



# **MOMENTUM V5.4**

MEDIA ASSET MANAGEMENT SYSTEM

## **Operator's Guide**

Issue 1 Revision 1

2020-11-17

[www.grassvalley.com](http://www.grassvalley.com)

## FCC Compliance

In order to comply with FCC/CFR47: Part 15 regulations, it is necessary to use Mini HDMI to HDMI high-quality triple-screened cable assemblies with integrated ferrite suppression at both ends.

## Patent Information

This product may be protected by one or more patents.

For further information, please visit: [www.grassvalley.com/patents/](http://www.grassvalley.com/patents/)

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## Important Safety Information

This section provides important safety guidelines for operators and service personnel. Specific warnings and cautions appear throughout the manual where they apply. Please read and follow this important information, especially those instructions related to the risk of electric shock or injury to persons.

### Symbols and Their Meanings



Indicates that dangerous high voltage is present within the equipment enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



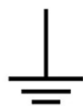
Indicates that the user, operator or service technician should refer to the product manuals for important operating, maintenance, or service instructions.



This is a prompt to note the fuse rating when replacing fuses. The fuse referenced in the text must be replaced with one having the ratings indicated.



Identifies a protective grounding terminal which must be connected to earth ground prior to making any other equipment connections.



Identifies an external protective grounding terminal which may be connected to earth ground as a supplement to an internal grounding terminal.



Indicates that static sensitive components are present, which may be damaged by electrostatic discharge. Use anti-static procedures, equipment and surfaces during servicing.



Indicates that the equipment has more than one power supply cord, and that all power supply cords must be disconnected before servicing to avoid electric shock.



The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Underwriters Laboratory (UL) regulations and recommendations for USA.



The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Canadian Standard Association (CSA) regulations and recommendations for USA/Canada.



The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Underwriters Laboratory (UL) regulations and recommendations for USA/Canada.



The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Intertek Testing Services regulations and recommendations for USA/Canada.



The presence of this symbol in or on Grass Valley product means that it complies with all applicable European Union (CE) directives.



The presence of this symbol in or on Grass Valley product means that it complies with safety of laser product applicable standards.

## Warnings



A warning indicates a possible hazard to personnel, which may cause injury or death. Observe the following general warnings when using or working on this equipment:

- Appropriately listed/certified mains supply power cords must be used for the connection of the equipment to the rated mains voltage.
- This product relies on the building protection. Ensure that a fuse or circuit breaker for the rated mains voltage is used on the phase conductors.
- Any instructions in this manual that require opening the equipment cover or enclosure are for use by qualified service personnel only.
- Do not operate the equipment in wet or damp conditions.
- This equipment is grounded through the grounding conductor of the power cords. To avoid electrical shock, plug the power cords into a properly wired receptacle before connecting the equipment inputs or outputs.
- Route power cords and other cables so they are not likely to be damaged. Properly support heavy cable bundles to avoid connector damage.
- Disconnect power before cleaning the equipment. Do not use liquid or aerosol cleaners; use only a damp cloth.
- Dangerous voltages may exist at several points in this equipment. To avoid injury, do not touch exposed connections and components while power is on.
- High leakage current may be present. Earth connection of product is essential before connecting power.
- Prior to servicing, remove jewelry such as rings, watches, and other metallic objects.
- To avoid fire hazard, use only the fuse type and rating specified in the service instructions for this product, or on the equipment.
- To avoid explosion, do not operate this equipment in an explosive atmosphere.
- Use proper lift points. Do not use door latches to lift or move equipment.
- Avoid mechanical hazards. Allow all rotating devices to come to a stop before servicing.
- Have qualified service personnel perform safety checks after any service.

## Cautions



A caution indicates a possible hazard to equipment that could result in equipment damage. Observe the following cautions when operating or working on this equipment:

- This equipment is meant to be installed in a restricted access location.
- When installing this equipment, do not attach the power cord to building surfaces.
- Products that have no on/off switch, and use an external power supply must be installed in proximity to a main power outlet that is easily accessible.
- Use the correct voltage setting. If this product lacks auto-ranging power supplies, before applying power ensure that each power supply is set to match the power source.
- Provide proper ventilation. To prevent product overheating, provide equipment ventilation in accordance with the installation instructions.
- Do not operate with suspected equipment failure. If you suspect product damage or equipment failure, have the equipment inspected by qualified service personnel.
- To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.
- This unit may have more than one power supply cord. Disconnect all power supply cords before servicing to avoid electric shock.
- Follow static precautions at all times when handling this equipment. Servicing should be done in a static-free environment.
- To reduce the risk of electric shock, plug each power supply cord into separate branch circuits employing separate service grounds.

## Electrostatic Discharge (ESD) Protection



Electrostatic discharge occurs when electronic components are improperly handled and can result in intermittent failure or complete damage adversely affecting an electrical circuit. When you remove and replace any card from a frame always follow ESD-prevention procedures:

- Ensure that the frame is electrically connected to earth ground through the power cord or any other means if available.
- Wear an ESD wrist strap ensuring that it makes good skin contact. Connect the grounding clip to an *unpainted surface* of the chassis frame to safely ground unwanted ESD voltages. If no wrist strap is available, ground yourself by touching the *unpainted* metal part of the chassis.
- For safety, periodically check the resistance value of the antistatic strap, which should be between 1 and 10 megohms.
- When temporarily storing a card make sure it is placed in an ESD bag.
- Cards in an earth grounded metal frame or casing do not require any special ESD protection.

## Battery Handling



This product may include a backup battery. There is a danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions. Before disposing of your Grass Valley equipment, please review the *Disposal and Recycling Information* at:

[http://www.grassvalley.com/assets/media/5692/Take-Back\\_Instructions.pdf](http://www.grassvalley.com/assets/media/5692/Take-Back_Instructions.pdf)

## Cautions for LCD and TFT Displays



Excessive usage may harm your vision. Rest for 10 minutes for every 30 minutes of usage.

If the LCD or TFT glass is broken, handle glass fragments with care when disposing of them. If any fluid leaks out of a damaged glass cell, be careful not to get the liquid crystal fluid in your mouth or skin. If the liquid crystal touches your skin or clothes, wash it off immediately using soap and water. Never swallow the fluid. The toxicity is extremely low but caution should be exercised at all times.

## Environmental Information

European (CE) WEEE directive.



This symbol on the product(s) means that at the end of life disposal it should not be mixed with general waste.

Visit [www.grassvalley.com](http://www.grassvalley.com) for recycling information.

Grass Valley believes this environmental information to be correct but cannot guarantee its completeness or accuracy since it is based on data received from sources outside our company. All specifications are subject to change without notice.

If you have questions about Grass Valley environmental and social involvement (WEEE, RoHS, REACH, etc.), please contact us at [environment@grassvalley.com](mailto:environment@grassvalley.com).

## **On Receipt of the Momentum System**

Any equipment is supplied in dedicated packaging provided by the manufacturer and should not be accepted if delivered in inferior or unauthorized materials.

Carefully unpack the system components and check them against the packing list. If there is anything incorrect notify your Grass Valley Partner, or Grass Valley, at once. Check that the equipment has not been damaged in transit. If any damage has occurred notify your Grass Valley Partner (or Grass Valley directly) and the carrier immediately. Always retain the original packing materials if possible, they could prove useful should it ever be necessary to transport or ship the system units.

Always read the *Installation Guide*, *Configuration Guide* and the *Operator's Guide* (separate manuals) carefully, it will provide you with helpful hints and tips about care and maintenance and help you get the most out of your Momentum system.

In the unlikely event of an equipment failure, contact your Grass Valley Partner, or Grass Valley, at once, contact details are at the rear of this manual.



# toc

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# 1 Introduction

## Welcome to Momentum!

Momentum is a powerful, media asset management and workflow automation system, designed to suit the requirements of leading media organizations. An incredibly flexible, enterprise level system, Momentum features fully configurable workflows, detailed process reporting and extensive integration with third party applications and platforms, enabling you to take complete control of your media assets, operations and business processes.

Based on service-oriented architecture (SOA), Momentum provides access to your business processes through the Internet or the company intranet - supplying an extensive suite of tools for different stages of the production process.

Momentum maintains and tracks your media assets in an Oracle database, makes them searchable, augments them with rich metadata, manages various job queues, controls archive and other third party devices, and enables assets to be ingested and exported in a number of different formats.

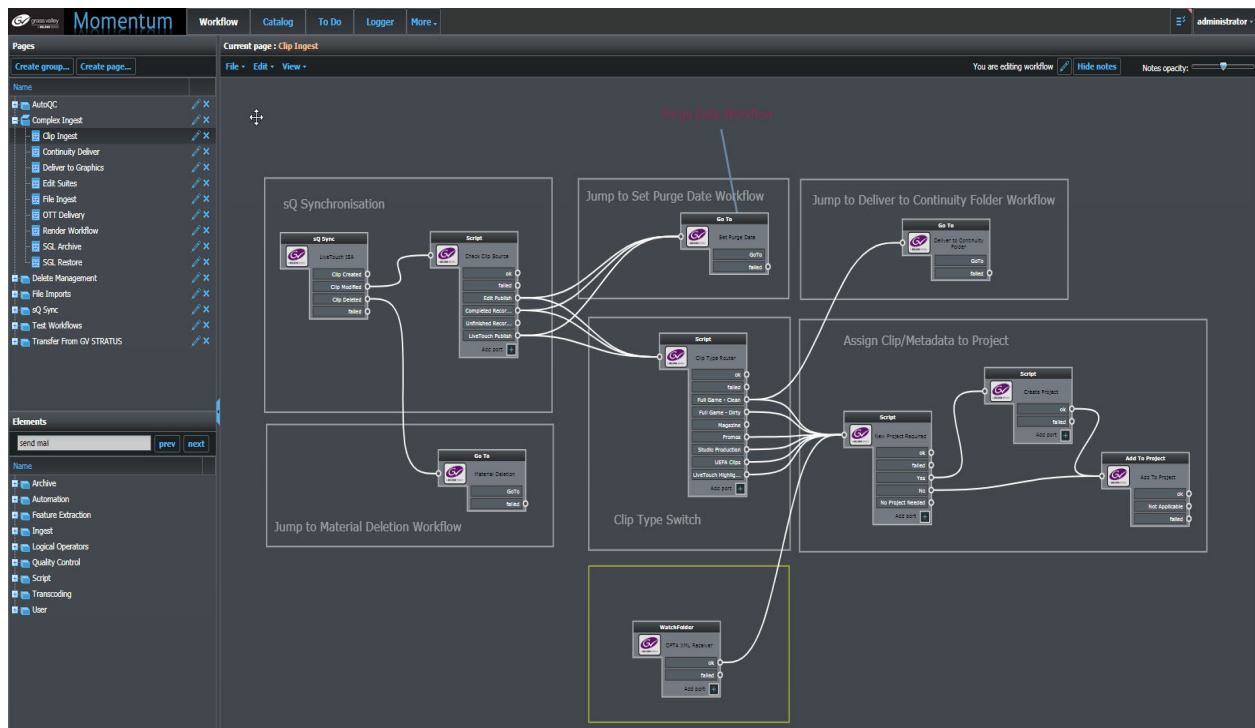


Fig. 1-1: Example Momentum Workflow Page

Most of these operations take place through managed workflows, in which you can define when and how a new or existing asset requires additional automated or manual processing to meet your needs. Powerful workflow modeling tools provide the building blocks to manage media assets on the Momentum Workflow page, a canvas on which your business processes are represented as a series of interconnected and easy-to-use schematic diagrams. Using the workflow functions, you can design and implement your workflows and the desired processing paths for the different media asset files. In addition, you can also monitor and analyze the progress of running processes and any associated tasks. As a file-based solution,

In summary, Momentum enables you to:

- Automate the processing of content through reliable and repeatable workflows.
- Extend your organization's capability as operations grow through configurable workflows and resource pooling.
- Deliver content to a range of platforms including social media and VOD applications.

## Momentum Key Features

Momentum supports the following features:

- User configurable workflows with support for scripting in C#, Python, IronPython and Visual Basic.
- HTML5-based user interface for web browser access to a multi-user environment for media-file cataloging and faster content distribution.
- Automated media file ingest using watch folders, delivery to S3 and social media platforms. And use of both standard file transfer protocols and proprietary transfer applications such as Signiant and Aspera.
- Automated metadata ingest using watch folders, BXF messaging and other third party system integrations.
- Video and audio editing using the built-in editor or other integrated Grass Valley editors.
- Desktop proxy browsing, including automated generation of proxy files.
- Integration with a wide range of third party, automated quality checking, transcoding and archive devices.
- Integration with other Grass Valley products such as the Go! Video Timeline Editor, sQ Suite and Morpheus Playout Automation.
- Configurable metadata publishing templates for delivery to linear playout and non-linear delivery platforms.
- Web services API for third party integration.
- Oracle 12c database clustering.
- Support for Microsoft Windows 2012 with IIS for dual redundancy and user load balancing.
- Reporting and statistical analysis to understand processes and improve capacity planning.



## Summary of Supported Formats

The following formats are supported by Momentum:

Type	Formats
Wrappers	<ul style="list-style-type: none"> <li>• MPEG-2 Transport Stream</li> <li>• MPEG-2 Program Stream</li> <li>• MPEG-4 Parts 1, 14 &amp; 15</li> <li>• 3GPP</li> <li>• MOV</li> <li>• ASF</li> <li>• BXF</li> <li>• GXF</li> <li>• MXF</li> </ul>
Video	<ul style="list-style-type: none"> <li>• MPEG-2</li> <li>• IMX 30/50</li> <li>• D10</li> <li>• D11</li> <li>• XDCAM</li> <li>• MPEG-4 AVC (H.264)</li> <li>• VC-1/WMV9</li> <li>• MPEG-4 Part 2</li> <li>• H.263</li> <li>• DV/DVCPRO25</li> <li>• DV/DVCPRO50</li> <li>• DVCPRO100/HD</li> </ul>
Audio	<ul style="list-style-type: none"> <li>• MPEG-1</li> <li>• MPEG-2</li> <li>• MPEG-2 AAC</li> <li>• AAC-Plus (MPEG-4 AAC)</li> <li>• HE-AAC</li> <li>• PCM</li> <li>• WMA</li> <li>• AC3</li> <li>• Dolby E</li> </ul>
Formats	<p>All frame format sizes, bit rates and resolutions for SD/HD and mixed workflows, including:</p> <ul style="list-style-type: none"> <li>• QCIF</li> <li>• CIF</li> <li>• D1</li> <li>• 720p</li> <li>• 1080i</li> <li>• 1080p</li> </ul>

The management and support of the different formats strongly depend on the third party application and devices controlled by the Momentum system. For information on supporting specific formats, refer to the third party documentation.

For more detail on supported formats, see [Appendix B Supported File Formats](#), on page 219.

## Supported Web Browsers

The Momentum system uses a web-based Graphical User Interface based on HTML5. It is, therefore, recommended to use a **Google Chrome** browser to access the Momentum user interface. We cannot guarantee that any other browser can provide the full Momentum operational capabilities.

## **Playback Supported File Formats**

The Momentum system provides built-in media players that enable you to view and manage material.

For playback purposes, Momentum supports only an MP4 container with an h264-encoded video track and ACC-coded audio.

Other file formats are not supported and playback attempts will result in a blank media-player pane.

# Using the Momentum Interface



The Momentum user interface is web-based so that you can work from the Local Area Network or from a remote network using a virtual private network (VPN) or similar network protocol.

Using an Internet connection and a standard Web client, you can access the login page and, after entering your username and password, you can start your session.

Momentum is HTML5 compatible, therefore, you can use any HTML5 browser, but preferably Google Chrome, to display the application pages.

## Logging in to Momentum

To log in to Momentum:

- 1 Open your browser (for example, Chrome) and type in the address bar:  
`http://<MyMomentumServer>/Momentum/html5/Login.aspx`  
where `<MyMomentumServer>` is the hostname of your Momentum Web server.

The login dialog box appears:

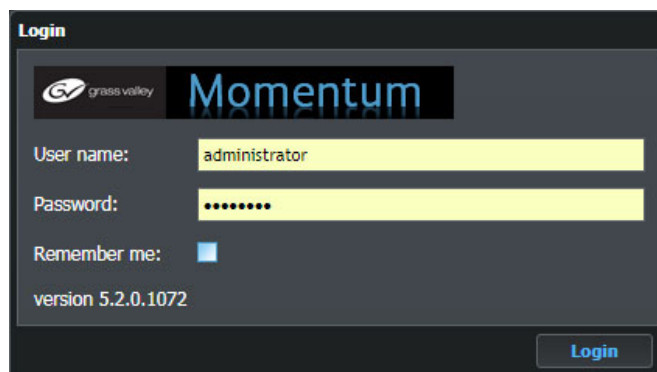


Fig. 2-2: Login Screen

- 2 Enter your user name and password to login. When logging in for the first time, the default username is **administrator** and the password is **password**.

When a new session starts, you are redirected to the Momentum Web Site which displays a Menu Bar with tabs linking to the pages that you can access according to your permissions and user rights, see Figure 2-3.

The top right-hand part of the toolbar displays the username of the current user. Click on the user name work area display a drop-down list with an option to change your password and an option to log out. When you log out, Momentum remembers the current page and returns you to the same page when you next log in.

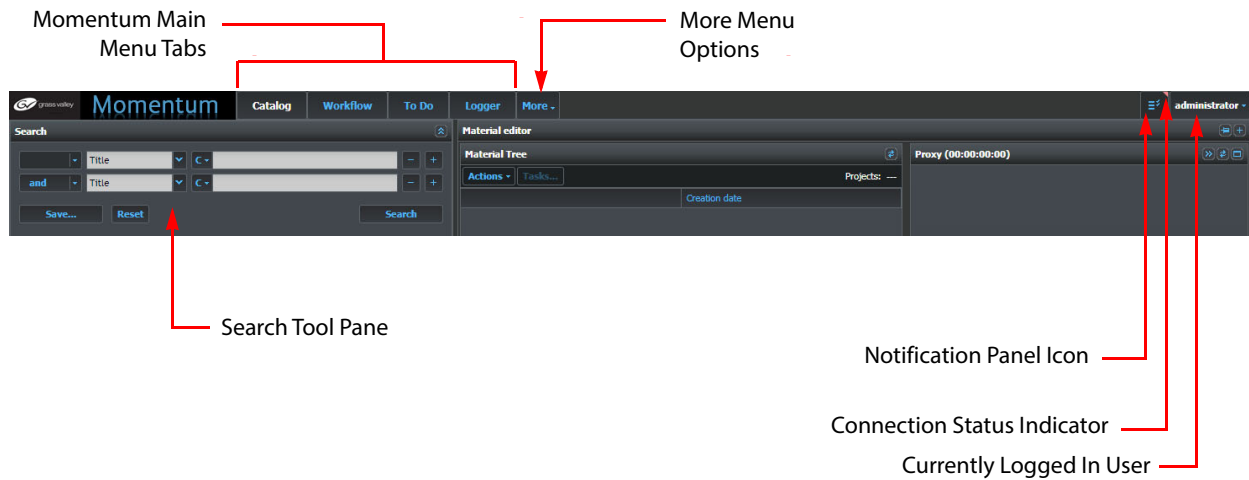


Fig. 2-3: Momentum Toolbar

## Using the Momentum Main Menu Toolbar

The Momentum main menu toolbar is displayed across the header of all Momentum screens and provides links to open the various Momentum screens, see Figure 2-4:

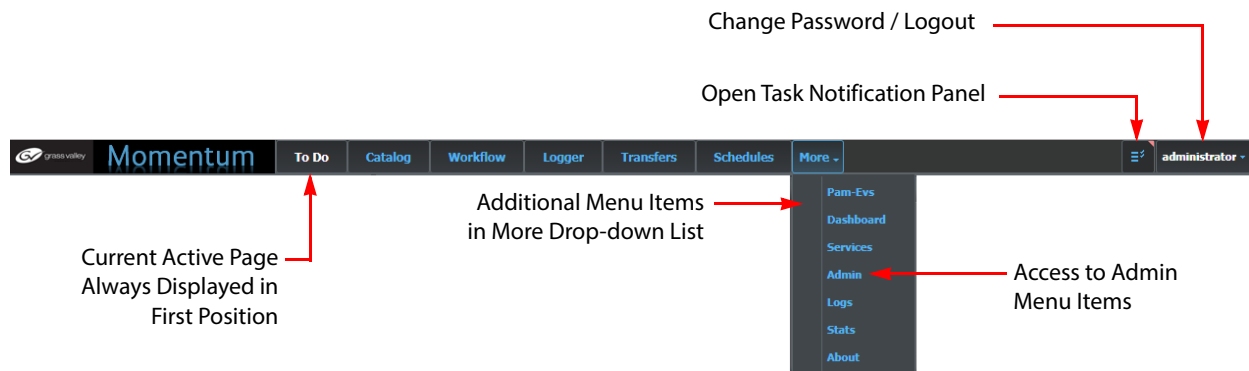


Fig. 2-4: Momentum Main Menu Toolbar

The Main Menu toolbar displays the following pages, depending on the permissions assigned to your role or configuration:

- **To Do:** Contains the list of the tasks to be performed by users. This is the default page which appears when you log in for the first time. For information on this page, see Chapter 8 *Working with User Tasks in the To Do Page*, on page 149.
- **Catalog:** Enables you to search the entire database content using metadata keywords or criteria.
- **WorkFlow:** Enables you to create workflows and monitor all the current operations.
- **Logger:** Enables you to create new segments from existing material.

- **Transfers:** Enables you to monitor the status of and manage transfer requests for material.
- **More:** Provides access to a drop-down list of additional menu items containing:
  - **Schedules:** Enables you to import, export and review Morpheus schedule files (.sch) to identify missing materials.
  - **Pam-Evs:** Enables Momentum to ingest files received from an EVS Production Asset Manager (PAM) system
  - **Dashboard:** Enables you to monitor the status of running workflow tasks.
  - **Services:** Enables you to monitor the Momentum Servers and Nodes and report on their running status.
  - **Admin:** Administrative tools page, which enables you to perform various administrative tasks on Momentum, including:
    - Defining Users and assigning roles
    - Defining metadata and metadata masks
    - Configuring attributes for search results
    - Editing metadata
    - Configuring BXF routes
    - Configuring Watchfolder templates
    - Defining custom lists
    - Managing metadata categories
    - Configuring target social media sites
    - Setting-up the virtual keyboard
    - Defining ISA mappings.
  - **Logs:** Lists the status of the overall operations performed in Momentum.
  - **Stats:** Displays statistics about resources and hardware utilization.
  - **About:** Provides information about the version and license configuration of this instance of Momentum.

To select a page, click the page tab in the toolbar. Click the **More** button to see additional pages that are not currently visible in the toolbar.

---

**Note:** The position of the page tabs changes depending on the current selected page, the tab for which opens in the left-most position at the front of the list of tabs.

---

## Viewing the Task Notification Panel


The Task Notification Panel enables you to view a list of tasks that require a manual user action before they can be progressed through a workflow. For example, a media file may require a manual quality check before being re-submitted to the automated workflow.

---

**Note:** You can only view tasks in the Task Notification Panel if you have been assigned the role: **CAN\_HAVE\_TASKS\_NOTIFICATION**.

---

Open the **Task Notification Panel** as follows:

- Click the Task Notification Panel icon at the top-right corner of the screen:  This opens the Task Notification Panel and lists all unexpired notifications showing tasks awaiting manual user interactions, see Figure 2-5:

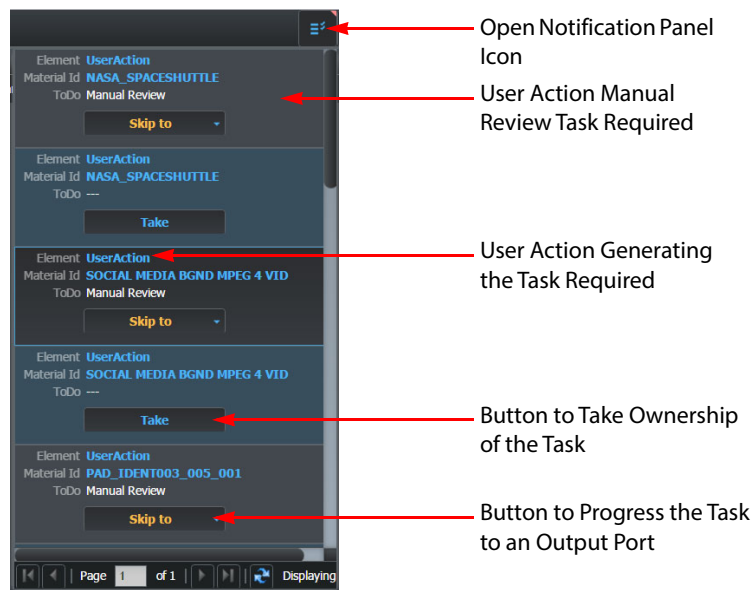
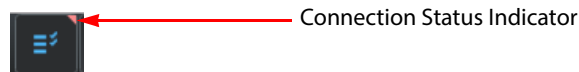


Fig. 2-5: User Action Notification Panel

You can use the Element or Material Id links to go directly to the specific User Action workflow element or material respectively. Alternatively, use the appropriate action button (Take, Skip to) either to accept the task or to skip it to the next stage of the workflow.

## Viewing the Connection Status of the Task Notification Panel

Momentum provides visual feedback to show the current connection status of the Task Notification Panel. To do so, it changes the color displayed in the top right-hand corner of the Task Notification icon located at the top right of the screen, next the name of the logged-in user:



If you hover your cursor over the icon, a tool-tip will inform you as to whether the Task Notification Panel is either:

- Connected:



- Locally disconnected - the node to router connection is down:



- Remotely disconnected - the server to router connection is down:



## Overview of the Screen Icons

The following screen icons are common to all Momentum pages:

Screen Icon(s)	Function
	Collapse or expand a screen element or pane. The arrows indicate the direction of the expand/collapse action of a pane.
	<b>Lock</b> the status of the element.
	<b>Add / Create</b> an element.
	<b>Delete</b> an element.
	<b>Edit</b> an element.
	<b>Update / refresh</b> the contents of the pane / element. Also provides an <b>Eject</b> function in a Media Player, which can eject and reload a clip.
	<b>Maximize / Reduce</b> Down the size of the player.
	Display data in a table with thumbnails.
	Display data in a table as a list, without thumbnails.
	<b>Open / Close</b> a pane or menu.
	<b>Planner</b> icon to allow the selection of a date from a calendar.
	<b>Delete</b> an element / <b>Close</b> a pane.
	<b>Open</b> a workflow page, highlighting the selected element.

## Editing Metadata Fields

Several Momentum pages enable you to modify metadata associated with material if you have the appropriate permissions see the *Configuration Guide* for more information.

When the metadata of an item of material is displayed in a Details pane, it is initially in a read-only state as shown below:

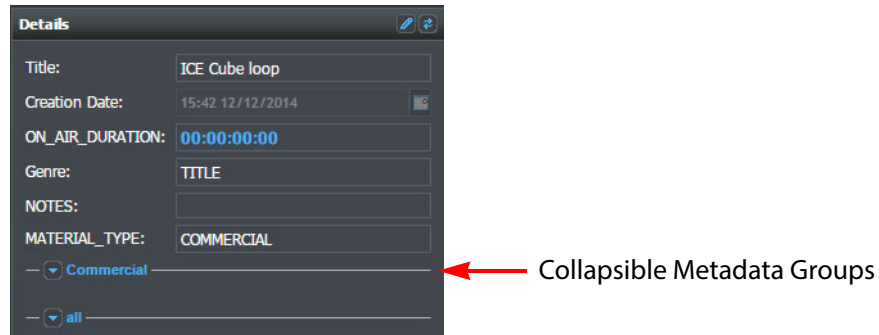



Fig. 2-6: Metadata Read-only State

To modify the metadata values:

- 1 Click the edit icon  at the top right corner of the pane. This enables the text field input for all the editable metadata listed on the pane as shown below:

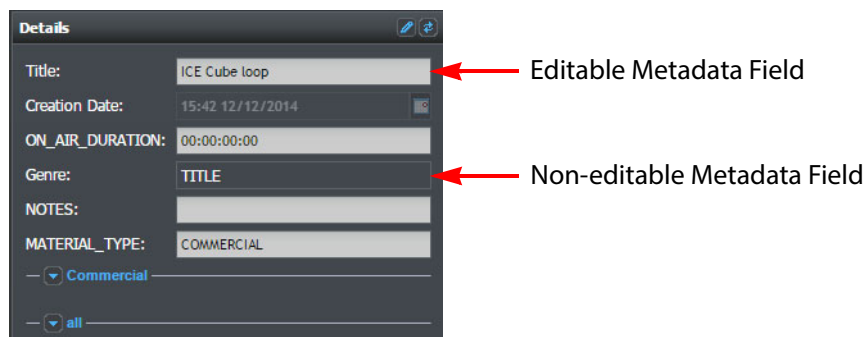



Fig. 2-7: Metadata Edit State

- 2 Enter the new values as required.
- 3 Click the edit icon  again to save the changes into the database.

If an item of metadata cannot be modified, it remains grayed out. For further information on metadata, see Chapter 5 *Working with Metadata*, on page 93.

## Working with Momentum Tables

Tables in Momentum are dynamic objects and you can decide which information appears.



Title	Creation Date	Genre
Demo for Snellshow1	11:50 12/15/2014	TIMELINE
Demo timeline	11:42 12/15/2014	TIMELINE

Fig. 2-8: Generic Table

A table is composed of a variable number of rows and columns, and can be generated automatically by the software using predefined criteria or in response to a user's query. In both cases, the first row of the table is the header of the table.

The **header** reports the names of the fields in the table. Each name is in the color blue as it is an active element. The following rows report the data of the fields described in the header.

Hovering the mouse over a row, changes its background color to a dark shading to highlight the position in the table as shown below:

Title	Creation Date	Genre
Demo for Snellshow1	11:50 12/15/2014	TIMELINE
Demo timeline	11:42 12/15/2014	TIMELINE

Fig. 2-9: Hovering the Mouse over a Table Row

Clicking on a row, selects the row itself and outlines the active row in blue.

Title	Creation Date	Genre
Demo for Snellshow1	11:50 12/15/2014	TIMELINE
Demo timeline	11:42 12/15/2014	TIMELINE

Fig. 2-10: Selecting a Row in a Table

When selected, the row becomes an active element. Selecting a row can display new data in other panes on the page and can also activate a media-player for playback. Sometimes the active state is bound to the presence of buttons in one or more cells of the table. In this case, the selected row, or the content of one or more of its cells, is the target of the available modifications.

When hovering the mouse over a header field, a new symbol appears on the right side of the field cell. Click on the triangle symbol to open a new, drop-down menu.

Title	Creation Date	Genre
Demo for Snellshow1	11:50 12/15/2014	TIMELINE
Demo timeline	11:42 12/15/2014	TIMELINE

Fig. 2-11: Hovering the Mouse over a Field in the Table Header

This menu contains two options which enable you to change the sort order of the column data between ascending or descending values:

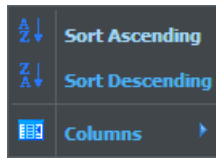


Fig. 2-12: Table Header First Level Menu

The **Columns** option displays a second level menu as shown in the example below:

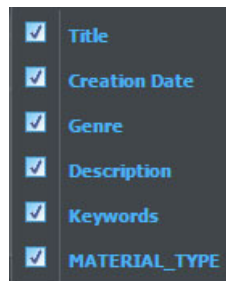


Fig. 2-13: Table Header Second Level Menu

This menu lists all the field names available for inclusion as columns of the table. By default, all fields appear but you can choose to hide any columns that are not required by unchecking the appropriate checkbox(es).

Clicking on a header cell displays a shortcut to change the sort order of the data in the related column. In this case, the direction of the triangle next to the field name indicates the sort type (either ascending or descending).

Title	Creation Date ▲	Genre
Demo timeline	11:42 12/15/2014	TIMELINE
Demo for Snellshow1	11:50 12/15/2014	TIMELINE

Fig. 2-14: Selecting a Field in a Table

---

**Note:** The **Click & Drag** action on an column header enables you to drag the related column to a different position in the table.

---

## Save Pending

Whenever **an asterisk (\*)** is displayed near the title in the heading of a pane, it means that the data in the pane was modified but the modified version is still unsaved.

As a general rule, to avoid the loss of data, if a pane is in a save-pending status and you activate a different pane or try to change page, a pane opens to warn you that data can be lost if a save action is not performed.

## Media Players

Some of the Momentum pages include a Media Player, which you can use to review the material files as shown below:

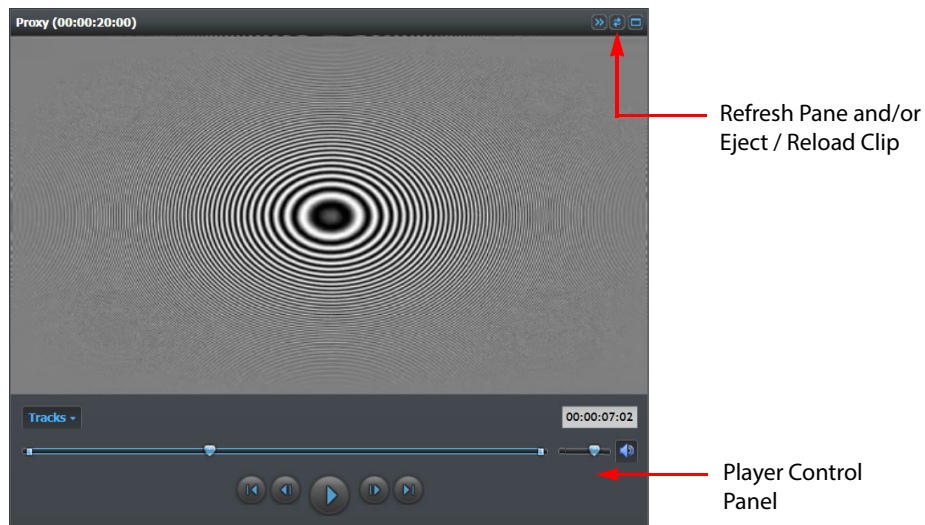



Fig. 2-15: Media Player Pane

The Momentum Player Controller automatically selects the appropriate Player for the selected Media Asset.

**Note:** If the Player cannot play-back the selected material (for example, an auxiliary file) all control buttons and the **Tracks** menu are disabled.

The header reports the name of the material selected and its duration in **hh:mm:ss:ff** format.

At the right side of the header is the icon  which maximizes the size of the player on the page (this is not available on all the media players).

The icon  collapses the player on the page (this is not available on all media players).

On the left side of the player is the **Tracks** button. Click this button to display the following menu:

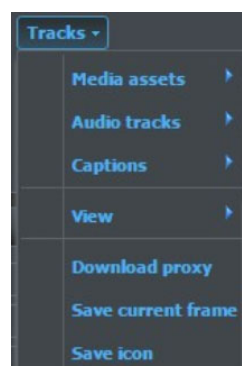


Fig. 2-16: The Player Tracks Menu

The first part of the Tracks menu enables you to select which elements, related to the selected material, are available for the playback. The options are: **Media assets**, **Audio tracks** or **Captions**. You can expand each of these options to select any elements of that

kind related to the selected material. The **None** option in the **Captions** menu enables you to unload subtitle contents to prevent a forced, continuous display in the Player, making it possible to view only the video content after visualizing the subtitles.

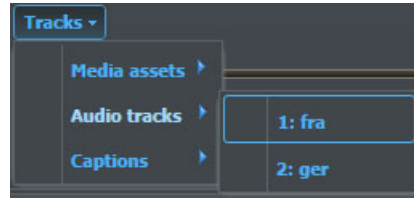


Fig. 2-17: The Tracks Menu, Sub-menu Audio Tracks Expanded

The **View** section of the Tracks menu displays a list of all media player controllers currently available to Momentum, however, if the selected media asset cannot be played by a specific PlayerController, the corresponding item cannot be selected in the View menu. For example, you might select either the standard Proxy Player, the GoPlayer or the ImagePlayer, if available. The GoPlayer is an optional integration of the Grass Valley Go! Media Player running in a Momentum panel.

For more information, see the section [Using the Tracks Menu to Change the Media Player Controller](#), on page 142.

Using the Tracks menu, you can select and play-back different instances of a Title, or any of the multiple audio tracks or caption files available.

The final part of the Tracks menu enables you to interact with the content of the player, for example you can download a proxy file, save the current frame or save an icon. The available options are:

- Download proxy

---

**Note:** The Proxy Actions are available only if you have the required permissions.

---

- Save current frame
- Save icon.

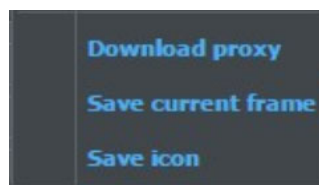


Fig. 2-18: The Tracks Menu, Detail of Proxy Actions Section

Use the **Download proxy** option to save the proxy file in the default browser's download folder. If an audio-only asset is selected, the **Download proxy** option will download an MP3 format file.

Use the **Save current frame** option to save a picture of the current content of the player, using the maximum resolution available from the HQ version of the material, and store it in a folder specified in the section `<ThumbFullFramePath>` of the configuration file `MantricsServer.xml`.

---

**Note:** The **Save current frame** option is disabled if the media asset loaded in the player is an AUDIO asset.

---

Use the **Save icon** option to save the current content of the player as an icon or thumbnail with a filename reflecting the timecode at that point, and store it in a folder specified in the section **<ThumbPath>** of the configuration file `MantricsServer.xml`.

---

**Note:** The **Save icon** option is disabled if the media asset loaded in the player is an AUDIO asset.

---

A field above the volume control reports the current timecode. This field is not editable but it can be selected and its content highlighted and copied for pasting into other fields.

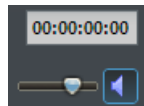



Fig. 2-19: Media Player Current Timecode and Volume Control

If necessary, you can choose to reload a clip into the Player by clicking the refresh icon  which first ejects the clip and then reloads it in the preview server. Momentum also issues an eject command when changing the displayed clip and after completing the current task.

An optional **GoPlayer**, which integrates Momentum with the Go! player, includes two audio meters (left and right) just beneath the volume control, which are available if the material includes one or more audio tracks. This audio metering component of the QPlayer splits the audio signal into two channels (left and right) and renders the loudness of each channel graphically. This feature can help to identify whether an audio track is missing.

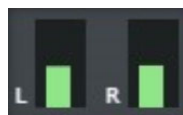



Fig. 2-20: Left and Right Audio Meters

Regulate the volume using the slider or by clicking the Sound icon, to switch the player between Active Sound  and Mute  status.

You can drag the playback head along the timeline slider to display different time segments of the selected media file. The playback controls are located below the timeline slider as shown below:

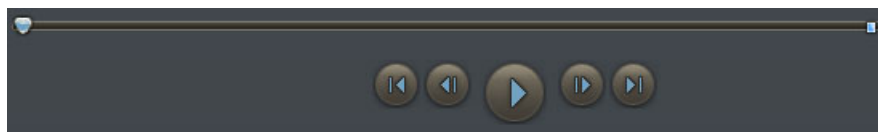







Fig. 2-21: The Basic Media Player Playback Control

The Media Player controls have the following functions

Control	Function
	Go to start.
	Go to previous frame.
	Play / pause.
	Go to next frame.
	Go to end.

Move the cursor to a point on the timeline of the player to display a thumbnail and timecode for the frame, as shown in Figure 2-22:



Figure 2-22: Timeline Frame Thumbnail

On some pages, the media players contain additional functionality to achieve specific goals and the control panel of the player may contain additional buttons and icons. These specific features are described in the documentation for the relevant page.

---

**Note:** The player does not add black content at the edges of the frame, if black is seen then it is part of the clip, or frame, displayed.

---

## Using the Search Tool

Several pages of the Momentum system enable you to review or edit material. To help you select the required material, a **Search** tool is provided. The Search Tool enables you to build flexible, complex queries to search for, and match, material in the Momentum database.

### Overview of the Search Tool

The Momentum Search tool pane appears as follows:

The screenshot shows the Search Tool interface with the following components and annotations:

- Query area:** Located at the top, it contains a search bar with a dropdown menu set to 'Title' and a search button. Below it, there is a logical operator dropdown set to 'and', a field for 'Ingest date', a dropdown set to 'before', and a date field '22/02'. There are also 'Save...', 'Reset', and 'Search' buttons.
- Saved searches area:** Below the query area, it shows a list of saved searches: 'RC Test', 'RC Weather', 'RDFCI', 'Title', and 'Today'.
- Search result options:** Below the saved searches, there are 'Select' and 'Actions' dropdown menus.
- Search results display area (Details):** A table displaying search results with columns: Title, Creation, Genre, Description, Keywords, Created, and ISDROFF. The table contains 24 rows of results.
- Navigation bar:** At the bottom, it shows 'Page 1 of 1' and 'Displaying 1 - 24 of 24'.

Fig. 2-23: Search Tool Components - Details View

The Search tool includes the following functional areas:

- **Query area** - where the search queries are built and managed. The first field is a logical operator field, which, in a query composed of only one line, is inactive. From the second row onward this field is activated and enables you to toggle or select one of the relational operators from the menu shown in Figure 2-24.

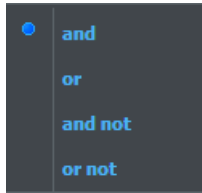


Fig. 2-24: Logical Operator Menu

- **Saved searches area:** Displays previously saved searches for use.
- **Search result options:** Provides Select and Actions menus for use on the search results together with buttons to switch between Thumbnail and Detail views.
- **Search results display area:** Displays the results matching the search query conditions.
- **Navigation bar:** For browsing through and refreshing the search results
- **Thumbnail images:** Make it easier to identify material.
- **Checkboxes:** Select and activate the material in the search results for further actions.

The Search Results menu buttons, **Select** and **Actions** enable you to select material in your search results and submit that material to further tasks as follows:

- The **Select** menu provides a short-cut method for selecting or de-selecting all items in the search results.
- The **Actions** menu enables you to perform further tasks on your selected search results;

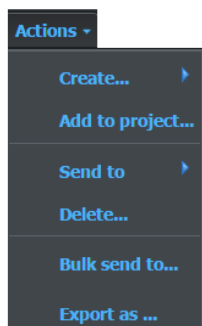


Fig. 2-25: Actions Menu

You can choose from the following options:

- **Create...:** Create a Title or Project and include in the search results area.

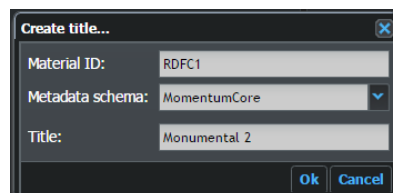


Fig. 2-26: Actions Menu - Create Title Dialog



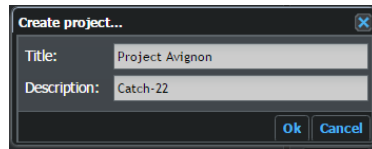


Fig. 2-27: Actions Menu - Create Project Dialog

- **Add to project...:** Add the selected item to an existing Project.

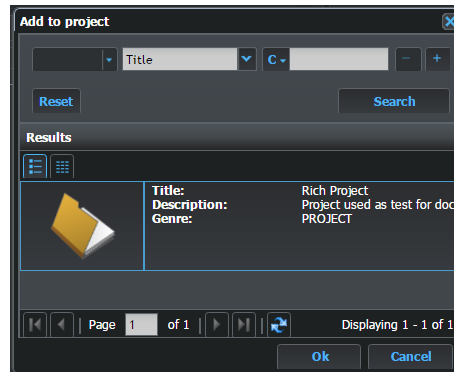


Fig. 2-28: Actions Menu - Add to Project Pane

- **Send to:** Lists all **Send to** workflow elements available in the existing workflows. Selecting an element enables the item to enter a workflow using the **Send To** element as a starting point.

---

**Note:** To use the **Send to** action, a user must be assigned either of the roles: CAN\_SEND\_TO\_WORKFLOW or CAN\_SENDDTO\_ALL\_ELEMENTS.

---

- **Delete...:** Removes the selected material from the system. It deletes everything related to the selected material including files and data structure.
- **Bulk send to...:** Upload the Material IDs of all search results to a file and select a target workflow to which to send the file.

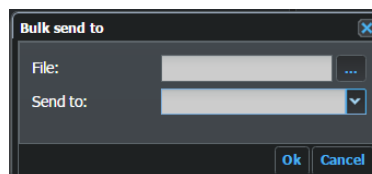


Fig. 2-29: Actions Menu - Bulk send to Dialog

- **Export as...:** Export the selected items to file. You are prompted for the output file name and start and end pages of the search results to include. You can also select the desired export template using the **format** drop-down menu.

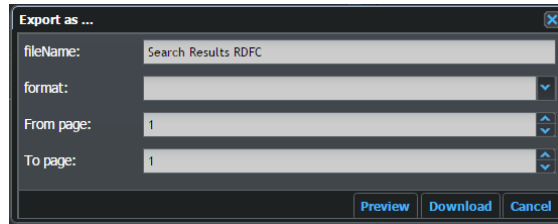




Fig. 2-30: Actions Menu - Export as Dialog

### Using Thumbnails in the Results Table

The first button at the top of the Result area enables you to manage the thumbnails in the results table. To activate thumbnail images, click . To deactivate the thumbnails and switch to the list display layout, click .

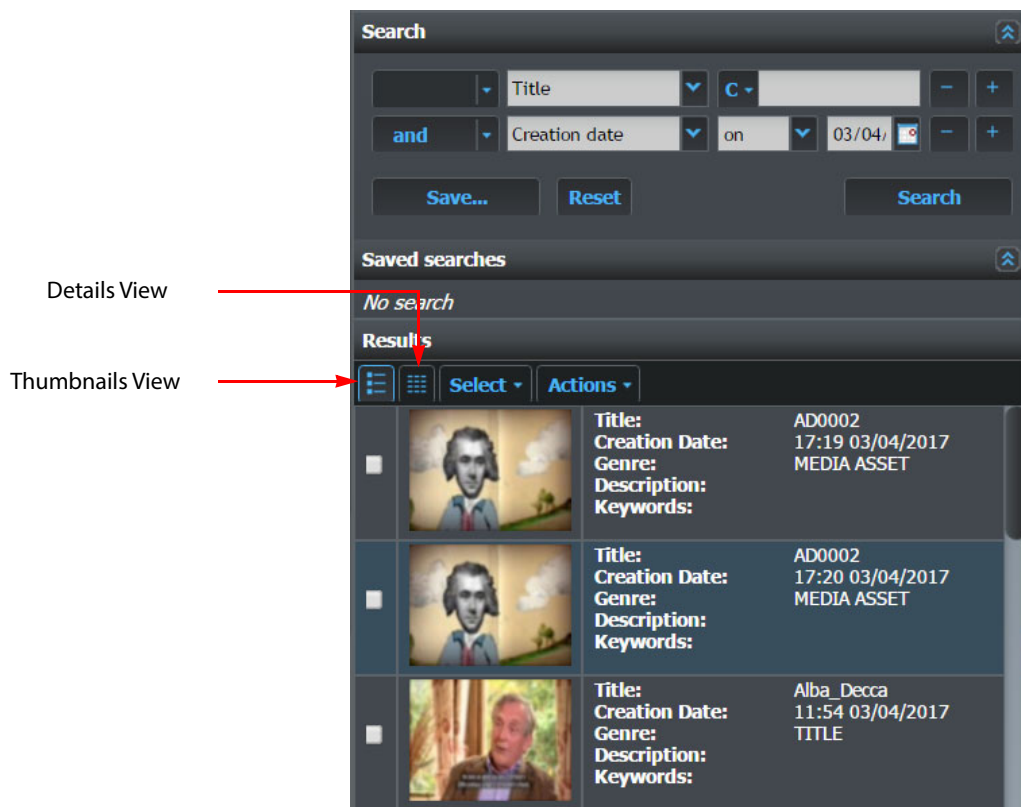
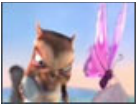
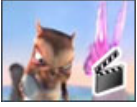








Fig. 2-31: Search Tool Components - Thumbnails View

The following thumbnail icons can be displayed:

Thumbnail	Description
	Titles and Media assets are identified by a thumbnail image. A black rectangle means that a black frame was selected as thumbnail.
	Key segments are identified by a thumbnail with a small icon in the right bottom corner.
	Titles, Key segment and Media assets which lack thumbnails are identified by an icon with a question mark. This means that the creation of thumbnails is not included in the workflow or their creation failed.
	Identifies audio tracks.
	Identifies Edit Decision List (EDL) timelines.
	Identifies albums.
	Identifies projects.
	Identifies documents. Document files are any files attached to a selected material.

### Defining a Search Query

You can use the fields in the Search Query area to define precise queries to retrieve target material by matching metadata to a text string or regular expression.

