binder. In Vantage, all files are referenced by nickname as you design and configure the workflow. In binder mode, these nicknames display on each action.

Nicknames do not affect the actual file name, rather they are simply a way to tell each action in a workflow which file (referenced by the nickname) it should be using. The use of nicknames makes workflow design much easier – Vantage automatically tracks the physical location of the actual files – allowing you to simply refer to files by nickname as you design the workflow.

Vantage generates nicknames automatically or you can assign your own nicknames to be more meaningful. Nicknames are stored in the database, and they can be re-used over and over again in multiple workflows - they're only attached to files during the execution of the workflow.

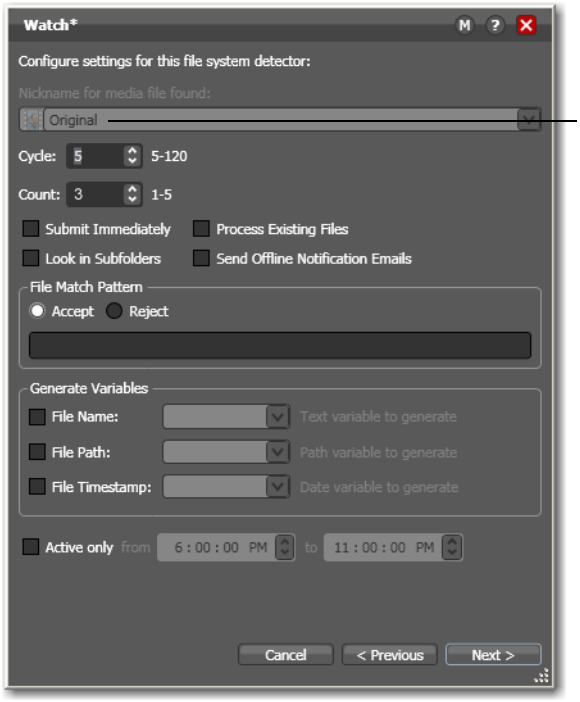
Virtually every action in Vantage involving a file uses a nickname to reference it.

4. Select the *Simple Transcode* workflow, and open the watch action Inspector.
5. Click Next three times to step through the inspector panels until you display the Configure Settings panel.

Note that the topmost item in this panel is a dropdown menu, displaying the nickname of the file, which defaults to *Original*. This setting causes the watch action to provide each new file that it discovers the nickname

Original in each job it submits, so that downstream actions can reference the file just by using the nickname *Original*.

Figure 32. Watch action's polling details.



Nickname assigned to this file. You can choose one from the dropdown, or enter a new one.

6. Now, close the watch action and open the encode action. Note that the input media file nickname (the dropdown directly below Encoder) is also referencing the *Original* input file.

Note: For some complex media types – such as Omneon reference files or P2 camera files – a media file *is actually a collection of files, all of which are necessary to make the media work. In this case, the nickname refers to the entire collection of media files; Vantage tracks the underlying video and audio files automatically.*

Adding a Delete Action

One of the important actions that is only available in binder mode is the delete action. The delete action allows you to delete a file as part of a workflow. Let's add it to a workflow to delete the original file after encoding is complete. (Remember, editing this workflow in binder mode converts it to a binder mode workflow.)

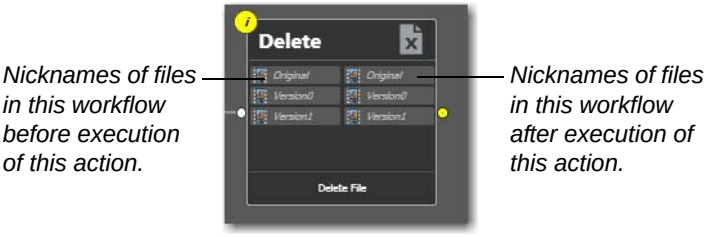
7. Select the *Complex Transcode* workflow and duplicate it as *Complex Transcode Tour 3*.
8. In *Complex Transcode Tour 3*, open the transport action group, and click and drag a delete action into the workflow. Notice that there are no nicknames displayed on this action.

Note: If the delete action is deactivated, you're still in file mode - switch to binder mode: Options > Application Mode> Binder.

9. Now, connect the delete action to the copy action on the top encode action branch.

Notice that the nicknames now display on this action. The list on the left are files available before execution; the list on the right are files available after execution. (After configuration, the files used in this action are highlighted.)

Figure 33. File nicknames display on the face of an action.



10. Now, open the delete action inspector (remember to click the yellow I icon in the top left corner).

Figure 34. Delete action inspector lists files by nickname.

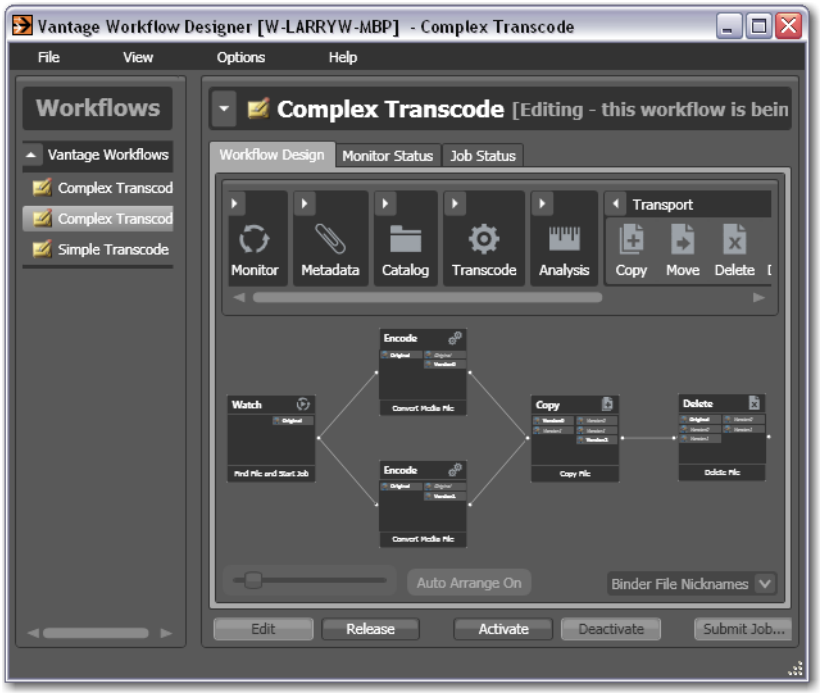
The delete action accepts one parameter: The nickname of the file that you want to delete. This delete action displays the nicknames of all files in the workflow - *Original* (from watch) and *Version0*, and *Version1* (from both encodes).

11. Select *Original* (which identifies the ingested file) and click Save to close the inspector.

Now - Vantage highlights the other encode action's *Original* nickname in red, indicating an error - this file has been deleted. By using nicknames, Vantage can discover many workflow design issues automatically – in this case, you're attempting to delete a file while it is simultaneously being transcoded by a peer encode action in the other branch!

This issue is easily resolved by connecting the second encode action to the copy action to merge the branches, as shown following, with the steps complete:

Figure 35. Merged branches synchronize actions.



12. Click and drag from the out pin of the bottom encode to the in pin of the copy action.

When the workflow branches are merged, the workflow is now valid and the encode actions are *synchronized* - and in this case, the workflow waits for all upstream workflow branches to complete before executing the first step in the merged branch. When the branches are merged, the copy and deletes action won't execute until both encode actions have completed.

Tracking Nicknames in a Workflow

Now, to see automatic file tracking in action, lets change a nickname.

13. Open the top (3GP Advanced) encode action inspector (you know that it is creating a new version of a media file).
14. You can provide your own nickname for each media file you use or create in a workflow - for example, select *Version1* in the Output Media File Nickname field and enter *MyNewMediaFile* and close the inspector.
15. Of course, downstream actions (such as the copy) need to be updated if they used the nickname you just deleted (*Version0*) - open the inspector and select *MyNewMediaFile* as the new nickname to copy.

In binder mode, you also have a more detailed view of what is going on inside each action.

Figure 36. Nicknames before and after execution.

Looking at the copy action, you can see which nicknames are available *before* the action executes on the left, and which nicknames are available *after* the action executes on the right. Further, Vantage highlights the nicknames that are used – and created – by an action.

Attachment Files and the Associate Action

Another difference in binder mode is support for non-media files, called *attachments*. An attachment file might be an XML file, an SCC caption file, an STL subtitle file, a PDF, or any other type of file which is not actually media.

A binder may contain more than one media file; it may also contain more than one attachment file. This capability allows you to copy and move not only the media, but any supporting files that are necessary in the workflow.

Vantage also allows you to watch hot folders for attachment files as well as media files.

Open the watch action inspector, and note that you can determine whether to watch for a media or attachment file (select Watch for options at the top of the panel).

This feature is useful in several situations. For example, suppose that you have a set of media files and you are receiving SCC caption files that need to be matched to those files, and applied during a transcode. You can set up a watch action to wait for incoming SCC files; but how will you apply them to media?

The answer lies in the associate action, which allows you to add files to a binder midway through a workflow. It accomplishes this by matching the filename of an *existing* binder file, to discover new files that will be added. For example, in this workflow, the filename of the SCC file can be used match with the appropriate media file; now both files are in the binder and they can be used in the workflow.

Conclusion

In this tour, you learned how to enable binder mode, and you learned about file nicknames. You also learned how to manage multiple assets in a workflow, and how to troubleshoot for errors.

Tour 4: Using Variables in Workflows

This hands-on tour takes about 30 minutes and introduces you to the concept of *variables* in Vantage and provides you a first look at the Vantage Management Console.

Tour Overview

This tour discusses the role that variables play in Vantage workflows: passing important job information between actions, controlling execution flow, action priority, and controlling job routing.

In this tour, you'll learn the following:

- Introduction to Variables
- Starting Vantage Management Console
- Creating and Managing Variables
- Using the Priority Variable
- Setting Variable Values in a Workflow
- Using Variables in the Workflow

Introduction to Variables

Variables are temporary job metadata; it is information that only lasts as long as the job. A variable is simply a name, a type, and a value – for example, a number named Lines of Black at Top, set to 50.

Variables can be used in several ways in Vantage:

- Variables allow information to be passed between actions in a workflow
- Variables can be used for job routing to specialized hardware
- Variables can be used for decision-making
- Variables can be used to determine the priority of a particular action

In this tour, you'll learn how to manage and publish variables. In subsequent tours you'll also learn how to use variables for decision-making and job routing.

Starting Vantage Management Console

Variables are managed in the Vantage Domain via the Vantage Management Console.

To start the console, double-click the Vantage Management Console shortcut on your desktop.

Figure 37. Vantage Management Console desktop shortcut

Or, select start > Programs > Telestream > Vantage > Vantage Management Console.

Recall that the Vantage Management Console (usually referred to as just console) is the program you use to configure and administer your Vantage domain - including Vantage services, licenses, workflow design items, and the workflows themselves.

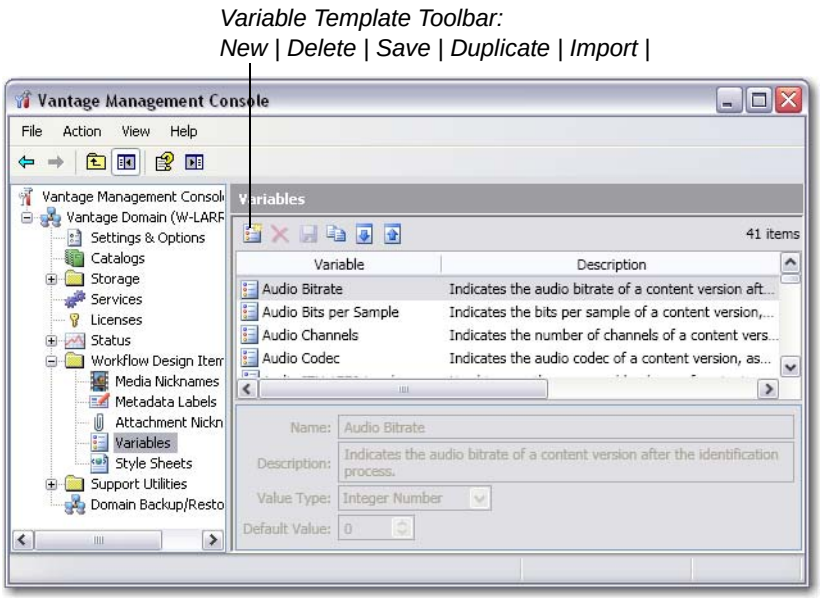
1. Double-click the Vantage Management Console now to launch it.
2. If you haven't previously launched the console, you'll be prompted to select a Vantage domain. Select your Vantage domain to continue.

Creating and Managing Variables

To create and manage variables in a domain, you create variable templates. You use these templates to implement variables in your workflows, and also for use in Vantage services.

3. Select Workflow Design Items > Variables to display the Variables panel:

Figure 38. Variables panel in the Management Console.



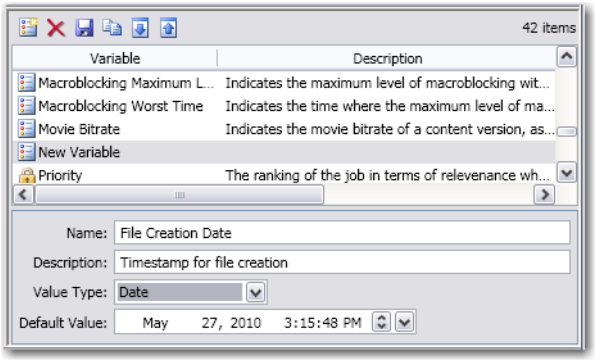
The Variables panel displays a list of pre-set variable templates that are included with Vantage for use in the domain. You can use these variable templates in workflows as-is, or you can select a variable template, change its name, type, and change its default value.

4. For example, select the *Curtained* template to displays its details at the bottom of the panel. The variable template is configured in edit fields to allow you to change the properties of the template.

   You can also add your own variable templates. Let's add one now.

5. Click the Create a New Variable icon in the toolbar (far left icon).

Figure 39. Variable template details.



6. In the details panel, enter the name `File Creation Date`, set the value type to *Date*, and leave the default value unchanged.
7. Click Save the Save icon (disk) to save your variable template.

Note: There is nothing special about the name File Creation Date – you can create variable templates with any name. However, in this workflow, we will use this specific variable to store the creation date of the file. In addition, you can also duplicate an existing variable template and just update it to meet your needs.

Using the Priority Variable

There is one special variable that cannot be edited – *Priority*. This variable has special meaning in Vantage, because it sets the priority of any actions that receive it when determining job load balancing.

However, aside from this special meaning, Priority acts like any other variable. Its value can be set just like other variables, and it can be used for all the same purposes.

Setting Variable Values in a Workflow

The power of variables is that their value can change during a workflow. There are several ways that this can happen:

- As the result of an action executing. For example, analysis actions generally can publish their results as variables. Similarly, watch and associate actions can publish information about files that they detect, using variables.

- From external metadata. Specifically, the populate action can set variables based upon metadata label values found in external files.

- From Web Services. The Web Services notify action can receive the results of a web services call and make those results available as variables.

