

APPLICATION NOTE

GV STRATUS DIGITAL PUBLISHING WORKFLOWS

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Using GV STRATUS nonlinear media production tools media organizations can capture new opportunities in multiplatform environments. With GV STRATUS, users can add metadata, segment their assets, and get them automatically prepared and published to an external FTP location for multiple use cases with just one set of tools and one set of production professionals.

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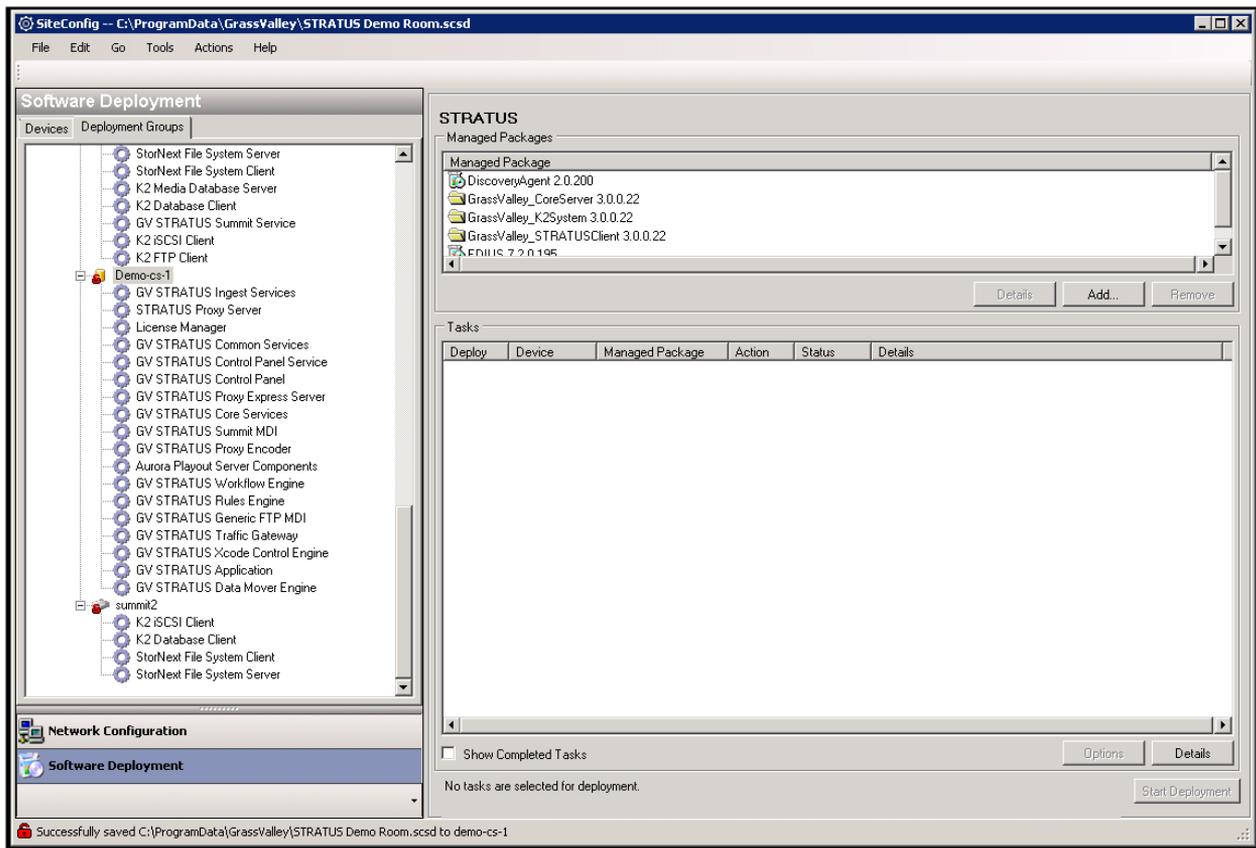
INTRODUCTION

The GV STRATUS® nonlinear media production tools application (version 2.8 or higher) from Grass Valley® integrates capabilities to seamlessly manage the processing and delivery of content to digital platforms, benefiting media organizations seeking to capture new opportunities in multiplatform environments. Under GV STRATUS control, users can add metadata, segment their assets, and get them automatically prepared and published to an external FTP location. The primary benefit to the media organization is that content can be prepared and then delivered for multiple use cases with just one set of tools and one set of production professionals.

PREREQUISITES

The transcode/transfer workflows in GV STRATUS utilize the following engines, installed on the GV STRATUS server by specifying the corresponding role in a SiteConfig Deployment Group:

- Workflow Engine
- Rules Engine
- Xcode Control Engine
- Data Mover Engine



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- Workflow Engine
- Rules Engine
- Xcode Control Engine
- Data Mover Engine

PREREQUISITES (CONT.)

Note: The Xcode Control Engine is dependent upon the Workflow and Rules Engines.