The **Search** section enables you to define filter criteria to apply to the query as shown in the example below:

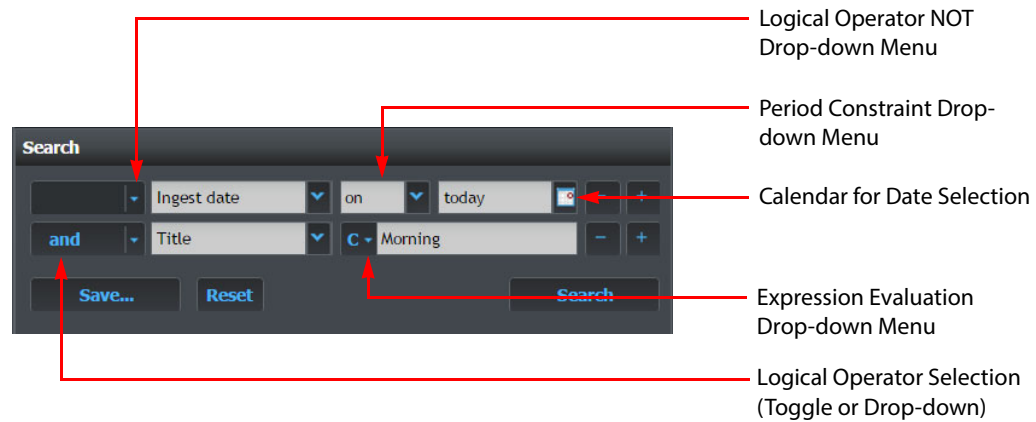


Fig. 2-32: Defining Filter Criteria in the Search Panel

The first field of the first Search row provides a drop-down menu that enables you to select either a blank string to leave the field empty (default) or a **NOT** logical operator.

Click the expression evaluation drop-down (see Figure 2-32) to display the options menu for the matching expression.

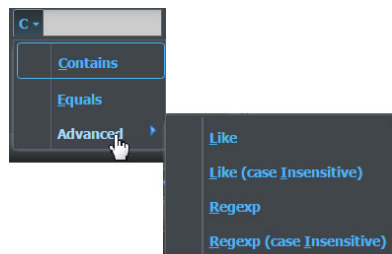




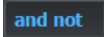
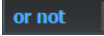



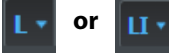
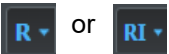
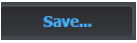

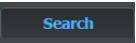


Fig. 2-33: Expression Evaluation Advanced Options

The buttons in the Search panel have the following functions:

Search Button	Function
	Enables you to add more criteria (rows) to the query.
	Enables you to delete criteria (rows) from the query.
	Toggles the logical operator used to evaluate the query rows between: <b>and</b> , <b>or</b> , <b>and not</b> , <b>or not</b> . When set to <b>and</b> (default), the expression evaluates both or all rows inclusively. <i>All</i> of the filter values in the current and previous row(s) must match for an object to be included in the search results. You can also select from the drop-down menu.

Search Button	Function
	<p>Toggles the logical operator used to evaluate the query rows between: <b>and, or, and not, or not</b></p> <p>When set to <b>or</b>, the expression evaluates either row or all rows exclusively. Only <i>one</i> of the filter values in the current and previous row(s) must match for an object to be included in the search results. You can also select from the drop-down menu.</p>
	<p>Toggles the logical operator used to evaluate the query rows between: <b>and, or, and not, or not</b></p> <p>When set to <b>and not</b>, the expression evaluates both or all rows inclusively, but uses the negative value of the current row to exclude matches. The filter value of the previous row(s) and the negative filter value of the current row must all match for an object to be included in the search results. You can also select from the drop-down menu.</p>
	<p>Toggles the logical operator used to evaluate the query rows between: <b>and, or, and not, or not</b></p> <p>When set to <b>or not</b>, the expression evaluates either row or rows exclusively but uses the negative value of the current row to exclude matches. Only one of the filter values in the current and previous row(s) must match for an object to be included in the search results. You can also select from the drop-down menu.</p>
	<p>Enables you to define a filter string that the matching expression should <b>Contain</b>.</p>
	<p>Enables you to define a filter string or value that the matching expression should be <b>Equal</b> to (or the same as.) You can also select a value equal to <b>Is Null</b> to check whether an item of metadata is null or empty.</p>
	<p>Enables you to define a filter string or value that the matching expression <b>Is</b> either <b>Blank</b> (Null) or <b>Not Blank</b> (Not Null).</p>
	<p>Advanced Search option. Enables you to define a filter string including the wildcard operators ? and/or * that the matching expression should be <b>Like</b>. The string can be either case-sensitive (<b>L</b>) or case-insensitive (<b>LI</b>) respectively.</p>
	<p>Advanced Search option. Enables you to define a filter comprising a Regular Expression. The Regular Expression can be either case-sensitive (<b>R</b>) or case-insensitive (<b>RI</b>) respectively. These search tools are particularly useful for long text fields, for example, when searching a CLOB (character large object) like a dope sheet.</p>
	<p>Save the search query in the Saved Searches section to use later as required.</p>

Search Button	Function
	Reset the search filter settings to undo the criteria settings and start again.
	Run the Search query.

## Logging Off from Momentum

To log off from Momentum:

- 1 Go to the top right-hand part of the toolbar where Momentum displays your user name.
- 2 Click your user name to open a drop-down menu:

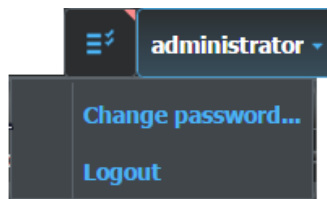


Fig. 2-34: Logout and Change Password Menu

- 3 Select **Logout** and you will be returned immediately to the Login dialog.

If you attempt to logout while you still have **taken** processing tasks assigned to your user ID from any User Action workflow elements, Momentum displays the following screen requesting you to confirm your logout:

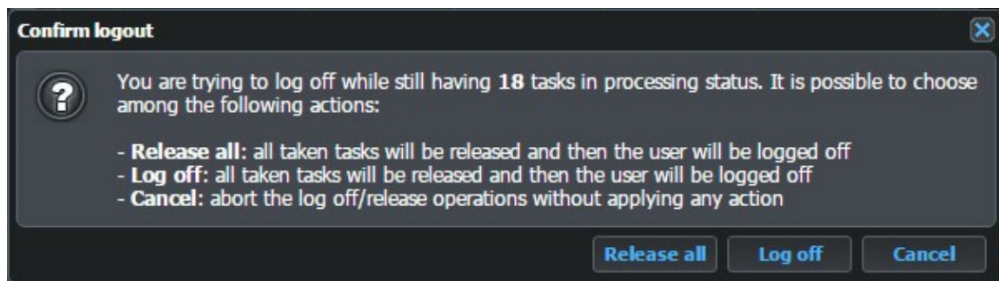


Fig. 2-35: Logout Confirmation

At this point, you can choose one of the following actions:

- **Release all:** Releases all taken tasks before logging you off enabling other active users to take the tasks.
- **Log off:** Logs you off without releasing the taken tasks, however, this will prevent any taken tasks assigned to your User ID from being taken and progressed by other users.  
Another user with the correct permissions can release tasks taken and locked by another user, by selecting the **Actions > Release**

- **Cancel:** menu option, as described in Section 3.6.2 Performing Task Actions on page 53.  
Cancels the log off / release operations without applying any action.





# 3

## Creating a Workflow

### Overview of the Workflow Page

The Workflow page is the heart of Momentum where you can create or modify workflows to reflect your business processes. You can save different workflows as a series of pages and organize pages into Groups. In addition, operators can use the Workflow page to monitor each scheduled or running workflow process.

To access the Workflow page, click the **Workflow** button in the toolbar. The Workflow page is displayed as shown below:

## Creating a Workflow Using the Pages Pane

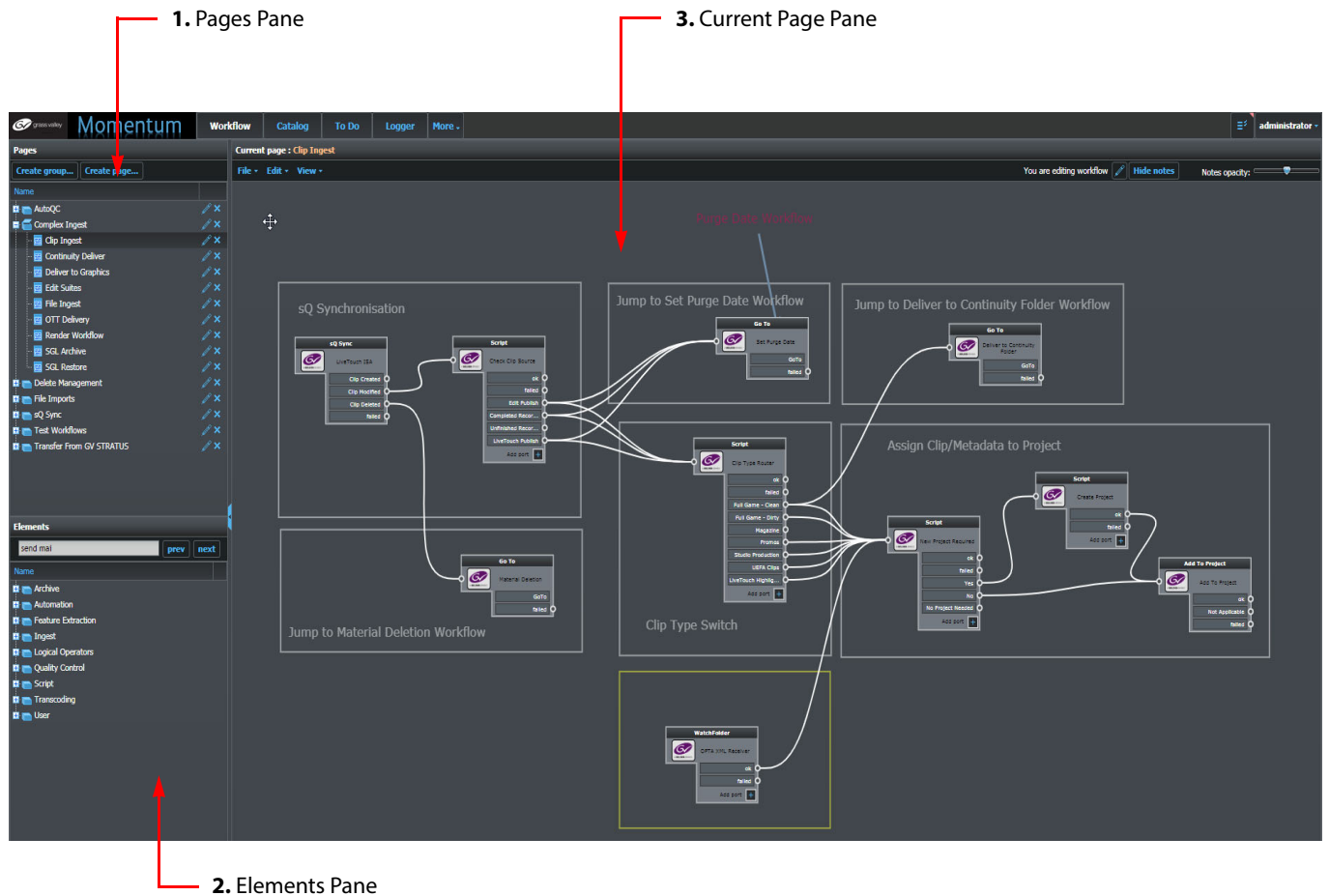


Fig. 3-36: Workflow Page

The Workflow page includes the following panes, as shown in Figure 3-36:

- **Pages pane (1):** Used to organize pages, each with a different workflow, into groups in order to better organize the overall workflow.
- **Elements pane (2):** Lists the workflow elements available to your configuration, ready for use in a workflow.
- **Current page pane (3):** Used to define and modify workflows, and to monitor workflow tasks.

## Using the Pages Pane

The **Pages** pane lists all the workflow pages which exist in the database. The pages can be organized into groups and you can manage both groups and pages from this pane.

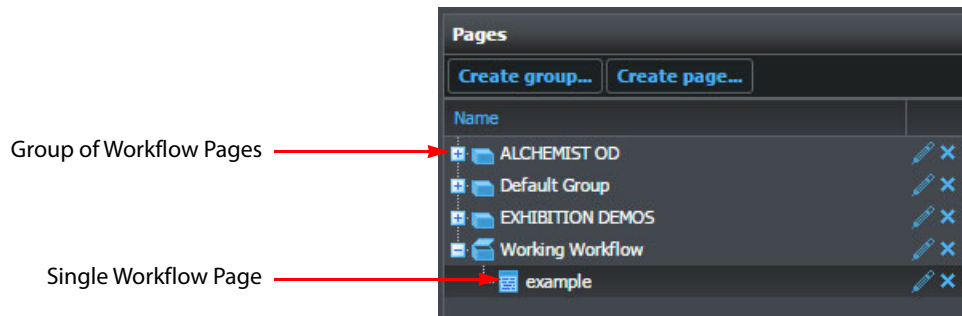


Fig. 3-37: Pages Pane

The groups and pages are listed in alphabetical order. If desired, you can move pages between groups by simply dragging and dropping.

## Creating a New Workflow Page Group

To create a new group:

- 1 Click the **Create group...** button. The following dialog box is displayed:

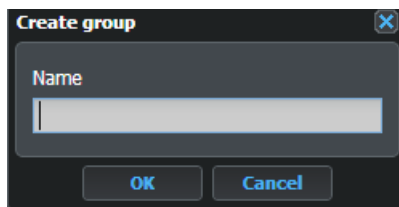


Fig. 3-38: Create Group Pane

- 2 Enter the name of the new group.
- 3 Click the **OK** button to confirm.

The new group is now listed in the tree view of the Pages pane.

## Creating a New Workflow Page

To create a new workflow page:

- 1 Click the **Create page...** button. The following dialog box is displayed:

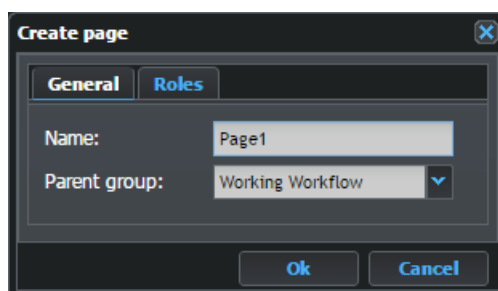



Fig. 3-39: Create Page Pane

- 2 Enter the name of the new page.
- 3 Select a group from the list of existing groups.
- 4 Click the **Roles** tab.
- 5 Click the **Add role** button to in order to restrict the editing of the workflow page to specific roles.
- 6 Select one or more roles from the list.

A role that has not been granted the editing privileges for a particular page, can access this specific page in a **Read Only mode**, and cannot add, remove or copy elements or branches in the workflow.

When the role list in the Edit pane of a page is empty (no roles are listed), it means that all roles can edit this page. To remove a role from the list, click on the  icon next to its name in the Edit pane.

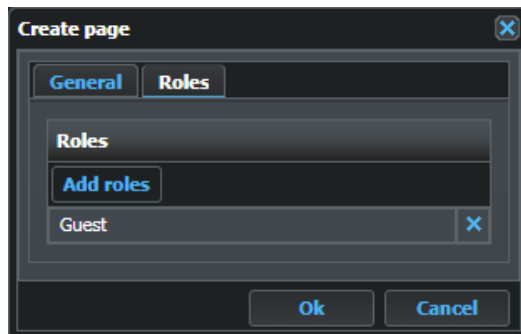




Fig. 3-40: Create Page Dialog - Adding Roles

- 7 Click **Ok** to confirm.  
The new page is now listed in the tree view of the Pages pane as a child of the selected group.

## Editing Pages or Groups

In the tree view of the Pages pane, the  icon enables you to edit the related page or group. You can modify the name of the group or page and also move a page to a different group.

## Deleting Pages or Groups

In the tree view of the Pages pane, the  icon enables you to delete the related page or group. In both cases (deleting a page or a group), confirmation is required.

---

**Note:** When deleting a group, all associated child pages are also deleted.

---

## Restricting the Ability to Edit a Workflow Page to Specific Roles

While **creating or editing** a page, you can define restrictions that allow only specific roles to access the editing functions of the selected page.

The editing options of a page are not only those related to the Pages pane but also those related to the Work Area. A role that is not granted permission to edit a particular page, can access this specific page in a **Read Only mode**, and cannot add, remove or copy elements or branches of the workflow.

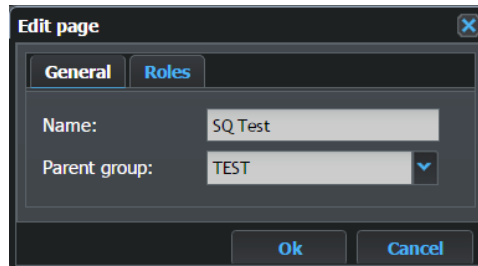


Fig. 3-41: Edit Page Pane

Open the **Roles** tab, to list all roles permitted to edit the selected page. To add another role to this list:

- 1 Click the **Add roles** button in the Edit page or while creating a page.
- 2 Select one or more roles from the Add roles pane that opens (use [ **Ctrl** ] [ **Click** ] to make multiple selections).

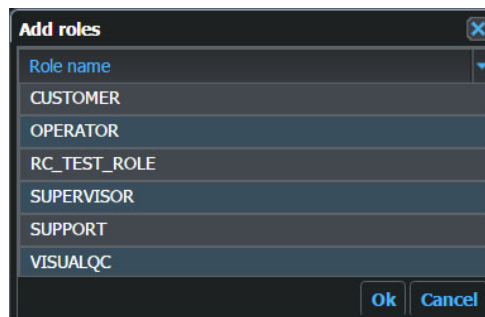


Fig. 3-42: Add Roles Pane

- 3 Click **Ok** to confirm your selection or **Cancel** to abort the operation.

To remove a role from the list, click the  icon next its name in the Edit pane.

---

**Note:** When the role list in the Edit pane of a page is empty (no roles are listed), all roles can edit the page.

---

## Using the Elements Pane

The **Elements** pane is the main toolbox for building a new workflow. The tree view of the pane contains all of the workflow elements, in categories, currently available in the database that are available for use in a workflow.

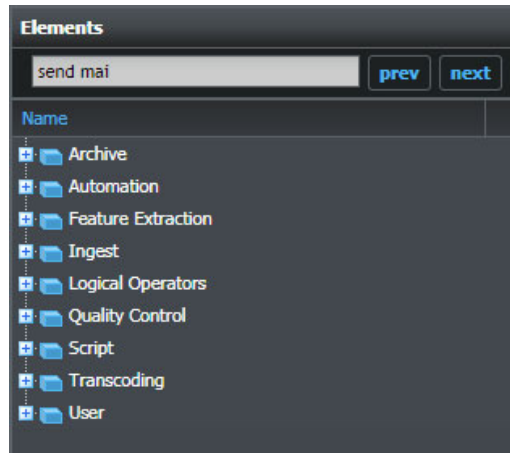


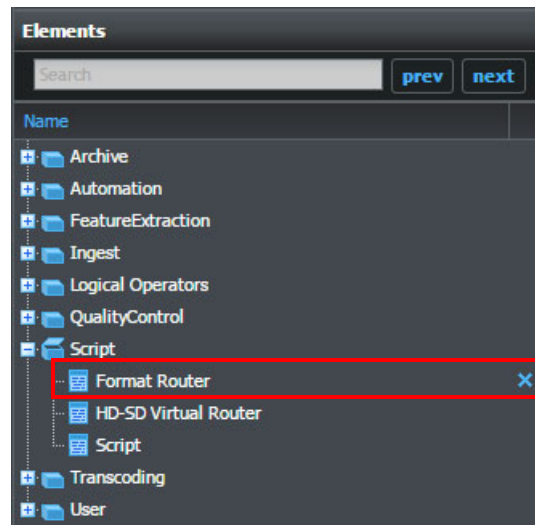
Fig. 3-43: Elements Pane Showing Top Level Categories

The following workflow categories are available:

- **Archive:** Contains workflow elements to archive and restore material.
- **Automation:** Contains workflow elements to manage and manipulate material and metadata.
- **Feature Extraction:** Contains a workflow element to detect and extract information from the material in the database.
- **Ingest:** Contains workflow elements to ingest material into the workflow for further processing.
- **Logical Operators:** Contains workflow elements to perform logical operations on material, for example, requiring all inputs to be complete before enabling the workflow to continue.
- **Quality Control:** Contains workflow elements to check the material for unwanted frames and defects.
- **Script:** Contains workflow elements to create rules and customized functions for the workflow.
- **Transcoding:** Contains workflow elements to transcode files into different formats.
- **User:** Contains a workflow element to set a role that allows a user or group of users to complete workflow tasks manually.


A text search field enables you to search the tree for a specific matching workflow element. The **prev** and **next** buttons enable you to skip to the previous or following element in the tree matching the search string.

Some of the elements listed in the tree view may also have a delete icon as shown in Figure 3-44:



3-44: Elements Pane

These are **customized workflow elements** created by users with specific parameters and saved as specialized workflow elements.

When no longer required, click the delete icon  to remove customized elements. See Section [Creating a Workflow Element from a Customized Element](#) on page 49 for more details.

## Using the Current Page Pane

The **Current Page** pane is where Momentum displays the workflow of the page selected in the Pages pane. Here you can create, add or modify new branches or elements and inspect and modify parameters for each element. This pane also enables you to create links between elements to create your workflows.

Creating a Workflow  
Using the Workflow/Notes Menus

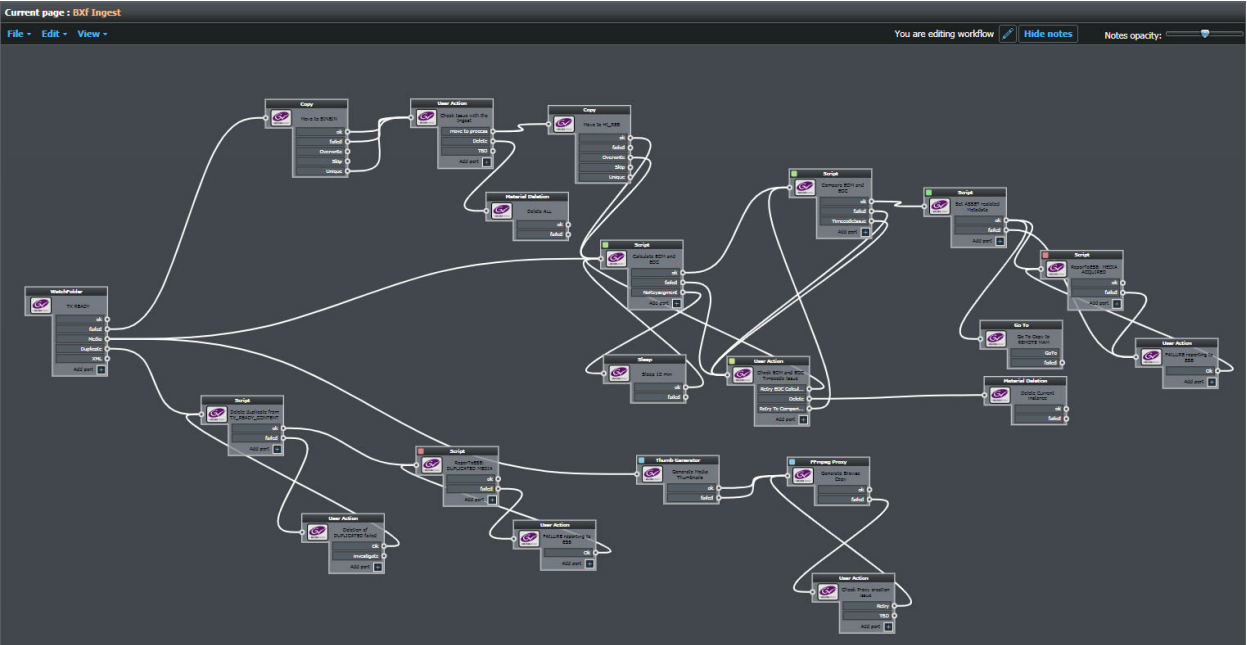


Fig. 3-45: Current Page Pane

In the top left corner, the pane reports the name of the currently selected page in orange text. Below the header, a menu contains the following workflow options by default:

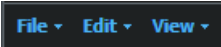


Fig. 3-46: Current Page - Workflow Menu Options

Using the Workflow/Notes Menus

toggling Between the Workflow and Notes Menus

The top-right corner of the toolbar has an **Edit toggle** button that activates two different modes of working in the Current Page:

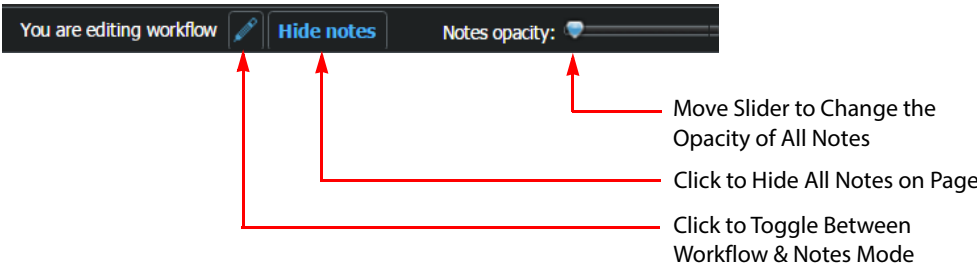


Fig. 3-47: Current Page Toolbar




Click the **Edit** icon  to toggle between the two editing modes: **Edit workflow** and **Edit notes**, the text of the toggle button changes, as shown in Figure 3-48.



Fig. 3-48: Workflow and Notes Edit Toggle Modes

In addition, a further toggle button **Show notes/Hide notes**, enables you to display or hide the content of the Notes layer. While the Notes are visible, the **Notes opacity** slider is available to set the transparency of the entire Notes layer.

By default, the Workflow page opens in **Edit workflow** mode.

## Using the Workflow File Menu

The workflow **File** menu enables you to import a workflow as a new page or to export a page in one of the several formats available as shown in Figure 3-49:

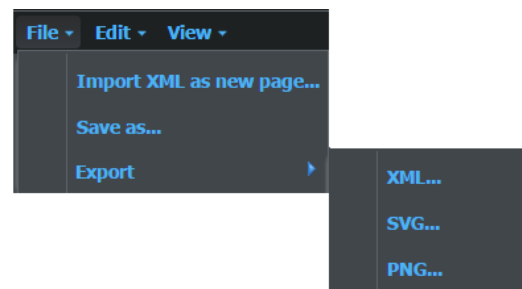


Fig. 3-49: Workflow File Menu

## Importing XML as a New Workflow Page

To load a previously saved page in XML format:

- 1 Click **File** in the toolbar.
- 2 Select **Import XML as new page...**

The **Import** dialog opens as shown in Figure 3-50:

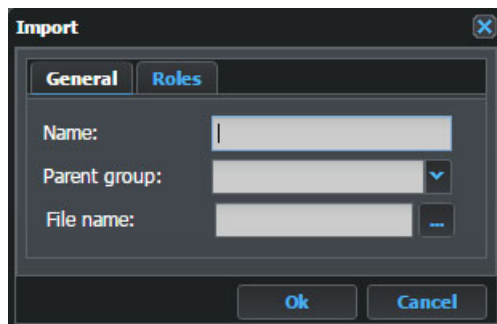


Fig. 3-50: Import Page Dialog

- 3 Enter a name for the new workflow page into the **Name** field.

- 4 Select a parent group to contain the new workflow page from the **Parent group** drop-down menu.
- 5 Browse to, or enter, the name of the XML file to import in the **File name** field.
- 6 Click the **Ok** button to import the file.

### Saving a Workflow Page

To save a workflow page in XML format:

- 1 Click **File** in the toolbar and select the option **Save As.....**
- 2 Enter a name, the parent group and permitted roles for the new file.
- 3 Click **Save**.

### Exporting a Workflow Page

You can export a workflow page in the following formats:

- As an XML file to allow a later restore of the page or for moving a workflow to another system.
- As an SVG (scalable vector graphic) object, for printing or displaying on resolution independent devices.
- As a PNG (portable network graphic) file to create customizable images for reports.

To export a workflow page:

- 1 Click **File** in the toolbar.
- 2 Open the **Export** menu.
- 3 Select the file format from the list. A new dialog opens for the selected format.

For XML Export:

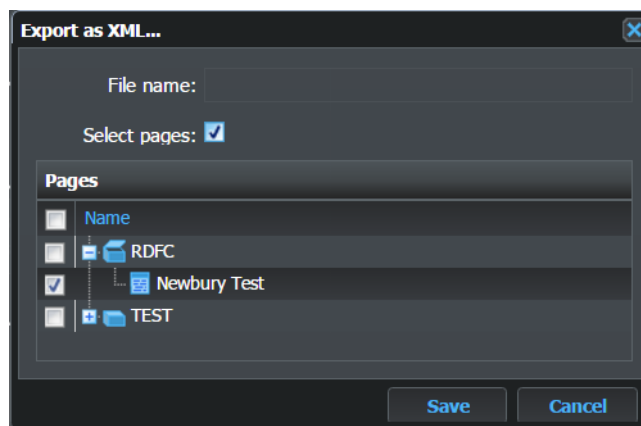


Fig. 3-51: XML Export of Workflow

By default, Momentum provides the name of the current active workflow page as the file name and appends the **.XML** file extension. If necessary, you can change the file name as required, without an extension.

If you want to export multiple workflow pages, check the **Select pages** checkbox to open the **Pages** tree. Check any pages to include in the export, then click **Save**.

Momentum exports the XML format file to the Downloads folder of your browser, by default.

**Note:** Export in XML format creates a file that can be imported back into the same system or moved to a different but compatible system, storing all the data and parameters of the elements of the selected workflow. The Tasks associated with a workflow are not stored in this way.

### For SVG Export:

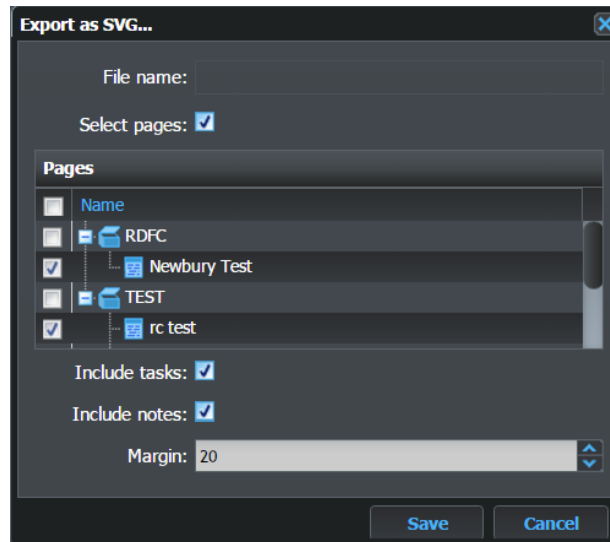


Fig. 3-52: SVG Export

By default, Momentum provides the name of the current active workflow page as the file name and appends the **.SVG** file extension. If necessary, you can change the file name as required, without an extension.

If you want to export multiple workflow pages, check the **Select pages** checkbox to open the **Pages** tree. Check any pages to include in the export.

Check the **Include tasks** checkbox to include the workflow **Tasks** in the exported file.

Check the **Include notes** checkbox to include all **Notes** in the exported file.

You can also set a blank **Margin** for the final picture, in pixels, then click **Save**.

Momentum exports the SVG format file to the Downloads folder of your browser, by default.

### For PNG Export:

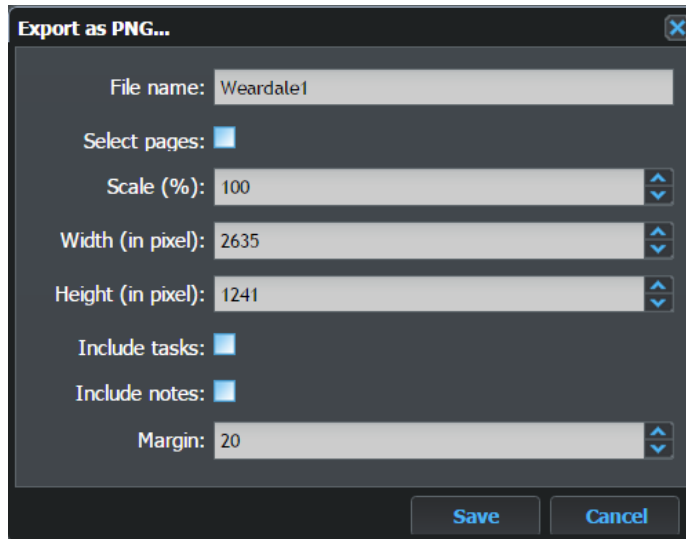


Fig. 3-53: PNG Export

By default, Momentum provides the name of the current active workflow page as the file name and appends the **.PNG** file extension. If necessary, you can change the file name as required, without an extension.

If you want to export multiple workflow pages, check the **Select pages** checkbox to open the **Pages** tree. Check any pages to include in the export.

In the **Scale (%)** field, enter a suitable value to size the resulting picture. As you change the scale factor, Momentum automatically adjusts the Width and Height settings accordingly.

**Width (in pixel)** defines the final width of the output picture. The Height and Scale settings are linked to the width.

**Height (in pixel)** defines the final height of the output picture. The Width and Scale values are linked to the height.

Check the **Include tasks** checkbox to include the workflow **Tasks** in the exported file.

Check the **Include notes** checkbox to include all **Notes** in the exported file.

You can also set a blank **Margin** for the final picture, in pixels, then click **Save**.

Momentum exports the PNG format file to the Downloads folder of your browser by default.

## Using the Workflow Edit Menu

The workflow **Edit** menu enables you to modify a workflow page using standard editing tools for copying/cutting and pasting elements, or stepping back from an action using the undo function.

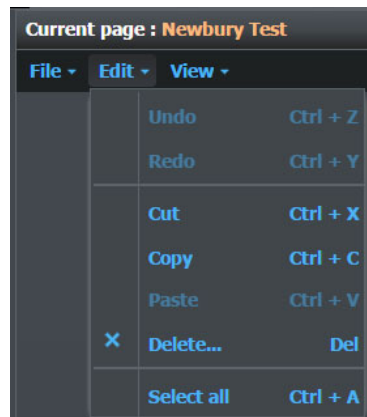


Fig. 3-54: Workflow Edit Menu

### Canceling a Modification to a Workflow Page

You can cancel unwanted modifications (like moving elements, or pasting an element) on a workflow page using the **Undo** option of the Edit menu.

To undo a change:

- 1 Select **Edit** from the toolbar.
- 2 Click the **Undo** option of the Edit menu, or use the **[ Ctrl ] [ Z ]** shortcut.

### Reapplying an Undo

If you need to reapply an Undo action, use the Redo option as follows:

- 1 Select **Edit** from the toolbar.
- 2 Click the **Redo** option of the Edit menu, or use the **[ Ctrl ] [ Y ]** shortcut.

### Cutting Elements

If an element needs to move to a new location, use the Cut option as follows:

- 1 Select the elements to cut.
- 2 Select **Edit** from the toolbar.
- 3 Select the **Cut** option from the Edit menu, or use the **[ Ctrl ] [ X ]** shortcut.

Now the element can be pasted where it is needed.

### Pasting Elements

After a cut or a copy action, elements can be repositioned by pasting them in a new location as follows:

- 1 Select **Edit** from the toolbar.
- 2 Select the **Paste** option from the Edit menu, or use the **[ Ctrl ] [ V ]** shortcut.

## Deleting Elements

Elements on the Work Area can be removed using the **Delete** option on the **Edit** menu as follows:

- 1 Select the elements to delete.
- 2 Select **Edit** from the toolbar.
- 3 Select the **Delete** option. A confirmation dialog appears. Click **Yes** to confirm or **No** to abort.

## Selecting all Elements

All the objects in a work flow can be selected at once as follows.

- 1 Select **Edit** from the toolbar.
- 2 Select the **Select all** option from the **Edit** menu, or use the [ **Ctrl** ] [ **A** ] shortcut.

## Using the Workflow View Menu

The **View** menu enables you to focus on specific areas or objects in the workflow.

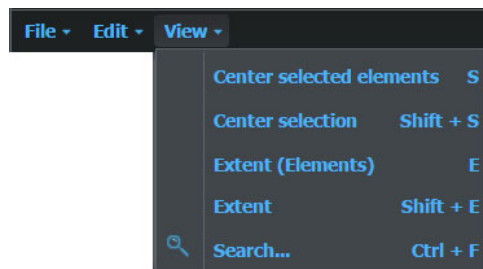


Fig. 3-55: Workflow View Menu

## Focusing on Selected Elements

To zoom and center on just the selected elements:

- 1 Select **View** from the toolbar.
- 2 Click the **Center selected elements** option or use the **S** shortcut. The content of the Work Area changes to display the **selected elements** at the highest zoom factor available which can contain them all.

## Focusing on the Current Selection

To zoom and center the selected elements, their links and link targets:

- 1 Select **View** from the toolbar.
- 2 Click the **Center selection** option or use the [ **Shift** ] [ **S** ] shortcut. The content of the Work Area changes to display the **selected elements, links and link targets** at the highest zoom factor available which can contain them all.

## Framing all the Work Area Contents

To highlight the entire structure of the workflow for examination:

- 1 Select **View** from the toolbar.
- 2 Click the **Extent** option or use the [ **E** ] shortcut. All the elements in the Work Area (connected to the main workflow or not) are displayed on one screen.

## Searching for an Element

To search for an element:

- 1 Click **Search** to open the following dialog:

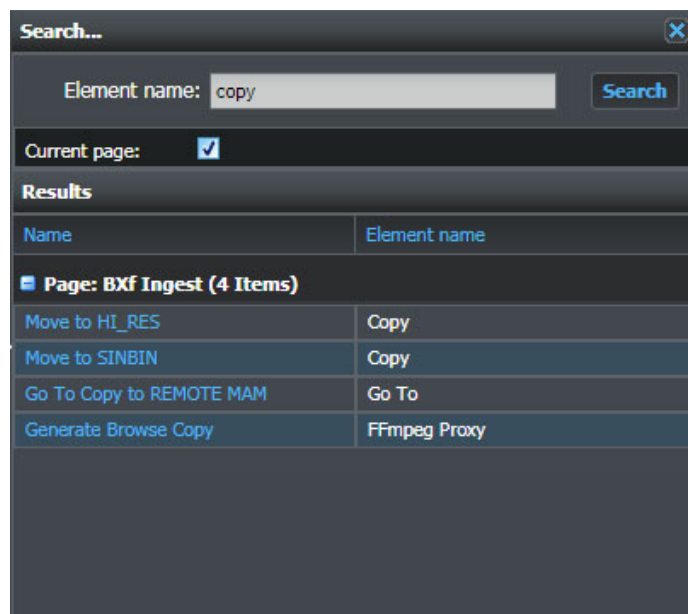



Fig. 3-56: Toolbar Workflow Search Dialog

- 2 Enter an element name into the search field and click **Search**.  
Momentum looks for any matching elements. If the Current page option is selected, the search only applies to the open workflow. If this option is not selected, the search returns results for all workflows in the system.
- 3 Click the element name in the list in order to highlight the target element on the workflow. If the element is not on the current workflow, Momentum opens the relevant workflow and highlights the element.

## Editing Workflow Notes

Click the Edit Icon  to switch to the **Edit Notes** mode. This changes the menu at the top-left of the pane and displays the message: **You are editing notes.**

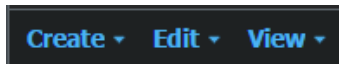


Fig. 3-57: Notes Create Menu

The Edit Notes mode activates a new layer in the Work Area. This layer does not interact directly with the elements and the workflow structure and you use it to write remarks and create notes commenting on the workflow, highlighting specific branches or making colored memos.

### Using the Notes Create Menu

The notes **Create** menu enables you to annotate or mark-up a workflow to provide additional information or highlight specific areas of the workflow.

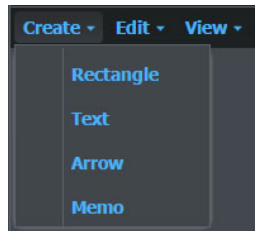


Fig. 3-58: Notes Create Menu

The **Create** drop-down menu enables you to create any of the following objects on the canvas:

- **Rectangle:** Use to construct colored frames.
- **Text:** Use to insert a text comment in a specific area of the canvas.
- **Arrow:** Use to create a straight arrow to place a pointer between text and workflow elements.
- **Memo:** Use to create a text memo on a colored, rectangular, background.

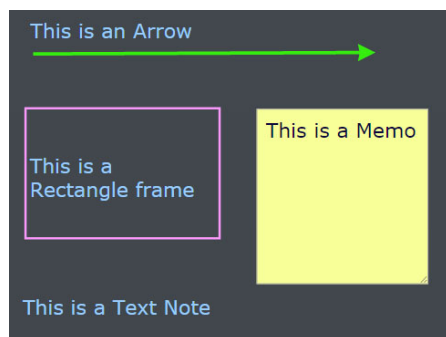


Fig. 3-59: Workflow Note Objects

Click the relevant option and create the element on the canvas.

You can modify each object as follows:

- Click and drag an element to move it.
- Hover the cursor over a rectangle or memo object to display a small square in the bottom-right corner. Click and drag this square to resize the rectangle or memo.



- Hover the cursor over an arrow to display two circular handles. Click and drag either handle to change the position of the head or tail of the arrow, and to adjust its length.
- Double-click a Text or Memo object to open the **Modify text** or **Modify memo** dialog enabling you to edit the text content.
- Right-click a note object to open a context menu that enables you to select various options that you can perform on that object, including Delete, Cut, Copy, Change Color, Center on screen, or set the Extent.

### Using the Notes Edit and View Menus

The **Edit** drop-down menu allows you to select the **Undo** and **Redo** options. In addition, you can cut, copy, paste or delete a Note object or select all note objects.

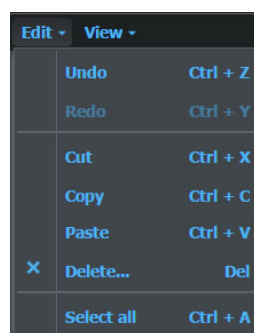


Fig. 3-60: Notes Edit Menu

The **View** drop-down menu allows you to:

- Center selected note objects on the screen.
- Select either the **Extent (Notes)** or **Extent** options, to frame all the contents of the Notes layer on screen.

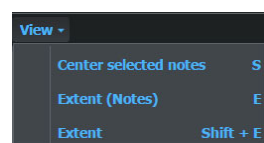


Fig. 3-61: Notes View Menu

## Overview of the Workflow Elements

Momentum represents workflows as a group of interconnected elements which together form *node diagrams*.

You can create a node diagram using a collection of workflow elements selected from the menu tree in the Elements pane, where they are organized in groups according to their function.

To build a workflow, select the elements required, drag them across and drop them into the working area of the Current Page pane.

See the *Configuration Guide* for more detailed information on the individual elements and their parameters.

The elements are structured as shown in Figure 3-62:

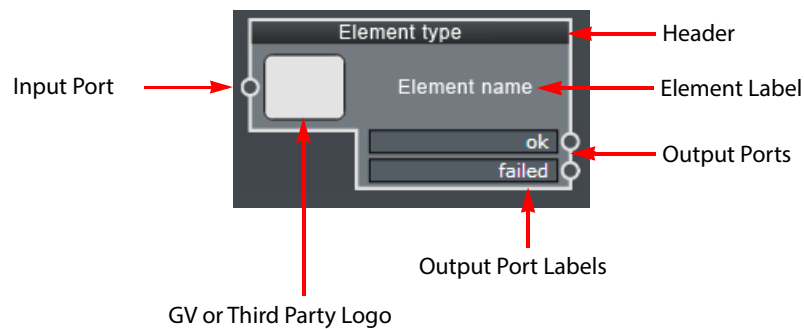


Fig. 3-62: Workflow Element Components

- **Header:** Identifies the type of element.
- **Input port:** Tasks arrive at the element through this port. This is also the target for a link starting at another element.
- **Logo area:** This area displays the logo of the owner (Grass Valley or third party device) of the element.
- **Element name label:** Each element can be assigned a label when it is configured.
- **Output port ok and label:** Successful tasks leave the element through this port and can pass to elements further downstream in the workflow.
- **Failed output port and label:** If an error occurs, tasks leave the element through this port and can pass to elements further downstream in the workflow for fault finding, repair and possible re-introduction to the workflow.

You can customize certain elements by adding extra output ports, as required. This enables an element to connect to different branches in a workflow depending on specific conditions.

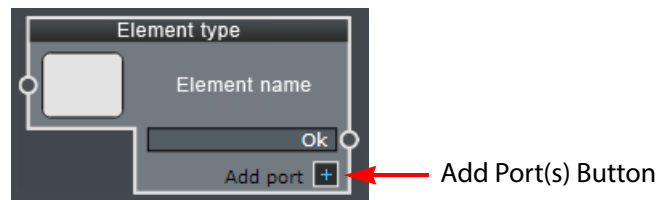


Fig. 3-63: Add Port Button on Workflow Element

To add a new output port to an element, click the **Add port** button on the element. The area below the **ok** port and label moves down when a new port is added, which provides the ability to add an unlimited number of new ports, as required.

---

**Note:** When adding a new port, the port label is limited to 64 characters in length. For long port labels, the first 12 characters are displayed followed by an ellipsis (...) to show that the label is extended. You can view the entire port label by hovering your cursor over the label to display the full text in a tooltip.

---

Once placed on the canvas of the work area, you can move the element, link it to other elements or configure its parameters by double-clicking on the element itself.

## Using the Work Area Canvas

The work area canvas is an unlimited area; its size is defined by the actual size of the workflow you define on the Current page.

To **pan** the **content** of the canvas, click and drag an empty area while the cursor looks like this:



To **zoom** the content of the canvas, with the cursor over the work area, roll the Mouse wheel to enlarge or reduce the size of the canvas contents.

To move an element to a new position on the canvas, move the cursor over the desired element then click and drag to its new position. The cursor changes to the following icon:



## Adding a Workflow Element to the Canvas

To add a workflow element:

- 1 Find the element you need in the Elements pane.  
Expand the element tree as necessary.
- 2 Click and drag the workflow element onto the work area canvas.

## Changing the Workflow Element Settings

To change the configuration settings of a workflow element:

- 1 Double-click an element in the work area.  
The element settings dialog opens, see Figure 3-64 for an example.

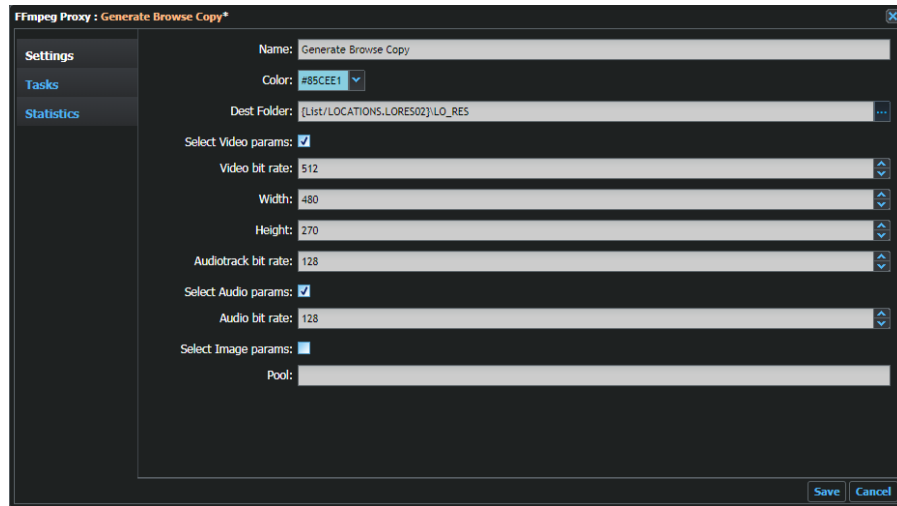


Fig. 3-64: Settings Dialog for FFmpeg Proxy Workflow Element

- 2 Edit the settings as required and click the **Save** button.  
For details of the possible settings for each workflow element, see the *Configuration Guide*.

## Removing a Workflow Element

To remove an element:

- 1 Click the workflow element to select it.
- 2 Press the [ **Delete** ] key.

## Focusing on a Single Workflow Element

The workflow elements can appear small on the work area, especially if the workflow is large, complex and composed of many branches and elements.

To help visualize a workflow element's name, ports and tasks, hover your cursor over an element smaller than 100% in size (due to the overall scaling of the canvas) then Momentum displays a tooltip, which lists the name, type, status and port labels of the element, see Figure 3-65.

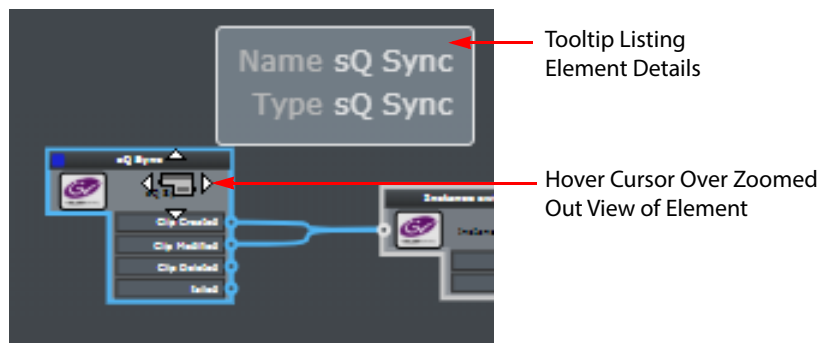


Fig. 3-65: Focusing on a Single Element

You can use this method to make links and inspect tasks without scaling all the workflow content.