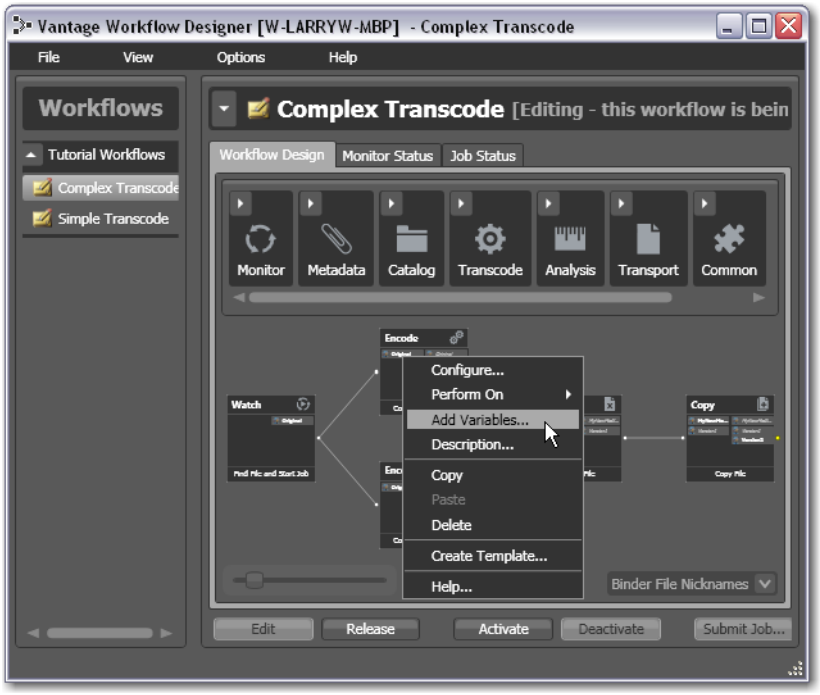
- As a pre-step to an action executing; any action can set any variable prior to execution.

- As a pre-step to a machine executing an action; any service on any machine can be configured to set a variable before executing an action.

Let's experiment with two of these. First, lets modify an encode action in the Complex Transcode workflow, so that Vantage processes it with a higher priority than the other.

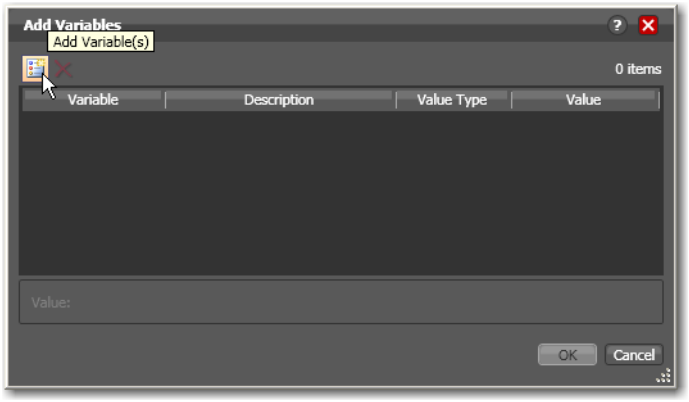
8. Open Workflow Designer, and duplicate *Complex Transcode Tour 3* as *Complex Transcode Tour 4.*

Figure 40. Adding variables to a workflow.



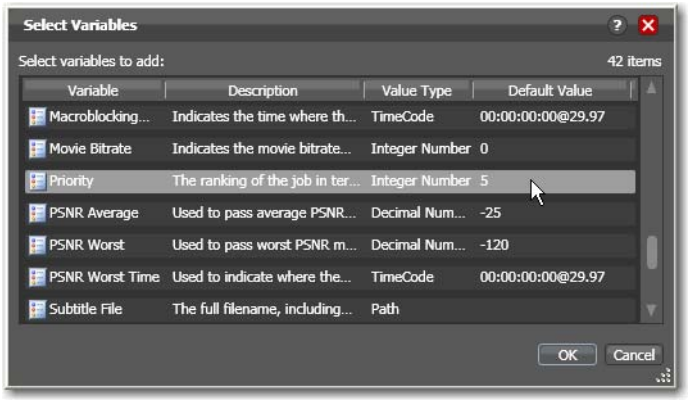
9. Right-click the 3GPP encode action (top branch) and select Add Variables from the context menu to display the Add Variables dialog.

Figure 41. Right-click and select Add Variables.



10. Next, click the Add Variable(s) icon in the toolbar to display the Select Variables dialog:

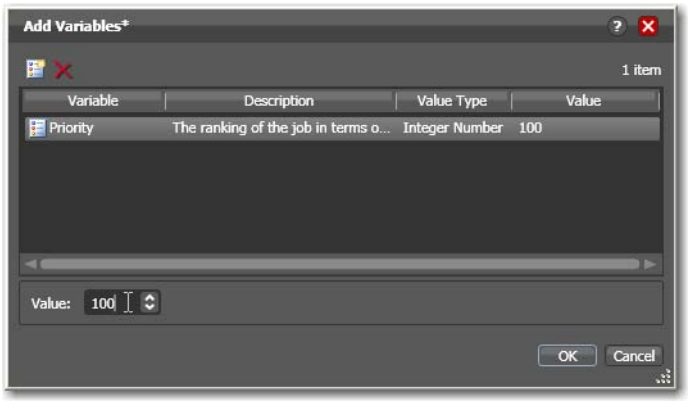
Figure 42. Select variable templates to add to this action.



11. Scroll through the list (or press the first letter of the variable - in this case *P*) and select the Priority variable template - click OK to add it to this action.

Now, the Priority variable is attached to the workflow and its value will be set to 5 prior to the encode action executing. You can change the value of the variable at the bottom of the panel – higher numbers indicate higher priority, lower numbers indicate lower priority.

Figure 43. Adding variables (and setting values) to encode.

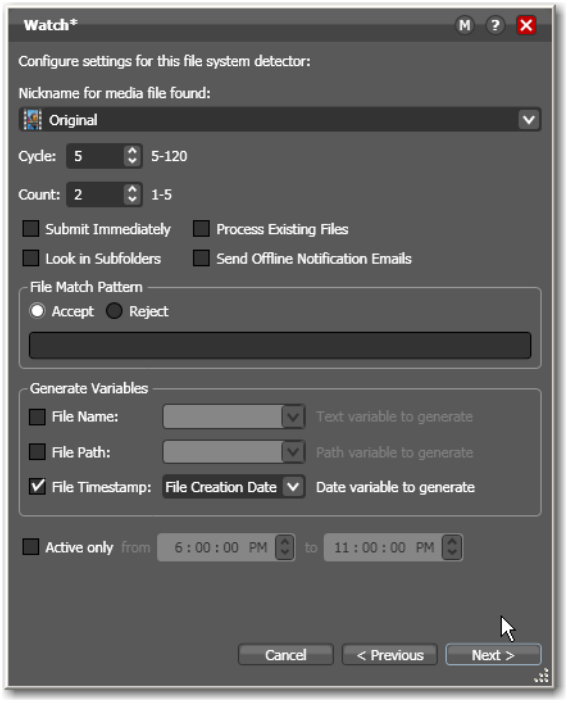


12. Enter a large number (for example, 100) and click OK to make this variable setting permanent.

Next, let's configure the watch action to set the value of the File Creation Date variable that you created earlier, each time it picks up a file and submits a job.

13. Open the watch action inspector, and click Next repeatedly to display the configuration panel:

Figure 44. Adding variables (and setting values) to watch.



14. Under Generate Variables, check the File Timestamp checkbox.
15. Next, use the drop-down to select *File Creation Date*, the variable that you created in the Management Console earlier in the tour.

Now, your watch action will publish the timestamp of any file that it finds, into the variable *File Creation Date*, for use in this workflow. You'll use this variable in the next tour.

Using Variables in the Workflow

Variables are generally available to any action *downstream* from where they were set. In the case of *File Creation Date*, that variable's value is available to all subsequent actions. In contrast, setting *Priority* on one encode action does not affect *Priority* on the other - because these are two different variables with the same name in two different branches… but it does affect the downstream actions from those encode actions.

In cases where workflow branches merge, variables are passed from the branch which actually completes *last*. Because this is indeterminate (from the perspective of workflow actions), it is recommended that merged branches explicitly set variables that are important. In this case, you could set Priority on the merge action; this would ensure that no matter which upstream branch completed first, it would work.

If a variable is not set explicitly in a workflow, but is used by an action in the workflow, then the variable's default value is used. For example, in the

above workflow, we set Priority to 100 for one of the encode actions; the other would use the default value of 5.

Conclusion

In this tour, you learned about managing and creating variables, as well as how to set variable values in a workflow. In the next two tours, you'll learn about how to use variables for decision-making, and how to use them to pass information between actions in a workflow.

TOUR 5: DECISION MAKING IN WORKFLOWS

This hands-on tour takes about 30 minutes and introduces you to the concept of *decision-making* in Vantage and you use variables to make decisions.

***Note**: To execute workflows you create in this tour, you'll need a license - certain features (the decide action, for example) won't execute without one. For a demo license, contact sales@telestream.net.*

Tour Overview

In this tour, you'll learn the following:

- Action States
- The Decide Action
- Processing New Files Example
- Filtering Old Files Example

If you quit Workflow Designer after the last tour, be sure to start it again.

Action States

After most actions execute, they set one of three action states to indicate the result of the execution: Pass, Ignore, and Fail. This state is automatically passed to the next action or actions (in the case of a branch) in the workflow; these actions in turn may determine whether or not to execute based upon the incoming state. Action states enable decision-making - causing entire branches of the workflow to not execute.

To understand how to use action states, its important to understand their precedence, whether an action receives states from one or multiple incoming actions (a merge of multiple branches):

- If at least one incoming state is Fail, regardless of other incoming states, the action inherits Fail and must pass it on - Fail has precedence over all action states. Most actions will not execute if they inherit Fail. If one action fails, the entire job fails.

- If there is no Fail state, but at least one Pass state, then the action inherits Pass - which has precedence over Ignore.

- If all incoming states are Ignore, the action inherits Ignore. Ignore has lowest precedence of the three states.

Generally speaking, actions only execute if (1) none of their predecessors set the Fail state, and (2) at least one of the predecessors set the Pass state.

Similarly, if an action sets Ignore, the next action will also likely not execute. Most actions, excluding watch and associate, can be configured to perform on certain states - this allows workflows to send an email for example, if they detect a failure.

***Note**: Actions can also be configured to execute upon receipt of Fail or Ignore– for example, to send an email when a failure is detected. To*

configure an action's execution based on the incoming action state, right-click and select Perform On.

The Decide Action

The Decide action analyzes incoming variables and sets the action state based upon the results of its analysis. Decide effectively acts as a gatekeeper to a branch in a workflow, determining whether the actions that comprise that branch should execute (Pass), not execute (Ignore), or report a failure (Fail).

Because variables are set at run-time, decide allows you to set this state at run-time and may behave differently for every job through a workflow. This action is a powerful action allowing you to build complex decision-making into a workflow.

Note that if you want to have multiple branches in a workflow, and only execute one or some of them for each job, then you'll need multiple decides – one acting as a gatekeeper for each branch in the workflow.

Processing New Files Example

Let's look at an example.

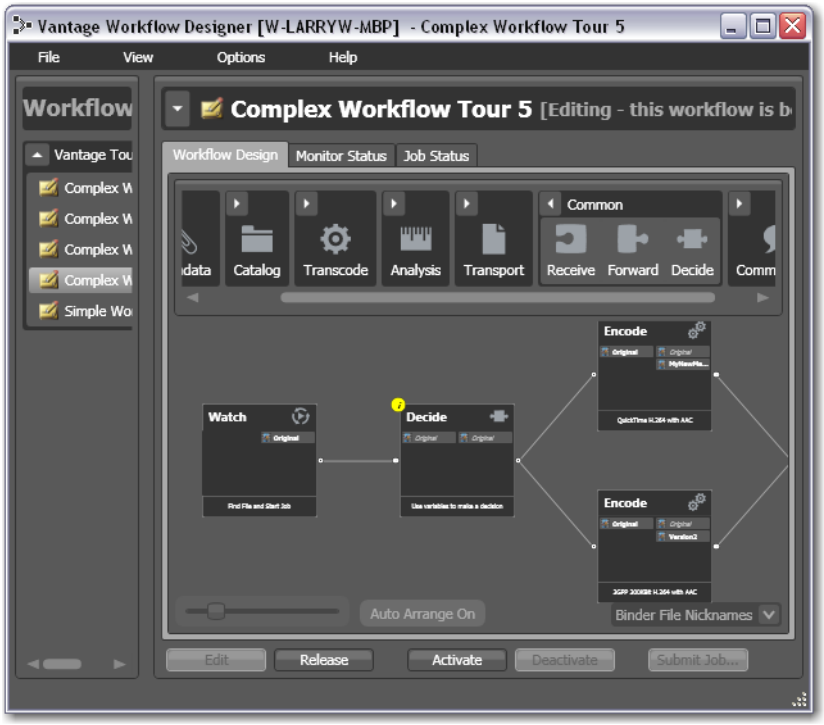
1. Open the *Complex Transcode Tour 4* workflow and rename it to *Complex Transcode Tour 5*. We'll update this workflow to only process new files that are in the hot folder.

Recall that in Tour 4, the watch action was configured to publish a variable named *File Creation Date*. We'll use this variable to only process files created after January 1st, 2010.

2. In the actions toolbar, open the Common category and drag a decide action onto the workflow.

3. Next, modify the workflow so that decide follows watch, and all remaining actions follow decide (shown complete):

Figure 45. Rearranging actions in a workflow.



4. To break action connections, roll over the connector between them and click the red X icon. In this case, you'll have to delete the connectors between the watch and both encoder actions. Then, reconnect the actions the way you want them to execute.
5. Next, open the decide inspector.

Decide is designed perform evaluations upon variables, and set a state if they meet *all* the conditions that you specify.

6. In the top left, click Select Variables and add the *File Creation Date* variable. Next, select the > (Greater) operator and set the test value to *January 1, 2010, 12:00:00 AM*. Verify that the state selection is Pass – meaning that if the date is later than January 1st, this action will emit a Pass – and that the Otherwise state is Ignore. Click Save to save the workflow.

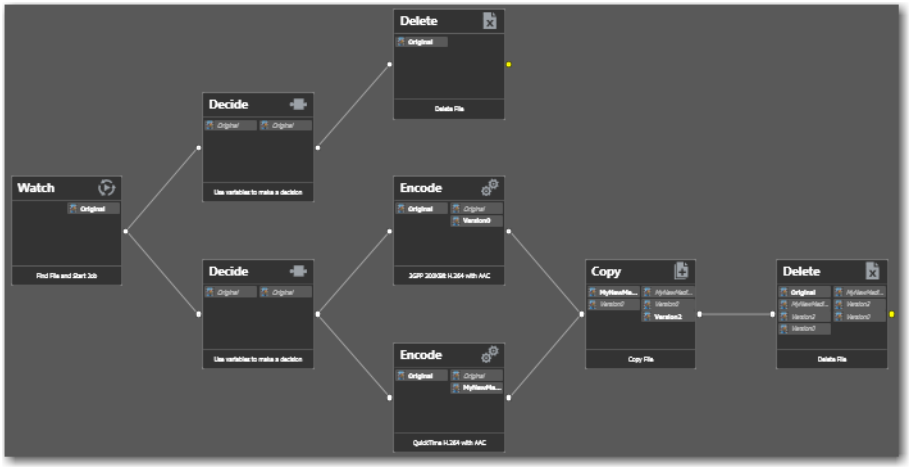
Now - because actions by default operate only when the incoming action state is Pass, your workflow will process files created after January 1st, but will not process files created earlier than that.

Filtering Old Files Example

But what if you wanted to simply delete old files?

Let's modify the workflow to delete old files. To do that, you'll create a new branch off of watch, with a decide and delete action (shown below, complete).

Figure 46. Rearranging actions in a workflow.