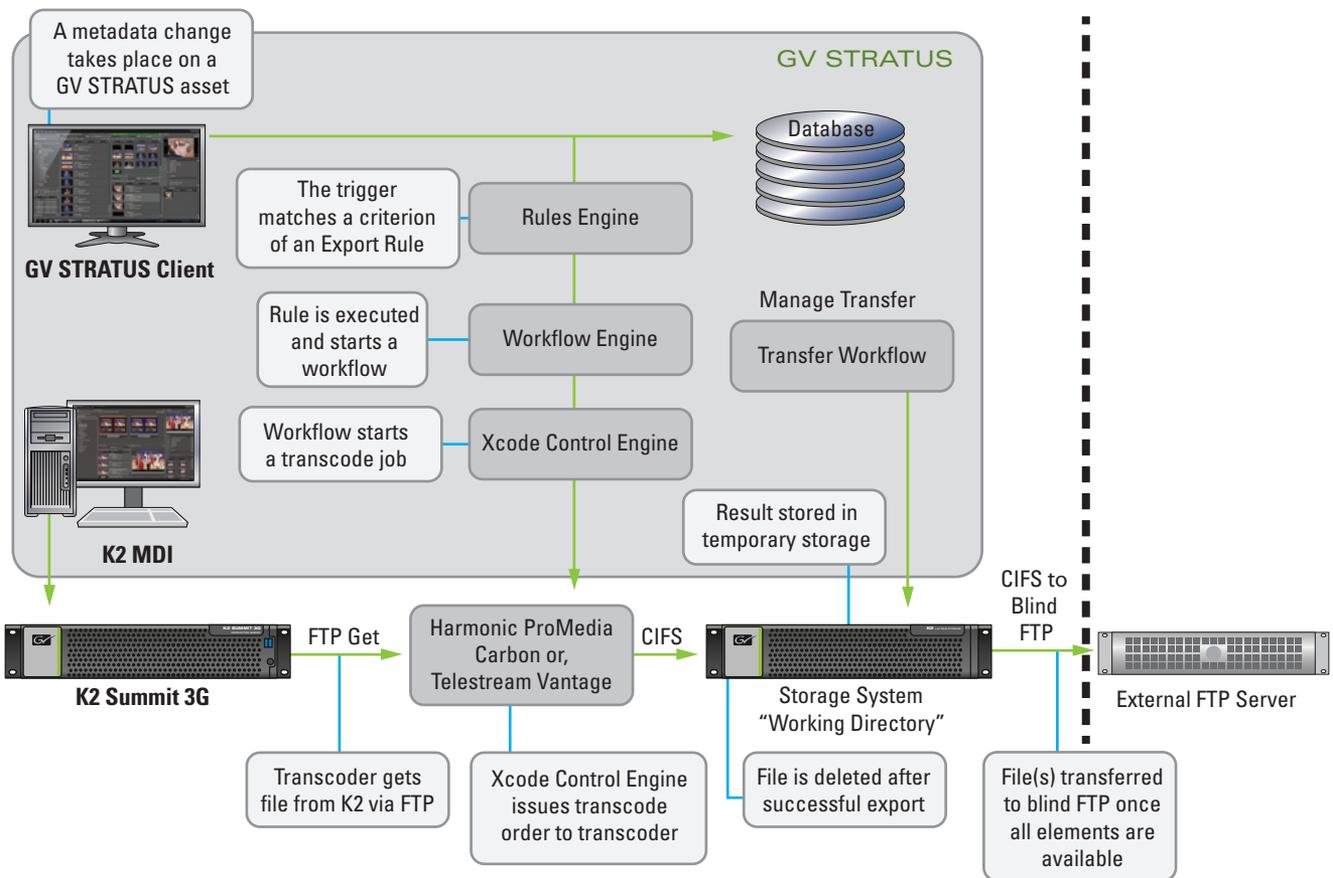
The digital publishing workflows employ best-of-breed transcoding engines—Harmonic ProMedia Carbon engine (formerly Carbon Coder) or Telestream Vantage system— as “customer furnished equipment” to handle transcoding of files to web-compatible formats.

The GV STRATUS Control Panel shows the engine configuration of all engines configured in SiteConfig. Engine service may be stopped and restarted from this list.

Engines						
Configured	Engine Type	Hostname	Services	Action	Status	
✓	Conform	Demo-Conform	gvConformEngine	⊞	Running	
✓	Workflow	Demo-cs-1	gvmfl_workflowengine	⊞	Running	
✓	Rules	Demo-cs-1	gvrulesengine	⊞	Running	
✓	Xcode Control	Demo-cs-1	gvtranscodeengine	⊞	Running	
✓	Data Mover	Demo-cs-1	gvdatamoverengine	⊞	Running	

WORKFLOW ARCHITECTURE

The GV STRATUS transcoding and export workflows architecture is shown below.



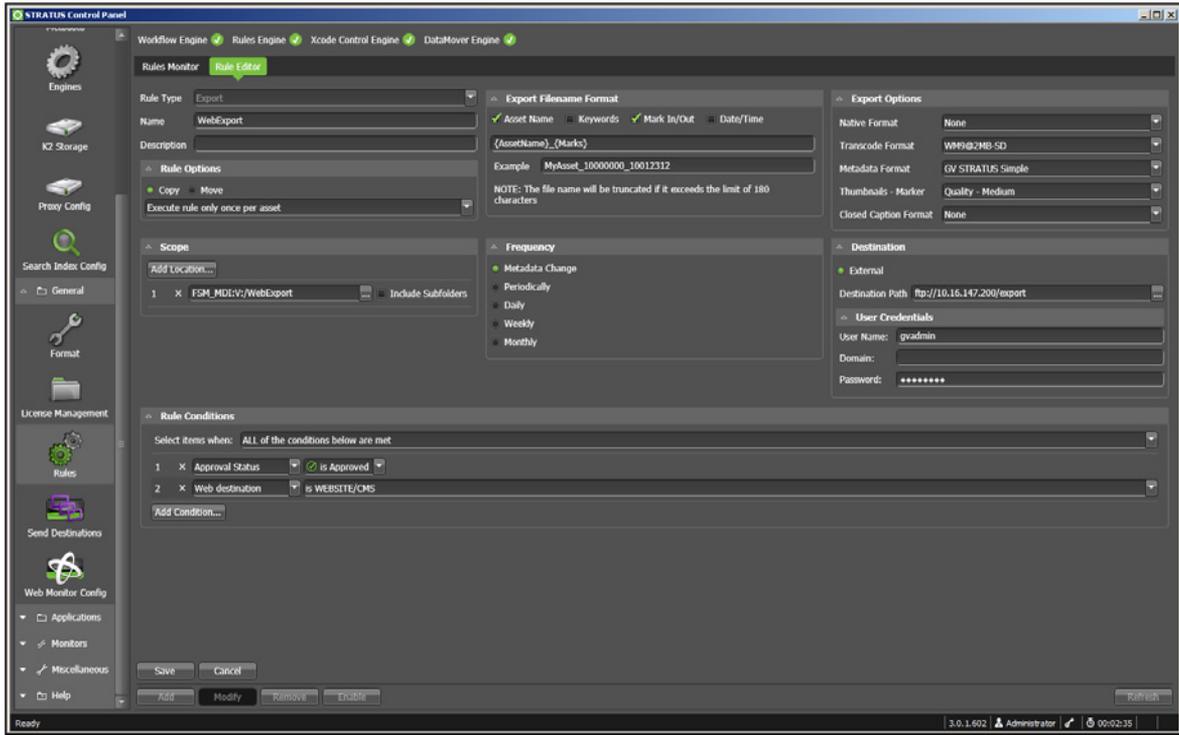
The workflow engine permits triggers to be set manually at any point during production or configured to automatically create transcoded video, rich metadata, and closed captioning files for various web publishing needs. The GV STRATUS engines enabling the transcode/export workflows coupled with the job monitoring tool simplify the editorial process, empowering producers to address the distribution path as well as the end user experience, both within the context of their existing workflows.

In automated mode, the rules engine manages the transcoding of content from Grass Valley K2 Summit®, K2 Solo®, or K2 SAN media server/storage to web-compatible formats, packaging closed captioning data and XML manifest files, and the subsequent export to external FTP locations.

Transcode/export operations require access to a Harmonic ProMedia Carbon engine or Telestream Vantage system to handle transcoding of files to web-compatible formats.