### 0.0.1 Selecting Workflow Elements

A selected element is outlined by a blue border and the links connecting its ports are also selected and are of the same color as shown below:

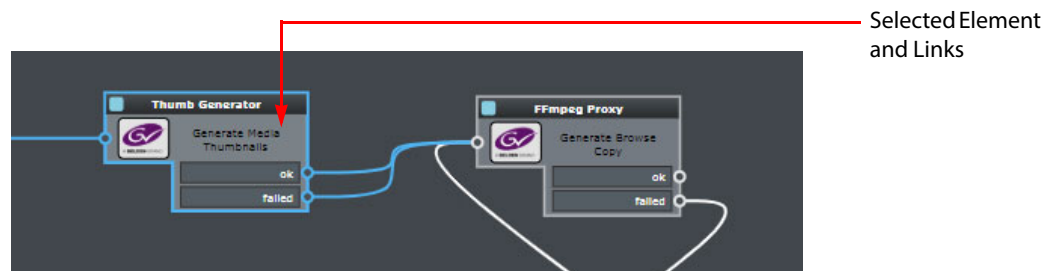


Fig. 3-66: Selected Workflow Element

Several modes are available to help you select the required element(s):

- **Direct selection** - move your cursor onto the required element and **click** it. Only the element and its related links are selected.
- **Rectangular selection** - if you need to select a group of elements, press [ **Shift** ] and **click and drag**. A semitransparent rectangle appears. When you release the mouse button, all the elements enclosed by the rectangle and their links are selected. While performing this action, the cursor changes to the following shape:



Fig. 3-67: Rectangular Selection Cursor

- **Connected selection** - press [ **Alt** ] and **click an element** to select all the elements that can be reached from (and those that can reach) the selected element and related links.

### Adding a Workflow Element to a Selection

To add an unselected workflow element to an existing selection:

- 1 Press [ **Ctrl** ].
- 2 **Click** an **unselected** element.

### Removing an Element from a Selection

To remove an element from an existing selection:

- 1 Press [ **Ctrl** ].
- 2 **Click** an already selected element.

## Moving Workflow Elements

You can move a selection anywhere on the canvas of the work area. While the cursor hovers over a selected element, it has the following shape:

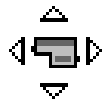


Fig. 3-68: Move Workflow Element Cursor

Click and drag the selection to move it to another location. Moving to an edge of the work area makes the canvas scroll in the opposite direction, making room for the new location of the elements.

## Linking Working Elements Together

Once placed on the canvas, the workflow elements need to be linked together in order to build a processing path through the workflow.

### Creating a Link

To create a link between workflow elements:

- 1 Hover over the **Output port** of the first workflow element in the path. While the mouse is hovering over the port, the port and its label are activated and the cursor changes its shape to show a link, see Figure 3-69.



Fig. 3-69: Workflow Element Link Cursor

- 2 **Click and drag** the port. A curved line is drawn while moving the cursor.
- 3 **Drag** the cursor to the input port of the target workflow element.
- 4 **Release** the mouse button. Momentum automatically creates the link. Now tasks can flow from the first element to the second.

### Removing a Link

To remove a link:

- 1 Select the link.
- 2 Press [ **Delete** ].
- 3 **Confirm** the link removal.

## Creating a Workflow Element from a Customized Element

After changing the configuration of a workflow element, it can be useful to save it as a customized element in the Elements pane. If the same configuration is needed again, you can simply drag the custom element onto the canvas from the Elements pane.

To create a customized element:

- 1 **Right-click** the configured element.
- 2 Select **Create workflow element**.

Edit the name of the workflow element and click **OK** to store it in the same category as the parent element.

## Context Menu Options

Right-click on a workflow element to display a context menu as shown in Figure 3-70.:

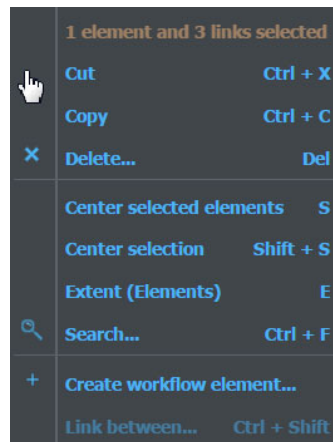


Fig. 3-70: Element Context Options

The dialog contains the number of elements selected and the following options:

- **Cut:** Removes the selected workflow element(s) from the workflow.
- **Copy:** Copies the selected element in order to create a duplicate element on the workflow.
- **Delete:** Deletes the selected workflow element(s).
- **Center selected elements:** Centers the workflow around the selected element(s).
- **Center selection:** Centers the workflow around the selected elements as well as their links and any connected elements, in order to focus more on the structure of a section of the workflow rather than just the selected elements.
- **Extent:** Reduces the size of the elements so that the entire workflow appears on the screen.

- **Search:** Enables you to search all of the workflows for a specific element.
- **Create workflow element:** Opens the Create workflow element dialog enabling you to save a new customized workflow element to the Elements tree.

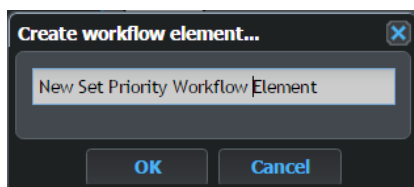


Fig. 3-71: Creating a Customized Workflow Element

- **Link between:** Enables you to link a workflow element between two already linked elements. For example, consider the example in Figure 3-72:

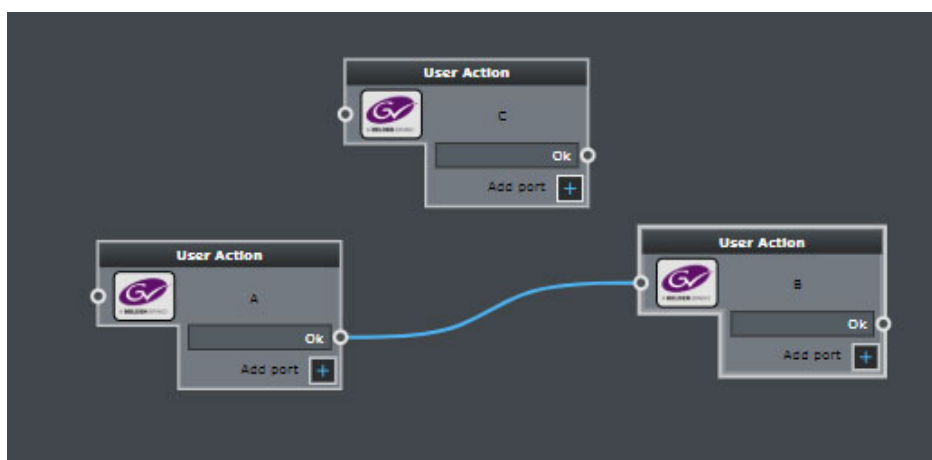


Fig. 3-72: Using the Link Between Option

In this scenario workflow element **A** is already connected to element **B** and you would like to change this so that **A** connects first to element **C** and then to element **B**. To do so, select the link between elements **A** and **B**, then press [ **Ctrl** ] and right-click element **C**. This activates the **Link between** option in the context menu. Select **Link between** to establish the desired link between element **A** to element **C** then to element **B**. You are prompted to select the desired exit port from the new element **C**.

## Using Variables in Momentum

The **Destination Folder** setting (also labeled **Dst**, **DstFolder**, **Dest Folder**, etc.) available for some elements can include variables which enable you to customize the folder structure. Variables are also available to describe an item of material (for example, in a search string) when creating email settings for elements, and in the Momentum Server or Node



configuration files to specify target paths (for example, when defining the output path for a QC report).

The following variables are available for use in Momentum:

Variable	Description
{Brick.Name}	The name of the current element.
{DD}	The current day expressed as two digits, for example, 26.
{DESCRIPTION}	The description of the material.
{DEVICE_ID}	The Morpheus DEVICE_ID of the active instance of the current task.
{FULLMEDIAPATH}	The full path of an instance, selected using an instance switcher element, associated with the specific task.
{GUID}	GUID is generated as a random value at runtime. The {GUID} variable does not identify a specific resource, but the stored value can be used as a Unique ID.
{INSTANCEID}	The ID of the active instance of the current task.
{INSTANCELABEL}	The label of an instance related to a specific task.
{JOBCREATOR_MAIL}	Sets the email receiver dynamically in the element.
{JOBID}	The ID of the job of the current task.
{LASTUSER_MAIL}	The email address of the last user.
{MATERIALID}	The material ID.
{MEDIAPATHDIR}	The name of the folder where the instance is located, for example, for the file <code>\\server\disk1\myFile.avi</code> the folder is <code>\\server\disk1</code> .
{MEDIAPATHFILENAME}	The full path and name of the file, for example, for the file <code>\\server\disk1\myFile.avi</code> the path and file is <code>\\server\disk1\myFile.avi</code> .
{MM}	The current month expressed as two digits, for example, May is 05.
{MORPHEUSID}	The Morpheus ID of an item of material.
{QCREPORT_PATH}	The path of the QC report of the current material.
{Task.Previous.Remark}	Reports the remark related to the propagation of the current material from the previous element of the workflow to the current one.
{TASKID}	The ID of the current task.
{TASKLIST}	The task history of the current material.
{TITLE}	The title of the material.
{WEB_HOST}	The Momentum Web Application path. This value is the one set in the <code>MantricsServer.xml</code> file.
{YY}	The current year expressed as two digits, for example, 17.
{YYYY}	The current year expressed as four digits, for example, 2017.

The following are some examples of using variables in destination folder names:

- `\\server\disk1\{MATERIALID}\`

Creates a new folder in `\\server\disk1\` for each task using its `{MATERIALID}` in order to name the folder.

- `C:\media\{YYYY}\`

Creates a new folder in `C:\media\` using the value of the current year `{YYYY}` in order to name the folder.

- `C:\media\{DD}{MM}{YY}\`

Creates a new folder in `C:\media\` using the value of the current date in `{DD}{MM}{YY}` in order to name the folder.

## Creating Custom Variables

If required, you can define your own, custom variables and add them to the available list as follows:

- 1 Open the **More > Admin** page.
- 2 Open the **Custom lists** tab from the left-hand side menu options.
- 3 Click **Create custom list...** and enter a label for the custom list.

The new custom list container is added to the list.

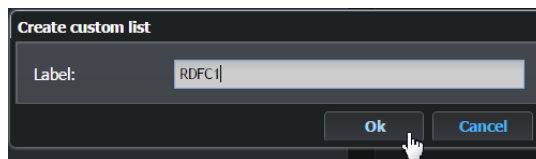


Fig. 3-73: Creating a Custom List

- 4 With the custom list selected, click **Create value...** in the **Details** pane to open the **Create value** dialog.
- 5 Enter a label for the custom variable, for example: `FTPPATH`.
- 6 Enter the value of the variable, for example: `\\10.10.101.103\TESTFTP`.

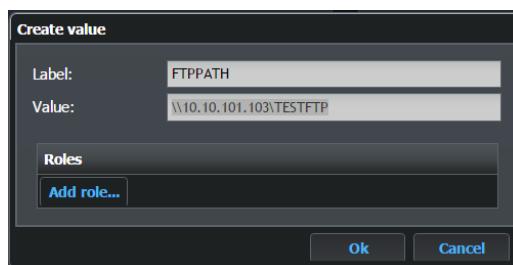


Fig. 3-74: Creating a Custom Variable

- 7 If necessary, click **Add role...** to select the specific roles that can use the variable. If you do not select a role, all roles can use the variable.
- 8 Click **Ok** to save the variable to the **Details** pane.

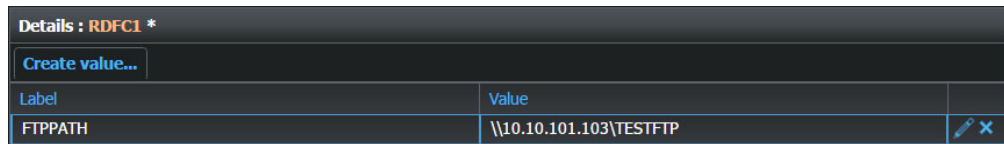


Fig. 3-75: Adding a Custom Variable to the List

- 9 Add further variables as required by repeating steps **4** to **8** above.
- 10 Click **Save** to commit your changes to the Momentum database.

In the above screens, Momentum creates a new variable using the syntax:

```
{List/CustomListLabel.CustomListValueLabel}
```

When you use the variable, Momentum renders it using the syntax:

CustomListValueValue

For example, when:

- CustomListLabel = RDFC1
- CustomListValueLabel = FTTPATH
- CustomListValueValue = \\10.10.101.103\TESTFTP

Momentum creates the variable: **{List/RDFC1.FTTPATH}**

Which, when used in a string, Momentum renders as: \\10.10.101.103\TESTFTP

## Working with Task Actions and Task Statuses

When a workflow is running, objects (usually material files ingested into the system,) start the workflow process. The end-to-end process is referred to as a **Job** and a job can comprise multiple **Tasks**. Tasks are propagated through the Workflow page in real-time.

Each element of the workflow performs one or more tasks, where tasks are effectively the actions that target the material currently available to the workflow element.

## Reviewing the Task Status Indicators

Using the Workflow page, you can monitor the status of each task processed by any of the workflow elements. To highlight the current status of a processing task, Momentum displays one or more colored status indicators above each workflow element, see Figure 3-76.

Several other tools are also available to assist in monitoring and managing processing tasks. For further information, see Chapter 10 [Task Monitoring and Statistics](#), on page 169.

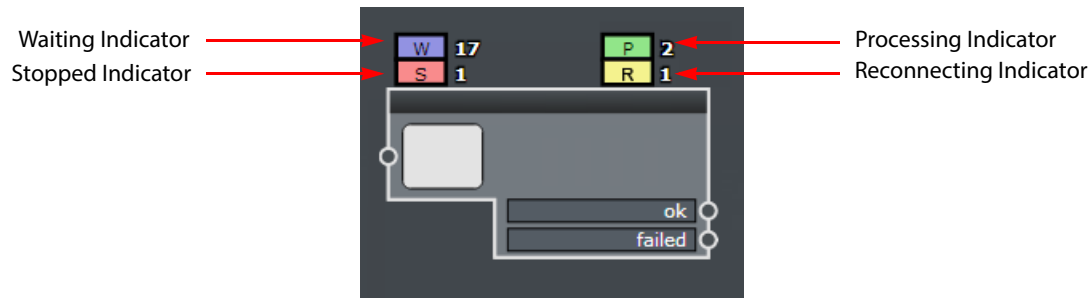


Fig. 3-76: Generic Element Showing the Possible Task Processing Status Indicators

These processing status indicators can be displayed in different colors as follows:

- A **purple** square represents a **waiting** status to indicate that the task is waiting in a queue or waiting for a user action. This status indicator also contains the letter **W** as shown below:

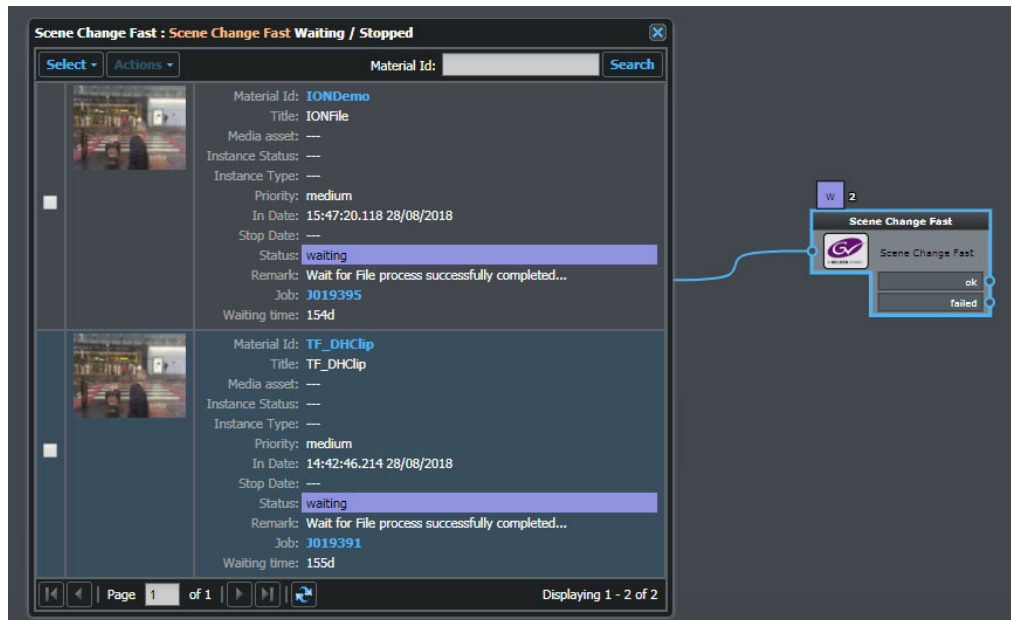


Fig. 3-77: Task Processing Status: Waiting

- A **red** square represents a **stopped** status to indicate that the task has been stopped by user and is waiting for the user to resume the task (see the sections [Using the Dashboard for Task Monitoring](#), on page 176 , or [Using the Services Page](#), on page 182 for more information.) This status indicator also contains the letter **S** as shown in Figure 3-78:

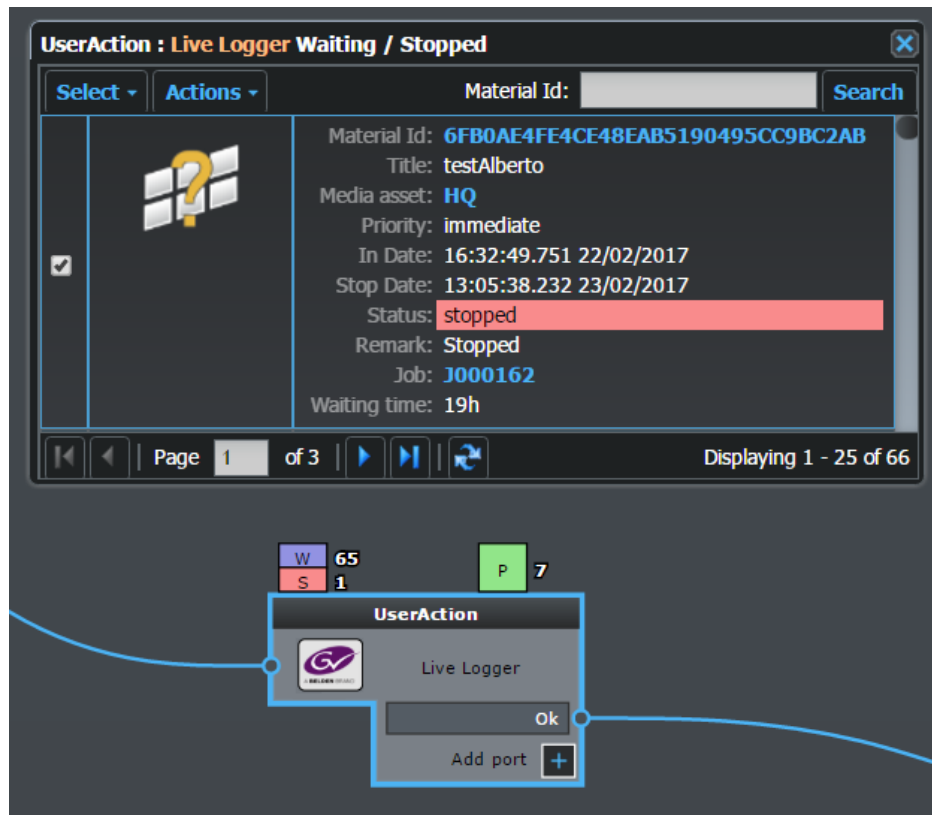


Fig. 3-78: Stopped Status

- A **yellow** square represents a **reconnecting** status to indicate that the task has lost its connection to an associated node and is attempting to reconnect. This status indicator also contains the letter: **R**.
- A **green** square represents a **processing** status to indicate that the task is currently being processed. This status square also contains the letter **P** as shown in Figure 3-79:

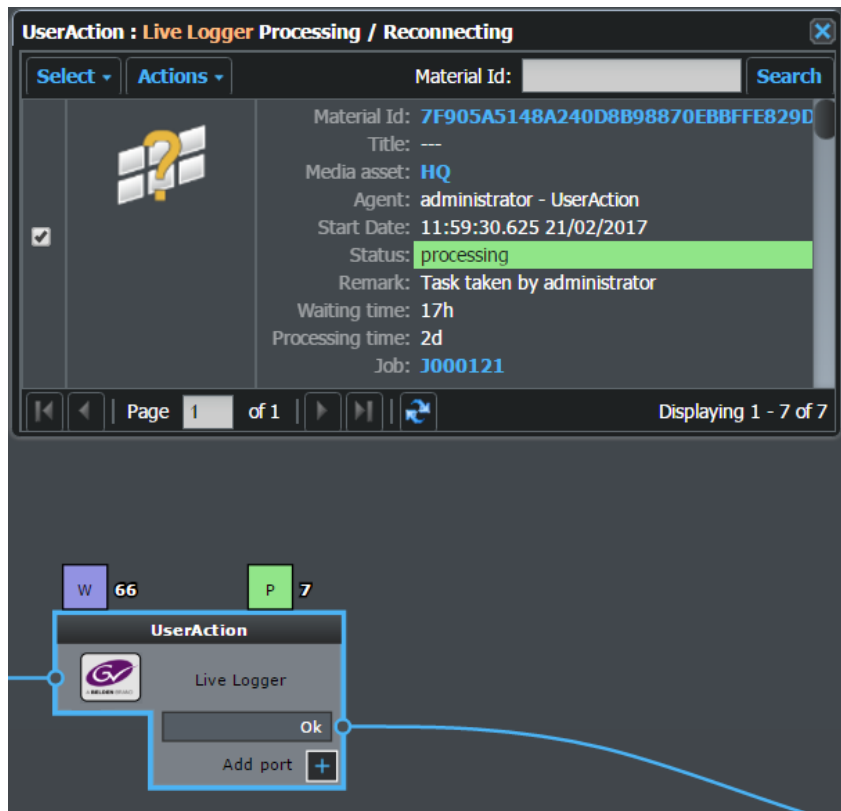


Fig. 3-79: Processing Status

The number next to a status indicator represents the number of tasks currently in that state for the workflow element.

## Performing Task Actions

You can use either of the following methods to view further information about a task progressing through the workflow and perform an action on that task:

- Using the status indicators.
- Using the Tasks pane of the workflow element.

### Performing Task Actions Using the Status Indicators

Click a status indicator to display a pop-up window containing a summary of the tasks currently in that status, see Figure 3-80.

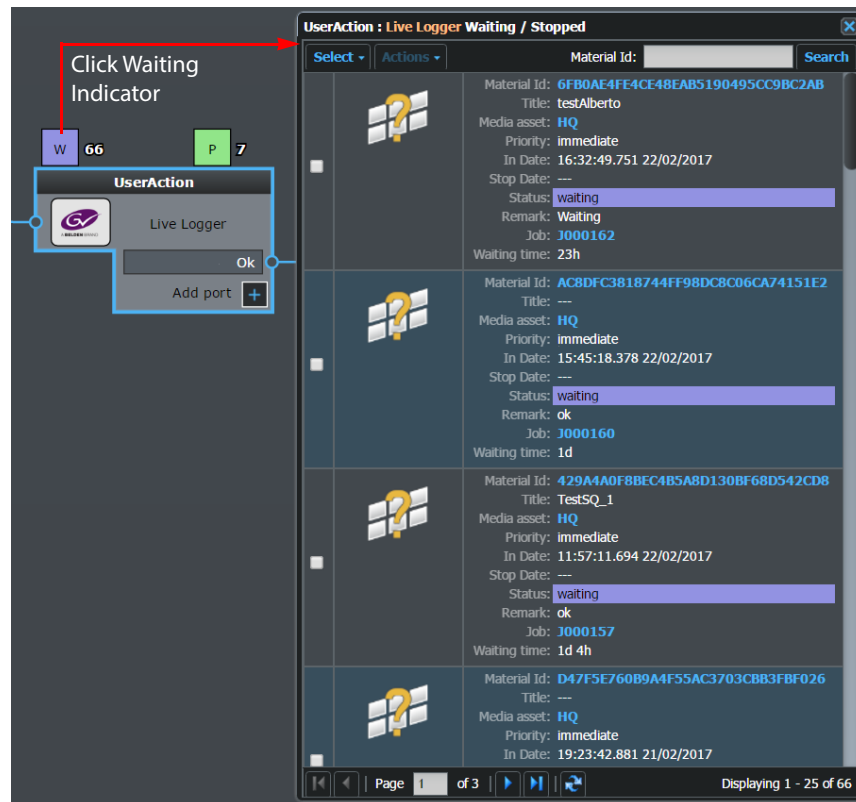


Fig. 3-80: Listing All Tasks in Waiting Status for a User Action Workflow Element

In the header line, the User Action tasks window provides **Select** and **Actions** menus and a **Material ID** search field. The **Actions** menu only becomes active once a task (or multiple tasks) is selected.

In addition, the task summary provides certain information to help you to identify the task, for example, the thumbnail, Material ID, Title, Media asset type, Priority, In Date and time, and a description of the task status. In the event that a task in Processing status has been taken by another user, you will see a Remark: **Task taken by <user ID>**

Click a checkbox to select a single task then use the options in the **Actions** drop-down menu to submit the task to any of the following possible actions:

- **Resume:** Enables you to Resume a stopped task making it available again for processing through the workflow.
- **Release:** Enables you to release a task, in processing or waiting status on a User Action workflow element, that has been previously taken by another user but for some reason has not been progressed through the workflow.

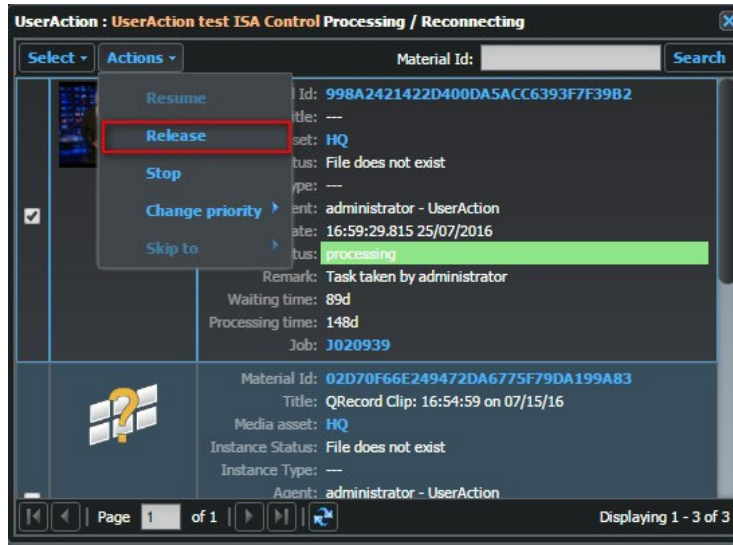


Fig. 3-81: User Action Tasks List - Actions Release Task

- **Stop:** Enables you to stop a task, preventing it from going further through the workflow.
- **Change priority:** Enables you to increase or decrease the priority level of:
  - A processing task, or
  - A job and all its currently active, associated tasks.

The priority options are Low, Medium, High, Urgent and Immediate. Momentum automatically uses the priority setting for example, when processing a transcoding queue, material set to High takes priority over material set to Low.

---

**Note:** In Momentum, a Job consists of multiple Tasks.

---

The **Actions > Change Priority** menu is shown in Figure 3-82.

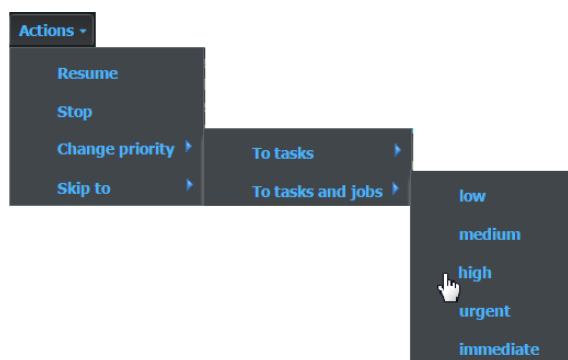


Fig. 3-82: User Action Tasks List - Actions Change Priority Menu

- **Skip to:** For modified material, this option skips the process that it is waiting for and moves it to the next workflow element in the



process. For multi-port workflow elements, you can choose which port the material skips through.

## Performing Task Actions from a Workflow Element

All workflow elements have a series of underlying function windows that give you access to:

- Work element configuration **Settings**.
- **Tasks** that have already been processed by the element and tasks in different statuses at the element.
- **Statistics** showing the times tasks were processed and the duration of each task.

To display these additional functions, double-click the workflow element on the workflow canvas. By default, the workflow element opens to display the **Settings** pane as shown in Figure 3-83.

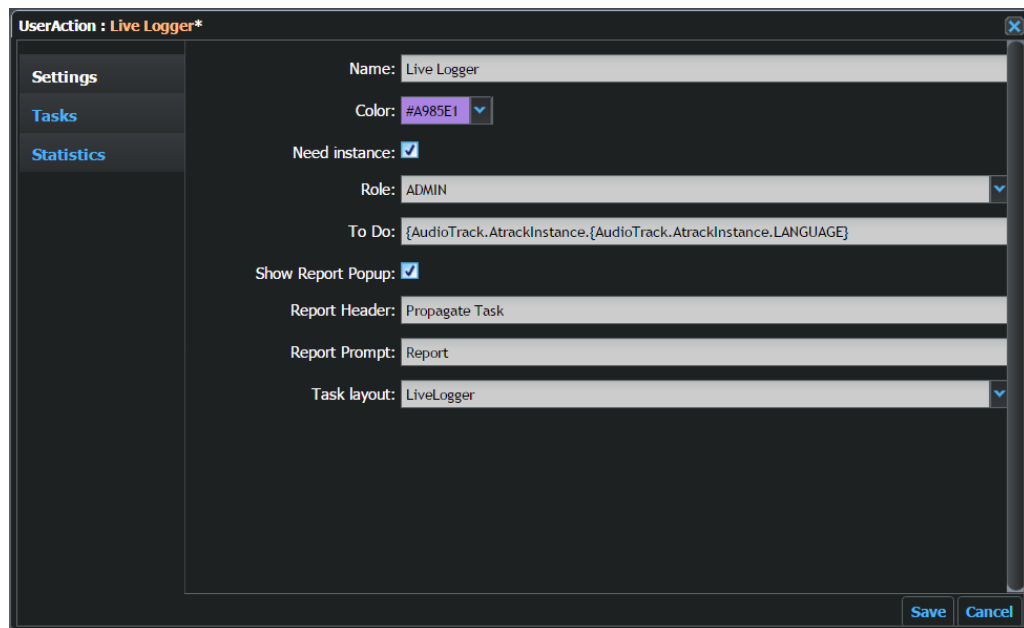


Fig. 3-83: User Action Workflow Element - Settings Pane

For more information on configuring the workflow element settings, see Section Creating an Elementary Workflow on page 65.

To access the **Tasks** pane of the workflow element, click the option **Tasks** in the left-hand side menu. The Tasks pane opens as shown in Figure 3-84.

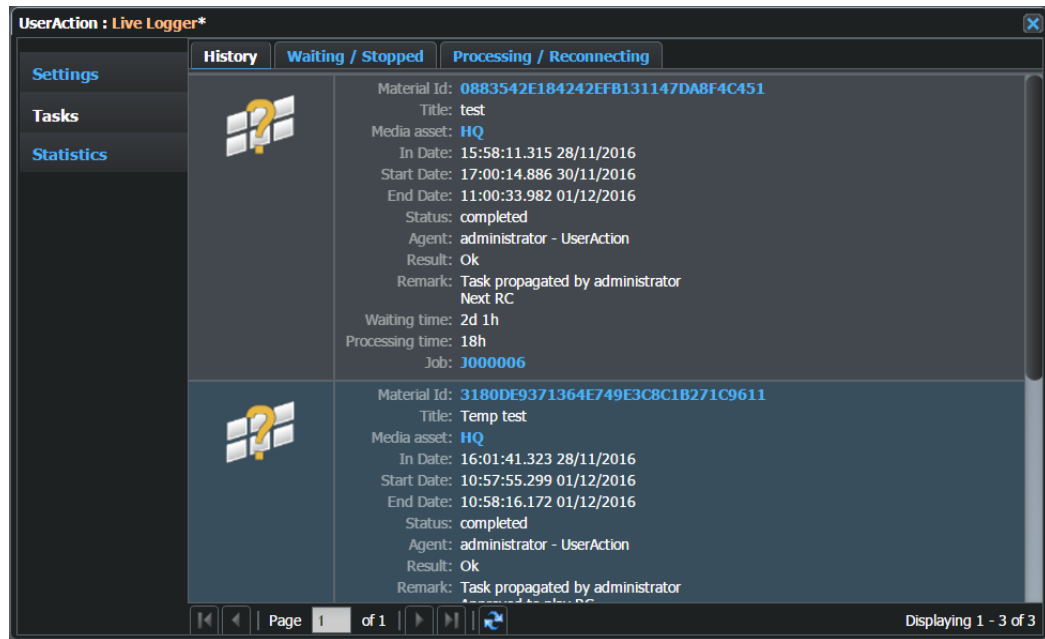


Fig. 3-84: User Action Workflow Element - Tasks Pane (History Tab)

The Tasks pane has the following tabs:

- **History:** Summarizes all tasks that have been successfully processed by the workflow element.
- **Waiting / Stopped:** Summarizes all tasks for which the current status is either Waiting or Stopped.
- **Processing / Reconnecting:** Summarizes all tasks for which the current status is either Processing or Reconnecting.

To display the current tasks held at, or being processed by the workflow element, click either of the tabs: **Waiting / Stopped** or **Processing / Reconnecting**.

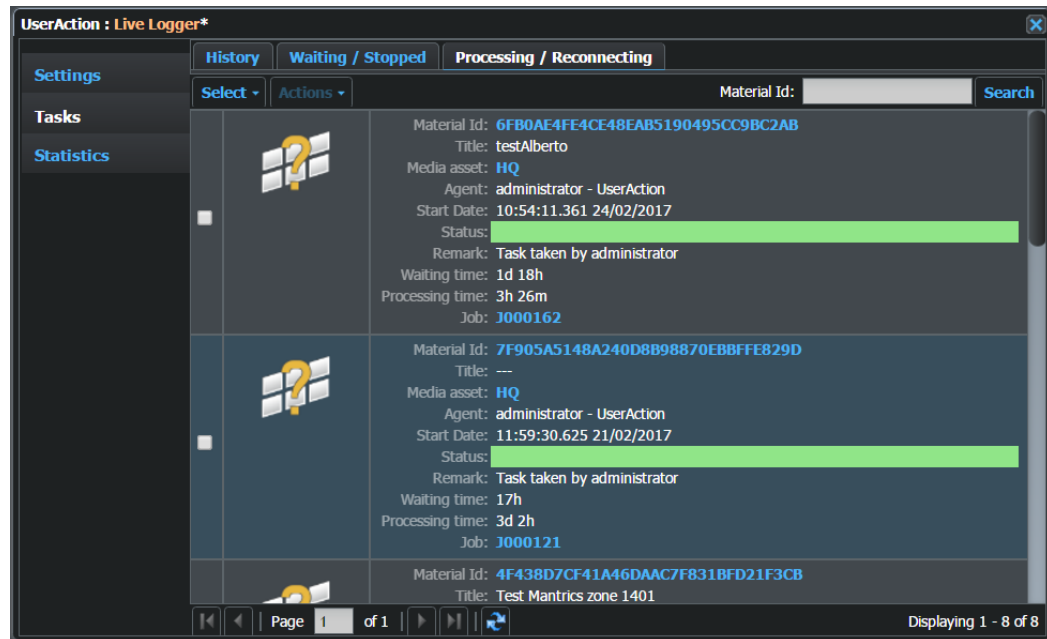


Fig. 3-85: User Action Workflow Element - Tasks Pane (Processing /Reconnecting Tab)

The toolbar at the top of the tasks grid includes the following elements:

- **Select:** Provides methods to select or deselect all listed tasks, either directly by item, or using the selection checkboxes.

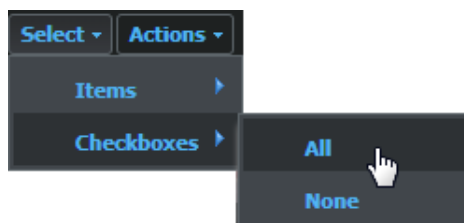


Fig. 3-86: Task Selection Menu

- **Actions:** Only activated when you select one or more tasks. When active, enables you to select an action to perform on the selected task or tasks.

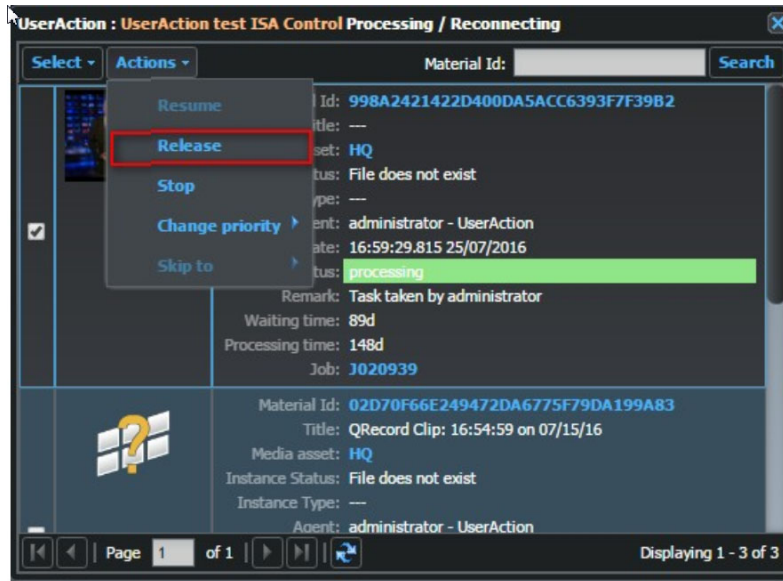


Fig. 3-87: Actions Menu for User Action Tasks

Some actions can be performed only on tasks in a specific status. If you attempt an action on a task for which the action is not allowed, Momentum displays a popup with a warning message, see Figure 3-88.

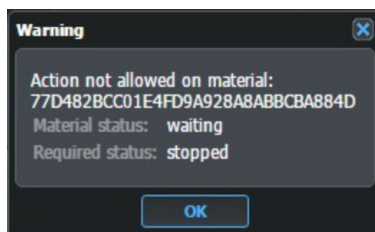


Fig. 3-88: Task Actions Menu Warning Message

The **Actions** menu has the following options:

- **Resume:** Enables you to Resume a stopped task making it available again for processing through the workflow.
- **Release:** Enables you to release a task, in processing status on a User Action workflow element, that has been previously taken by another user but for some reason has not been progressed through the workflow.
- **Stop:** Enables you to change the stop a task, preventing it from going further through the workflow.
- **Change priority:** Enables you to increase or decrease the priority level of a processing task, or a job and all its currently active, associated tasks. The priority options are Low, Medium, High, Urgent and Immediate. Momentum automatically uses the priority setting for example, when processing in a transcoding queue, material set to **High** takes priority over material set to **Low**.

- **Skip to:** For modified material, this option skips the process that it is waiting for and moves it to the next workflow element in the process. For multi-port workflow elements, you can choose which port the material skips through. By hovering your cursor over the options, you can see the related, selectable values (e.g., for the **Skip** options a list of available ports is displayed.)
- **Material Id:** Enables you to define a search string for a specific MaterialID or a generic MaterialID using variables. If the applied filter does not return any results, Momentum displays the message: **No match found using the <string> filter**. The User Action task panel remains open.

To change the status of a task, change its priority or skip the task to another element:

- 1 Select a specific task or group of tasks.
- 2 Open the **Actions** menu. The available options depend on the status of the corresponding task or tasks as follows:
  - A processing task has a **Stop** option to stop the task.
  - A processing task has a **Release** option if it has been taken by another user and is not being actioned.
  - A stopped task has a **Resume** option for use with the **Change priority** and **Skip to** options.
  - A waiting task has a **Stop** option for use with the **Change priority** and **Skip to** options.
- 3 To **change the status** of a task, select the **Stop** or **Resume** option.
- 4 To **change the priority** of a task, select a new value from the **Change priority** drop-down list.
- 5 To make the task pass through a specific port of the element in order to move directly to another element, or to exit the workflow, select the appropriate port from the **Skip to** drop-down list.

The life-cycle of a task and its states is summarized in the following schematic:

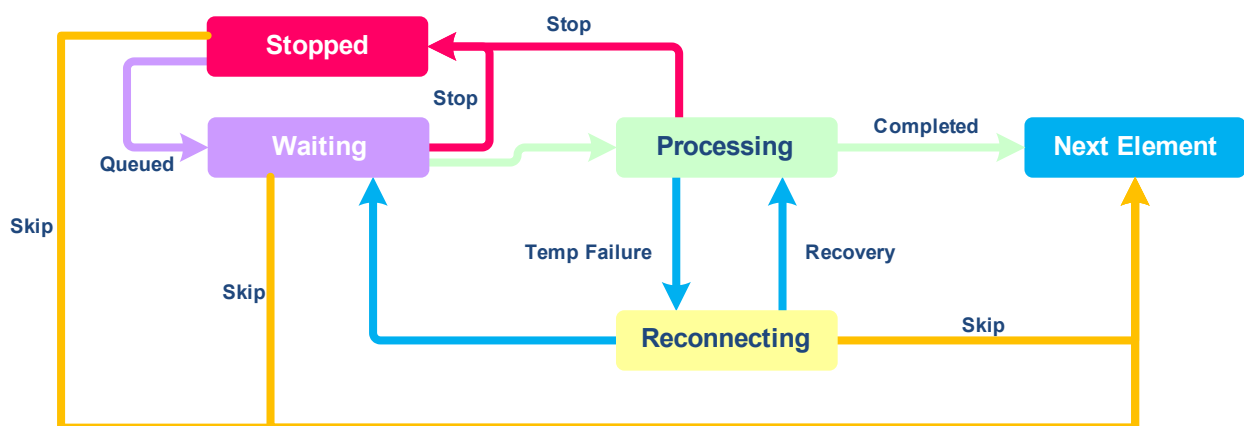


Fig. 3-89: Momentum Task Life-cycle

The path marked by the green arrows represents a typical workflow:

- The task waits (either queued or waiting for a user action).
- After waiting, the task is processed by the workflow element.
- Once processing is complete, the task moves to the next element in the workflow.

You can interrupt a task in either **Waiting** or **Processing** status (see the paths marked by the red arrows). If you do so, the task status changes to **Stopped**. The Stopped status is similar to the Waiting status but only the user who stopped a task can resume it from a Stopped status.

The blue arrows show changes of state managed automatically by Momentum. While processing there can be a temporary failure in the process where the task moves to **Reconnecting** status and Momentum attempts to recover the process. If successful, the task moves back to **Processing** status, otherwise it returns to **Waiting** status.

You can choose to **skip** the statuses **Stopped**, **Waiting** or **Reconnecting**, which progresses the task to the next workflow element, skipping the previous processing step.


You can choose to **Stop** a Processing or Waiting task or alternatively **Resume** a Stopped task using the tools available from the element, on the **Dashboard** page (see [Using the Dashboard for Task Monitoring](#), on page 176) or in the **Services** page (see [Using the Services Page](#), on page 182).

## Working with Momentum Jobs

As previously described, a Workflow is composed of workflow elements and the elements perform tasks on the materials available to the workflow. The set of tasks performed by a group of connected elements on the available material is defined as a *job*. The Momentum Dashboard page displays a list of all jobs in their different statuses.

The concept of a job is widely used when monitoring and managing the tasks running in a workflow using specific tools and pages. Jobs also have a status to describe what is happening to a specific job at any moment. See Chapter 10 [Task Monitoring and Statistics](#), on page 169 for further information.

A Momentum Job can have any of the following statuses:

- **Aborted:** Applies when at least one task has been deleted from the job using the  button on the Dashboard.
- **Failed:** One or more tasks of the job has been marked as **FAILED**.
- **Completed:** This job has no active tasks in the workflow (an active task is a task in a Waiting, Running or Stopped status).
- **Processing:** At least one task from the job is in Processing status.
- **Waiting:** At least one task from the project is in Waiting status.
- **Stopped:** One or more tasks from the project is in Stopped status.

---

**Note:** The above status values are listed in a priority order (highest first) so, for example, the Aborted value is a higher priority than a Completed status and, therefore, the status Aborted is reported as the overall status for the job.

---

## Creating an Elementary Workflow

This section describes how to build an example of a workflow using a few basic Momentum workflow elements.

For example, some incoming Material needs to be processed before play-out. In Momentum, material is referred to as a **TITLE**. For further information about metadata definitions, see Chapter 5 *Working with Metadata*, on page 93.

The example in this section performs the following tasks:

- Ingest files by placing them in a folder specified in the Watchfolder element.
- Create a proxy for playback on a Momentum media player (for example, on the Catalog page).
- Screen the content of a specific item of material using the **To Do** page for the user associated with the User Action element.
- Send an email message automatically, containing a report on which materials have been approved.
- Populate the system database with the ingested materials. The material metadata can then be inspected and modified using the Catalog page.

To build a basic workflow for these tasks, you need to:

- 1 Create a blank new page.
- 2 Insert the entry point.
- 3 Convert incoming material.
- 4 Send an email.
- 5 Submit a file to the workflow.

## Creating a New Blank Page

Open the **Workflow > Pages** pane and create a new page as follows:

- 1 Click **Create Page** at the top of the pane.
- 2 Enter a name for the page.
- 3 Select a Parent group (and role if required) and click **Ok** to confirm as shown in Figure 3-90:

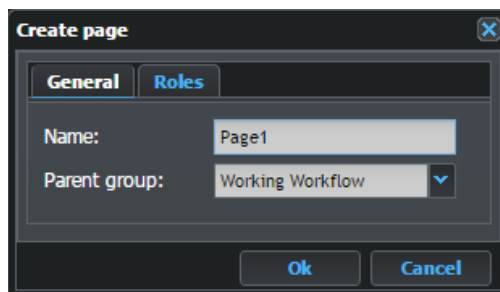


Fig. 3-90: Adding a New Workflow Page

- 4 Select the new page to start working on it.


You can now proceed to add the following workflow elements to the newly created page:

- **Watchfolder:** Located in the **Ingest** category of the Elements pane.
- **FFmpeg Proxy:** Located in the **Transcoding** category of the Elements pane.
- **UserAction:** Located in the **User** category of the Elements pane.
- **Send Mail:** Located in the **Automation** category of the Elements pane.

## Creating an Entry Point for Media Files

Add a **Watchfolder** element as the start-point of the workflow. This is the entry point to start ingesting files into the Momentum system.

To add a Watchfolder element:

- 1 In the Elements pane, open the **Ingest** folder by clicking the cross icon: .
- 2 Drag the **Watchfolder** element across to the Workflow pane and drop on the canvas.

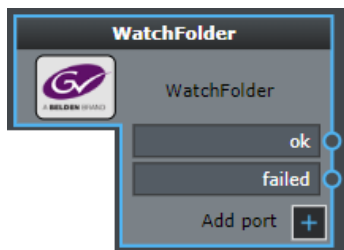


Fig. 3-91: Watchfolder Workflow Element

- 3 Double-click the element to modify the Watchfolder settings as shown in Figure 3-92:

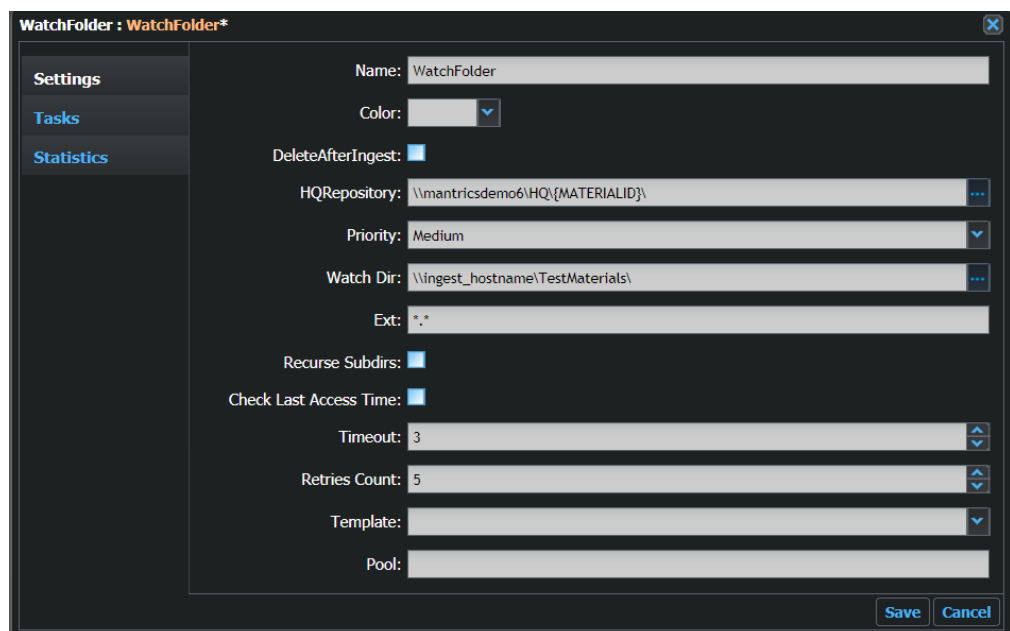


Fig. 3-92: Watchfolder Element Settings



Modify the settings as described in the *Configuration Guide*.