7. Add the decide action, connected to the watch on a separate branch.
8. Now, open the decide action, and configure similarly to the previous one - add the *File Creation Date* variable, select the reverse operator <= (Less Than or Equal), and set the date to *January 1, 2010 AM*. If this is true, Pass is emitted; if false, Ignore is emitted.
9. After the decide, add a delete action and configure it to delete the *Original* file. It executes by default only on Pass states.

This workflow now has two branches controlled by decide actions – one will pass only new files, the other will pass only old files. Because of the way we configured the Decide actions, every file will execute only one branch in this workflow.

Conclusion

In this tour, you've learned how to assign values to variables, to test those values, set action states, and use the decide action to make run-time decisions - all features designed to enable you to add control to your workflows, based on information you've gleaned from your input file.

TOUR 6: DYNAMIC PARAMETERS

This hands-on tour takes about 15 minutes and introduces you to the concept of dynamic parameters in Vantage, and how they can be used to pass information between steps in a workflow.

***Note**: To execute workflows you create in this tour, you'll need a license - certain features (the decide action, for example) won't execute without one. For a demo license, contact sales@telestream.net.*

Tour Overview

In this tour, you'll learn the following:

- Parameter Binding
- Cropping out Curtains

Parameter Binding

Thus far, when we have configured our actions in a workflow, parameters have been set at a fixed value. For example, the frame size of a transcode output is 320x240. Obviously, by using fixed values the action performs the task the same way each time - creating an output file that is 320x240 - every time this action executes.

How would workflow processing improve, if we could change these settings and parameters job-by-job, on the basis of the media being processed?

Vantage supports this capability to dynamically change the value of parameters and settings by binding parameters to variables. Recall that variables are metadata that is only known at run-time, and this metadata may be different for every single file. In Vantage workflows, you can configure almost any parameter, in almost any action, to use a variable (and its current value) as its input.

Cropping out Curtains

Let's build a real-world example. In this example, we know that some of our content has black on the left and right - *curtains* - that we want to crop. However, the amount of black is likely to be slightly different for every file being processed in Vantage. Instead of creating many workflows to deal with each situation - and manually measuring the black before processing, we'll build a workflow to crop the curtains automatically, as appropriate for each incoming media file, by combining an examine actions with a transcode with filters implemented.

1. Open the *Complex Transcode Tour 4* workflow again, and rename it to *Complex Transcode Tour 6*.
2. Using *Complex Transcode Tour 6*, open the Analysis group and drag an examine action out - connect it between watch and the top (QuickTime H.264/AAC) transcode action. (Remember to use Control to suspend auto-arrange to make it easier).
3. Open the examine inspector and click the Analyzer dropdown menu - select Curtain Detection. Designer displays the configuration setting for this analysis tool.

4. Open Generate Variables and configure this action to publish two variables (by checking them): Crop Left (select the Curtained Left Pixels variable) and Crop Right (select Curtained Right Pixels).

***Note**: Vantage provides many predefined variables for use in your actions. While this is convenient, you're certainly free - and often will need to - create your own variables - they behave just like the ones Vantage provides.*

5. Under Input Media File Nickname, select *Original* as the file to analyze.
6. Click Save to update the action and close the inspector.
7. Next, open the inspector of the transcode action immediately after examine.
8. Click on the Video Stream button, then click the triangle in the Video Filter button (2nd from the right) to display the video filters you can use. Add a Crop video filter to the transcode.
9. Select the Crop filter to display its parameters at the bottom of the window.
10. On the Left value, click the bind (green with ellipses) button to bind the Left parameter to the *Curtained Left Pixels* variable.
11. Perform these steps to do the same for the Right parameter and the *Curtained Right Pixels* variable.
12. Click Save when you're done.

You've now created a dynamic transcode, which will automatically adjust crop settings based upon incoming curtain data from the curtain detection examine step. Every media file that is processed will have its own, custom transcode setting appropriate for that file!

Take a moment to explore the rest of the transcode settings in this inspector, and notice the bind buttons on many parameters. You'll find the bind button in other actions as well - for example, the Web Service notification action allows you to send variables to external Web Services, and the Email message action allows you to include variables as part of an email.

13. If you have curtained material, submit a job for processing and view the results.

Conclusion

In this tour, you learned how to create dynamic parameters that use variables as their inputs. This feature enables you to create powerful, dynamic workflows that adaptively change what they do based upon the metrics of the media being processed.

CHAPTER 2

Using Workflow Designer

Vantage Workflow Designer is a multi-user application for creating and managing workflows, and submitting and monitoring Vantage media processing jobs.

This chapter provides information about how you use the major features of Vantage Workflow Designer.

Topics

STARTING AND STOPPING VANTAGE WORKFLOW DESIGNER

Starting Vantage Workflow Designer

To start Vantage Workflow Designer, double-click the Vantage Workflow Designer shortcut on your desktop.

Figure 47. Vantage Workflow Designer desktop shortcut

Or, select start > Programs > Telestream > Vantage > Vantage Workflow Designer.

Stopping Vantage Workflow Designer

To stop Vantage Workflow Designer, select File > Exit. You don't need to save work you've accomplished, because all workflows, monitor status,

and job information is stored in the Vantage database and updated automatically as you make changes.

Changing the Vantage Domain

Vantage Workflow Designer connects to a single Vantage domain at a time, and enables you to use workflows in that domain.

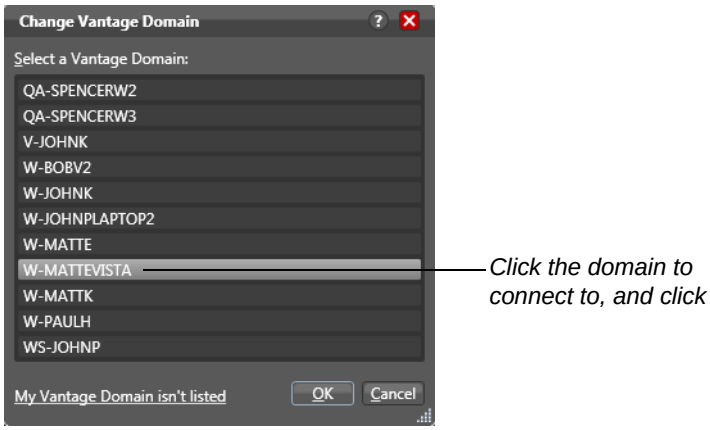
In a multi-domain environment, you can connect to any domain you want, and use that domain's workflows or check on jobs in that domain.

Vantage domains are by default, identified by the name of the computer on which the Vantage database resides. To determine the domain to which Vantage Workflow Designer is currently connected, note the name of the computer displayed in the title bar of the window.

To connect to another Vantage domain, select File > Change Vantage Domain or right-click in the workflows panel away from any icons and select Change Vantage Domain.

The Workflow Designer polls the network for domains, and displays the Change Vantage Domain panel:

Figure 48. Change Vantage Domain panel.

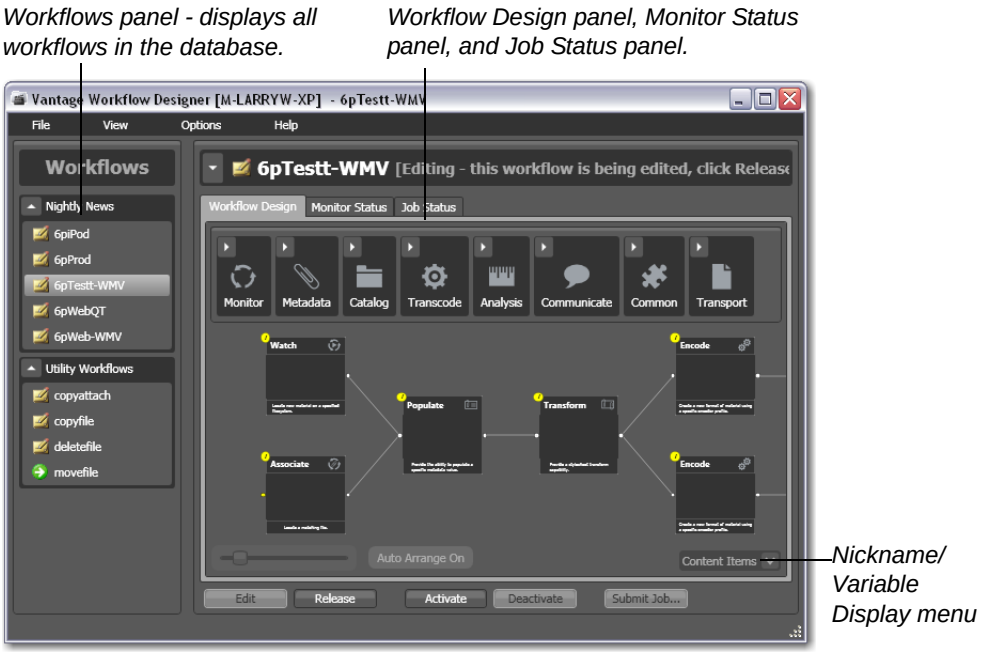


Select the domain you want to connect to, and click OK. When you change domains, Workflow Designer closes its connection to the current domain's Vantage database and connects to the selected domain's database, refreshing the list of its workflows.

Using the Workflow Designer's Workspace

Vantage Workflow Designer's window enables you to create and edit workflows, activate and deactivate them, and monitor their status and review jobs in process and already processed.

Figure 49. The Workflow Designer window



Note: When editing in file mode, the action display options menu (bottom right) does not display, and nicknames and variables do not display on actions.

Printing Workflows

Select File > Print Workflow to print the selected workflow using the current workflow settings. The workflow is scaled to fit on a single page (with landscape or portrait mode preset based on workflow shape), unless the workflow is sufficiently large to make it difficult to read when scaled to a single page. Then, Designer provides you the option of printing across multiple pages.

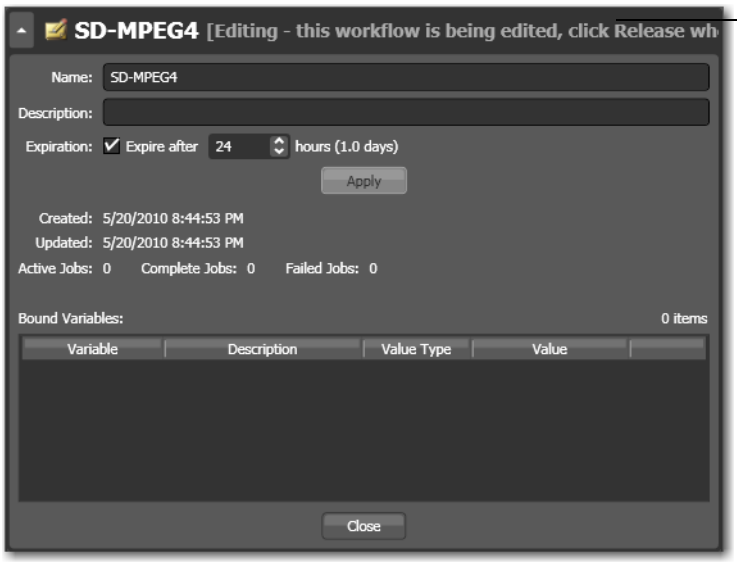
Workflows Panel

All of the workflows stored in the Vantage database are displayed in the Workflows panel on the left. Workflows are organized alphabetically by category. For details on the workflows panel, see Using the Workflows Panel.

Using the Workflow Details Panel

To display the selected workflow's details panel, click once in the title bar. Vantage obscures the tabbed panels by displaying the details panel for the selected workflow:

Figure 50. The workflow details panel.



Click once to display workflow details - click again to display the tabbed panels.

Click again to hide the details panel.

Name. Name of workflow.

Description. Description of workflow - displays in workflow tooltip.

Expiration. Check to expire jobs from this workflow after the specified elapsed time.

Hours. Select the number of hours before this workflow expires.

Bound Variables. Indicates which variables are being utilized by actions in this workflow. If an action parameter in the workflow binds to a variable, it displays here.

Workflow Design, Monitor, and Job Status Panels

Information about the selected workflow is displayed in three tabs:

- Using the Workflow Design Tab
- Using the Monitor Status tab
- Using the Job Status Tab.

Using the Workflow Status Buttons

At the bottom of the details panel are status buttons that you use to control the status of the workflow, and to manually submit jobs:

Edit. Click to modify the selected workflow. If the workflow is currently active (the monitor action is running and the workflow can process jobs), Vantage will display a warning dialog that it is about to deactivate the workflow. Click OK to continue.

The Actions toolbar displays at the top of the panel when in design mode, so that you can add new actions to the workflow.

When you are editing a workflow, other Workflow Designer users can view the workflow, but cannot edit or activate it.

Release. When a workflow is in Edit mode, click Release to stop editing it. Released workflows can be activated, and can also be edited by others.

Activate. Click Activate on a deactivated workflow to start any monitor actions so that jobs can be submitted and processed by this workflow.

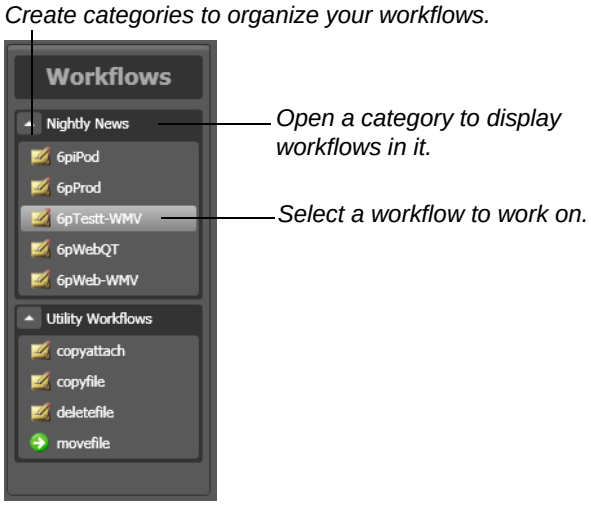
Deactivate. Click Deactivate to deactivate the workflow. New jobs cannot be submitted and media cannot be processed by the workflow in this state. Existing jobs using this workflow continue executing to completion.

Submit Job. When the workflow is active, click to display the Submit Job window. For details, see Submitting Jobs Manually in Workflow Designer.

Using the Workflows Panel

Use the Workflows panel to create workflow categories, and create workflows.

Figure 51. Workflows panel.



When you are editing a workflow in file mode (Options > Application Mode > File), you can only edit or create file-based workflows; in binder mode (Options > Application Mode > Binder), you can edit all workflows. (For details, see Building Workflows.)

Workflows Panel Context Menu

Right-click in the workflows panel to display the following context menus:

In the panel title or empty space: Use this context menu to change the Vantage domain, or to create a new workflow category or new workflow.

On a category: Use this context menu to create a new category, or delete or rename the target category.

CAUTION: When you delete a workflow category, all workflows in this category are permanently removed from the domain database.

On a workflow: Use this context menu to change the mode to edit or release, and activate or deactivate the target workflow. You can also rename, delete, move, or duplicate the target workflow, or submit a job if the workflow is active.

Creating a New Category

To create a workflow category (at least one is required before you can create a workflow), select File > Create New Category or right-click in the panel away from workflow objects, and select Create New Category. Name the category and click OK to create it.

Renaming a Category

To rename a category, right-click the category and select Rename. Workflow Designer makes the text editable - change the name and press Enter to update the name.