BASICS OF WORKING WITH EXPORT AUTO RULES

An Export Rule is created when assets need to be transcoded, copied, or moved to a location outside of the GV STRATUS/K2 system. Working in the Rules Engine view, administrative users have the flexibility to specify Export Rules (with or without transcoding) based on different combinations of filenames, export locations, export destinations, as well as a specific metadata values.



Export Format & Location

Export Rules include options for the transcoding format, metadata format, thumbnails, and closed captioning format.

The Transcode Format selection field has multiple options:

- Any format for which a Harmonic ProMedia Carbon engine or Telestream Vantage profile exists
- None

Powered by Harmonic's ProMedia Carbon engine or Telestream's Vantage, the transcoding solution provides the ability to transcode from any media format supported by GV STRATUS to most mainstream web, mobile, and VOD file types and resolutions. Supporting all major SD and HD formats, the application is continually updated to accommodate emerging media formats and ensure user's ability to meet evolving content production and distribution requirements.

Notably, the exported formats need to be made available within the GV STRATUS system. In the case of the Harmonic ProMedia Carbon engine, the format definition is exported as a file and stored on the GV STRATUS system. When interacting with the Telestream Vantage system, the GV STRATUS system reads all transcoding templates from the "STRATUS" category on the Vantage system and makes them available to set up a transcoding operation.

See section "Adding Transcode Profiles to GV STRATUS" on how to add transcode profiles to GV STRATUS.

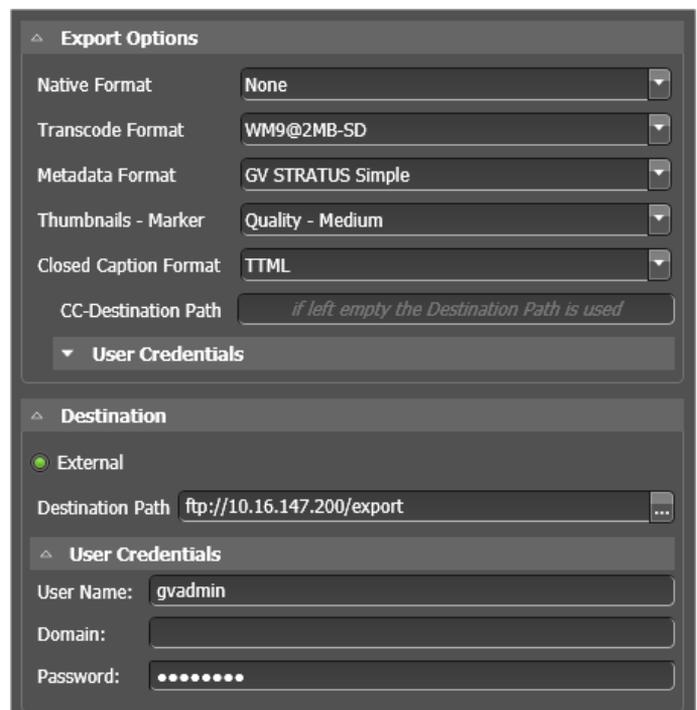
The Metadata Format operation features the following options:

- GV STRATUS Simple XML format
- Apple FCP7 XML Interchange Format
- None

Metadata is exported in XML format, enabling interchange with a broad range of broadcast applications and systems.

Closed caption formats:

- TTML
- SCC
- None



BASICS OF WORKING WITH EXPORT AUTO RULES (CONT.)

Closed caption is simply a subtitling system designed to make television more accessible to the hearing-impaired. For exporting closed caption metadata, the GV STRATUS application uses the Timed Text Markup Language (TTML) or Scenarist Closed Caption (SCC) online delivery format.

TTML is an open, industry-wide specification published by W3C that covers timed text on the web. Specifically, the TTML Simple Online Delivery profile for closed captions focuses on interoperability using TTML 10 to support delivery of closed captions for video content on the Internet.

The SCC file format is used by Scenarist as well as other DVD authoring programs for encoding closed captions onto DVDs. The format includes text and timing information, which syncs the text with the media content.

The destination path can be specified as:

- Any UNC accessible path
- FTP location

The transcoded essence is delivered via FTP to a location defined in the Destination Path field. The packaged metadata is delivered to the same location as the essence. The closed caption data in the TTML or SCC file is delivered either to the same location as the essence and metadata, or to a different location specified in the destination description.

The transcode formats are defined in the Destination Format field. As noted, this can be any format for which a Harmonic ProMedia Carbon or Telestream Vantage profile exists.

Adding Transcode Profiles to GV STRATUS

As noted, GV STRATUS rules support transcode profiles that users create via third-party applications. The following steps outline how to add transcode profiles to GV STRATUS when working with Harmonic ProMedia Carbon and Telestream Vantage transcoding platforms.

Harmonic ProMedia Carbon

To create a transcode profile required by their workflows, users can select from the source formats supported by the Harmonic ProMedia Carbon application. Notably, only one output format per transcode profile is supported by GV STRATUS rules.

The procedure for setting up transcoding profile involves the following steps:

- 1) Identify the transcode profile file. For the ProMedia application, it is the project file, with a .pcp file extension.
- 2) Identify the GV STRATUS server that hosts the GV STRATUS Xcode Control Engine. Typically this is the GV STRATUS Core server.
- 3) Copy the transcode profile to the following directory on the Xcode Control Engine host:


```
C:\Program Files\Grass Valley\STRATUS Transcode Engine\Profiles\RhozetCC
```
- 4) Wait approximately one minute for the GV STRATUS system to detect the transcode profile. The transcode profile is added in GV STRATUS Control Panel at **General | Rules** in **Export Options** settings as a **Transcode Format**.

Telestream Vantage

On the GV STRATUS server that hosts the GV STRATUS Xcode Control Engine (typically this is the GV STRATUS Core server), users can locate Telestream Vantage workflow files at *C:\Program Files\Grass Valley\STRATUS Transcode Engine\Profiles\Vantage*. The files at this location are templates.

They are not active Telestream Vantage workflows and GV STRATUS rules do not detect these files as transcode profiles. To use one of these template files, users must import it into Telestream Vantage Workflow Designer in the "STRATUS" category and activate it as a Telestream Vantage workflow. After it is activated in the "STRATUS" category, GV STRATUS rules automatically discover the Telestream Vantage workflow as a transcode profile. It is not necessary to copy files to the Xcode Control Engine host.