- 4 Click **Save** to store the Watchfolder settings.

### Icon Creation for a Newly Ingested Title

The ingest of a media clip by a Watchfolder element automatically generates an icon or *thumbnail* to represent that clip as it progresses through the workflow. The icon is created by Momentum's **Thumbnail Generator** utility.

Previously the icon was taken from the first frame of an ingested clip. To generate a representative icon, however, the Thumbnail Generator now takes a frame from a position two minutes into a clip to avoid any black frames and/or test signals that might exist at the beginning of the clip. If the total length of a clip is shorter than eight minutes, the Thumbnail Generator selects a frame from a time-point that corresponds to the end of the first quarter of the clip's length.

## Converting Ingested Material

Next, add an **FFmpeg Proxy** element to transcode the ingested material in order to create a low resolution proxy of the source file. If there is no supported third party software available for this function, use the generic **FFmpeg Proxy** workflow element for this task.

To add the **FFmpeg Proxy** element:

- 1 In the Elements pane, open the **Transcoding** folder.  
Open the **FFmpeg** folder, drag the **FFmpeg Proxy** element across to the Workflow pane and drop on the canvas.



Fig. 3-93: Ffmpeg Proxy Workflow Element

- 2 Double-click the element to modify the default element settings if required as shown below:

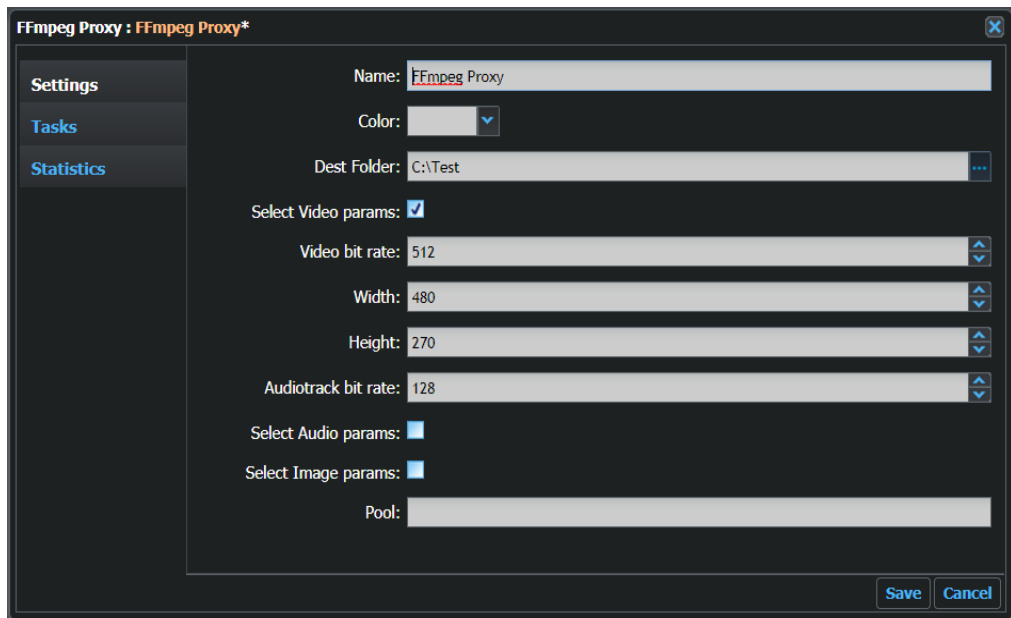


Fig. 3-94: Ffmpeg Proxy Workflow Element Settings

- 3 Modify the element settings as described in the *Configuration Guide*.
- 4 Click **Save** to store the Ffmpeg settings.
- 5 Link the two elements together by clicking the **ok** port of the **Watchfolder** element and dragging the link to the transcoder input port, see Figure 3-95.

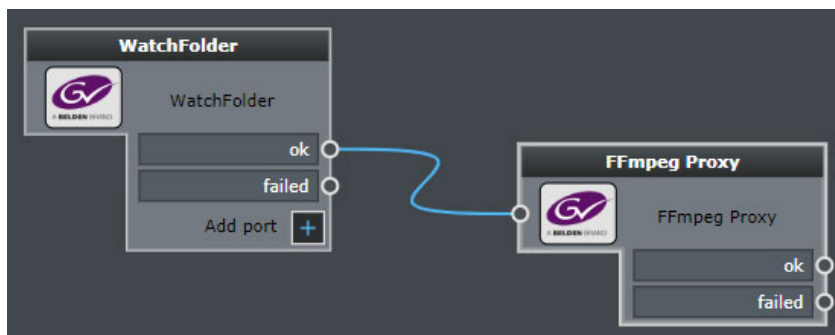


Fig. 3-95: Linking Watchfolder to FFmpeg Proxy Workflow Element

## Assigning a User Action Task

Now add a **UserAction** workflow element to the workflow. The UserAction element assigns tasks automatically to the operator, and also provides instructions for performing the action. In this example, the task consists of inserting metadata into new material.

To add a **UserAction** workflow element:

- 1 In the Elements pane, open the **User** folder.
- 2 Drag the UserAction element across to the Workflow pane and drop on the canvas.

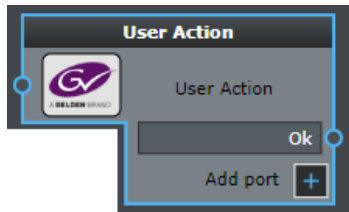


Fig. 3-96: User Action Workflow Element

- 3 Drag the UserAction element to Workflow pane and drop on the canvas.
- 4 Double-click the UserAction element to modify its settings, see Figure 3-97.

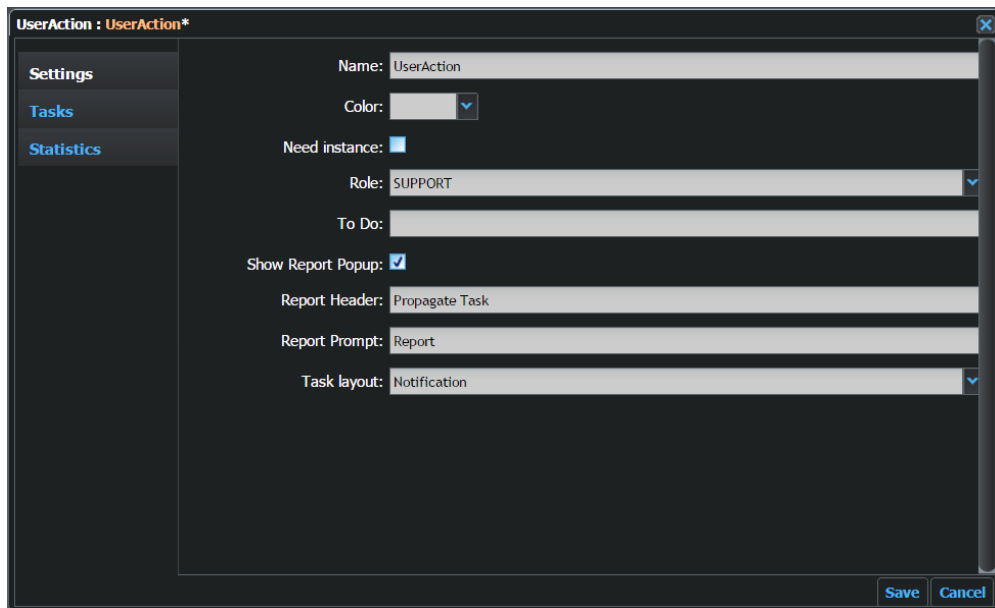


Fig. 3-97: UserAction Element Settings

- 5 Modify the settings as described in the *Configuration Guide*.  
 Modify the following settings as required:
  - Edit the **Name** field to change the element label (for example, if the action is to add metadata, call the element **Metadata**).
  - In the **Role** field, select the user role permitted to complete the assigned action. The action becomes available on the **To Do** page of the users belonging to the selected role.
  - Edit the **To Do** field to describe the action to perform (for example, add metadata to the incoming material). This is not an automatic action. To modify the value of an item of metadata, the user can edit it in the details pane of the **To Do** page and then choose the required action from the **Actions** pane to move the task along the Workflow.
  - In the **Task Layout** field, select the **Default Layout** option.
- 6 Click **Save** to store the UserAction settings.
- 7 Link the **OK** port of the **Transcoder** workflow element to the input port of the **UserAction** element.

---

**Note:** The User Action element enables a user to add one or more ports to the element in order to allow different solutions, for example, a Waiting port can indicate that the user is waiting for something to complete the process.

---

## Sending an Email

The final component in this example workflow is a **Send Mail** element. This element informs a Supervisor that the task processing is complete and that the processed material is ready for the next step.

To add a Send Mail workflow element:

- 1 In the Elements pane, open the **Automation** folder.
- 2 Drag the **Send Mail** element across to the Workflow pane and drop on the canvas.

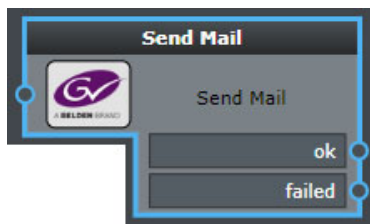


Fig. 3-98: Send Mail Workflow Element

- 3 Double-click the element to modify the element settings, see Figure 3-99.

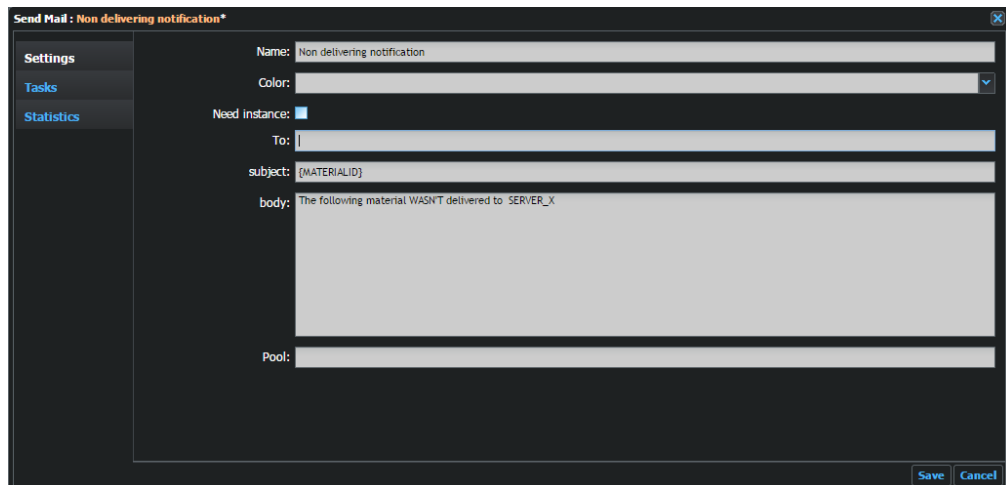


Fig. 3-99: Example Send Mail Element Settings

- 4 Modify the settings as described in the *Configuration Guide*.
- 5 Click **Save** to store the settings.
- 6 Link the **ok** port of the **UserAction** element to the input port of the **Send Mail** element.

Your workflow should now appear as follows:

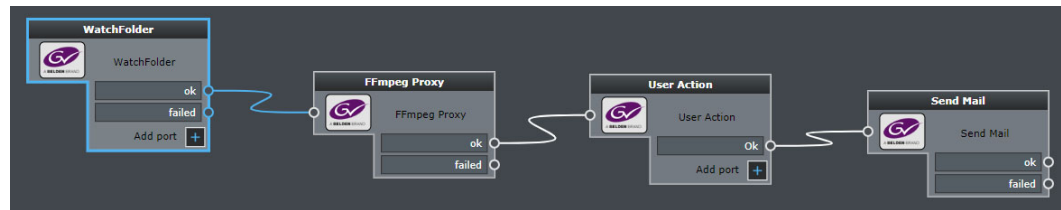


Fig. 3-100: Example of an Elementary Workflow

## Creating the Elements of a Workflow Using the Wizard

It is possible to use the **Create New Element Wizard** to view elements and set their parameters without moving them into the work area.

To start the wizard:

- 1 Right-click anywhere in the Workflow pane.
- 2 Select **Create new brick...** from the context menu.
- 3 Select a workflow element from the Elements tree, for example, click **UserAction**.

The following dialog appears:

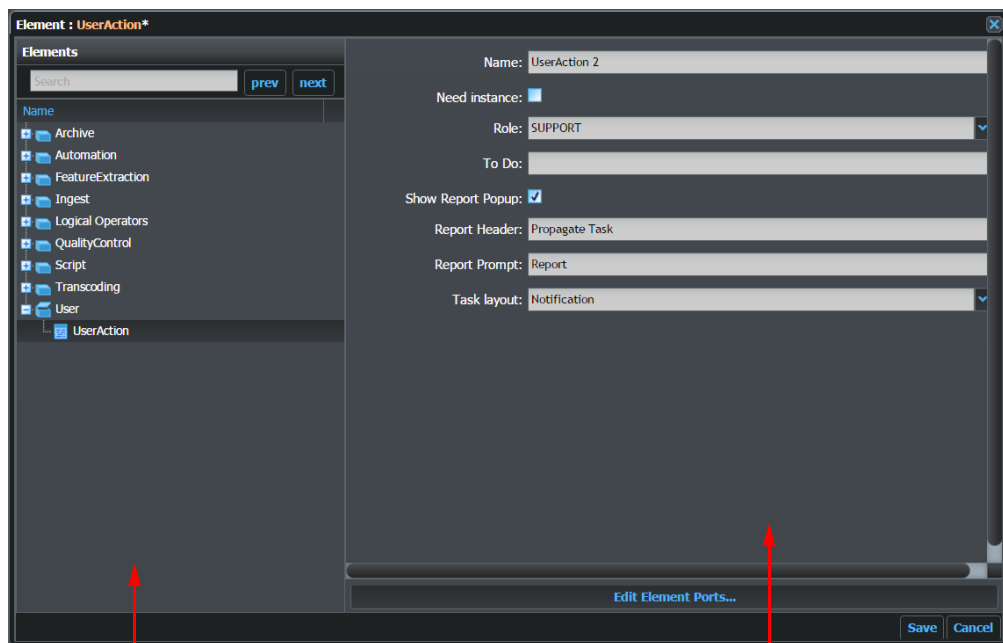


Fig. 3-101: Example User Action Element Settings

The pane is divided into two areas as follows:

- **The Elements pane** - This is the same as the Elements pane in the Workflow page. Here you can browse the available elements to select the one you need.

- **The Parameters pane** - This pane becomes active when you select an element in the Elements pane. Here all the element settings are available for modification.

If the element has configurable ports, an **Edit Element Ports button** is available at the bottom of the Parameters pane. Click to open a new dialog enabling you to configure the output ports.

After setting the parameters, click **Save** to close the wizard. The element appears in the workflow pane already initialized with the new values.

# 4 Ingesting Content

## Overview

The ingest process provides new material for processing by the Momentum system. When a new item is ingested, multiple actions take place. When ingesting content, Momentum:

- Stores a copy of the original file
- Creates an instance of the new element in the database
- Applies a metadata schema to the new material
- Starts a workflow.

Contents are ingested into Momentum using a variety of workflow elements and associated methods as follows:

- **Watchfolder:** Use a Watchfolder or Watchfolder FTP element in the workflow.
- **BXF Receiver:** Ingest new Titles from a Morpheus Payout Automation system or another Momentum system by way of a BXF XML message.
- **Morpheus:** Interface with a Morpheus Payout Automation system.
- **XCache Receiver:** Ingest a new Title by way of an XCache message.

---

**Note:** The XCache Receiver workflow element is planned to be deprecated from Momentum version 5.1. It is recommended to use the BXF Receiver in preference to the XCache Receiver.

---

- **Pam-EVS:** Ingest files from a Production Asset Management / Morpheus Payout Automation system to start workflows to replace or update missing material or metadata in the Morpheus database.
- **sQ Sync:** Listen for event types Clip Created, Clip Modified, or Clip Created originating from an sQ Zone and initiate a workflow to synchronize Momentum with an sQ Server environment.

These workflow elements are grouped together in the **Ingest** folder of the Elements pane in the Workflow page.

---

**Note:** To start an ingest operation, at least one workflow with an entry point must exist in the current system (see Section 3.6 Working with Task Actions and Task Statuses for details).

---

Momentum can ingest the following main classes of object as files:

Object Class	Description
Video	<p>The following <b>video</b> types are eligible for ingest:</p> <ul style="list-style-type: none"> <li>• MOV</li> <li>• MOV Ref (Mediadir folder needed to ingest media contents)</li> <li>• MXF</li> <li>• MXF-D10 (each audio channel becomes an audio track)</li> <li>• LXF</li> <li>• GXF</li> <li>• AVI</li> <li>• MP4</li> <li>• MPEG-2 (IMX, XDCAM, XDCAMHD, AVC-INTRA)</li> <li>• Apple ProRes.</li> </ul>
Sequence of Images	<p>The following sequences are eligible for ingest:</p> <ul style="list-style-type: none"> <li>• JPG</li> <li>• TIFF</li> <li>• PNG</li> <li>• TGA</li> <li>• YUV</li> <li>• DPX</li> </ul>
Audio	<p>Momentum ingests Audio tracks for video assets separately, and then uses the <b>AudioMorph</b> workflow element to render them with the required video Title. The following <b>audio</b> types are eligible for ingest:</p> <ul style="list-style-type: none"> <li>• WAV</li> <li>• AIFF</li> <li>• AC3</li> </ul> <p>The file name must be the same as the related video file and include a suffix <b>_ABC</b> (where ABC is a three character label to specify the language), together with a supported audio file extension.</p>
Subtitles / Captions	<p>Momentum ingests captions files separately and automatically associates them with the related video Title. The following <b>subtitle</b> types are eligible for ingest:</p> <ul style="list-style-type: none"> <li>• STL</li> <li>• SCC</li> <li>• SRT</li> <li>• WebVTT</li> </ul> <p>The file name must be the same as the related video file and include the suffix <b>_ABC</b> (where ABC is a three character label to specify the language), together with a supported subtitle file extension.</p>

Momentum automatically manages audio tracks and subtitles as children of a specified video Title. They are not considered as autonomous elements and only a limited range of actions is available for these types of material (no archiving of soundtracks is permitted, only the ingest of audio tracks linked to specific video Titles.)



---

**Note:** To ingest Caption files the option **Set Subtitle** must be activated and the **Default Language** specified for the Watchfolder element involved in the ingest process.

---

## Ingest from a Watchfolder

The **Watchfolder** element is an entry point for a workflow. This element enables you to define a folder that Momentum checks periodically for incoming material. When a new file is added to the folder, the ingest process starts automatically. When ingesting material, the most appropriate of several libraries (e.g., MediaInfo, Omneon, etc.) is automatically used to extract structural metadata information.

When ingesting assets that include embedded audio channels, you can define a stereo audio layout, linked to the Watchfolder element used for the ingest, and constrain the Titles created to use only this layout, see the Momentum *Configuration Guide* for more details.

For more details about the settings of a Watchfolder element, see Section 3.8.2 Creating an Entry Point for Media Files on page 63.

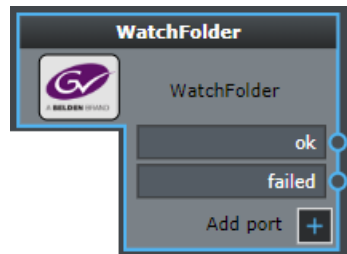


Fig. 4-102: Watchfolder Element

The Watchfolder element has configurable output ports to manage the result of the ingest action and these can be defined in the Watchfolder template.

---

**Note:** In the Elements pane of the Workflow page, the Ingest section contains two elements related to the Watchfolder function: Watchfolder and Watchfolder FTP. The only difference is the protocol used to access the monitored folders.

---

For more information, see:

- See Section 3.8.2 Creating an Entry Point for Media Files on page 63 for a description of the Watchfolder element.
- See the Momentum *Configuration Guide* for further information on configuring the Watchfolders.

## Using a Watchfolder in Sidecar Mode

A Watchfolder working in Sidecar mode, expects that a matched pair of files, one media file (video), and a **sidecar** XML file (metadata description), are ingested to start a workflow.

To activate the Sidecar mode on a Watchfolder element, additional configuration is required in the Watchfolder template, see the *Momentum Configuration Guide* for a detailed description of the configurable parameters.

When working in Sidecar mode, the **Watchfolder** element fails if only one of the two expected files arrives in the monitored folder. After a configurable timeout, Momentum checks the database and if no reference to the expected material is found, then the task progresses through the failed port.

## Ingest from Another Momentum or Morpheus Playout Automation System

Momentum is able to ingest BFX message files originating from either another Momentum system or a Morpheus Playout Automation system by way of the **BFX Receiver** workflow element. This enables Momentum to receive events relating to the creation, update or deletion of materials, depending on the operations performed in the database of the source system.

Prior to version 5.0, Momentum interfaced with a Morpheus Server application using the **Morpheus** workflow element.

In addition to the recommended ingest method using the BFX Receiver element, several other methods are currently available to interface between Momentum and a Morpheus system for the ingest of material, including:

- **Morpheus** (XMLDB Interface) workflow element (to be deprecated in Momentum version 5.1)
- XML **Gateway Receiver** workflow element (to be deprecated in Momentum version 5.1)
- **XCache Receiver** workflow element (to be deprecated in Momentum version 5.1)

## Ingest Using a BFX Receiver Workflow Element

When ingesting material using the **BFX Receiver** workflow element, Momentum monitors a configurable location, referred to as the BFX Route, for the arrival of BFX format XML message files. See Section *Defining BFX Routes for the BFX Workflow Elements* on page 79 for more information on setting up BFX Routes.



Fig. 4-103: BFX Receiver Workflow Element

When a BXF format XML message file arrives at the BXF Receiver, Momentum reads the values of the specific tags **<action>** and **<house number>**, validates the content of the message against the Momentum database and uses these values to determine the output route of the subsequent path for the task as follows:

- If the **<action>** tag contains the value **remove**, Momentum queries its database to check for a Title with a matching Morpheus ID or Material ID. If a matching Title exists in the database, then the BXF Receiver element routes the task through the **ok** port to initiate a workflow to remove the original Title from the Momentum database.  
To improve the clarity of your workflow, you might use the **Add port** function of the element to configure an additional port through which Momentum routes tasks intended to remove material from its database.
- If the **<action>** tag contains the value **add**, Momentum queries its database to check for a Title with a matching Morpheus ID or Material ID. If a matching Title exists in the database, then the BXF Receiver element routes the task through the **ok** port to initiate a workflow to update the original Title in the Momentum database with the newly ingested Title, or to create the new Title in the database, if there is no matching Title.  
To improve the clarity of your workflow, you might use the **Add port** function of the element to configure an additional port through which Momentum routes tasks intended to update material in the database.
- If the BXF message is a **Transfer Request**, Momentum queries its database to match the value of the **<house number>** tag to a Morpheus ID. If a matching Title exists in the database, then the BXF Receiver element routes the task through the **ok** port to initiate a workflow to complete the Transfer Request.  
To improve the clarity of your workflow, you might use the **Add port** function of the element to configure an additional port through which Momentum routes tasks of this type.
- If the BXF message is a **Transfer Request** that refers to an object that is **not** present in the Momentum database, then the BXF Receiver element routes the task through the **ok** port to initiate a workflow to complete the Transfer Request without supporting material.  
To improve the clarity of your workflow, you might use the **Add port** function of the element to configure an additional port through which Momentum routes tasks of this type.
- The task goes through the **failed** port if any system or connection errors occur during the ingest of the BXF message.

See Figure 4-104 for a schematic overview of the receipt of Morpheus transfer requests by the **BXF Receiver** workflow element.

See the Momentum *Configuration Guide* for more details about the BXF Receiver and its parameters.

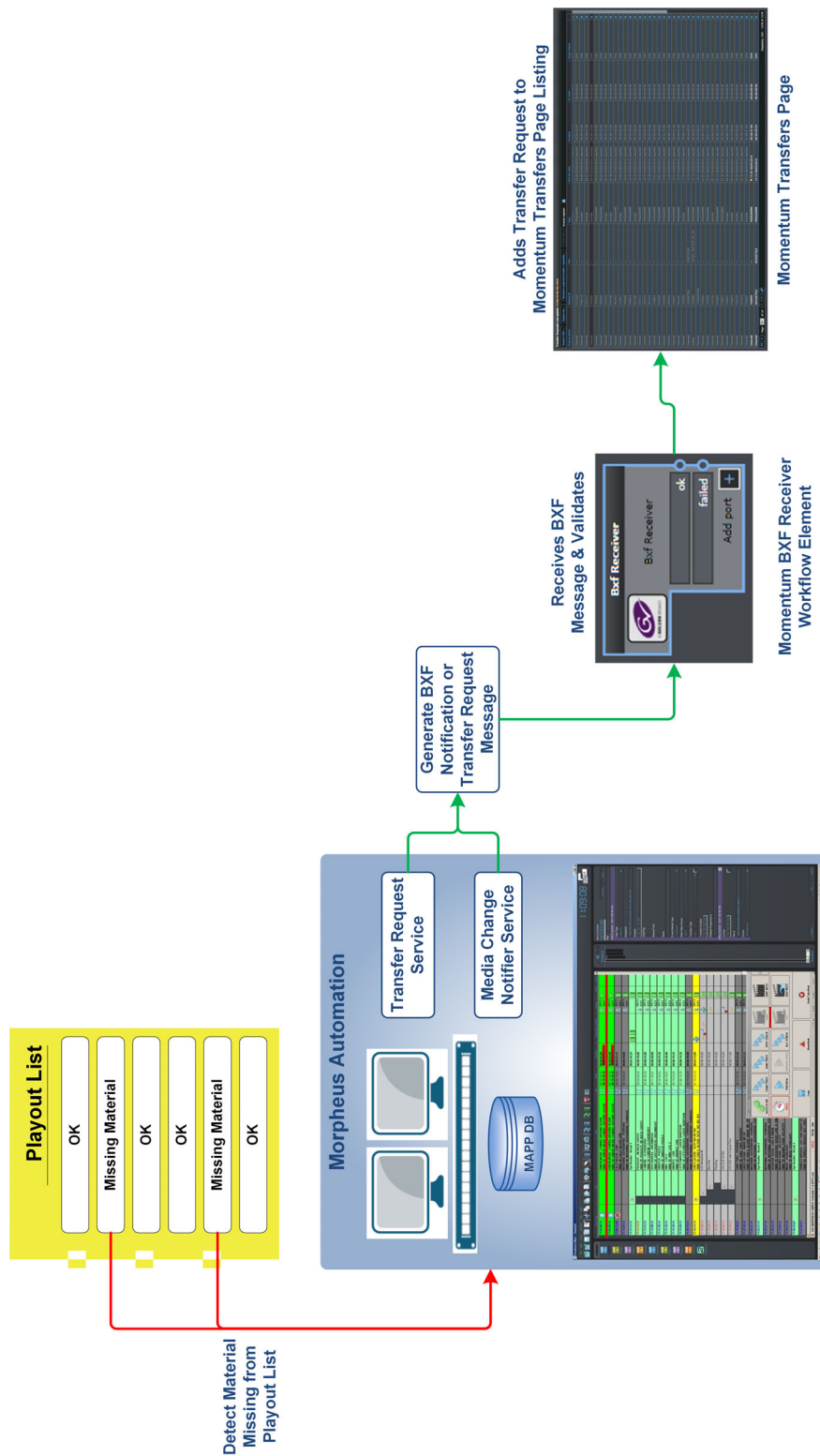


Fig. 4-104: Schematic Overview - Receipt of Morpheus Transfer Requests & Notifications by BXF Receiver

## Defining BFX Routes for the BFX Workflow Elements

Using the Admin page, you can define BFX routes for use by the BFX Receiver, BFX Morpheus Query, BFX Morpheus Export and BFX Transfer Metadata Receiver workflow elements, see Figure 4-106.

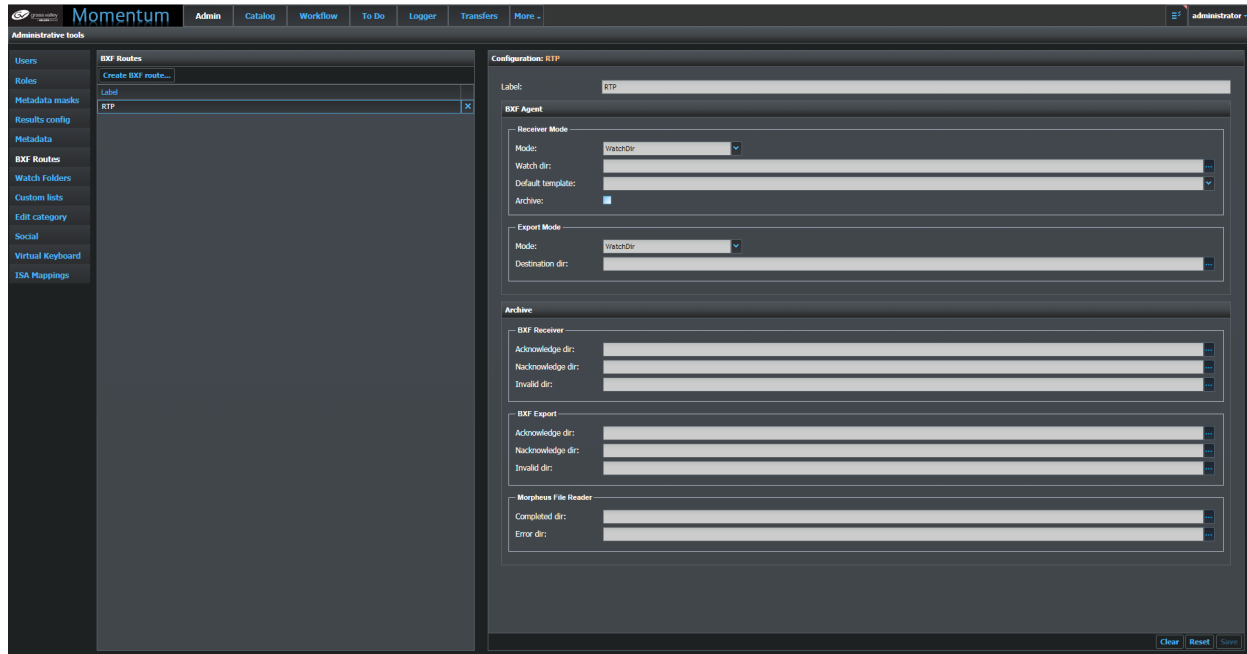


Fig. 4-105: Admin Page - Defining BFX Routes

In the **BFX Routes** pane, Momentum lists all existing routes for the import and export of BFX messages. You can use this pane to create new BFX routes and modify existing BFX routes as required. The **route** refers to the communication path followed by the BFX messages.

To create a new BFX route, click **Create BFX route...** The following dialog box is displayed requesting you to enter a label for the new BFX route:

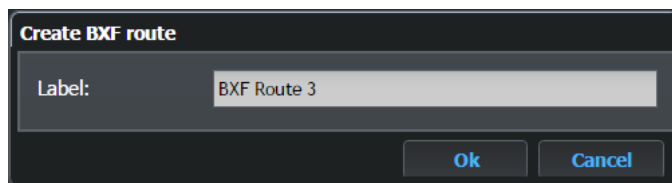


Fig. 4-106: Admin Page - Create BFX Route Dialog

Enter a unique label to identify the new BFX route you are defining, then click **Ok**. Momentum adds the new BFX route to the list and opens a new configuration pane for you to enter the details of the BFX route, see Figure 4-107.

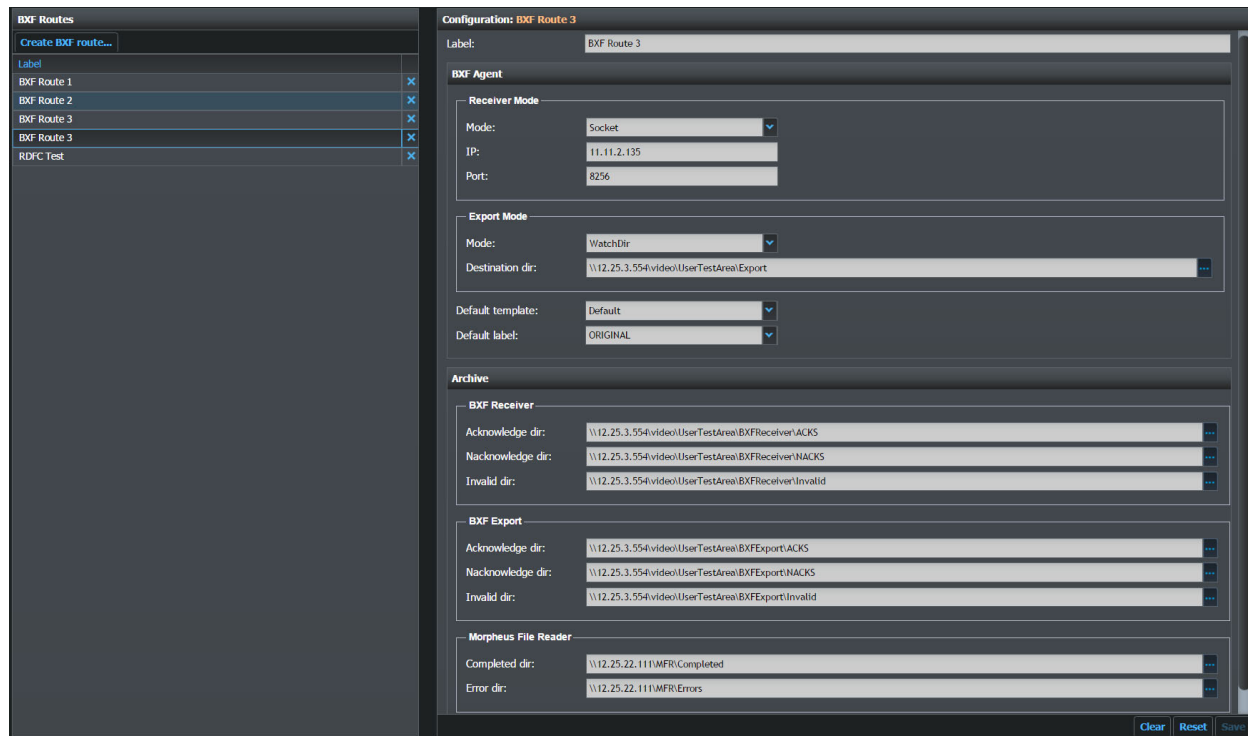


Fig. 4-107: Defining BXF Routes

The **BXF Agent** section enables you define the following components:

- **Receiver Mode** - Define the mode employed by the BXF Receiver workflow element to receive BXF messages. You can choose between **WatchDir** or **Socket** modes. The **socket** mode enables Momentum to receive BXF messages directly, using a socket reader, rather than wait for BXF files to appear in a watched directory. Using a socket connection can help to reduce latency in the communication between the source and target systems. If a socket connection fails, Momentum will retry to receive any messages that cannot be processed as a result of the connection failure. The **WatchDir** mode requires you to define the path to a directory that Momentum monitors for the arrival of BXF messages.
- **Export Mode** - Define the mode employed by the BXF Export workflow element to receive BXF messages. You can choose between **WatchDir** or **Socket** modes. The **socket** mode enables Momentum to export BXF messages directly, using a socket writer, rather than wait for BXF files to be placed in a watched directory. Using a socket connection can help to reduce latency in the communication between the source and target systems. If a socket connection fails, Momentum will retry to export any messages that cannot be processed as a result of the connection failure. The **WatchDir** mode requires you to define the path to a directory to which Momentum writes BXF messages.
- **Default template** - Select a default XML configuration file for the BXF workflow elements. These configuration files contain settings for the general action of the corresponding BXF element and the types of task routed through the **ok** and **failed** output ports.

The default templates are located in the following folders on the Momentum server:

- C:\Mantrics\BxfReceiverTemplates\default.xml
- C:\Mantrics\BxfExportTemplates\default.xml
- C:\Mantrics\BxfQueryTemplates\default.xml

For more information on the default configuration files for the BXF workflow elements, see the *Momentum Configuration Guide*.

For a schematic overview of the configurable components of the BXF workflow elements, see Figure 4-110 on [page 84](#).

- **Default label** - Select a default label used for the BXF workflow element.

Fig. 4-108: Defining BXF Routes - Configuring the BXF Agent Section

Configure the **BXF Agent** components as follows:

- 1 In the **BXF Routes** pane, select the label of the BXF route you want to configure.
- 2 In the **Receiver Mode** section, either keep the default **WatchDir** mode or click the **Mode** drop-down menu and select **Socket**.



- a For the **WatchDir** mode, enter the full path to be monitored by the BXF Receiver for the arrival of new BXF messages in the **Watch dir** field. This is the source directory from which a BXF Receiver workflow element receives BXF files.  
You can also click the browse icon ( ) to browse to the desired directory.
  - b For a socket connection, enter the **IP** address and **Port** number of the source server into the corresponding fields. This is the source from which a BXF Receiver workflow element receives BXF messages.
- 3 In the **Export Mode** section, either keep the default **WatchDir** mode or click the Mode drop-down menu and select **Socket**.
    - a For the **WatchDir** mode, enter the full path to the target destination directory used by the BXF Export element in the **Destination dir** field. This is the target directory to which a BXF Export workflow element exports BXF files.

You can also click the browse icon (  ) to browse to the desired directory.

- b For a socket connection, enter the **IP** address and **Port** number of the destination server into the corresponding fields. This is the target server to which a BXF Export workflow element exports BXF messages.
- 4 Click the Default template drop-down menu and select the required template name from the available list. Generally this will be **Default** unless you have configured your own BXF templates.
- 5 Click the **Default label** drop-down menu and select the required label for all BXF elements in that BXF route.
- 6 Click **Save** to save the BXF Agent settings.

The screenshot displays the 'Archive' configuration section. It is divided into three sub-sections:

- BXF Receiver:** Acknowledge dir: \\12.25.3.554\video\UserTestArea\BXFReceiver\ACKS; Nacknowledge dir: \\12.25.3.554\video\UserTestArea\BXFReceiver\NACKS; Invalid dir: \\12.25.3.554\video\UserTestArea\BXFReceiver\Invalid
- BXF Export:** Acknowledge dir: \\12.25.3.554\video\UserTestArea\BXFExport\ACKS; Nacknowledge dir: \\12.25.3.554\video\UserTestArea\BXFExport\NACKS; Invalid dir: \\12.25.3.554\video\UserTestArea\BXFExport\Invalid
- Morpheus File Reader:** Completed dir: \\12.25.22.11\VMFR\Completed; Error dir: \\12.25.22.11\VMFR\Errors

Fig. 4-109: Defining BXF Routes - Configuring the BXF Message Archive Paths Section

The **Archive** section of the BXF Routes configuration enables you to define archive folder locations for certain types of acknowledgment or error messages, resulting from BXF message communications, see Figure 4-109. This ensures that the messages are available for troubleshooting and diagnostic purposes.

### Defining the Archive Components

In the **Archive** section you can define the following components for the **BXF Receiver** and **BXF Morpheus Export** workflow elements:

- An **Acknowledge** directory in which to store received or exported acknowledgment messages (**Acks**), confirming the validity of the BXF message.
- A **Nacknowledge** directory in which to store received or exported negative acknowledgment messages (**Nacks**) rejecting the validity of the BXF message.
- A directory in which to save invalid or failed BXF messages.


In addition, you can also define the following components for the **Morpheus File Reader**:

- A directory for completed messages.
- A directory for error messages.



Configure the **Archive** components as follows:

- 1 In the Archive **BXF Receiver** section, browse to, or enter the full path for, the following directories:
  - A directory in which to archive Acknowledgment messages (**ACKs**), confirming a successful receipt of a BXF message.
  - A directory in which to archive Negative Acknowledgment messages (**NACKs**), confirming a failure to receive a BXF message.
  - A directory in which to archive invalid or failed messages relating to received BXF messages.
- 2 In the Archive **BXF Morpheus Export** section, browse to, or enter the full path for, the following directories:
  - A directory in which to archive Acknowledgment messages (**ACKs**), confirming a successful export of a BXF message.
  - A directory in which to archive Negative Acknowledgment messages (**NACKs**), confirming a failure to export a BXF message.
  - A directory in which to archive invalid or failed messages relating to exported BXF messages.
- 3 In the Archive **Morpheus File Reader** section, browse to, or enter the full path for, the following directories:
  - A directory in which to archive Completed messages.
  - A directory in which to archive Error messages.
- 4 Click **Save** to save the Archive settings.

To **remove** an existing BXF route, click the delete icon  corresponding to its label in the BXF Routes pane. No confirmation is required.

If necessary, the **Reset** button recalls the last saved version of the BXF route, discarding any changes since the last save. The **Clear** button clears the content of all the fields.

## Configuring Momentum / Morpheus MAPP Integration

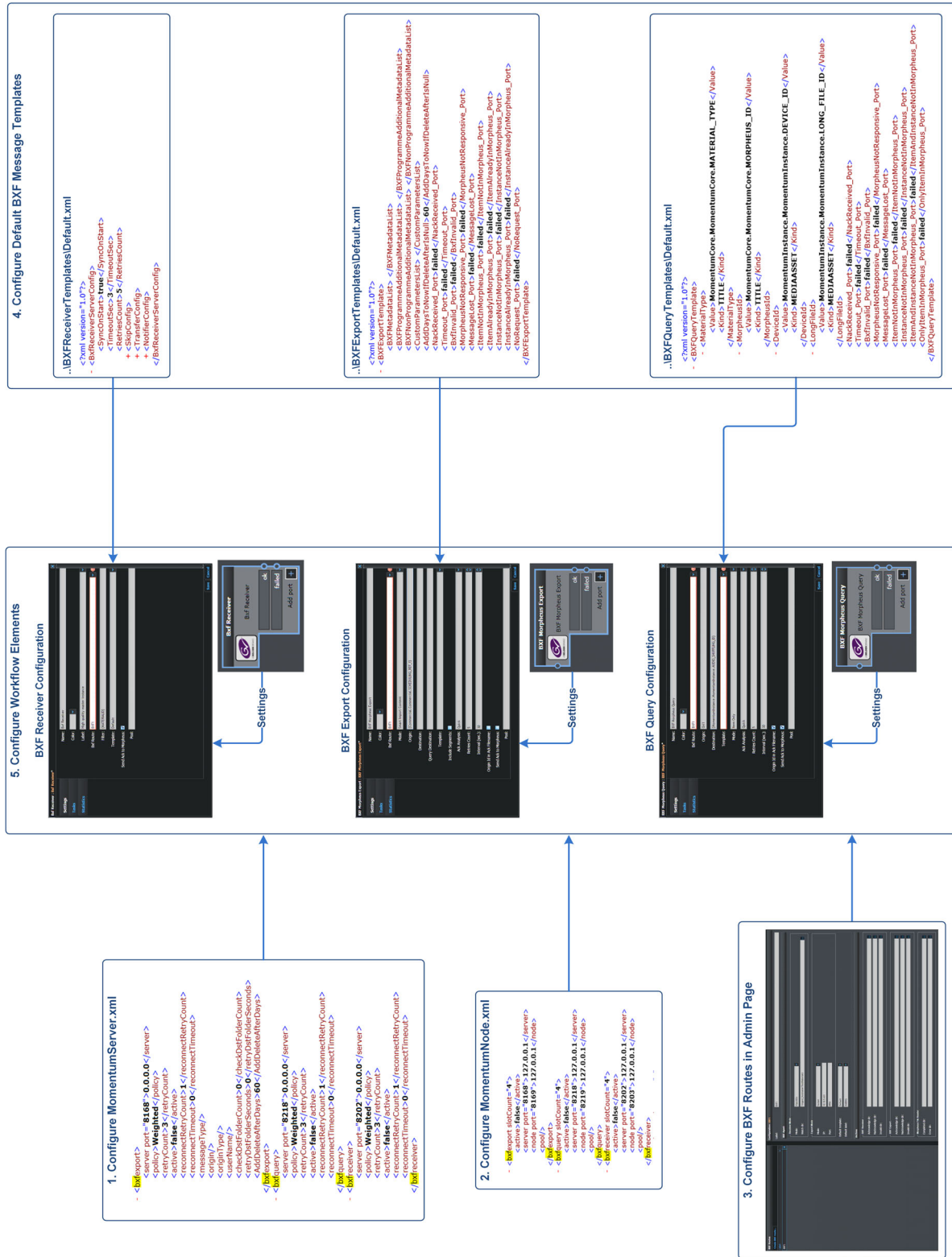


Fig. 4-110: Configuring the BXF Elements for Momentum / Morpheus Integration

## Ingest from a Morpheus System (XMLDB Interface) Element

**Note:** The **Morpheus** workflow element will be deprecated from Momentum version 5.1 and should not be used. It is recommended to use the BXF Receiver, BXF Query and BXF Export workflow elements to interface with a Morpheus system in preference to the Morpheus element.

Using the **Morpheus** workflow element, the Momentum system can interface with a Morpheus Playout Automation system by analyzing the messages generated by the XMLDB Interface.

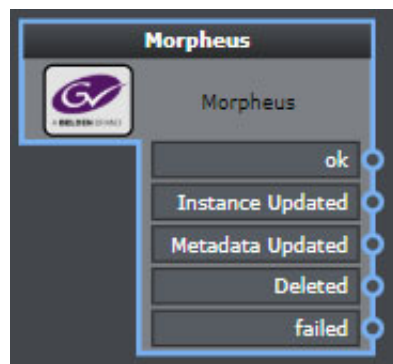


Fig. 4-111: Morpheus Workflow Element

Momentum uses the insert, update and delete commands contained in the message to determine the subsequent workflow of a task.

If a message contains the commands **insert** or **update**, then Momentum checks the existence of an Instance for the specified Title and for the specified Device ID.

- If the Instance is not found in the database, then a new Instance is created and the task goes through the **ok** port.
- If the Instance is already present in the database:
  - If the Instance was originally ingested from another source, it is updated to appear as if it was ingested by the XMLDBInterface. The task goes through the **Instance Updated** port.
  - If the Instance was created by an older version of the XMLDBInterface, then it is deleted together with all of its children. The new Instance is inserted into the database. The task goes through the **ok** port.
  - If the Instance is the same as the one already in the database and only a few items of metadata are different, the original Instance is preserved, the metadata is modified and the task goes through the **Metadata Updated** port.

If the message contains a **delete** command, Momentum checks for the existence of an Instance for the specified Title and for the specified Device ID. If the Instance is found, depending on the configuration, its label can be set to Deleted. The task goes through the **Deleted** port and is automatically set to refer to the instance specified in the XMLDBInterface message.

See the *Momentum Configuration Guide* for more information on the **Morpheus** workflow element, its parameters and the configuration file settings.

The Morpheus Server is able to track all the received events and use a synchronization parameter to recall all the events up to the last received. You can also force synchronization with the Morpheus Media Management database (MAPP) to ingest only the material created or updated during a defined time span.

To synchronize the Momentum database with the Morpheus Media Management database:

- 1 Open a command prompt and navigate to the directory where the Morpheus Server application is installed. In a standard installation, the directory is:

```
C:\Program Files\Mantrics S.r.L\Morpheus Server 2.2
```

- 2 Enter the following:

```
MorpheusServer.exe -sync 01-jan-2017 01-feb-2017
```

Where the first date is the start day and the second date is the last day of the synchronization time span.

---

**Note:** If material with the same ID is ingested, Momentum verifies the dates and if the material is to be deleted, it creates a new ingest to update the material with the new content.

---

## Ingest using an XML Gateway Receiver Element

---

**Note:** The **Gateway Receiver** workflow element will be deprecated from Momentum version 5.1 and should not be used. It is recommended to use the BXF Receiver, BXF Query and BXF Export workflow elements to interface with a Morpheus system in preference to the Morpheus element.

---

When ingesting using the XML **Gateway Receiver** workflow element, Momentum monitors a specified target folder for the arrival of XML Gateway files. These files have a predefined format and contain both the metadata description of a material, and the path where the media file is located.



Fig. 4-112: XML Gateway Receiver Workflow Element

This element has several specialized output ports to manage the result of the ingest action as follows:

Port	Description
ok	Used when the XML is correct and the files are available.
Missing Media	Used when the media files specified in the XML file are not available or reachable.
Missing Metadata	Used if one or more mandatory items of metadata are not initialized in the XML file.
Invalid Metadata...	Used when values specified as mandatory are missing from the XML file.
ID Mismatch	Used when the Material ID differs from the Filename specified.
Duplicate	Used if the material is a duplicate. To verify this condition, Momentum checks the metadata specified in the configuration file.
Failed	Used if any system or connection errors occur during ingest of the XML Gateway file.