Deleting a Category

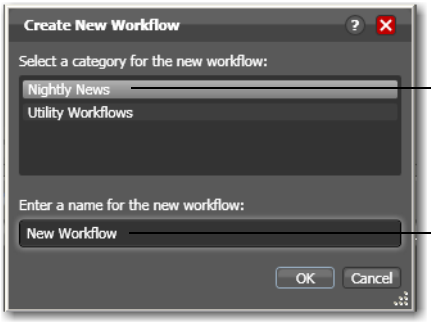
To delete a category and all of the workflows it contains, right-click the category and select Delete. Click OK to confirm that you want to delete the category and its workflows and transaction history.

CAUTION: When you delete a workflow, it is permanently removed from the domain database, along with all of its transaction history.

Creating a New Workflow

To create a new workflow, select File > Create New Workflow or right-click in the panel away from workflow objects, and select Create New Workflow. Workflow Designer displays the Create New Workflow dialog:

Figure 52. Create New Workflow panel.



First, select the category where you want the new workflow saved, and then name the workflow and click OK to create it.

For complete workflow creation details, see Building Workflows.

Renaming a Workflow

To rename a workflow, right-click the workflow and select Rename. Workflow Designer makes the text editable - change the name and press Enter to update it.

Note

You can also rename a workflow in the Workflow details panel. See Using the Workflow Details Panel for details.

Deleting a Workflow

To delete a workflow, select it and select File > Delete Workflow or right-click the workflow and select Delete Workflow. Click OK to confirm that you want to delete the workflow and all of its transaction history.

CAUTION: When you delete a workflow, it is permanently removed from the domain database, along with all of its transaction history.

Moving Workflows Between Categories

To move a workflow from one category to another, select File > Move Workflow or right-click on the workflow you want to move and select Move. Workflow Designer displays a Category dialog. Select the category you want to move the workflow to, and click OK.

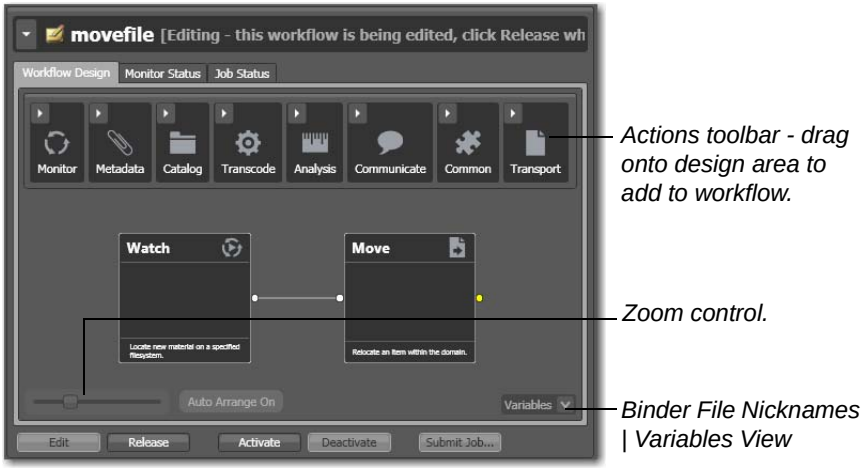
Duplicating a Workflow

To duplicate a workflow, select File > Duplicate Workflow or right-click on the workflow and select Duplicate. Workflow Designer displays a Category dialog. Select the category you want to create the new workflow in, enter a name, and click OK.

Using the Workflow Design Tab

Click the Workflow Design tab to view, create, and modify workflows.

Figure 53. Workflow details panel.



For details on creating and configuring workflows, see Creating Workflows.

Actions Toolbar

At the top of the panel is the actions toolbar, organized by action type. Click the arrow to open each action type and display the set of actions in this group.

You can display the actions toolbar in two ways: right-click in the tool bar and select actions and text, or only actions.

To add an action to a workflow, click and drag the action onto the work area, then connect it to other actions to create a workflow. Or, copy and paste an existing action.

Showing and Hiding Grid Lines

Select View > Show Grid Lines (Control-g) or right-click and select Show Grid Lines to display horizontal and vertical grid lines. Select again to hide grid lines.

Detail View

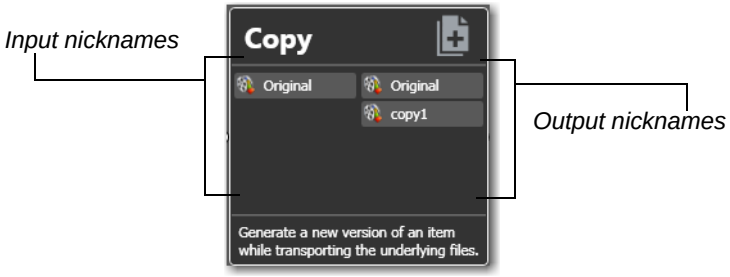
Detail view is only available when Designer is in binder mode. Select View > Detail View (Control-d) or right-click and select Detail View. In detail view, Workflow Designer displays the action name, icon, and editable description, plus binder file nicknames or it variables used in the workflow, depending on the binder file nickname/variable display setting (in the bottom right corner of the Workflow Design tab).

Click again to display actions only as an icon.

Binder File Nickname | Variables View

When Designer is in binder mode, binder file nicknames, metadata labels, and variables associated with an action display on the action (in detailed view) for quick reference.

Figure 54. Actions can display binder and file nicknames plus metadata labels, or variables.



Binder File Nickname View

In binder file nickname view, each action displays a list of file nicknames and metadata labels that are available to the action before it executes (on the left), and the nicknames and labels that are available downstream when the action completes (on the right). Content items change color based upon the validity of the current workflow. Highlighted nicknames have been utilized / created in this workflow. Nicknames displayed in red represent an error.

Note: Nicknames and labels that are used or affected by the action are highlighted. Nicknames and labels also change color indicating whether or not the workflow is valid.

For example, if you configure an action to utilize nickname *Copy7* provided by an earlier action and then delete the action that created *Copy7*, then *Copy7* displays in red on the now-invalidated action.

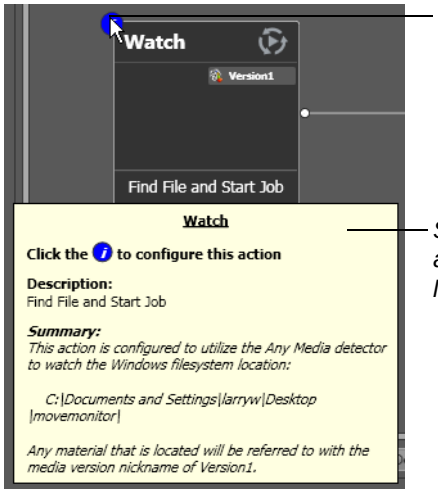
Variable View

The variable view displays variables that are used to bind parameters in this action.

Action Summary

Each action has a summary - to display it, hover over the inspector icon.

Figure 55. Action summary text



The summary displays the action type, description (editable), and a high level description of how the action is configured.

Moving the Workflow in the Design Space

A workflow with lots of actions may be larger than your workspace when viewed at the zoom level you're using. To move the workflow around in the workspace, click anywhere on the design area (including an action). The cursor displays as a compass – now, drag the workflow in the appropriate direction.

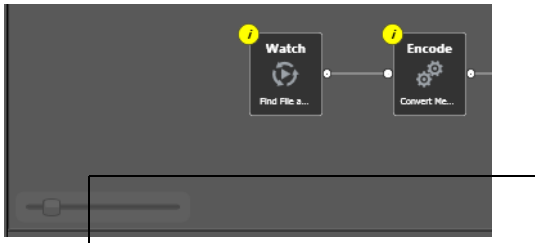
Centering a Workflow

To center a workflow in your workspace, right-click in the workspace and select Recenter Workflow (Control-r) or select View > Recenter diagram) to recenter the diagram on the work area.

Zooming In and Out on a Workflow

The zoom slider bar at the bottom left corner enables you to zoom in and out to suit your needs.

Figure 56. Vantage Workflow Designer



Use the zoom slider bar to zoom your workflow in and

To zoom in on a workflow choose one of these actions:

- Drag the zoom slider bar to the right
- Repeatedly press Control-+ (the Plus key)

To zoom out on a workflow choose one of these actions:

- Drag the zoom slider bar to the left
- Repeatedly press Control-- (the Minus key)

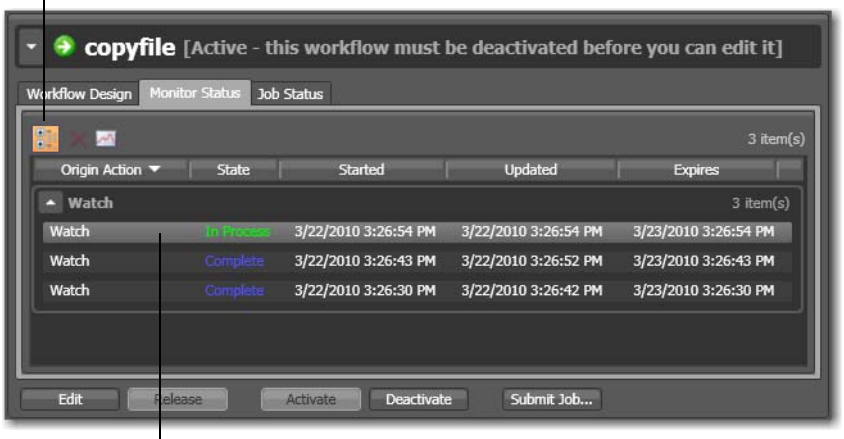
You can also use the scroll wheel on your mouse while pressing Control to zoom in and out on a workflow.

USING THE MONITOR STATUS TAB

Click the Monitor Status tab to review the status of active origin actions for the selected workflow.

Figure 57. Monitor Status displays all active origin actions.

Monitor Status toolbar - Group | Delete | Details.



Each row is an active origin action, indicating status and other details.

If your workflow is deactivated, the table displays a history of previous activations. If your workflow is active, the table displays active origin actions.

Click any column to make it the primary column and sort it ascending or descending.

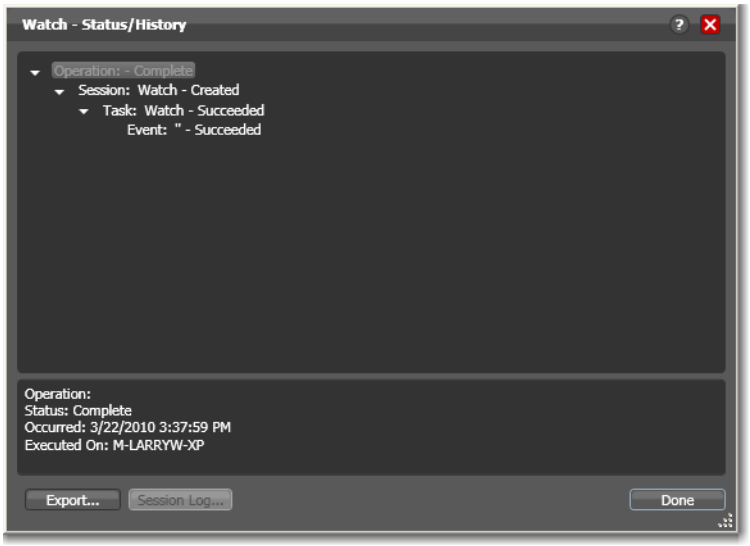
Toolbar

Groups. Click to organize actions by group, based on the primary column - the one you have selected. Click again to turn grouping off.

Delete. Click to delete the selected row(s). Or, right-click on the row, and select Delete.

Status. Click to display the selected action's details. Or, right-click and select View Status.

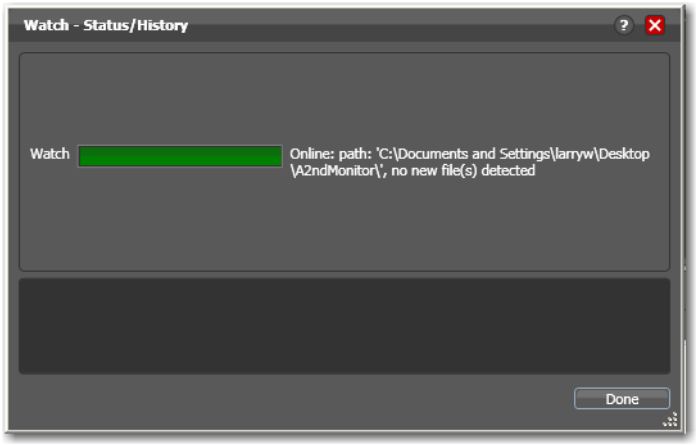
Figure 58. Complete monitor action status details



For an activation that has completed (Success | Ignore | Failure), this dialog displays the current status details for the activation.

If the action is still active (Queued | Paused | In Process | Waiting), this dialog displays with a progress bar and the path of the target directory, plus the last status.

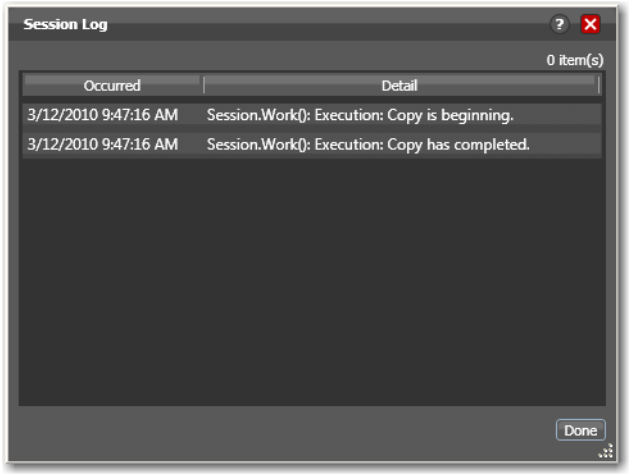
Figure 59. Active monitor action status details.



Export. Click to export these details for transmission to Telestream Customer Service to aid in support.

Session Log. Select a Session item in the tree and click Session log to display the Session log window.

Figure 60. Session log.



The Session log displays session activity entries, if any. This information can be helpful when working on an issue with Telestream Customer Service.

Click Done to close the window.

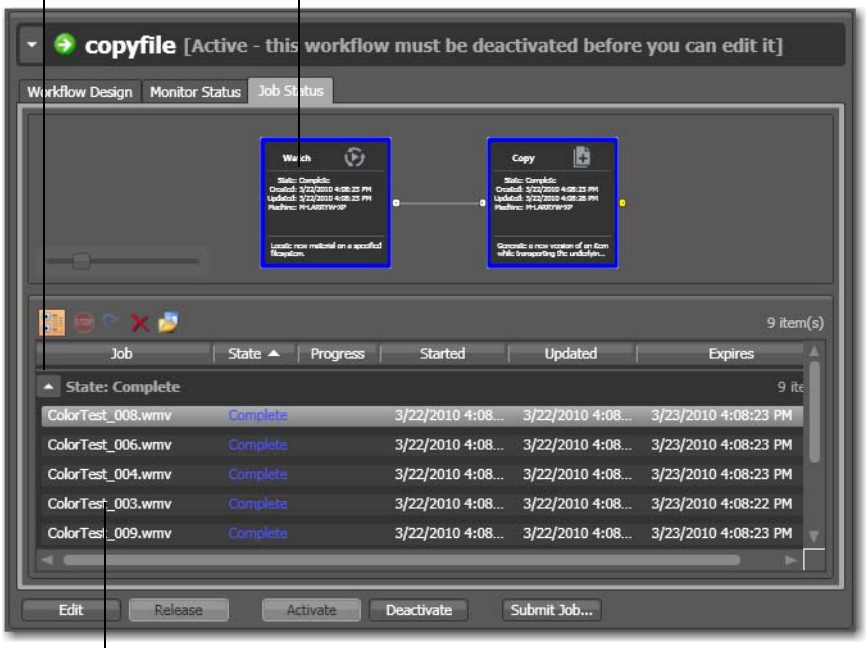
USING THE JOB STATUS TAB

Click the Job Status tab to review the all jobs in the database for the selected workflow and pause and resume jobs in progress.