Users create the transcode profile specific to their workflows by using the Vantage Workflow Designer and by following these steps:

- 1) Create a "STRATUS" category.
- 2) Import or create Telestream Vantage workflows in the "STRATUS" category.
- 3) If desired, users can copy template Telestream Vantage workflows from the Xcode Control Engine host at *C:\Program Files\Grass Valley\STRATUS Transcode Engine\Profiles\Vantage* to an accessible location and import them into Telestream Vantage Workflow Designer.
- 4) Configure the **Receive** action. This must be the first action in the workflow.
- 5) In the Receive action, for **Media Files**, set the **Expected Nickname** to **Original**.
- 6) Configure the **Flip** action. This must be the second action in the workflow.
- 7) In the Flip action, set **Input media file nickname** to **Original**.
- 8) In the Flip action, set **Output Location** to the **OutputPath** variable.
- 9) When finished editing the Vantage workflow, click the **Release** button and then the **Activate** button. The Telestream Vantage workflow is now activated in the "STRATUS" category. Only one output format per transcode profile is supported by GV STRATUS rules.
- 10) Wait approximately one minute for the GV STRATUS system to detect the Vantage workflow as a transcode profile.

As a result, the transcode profile is now added in GV STRATUS Control Panel at **General | Rules** in **Export Options** settings as a **Transcode Format**.

BASICS OF WORKING WITH EXPORT AUTO RULES (CONT.)

Export Filename Format & Frequency

The user has options available to build a file name from a selected asset's metadata, such as:

- Asset name
- Keywords
- In/Out timecodes
- Date/Time

The order in which these elements are selected is important in building a name format.

Frequency is another selectable export parameter. Note that when selecting the Metadata Change option, the rule is triggered any time the metadata selected in Rule Conditions matches the specified value.

Export Filename Format

Asset Name Keywords Mark In/Out Date/Time

{AssetName}

Example MyAsset

NOTE: The file name will be truncated if it exceeds the limit of 180 characters

Frequency

Metadata Change
 Periodically
 Daily
 Weekly
 Monthly

Rule Conditions

Select items when: ALL of the conditions below are met

1	X	Approval Status	is Approved
2	X	Web destination	is WEBSITE/CMS

Add Condition...

DIGITAL PUBLISHING WORKFLOWS

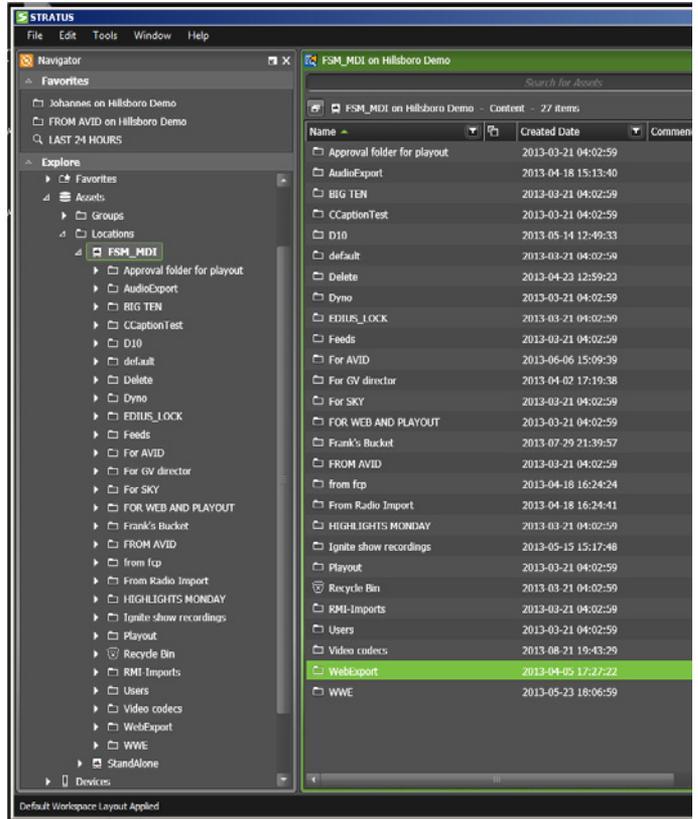
GV STRATUS digital publishing workflows enable content delivery to alternate distribution channels in a highly automated fashion, while providing flexibility for manual interaction where and when needed.

For the sake of clarity, this section is presented as a linear description of the key GV STRATUS capabilities available for transcoding and export of content to digital distribution platforms. The presented workflow should not be interpreted as a rigid sequence to follow. Rather, users will apply the tools below in a way that best suits their specific use cases, picking and choosing among applicable tools and options.

1) Create Export Bin

There may be different entry points to the digital publishing workflows, including manual/scheduled recordings where an essence is recorded on a K2 system (SAN or standalone), or the use of watch folders to produce finished segments.

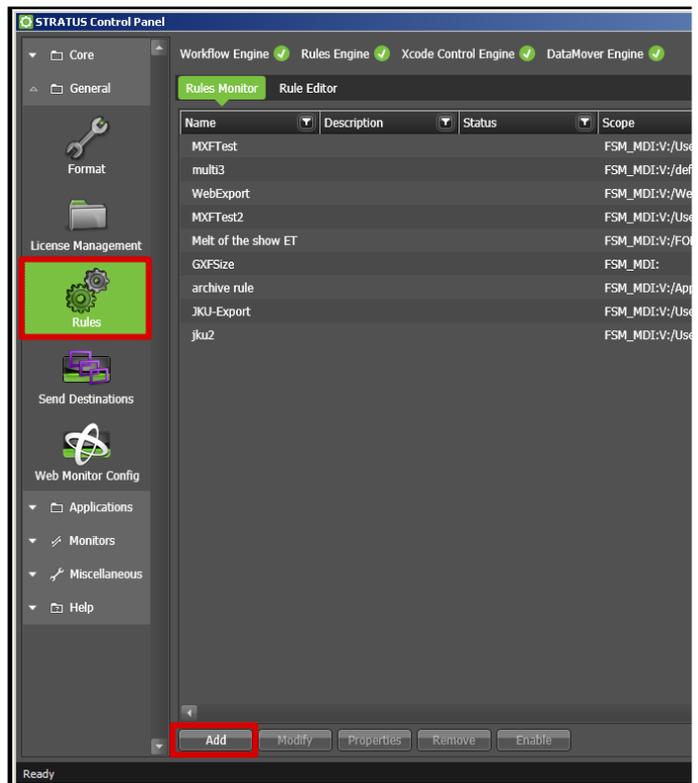
For user scenarios involving fully automated operations, setting up a local watch folder is a convenient way to export/transcode media. In those cases, users can create a bin on a K2 system designated as the source location for the web export operation:



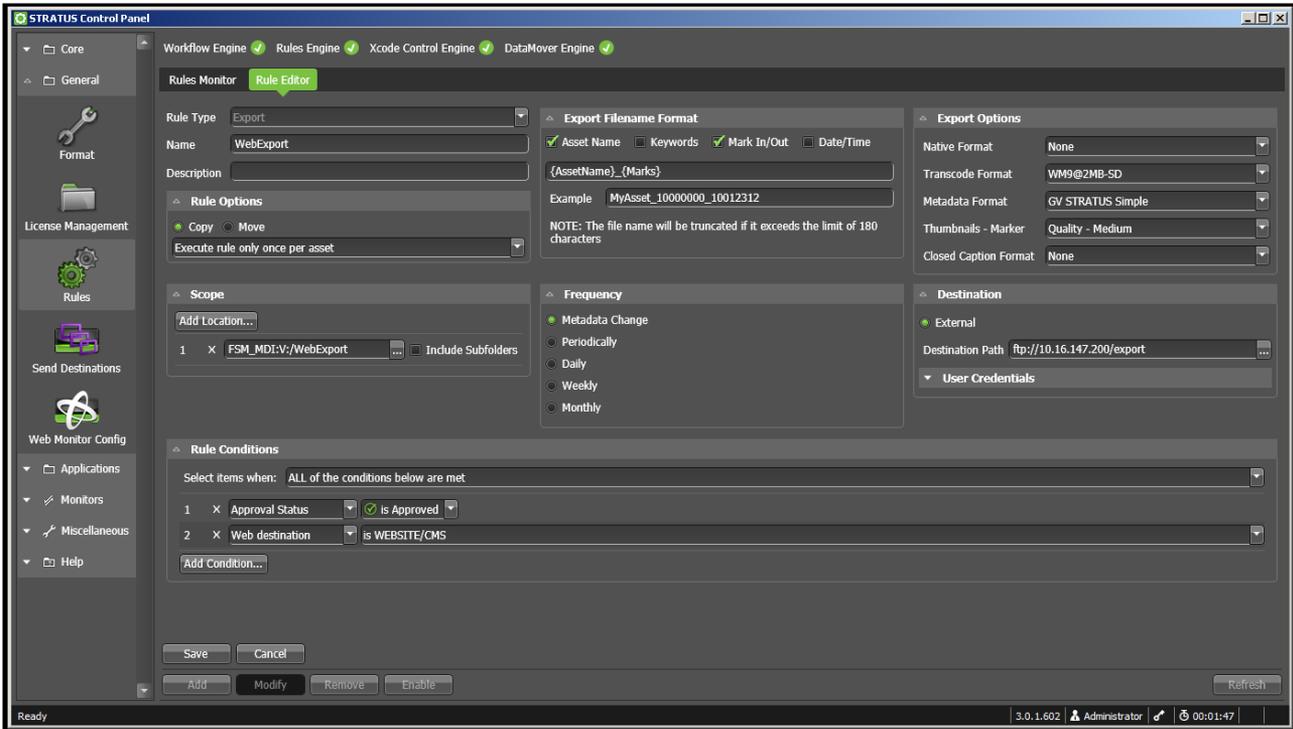
2) Set Export Rules

The GV STRATUS Rule engine can be setup to be triggered on any metadata tag, asset name, position, and so on in a folder.

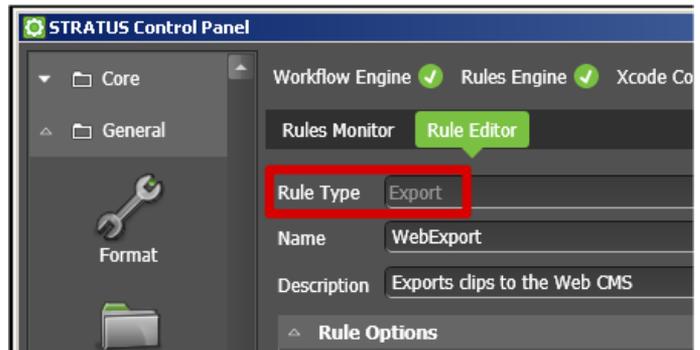
When automating an export/transcode workflow, users work in the GV STRATUS Control Panel to create a new export rule:



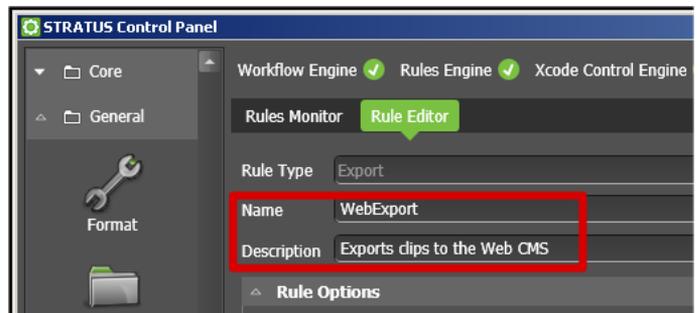
DIGITAL PUBLISHING WORKFLOWS (CONT.)



Since auto rules are to be applied to export operations, “Export” is the Rule Type to be selected in this step:

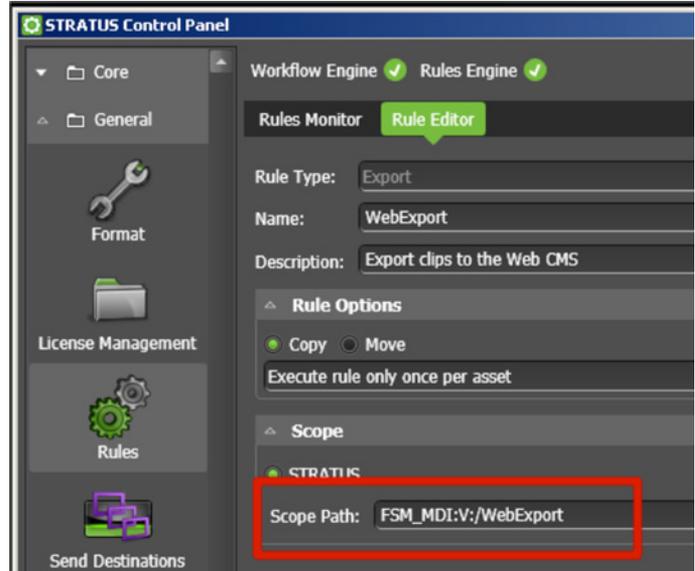


Next, a Name and Description are to be added to the rule:

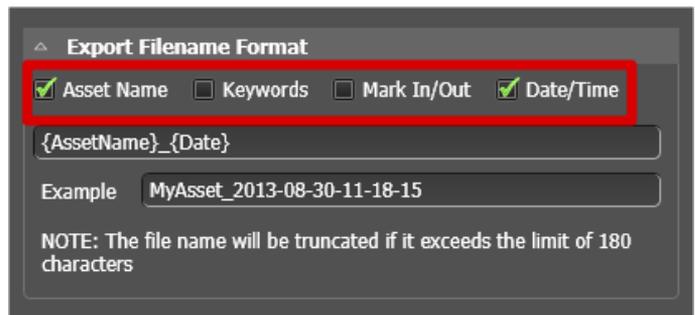


DIGITAL PUBLISHING WORKFLOWS (CONT.)