The **Gateway Receiver** workflow element does not directly monitor the media file, only the target location specified in the XML file in order to ensure that the material is reachable. If the ingest process can progress with no errors, Momentum creates a new Instance and Title and starts the next stage of the connected workflow.

For more details about the XML Gateway Receiver element, see the *Momentum Configuration Guide*.

## Ingest using an XCache Receiver Element

---

**Note:** The **XCache Receiver** workflow element will be deprecated from Momentum version 5.1 and should not be used. It is recommended to use the BXF Receiver, BXF Query and BXF Export workflow elements to interface with a Morpheus system in preference to the Morpheus element.

---

The **XCache Receiver** monitors a target folder for incoming XCache messages and manages the routing of Delete and Transfer Request message types.

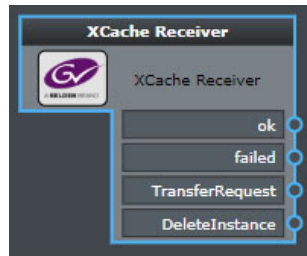


Fig. 4-113: XCache Receiver Workflow Element

When an XCache message arrives, it contains a Morpheus ID. Momentum retrieves this ID and carries out the following checks:

- If the same Morpheus ID is already associated with an item of material in the database, then the task goes through the **ok** port, regardless of message type.

You can activate more strict matching by setting the `<DeviceIdIgnore>` tag to **true** in the configuration file:

```
C:\Mantrics\XCacheReceiverConfig.xml
```

In this case the Material must have the Morpheus ID specified and an instance with the DeviceId metadata equal to the DeviceId specified in the XML message. If both the conditions are true, the task goes through the **ok** port.

- If there is no Material with the same Morpheus ID, then Momentum creates a new item of material with the Morpheus ID. The task goes through either the **TransferRequest** port or the **DeleteInstance** depending on the message type received.
- If the XML received is not valid, then Momentum creates an empty Title and the task goes through the **failed** port.

See the *Momentum Configuration Guide* for the configuration details of the XCache Receiver.

## Ingest using a PAM-EVS Element

The **Pam-EVS** workflow element is an entry point that enables Momentum to ingest files received from an EVS Production Asset Manager (PAM) system and update a Morpheus Playout Automation system accordingly.

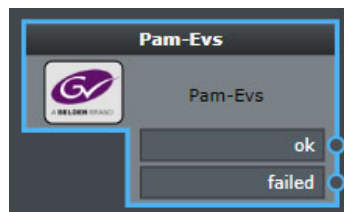


Fig. 4-114: PAM-EVS Workflow Element

This **PAM-EVS** workflow element ingests files in several stages, as follows:

- 1 Inbound files are first delivered to a specific location on a NAS storage platform (for example, EMC Isilon).
- 2 Depending on its configuration mode (Socket or DirWatcher) the **PAM-EVS** workflow element either:
  - Takes delivery of various format files (\*.\*, \*.**TXT**, \*.**MXF**, or \*.**XML**) files across the defined socket connection between Momentum and the NAS.
  - Monitors for the appearance of **TXT** or **XML** files in the specified watch directory.
- 3 Momentum validates the incoming files.
- 4 If necessary, Momentum uses the configured Conversion Script to convert the incoming file to a suitable XML format for Momentum.
- 5 For new XML files, Momentum starts a workflow on the **Complete** path as follows:
  - If media is not found, the element starts a **Missing Media** workflow to send notifications.
  - If a value is missing from the XML file, the element starts a **Missing Metadata** workflow.
  - If a specific value (for example, MATERIAL\_ID or LONGFILE\_ID) does not match the filename, the element starts a **Mismatch** workflow.
  - If the XML file fails validation against the XML standard, or certain values are missing, the element starts the **Failed or Missing Metadata** workflow.
  - If the same ID is already in the Momentum DB then the workflow start the Duplicate path

Momentum attempts to export new material to the Morpheus database.

## Ingest from sQ Server Systems

The **sQ Sync** workflow element provides an interface to an sQ Server environment. This sQ Sync interface registers with one or more sQ ISA Managers, using the configured sQ Zones, for updates on material and also to allow updates and deletion requests to be sent from Momentum to the ISA Manager.

The **sQ Sync** workflow element enables Momentum to listen for the sQ events: **ClipCreated**, **ClipModified** and **ClipDeleted** generated from the sQ environment and then makes the appropriate changes in Momentum. Momentum communicates with the sQ ISA Manager using the Common Object Request Broker Architecture or CORBA.

When a clip is created in the sQ database, the sQ Sync workflow element captures the ClipCreated notification and creates a Momentum TITLE with a TITLE ID taken from the Clip GUID value, contained in the sQ database.

The detected event then triggers an appropriate workflow as follows:

- On detecting a ClipCreated event, after processing the task, Momentum:
  - Creates a new Material Title.
  - Creates a new mediaAsset child of the new Title.
  - Creates a thumbnail and sets it as the Title icon.
  - Allocates metadata to the sQ mediaAsset.

- Propagates the task through the **Clip Created** port.
- On detecting a **ClipModified** event, after processing the task, Momentum:
  - Modifies the sQ Metadata.
  - Propagates the task through the **Clip Modified** port.
- On detecting a **ClipDeleted** event, after processing the task, Momentum:
  - Takes no action on the material.
  - Propagates the task through the **Clip Deleted** port.

For a schematic overview of the Momentum / sQ integration, see Figure 4-115.



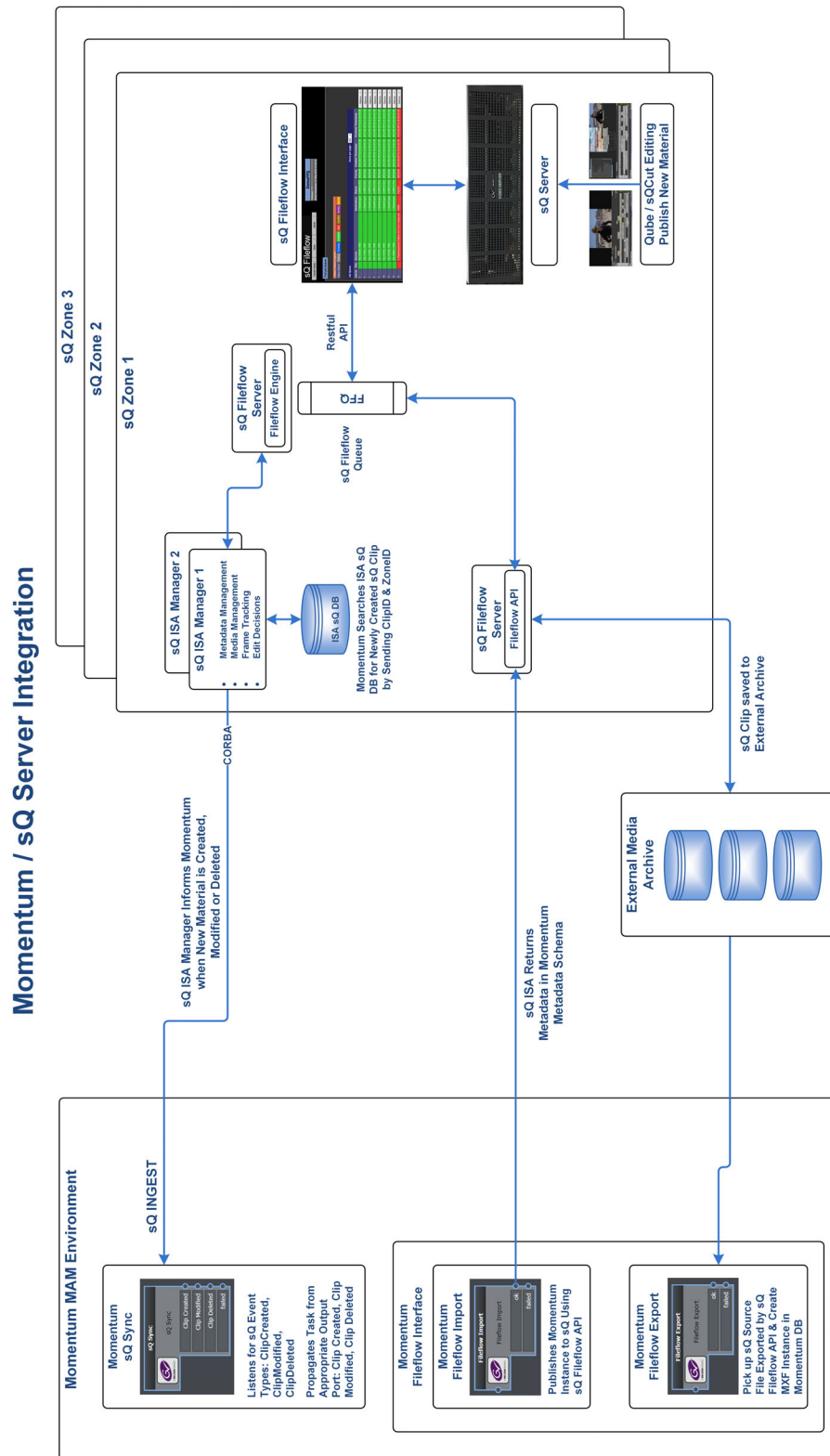


Fig. 4-115: Overview of the Integration Between Momentum and sQ Server



# 5 Working with Metadata

## Overview of the Momentum Database Objects

Objects of different types in the Momentum database are associated with specific sets of metadata. Momentum automatically assigns a unique ID (the GUID) each time a new object is created.

In normal operation, most users search for and control a **TITLE** object; the common term used in Momentum for all versions of the same media asset.

The following objects are available in the Momentum database:

Object	Description
PROJECT	A virtual folder that can contain any kind of object. It is publicly available to users.
TITLE	An object that can contain multimedia material.
MEDIAASSET	An object that contains a media file.
AUDIOTRACK	An object that represents the audio component of a media asset file.
KEYSEGMENT	A sub-video material; it does not have any specific file content, but instead contains pointers to the video material.
TAPE	An object that originated from a tape source, for example, a VTR.
HDD	An object that originated from a Hard Disk Drive source.
OPTICAL	An object that originated from an optical support mechanism, for example, a DVD or BluRay disk.
PROTOCOL	An object that originated from a data transfer mechanism such as FTP.
DOCUMENT	Any type of support file that the user considers useful to attach to an item of material (for example, PDF or EML files).
IMAGE	An object that contains an image file.
TIMELINE	An aggregate of audio/video and text, as represented in the Momentum timeline.
DEFECT	An object that contains metadata.
THUMBNAIL	A single thumbnail linked to a TITLE or a MEDIA ASSET.
CAPTION	An object child of a title containing the subtitles of the MEDIA ASSET.

## Database Schemas

The following schema represents how a movie is structured in Momentum.

### Example Schema

```
The Movie (PROJECT)
  The Movie 1st half (TITLE)
    The_Mov_1st_half.mxf (MEDIA ASSET)
  The Movie 2nd half (TITLE)
    The_Mov_2nd_half.mxf (MEDIA ASSET)
  The Movie_Final (TITLE)
    The_Mov_final.mxf (MEDIA ASSET)
  TIMELINE for On Air (TIMELINE)
    The_Mov_1st_half.mxf (MEDIA ASSET)
    The_Mov_2nd_half.mxf (MEDIA ASSET)
  TIMELINE for prime time trailer (TIMELINE)
    The_Mov_Trailer.mxf (MEDIA ASSET)
      Shot1 for trailer (KEYSEGMENT)
      Shot2 for trailer (KEYSEGMENT)
  Supplier NDA.pdf (DOCUMENT)
```

In this example, the movie:

- Is split into two halves,
- Has a defined prime-time trailer,
- Has playout automation for stitching together the two parts,
- Includes some document material.


A schema of metadata is automatically applied to the material during ingest, depending on the category selected in the start element of the workflow (see [Creating a Workflow](#) for details).

## Creating Metadata

The process for creating metadata can be automatic or manual:

- **Automatic** - Momentum extracts items of metadata, which are embedded in the file or signal, and inserts them into the database, see [Automatic Metadata](#) for more information.
- **Manual** - Metadata is defined and added by users and each modified value is immediately updated in the database.

Some metadata items such as **Title**, **Description** and **Keywords** are common to all material, while others depend on the material category.

All Momentum pages in which a Details pane is active (for example, the **Catalog** or **To Do** pages), users with the correct role permissions can edit metadata. All non-system metadata in the Details pane is editable by clicking the edit icon .

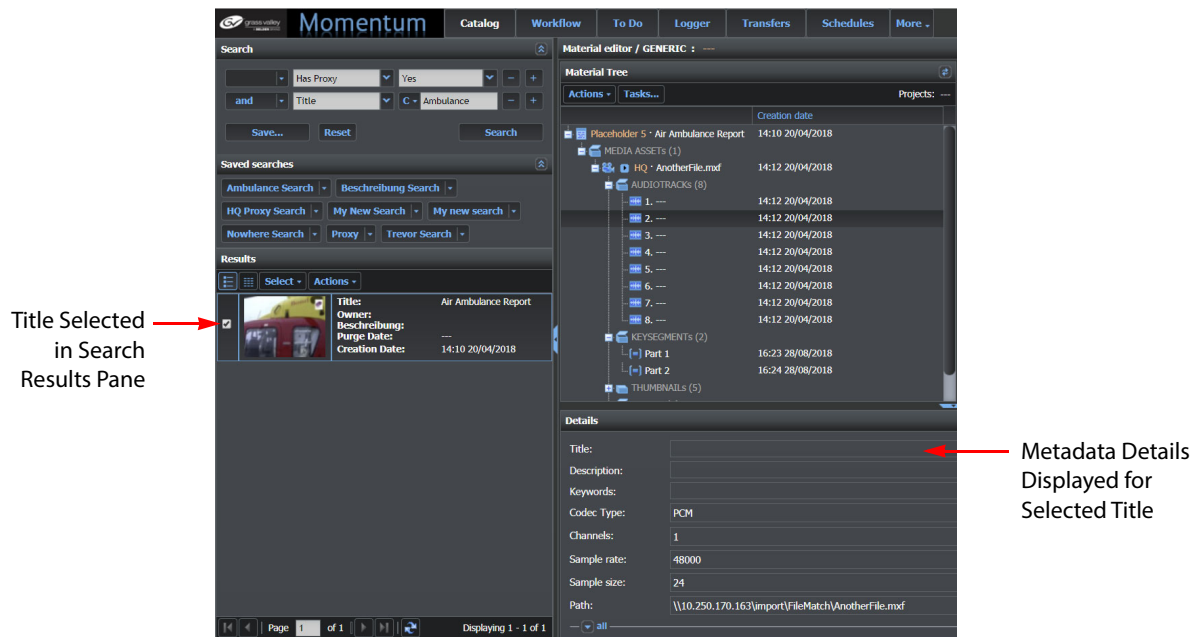


Fig. 5-116: Editing Metadata in the Catalog Page

## Automatic Metadata

Momentum automatically extracts the following items of metadata from the material and places it in the database:


- **Picture Aspect:** WxH, Aspect Ratio, Frame Rate, Interlacing
- **Timecode related:** TC IN, TC OUT, isDropFrame
- **Codec:** Codec Name


Momentum also extracts the following audio metadata:

- **Length:** Duration
- **Sampling:** Sample Rate, Bit per Samples, Number of Channels
- **Codec:** Codec Name
- **Additional information:** StreamPos, Language

## Editing Metadata

To edit an item of metadata:

- 1 Select the material in the **Results** pane of a search tool.
- 2 In the header of the **Details** pane, click the edit icon  .
- 3 Scroll down the pane to find the required metadata to modify.
- 4 Enter the new value.

- 5 In the header of the **Details** pane click the edit icon  to save the changes. You will need to refresh the search before your changes are reflected in with the thumbnail or details of the search results.

## Customizing Metadata Schemas Using Metadata Masks

A **metadata mask** defines how the metadata is displayed in the Catalog Details pane. By default, Momentum provides some categories with preconfigured schemas. You can, however, customize the category fields in a schema using the **Admin > Metadata masks** page. You can modify the related schema by adding or removing attributes and also by selecting metadata for each attribute.

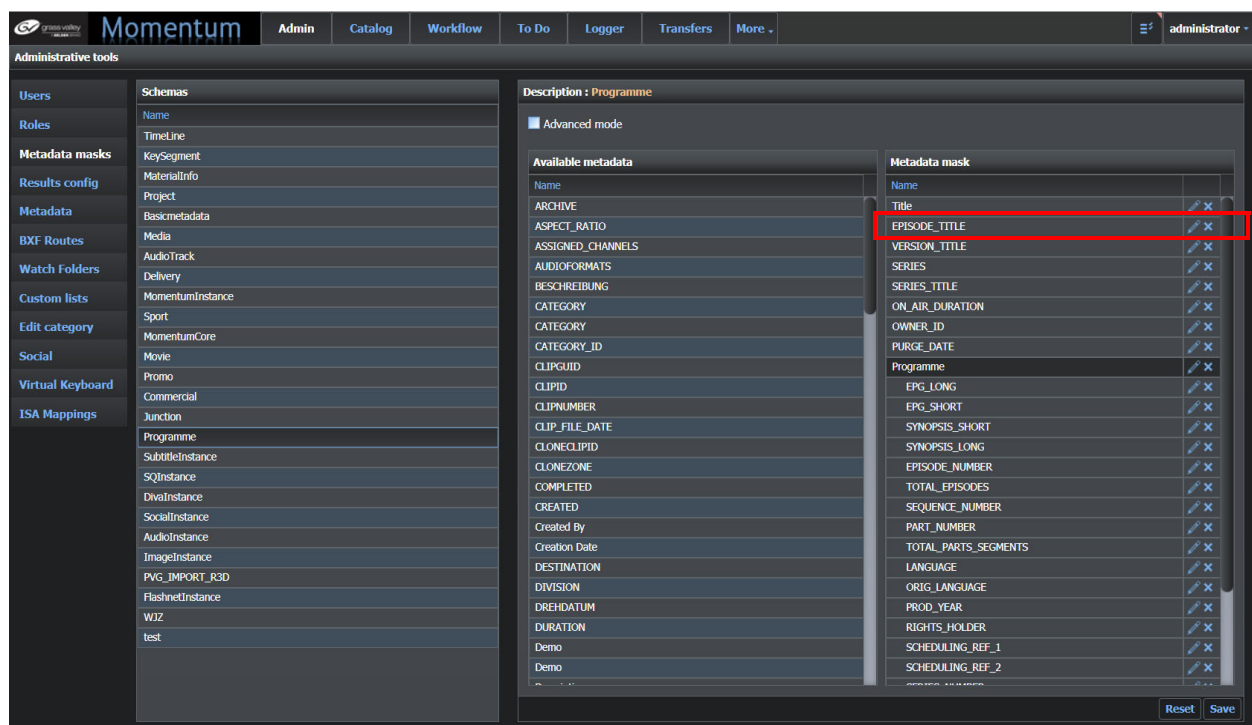


Fig. 5-117: Admin Page Metadata Masks Configuration

You can manipulate metadata listed in the metadata mask **Description** area by dragging the selected metadata and dropping into the other pane. You will need to save any changes to the metadata schema in order for them to become active.

---

**Note:** Attributes listed in the configuration are directly visible in the Catalog **Details** pane, while others are placed into groups, if created, or into the **All** group, which is created by default.

---

## Adding an Item of Metadata to a Schema

To add an item of metadata to a selected metadata schema:

- 1 Select the Schema from the **Schemas** list in the left-hand pane. The **Available Metadata** and the **Metadata mask** panes update automatically.
- 2 Select the required metadata in the **Available metadata** pane, then and then drag and drop it into the **Metadata mask** pane. The metadata is added to the mask.
- 3 Click **Save** to save and activate the new configuration.


## Modifying the order of Metadata in a Schema

To reorder the metadata in a selected schema:

- 1 Select an item of metadata in the Metadata mask pane.
- 2 Drag and drop it into its new position.
- 3 Click the **Save** button to save and activate the new configuration.

## Modifying the Order Label of Metadata into a Schema

To modify the label of a metadata in a selected schema:

- 1 Select an item of metadata in the Metadata mask pane.
- 2 Click the edit icon  .  
This opens the Details dialog.
- 3 Enter a new name for the metadata in the **Name** field.
- 4 Assign the group to which the metadata belongs by selecting from the **Group** drop-down menu, if necessary.
- 5 Click **Ok** to save your change
- 6 Either make further metadata changes, or click **Save** to save and activate the new configuration.

## Deleting an Item of Metadata from a Schema

To delete an item of metadata from a selected schema, click the Delete icon  .

The metadata is removed from the Metadata mask pane and moved into the Metadata available pane.

## Creating a New Metadata Group

The metadata masks define how Momentum displays the metadata for a selected element on the Catalog page. An item of material added to the metadata mask shown in Figure 5-117, appears as follows on the catalog page:

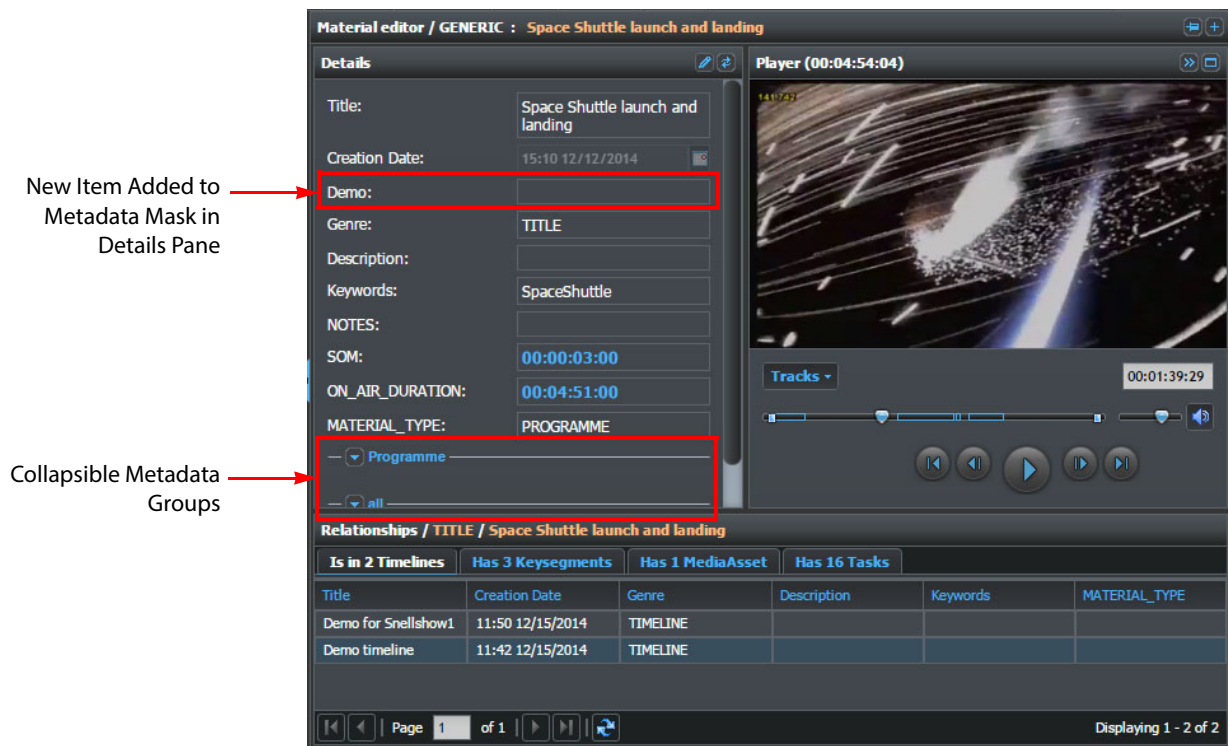



Fig. 5-118: Metadata Added to Metadata Mask in Details Pane of Catalog Page

The Details pane first lists the metadata which is included in a mask but that is not included in a metadata group. The metadata placed in the **Programme** and **All** groups is listed in collapsible lists below.

To create a new **group** in a metadata schema:

- 1 Click the edit icon  next to the name of an item of metadata in the metadata mask pane.

A new **Details** dialog is displayed which enables you to edit the metadata label and create or assign a group to the selected metadata (select a group from the drop-down list if you want to assign it to an existing group).

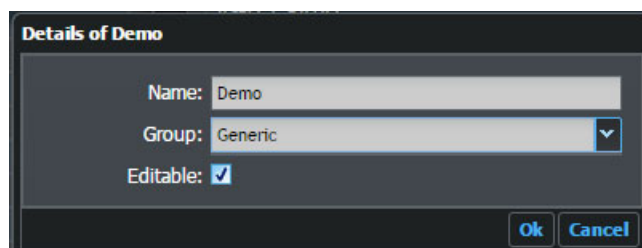


Fig. 5-119: Creating a New Metadata Group

- 2 Enter the name of the new group in the **Group** field.
- 3 Click **Ok**.

Momentum creates the new group and assigns the selected metadata to that group.



Organize the metadata content of the new group by dragging and dropping metadata from the **Available metadata** pane or within the same metadata mask pane.

Figure 5-120 shows that a new **Generic** group has been added to the schema.

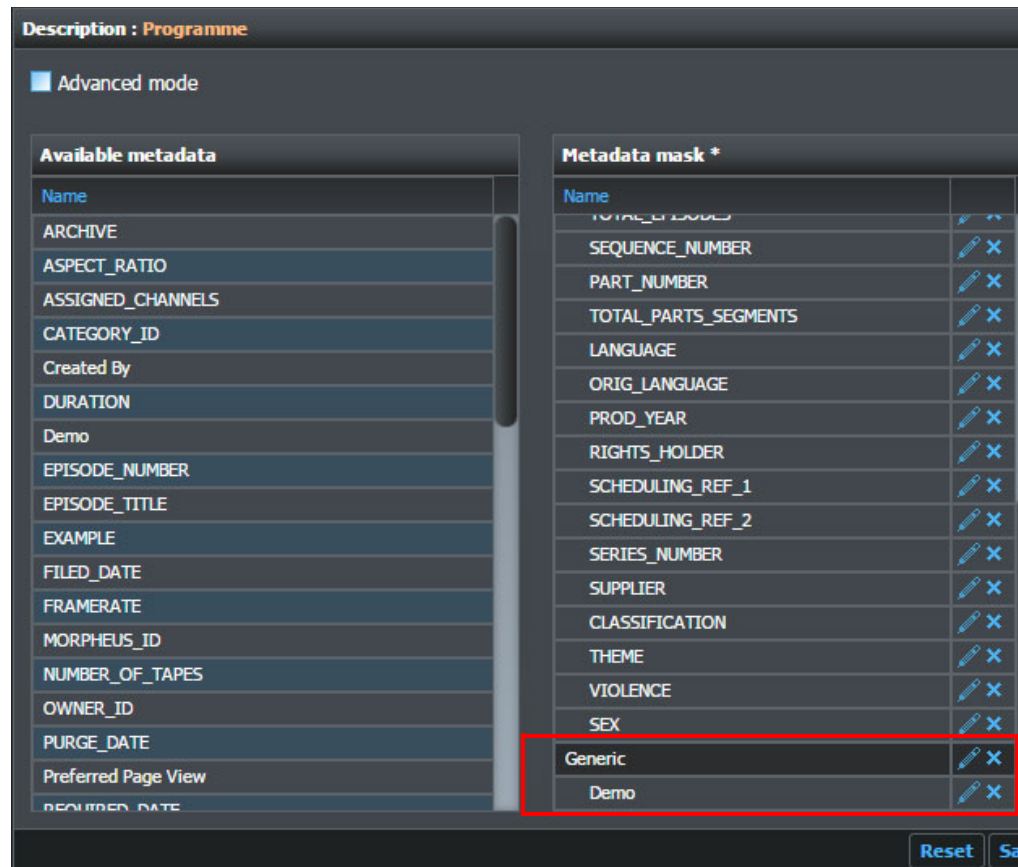


Fig. 5-120: New Metadata Group Added to Metadata Mask

- 4 Click **Save** to save the change and activate the new configuration.  
On the Catalog page, the same material now shows the new group of metadata in the Details pane.

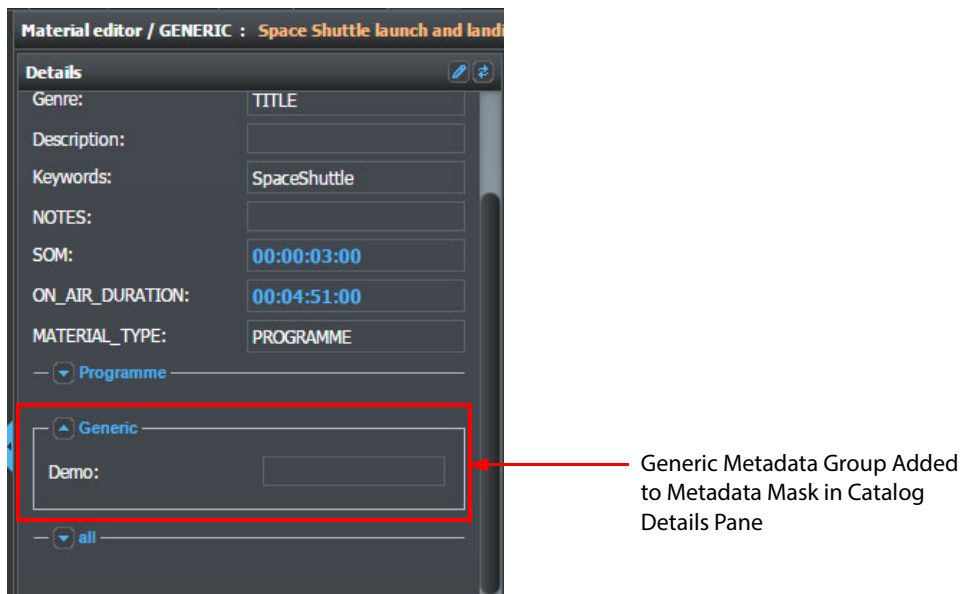


Fig. 5-121: Catalog Page New Metadata Group Added to the Details Pane

## Configuring Search Result Attributes

When Momentum displays the results of a material search (either in the **Thumbnails** view or **List** view) it includes some metadata for each item reported. You can customize this information, as required, using the **Admin > Results config** page.

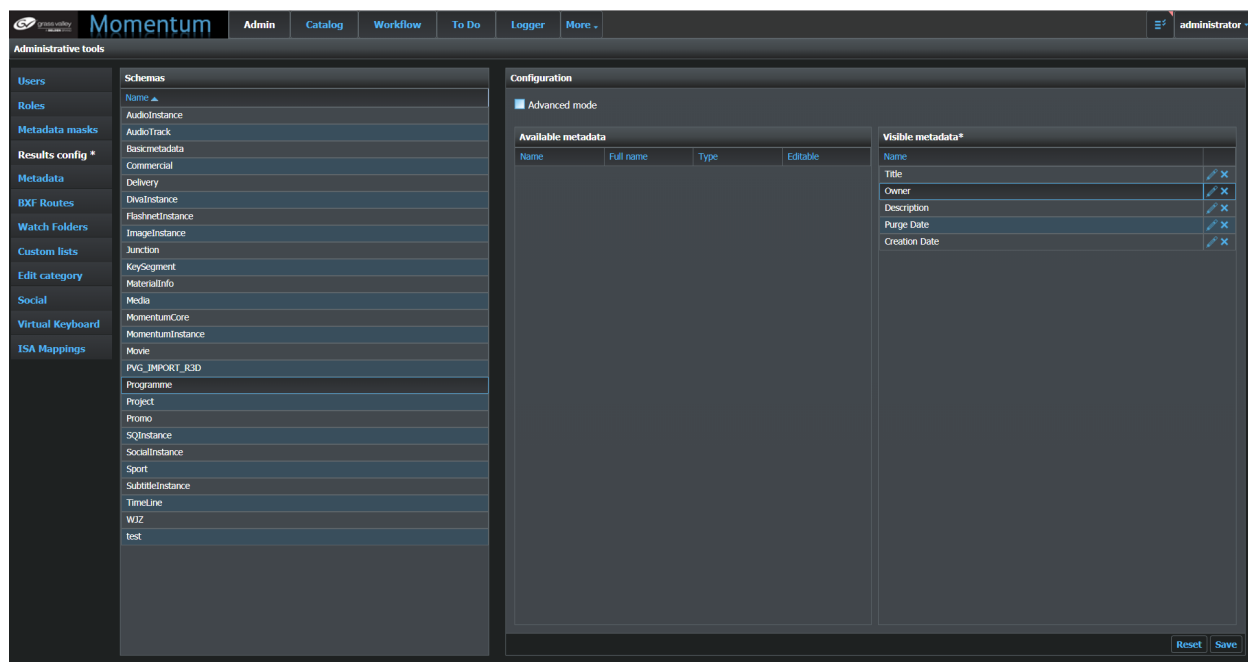


Fig. 5-122: Results Configuration

The configuration of the **Results** page affects all of the material in a selected schema and all of the results in the GUI search tools.

**Note:** The saved configuration also affects the items listed in the To Do page and in the material browser on the Editing page (see Chapter 8 [Working with Metadata](#), on page 93 and Chapter 7 [Creating Content in the Logger Page](#), on page 139 for details).

## Making Metadata Visible in a Results list

To add attributes to the search **Results** pane:

- 1 Navigate to the **Admin > Results config** page.
- 2 Select a metadata schema from the Schemas list.
- 3 Select an item of metadata from the **Available metadata** list and drag it to the **Visible metadata** pane.
- 4 Click **Save** to save and activate the new configuration in the Search Results pane.

## Modifying the Display Order of Metadata in a Results List

To reorder the metadata in a specific configuration:

- 1 Navigate to the **Admin > Results config** page.
- 2 Select a metadata schema. The current metadata configuration is loaded into the **Visible metadata** pane.
- 3 Click and drag the selected metadata to a new position in the list.

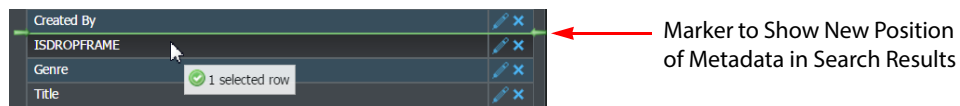



Fig. 5-123: Changing the Order of Metadata in Search Results List

- 4 Click **Save** to save and activate the new configuration.

## Removing Metadata from a Search Results List

To remove an item of metadata from a configuration so that it is no longer visible in a Results list:

- 1 Navigate to the **Admin > Results config** page.
- 2 Select the metadata schema. The configuration is loaded into the **Visible metadata** pane.
- 3 Click the Delete icon  next to the metadata name.
- 4 Click **Save** to save and activate the new configuration.

## Using the Advanced Mode

In both the **Metadata masks** and **Results config** pages, an **Advanced mode** checkbox enables you to display more information about the metadata. When activated, Momentum displays additional columns in the **Available metadata**, **Metadata mask** and **Visible metadata** panes as shown in Figure 5-124:

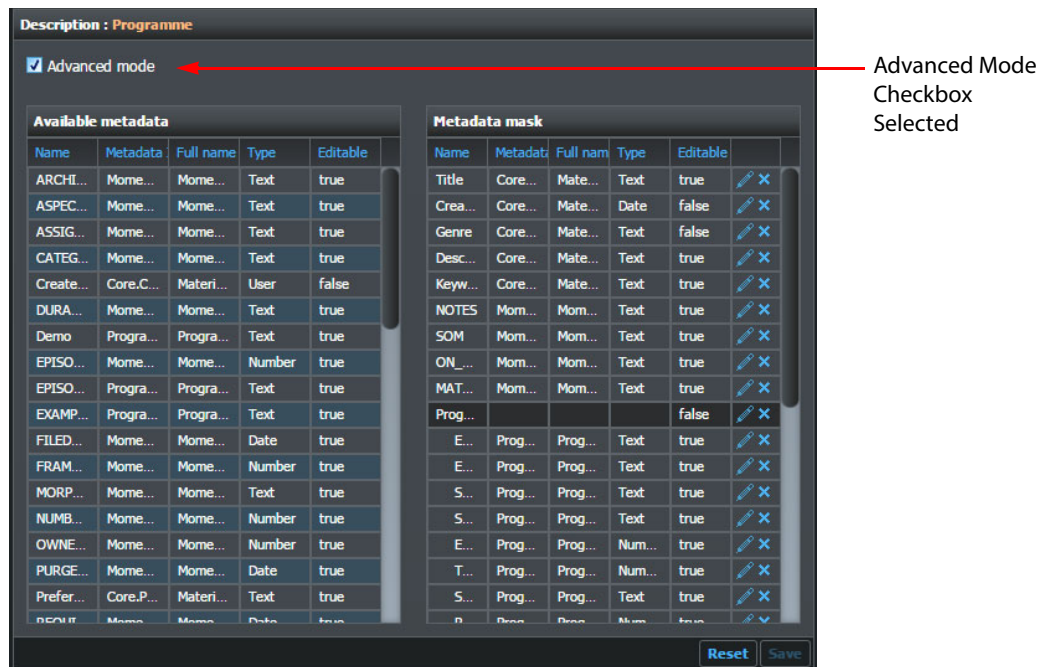


Figure 5-124: Admin Page Advanced Mode Active

The additional columns include the **Metadata ID** and the **Full name** columns. This information provides the full name of the metadata and is useful to understand which schema inherits the selected metadata.

## Managing System Metadata

The **Admin > Metadata** page provides an overview of all metadata available in the database schema used on a specific Momentum installation. You can also make changes to the metadata as required.

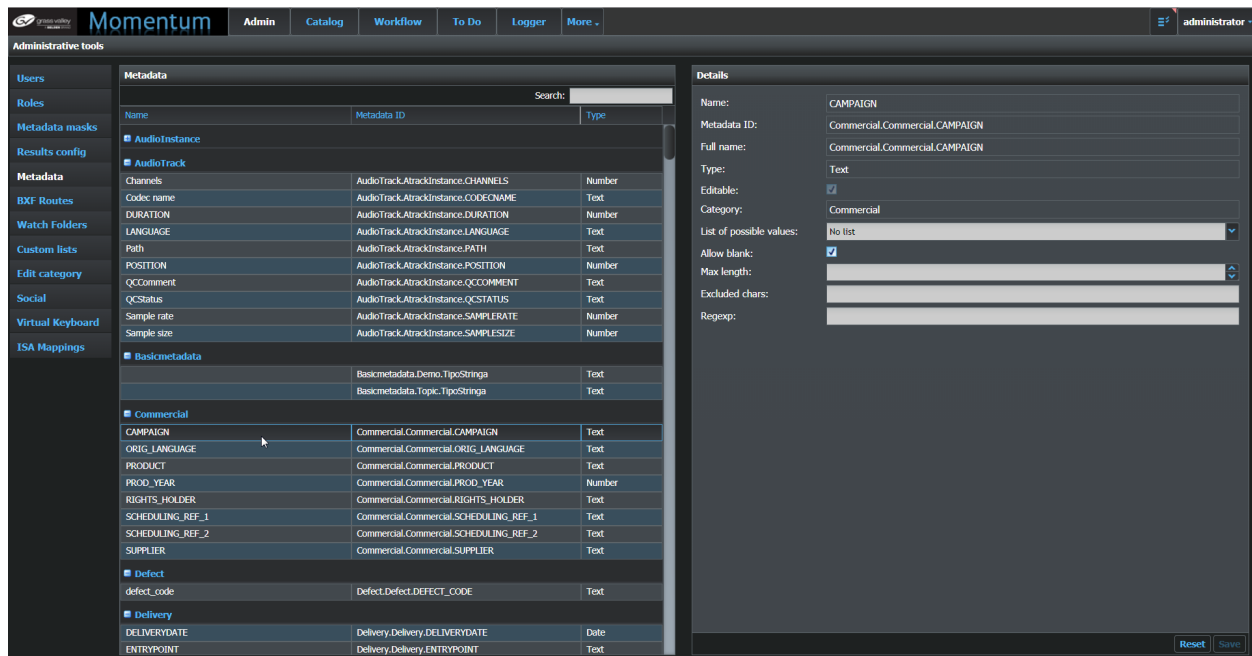


Fig. 5-125: Admin Page Metadata Editing Tool

The **Metadata** page is divided into two panes:

- **The Metadata Pane**

This pane lists all metadata available on the system, grouped by category. The following information is reported for each item of metadata:

- **Name:** The name displayed in the interface for the item of metadata.
- **Metadata ID:** The ID which uniquely identifies each item of metadata, for example, this is the value used to map the value of the item of metadata to a specific XPath.
- **Type:** Description of the kind of metadata, for example, number.

In this pane, you can filter metadata to locate specific items quickly using the **Search** field filter in the top-right corner. Enter a search string to display any items partially or fully matching the name or the Metadata ID.

- **The Details Pane**

This pane lists the detailed characteristics of the metadata selected in the Metadata pane. For each item of metadata, the following information is listed:

- **Name:** The name displayed in the interface for the item of metadata.
- **Metadata ID:** The ID which uniquely identifies each item of metadata, for example, this value is used when

- **Full name:** mapping the value of the item of metadata to a specific XPath.
- **Type:** Full name used to refer to the metadata item. By default, this is the same as the Metadata ID but this value can never be modified, while the Metadata ID can be edited.
- **Editable:** A description of the kind of metadata, for example, number, text, date, timecode, Clob, etc.
- **Category:** Indicates whether the metadata can be edited.
- **List of possible values:** Reports the Category parent of the selected metadata. Enables you to associate a custom list of values with an item of metadata. This capability means that, when a user defines a search query in any of the Search panes, the custom list values can be used in the search criteria. When defining a search query, the user can select an item of metadata from the list and if this metadata is associated with a custom list, the user can select a value from a drop-down list instead of typing.
- **Allow blank:** Makes an empty field a valid value for metadata.
- **Max length:** The maximum number of characters that can be used to give a value to the selected metadata.
- **Excluded chars:** A list of characters which are forbidden for the selected item of metadata.
- **Regex:** Can contain a regular expression (Oracle). The data inserted in the metadata must comply with the rule stated in the regular expression.

For the editable fields, (**Max length**, **Excluded chars**, etc.) you can insert custom values and store them in the database using the **Save** button in the bottom-right corner.

The **Reset** button helps you to avoid making accidental database modifications by discarding all unsaved values.

## Editing Metadata Categories

You can use the **Admin** page **Edit category** to edit existing metadata schema and to create custom metadata categories, which inherit metadata from the **MomentumInstance** or **MomentumCore** categories.

This enables you to ingest material associated with custom metadata, so that it inherits from the Momentum Instance category, and at the same time extends the set of metadata available for the Momentum instance material.

Momentum provides the following default metadata Categories:

- AudioInstance
- Commercial

- DivalInstance
- ImageInstance
- Junction
- MomentumCore
- MomentumInstance
- Movie
- Programme
- Promo
- SQLInstance
- SocialInstance
- Sport
- SubtitleInstance

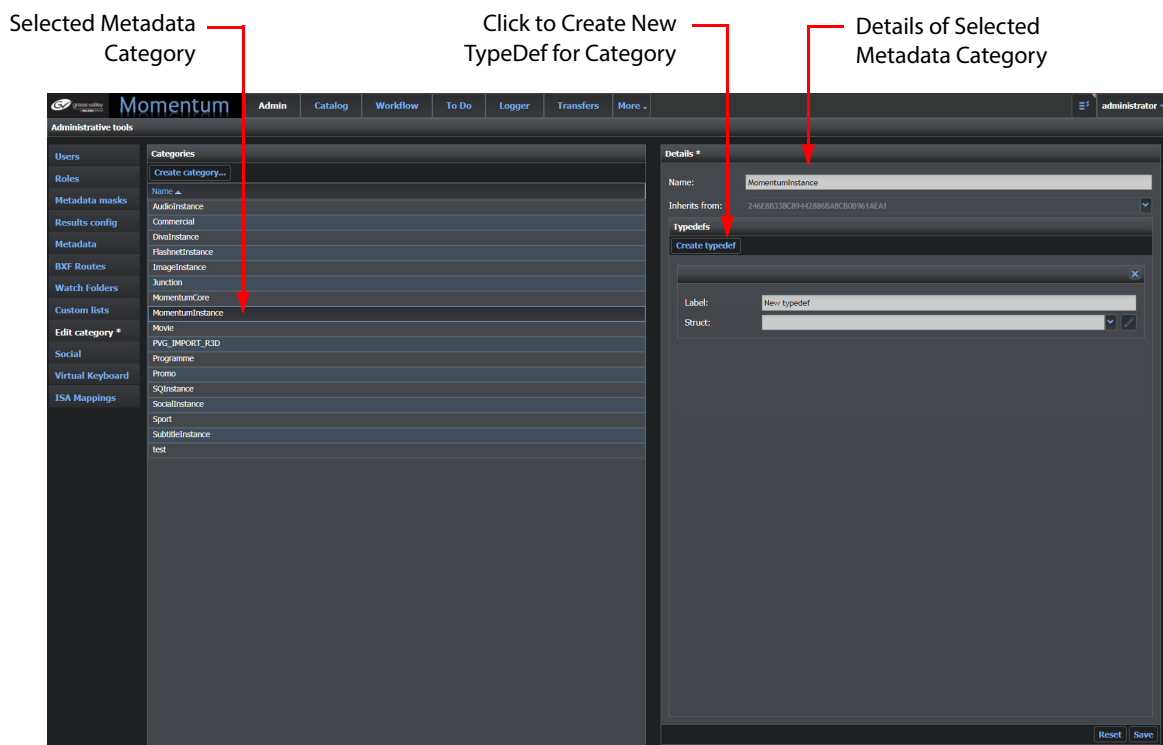


Fig. 5-126: Admin Page - Edit Category

On occasion, you may need to add one or more items of metadata to a Title or Instance schema. For example, you might want to add one or more metadata elements to the MomentumCore schema. To do so, you can add a new **typedef** (*type definition*) to the MomentumCore category using the **Create typedef** function in the **Edit category** page. This will create a new data structure or **Struct** containing the original metadata of

MomentumCore, together with one or more types of metadata that you want to associate with the TypeDef, see Figure 5-127 for a schematic overview.

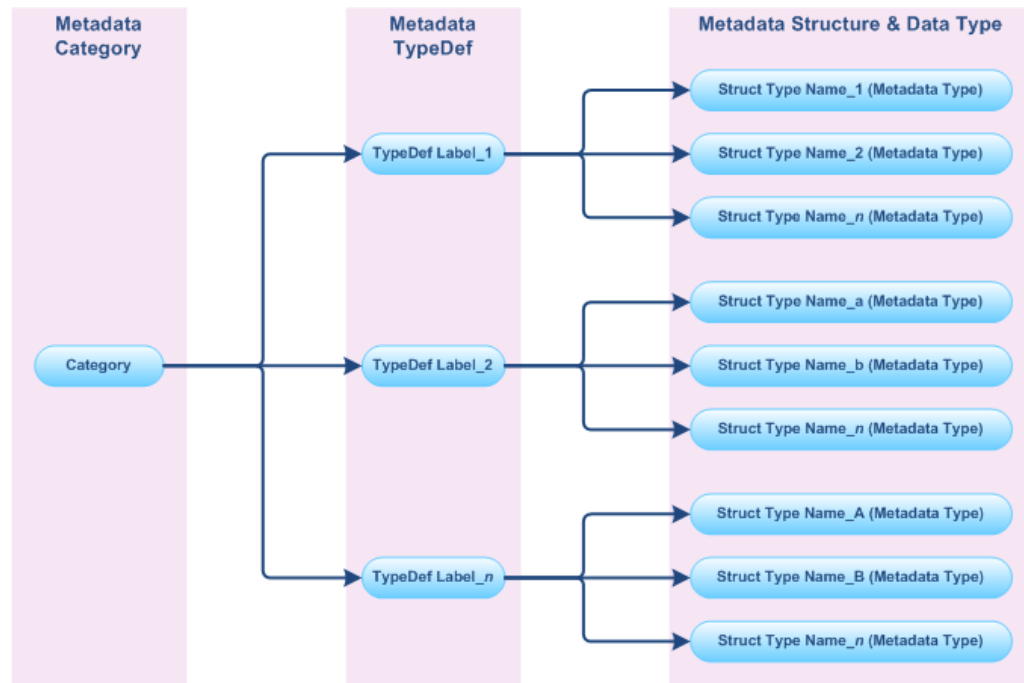


Fig. 5-127: Schematic Overview of Metadata Category Tree Structure

## Creating a New Metadata Category

Add a new Metadata Category as follows:

- 1 Select **Edit category** from the **Admin** menu.
- 2 Click **Create category...**
- 3 This opens the **Create category** dialog, see Figure 5-128.
- 4 Enter the name to assign to the new metadata category into the **Name** field, for example **RCTest**.
- 5 Click the **Inherits from** drop-down menu and select the Category from which to inherit the metadata schema, see Figure 5-128.

---

**Note:** Both fields must be completed. If you leave a field empty, it is underlined in red and you will be unable to save your changes.