Figure 61. Job Status displays all jobs for the selected workflow.

Job Status toolbar - Group | Stop | Restart | Delete | Binder

Real-time view of transaction processing.



Each row is a job processed by the selected workflow, indicating status and other details.

If your workflow is deactivated, the table displays the jobs that are still executing or which completed prior to deactivating the workflow.

Click any column to make it the primary column and sort it ascending or descending.

Actions display a color to indicate their state:

- Yellow - the action is waiting to execute
- Green - the action is currently executing
- Blue - this action has executed, and completed normally
- Red - this action has failed or an upstream action failed
- Dark Gray - this action did not execute due to action state analysis.
- Light Gray - this action is paused.

Toolbar

Groups. Click to organize the jobs by group, based on the primary column - the one you have selected. Click again to turn grouping off.

Stop. When processing, click to halt processing on this job. When you stop a job in process, each action for that job is notified to stop its own transaction. When all actions have been stopped, the job is considered complete, in a failed state.

Restart. If a job was stopped or it failed, it can be re-started and will continue processing where it stopped. Actions that fail are re-attempted.

Delete. Click to delete the selected job row(s). Or, right-click and select Delete.

Binder. Click to display the selected job's details. Or, right-click and select View Content.

Figure 62. Monitor Status displays all origin transactions.

The Binder window displays information about all files in this job, organized by nickname, metadata labels and tracks, and attachments, each in its own tab.

Media Files Tab

This tab displays a list of files, including the file's path, nickname, and filename. To the right is a WMV player control, where you can preview the selected content provided that it is in WMV format. For other media, press Play to attempt to play the file in an external viewer such as QuickTime Player, if one is available for the selected file's format.

Metadata Labels Tab

This tab displays metadata labels in the binder, their parameters and values. You cannot edit values in this viewer.

Metadata Tracks Tab

This tab displays metadata tracks that exist in the entire binder.

Attachments Tab

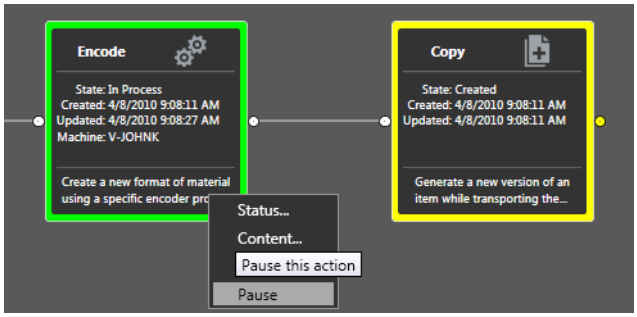
This tab displays a list of attachment files, including each file's path, nickname, and filename.

Click Done to close the Details window.

Pausing and Resuming Transcode Actions

You can pause and resume transcode actions in a job in progress.

Figure 63. You can pause and resume actions.



To pause a transcode action, right-click on the action and select Pause from the context menu. To resume a paused action, right-click on the job and select Resume from the context menu.

Pause for Priority in Transcode Actions

Pause for Priority feature is an automatic feature of transcode actions.

If a given transcode service is saturated (that is, it is performing a number of jobs equal to the number of configured sessions); then normally, Vantage will queue up the incoming job and wait for a slot to become available. For example, a transcode service is configured to run 2 simultaneous jobs; it receives three jobs (A, B and C); jobs A and B begin execution (the service was idle prior to this) and job C is queued until either job A or B completes (at which point C will execute).

Pause for Priority comes into play if job C has a higher priority than job A or B. When job C has a higher priority that job A, then job A is paused and job C begins processing immediately. When Job C or Job B completes; then job A (which was previously paused) returns to processing.

Submitting Jobs Manually in Workflow Designer

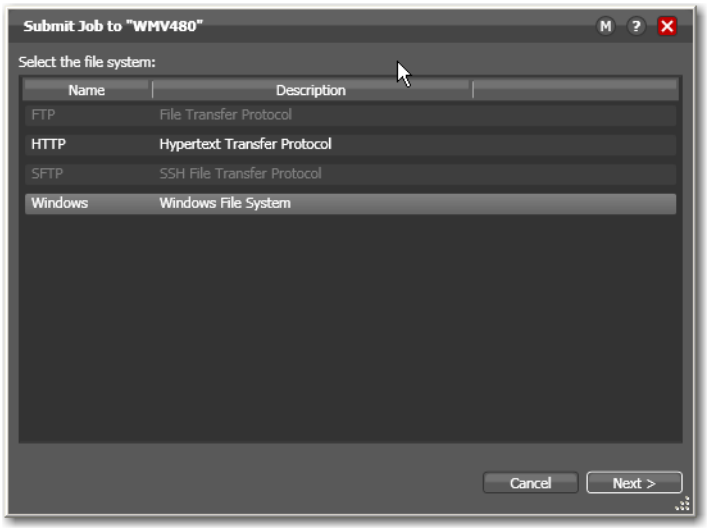
To submit a job directly to a workflow, select the workflow and click Submit Job.

Figure 64. Click Submit Job on the selected workflow.

Note: You can only submit jobs to active workflows.

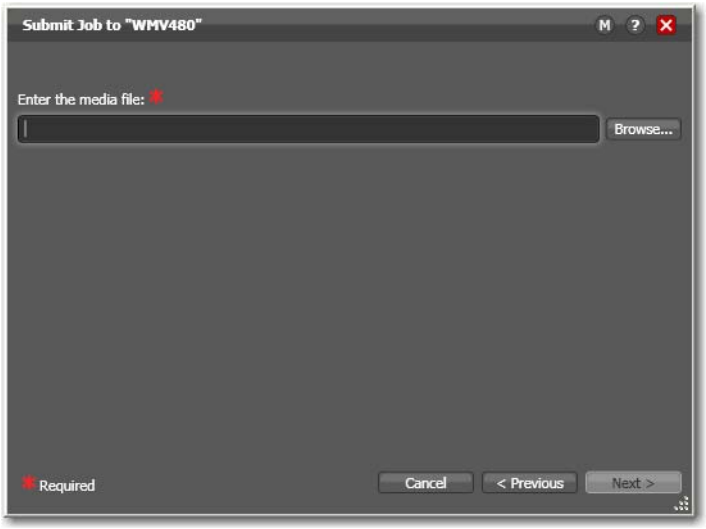
Designer displays the Submit Job window:

Figure 65. Submit Job window - select the file system.



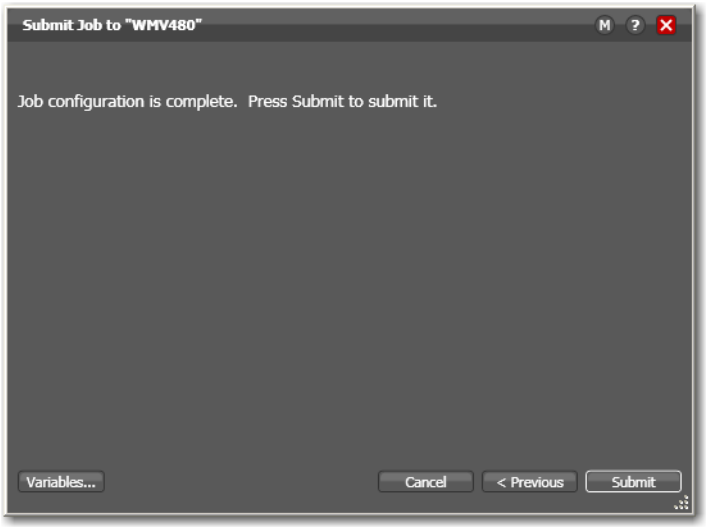
Select the type of file system where the input file is stored and click Next.

Figure 66. Submit Job window - select the file.



Click Browse to navigate to the directory and select the file you want to submit, and click Next.

Figure 67. Submit Job window - submit the job.



Click Submit to submit the job for processing.

When you have submitted the job, you can view its progress in the Job Status tab (Using the Job Status Tab).

CHAPTER 3

Creating Workflows

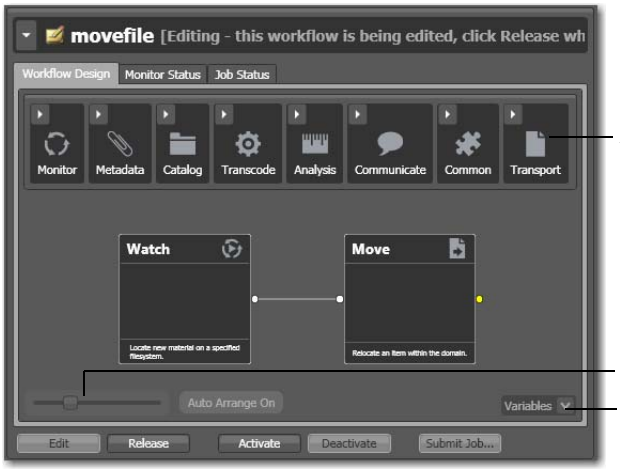
Use this to learn how to build workflows, and configure them.

Topics

BUILDING WORKFLOWS

Workflows in Vantage are created using the workspace in the workflow design tab (Using the Workflow Design Tab), by adding individual actions and connecting them together. A workflow can be a single action.

Figure 68. Workflow details panel.



Generally, you build a workflow in stages: first, conceptualize and design the workflow; next add actions; next, connect them together to control execution. Finally, configure each action.

File and Binder Mode

Vantage supports two workflow design modes: File Mode and Binder Mode. To select a mode, select Options > Application Mode and choose either file or binder mode.

File mode is the simplest mode for designing Vantage workflows. In file mode, lines connecting actions can be viewed as the path that files take through a workflow. In file mode, nicknames are not required; if a new file is created, subsequent actions will operate on that new file automatically, without you specifying it.

Actions in file mode workflows can only operate on the files created by their predecessor actions in the same control flow. You cannot create workflows that have rendezvous connections, where actions in two control branches connect to a single action.

File mode has some action limitations due to the fact that it does not allow the use of nicknames. For example, a delete action cannot be used - it would simply delete the file in the workflow. To access the full range of functionality in Vantage, binder mode is recommended.

File workflows are ideal for simple, transcoding workflows.

Binder mode is the preferred mode for designing Vantage workflows. In binder mode, workflows reference files by nickname and lines connecting actions only indicate the execution flow of those actions. Workflows may have branches that rendezvous (or merge) and all actions are available in binder mode.

By default, Designer operates in file mode. You can switch modes any time you want, but if you modify a file mode workflow, Vantages converts it to a binder workflow. When Workflow Designer is in file mode, you can only edit or create file workflows; in binder mode, you can only edit or create binder workflows.

Automatic Conversion from File to Binder Mode

When Workflow Designer is in file mode, binder mode workflows are displayed in gray and can not be opened. You can select and view file workflows in binder mode, but if you edit them in any way (for example, changing the action description or opening and progressing through the inspector and clicking OK rather than Cancel), Workflow Designer automatically (and silently) changes the workflow to a binder workflow.

Designing a Workflow

Before beginning the process of building a workflow, it is often helpful to have a solid understanding of what you want to accomplish, what actions (or steps) are necessary to perform the tasks, and where the media (and optionally, metadata and associated files) originates and where any new copies of media, metadata, and associated files should be stored.

Ideally, you should know in advance how you want to encode the media, what file operations you need to perform, what systems you need to interact with, and what metadata processing must be performed. Make certain the Vantage has read and write access to the necessary file systems.

Of course, if you don't have all this information at the start, Vantage will allow you to change your workflow later. And when you build a workflow that you like, features such as Vantage Folders and Action Templates will

allow you to save common file locations, or actions, for re-use in other workflows.

Adding Actions to your Workflow

To add actions to a workflow, you open the action categories in the Actions toolbar and drag the action onto the design area. Action categories are described in Action Types.

You can also copy and paste actions in your workflow. Right-click and select Copy to put the action on the clipboard. Next, click on the design area, right-click and select Paste to place the copied action on the design area. Or, right-click on another action of the same type, and select Paste to configure the action identically with the copied action.

When you drag an action onto the design area, Vantage may automatically align it near where you dropped it. Until you connect an action to other actions, you can move it anywhere you want on the workarea.

A valid workflow consists of at least two actions, which must be connected. A valid action must start with at least one origin action (watch or receive).

Note: *An origin action is required as the first action in a workflow, even if you plan to manually submit jobs to this workflow.*

Workflows must begin with at least one origin action (such as a Watch or Receive action). Actions may have more than one origin action, but each origin action will function independently of the others. Each origin action may have its own workflow branch with following actions that are unique to that origin.

Workflows are not required to end with a terminating action - an action without an output pin. The only terminating action is the forward action. This action does not have an output pin, so you can't perform any actions after a forward action in a workflow (but terminating actions are not required).

Generally, you should drag and drop actions in a pattern similar to the desired workflow, working from left to right. However, you can drag actions anywhere, and connect them as desired later.

Vantage will tidy up actions - moving them and organizing them by column. Once an action is connected, you can move it vertically (up or down) but it cannot be moved from its column. Alternatively, Vantage can also attempt to optimize the workflow, removing as many line crossings as possible. To remove line crossings right-click on the workflow canvas and select Remove Line Crossings.

Connecting Actions To Control Order of Execution

You connect actions together in a workflow to control the order of execution relative to other actions, and to control the flow of variables and either files or binders (depending on your workflow mode) from one action to another.

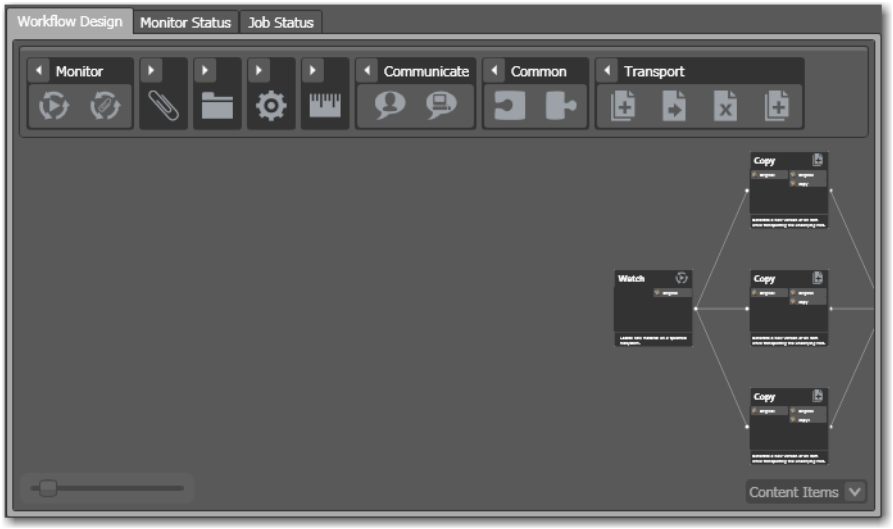
Actions can only be connected from an output pin (on the right side of the action) to an input pin (on the left side of the action), and control flows from output to input - from left to right.

To connect actions, click and drag a line from the output pin of one action to the input pin of the action you want to execute next in the workflow, or vice-versa.

Tasks proceed action by action, from left to right: when a workflow executes, actions at the far left execute first, and actions following the lines execute next.