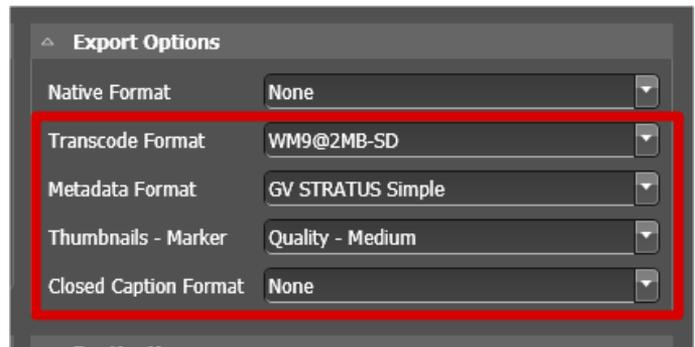
In scenarios that involve a watch folder to facilitate the export/transcode workflows, users must enter a watch folder (bin) location in the Scope Path. In this example, the watch folder resides on the GV STRATUS system:



When choosing their unique export file naming convention, users can create combinations of asset name, keywords, mark in/out, and date/time parameters. In this instance, since the asset name and date/time were checked as the two file naming components, the resulting filename combines those two components, in that respective order:



Using the Export Options menu, users will set their export options for Metadata Format, Transcode Format, and Closed Caption Format:



In this example, the Metadata Format export option is using the GV STRATUS Simple metadata format.

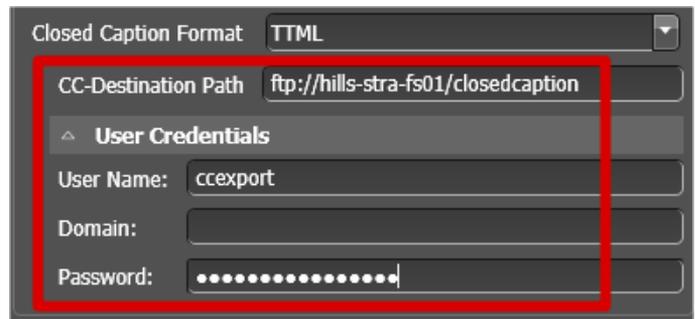
The Transcode Format rule selected will invoke media transcode profile "H.264@4MB-HD" running natively on the Harmonic ProMedia Carbon engine.

The transcoded essence is delivered via FTP to a location defined in the Destination Path field. The packaged metadata is delivered to the same location as the essence. The closed caption data in the TTML file is delivered either to the same location as the essence and metadata, or to a different location defined in the destination description.

Choosing "TTML" as the Closed Captioning Format indicates that closed caption data is exported along with the essence. The only other option available for Closed Captioned Format is "None," which implies that no closed caption data is to be exported with the essence.

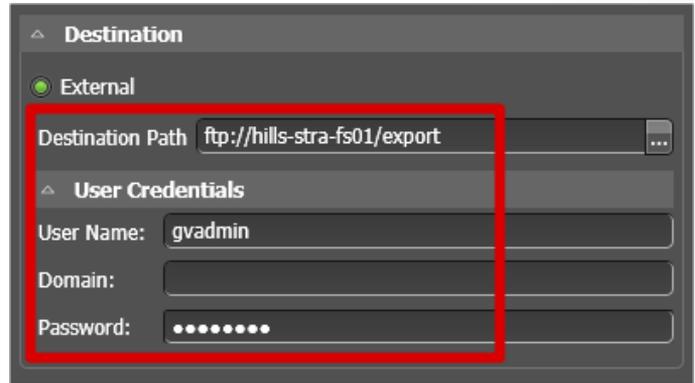
Since the CC-Destination Path is left empty, the closed caption data will be placed in the same location with media/metadata.

Alternately, users may specify a separate destination for their closed caption file in CC-Destination Path:

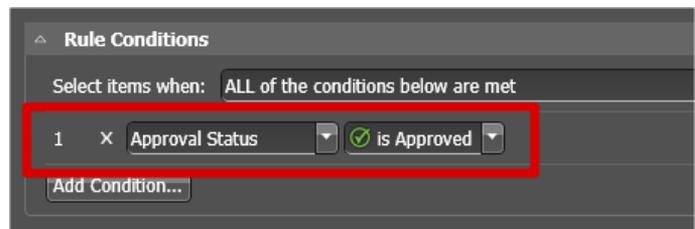


DIGITAL PUBLISHING WORKFLOWS (CONT.)

From the Destination menu, users will select an export Destination Path external to the GV STRATUS system:



Finally, users set the Rule Conditions to be validated against the asset metadata prior to export. In many production environments, the export condition may be pegged to an "Approval Status" option "Is Approved":



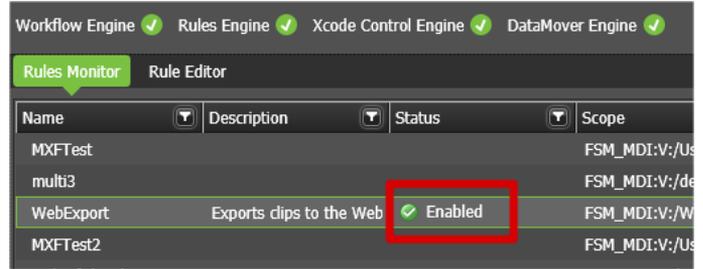
Another way to implement more granular export conditions is to leverage the Metadata Change in the Frequency dialog. When the Metadata Change option is enabled, it triggers the rule any time the metadata selected in Rule Conditions matches the specified value. In this instance, the rule will be activated when the metadata changes to "WEBSITE/CMS":



DIGITAL PUBLISHING WORKFLOWS (CONT.)