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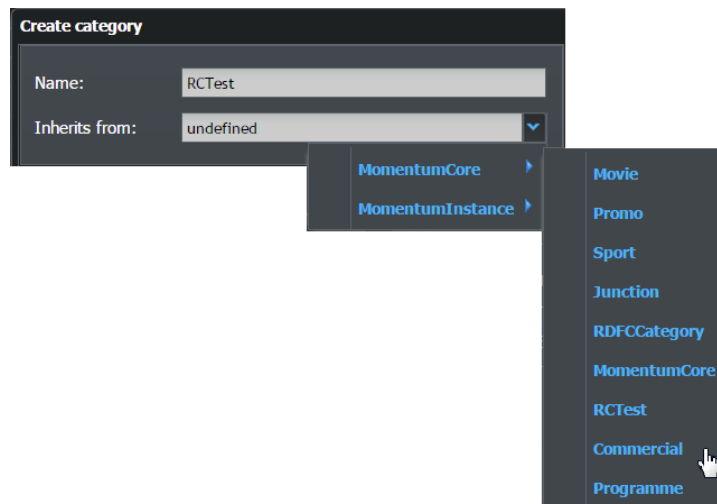


Fig. 5-128: Admin Page - Create Category Drop-down Menus

- 6 Click **Ok** to save the new category.  
Momentum adds the new metadata category to the list in the **Categories** pane, see Figure 5-129.



Fig. 5-129: Admin Page - New Metadata Category Added to Categories Pane

## Creating a Typedef for a Metadata Category

You can use the TypeDef functions to associate inherited metadata structures with existing or new metadata categories as follows:

- 1 Select a metadata Category from the list in the **Categories** pane.  
This loads the metadata category into the **Details** pane. For example, select the category **RCTest** added in the previous section.
- 2 In the Details pane, click **Create typedef**.
- 3 Enter a suitable label to identify the new TypeDef in the **Label** field.  
The TypeDef label is displayed as a container for the individual metadata elements defined by the TypeDef **Struct**.

- 4 Either select an existing structure from the **Struct** drop-down menu or select the option **Create struct...**

When you select an existing structure, the new typedef inherits the metadata elements from that structure.

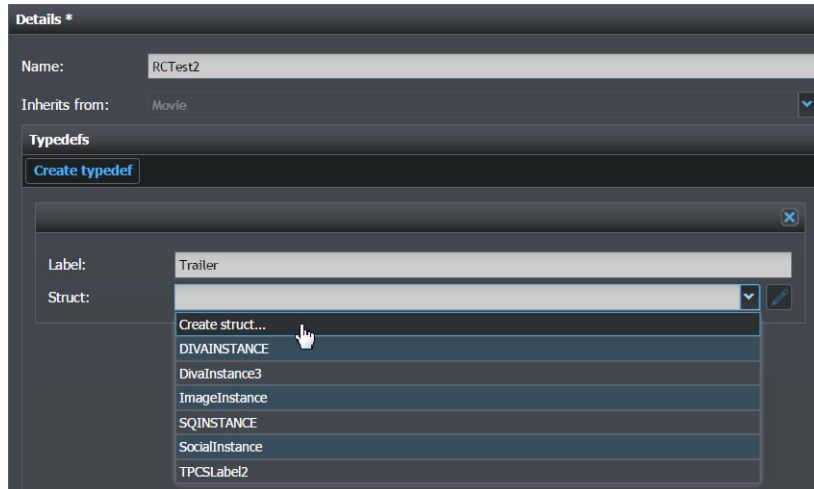


Fig. 5-130: New Metadata Category Added to Admin Metadata Page  
Click **Create struct...** to open the **Create struct** dialog, see Figure 5-131.

- 5 Enter a name to identify the data structure in the **Name** field, for example **SeriesInstance**.

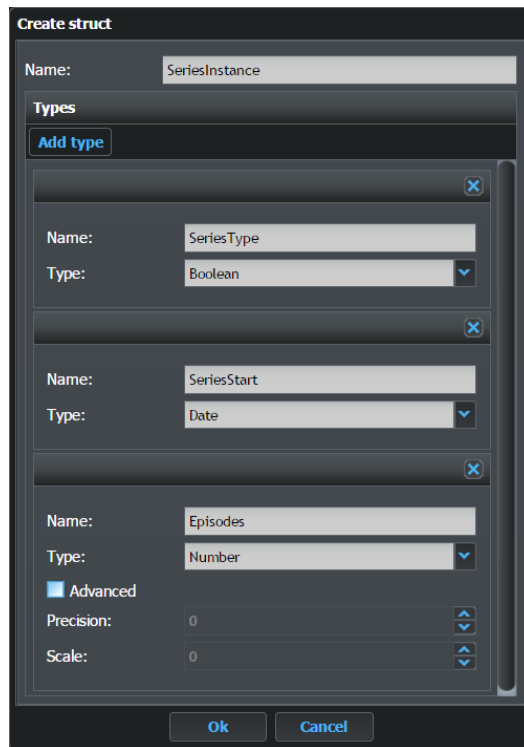


Fig. 5-131: Admin Edit Category - Create Struct Dialog

- 6 Click **Add type** to add each additional metadata element and data type to the new data structure.
- 7 For each data type, enter an appropriate name and select the required data type from the **Type** drop-down menu. You can select from:
  - Text (and set maximum number of characters)
  - Date
  - Timecode
  - Number (check **Advanced** to set **Precision** and **Scale** for the number)
  - User
  - Clob (*character large object*)
  - Boolean

The name and associated data types will represent the actual metadata element you will see when using the **Catalog** page.

- 8 Click **Ok** to save the data types associated with the new structure.

You can review the new data types in the structure by clicking the **Types** drop-down menu, see Figure 5-132. To remove a TypeDef from a Category, click the **Delete** icon.

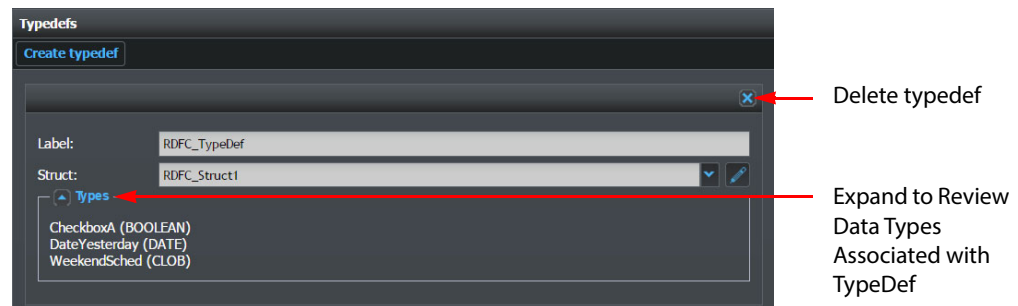


Fig. 5-132: Review Data Types

To change a Category or TypeDef name, select the Category and over-type the name as required.

- 9 Click **Save** to save the new or modified metadata Category.

Figure 5-133 shows how the components of a new Category structure are rendered in both the Admin Metadata page and in the Catalog page, when used to define a search query.

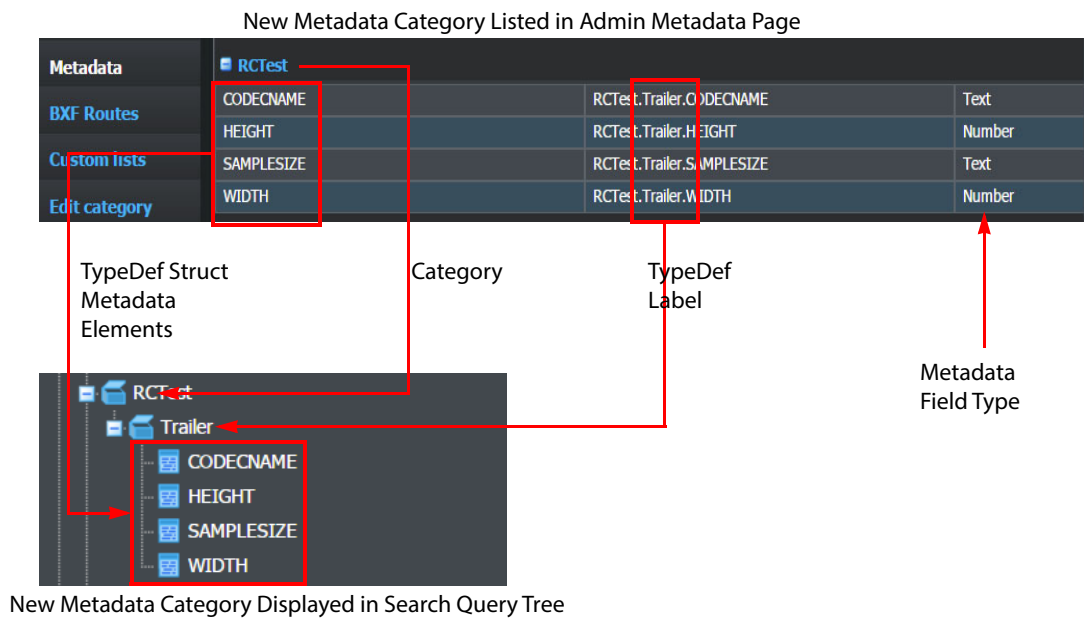


Fig. 5-133: New Metadata Category Available for Use in Search Query

# Using the Catalog Page to Search the Momentum Database

## Introduction

The **Catalog** page enables you to search the entire content of the Momentum database using specific keywords and complex search criteria. On completion of a search, you can select the content in order to examine the material and its related metadata.

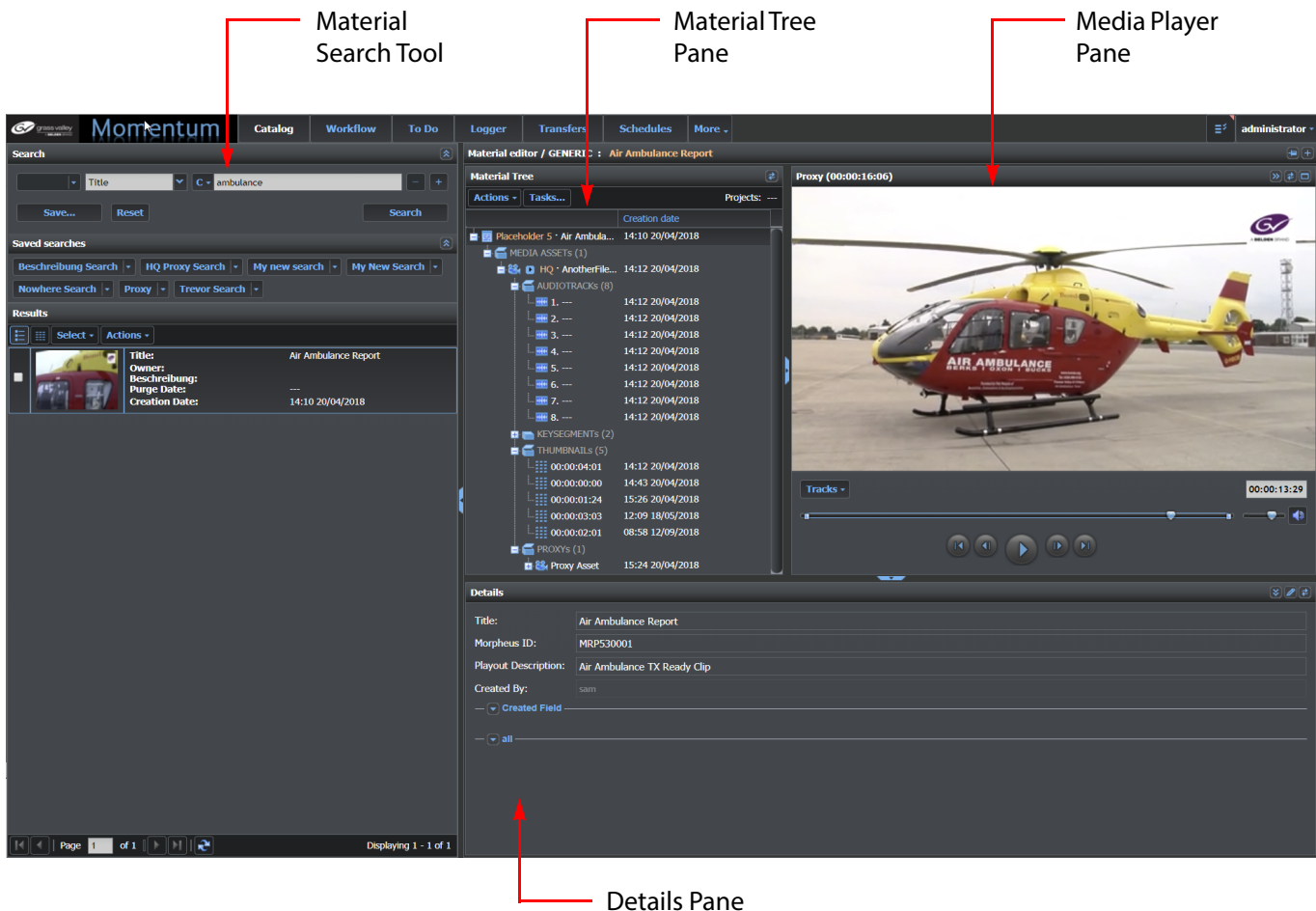


Fig. 6-134: Catalog Page

The **Catalog** page contains the following panes:

- **Search Tool:** See the section [Using the Search Tool](#), on page 17 for details.
- **Material Tree:** Reports the parents and children of the selected material in a collapsible/expandable tree structure, which shows, for example, associated media assets, key segments, thumbnails, timelines,

- tasks, auxiliary files, etc. Momentum dynamically creates the tree structure, depending on the specific relationships of the selected material. In addition, the **Actions** menu enables you to add material to a project or to upload an auxiliary file (for example, TXT, PDF, DOC, DOCX, etc.) to associate with the selected material. The **Tasks...** button opens a **Tasks** pane for the selected material.
- **Details Pane:** Lists the metadata details of the item(s) currently selected in the Material Tree, for example, Project, Media Asset, Title, Key segment, Thumbnail, Audiotrack, etc. If a metadata value contains a URL it is rendered as an active file name, which you can click to go to that item of material. You can review and, if necessary, edit Metadata in the Details pane. See [Editing Metadata Fields](#), on page 10 for information on editing the metadata fields or Chapter 5 [Working with Metadata](#), on page 93 for more information.
- **Media Player:** Used to play-back and inspect the selected material. When playing a clip, you can hover the cursor over a frame in the timeline to display a thumbnail and timecode for that frame. See the section [Media Players](#), on page 12 for a description of other features of the Player.

## An Overview of Metadata in Momentum

The Momentum asset management database is the primary repository of metadata used by the system.

### Basic Metadata

Basic metadata is defined as one or more of the following items:

- **Title:** User defined
- **Owner:** User defined
- **Category:** User defined
- **Description:** User defined
- **Duration:** System generated
- **Format:** System generated
- **Creation Date:** System Generated
- **Creation Time:** System Generated

Basic metadata is usually only referred to in systems where the Grass Valley sQ Server option is present for SDI workflows, as these are the only editable metadata fields on an sQ Server and consequently this is the preferred metadata included with media originating from an sQ Server.

## Standard Metadata

The metadata set supplied with Momentum is considered to be the Standard metadata.

Standard metadata is available to all assets regardless of the source. For example, media originating from an sQ Server may arrive with basic metadata, but the full standard metadata set is then available for that media asset. You can associate all standard metadata fields with non-media assets such as auxiliary files.

See Appendix C [Standard Metadata Fields](#), on page 223 for a complete list of standard metadata fields.

## Custom Metadata

Custom metadata is metadata that cannot be accurately represented in the standard fields. Custom metadata fields can be added as bespoke items on a project basis. Custom metadata fields can be defined as one of the following types:

- **User:** A reference to an existing user account on the system.
- **Number:** Integer.
- **Date:** Full format date using the system date format.
- **Text:** Free text up to 4000 characters.
- **Timecode:** Time in HH:MM:SS:FF format.
- **Boolean:** Either a 1 or 0.
- **Clob:** Character large object, used to store large text-based files, for example documents.

Contact your Grass Valley representative for information on custom metadata.

## Creating and Using Database Search Queries

The search panel enables you to build flexible and complex queries to search for material in the database. In Momentum, the simplest query is a single row query as shown in Figure 6-135:

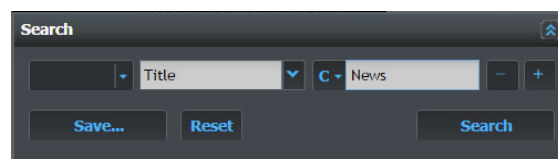


Fig. 6-135: Defining a Basic Database Search Query

Running the above search returns all the objects in the database of type TITLE and which contain the word News. For more information on the Momentum Search tool, see the section [Using the Search Tool](#), on page 17.

**Note:** Momentum will only return results when the **Contains** string (for example, News in the example above) is included in the metadata types **Title, Description or Keywords**. Momentum does not search across all metadata in all schemas.

The first input field is an operator field. In a query composed of just one line, it is inactive. From the second row onwards, this field becomes active and enables you to select a logical operator. You can use the operators to establish a relationship between the current row and the preceding row(s).

The second input field enables you to select the main filter of the condition from the search filter drop-down menu:

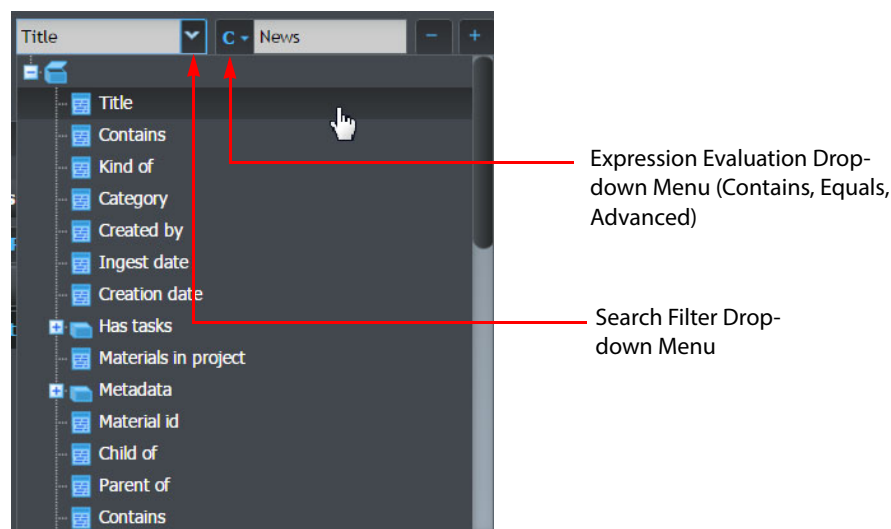


Fig. 6-136: Search Tool Filter Menu

The filter menu lists all available elements that you can use as a filter for the query. The following table lists the most frequently used filters and provides a description of their expected results:

Option	Filter Description
Title	Searches every kind of element present in the database containing the specified value in the metadata Title.
Contains	Searches every kind of element present in the database containing the specified value in the metadata Title, Description or Keywords.
Kind of	Searches for elements of the Genre selected from the drop-down menu. You can select from the following Genres: DEFECT, DOCUMENT, KEYSEGMENT, MEDIA_ASSET, PROJECT, THUMBNAIL, TIMELINE and TITLE.
Category	Searches for elements that have a metadata category of the specified value.
Created by	Searches for elements created by a specific user.
Ingest date	Searches for elements ingested on a specific day or in a specific span of time.
Creation date	Searches for elements created on a specific day or in a specific span of time



Option	Filter Description
Has tasks: Assigned to	Searches for elements that are in Assigned to status associated with a specific user.
Has tasks: Assignable to	Searches for elements that are in Assignable to status associated with a specific user.
Has tasks: To do for	Searches for elements that are in To do status associated with a specific user.
Materials in project	Searches for elements assigned to a specific project.
Ingested on	Searches for elements ingested on a specific day or in a specific span of time.
Task	Searches for elements that are in one of the following states: Assigned to, Assignable to, To do associated to a specific user.
Metadata	Searches for elements which have a specific value in a selected metadata field.
Material ID	Searches for elements matching a specified full or incomplete material ID.
Child of	Searches for elements that are the child of another element.
Parent of	Searches for elements that are the parent of another element.
Has instance with type	Searches for elements that have an instance matching the specified type.
Has instance with label	Searches for elements that have an instance matching the specified label.
Without proxy	Searches for elements that don't have a proxy.
Has Proxy	Searches for elements that have a proxy.
Without thumbnails	Searches for elements that don't have thumbnails.
Has thumbnails	Searches for elements that have thumbnails.
Has category	Searches for elements that have a specific category.
HQ timecode in	Searches for elements that have a <b>time code in</b> set to a specific value.
HQ timecode out	Searches for elements that have a <b>time code out</b> set to a specific value.
Archive...	Searches for elements having the archived metadata fields set to specific values. Possible filters are: Building, Floor, Rack, Shelf, Notes, Proavid, Archive Date and Room.
Proxy Id	Searches for assets having a relation to a specific proxy ID.
HQ MediaAsset Id	Searches for elements having a relation to an HQ having a specific ID.
Has waiting tasks on brick	Searches for tasks in waiting status on a specified element.
Has processing tasks on brick	Searches for tasks in processing status on a specified element.
Icon id	Searches for icons for video material with a specific Icon ID.
Schema Id	Searches for elements with a specific metadata schema ID.
Schema name	Searches for elements with a specific metadata schema name.
Children count	Searches for assets having a relationship with a number of child assets.
Parents count	Searches for assets having a relationship with a number of parent assets.
Created by	Searches for assets created by a matching operator.

Option	Filter Description
Is in projects	Searches for assets in a matching project.
Has parent	Searches for assets having a matching parent.

The next input field enables you to set an additional parameter for the main filter. It can be a date, a predefined type of object, a string specification or an additional metadata value. Use the **-** and **+** buttons to remove an existing row or to add a new row as shown below:

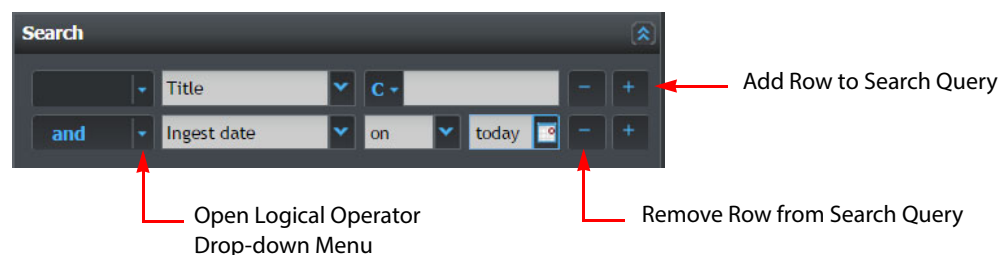


Fig. 6-137: A Two Row Query Using the and Operator

In the example shown in Figure 6-137, the two rows are combined to form a single query. The first row states that every element in the database that has an item of metadata named Title is a valid query result - the empty value for the Title filter means that all values meet the requirements. The second row, using the **and** operator, adds a condition that the element must also have been ingested **today**. The Search Results table will display all elements having Title metadata that have been ingested during the current day.

For more information on the Search Tool and the use of the logical operators (and, or, not, and not, or not), see the section [Using the Search Tool](#), on page 17.

The input text field of the values can accept **regular expressions** as search strings. These expressions must be preceded by a backslash (\) character. For example, to search for a value of **\34d**, enter the expression as **\\34d**, otherwise the original backslash is interpreted as an element of the regular expression syntax.

As a rule, if a search string includes one or more of the following special characters, it requires a preceding backslash:

- Opening square bracket [
- Backslash \
- Caret ^
- Dollar sign \$
- Period .
- Question mark ?
- Pipe symbol |
- Open and close bracket ( )
- Plus sign +
- Asterisk \*

- Curly bracket, or brace {

## Saving a Search Query

After building a complex query, it can be useful to save it for use at a later date. The saved queries appear as buttons in the **Saved searches** area of the Search Tool.

To save a query:

- 1 Construct the required query.
- 2 Click **Save...**
- 3 Enter the name of the query. This is the label of the saved search.

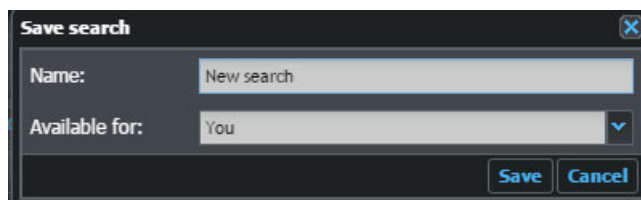


Fig. 6-138: Save Query Pane

- 4 Select who can use the query. The **Available for** drop down lists the following options:
  - **You** - makes the search private: **only the user** that created it has a button to recall this search.
  - **Everyone** - makes the query public: **all users** can recall this search.
  - **You and roles** - makes the query available for the current user and for users with specific roles. Those roles can be selected from a pane that opens when this option is selected and on clicking the **Add roles** button.

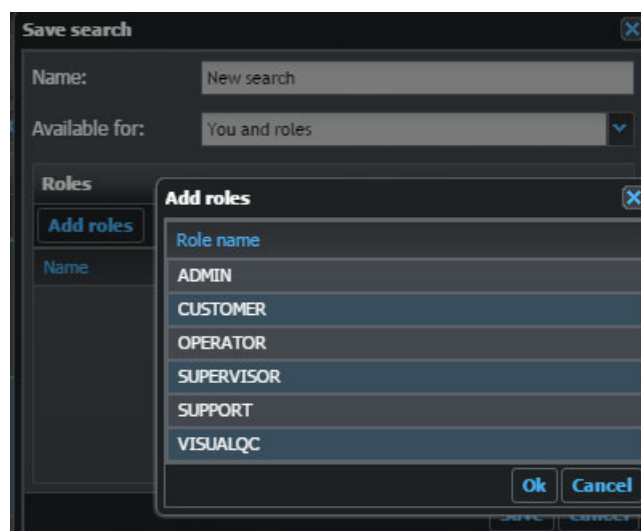



Fig. 6-139: Save Query Add Roles Pane

- Momentum adds the selected roles (use [ **Ctrl** ] and click for multiple selections) to the Roles list in the Save search pane. To remove a role from the list, click the icon  next to the role name.

5 Click **Ok** to save the query or **Cancel** to exit without saving.

## Reset the Search Query Area

Click **Reset** to remove all additional rows and return to the default query of one row.

## Running a Search Query

To run a start query:

- 1 Create the required search query or select a saved search query by clicking on the related button in the Saved searches area.
- 2 Click **Search**.

While the query is running, Momentum displays a **Loading** message. After retrieving the data, the Result area is updated with the new results.

## Managing Saved Searches

To manage a saved search query, open the dropdown menu in the saved search label. A new menu opens as shown in Figure 6-140:

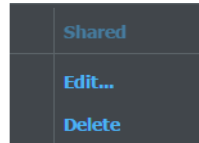


Fig. 6-140: Managing Saved Searches

The dialog reports the status of the search query:

- **Public** - available for every user
- **Private** - available only for the current user
- **Shared** - available to a sub-set of users in a selected role or roles.

Clicking **Edit...** enables you to modify the search query, for example, you might change the name of the search query or assign the query for use by additional roles. as shown in Figure 6-141:

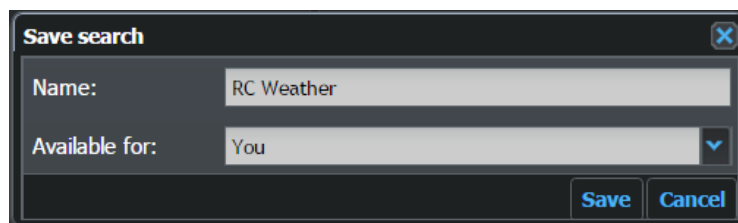


Fig. 6-141: Renaming Saved Searches

Modify a saved search as follows:

- 1 Change the name of the search query, if necessary.
- 2 Use the then click **Save**. or click **Cancel** to retain the original name. drop-down menu to assign additional roles or restrict access to the query as required.
- 3 Click **Save** to accept your changes.

Select the **Delete** option to remove a saved query from the Search Tool. You are asked to confirm the deletion.

## Checking and Selecting Items in the Search Tool

When you **select** an item in the search results list, Momentum actively updates the panes of the Catalog page with data associated with the **last** selected item (or the single item if only one item is selected.) This includes the detailed metadata for the item, its relationships and also, if there is a media player and the item is a video, the player displays the first frame. Selecting an item **always** puts a check in the checkbox. See Section [Actively Selecting Items](#) on page 119 for more information.

When you **check** a checkbox next to an item in the search results, you do not automatically select the item, rather this activates the item-specific options in the **Actions** menu of the Search Tool. See Section [Working with Checkboxes](#) on page 119 for more information.

### Working with Checkboxes

Clicking an item's checkbox does not actively select that item. The data for the checked item is **not** automatically displayed in the Details and Relationships panes.

Clicking a checkbox, or several checkboxes, activates the item-specific options in the **Actions** menu (**Add to project, Send to, Delete**) to act on the checked item(s). You can check any number of checkboxes in a list, irrespective of their position in the list.

If your search results span several pages, to check all items on all pages, you need to repeat the **Select > Checkboxes > All** command on every page of the results.

To uncheck checkboxes on all pages, click: **Select > Checkboxes > None**




### Actively Selecting Items

You can actively select items in a list with the mouse cursor using one of the following methods:

- **[ Click ]:** Selects a single item in the list.
- **[ Shift ] [ Click ]:** Select a range of adjacent items between the first selected item and the last item in the range.
- **[ Ctrl ] [ Click ]:** Select multiple items in a list, irrespective of their position in the list.

An actively selected item in a list displays a darker gray background than unselected items and is outlined with a blue grid. The data for the selected item (or last selected item for multiple selections) is displayed in the panes: Details, Relationships and Player (if possible), see the following table.

**Note:** It is important to note that selecting an item automatically checks its checkbox but checking an item does not select it.

Search Item Status	Appearance	Expected Results
Unselected and Unchecked Items		Catalog Data Panes: No Change Active Actions Menu Options: Create, Bulk send to, Export as.
Unselected but Checked Items	<p><b>Note:</b> Checkboxes checked but NO background color change</p> 	Catalog Panes: No Change Active Actions Menu Options: Create, <b>Add to project, Send to, Delete</b> , Bulk send to, Export as.
Selected and Checked Items	<p><b>Note:</b> Dark background color change and blue grid lines..</p> 	Catalog Panes: Last selected item displayed in Details, Player and Relationships Panes. Active Actions Menu Options: Create, <b>Add to project, Send to, Delete</b> , Bulk send to, Export as.

You can also select or de-select all items or checkboxes in the results list using the **Select** drop-down menu as shown in Figure 6-142:

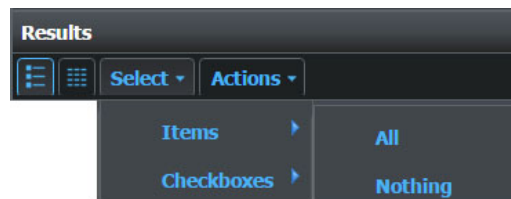


Fig. 6-142: Options in the Select Menu of the Search Tool

- To select all listed items on the displayed page of the Search Tool, use: **Select > Items > All**.

- To check all listed items on the displayed page of the Search Tool, use: **Select > Checkboxes > All**.
- To de-select any selected items on all pages of results, use: **Select > Items > Nothing** (None).
- To uncheck all checked items on all pages of results use: **Select > Checkboxes > Nothing** (None).

## Using the Actions Menu on Selected Items

On selecting an item by any method, the full **Actions** menu becomes available as shown in Figure 6-143:

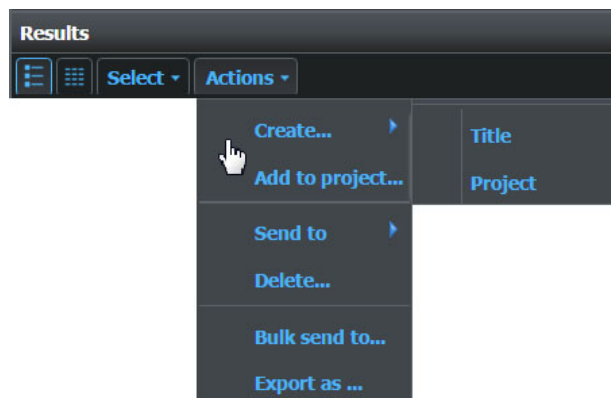


Fig. 6-143: Options in the Actions Menu of the Search Tool

The following options are available in the **Actions** menu:

- **Create:** Enables you to create a Title or Project in the database that is displayed in the search results, see Section Creating a Project on page 136. (Always active.)
- **Add to project:** Enables you to add the selected item to a project. (Only active for selected item(s).)
- **Send to:** Lists all **Send to** elements (by name) available in the existing workflows. Selecting an element enables the item to enter a workflow using the **Send To** element as a starting point. (Only active for selected item(s).)
- **Delete:** Removes the selected material from the system. It deletes everything related to the selected material including files and data structure. Some elements can be deleted only by sending them to a Material deletion element or when the user has the required permissions. Momentum performs an automatic check to verify these conditions prior to deletion and opens a pop-up to notify the user. (Only active for selected item(s).)

---

**Note:** The following database elements cannot be deleted using the Delete action of the Catalog page: Titles, Media assets, Soundtracks and Captions.

---

- **Bulk send to...:** Enables you to upload the Material IDs of all search results to a file and select a target workflow to which to send the file. (Always active.)
- **Export as:** Enables you to export the selected item(s) to a file. You can choose the desired format of the output file. (Always active.)

## Viewing Media Asset Relationships in the Material Tree Pane

The Catalog **Material Tree** pane displays all existing relationships between the item listed in the search results and its associations in the database. A new branch is created for each type of existing parent and child relationship, for example top-level Project, associated media assets, titles, key segments, thumbnails, audio tracks, auxiliary files, etc.



## Using the Catalog Material Tree

Select an item in your Search results to display its associations and relationships in the Material Tree, see Figure 6-144.

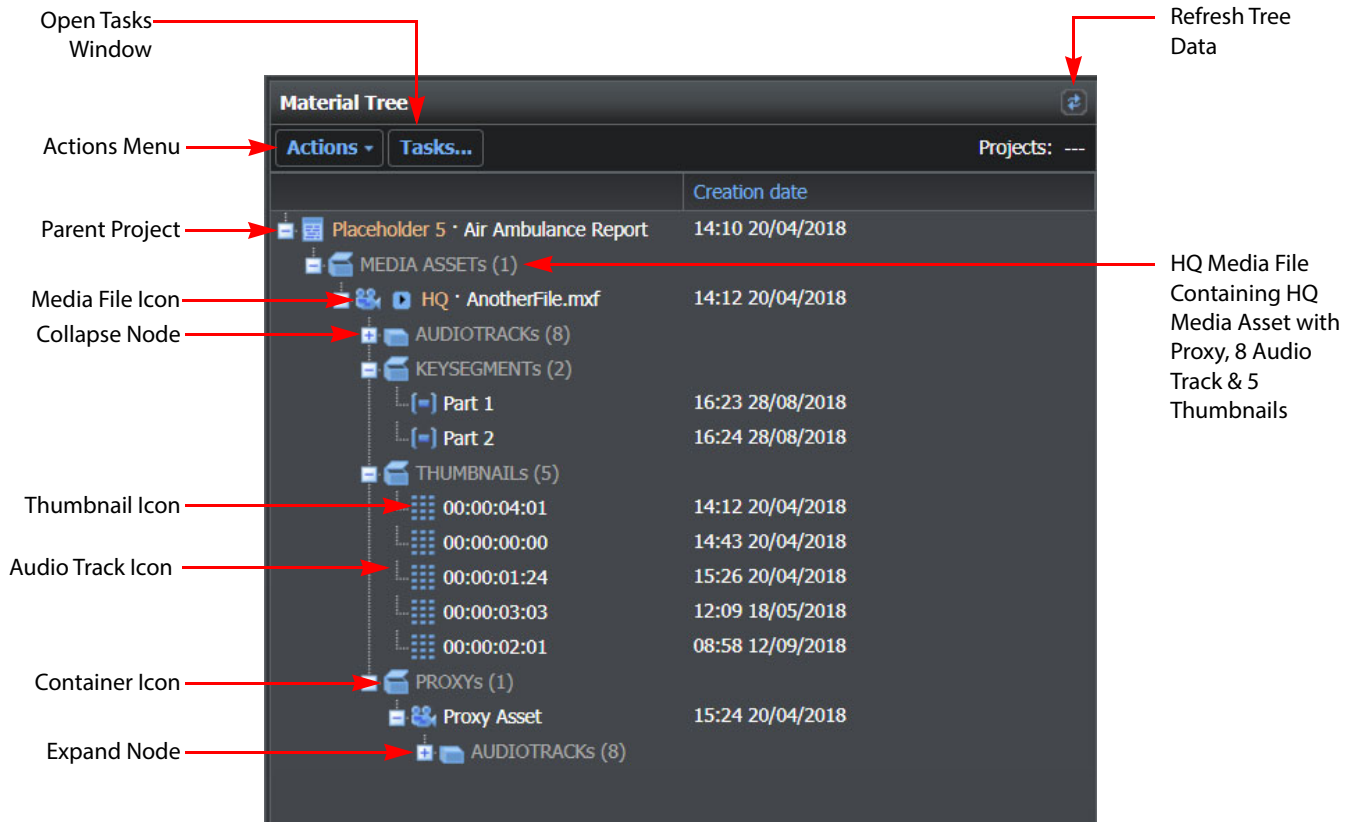















Fig. 6-144: Catalog Material Tree

The icons used in the Material Tree are as follows:

	Project material
	Collapsed media asset container; click to expand.
	Expanded media asset container; click to collapse.
	Title, media asset, video file material
	Key segment material. <b>Note:</b> If KeySegments have an InstanceLabel, they are nested under the media asset, otherwise they are nested under the real parent node.

	Thumbnail material; also includes the timecode at which the thumbnail was taken in the clip.
	Soundtrack material
	Picture material
	Tape material
	sQ material
	Proxy status flag, when active shows that an HQ Media asset has an associated proxy file.
	Caption, Sub-title material
	Timeline material
	Audio file material
	Archived material
	Social media material
	Attachment / Auxiliary file material
	Defective or unidentified material

If a folder in the Material Tree contains a large number of items, Momentum displays a More button to enable you to review additional items. If necessary, click the **Refresh** button to refresh the data displayed in the Material Tree.

## Using the Tasks Menu in the Material Tree

Select an item of material in the Search results, then click **Tasks...** in the Material tree.

This opens a pop-up Task pane in which the tasks are listed by Job ID, see Figure 6-145:

Tasks Pane Showing Material ID and title of the TITLE in the Header

Element	Element Type	Agent	Media asset	Instance Status	Instance Type	In Date	Start Date	End Date
<b>Job: 1008234</b>								
Contactbox	WatchFolder	127.0.0.1 - WatchFolder	HQ	File does not exist	VIDEO	14:47:13.974 05/06/2017	14:47:16.268 05/06/2017	14:47:17.684 05/06/2017
All OK	End	127.0.0.1 - End	HQ	File does not exist	VIDEO	14:47:17.923 05/06/2017	14:47:18.445 05/06/2017	14:47:18.632 05/06/2017
<b>Job: 1008279</b>								
Contactbox	WatchFolder	127.0.0.1 - WatchFolder	HQ	File exists	VIDEO	17:45:06.175 05/06/2017	17:45:08.499 05/06/2017	17:45:57.752 05/06/2017
Fileflow Import	Fileflow Import	127.0.0.1 - Fileflow Import	HQ	File exists	VIDEO	17:45:57.815 05/06/2017	17:45:58.658 05/06/2017	17:46:05.523 05/06/2017
<b>Job: 1009412</b>								
SocialMedi...	Send To ...	127.0.0.1 - Send To	HQ	File exists	VIDEO	13:14:07.192 27/06/2017	13:14:07.567 27/06/2017	13:14:07.895 27/06/2017
Instance s...	Instance switcher	127.0.0.1 - Instance switcher	HQ	File exists	VIDEO	13:14:07.910 27/06/2017	13:14:08.270 27/06/2017	13:14:08.739 27/06/2017
FFMPEG Tr...	Script	127.0.0.1 - Script	HQ	File exists	VIDEO	13:14:08.770 27/06/2017	13:14:09.129 27/06/2017	13:14:36.051 27/06/2017
Instance s...	Instance switcher	127.0.0.1 - Instance switcher	HQ	File exists	VIDEO	13:14:36.082 27/06/2017	13:14:36.426 27/06/2017	13:14:36.614 27/06/2017
Select Platf...	Script	127.0.0.1 - Script	SOCIALMEDIA	File exists	VIDEO	13:14:36.629 27/06/2017	13:14:38.160 27/06/2017	13:14:38.364 27/06/2017
<b>Job: 1009413</b>								
Render TIT...	Send To ...	127.0.0.1 - Send To	HQ	File exists	VIDEO	13:24:29.382 27/06/2017	13:24:29.710 27/06/2017	13:24:29.882 27/06/2017
RunRender	Script	127.0.0.1 - Script	HQ	File exists	VIDEO	13:24:29.929 27/06/2017	13:24:30.507 27/06/2017	13:24:31.788 27/06/2017
<b>Job: 1009414</b>								
SocialMedi...	Send To ...	127.0.0.1 - Send To	HQ	File exists	VIDEO	13:41:13.899 27/06/2017	13:41:14.196 27/06/2017	13:41:14.352 27/06/2017
Instance s...	Instance switcher	127.0.0.1 - Instance switcher	HQ	File exists	VIDEO	13:41:14.383 27/06/2017	13:41:14.743 27/06/2017	13:41:15.071 27/06/2017
FFMPEG Tr...	Script	10.250.170.159 - Script	HQ	File exists	VIDEO	13:41:15.102 27/06/2017	13:41:15.649 27/06/2017	13:41:18.715 27/06/2017
<b>Job: 1009415</b>								
SocialMedi...	Send To ...	127.0.0.1 - Send To	---	---	---	13:44:17.344 27/06/2017	13:44:17.422 27/06/2017	13:44:17.594 27/06/2017
Instance s...	Instance switcher	127.0.0.1 - Instance switcher	---	---	---	13:44:17.626 27/06/2017	13:44:17.719 27/06/2017	13:44:17.907 27/06/2017

Page 1 of 1 | Displaying 1 - 17 of 17 | Export CSV... Ok

Fig. 6-145: Tasks Pane Accessed from the Material Tree

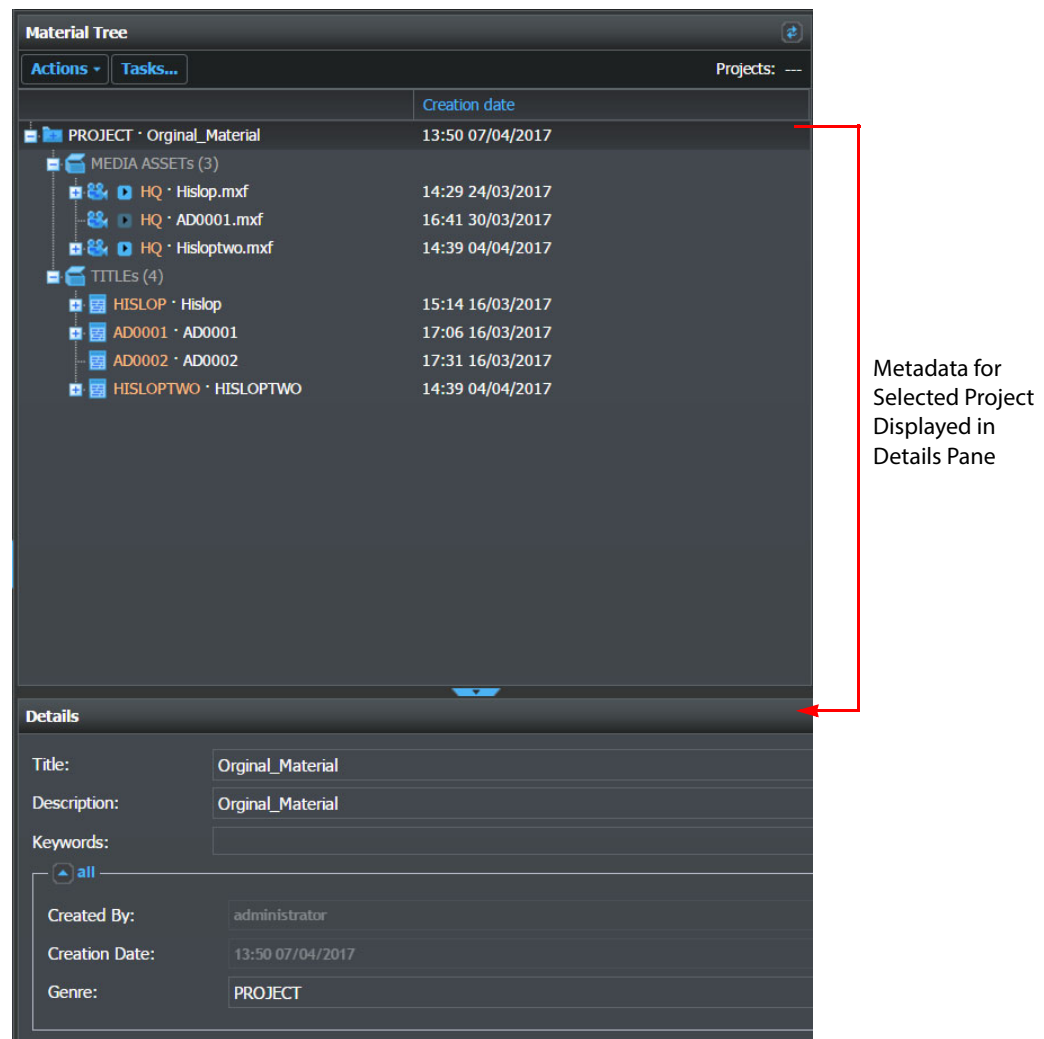
## Using the Actions Menu in the Material Tree

The **Actions** drop-down menu in the Material Tree provides a list of actions that you can choose to perform on an item of material selected in the Material Tree. The following actions are available:

- **Add to project...:** Add a selected item of material to an existing project.
- **Upload auxiliary file:** Upload an auxiliary file (e.g., DOC, TXT, XLS, PDF, etc.) and associate with the selected an item of material.
- **Send to...:** Lists all **Send to** elements (by name) available in the existing workflows. Selecting an element enables the item to enter a workflow using the Send to element as a starting point. (Only active for selected item(s).)

## Project Relationship Details

If the selected item in your search results belongs to one or more projects, the project folder and name is displayed as the first item in the tree hierarchy. When you select the project in the Material Tree, the Project details are displayed in the **Details** pane in the lower section of the screen, see Figure 6-146.



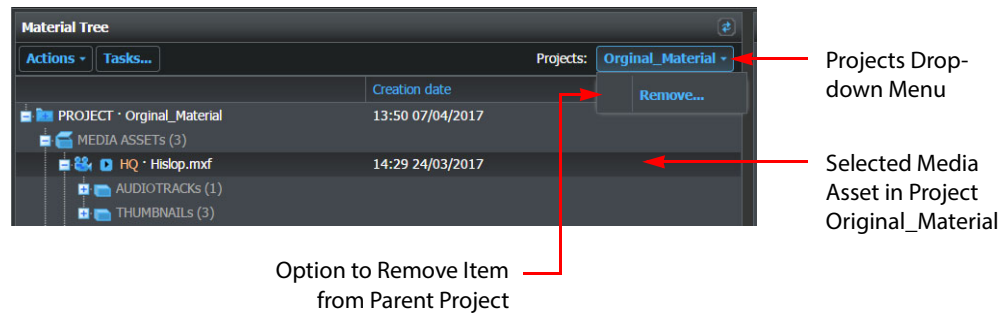
6-146: Project Metadata Details

For each project, the following information is reported:

- **Title:** Name of the project.
- **Description:** The content of the Description metadata for the project.
- **Keywords:** Keywords to describe the project and assist in searches.
- **Created by:** Name of the user that created the project.
- **Creation Date:** Date on which the project was created.

- **Genre:** Identifies the genre to which the project belongs and used to define whether a Project can be deleted.

If you select any other element in the Material Tree, the project or projects with which that element is associated is displayed as a **Projects** button at the top-right of the pane, see Figure 6-147.



6-147: Material Tree - Projects Drop-down Menu

To remove an item in the; Material Tree from a project, select the item then click the **Projects** drop-down menu and select **Remove...**

### Adding an Item to a Project in the Material Tree

To add an item of material to a project using the Material Tree:

- 1 Select the item in the Material Tree.
- 2 Select: **Actions > Add to Project**  
This opens the **Add to project** dialog, listing all available projects.
- 3 Select the target project from the list of available projects.
- 4 Click **Ok**.