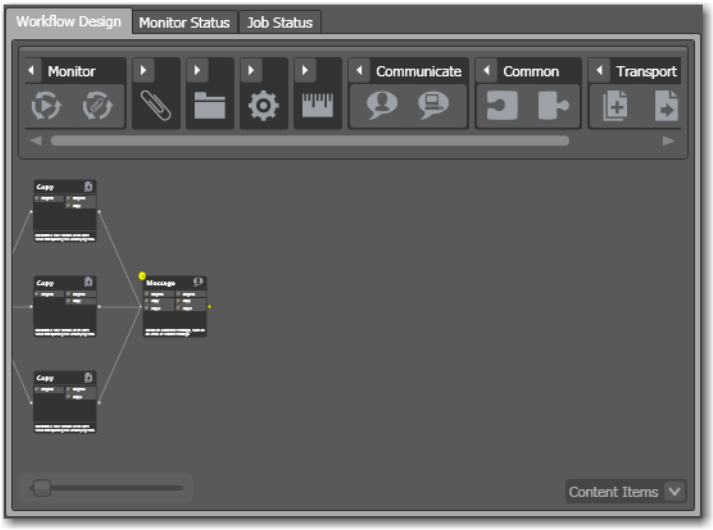
You can connect a single action to multiple succeeding actions, as shown following. When you do, none of the actions you connect can execute before the preceding action upon which they depend completes. In this example, three copy actions execute in tandem after the watch action completes. These three actions occur independently of each other, and their start time and completion time relative to each other is non-determinant.

Figure 69. Three independent actions follow a common action.



You can also connect multiple actions to a single succeeding action, as shown following. When you do, each of the actions you connect must execute before the succeeding common action can execute.

Figure 70. Three independent actions precede a common action.

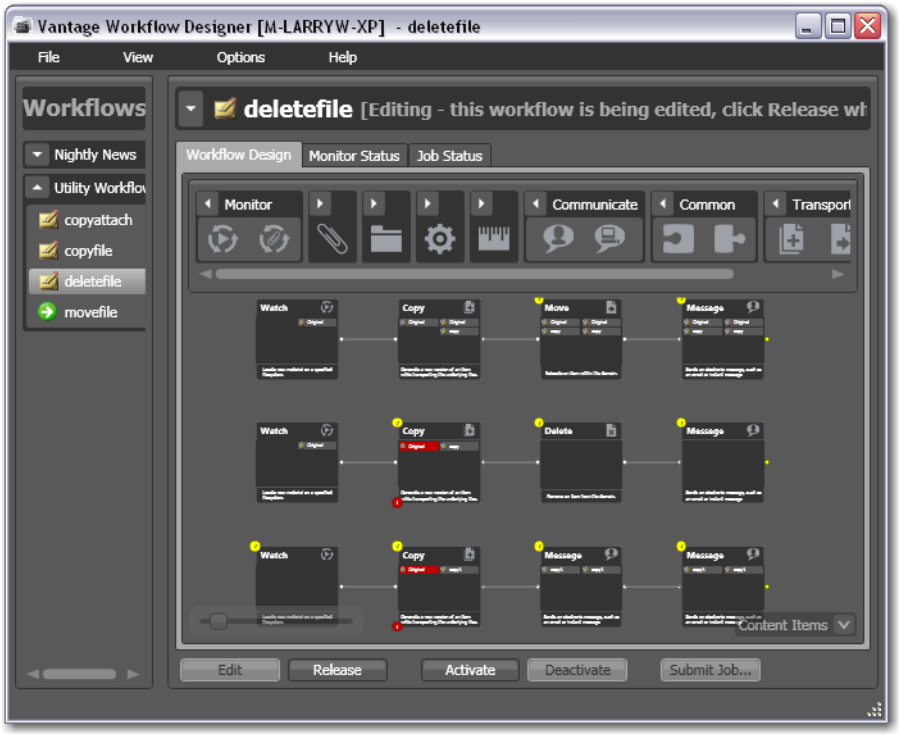


In this example, three copy actions must execute and complete before the Message action can execute.

Actions that are not connected do not execute - a single, disconnected action invalidates the workflow. However, you can create multiple groups of actions, provided that each group starts with an origin action. Each group operates independently of the other groups; effectively, this is like

having three independent workflows, each with its own origin(s), running in a single window. This is not generally recommended.

Figure 71. Three independent actions precede a common action.



In this example, three independent sets of actions execute in the workflow.

Working with Actions

Some connections create an invalid workflow, and there are several operations you can perform on actions in your workflow. The following topics describe these operations.

Invalid Action Connections

Certain connections between actions are invalid:

- You cannot connect actions to themselves or to other groups of actions to form a recursive loop.

- You cannot connect the input (left) pin to another input pin, or an output pin (right) to another output pin.

Removing Line Crossings

On occasion, you might connect two actions on rows in the layout that are more than one row apart - resulting in an unintended line crossing. To manually optimize the workflow layout, select View > Remove Line Crossings or right-click and select Remove Line Crossings in the context

menu. Workflow Designer reformats the workflow and optimizes the layout of the actions in a grid.

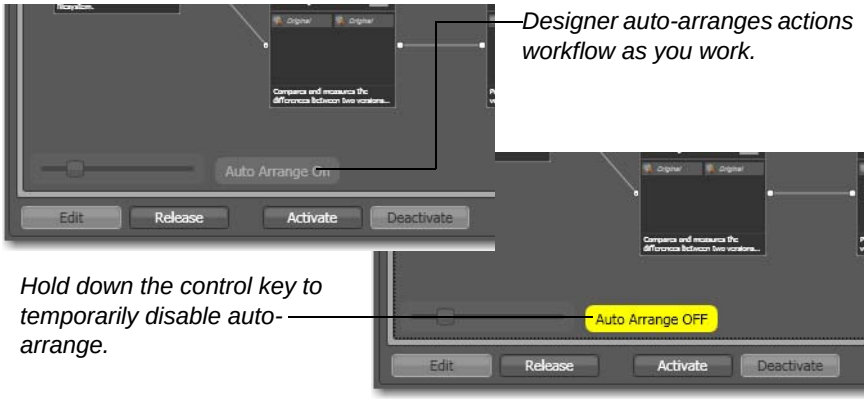
Re-ordering Actions

To re-order actions vertically, drag one of the actions up or down in the design area to the location where you want it. Designer adjusts the other actions to accommodate the manual placement of the other action.

Disabling Auto-Arrange

To temporarily disable auto-arranging of actions while you're adjusting actions in a workflow, hold the control key down as you move each action. Note that when the control key is depressed, the Auto Arrange advisor displays Auto Arrange Off in yellow.

Figure 72. Suspend layout optimization with the control key.



When you release the control key, auto-arranges goes back into effect.

Configuring Actions Using the Action Inspector

Each action has an action inspector - a series of one or more configuration panels - to access it, either click the inspect icon (round yellow i icon) in the upper left corner or by right-click the action and select Configure.

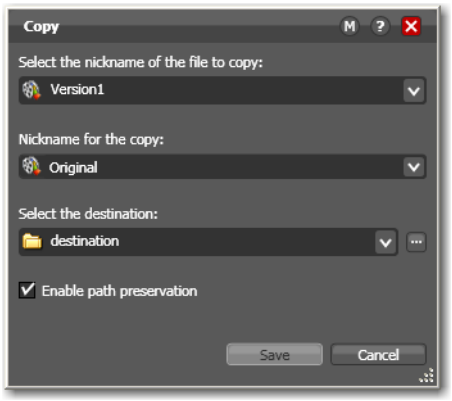
Figure 73. Each action has an Inspector icon.

Until an action has been configured, the inspector icon displays yellow; an unconfigured action cannot be executed. When an action has been

configured, the icon disappears unless you're hovering over the action. If you hover directly over the icon, a summary of the action will display.

The panel or panels vary, depending on the action, and the configuration choices you make. For example, to configure a copy action, you choose the source and copied file, and a destination - all in one panel:

Figure 74. Typical action inspector.



Conversely, the inspector for a watch action typically consists of about 7 or more panels, depending on the file system you configure it to monitor.

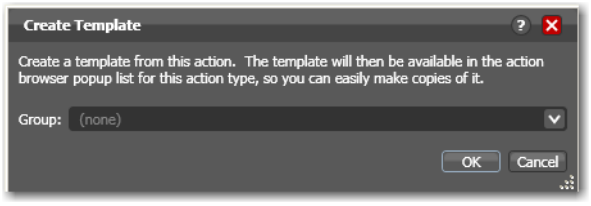
When you're viewing an inspector of an action in a workflow that is activated or someone else is editing it, the term *Read Only* displays in the inspector's title bar. Also, if you have changed the configuration, an asterisk (*) displays immediately after the action name: for example, *Watch **.

Detailed help is available on each panel in the inspector: Click the M icon to display its man page or click the ? icon to display the Workflow Designer User's Guide.

Creating an Action Template

Vantage ships with several default encode and watch action templates. To make your own action templates, select Create Template to make a copy of the selected action so that it can be re-used in other workflows. The action template can be selected by clicking on the parent.

Figure 75. Create Template window.



Grouping allows you to organize your action templates. If you want more than one level of grouping, separate each group with a vertical bar (|) - for example, *Broadcast Servers* | *Grass Valley*. The description of the action displays as the name of the action template.

Setting Conditional Action Execution

You can configure each action to only execute when an upstream action passes a specific action state forward.

To set the condition under which this action will execute, right-click and select Perform On > Success | Failure | Ignore. Conditional execution is available for most actions. However, you can't test action states in monitor and receive actions.

By default, actions only execute when the current action state (as set by upstream actions) is Success. Success means that all upstream actions have completed normally and set the action state to Success. If you have an action configured to execute on Success, it will only execute if all previous actions that executed in this workflow report Success.

The Failure state indicates that at least one action has executed and failed to complete normally. If you have an action configured to execute on Failure, it only executes if at least one upstream action has reported a failure.

You can also configure an action to execute regardless of the current action state by selecting Ignore.

Using Variables in Actions

A variable is temporary job metadata. Variables have a name (such as *Number of Audio Channels*), a type (such as *Integer Number*) and a default value.They can be set inside a job in a variety of ways: Through analysis, through metadata population, in the watch and associate actions, as a property of an action, or by a service as it executes an action.

Note: Variables can also be used in services (configuration is performed in the Management Console) - here, they are used for job routing. For example, an action with a FibreRequired=TRUE variable must pass this condition to a service which evaluates the condition to determine if it can successfully perform the action.

Variables are passed from action to action according to the action connections. When an action generates a variable, all downstream actions can access it.

Variables are used by actions to control their behavior and workflow logic. (Variables are also used by services - and set up in the Vantage Console.)

Many parameters in Vantage can be *bound* to a variable, allowing the workflow to dynamically update parameters on a job-by-job basis. For details on binding parameters to variables, see Binding Parameters to a Variable.

When a variable is set, that variable value is only available to actions within the same branch as the one that set the variable and actions in

downstream branches. If two branches merge to a common action, and both have specified a value for a variable, then the behavior is indeterminate.

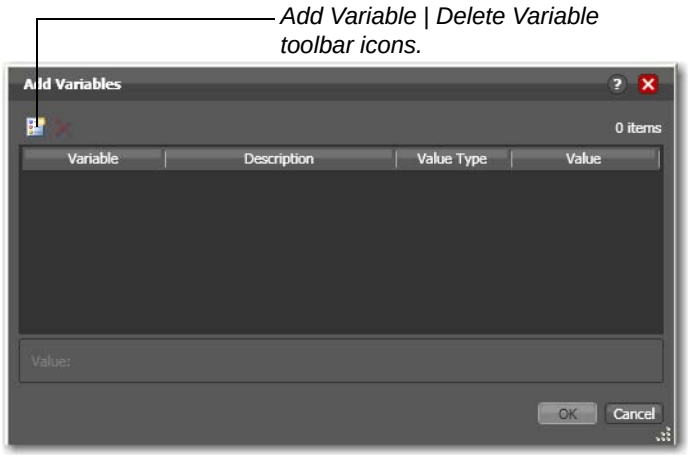
Before you can assign a variable to an action, you must create a *variable template*. You create variable templates in the Management Console (Templates > Variables). The name, default value, and type of a variable is defined in the variable templates.

Adding Variables to a Workflow

To add a variable to an action, right-click and select Add Variables. Vantage Designer displays the Add Variable window.

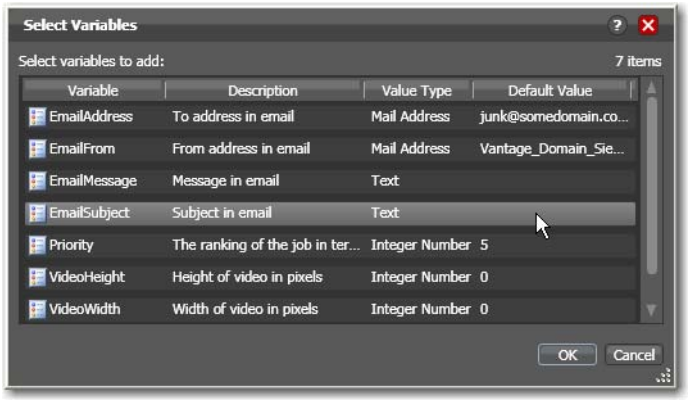
In the Add Variables window, you can add variables to the action prior to execution. Values set in this window are available to this action, and all downstream actions (including actions in connected workflows). This allows you to set job metadata as the workflow runs - for example, setting the priority of one workflow branch to high, and another to low.

Figure 76. Add Variables window.



Click the Add Variables icon in the toolbar to display a list of variable templates (which have been previously created in the Management Console: Templates > Variables).

Figure 77. Select Variables window.



Select the variable to add and click OK.

Next, with the variable selected, modify its default static value if necessary, and click OK to add it to the variable for use in the workflow.

Note: It is important not to generate the same variable in two actions if the branches merge, because the behavior is indeterminate.

Binding Parameters to a Variable

Most settings in an action can be configured with a static value - one that does not change from job to job. For example, you configure a watch action to poll a specific directory - and job after job, this directory never changes - that is, it is a *static* value.

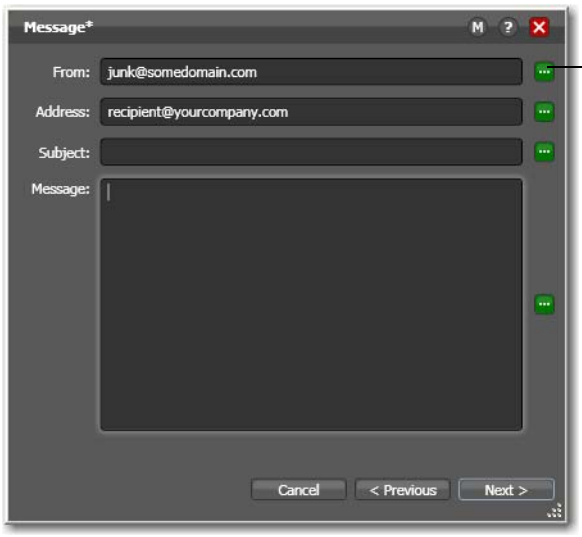
However, many actions also have parameters (settings) that benefit from being assigned a value at run time - a value the is very likely to change on a job-by-job basis - typically, based on the media being processed.

For example, you may have a message action that generates an email - and the subject line in the email should always be the name of the media file being processed. Of course, you can't know the value of the file name at design time - only at run time. Or, a variable may be assigned a value by an analysis action to determine how many lines of black are at the top of a video frame; a crop filter later in the workflow can bind to that variable, ensuring that every crop in every job is appropriate to the workflow.

To solve this problem, Vantage enables these parameters to be bound to a variable, allowing the workflow to dynamically update the value on a job-by-job basis.