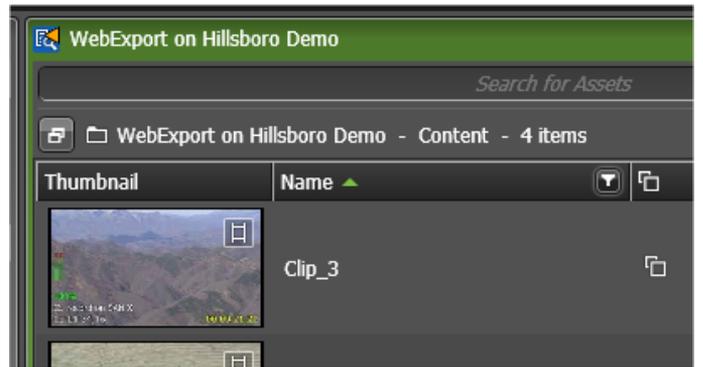
3) Enable Export Rules

In order to become enabled, the Rules Engine settings must be saved:

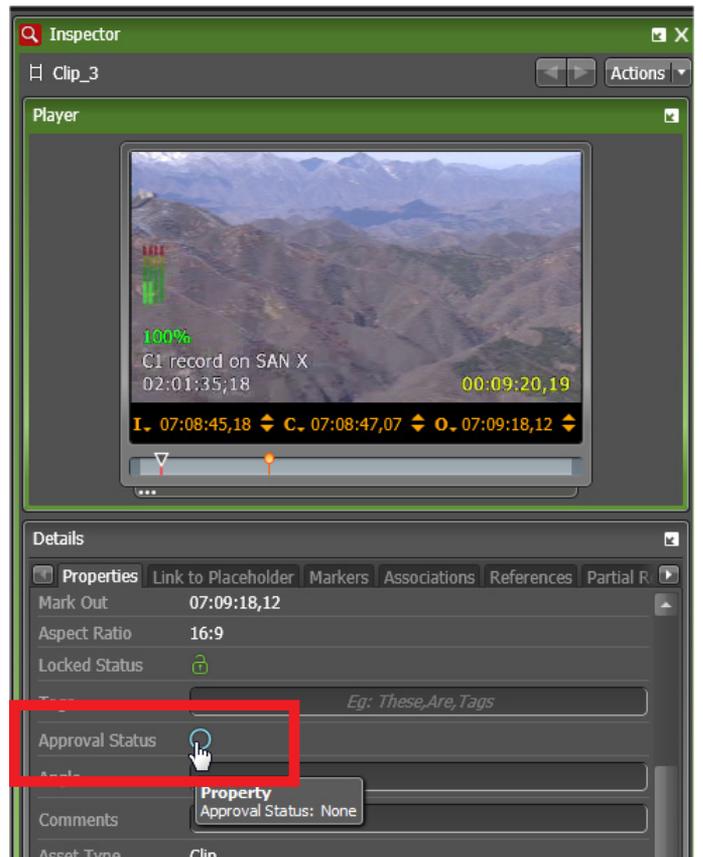


4) Export/Transcode Media

One way to initiate a media export is to drop it into the watch folder designated for media export:

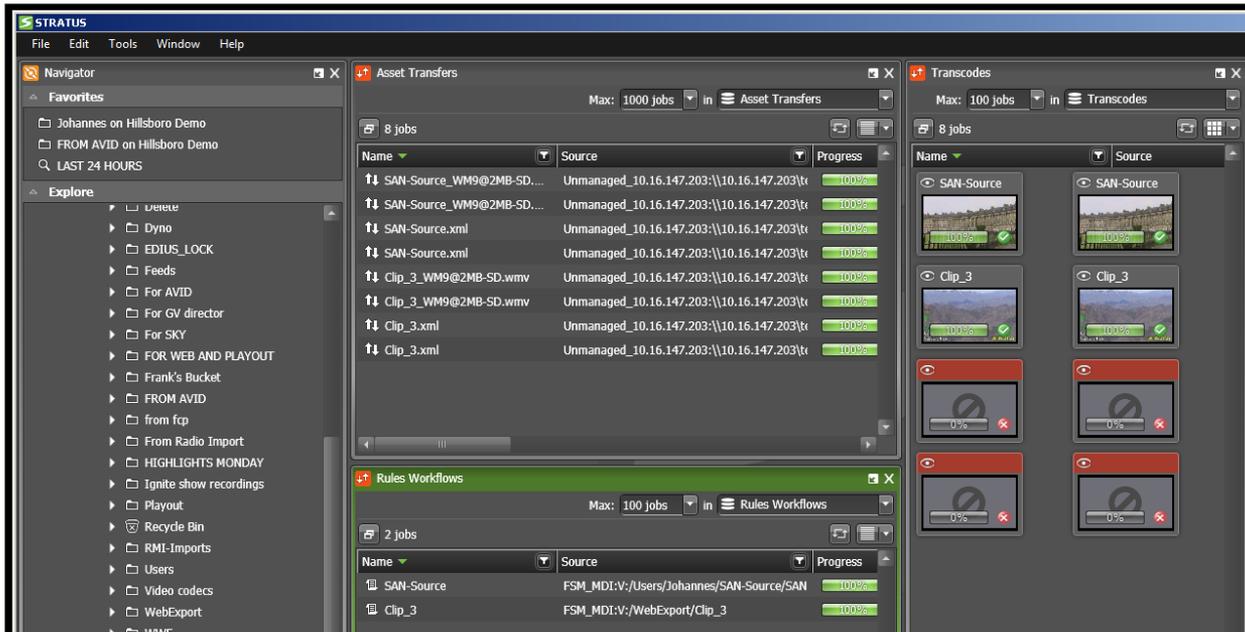


The next step in the workflow is for the GV STRATUS application to test and validate the export conditions for the media now designated for the export operation. Using the example of the Approval Status parameter as an export trigger, users load the clip into the GV STRATUS Inspector and set the Approval Status to "Approved": This will initiate media export operation.

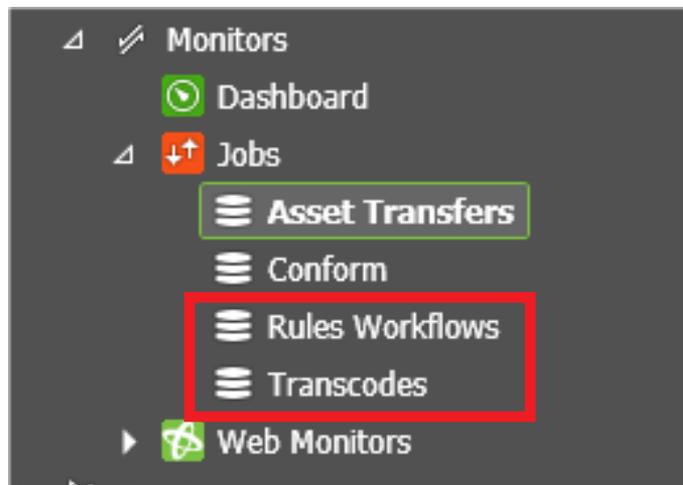


DIGITAL PUBLISHING WORKFLOWS (CONT.)