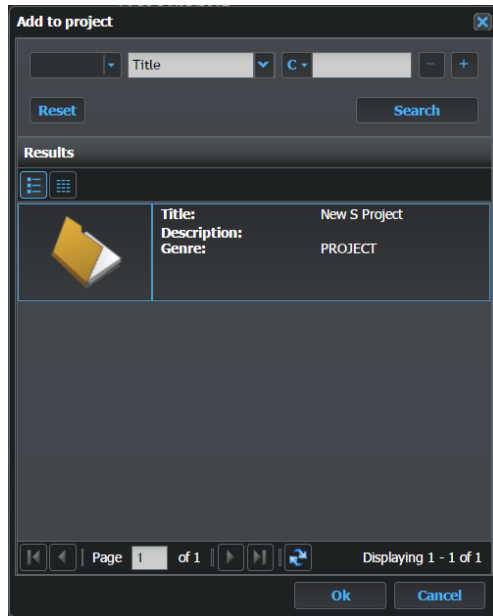
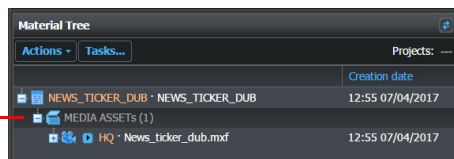


Fig. 6-148: Add to Project Dialog

## Media Asset Relationship Details

Any media assets associated with the selected item in the search results appear in the Material Tree below the Project branch, if assigned to a parent project, or as the top node if unassigned, see Figure 6-149:

Select Media Asset Container to List All Available Media Assets in Details Pane



Label	INSTANCE_GENRE	Creation Date	Timecode IN	Timecode OUT	Width	Height	AR	FPS	Essence type	Qc Status	Qc Report
HQ	VIDEO	12:21 07/04/2017	00:00:00:00	00:00:09:24	1920	1080	16:9	25	XDCAM HD422		



Proxy Status Flag

Quality Control Status of Associated Media Asset

Fig. 6-149: Media Asset Relationship Details

Momentum reports the following information for each media asset:

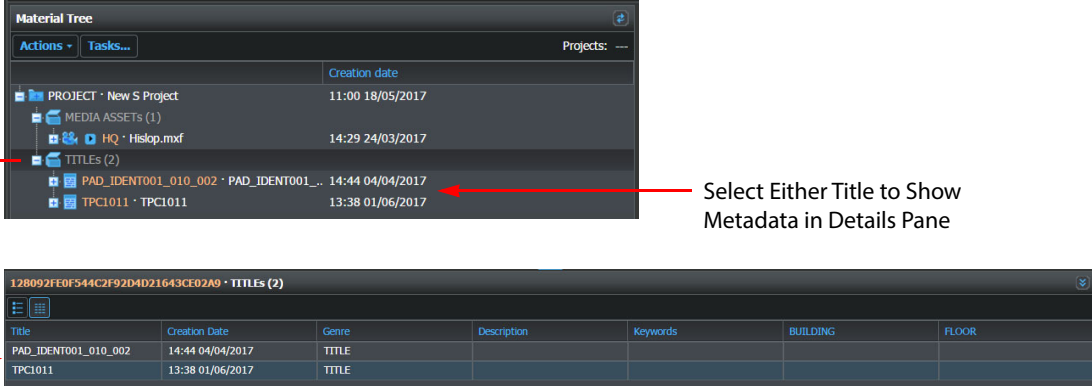
- **Label:** The label used to identify the asset.
- **Instance Genre:** Instance Genre to which the media asset belongs. Used to sort the media assets listed in the Details pane by genre.
- **Creation date:** Date when the asset was created.
- **Timecode IN:** The timecode of the start of the media asset.
- **Timecode OUT:** The timecode of the end of the media asset.
- **Width, Height:** The dimensions in pixels.
- **AR:** The aspect ratio.
- **FPS:** The frame-rate value in frames per second.
- **Essence type:** The essence of the related asset.
- **Qc Status:** The quality check status of the related media asset.
- **Qc Report:** Active link to the quality check report on the related media asset.

The proxy status flag can be activated , meaning that the asset has a proxy that you can load into the media-player for viewing, or deactivated  when no proxy is available.

To display the detailed metadata for associated children (titles, subtitles, key segments, thumbnails, etc.) of the parent media asset, click the item in the Material Tree.

## Title Relationship Details

Select a **Title** node in the Material Tree to report the metadata for the Title in the Details pane. The metadata listed is displayed according to the schema specified in the **Results Config** page of the **Admin** menu. See the section [Configuring Search Result Attributes](#), on page 100 for more details.



The screenshot shows the Material Tree interface with a list of assets. A red arrow points from the text 'Select Titles Container' to the 'TITLES (2)' folder. Another red arrow points from the text 'Select Either Title to Show Metadata in Details Pane' to the 'PAD\_IDENT001\_010\_002' title entry. Below the tree, the Details pane shows a table of metadata for the selected titles.

Title	Creation Date	Genre	Description	Keywords	BUILDING	FLOOR
PAD_IDENT001_010_002	14:44 04/04/2017	TITLE				
TPC1011	13:38 01/06/2017	TITLE				

Display Details of Available Titles

Fig. 6-150: Details of Available Titles

For each Title the following summary data are reported:

- **Title:** Title text.
- **Creation Date:** The date on which the Title was created.
- **Genre:** Genre to which the Title belongs.
- **Description:** Summary description of the Title.
- **Keywords:** Keywords to describe the Title and assist in searches.
- **Building:** Used to identify building in which Title is archived, if used.
- **Floor:** Used to identify floor on which Title is archived, if used.

## Key Segment Relationship Details

Select a **Key Segment** node in the Material Tree to report the metadata for that item in the Details pane as shown in Figure 6-151:

Material id	Instance	Timecode IN	Timecode OUT	Comment
1080I_50_SNELL_COMME...	HQ	00:00:00:00	00:00:10:08	Seg1
1080I_50_SNELL_COMME...	HQ	00:00:31:13	00:00:40:31	Seg2
1080I_50_SNELL_COMME...	HQ	00:00:50:39	00:01:00:08	Seg4
1080I_50_SNELL_COMME...	HQ	00:01:10:16	00:01:20:23	Seg5

Fig. 6-151: Key Segment Details

For each key segment the following data are reported:

- **Material Id:** The specific ID of the key segment, usually the same.
- **Instance:** The label of the instance parent of the key segment.
- **Timecode IN:** The timecode of the start of the key segment.
- **Timecode OUT:** The timecode of the end of the key segment.
- **Comment:** Any comment text added when creating the key segment.

## Thumbnail Relationship Details

Select a **Thumbnail** node, if available for the selected media asset, in the Material Tree to report the metadata for that item in the Details pane as shown in Figure 6-152.



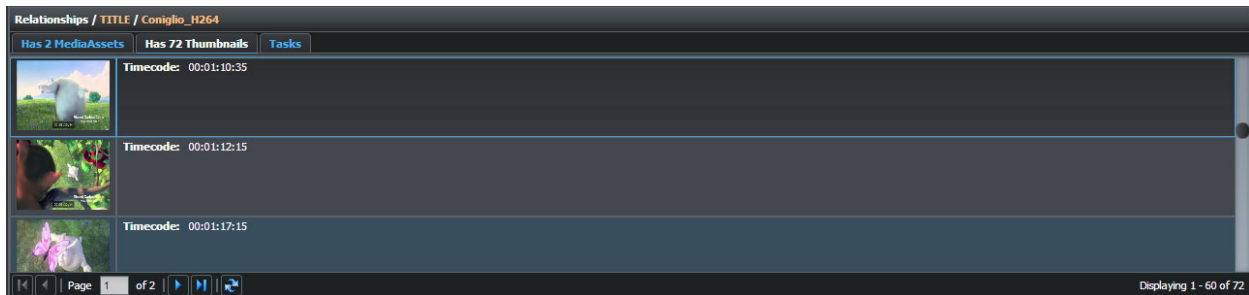


Fig. 6-152: Thumbnail Details

You can browse through the thumbnails in this pane to locate specific time-codes. The Material Tree reports the total number of thumbnails available for the selected item.

## Audio Track Relationship Details

Select an **Audio Track** node, if available for the selected media asset, in the Material Tree to report the metadata for that item in the Details pane as shown in Figure 6-153.

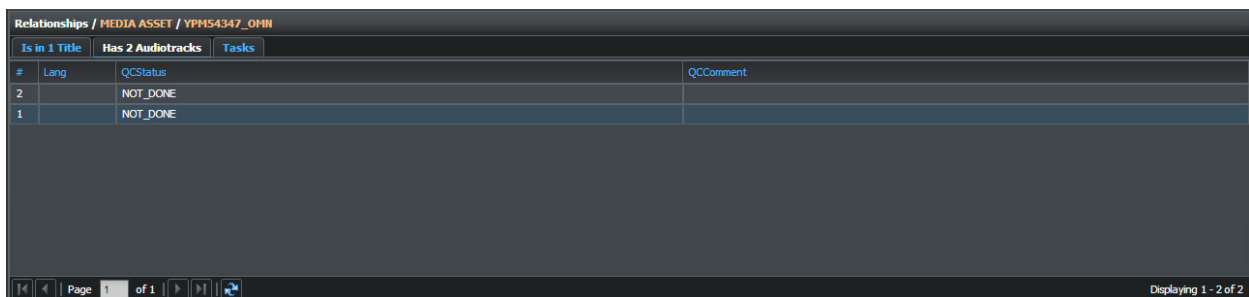


Fig. 6-153: Audio Track Details

If the selected item is a media asset, the listed tracks are those embedded in the asset. If the item is a Title, the listed audio tracks represent audio files ingested separately but linked to the Title. The following information is reported for each track:

- **#:** The number of the track.
- **Lang:** The language label for the track.
- **QCStatus:** Reports the result of an Audio Quality Check, if it has taken place for the track.
- **QCComment:** Reports any additional information compiled during the Audio Quality Check.

## Caption Relationship Details

Select a **Caption** node, if available for the selected media asset, in the Material Tree to report the metadata for that item in the Details pane. The Material Tree lists any captions associated with the selected item as shown in Figure 6-154:

Lang	FORMAT	PATH
ENG	.scc	\\demo\Momentum_MEDIA\HQ\F11\F11_eng.scc
ITA	.srt	\\demo\Momentum_MEDIA\HQ\F11\F11_ita.srt

Fig. 6-154: Caption Details

For each associated caption file the following data are reported:

- **Lang:** The three letter acronym stating the language of the captions.
- **FORMAT:** The format of the caption file (e.g., SCC, SRT, etc.)
- **PATH:** The path containing the caption file.

## Timeline Relationship Details

A **Timeline** icon is displayed in the Material Tree if the selected item belongs to one or more project timelines, see Figure 6-155.

Title	Creation Date	Genre	Description	Keywords	STATUS
matteo	16:19 20/05/2013	TIMELINE			
Test1	12:53 01/08/2013	TIMELINE			

Fig. 6-155: Timeline Details

For each timeline the following data is reported:

- **Title:** Name of the timeline.
- **Creation Date:** Date when the timeline was created.
- **Genre:** Genre to which the type of timeline belongs.
- **Description:** Reports a description of the timeline.
- **Keywords:** Reports any keywords associated with the timeline.
- **Status:** Reports if a timeline is undergoing processing.

## Auxiliary File Relationship Details

Any auxiliary files associated with an item selected in the search results appear as an icon in the material tree and when selected, in the Auxiliary files details pane as shown in Figure 6-156.

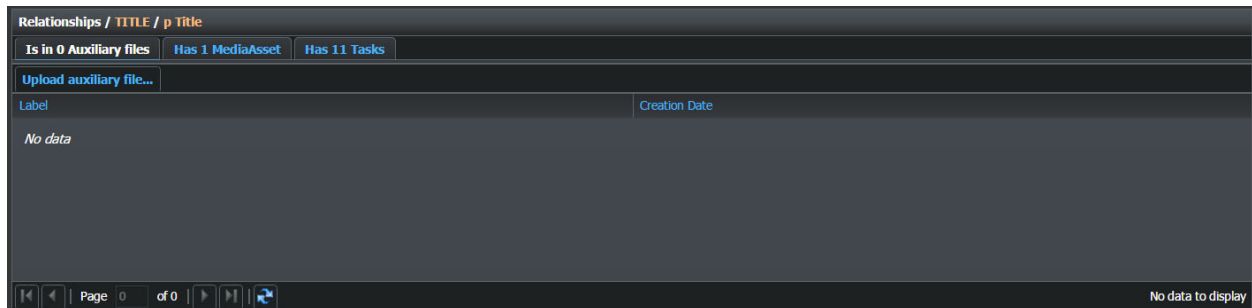


Fig. 6-156: Auxiliary File Details

An auxiliary file is a generic object associated with a Title and may have any format, for example, TXT, PDF, PAC, DOC, DOCX, CSV, XLS. By default, you can upload auxiliary files up to a maximum size of 30 MB.

---

**Note:** If necessary, you can increase the default maximum upload size in the IIS settings.

---

You can use the Material Tree to upload an auxiliary file and associate it with the selected item in the search results as follows:

- 1 Select: **Actions > Upload auxiliary file...** in the Material Tree pane.

This opens the Upload auxiliary file dialog, shown in Figure 6-157:

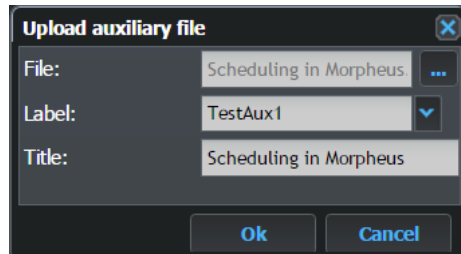


Fig. 6-157: Upload Auxiliary File Dialog

- 2 Browse to the generic auxiliary file to be associated with the selected Project, media asset or title.
- 3 Select a label from the drop-down menu.  
The labels are defined in the XML configuration file:  
C:\Mantrics\InstanceLabelsConfig.xml
- 4 Accept the auto-filled title of the file or overwrite the entry as required.
- 5 Click **Ok** to upload and associate the file.

Momentum displays a progress bar to show the progress of the file upload as shown in Figure 6-158:



Fig. 6-158: Progress of Auxiliary File Upload

On completion, the uploaded file is listed in Material Tree and saved to a remote upload folder defined in the XML configuration file in the section

<AuxiliaryFilesRepository>:

C:\Mantrics\MantricsConfig.xml

## Accessing Tasks from the Material Tree

To review any tasks associated with the selected asset, click the **Tasks...** button in the Material Tree pane.

The Tasks pane reports the task history for the selected asset by Job ID.

Element	Element Type	Agent	Media asset	Instance Status	Instance Type	In Date	Start Date	End Date	Status	Result	Remark
<b>Job: 1000004</b>											
WatchFolder	WatchFolder	127.0.0.1 - WatchFolder	---	---	---	15:14:42.466 16/03/20...	15:14:44.702 16/03/20...	15:14:52.505 16/03/20...	completed	ok	ok
FFmpeg Pro...	FFmpeg Proxy	127.0.0.1 - FFmpeg Transcoder	---	---	---	15:14:52.380 16/03/20...	15:15:13.661 16/03/20...	15:15:15.129 16/03/20...	completed	failed	Error while checking if
<b>Job: 1000007</b>											
WatchFolder	WatchFolder	127.0.0.1 - WatchFolder	---	---	---	14:28:39.053 24/03/20...	14:29:08.337 24/03/20...	14:29:11.846 24/03/20...	completed	ok	ok
FFmpeg Pro...	FFmpeg Proxy	127.0.0.1 - FFmpeg Transcoder	HQ	File does not exist	---	14:29:11.581 24/03/20...	14:29:37.720 24/03/20...	14:29:40.260 24/03/20...	completed	ok	ok
Thumb Gen...	Thumb Generat...	127.0.0.1 - Thumb Generator	HQ	File does not exist	---	14:29:11.628 24/03/20...	14:29:37.408 24/03/20...	14:29:38.930 24/03/20...	completed	ok	ok

Fig. 6-159: Catalog Task Pane

Tasks are grouped by Jobs and each job can be expanded or collapsed to examine or hide the details of the corresponding task. The task lists are populated in real-time according to the changes in the workflow.

For each task, the following information is reported:

- Job:** Number identifying the Momentum Job to which the associated tasks belong.  
 Click or to expand or collapse the tasks in a Job respectively.
- Element:** Name of the element that processed or is processing the task. The names are active links that open the corresponding Workflow page centered on the selected workflow element.
- Element Type:** Specifies the type of workflow element that processed the task.

- **Agent:** Specifies the IP address of the agent node and the name of the connecting workflow element
- **Media asset:** Active link to the HQ media asset. Click the link to load the metadata into the Catalog panes.
- **Instance Status:** Current status of the instance; used to indicate whether an instance is available for further processing. Instance status values are: Null, Allocated, FileExists, Playable, Transferable, Complete, FullyAvailable. A Playable status indicates that a file being ingested is in a suitable state to be worked on. A clip with such a status is available for baseband review, creation of new segments and making a new copy. A status of FullyAvailable indicates that the ingest process has completed.
- **Instance Type:** Instance type of the media asset, e.g., MomentumInstance, SQInstance, DivalInstance, SocialInstance, etc.
- **In Date:** Specifies when the task arrived at the workflow element.
- **Start Date:** Specifies the date on which processing of the task began on the workflow element.
- **End Date:** Specifies the date on which the processing of the task ended on the workflow element.
- **Status:** Reports the status of the task at the workflow element (completed, waiting, stopped, reconnecting.)
- **Result:** Reports the port used by the task to exit the workflow element.
- **Remark:** Provides additional information related to the result.

---

**Note:** Any customizations made to the appearance of the Tasks pane (e.g., size or order of the columns) are saved for each user that logs on to the system from a specific client machine.

---

From the Tasks pane, you can choose to export the tasks list in CSV format by clicking **Export CSV...** and entering a name for the file. Click **Ok** to close the window.

## Working with Projects

A **Project** is a collection of user-selected materials. You can use a project to group any kind of material which then provides an easy way to find related elements in the database. Any material (even a project) can be part of one or more projects.

You can use the Search Tool to locate projects in the database. Any material belonging to the selected project is listed in the Relationships tabs below the Details pane of the Catalog page.

If a material is part of a project, then the project name appears in the Parents tab of the Relationships pane.

The list of projects to which an element is assigned is a specific metadata element that can be viewed in the Details pane and/or in the Search Results of the Catalog page (see the

sections [Customizing Metadata Schemas Using Metadata Masks](#), on page 96 or [Configuring Search Result Attributes](#), on page 100 for more details).

## Creating a Project

To create a project:

From the **Results** pane in the **Catalog** page:

- 1 Select: **Actions** > **Create...** > **Project**
- 2 In the **Create project...** dialog enter a Title and Description for the new project, see Figure 6-160.:

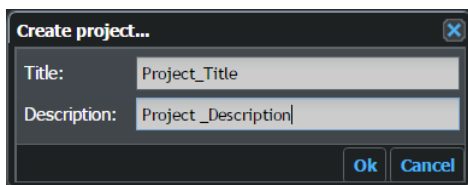


Fig. 6-160: Create Project Dialog

- 3 Click **Ok** to add the project.

## Deleting a Project

To delete a project:

- 1 Locate the project using the Search Tool.
- 2 Click the project in the search results to select and activate it.
- 3 Select **Actions** > **Delete...**

## Adding Material to a Project

Any kind of object in the Momentum database can be included in a project.


To add an object to a project:

- 1 Locate the material using the Search Tool.
- 2 Click the desired material in the search results to select and activate it.
- 3 Select **Actions** > **Add to project...**
- 4 Select the target project in the displayed list.
- 5 Click **Ok** to add the material.

## Removing Material from a Project

To remove an item of material from a specific project:

- 1 Locate the material using the Search Tool.

- 2 Open the **Is in Project** tab in the Relationships pane.
- 3 Click the Delete icon  associated with the item of material.  
The material is removed from the parent project.





# 7

## Creating Content in the Logger Page

### Using the Logger Page to Create Key Segments

The **Logger** page enables you to create new key segments from existing material, see Figure 7-161. **Key segments** can be objects of a query in a Search tool but they are not new media files; a key segment simply references a specific segment of the parent media file.

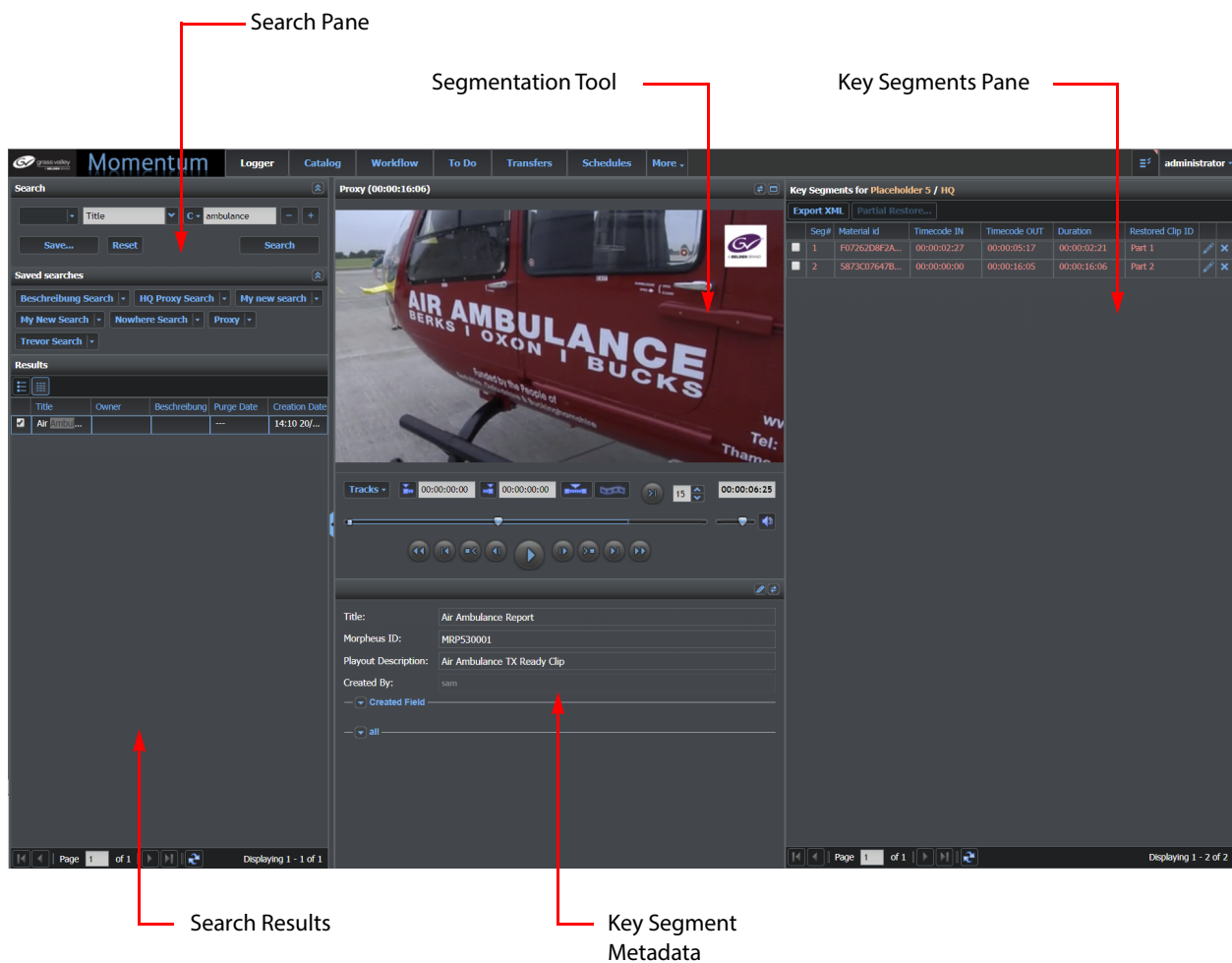


Fig. 7-161: Overview of the Logger Page

The **Logger Page** contains the following areas:

- **Search Pane:** Enables you to find relevant material.
- **Segmentation Tool:** Player used to create key segments and also to edit the associated metadata, as required.

- **Key Segments Pane:** Lists all of the key segments associated with the selected material and enables you to export the related data in an XML format file.

## The Segmentation Tool

The **Segmentation Tool** enables you to create new key segments by marking the timecode-in and timecode-out of new segments. In addition, you can also edit timecode-in and timecode-out values of existing key segments.

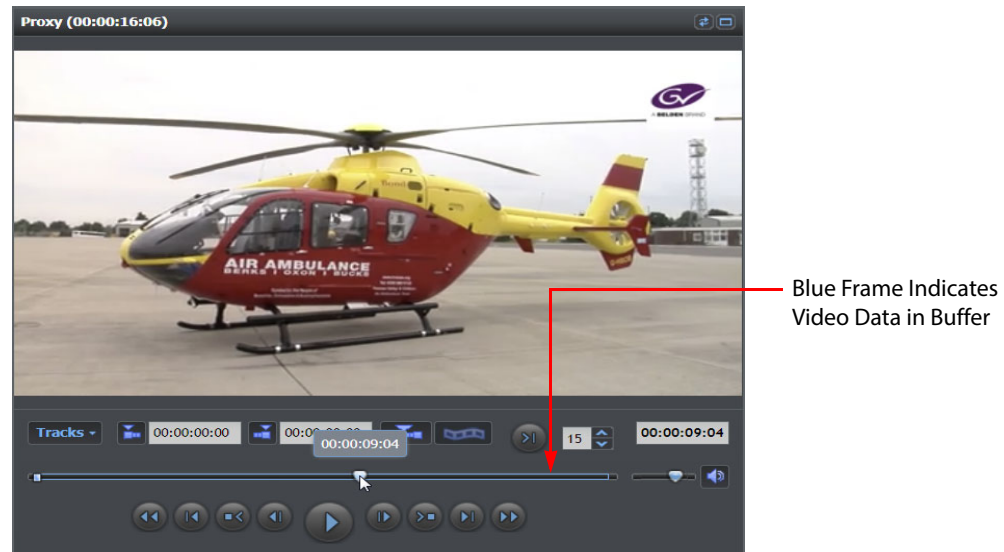


Fig. 7-162: Logger Segmentation Tool

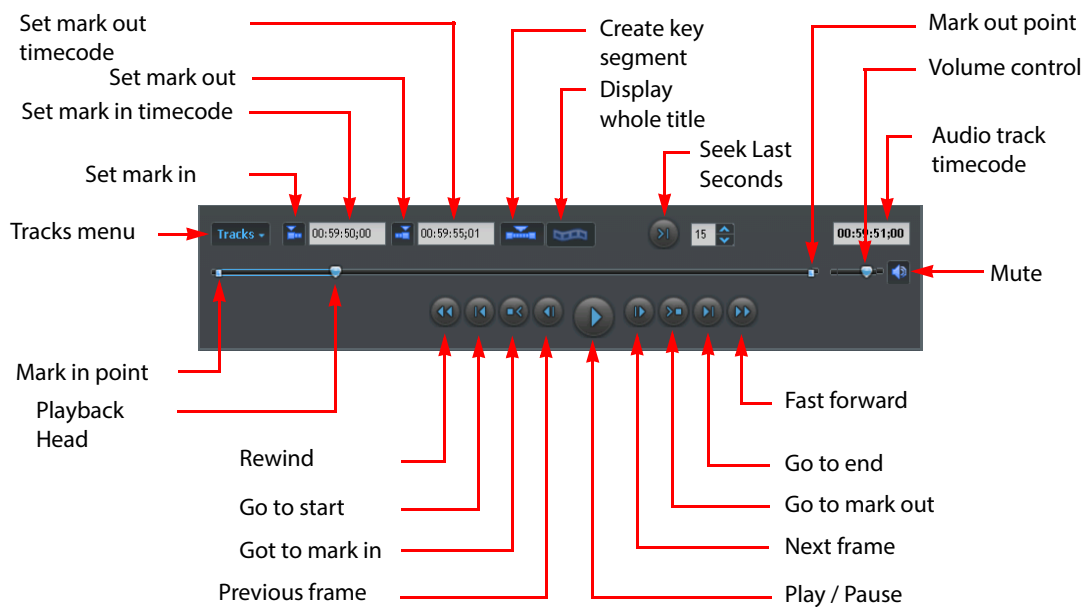




Fig. 7-163: Logger Segmentation Tool Control Panel

Below the current frame are the **Set mark in** and **Set mark out** controls, see Figure 7-164:



Fig. 7-164: Logger Segmentation Tool: Set mark in and Set mark out Controls

Hovering over a frame on the timeline displays a thumbnail for that frame.

After setting your mark in and mark out points, use the **Create key segment** button , to create a new key segment. In addition, you can use the **Display whole title** button , to return to the parent clip from the key segment.

You can use the **Seek last seconds** pane to move the playback head to a set number of seconds before the end of a clip or a segment, see Figure 7-165:

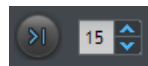


Fig. 7-165: Segmentation Tool - Seek Last Seconds

To start playing a clip at a pre-selected number of seconds before the end:

- 1 Enter the required number in the input field or use the **Increase** and **Decrease** buttons to reach the correct value.
- 2 Click the **Seek** button. The playback head moves to the required timecode.
- 3 Click the **Play** button of the Segmentation Tool controls.

If the player is already running the clip this step is not required.

Below the timeline slider, are the playback controls. There are three pairs of buttons more than available in a standard Player pane.

The **Go to mark in** and **Go to mark out** buttons move the playback head to the Mark In or Mark Out point in the timeline.

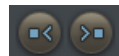


Fig. 7-166: Segmentation Tool Buttons: Go to mark in and Go to mark out

The **Rewind** and the **Fast forward** buttons enable you to change the playback speed. When you click either of these buttons, a message on the player reports the actual speed of the playback.



Fig. 7-167: Segmentation Tool Buttons: Rewind and Fast Forward

The **Go to start** and **Go to end** buttons enable you to display the start or end of the key segment, see Figure 7-163.

Some playback functions have keyboard shortcuts as follows:

- **j** - Single press: one frame back.  
Prolonged press: Rewind x 8 speed.
- **k** - Play / Pause toggle.
- **l** - Single press: one frame forward.

- Prolonged press: Fast Forward x 8 speed.
- **Spacebar** - Play / Pause toggle.

### Using the Tracks Menu to Change the Media Player Controller

The **View** section of the Tracks menu displays a list of all media player controllers currently available to Momentum, including:

- Proxy Player
- Go Player
- ImagePlayer

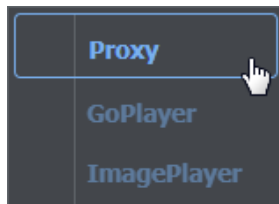



Fig. 7-168: Tracks View Menu Expanded



This menu provides the ability to review any media from the Catalog by assigning permission to switch viewing between **Proxy** and **GoPlayer** or **ImagePlayer**. You can select the most appropriate player for the selected media asset. In the event that the selected media asset cannot be played by a specific player controller, its corresponding item in the View menu is disabled and cannot be selected.

For more information on the **Tracks** menu, see the section [Media Players](#), on page 12.

## Creating a Key Segment

To create a new key segment:

- 1 In the Logger page, use the Search Tool to select an item of material of type **TITLE**.  
When the material is selected, the player displays the first frame of the file. The area below the player controls displays the metadata related to the selected material, and the key segments area lists any existing key segments for the selected material.
- 2 In the Segmentation Tool, set the mark-in point of the new key segment.  
When a frame is marked as the start point of a segment, a Square marker highlights its position on the timeline slider.  
You can create a Start point for a key segment as follows:
  - a Use the playback controls of the Segmentation Tool or drag the playback head to the desired first frame, then click **Set mark in** . The field next to the icon populates with the value of the start timecode.
  - b Enter or select the correct timecode value, if already known, in the **Edit Timecode** dialog. To do so, click the input field next to the **Set mark in** icon. This opens the Edit Timecode dialog where you can enter the timecode. Click **Save** to save the value or **Cancel** to exit without saving.

- 3 In the Segmentation Tool, set the mark-out point of the new key-segment.  
When a frame is marked as an end-point of a segment, a square marker highlights its position on the timeline slider. You can create a End point as follows:
  - Use the playback controls of the Segmentation Tool or drag the playback head to the desired last frame, then click **Set mark out** . The field next to the icon populates with the value of the end timecode.
  - Enter or select the correct timecode value, if already known, in the **Edit Timecode** dialog. To do so, click the input field next to the **Set mark out** icon. This opens the Edit Timecode dialog where you can enter the timecode. Click **Save** to save the value or **Cancel** to exit without saving.
- 4 Click **Create key segment** .
- 5 Enter a description or a title for the new key segment in the **Comment** dialog, see Figure 7-169.

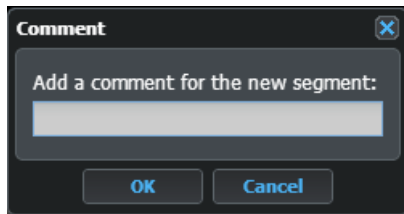


Fig. 7-169: Logger Page - Key Segment Comment

Click **Ok** to save the key segment or **Cancel** to exit without saving.

On creating a new segment, a new row appears in the Key segments pane. For each key segment created, Momentum generates a thumbnail using the frame set at the mark-in point, to help identify the segment in the Results lists of the search tool.

## Managing Key Segments


The key segments appear in table of the Key Segments pane which displays the following information:

- |                          |   |
|--------------------------|---|
| • <b>Segment Number:</b> | Progressive number identifying each segment.            |
| • <b>Material ID:</b>    | Material ID of the segment.                             |
| • <b>Timecode IN:</b>    | Start timecode of the segment.                          |
| • <b>Timecode OUT:</b>   | End timecode of the segment.                            |
| • <b>Duration:</b>       | Calculated duration of the segment.                     |
| • <b>Comment:</b>        | Title or description entered when creating the segment. |
| • <b>Edit Segment:</b>   | Icon to edit the segment comment or description.        |
| • <b>Delete Segment:</b> | Icon to delete the selected segment.                    |

### Key Segment Playback


To playback a key segment:

- 1 Click on the relevant row of the Key segments table to select a key segment.

The playback head moves to the start point of the selected segment. The Start and End points are now marked on the timeline. The **Switch to parent clip** button  is also activated.

- 2 Click the **Play** button on the Segmentation tool controls.  
The playback ends when the mark-out endpoint is reached.



---

**Note:** When a segment is selected, the Segmentation tool enters a special playback mode, that is limited to the frames of the segment. To edit and playback the entire parent clip, use the Switch to parent clip button .

---

### Modifying the Length of a Key Segment

To change the Start and/or End point of a key segment:

- 1 In the Key segments pane, select a segment.
- 2 Use the Segmentation tool to locate the desired frame.
- 3 Mark the frame as start point or end point as required by clicking **Set mark in**  or **Set mark out** .

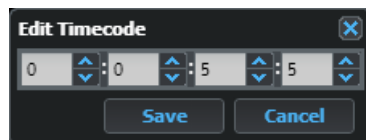


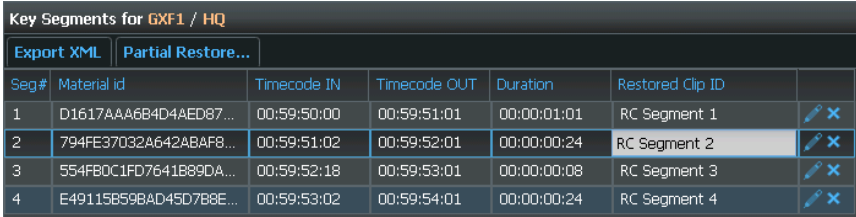
Fig. 7-170: Logger Page Editing a Timecode

The content of the Segmentation Tool and the Key Segments pane is updated to reflect the length of the new segment.

### Editing a Key Segment Comment

The Key segments pane can contain comments about the key segment. To modify a existing comment:

- 1 Click the **Edit segment** icon:   
This enables the Comment field for editing, see Figure 7-171.











Seg#	Material id	Timecode IN	Timecode OUT	Duration	Restored Clip ID	
1	D1617AA6B4D4AED87...	00:59:50:00	00:59:51:01	00:00:01:01	RC Segment 1	 
2	794FE37032A642ABAF8...	00:59:51:02	00:59:52:01	00:00:00:24	RC Segment 2	 
3	554FB0C1FD7641B89DA...	00:59:52:18	00:59:53:01	00:00:00:08	RC Segment 3	 
4	E49115B59BAD45D7B8E...	00:59:53:02	00:59:54:01	00:00:00:24	RC Segment 4	 

Fig. 7-171: Logger Page - Editing a Comment Field

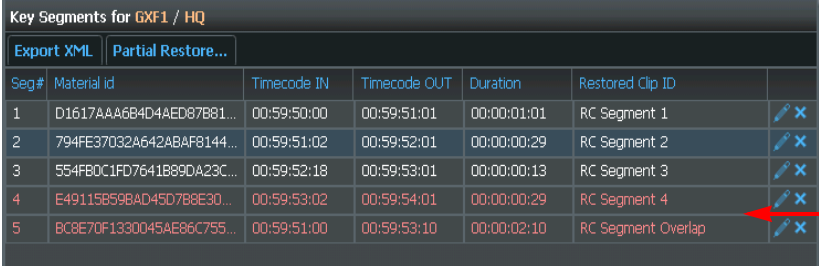
- 2 Enter the required description for the segment.
- 3 Press **Enter** or click anywhere outside the Comment field to exit the editing function.

## Deleting a Key Segment

To delete a key segment, click the Delete icon  and confirm the deletion.

## Overlapping Key Segments

It is possible for two segments to overlap. Momentum checks for this occurrence and highlights the overlapping segments, see Figure 7-172













Seg#	Material id	Timecode IN	Timecode OUT	Duration	Restored Clip ID	
1	D1617AAA6B4D4AED87B81...	00:59:50:00	00:59:51:01	00:00:01:01	RC Segment 1	 
2	794FE37032A642ABA8144...	00:59:51:02	00:59:52:01	00:00:00:29	RC Segment 2	 
3	554FB0C1FD7641B89DA23C...	00:59:52:18	00:59:53:01	00:00:00:13	RC Segment 3	 
4	E49115B59BAD45D788E30...	00:59:53:02	00:59:54:01	00:00:00:29	RC Segment 4	 
5	BC8E70F1330045AE86C755...	00:59:51:00	00:59:53:10	00:00:02:10	RC Segment Overlap	 

Fig. 7-172: Logger Page - Overlapping Segments

While there is an overlap, it is not possible to export or save the file, you will need to resolve the overlap conflict. An error message is displayed to warn you that some key segments are overlapping, see Figure 7-173.

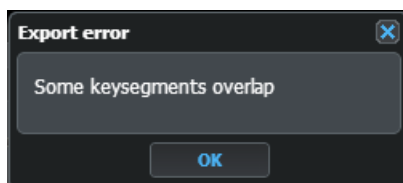



Fig. 7-173: Logger Page Export Failed Due to Overlapping segments

To export the file, change the Start and/or End point of one of the key segments to prevent the overlap.

## Exporting the Segmentation Timeline

You can export the key segment information to an XML file stored in the download folder of the browser.

To export the segmentation timeline:

- 1 Click the  button at the top left corner of the Key segments pane.
- 2 Retrieve the exported file from the download folder of your browser.

## Restoring Key Segments from Archived Files

If using Telestream DIVA to archive video contents, the **Partial Restore...** button is available in the Key segments pane.

You can use the **Partial Restore** function to create a new title from a title in the archive, making the content of the new title the same as a selected key segment tagged on the archived material.

To perform a partial restore from an archive:

- 1 Click the **Partial Restore...** button.

This opens the **Partial restore dialog**, see Figure 7-174.

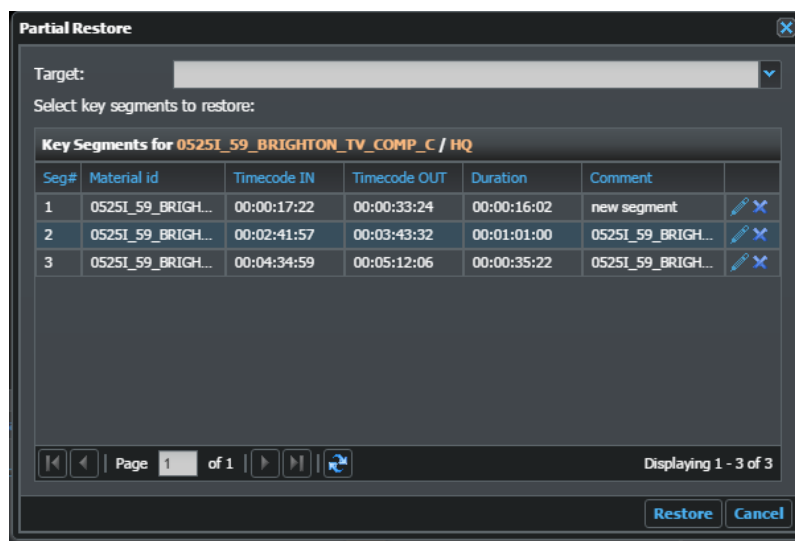


Fig. 7-174: Partial Restore of Key Segments

The Target field is a drop-down from which you can select one of the Partial Restore elements active in your workflows.

- 2 Choose the desired target archive from the drop-down list, then select one or more of the available key segments.
- 3 Click **Restore**.

This sends a task to the target workflow element to render the selected key segment. On completion of a successful partial restore, you should see the following message displayed:

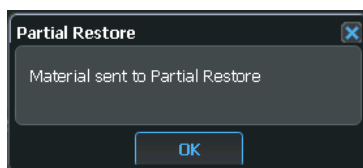


Fig. 7-175: Successful Partial Restore of Key Segments

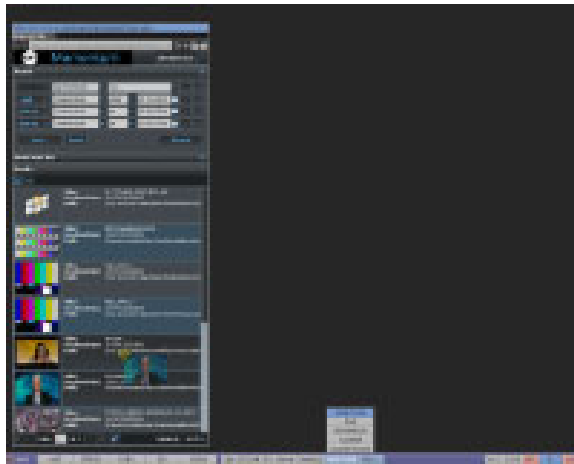


## Using External Editing Tools with Momentum

You can also integrate Momentum with more powerful external editors, such as products in the Grass Valley Go! or sQ range of editors, depending on your editing requirements.

A page embedded in the sQ browser enables you to query the Momentum database and then drag and drop a clip from the Momentum search result into sQ using SoftMount. After editing the material, you can then save the changed material in the external editor back to the Momentum database. An sQ seat enabled with WebTools is required for this purpose.

For further information, see the documentation supplied with your editor.



*Fig. 7-176: Linking to the Momentum Catalog Search Tool from an External Editor*



# 8

## Working with User Tasks in the To Do Page

### Overview

The **To Do** page provides an interface for the Momentum operator to accept and complete tasks requiring user actions so that the task can continue to progress through the workflow. Momentum reports all actions that need to be completed by the currently logged in user in the **To Do** page.

As an operator, you can choose to switch the view of the **To Do** page between a Materials-based view or a Tasks-based view using the **To Do** drop-down menu, see Figure 8-177.

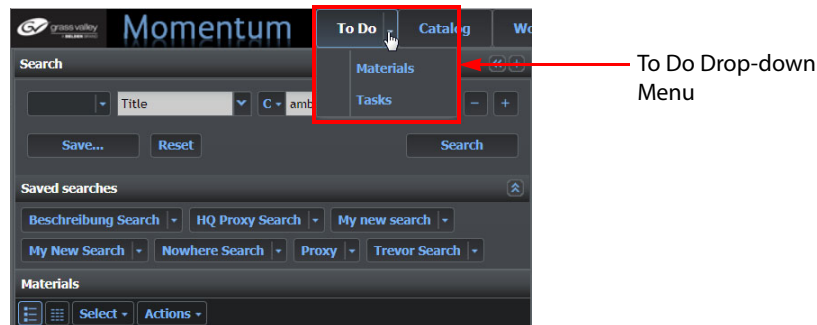


Fig. 8-177: To Do Page - Drop-down Menu

The default view of the **To Do** page is set in the configuration file: `C:\Mantrics\MantricsConfig.xml` by setting the tag `<DefaultToDoViewType>` to **materials** or **tasks** (case-sensitive).

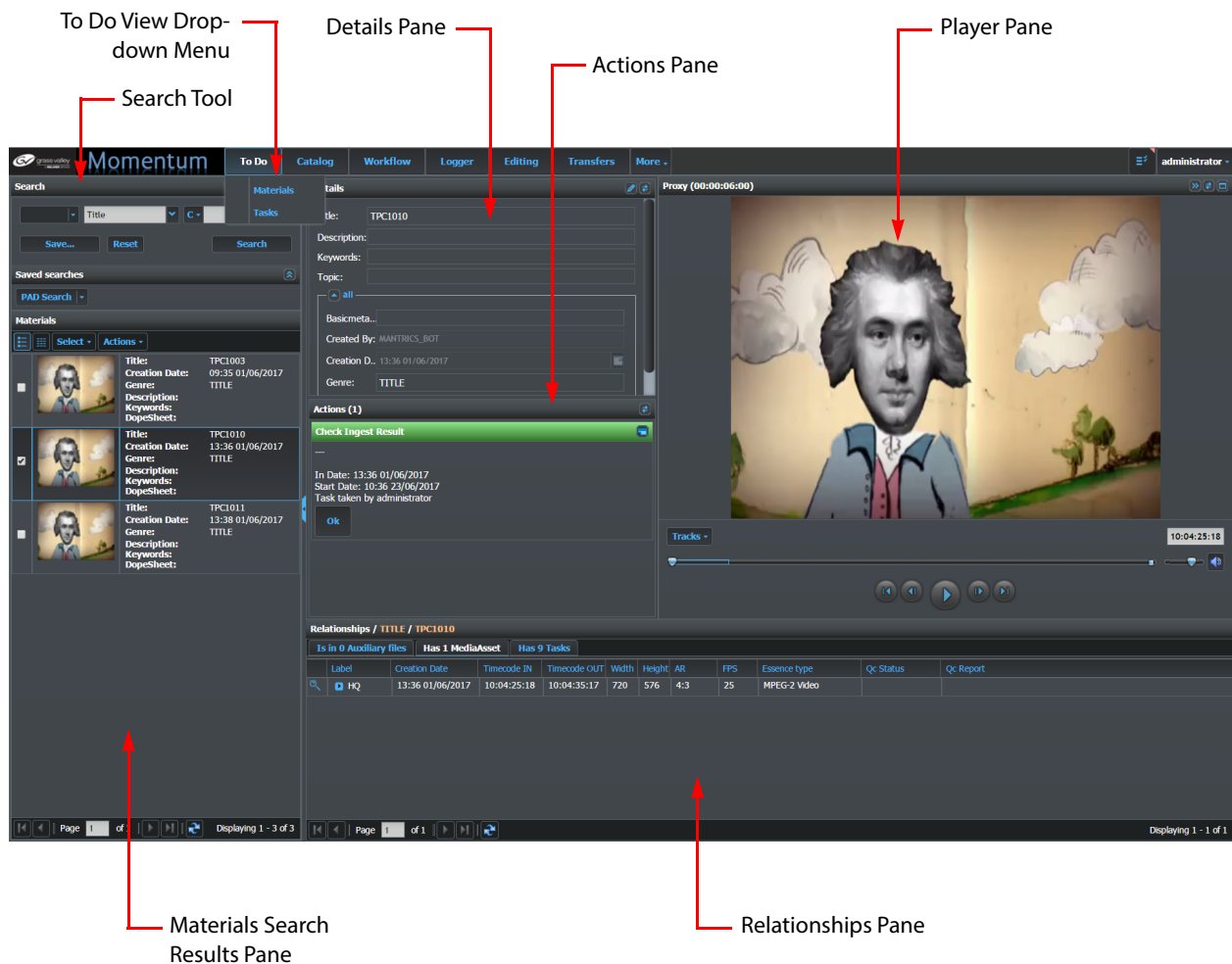


Fig. 8-178: To Do Page - Materials View

The **To Do Materials** view includes the following components:

- **View drop-down:** Enables you to switch the view of the To Do page between Materials and Tasks.
- **Player pane:** Enables you to play out material.
- **Search tool:** Enables you to define complex queries to search for relevant material.
- **Search results pane:** Displays the results matching the material search query.
- **Details pane:** Enables you to view and edit the metadata of the selected material.
- **Actions pane:** Enables you to take actions relating to the selected material.
- **Relationships pane:** Reports all the associations (parents, children, etc.) of the selected material in several tabs. These tabs are dynamically created and each one reports a specific

relationship with the selected material, as a result, the aspect of this pane changes depending on the characteristics of the selected element.