Many parameters in Vantage can be bound to variables. Parameters that can be bound to a variable display a green Variable Browse button:

Figure 78. Message action inspector - bindable parameters.

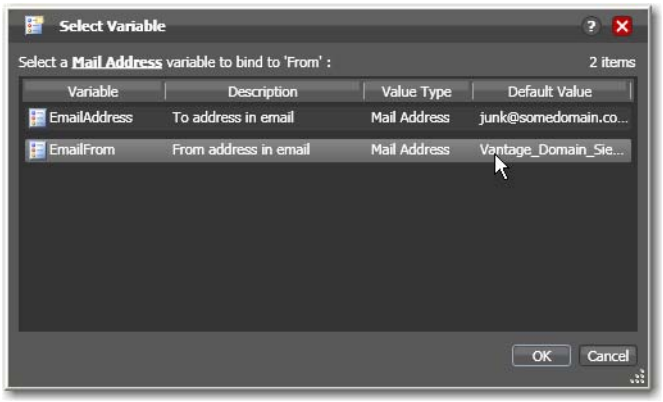


Parameters that can be bound to a variable display a green Variable Browse button.

Click it to bind a variable, which will supply its current value as the value for the parameter.

Click the Variable Browse button to display the Select Variable window:

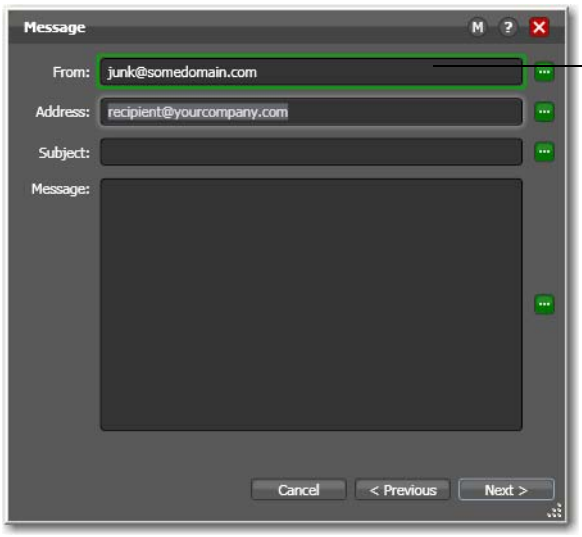
Figure 79. Select Variables window.



The list of variables includes those variables that are present in the domain, and are of the correct type for the parameter. For example, the subject line parameter only accepts text variables; the email address parameters can only accept email address variables.

Select the variable to bind to this parameter, and click OK.

Figure 80. Message action inspector with a bound parameter.



Parameters are bound to a variable display a green border.

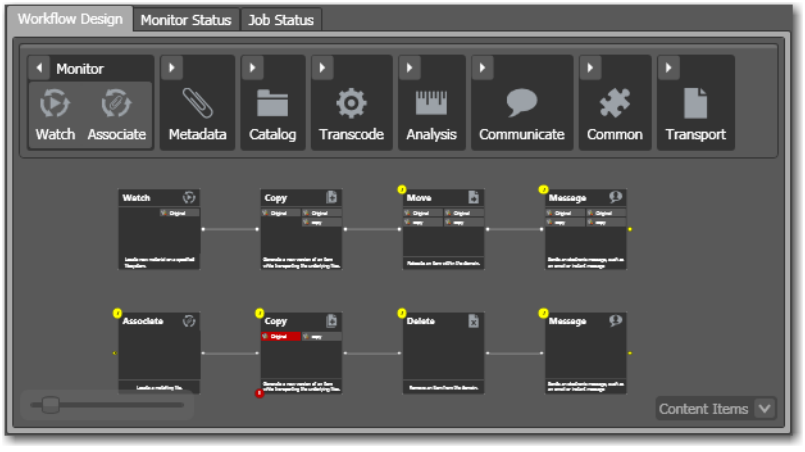
Click Variable Browse again to unbind a variable, or change which variable you want to use.

Now, the parameter displays with a green border, indicating its value is derived directly from the current value of the parameter, not the manually entered value.

Action Details

Actions are the building blocks of workflows. At the top of the workflow design panel is the actions toolbar, categorized by action type. Click the arrow to open each action type and display the set of actions in this group.

Figure 81. Actions are organized by group and type in the toolbar.



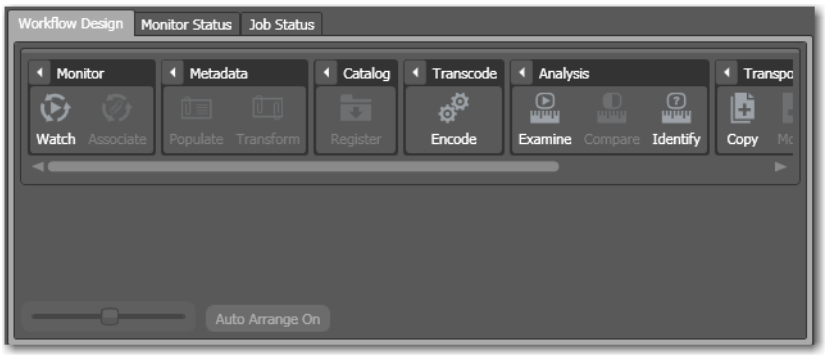
You can display the actions toolbar in two ways: right-click in the tool bar and select actions and text, or display only actions.

Binder Mode Actions

Certain actions can be used in both file and binder workflows; other actions can only be used in binder workflows.

When Workflow Designer is in file mode (Options > Application Mode > File), several binder mode actions are deactivated and display in gray:

Figure 82. Action toolbar in file mode.



Notice that in file mode the associate action, both metadata actions, and others are deactivated. The following table lists those actions which are binder-mode actions, and cannot be used in file mode.

Table 1. Binder Actions

Associate	Move
Compare	Receive
Delete	Register
Deploy	Populate
Forward	Transform

Action States

The action state describes the condition of an action execution in process and after completion.

During execution, an action may be Queued | Paused | In Process | Waiting. These keywords display in the job status tab of Workflow Designer.

After execution, an action's final state may be Success | Ignore | Failure. These keywords may be tested by actions immediately following the target action, to determine whether or not following actions should execute.Note that this final action state is passed to subsequent actions. If an action FAILS, then the next action will inherit the FAIL action state and (in most cases) will not execute.

Similarly, if an action sets the Ignore state, the next action will inherit the Ignore state and will likely not execute. Certain special actions, such as Message, can be configured to perform on certain states - this allows workflows to send an email if they detect a failure.

If an action receives states from two incoming actions (such as a merge of two branches), then states are given the following priority:

- If at least one incoming state is Failure, regardless of other incoming states, the action will inherit the Failure state - Failure has precedence over all action states.

- If there is no Fail state, but at least one Pass state, then the action will inherit the Pass state- Pass has precedence over Ignore states.

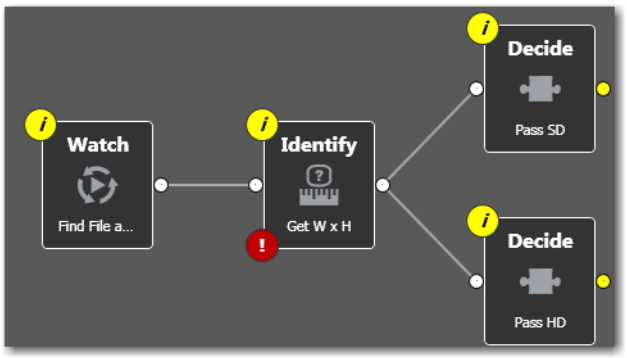
- Only if all incoming states are Ignore, will the action will inherit the Ignore state.

Ignore has lowest precedence of the three states.

Decision-Making using Variables and Action States

Generally, decision-making is performed in a workflow by adding a decide action and configuring it to evaluate variables, then setting an action state for its branch.

Figure 83. Decide actions enable you to branch media processing.



Action Types

Workflow Designer organizes its actions by type for ease of use. Each type and its actions is described in the sections below.

Analysis Actions

Use these actions in workflows when you want to perform measurements on media files, compare media files, or identify the characteristics of media files, and publish the results as variables or metadata labels, or set the state of the workflow based on the results.

You can publish analysis results in a metadata label within the binder, or you can publish results as variables so that they can be used for decision-making, or to feed parameters in other actions. In some cases, you can also set the action state of the action based on the results of the measurement.

Examine Action

Use the examine action to analyze the video and audio of a media file, by selecting a given analyzer (Black detection, slate detection, etc.).

Compare Action (Binder Workflows Only)

Use the compare action to compare two media files.

Identify Action

Use the Identify action to determine the technical properties of a media file (for example, frame size, frame rate, codec, bitrate, number of audio channels, etc.).

Catalog Actions

Register Action (Binder Workflows Only)

The register action registers the workflow binder in the Vantage catalog. This allows Vantage to preserve the binder - and any temporary files referenced by it - even after a job expires.

Common Actions

Common actions do not have a dedicated Vantage service to perform them, and tend to happen instantaneously.

Receive Action (Binder Workflows Only)

A receive action provides a starting point for new jobs in Vantage workflows that are not started by a watch or other starting action.

Typically, workflows are created with a receive action when they are intended for execution by another workflow that immediately precedes this one. This ability to chain workflows enables you to create run-time customizable workflows consisting of smaller workflow building blocks.

Workflows that end with a forward action are used to start receive action-based workflows. When you chain workflows, you can pass binders and variables between them.

Note

An origin action is required as the first action in a workflow, even if you plan to manually submit jobs to this workflow.

Forward Action (Binder Workflows Only)

A forward action forwards a binder and all current variables to another workflow, and starts a new job in the target workflow.A forward action may be added to the end of a workflow, and requires that the target workflow has a receive action as its first action.

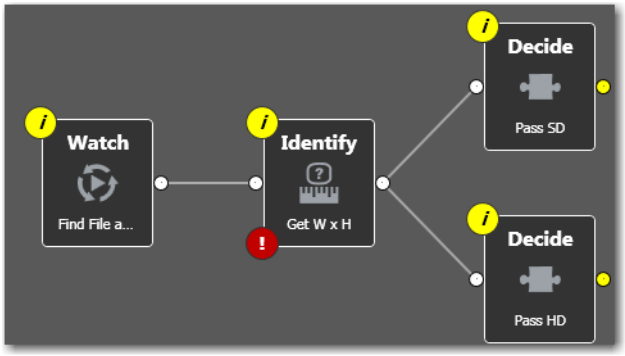
Typically, workflows are created with a receive action when they are intended for execution by another workflow that immediately precedes this one. This ability to chain workflows enables you to create run-time customizable workflows consisting of smaller workflow building blocks.

Decide Action

A decide action is an action which sets the action state based upon variables. It is commonly used to decide whether or not a branch in a workflow should execute (it sets the Pass state) or not (it sets the Ignore state).

Note that when the decide action is used, the state gets passed to all subsequent actions; as a result, for decision branches more than one decide action will usually be used.

Figure 84. Decide actions enable you to branch media processing.



For example, if one branch is for HD, it will start with a decide action that will set the state to Pass for HD content, ignore otherwise; if another branch is for everything else, it will start with a decide action that performs the opposite behavior.

Communicate Actions

Communicate actions are used to communicate with external systems.

Message Action

A message action is an action which enables you to generate and transmit an electronic message - an email, for example. You must configure Vantage to use an SMTP server before email can be utilized; this can be done in the Vantage Management Console.

Notify Action

A notify action is an action which saves job information to a file, or which interfaces with an external system. You can configure a notify action to produce an XML file, and you can invoke a Web service via a URL.

Metadata Actions

Metadata actions are used to convert between attachment files, metadata labels, and variables.

Populate Action (Binder Workflows Only)

Populate actions transform data between variables and metadata labels.

Transform Action (Binder Workflows Only)

A transform action transforms data between XML files (attachments) and labels. XSL stylesheets are used to perform these transformations; stylesheets can be managed through the Vantage Management Console.

Monitor Actions

Monitor actions are used to identify new files to be added to a binder, and in the case of the watch action, to start a job for this workflow.

Watch Action

A watch action uses the monitor service to continually (and at regular periods) polls a target location (a directory, for example) on a device or file system (FTP, network folder, etc.) to discover new files.

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

Note: *An origin action is required as the first action in a workflow, even if you plan to manually submit jobs to this workflow*

For details, see the inspector's man page.

Associate Action (Binder Workflows Only)

An associate action uses the monitor service to continually (and at regular periods) poll a target location (a directory, for example) on a device or file system (FTP, network folder, etc.) to discover new files.

Generally, the associate action uses the file name of an existing media file or attachment as the basis for discovering new files; for example, if media file *Vantage.mpg* is currently in the workflow, then the associate action may look for *Vantage.scc*. This behavior can be defined in the associate action's inspector dialog.

Associate actions execute until the new file is discovered; subsequent actions do not execute until the file is found. When the new file is discovered, the associate action makes the file available to other actions in the workflow.

Note: *An origin action is required as the first action in a workflow, even if you plan to manually submit jobs to this workflow.*

For details, see the inspector's man page.

Transcode Actions

The encode action creates a new format of media, using a specific encoder profile.

Encode Action

Use the encode action to create media of a new format, and save it as a file, using a prescribed codec profile. How you configure the encoder depends on the encoder you choose.

For details, see the inspector's man page.

Transport Actions

Transport actions perform file operations on files.

Copy Action

Use the copy action to copy a file from one directory to another directory on a given file system. In binder mode, the new file will be tracked by the workflow - that is, referenced in the Binder. As a result, the new file must be given a nickname.

Move Action (Binder Workflows Only)

Use the move action to move a file from one directory to another. This action deletes the original file. In binder mode, the file may also optionally have its nickname changed during the move.

Delete Action (Binder Workflows Only)

Use the delete action to delete a file on the specified file system. This action also removes the file reference from the binder.

Deploy Action (Binder Workflows Only)

The deploy action copies one or more files to a destination as a single action, and may perform additional custom steps depending upon the type of deployment.

In binder mode, the deployed files are not referenced in the binder, and are not tracked after the action completes.

Glossary

action

An *action* is the smallest unit of work that can be specified in a Vantage workflow. Actions are connected together in a workflow to perform a useful task. Each action must be configured to perform its task in the context of the workflow, using an action inspector. Action inspectors are specific to each type of action.

Actions are grouped by functional categories: communication, transcoding, file operations, metadata processing, etc. Each action is defined by the specific task they perform. For example, an email action, or a metadata label/file transformation action.

Actions have limited interdependency, and so, are very flexible. You may impose limitations on actions in a workflow. For example, you might require action B to depend on action A in a Vantage workflow.

Actions - during execution - operate on binders, variables, and states, and they generate an action state when they complete. Actions are executed by Vantages services, which perform the requirements of the action.

action state

The *action state* describes the condition of an action execution in process and after completion.

During execution, an action may be Queued | Paused | In Process | Waiting.

These keywords display in the job status tab of Workflow Designer.

After execution, an action's final state may be Pass | Ignore | Failure.

These keywords may be tested by actions immediately following the target action, to determine whether or not following actions should execute.

These action states are passed to subsequent actions. If an action fails, then the next action will inherit the Failure action state and (in most cases) will not execute. If one action fails, the entire job fails.

Similarly, if an action sets the Ignore state, the next action will inherit the Ignore state and will also likely not execute. Certain special actions, such as Message, can be configured to perform on certain states - this allows workflows to send an email if they detect a failure.

Action states have precedence when an action receives states from multiple incoming actions (a merge of multiple branches):

- If at least one incoming state is Failure, regardless of other incoming states, the action will inherit the Failure state - Failure has precedence over all action states.