The GV STRATUS application allows for real-time monitoring of transcodes/exports and transfers. The Jobs node in the Navigator panel provides access to progress information on Asset Transfer and Transcode/Export jobs.

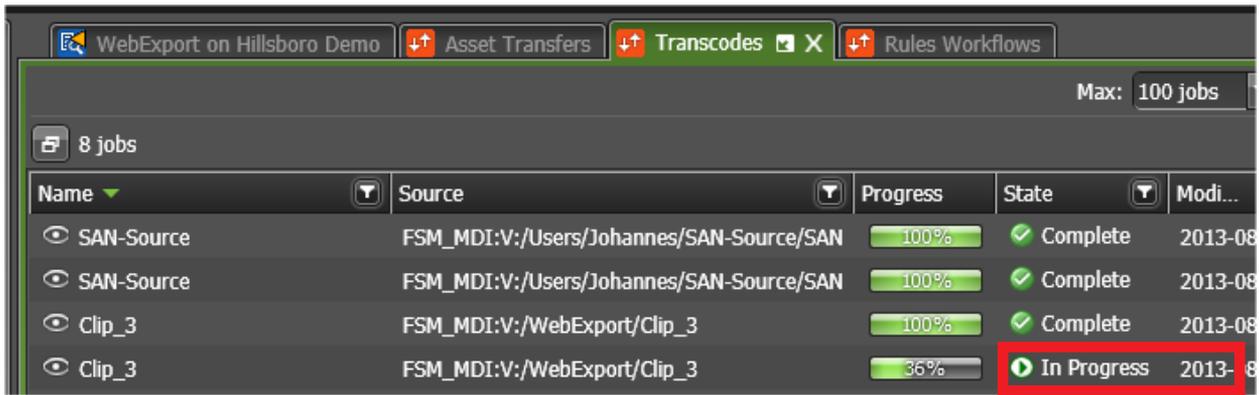
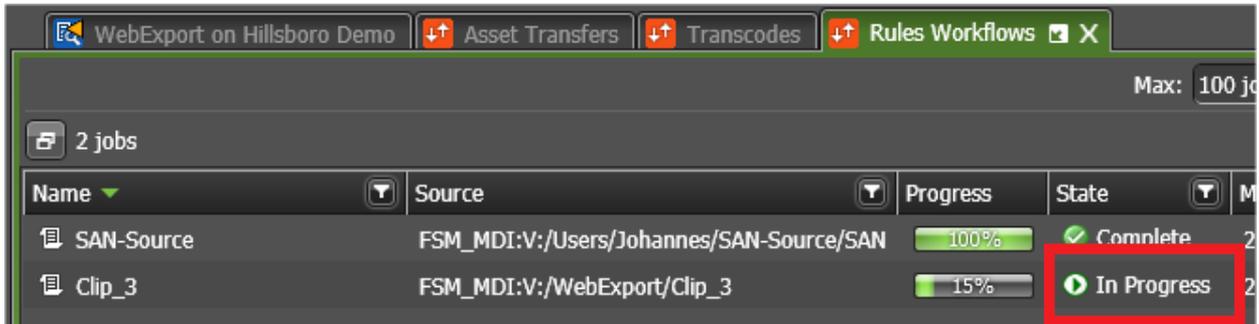


Opening up the Rules Workflow Monitor, users can scroll down to the Transcode Monitor:

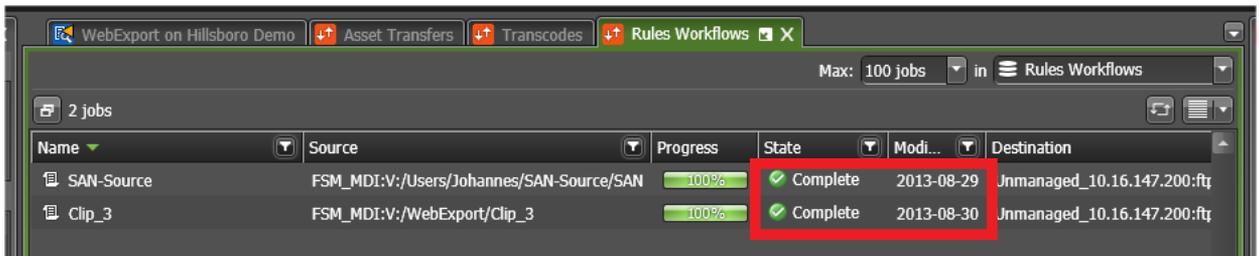


DIGITAL PUBLISHING WORKFLOWS (CONT.)

Under the Rules Workflows tab, users can monitor the transcode/export job progress in real time:



When the rule workflow is completed, the last step is to validate the status in the destination location for the export operation. It will indicate "complete" when successfully completed:



SUMMARY

As viewers are gravitating to an “anytime, anywhere” media consumption model, media organizations are seeking efficient ways to produce and distribute content to an ever-increasing variety of online, mobile, and social media platforms. Along with the downward pressure on operational expenses, this drives the need to unify the entire content value chain from creation to multiplatform distribution, and demands complete, flexible, and adaptable production tools that better leverage production staff abilities.

The traditional approach of deploying islands of disparate media production tools and technologies is not conducive to integrating them into efficient production workflows. The GV STRATUS

framework, on the other hand, was conceived as a unified, adaptable, and software-centric production platform. With this latest evolution, media organizations can efficiently deploy workflows that integrate content preparation and distribution to multiple digital platforms.

Working in the same familiar GV STRATUS environment, the production staff is empowered to create timely and more compelling content, and prepare it for distribution to the devices consumers prefer. Meanwhile, media organizations reap the benefit of generating multiformat, multiplatform content ready to generate new revenue streams.

REFERENCES

For more information about Harmonic ProMedia Carbon engine:

- Product Page

<http://www.harmonicinc.com/product/promedia-carbon>

- Datasheet

http://www.harmonicinc.com/sites/default/files/data_sheets/ProMedia_Carbon_Datasheet.pdf

- Format Guide

http://www.harmonicinc.com/sites/default/files/ProMedia_Carbon_Format_Guide.pdf

- Support

<http://www.rhonet.com/support.html>

For more information about Telestream Vantage family of solutions:

- Product page

<http://www.telestream.net/vantage/>

- Product Brochure

<http://www.telestream.net/pdfs/datasheets/bro-Vantage.pdf>

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