- If there is no Fail state, but at least one Pass state, then the action will inherit the Pass state- Pass has precedence over Ignore states.

- Only if all incoming states are Ignore, will the action will inherit the Ignore state. Ignore has lowest precedence of the three states.

analysis service

The analysis service is the Vantage component (operating as a Windows service) which executes the actions relating to the analysis of content: Examine, Compare, and Identify.

associate action

An *associate action* uses the monitor service to continually (and at regular periods) poll a target location (a directory, for example) on a device or file system (FTP, network folder, etc.) to discover new files, based on some permutation of the name of the file being processed.

Associate actions can be executed on any action state.

Generally, the associate action uses the file name of an existing media file or attachment as the basis for discovering new files. For example, if media file *Vantage.mpg* is currently in the workflow, then the associate action may look for *Vantage.scc*. This behavior can be configured in the associate action's inspector.

Associate actions begin executing when a job is submitted, and execute until a new file is discovered - subsequent actions do not execute until the file is found. When the new file is discovered, the associate action makes the file available to the other actions in the workflow.

Configuration is accomplished in the inspector, and is based on the target device/file system being monitored and other requirements.

attachment

An *attachment* is a non-media file that is associated with media during execution of a workflow. For example, an attachment may be an XML file that contains metadata, an SCC caption file, an STL or PAC subtitle file. Attachments may also be a PDF file, Excel spreadsheet, or Word document, for example. Attachments are identified and processed using nicknames for simplicity. Processing is optional - attachments may be simply passed through a workflow for storage with the processed media and registered in the Vantage catalog.

attachment nickname

See nickname.

binder

A binder is a collection of media files, attachment files, metadata labels, and metadata tracks. All workflows in Vantage operate upon binders. A binder allows a Vantage workflow to keep track of dozens of files while the workflow executes.

Files within binders are referenced by nickname - that is, a binder is not a physical location, rather a collection of references. The underlying files

may be moved around without changing the nickname of the file. This allows a binder to be submitted to, or passed between, workflows without requiring that the files be in specific locations.

Binders are referenced by jobs, and by the catalog. If a binder is not in the catalog, and not associated with a job, then the binder will be deleted. When a binder is deleted, any temporary files (such as media files in Vantage Stores) will also be deleted.

binder mode

Binder mode is the preferred mode for designing Vantage workflows. In binder mode, workflows reference files by nickname and lines connecting actions only indicate the execution flow of those actions.

See file mode.

catalog

See Vantage catalog.

catalog service

The *catalog service* is the Vantage component (operating as a Windows service) that executes actions utilizing the Vantage catalog.

See register action.

common actions

Common actions are actions that can be executed by any Vantage service; they do not have a dedicated Vantage service.

See receive action, forward action, decide action.

communicate service

The *communicate service* is the Vantage component (operating as a Windows service) that executes the actions relating to electronic messaging.

See message action, notify action.

compare action

A *compare action* compares media files to calculate certain metrics (for example, PSNR). These metrics can generally be published as variables or as a label.

console

The term *console* is an informal name for the Vantage Management Console.

See Vantage Management Console.

copy action

A *copy action* is used to replicate a file from a source target (file system/device and directory) to a destination target (file system/device and directory). It typically performs this task by copying the file to the destination.

Copy actions can be executed on any action state.

database

The term *database* is the common term used to refer to the Vantage database, where all specifications for the domain are stored, along with workflows and job history.

decide action

A *decide action* is an action which sets the action state based upon variables. It is most commonly used to decide whether or not a branch in a workflow should execute (by setting the Pass state) or not (by setting the Ignore state).

Note that when the decide action is used, the state gets passed to the next action; as a result, for decision branches more than one decide action will usually be used. For example, if one branch is for HD, it will start with a decide action that will set the state to Pass for HD content, ignore otherwise; if another branch is for everything else, it will start with a decide action that performs the opposite behavior.

See variable, action state

delete action

A *delete action* is used to permanently remove a file from a source target (file system/device and directory).

Delete actions can be executed on any action state.

deploy action

A *deploy action* is used to save the specified files to a destination outside the Vantage domain. Unlike the move or copy actions, deploy actions allow multiple files to be deployed simultaneously, and do not maintain a reference to those files in the binder after it completes.

Deploy actions can be executed on any action state.

encode action

An *encode action* is used to transcode a media file into another media file types.

examine action

An *examine action* evaluates the video and audio of a media file to measure certain characteristics, such as audio loudness, or to detect characteristics, such as the presence and size of curtains. You can configure it to publish metadata or variables containing the results of analysis.

file mode

File mode is the simplest mode for designing Vantage workflows. In file mode, lines connecting actions represent the path that files take through a workflow. In file mode, nicknames are not required; if a new file is created, subsequent actions will operate on the new file automatically.

File mode has some limitations due to the fact that it does not allow the use of nicknames. For example, a delete action cannot be used in file mode workflow - it would simply delete the file in the workflow, leaving it without a file to process. To access the full functionality of Vantage, binder mode is recommended.

forward action

A *forward action* forwards a binder and all current variables to another workflow, starting a new job with the target workflow. A forward action may be added to the end of a workflow, and requires that the target workflow has a receive action as its first action.

Typically, workflows are created with a receive action when they are intended for execution by another workflow that immediately precedes this one. This ability to chain workflows enables you to create comprehensive, intelligent run-time switching workflows consisting of smaller workflows used as building blocks.

See receive action.

hot folder

A *hot folder* is a slang term for a directory on a server that has been identified as a directory for storing media to be processed by a workflow in Vantage. When the workflow monitor identifies new media in this folder, it is submitted for processing.

inspector

An *inspector* is a series of one or more panels in Vantage Workflow Designer that facilitate the setup and configuration of a given action. Inspectors are unique to each action - for example, configuring a watch action is very different than configuring an encode action.

identify action

An *identify action* determines technical properties of a media file, such as codec type, video bitrate, or file size. This information can then be published as a metadata label, or as variables.

job

A *job* is an execution of a Vantage workflow. Jobs have a state (separate from action states), and jobs are comprised of actions that are executing. Jobs, like actions, may be in-process or they may be complete.

As a job executes, each action may be performed by any service (on any computer) in the Vantage domain that is capable of performing it. The capability of a service to perform a specific job depends on its current operating state, its workload, and its suitability, defined by qualification rules.

Jobs for a given workflow can be viewed in the Workflow Designer by selecting the workflow in the Workflow Designer tab and displaying the Job Status tab. Alternatively, all in-process and failed jobs within a Vantage Domain may be viewed in the Status section of the Management Console.

job routing

See qualification rule

job state

A *job state* is the current condition of a job. Keyword values are Start | Pause | Success | Fail | In Process.

label

A *metadata label* defines a set of metadata by use of name/value pairs associated with content. For example, a spot label may contain Agency,

Author, ISCI, and other metadata values; this set of metadata is collectively called a Spot metadata label. Metadata labels are stored in binders with the associated media and attachment files.

Vantage supplies several metadata label templates for use in workflows. In addition, you can create and modify labels for your use using the Management Console (Templates > Metadata Labels).

license

A *license* is stored in the Vantage database. Generally, licenses are imported as XML files into the database through the Management Console.

media nickname

See nickname.

message action

A *message action* is an action which enables you to generate and transmit an electronic message - an email, for example. You must configure Vantage to use an SMTP server (Management Console: Vantage Domain > Settings & Options > Email) before email can be utilized.

metadata service

The *Metadata service* is the Vantage component (operating as a Windows service) that executes the actions relating to the transformation of metadata between labels, variables, and XML files.

See also populate action, transform action.

metadata track

A *metadata track* is time-based or temporal metadata associated with media. For example, closed caption metadata is defined as a metadata track.

monitor service

The *Monitor service* is the Vantage component (operating as a Windows service) that executes the actions relating to the discovery of files and starting jobs.

See also watch action, associate action.

move action

A *Move action* is used to move a file from a source target (file system/device and directory) to a destination target (file system/device and directory). It typically performs this task by copying the file to the destination, then deleting the source.

Move actions can be executed on any action state.

nickname

Nicknames are user-defined strings that are used to reference files within a Vantage workflow. Nicknames allow users a convenient way to design workflows independent of the actual file locations or underlying file names. As a workflow executes, it maintains a collection of underlying files called a binder; nicknames allow the workflow to access files within the binder.

Nicknames may refer to either media files, or attachment files. Certain actions will only allow the use of certain nickname types; for example, a transcode action only allows media file nicknames to be used as the inputs and outputs. However, other actions (such as move and copy actions) operate on any type of file, and allow the use of any nickname.

The use of a nickname does not affect the actual name of the underlying file, nor do nicknames have any special meaning. For example, providing a media file the nickname *Flash* does not necessarily mean that the media file is in fact a Flash file.

Nicknames can be managed in the Management Console under Workflow Design Items > Media Nicknames. Nicknames can also be entered manually, directly in the Workflow Designer.

The word *Original* is a reserved nickname specific to media files.

notify action

A *notify action* is an action which saves job information to a file, or which interfaces with an external system. You can configure a notify action to produce an XML file, and you can invoke a Web service via a URL.

populate action

A *populate action* uses the metadata service to transform data between variables and metadata labels.

Populate actions can be executed on any action state.

qualification rule

A *qualification rule* influences or controls the routing and execution of actions among Vantage services of the same type in a distributed Vantage domain. Qualification rules can be used to ensure that jobs are routed to services that are best suited for the task. Vantage uses values contained in variables to determine the suitability of a given service to execute the action.

For example, one machine in a domain has specialized hardware - a fibre connection. In workflows where move and copy actions require the fibre connection, qualification rules specify that the specialized machine (which hosts a Vantage transport service) execute those workflows. This is accomplished by (1) adding a qualification rule to all other transport services in the domain indicating that they cannot executed actions that require a fibre card or (2) adding a *fibre card required* variable to the action in the workflow that requires the fibre card.

Qualification rules are exclusively based on variables; they are not based on any actual machine analysis. As a result, it is up to the system administrator to correctly set up variables and qualification rules, and apply variables to the appropriate actions to ensure that jobs are routed correctly.

Qualification rules are created and managed in the Vantage Domain Console: Vantage Domain > Services.

receive action

A *receive action* provides a starting point for new jobs in Vantage workflows that are not started by a watch or other starting action.

Typically, workflows are created with a receive action when they are intended for execution by another workflow that immediately precedes this one. This ability to chain workflows enables you to create comprehensive, intelligent run-time switching workflows consisting of smaller workflows used as building blocks.

Workflows that end with a forward action are used to start receive action-based workflows. When you chain workflows, you can pass binders and variables between them.

See forward action.

register action

A *register action* uses the catalog service to place a binder into the Vantage catalog. Register actions can be executed on any action state.

See also Vantage catalog.

service

See Vantage service.

transcode

Transcode means the process of decoding media in one format (MPEG2, for example) down to digital baseband and then encoding it in another format (MPEG4, for example).

transcode service

The *Transcode service* is the Vantage component (operating as a Windows service) that executes the encode action - transforming media from one format to another.

See encode action.

transport service

The *transport service* is the Vantage component (operating as a Windows service) that executes the actions relating to file operations: move action, delete action, copy action, and deploy action.

transform action

A *transform action* uses the metadata service to transform metadata between XML files (attachments) and labels. XSL stylesheets are used to perform these transformations; stylesheets can be managed in the Vantage Management Console: Vantage Domain > Catalogs.

Transform actions can be executed on any action state.

Vantage catalog

The *Vantage catalog* (or simply catalog) allows the management of binders that you want to exist past the life of an individual job. Folders can be created in the catalog with individual expiration rules.

The catalog and its folders are not a physical location; rather they are a way of organizing binders and controlling when the binders - and the underlying files - are deleted.

Vantage database

A *Vantage database* is a Microsoft SQL Server database which contains all workflows, actions, jobs, binders, licenses, and configuration information for a Vantage domain.

Vantage domain

A *Vantage domain* is a specific collection of computers, Vantage workflows, actions, services, jobs, binders, configuration settings and templates all known to and interacting each other, using a Vantage database. This collection constitutes a complete Vantage domain. Vantage domains may exist on a single computer or they may be distributed across many computers for durability and scalability.

Multiple Vantage domains may exist on a network, but they are independent entities that do not communicate with each other. They are not bound together and do not share resources or work. The purpose of storing an entire domain in a database is to provide an easy way to create and manage the domain and to provide access to all the details about each resource in the domain to any other resource that needs it.

Vantage folder

A *Vantage folder* is a directory on a supported file system that is stored in the Vantage database, which is used in move and copy actions. Unlike Vantage Stores, files placed in a Vantage folder are not deleted when the binder is deleted. Vantage folders are used for output folders of files.

Vantage folders are managed in both the Vantage Management Console and Vantage Workflow Designer. Changes to a Vantage folder - such as updating an IP address or a password - immediately affect all workflows.

Vantage Management Console

The *Vantage Management Console* (usually referred to informally as *the console*, for short) is a Windows MMC program that enables Vantage system administrators to effectively configure Vantage domains, and scale domains across multiple servers to meet their operating requirements and perform effectively in their environment.

Vantage service

The term *Vantage service* refers to the collection of software components (operating as Windows services) in Vantage that implement and execute the actions in a workflow as it executes as a job.

Vantage store

A *Vantage store* is a directory on a Windows file system that used for storing temporary files. Stores are managed by the Vantage domain for the purpose of centralizing large directories for reading and writing files. Unlike a Vantage folder, files placed in a Vantage store are deleted when the binder is deleted. Vantage stores are generally used to hold temporary files for the duration that a job is executing.

Vantage stores are managed in the Vantage Management Console: Vantage Domain > Storage. Services that create temporary files, such as the Transcode service, can be configured to use specific stores.

Vantage Workflow Designer

Vantage Workflow Designer is a program that enables you to create and edit workflows, activate and deactivate them, and monitor their status and review jobs in process and jobs that have completed.

variable

A *variable* identifies temporary job metadata. Variables have a name (such as *Number of Audio Channels*), a type (such as *Integer Number*)

and a default value. Variables values can be set inside a job in a variety of ways: Through analysis, through metadata population, in the watch and associate actions, as a property of an action, or by a service as it executes an action.

Variables are used by Vantage services and actions to control their behavior and workflow logic. The majority of parameters in Vantage can be bound (or attached) to variables, allowing the workflow to dynamically update on a job-by-job basis.

For example, a variable may be assigned a value by an analysis action to determine how many lines of black are at the top of a video frame; a crop filter later in the workflow can bind to that variable, ensuring that every crop in every job is appropriate to the workflow requirements.

Variables in services may be also be used for job routing. For example, an action with a FibreRequired=TRUE variable must pass this condition to a service which evaluates the condition to determine if it can successfully perform the action.

The actual name, default value, and type is a Variable Template. Variable templates are created in the Management Console (Vantage Domain > Templates > Variables) and assigned for use in actions and services.

variable template

A *variable template* identifies a variable, including its name, description, type, and default value. Variable templates are created in the Management Console. Variable templates must be pre-defined, prior to assigning a variable from this template for use in services or in actions.

watch action

A *watch action* uses the monitor service to continually (and at regular periods) poll a target location (a directory, for example) on a device or file system (FTP, Windows network folder, etc.) to discover new files.

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

workflow

A *workflow* in Vantage is a set of actions designed to perform an automated process. Vantage workflows are created using the Vantage Workflow Designer by adding and configuring actions and connecting them together. Workflows are stored in the Vantage database, and executed by Vantage services.

Workflow Designer

Short for Vantage Workflow Designer. Also sometime called just *Designer*, for short. See Vantage Workflow Designer.

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