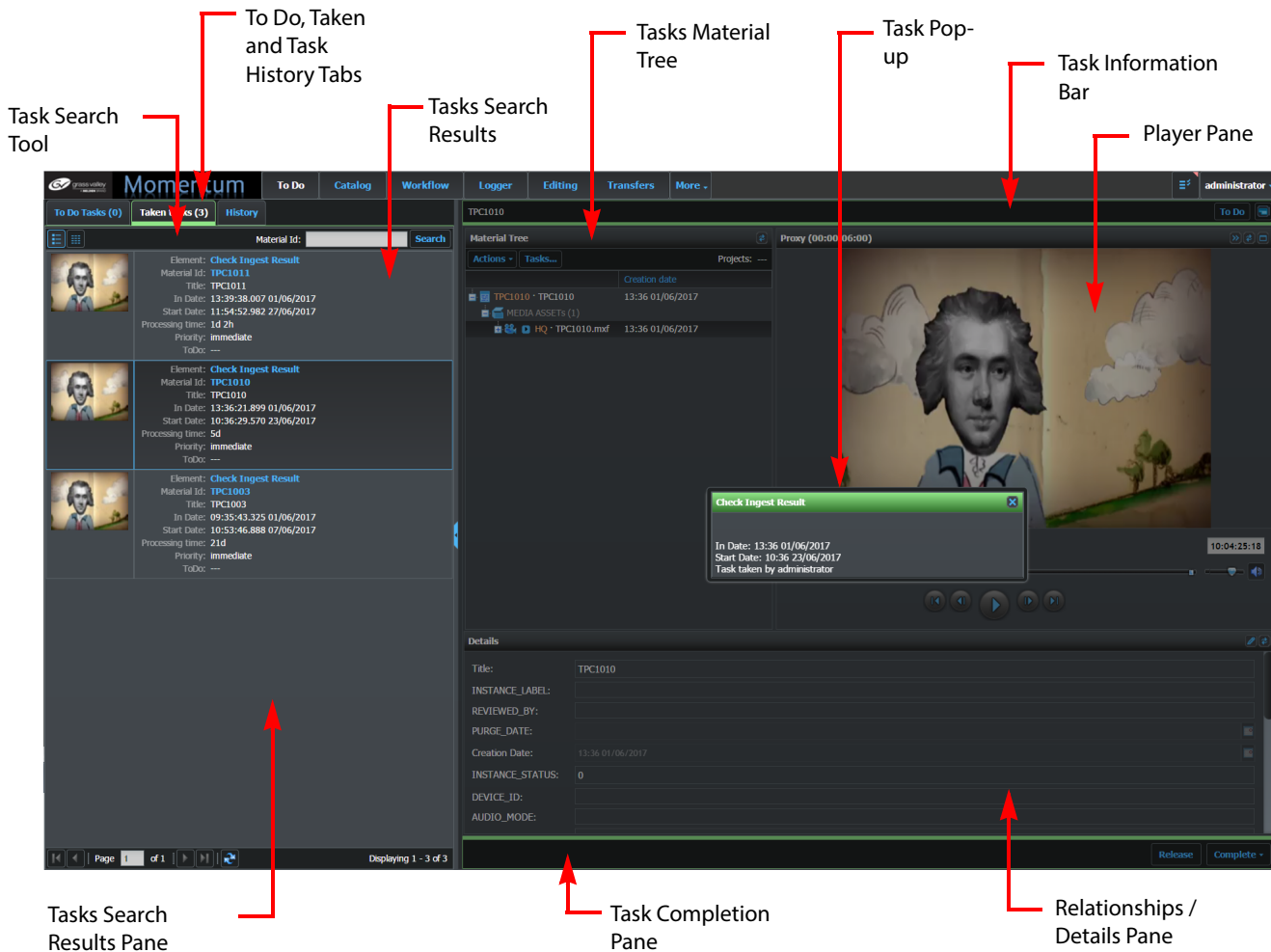


Fig. 8-179: To Do Page - Tasks View

- The **To Do** Tasks view includes the following components:
- **View drop-down:** Enables you to switch the view of the To Do page between Materials and Tasks.
- **Player pane:** Enables you to play out material.
- **Task tabs:** Enable you to switch between To Do tasks, Taken tasks, and Task History. Each tab displays the number of tasks in that category.
- **Task search tool:** Enables you to search available tasks by Material ID.

- **Search results pane:** Displays the tasks associated with the matching Material ID.
- **Material tree:** Displays the various material components associated with the selected task.
- **Details pane:** Displays the detailed metadata of the selected material.
- **Actions pane:** Enables users to make decisions about the material in the workflow.
- **Task pop-up:** Depending on the status of the task either enables you to take a task, or provides further information on the selected task.
- **Relationships pane:** Reports all the associations (parents, children, etc.) of the element selected in the Material Tree, using several tabs. The tabs are dynamically created and each one reports a specific relationship with the selected material, as a result, the aspect of this pane changes depending on the characteristics of the selected element.
- **Task information bar:** Displays the Material ID of the selected task. provides a To Do button to display the Task pop-up and enables you to view the workflow element generating the task in the Workflow page.
- **Task completion pane:** For Taken tasks, displays the Release and Complete buttons enabling you either to release a task to be taken by another user or to complete the task by entering a report comment.

## Using the Search Tool

The Search Tool in the **To Do** page Materials view, enables you to define complex search queries to search for material with associated tasks requiring manual user intervention.

You can use the search tool in the same way as in other panes by creating search queries and saving favorite searches for later use.

For more information on the Search Tool, see the section [Using the Search Tool](#), on page 17.

## Resolving User Tasks

When required, you can accept and take control of a task using the **Actions** pane (in the Materials view see Figure 8-180) or from the **To Do Tasks** tab (in the Tasks view):

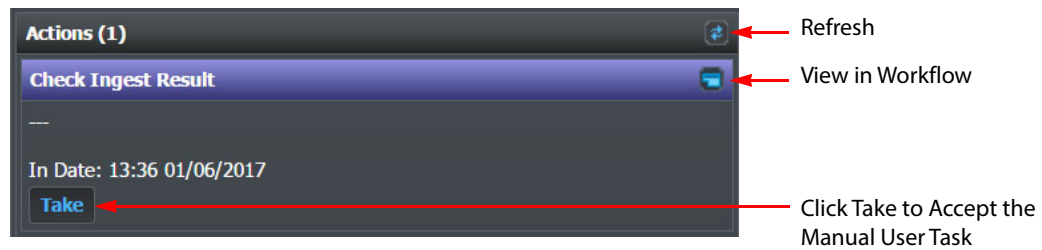


Fig. 8-180: Viewing Unassigned Actions in the Actions Pane

The User Action task displays the date and time at which the task was created.

To log the beginning of the action, click the **Take** button. The corresponding task in the Workflow page is displayed with the status **In Processing**.

The available actions now appear on the Actions pane as shown in the example below:

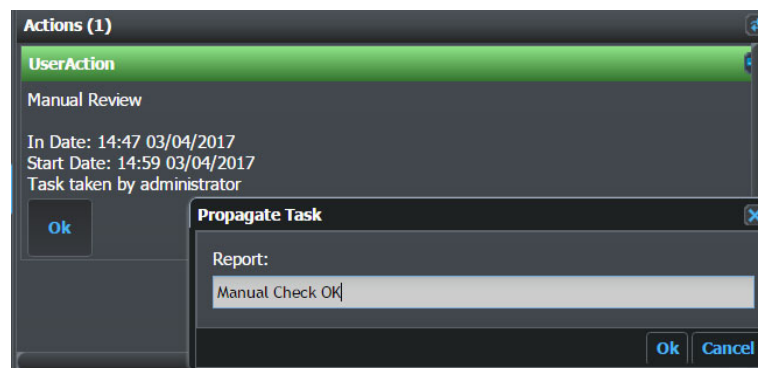



Fig. 8-181: Completing a Manual User Action

The manual action required to resolve the manual user action is defined in the settings of the **User action** workflow element, see the *Configuration Guide* for details.

Perform the required manual operation on the assigned task, click **OK**, enter a report comment and click **Ok** again.

Momentum records your action, updating the database with the report comment, and the date and time of the action itself. The material is removed from the To Do list, and the content's history is updated with the operator's report and extra notes, if available.

The task itself now progresses to the next step in the workflow.

When the user has the correct permissions, the **View in workflow** icon  appears on the action header bar. Click on this icon to display the Workflow page and focus on the workflow element at which the task is pending.

When you *take* a waiting task, from the **To Do Tasks** tab of the **Tasks** view, the panel switches to the **Taken Tasks** tab and re-selects the task you have just taken that should now be in processing status. When you either **Release** or **Complete** a taken task, the Tasks panel reacts as follows:

- If there are still taken tasks available, Momentum continues to display the **Taken Tasks** tab but de-selects all tasks.

- If there are no more taken tasks **Taken Tasks** tab, Momentum switches back to the **To Do Tasks** tab and de-selects all tasks.

## Resolving Audio QC Actions

If the name of a User Action element in a workflow begins with the words **Audio QC**, the Actions pane contains a special **Audio QC** button as shown below:

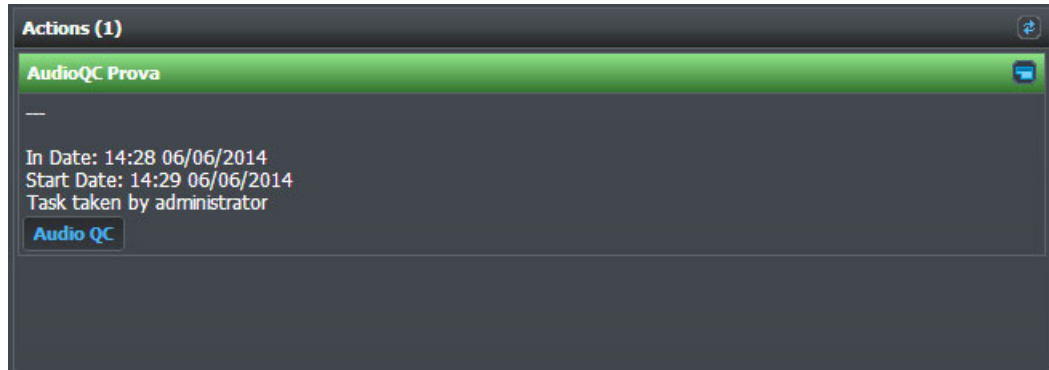


Fig. 8-182: Actions Pane Audio QC Button

Click this button to open the Audio QC page as shown below:

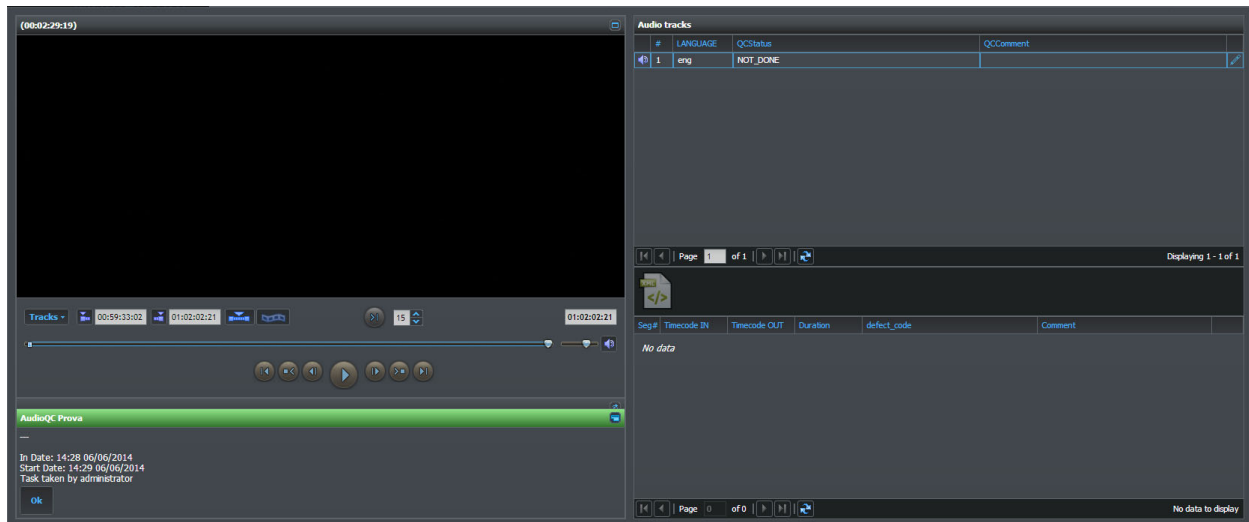


Fig. 8-183: Audio QC Page

Using this page, you can select and review audio tracks and also create a list of possible defects for each track.



## Creating an Audio Defect Report

On the left side of the page, a media player enables you to select a track and then create a defect report.

To create a defect report:

- 1 Mark a start point and an end point using the player.
- 2 Click the **Create defect** button . The following dialog appears:

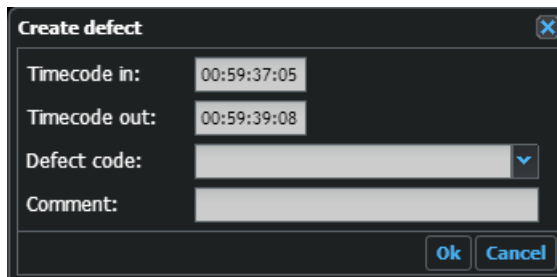


Fig. 8-184: Audio QC Create Defect Pane

The **Timecode in** and **Timecode out** values are already populated.

- 3 Specify a **Defect code** from the drop-down list as shown below:

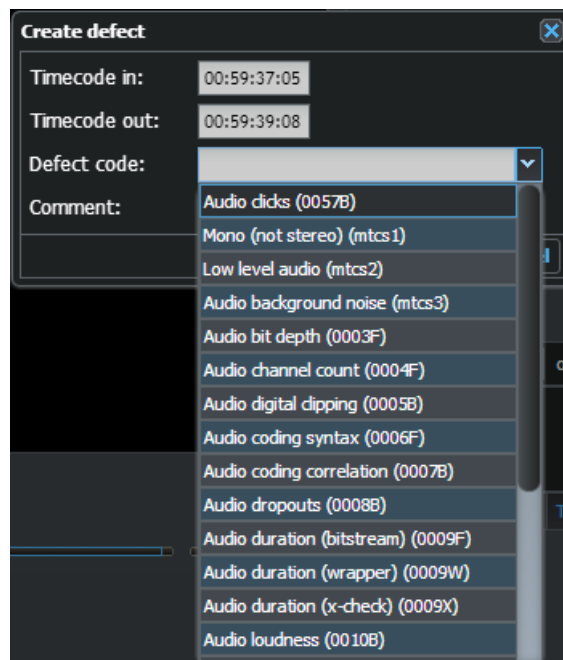
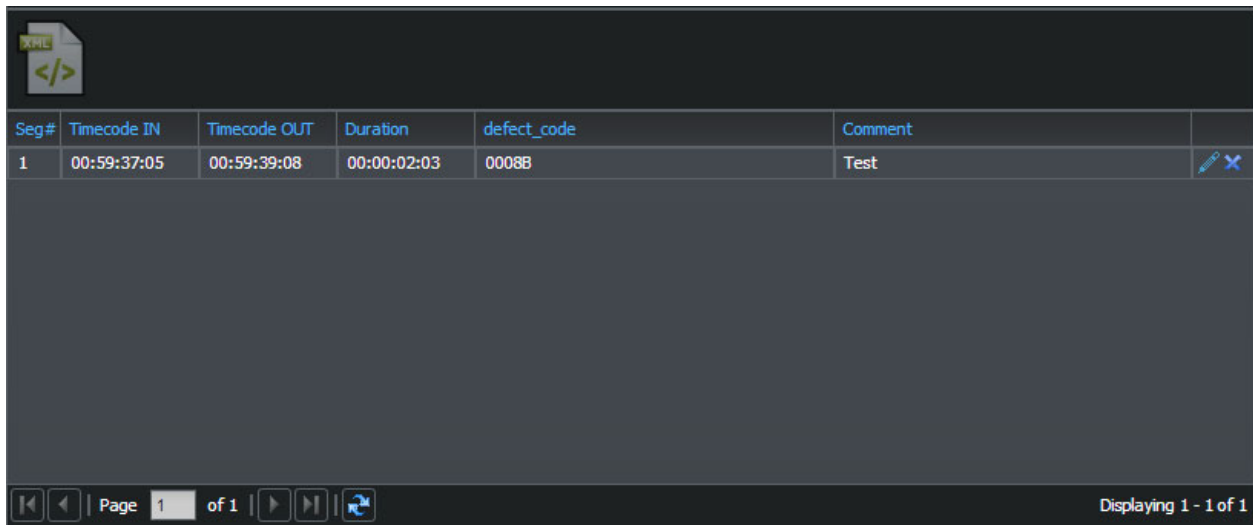


Fig. 8-185: Actions Pane Audio QC Button

- 4 Add a **Comment** if required.
- 5 Click **OK**. The new defect is added to the list on the right side, below the list of available tracks as shown below:







Seg#	Timecode IN	Timecode OUT	Duration	defect_code	Comment	
1	00:59:37:05	00:59:39:08	00:00:02:03	0008B	Test	 


Fig. 8-186: Audio QC Defect List

Use the edit icon  to make changes to the defect report.

To delete a defect report, click the Delete icon .

### Audio Track Information

In the upper right area of the **Audio Tracks** pane, Momentum lists the available tracks. The following information is available for each entry:

- #: Number of the track.
- **LANGUAGE:** Audio track label (usually the language).
- **QC Status:** Reports whether the track still needs to be reviewed or if it has already been checked.
- **QC Comment:** Contains any QC comments.
- **Edit icon**  Enables you to set the QC status and add QC comments if necessary.

## Viewing Media Asset Relationships (Materials View)

The **Relationships** pane in the Materials view of the **To Do** page displays all existing relationships between the item listed in the search results and its associations in the database. A new tab is created for each type of existing relationship, for example parent and child relationships, associated key segments or thumbnails, auxiliary files, etc.

## Relationships Pane - Auxiliary Files Tab

Any auxiliary files associated with an item selected in the search results appear in an Auxiliary files tab as shown in Figure 8-187.

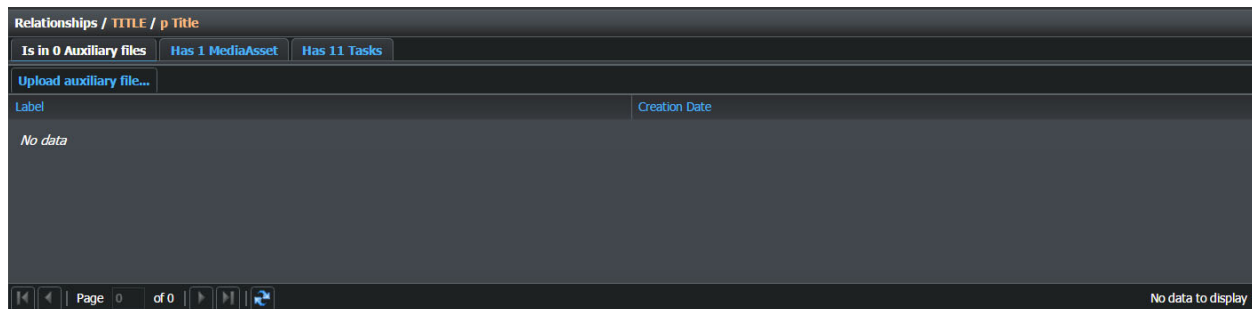


Fig. 8-187: Relationships - Auxiliary Files Tab

An auxiliary file is a generic object associated with a Title and may have any format, for example, TXT, PDF, PAC, DOC, DOCX, CSV, XLS. By default, you can upload auxiliary files up to a maximum size of 30 MB.

---

**Note:** If necessary, you can increase the default maximum upload size in the IIS settings.

---

You can use this screen to upload an auxiliary file and associate it with the selected item in the search results as follows:

- 1 Click **Upload auxiliary file...**.

This opens the Upload auxiliary file dialog, shown in Figure 8-188:

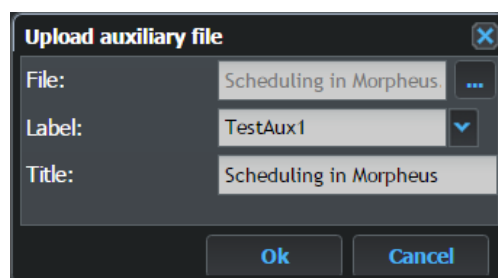


Fig. 8-188: Upload Auxiliary File Dialog

- 2 Browse to the generic auxiliary file to be associated with the selected Title.
- 3 Select a label from the drop-down menu.

The labels are defined in the XML configuration file:

```
C:\Mantrics\InstanceLabelsConfig.xml
```

- 4 Accept the auto-filled title of the file or overwrite the entry as required.
- 5 Click **Ok** to upload and associate the file.

Momentum displays a progress bar to show the progress of the file upload as shown in Figure 8-189.

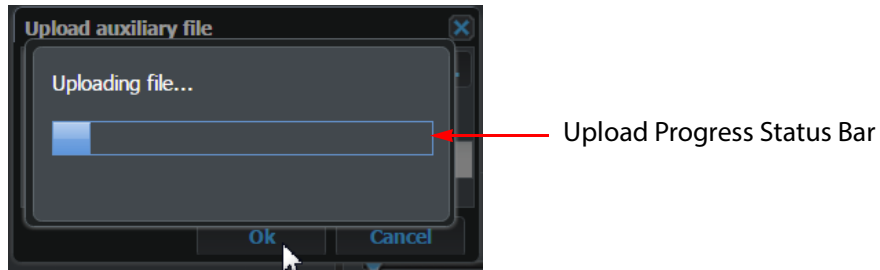


Fig. 8-189: Progress of Auxiliary File Upload

On completion, the uploaded file is listed in the **Auxiliary Files** tab of the Catalog page and saved to a remote upload folder defined in the XML configuration file:

**C:\Mantrics\MantricsConfig.xml**

## Relationships Pane - Media Assets Tab

Any media assets which are associated with the selected item in the search results appear in a **Media Assets** tab as shown in Figure 8-190:

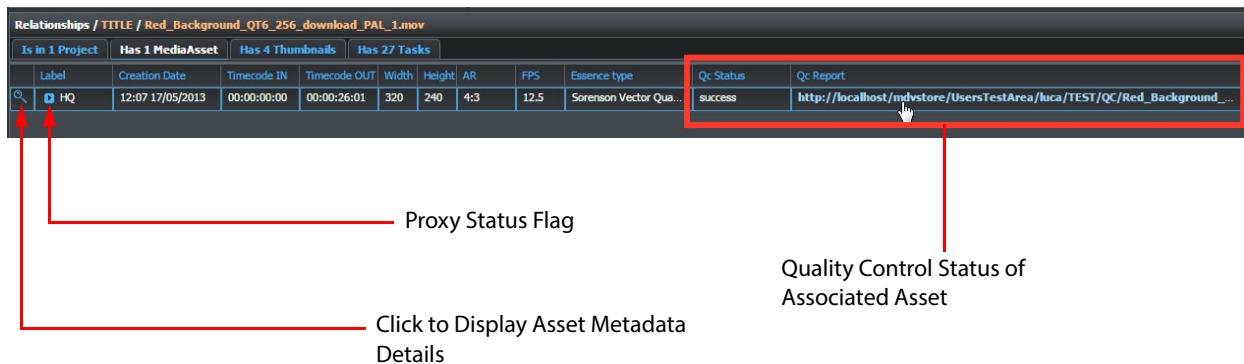






Fig. 8-190: Relationships - Media Assets Tab

Momentum reports the following information for each media asset:

- **Label:** The label used to identify the asset.
- **Creation date:** The date when the asset was created.
- **Timecode IN:** The timecode of the start of the media asset.
- **Timecode OUT:** The timecode of the end of the media asset.
- **Width, Height:** The dimensions in pixels.
- **AR:** The aspect ratio.
- **FPS:** The frame-rate value in frames per second.
- **Essence type:** The essence of the related asset.
- **Qc Status:** The quality check status of the related asset, highlighted in Figure 8-190.
- **Qc Report:** Active link to the quality check report on the related asset, highlighted in Figure 8-190.

Click the Details icon (  ) to load the metadata of the selected asset into the Details pane. It is also set as the current material and the Relationships pane is updated to show the relationships of the selected asset.

**Note:** Displaying the asset details using  does not modify the Search tool and its results list.

The proxy status flag can be activated , meaning that the asset has a proxy that you can load into the media-player for viewing, or deactivated  when no proxy is available.

## Relationships Pane - Thumbnails Tab

The **Thumbnails** tab is available only when thumbnails are available for the selected item.

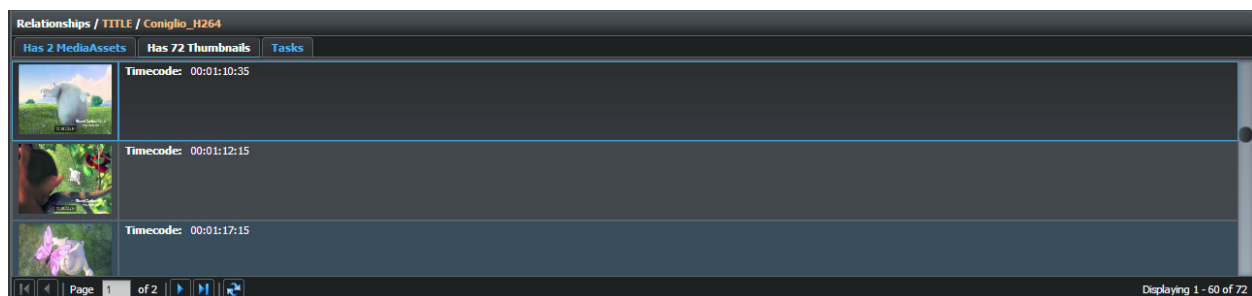


Fig. 8-191: Relationships - Thumbnails Tab

You can browse through the thumbnails in this pane to locate specific time-codes. The header of the tab reports the total number of thumbnails available for the selected item.

## Relationships Pane - Audio Tracks Tab

The **Audio Tracks** tab reports any audio tracks related to the selected item as shown in Figure 8-192:

#	Lang	QCStatus	QCComment
2		NOT_DONE	
1		NOT_DONE	

Fig. 8-192: Relationships - Audio Tracks Tab

If the selected item is a media asset, the listed tracks are those embedded in the asset. If the item is a TITLE, the listed audio tracks represent audio files ingested separately but linked to the TITLE. The following information is reported for each track:

- #: The number of the track.

- **Lang:** The language label for the track.
- **QCStatus:** Reports the result of an Audio Quality Check, if it has taken place for the track.
- **QCComment:** Reports any additional information compiled during the Audio Quality Check.

## Relationships Pane - Captions Tab

The **Captions** tab reports any captions associated with the selected item as shown in Figure 8-193:

Has 1 MediaAsset		Has 2 Captions		Has 21 Tasks	
Lang	FORMAT	PATH			
ENG	.scc	\\demo\Momentum_MEDIA\HQ\F11\F11_eng.scc			
ITA	.srt	\\demo\Momentum_MEDIA\HQ\F11\F11_ita.srt			

Fig. 8-193: Relationships - Captions Tab

For each associated caption file the following data are reported:

- **Lang:** The three letter acronym stating the language of the captions.
- **FORMAT:** The format of the caption file (e.g., SCC, SRT, etc.)
- **PATH:** The path containing the caption file.

## Relationships Pane - Key Segments Tab

The **Key segments** tab reports the segmentation of the related Title as shown in Figure 8-194:

Has 4 Keysegments		Has 1 MediaAsset		Has 8 Tasks	
Material id	Instance	Timecode IN	Timecode OUT	Comment	
1080I_50_SNELL_COMME...	HQ	00:00:00:00	00:00:10:08	Seg1	
1080I_50_SNELL_COMME...	HQ	00:00:31:13	00:00:40:31	Seg2	
1080I_50_SNELL_COMME...	HQ	00:00:50:39	00:01:00:08	Seg4	
1080I_50_SNELL_COMME...	HQ	00:01:10:16	00:01:20:23	Seg5	

Fig. 8-194: Relationships - Key Segments Tab

For each key segment the following data are reported:

- **Material Id:** The specific ID of the key segment, usually the same.
- **Instance:** The label of the instance parent of the key segment.
- **Timecode IN:** The timecode of the start of the key segment.
- **Timecode OUT:** The timecode of the end of the key segment.
- **Comment:** Any comment text added when creating the key segment.

## Relationships Pane - Tasks Tab

The Tasks tab reports the task history for the selected item by Job ID.



Element	Element Type	Agent	Media asset	In Date	Start Date	End Date	Status	Result	Remark
Job: J00012									
sQ Sync	sQ Sync	127.0.0.1 - sQ Sync	---	17:31:27.638 06/12/20...	17:31:48.558 06/12/20...	17:31:48.667 06/12/20...	completed	Clip Created	ok
Set Priority	Set Priority RC	127.0.0.1 - Set Priority	HQ	17:31:48.636 06/12/20...	17:32:18.697 06/12/20...	17:32:18.791 06/12/20...	completed	ok	ok
Instance swit...	Instance switcher	127.0.0.1 - Instance switcher	HQ	17:32:18.759 06/12/20...	17:32:48.727 06/12/20...	17:32:48.836 06/12/20...	completed	ok	ok
Live Logger	UserAction	---	HQ	17:32:48.790 06/12/20...	---	---	waiting		ok
Job: J00013									

Click to Open Tasks Tab in  
Expanded Standalone Window

Fig. 8-195: Relationships - Tasks Tab

Tasks are grouped by Jobs and each job can be expanded or collapsed to examine or hide the details of the corresponding task. The task lists are populated in real-time according to the changes in the workflow.

For each task, the following information is reported:

- **Job:** Number identifying the Momentum Job to which the associated tasks belong.  
Click  or  to expand or collapse the tasks in a Job respectively.
- **Element:** Name of the element that processed or is processing the task. The names are active links that open the corresponding Workflow page centered on the selected workflow element.
- **Element Type:** Specifies the type of workflow element that processed the task.
- **Agent:** Specifies the IP address of the agent node and the name of the connecting workflow element
- **Media asset:** Active link to the HQ media asset. Click the link to load the metadata into the Catalog panes.
- **In Date:** Specifies when the task arrived at the workflow element.
- **Start Date:** Specifies the date on which processing of the task began on the workflow element.
- **End Date:** Specifies the date on which the processing of the task ended on the workflow element.
- **Status:** Reports the status of the task at the workflow element (completed, waiting, stopped, reconnecting.)
- **Result:** Reports the port used by the task to exit the workflow element.
- **Remark:** Provides additional information related to the result.

**Note:** Any customizations made to the appearance of the Tasks table in the tab (e.g., size or order of the columns) are saved for each user that logs on to the system from a specific client machine.

You can open the Tasks table in a separate window for an expanded view by clicking the **Open in window** button as shown in Figure 8-196:

Element	Element Type	Agent	Media asset	In Date	Start Date	End Date	Status	Result	Remark
<b>Job: J000012</b>									
sQ Sync	sQ Sync	127.0.0.1 - sQ Sync	---	17:31:27.638 06/12/20...	17:31:48.558 06/12/20...	17:31:48.667 06/12/20...	completed	Clip Created	ok
Set Priority	Set Priority RC	127.0.0.1 - Set Priority	HQ	17:31:48.636 06/12/20...	17:32:18.697 06/12/20...	17:32:18.791 06/12/20...	completed	ok	ok
Instance swit...	Instance switcher	127.0.0.1 - Instance switcher	HQ	17:32:18.759 06/12/20...	17:32:48.727 06/12/20...	17:32:48.836 06/12/20...	completed	ok	ok
Live Logger	UserAction	---	HQ	17:32:48.790 06/12/20...	---	---	waiting		ok
<b>Job: J000013</b>									
sQ Sync	sQ Sync	127.0.0.1 - sQ Sync	---	17:31:27.888 06/12/20...	17:31:48.636 06/12/20...	17:31:48.729 06/12/20...	completed	Clip Modified	ok

Fig. 8-196: Relationships Tasks in Expanded Standalone Window

From this window, you can choose to export the tasks list in CSV format by clicking **Export CSV...** and entering a name for the file. Click **Ok** to close the window.

## Relationships Pane - Title Tab

The **Title** tab reports metadata on the Title parent of the media asset. The metadata listed is displayed according to the schema specified in the **Results Config** page of the **Admin** menu. See Configuring Search Result Attributes for more details.

## Relationships Pane - Project Tab

The **Projects** tab is available if the selected item belongs to one or more projects.

Title	Description	Created by	Children count
Test		administrator	VIDEO(1)

Fig. 8-197: Relationships - Project Tab

For each project, the following information is reported:

- **Title:** Name of the project.
- **Description:** The content of the Description metadata for the project.
- **Created by:** Name of the user that created the project.
- **Children Count:** The type and number of items contained in the project.

The **Delete from project** icon  enables you to remove the item from the project.



## Relationships Pane - Timeline Tab

The **Timeline** tab is displayed if the selected item belongs to one or more project timelines.

Relationships / TITLE / EDtest.mov					
Is in 2 Timelines	Is in 1 Project	Has 1 MediaAsset	Has 148 Thumbnails	Tasks	
Is in 2 Timelines					
Title	Creation Date	Genre	Description	Keywords	STATUS
matteo	16:19 20/05/2013	TIMELINE			
Test1	12:53 01/08/2013	TIMELINE			

Fig. 8-198: Relationships - Timeline Tab

For each timeline the following data is reported:

- **Title:** Name of the timeline.
- **Creation Date:** Date when the timeline was created.
- **Genre:** Genre to which the type of timeline belongs.
- **Description:** Reports a description of the timeline.
- **Keywords:** Reports any keywords associated with the timeline.
- **Status:** Reports if a timeline is undergoing processing.



# Publishing to Social Media Sites



## Overview

Momentum provides a suite of workflow elements that enable you to connect to the social media websites Facebook and Twitter either to publish or to remove material.

The available elements are:

- Publish to Dailymotion
- Publish to Facebook
- Publish to Twitter
- Publish to Youtube
- Remove from Dailymotion
- Remove from Facebook
- Remove from Twitter
- Remove from Youtube

Before setting-up the social media workflow elements, you need to register the target social media sites in the Momentum **Admin** page: **Social**.

## Registering Target Sites

Register a target Twitter site in Momentum for the publishing and/or removal of material as follows:

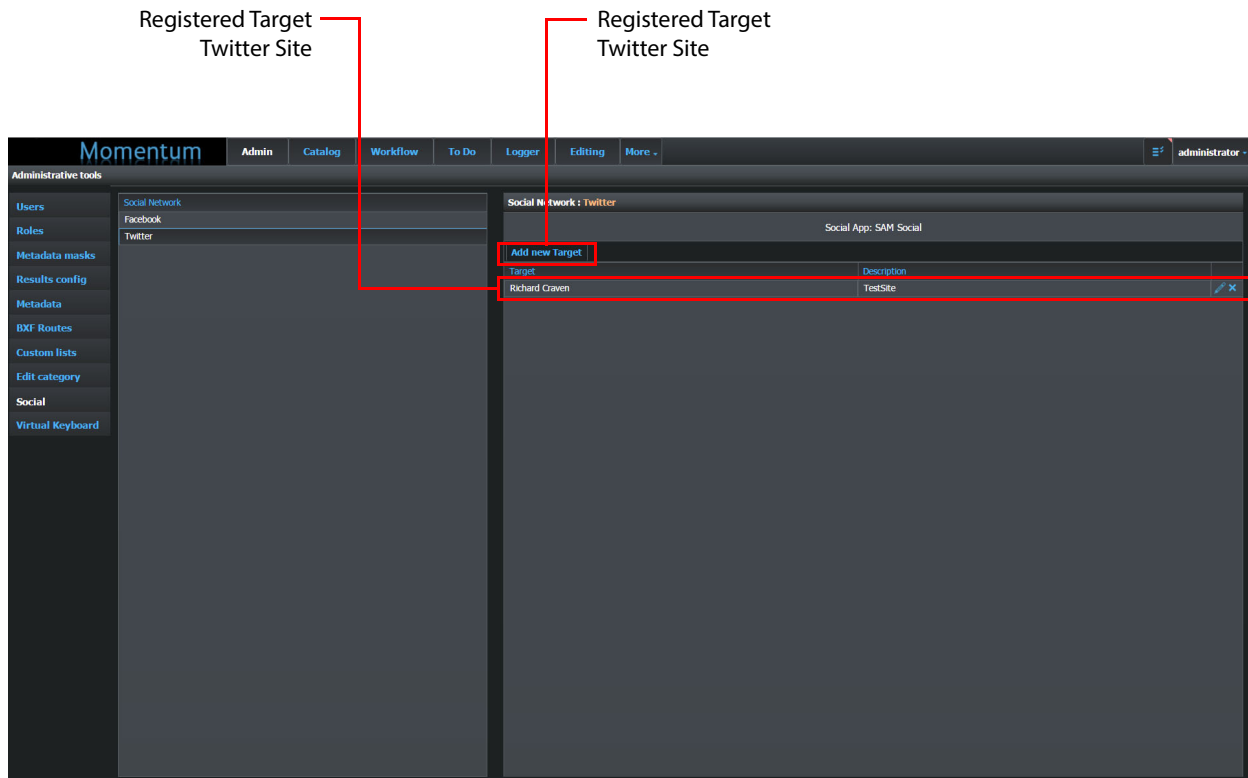
---

**Note:** The social media site setup page is available only to those users assigned the role **Has\_Admin\_Page**.

---

- 1 Select: **Admin > Social**.

This opens the Admin Social Network page, see Figure 9-199.



: Social Network Admin Page

- 2 Select **Facebook** or **Twitter** in the Social Network pane.
- 3 Click **Add new Target** to add a new target social media site.

Momentum prompts you to register the target site and provides a login button to Twitter or Facebook:

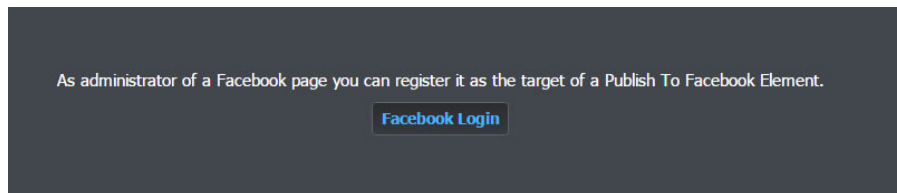


Fig. 9-200: Facebook Login Prompt

- 4 Click either **Twitter Login** or **Facebook Login**, as appropriate and enter your account credentials.
  - 5 Follow the prompts to register the site.
- Momentum adds the site to the list of registered target social media sites. You can now select the site in the **Target** drop-down menu when configuring the social media workflow elements, see Section .

## Configuring the Social Media Workflow Elements

Once you have set-up your target social media sites in the Admin pages, you can start to include the social media elements in your workflows.

Momentum provides a number of workflow elements to interact with various social media sites. These elements are available from the **Workflow** page in the elements folder: **Automation > Social**, see Figure 9-201.

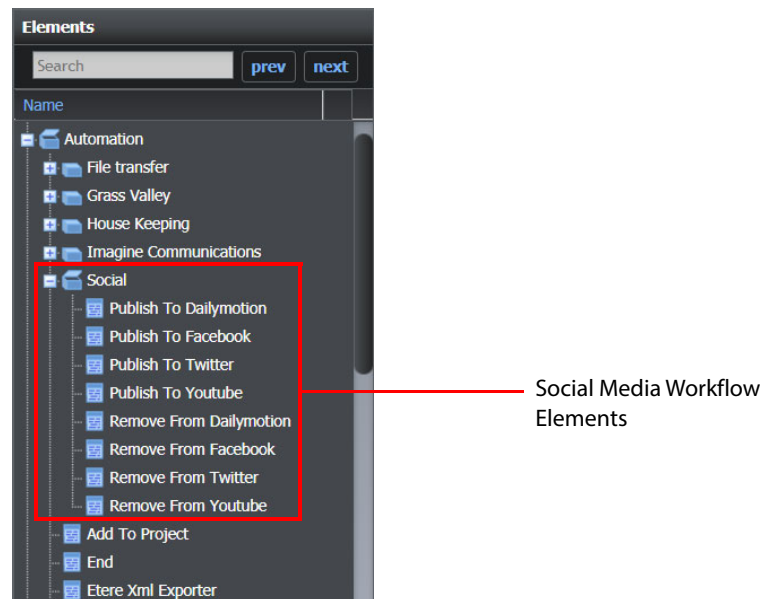


Fig. 9-201: Social Media Workflow Elements

For each of these elements, the communication parameters for the social media sites are configured in the configuration files: `MantricsServer.xml` and `MantricsNode.xml`.

See the *Momentum Configuration Guide* for details on configuring the individual workflow elements.



# 10

## Task Monitoring and Statistics

### Overview

Momentum contains the following sources of information about the system that can be used to monitor the progress of tasks through a workflow and to report statistics related to task processing times:

- **Workflow page:** Displays the movement of the tasks along a workflow. It also provides information about each task and the task processing history of each element and enables you to interact with tasks to modify the task status or change its priority. See Section 3.6 Working with Task Actions and Task Statuses on page 51.
- **Catalog page:** Contains a tasks history which contains all of the tasks for all jobs related to a specific item of material. See [Viewing Media Asset Relationships in the Material Tree Pane](#), on page 122.
- **Dashboard:** Enables you to monitor the status of running workflow jobs and associated tasks. Note: This page is only available to roles assigned the permission: Has\_Dashboard\_Page.
- **Services page:** Contains status information for the Momentum Nodes.
- **Stats page:** Shows usage graphs for a wide range of workflow components.
- **Logs page:** Contains warning and error information.
- **About page:** Contains information about the Momentum version, connected users and any configured licenses.
- **Transfers page:** Enables you to monitor the status of content transfer requests, sent to Momentum from a Morpheus system by way of a BXF transfer request message. The Transfers page lists all transfer requests currently managed by the Momentum system. Note: This page is only available to roles assigned the permission: Has\_Transfers\_Page.
- **Schedules page:** Enables you to import schedule files into Momentum. Once imported, you can manipulate schedule data to filter the view by channel, schedule file, presence of material in database, occurrence or occurrences of material, or include expired schedules. In addition, you can export schedule data in CSV or XML format. Note: This page is only available to roles assigned the permission: Has\_Schedules\_Page.

## Using the Workflow Page

Each workflow element in a workflow records the history of its tasks. This can be a powerful tool for analyzing what has happened in a workflow over a specific length of time.

### Task History

To review the tasks history of a specific element:

- 1 In the **Workflow** page, select the required element.
- 2 Double click on the body of the element. A dialog opens which displays the configuration settings for that element.
- 3 On the left-hand side of the pane, click the **Tasks** button.
- 4 Click the **History** tab.

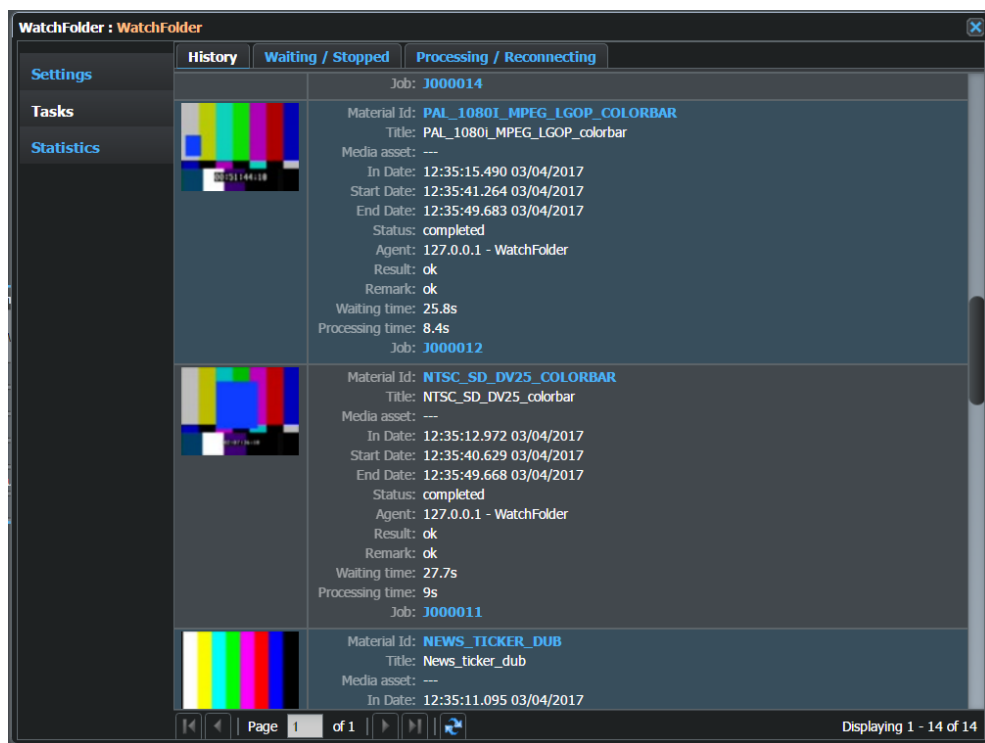


Fig. 10-202: Tasks History of a Watchfolder Workflow Element

- 5 Retrieve the required information about specific tasks and materials.



---

**Note:** You can browse the list of tasks using the navigation bar at the bottom of the pane and the scroll bar on the right-hand side. The **Material ID**, **Media Asset** and **Job** fields are active links that open the **Catalog** page or **Dashboard** page as appropriate. The **Material ID** and **Media Asset** links to the Catalog page automatically open a search targeting the selected material for the available metadata. The **Job** link to the Dashboard page provides an overview of the whole workflow job and provides active links to the starting element, the **Material ID** in a Catalog page and to the active tasks in the Workflow page.

---

## Current Tasks And Task Actions

The Workflow page also contains information about the tasks which are currently running.

### Selecting a Task

To select a task to view:

- 1 In the Workflow page, select the required workflow element.
- 2 Double click the body of the workflow element.

A dialog opens to display the configuration settings of the workflow element.

---

**Note:** Alternatively, you can also double-click the status indicator displayed above a workflow element. This opens a dialog listing all current tasks in that status.

---

- 3 Select Tasks from the menu on the left-hand side of the pane.
- 4 Click the **Waiting / Stopped** or **Processing / Reconnecting** tabs, see Figure 10-203 and Figure 10-204.

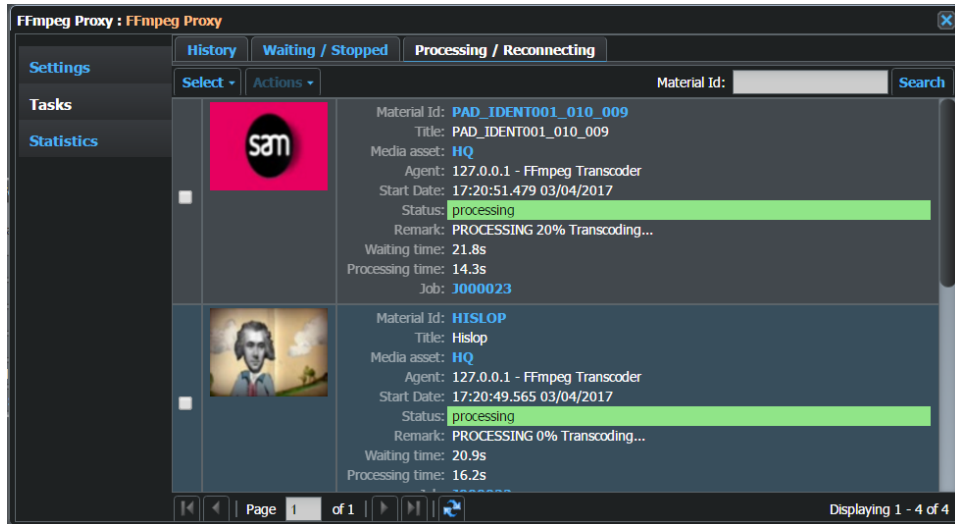


Fig. 10-203: Workflow Element Processing/Reconnecting Tasks Tab

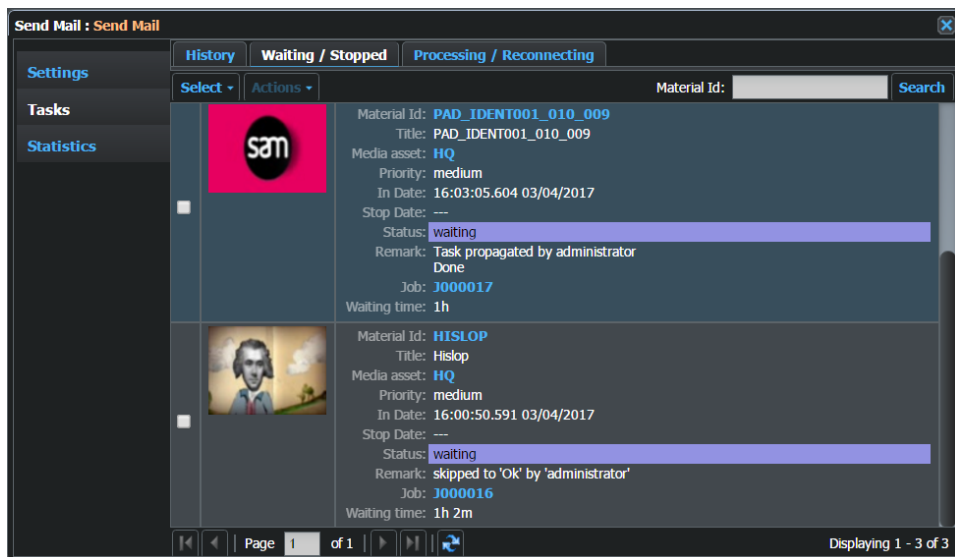


Fig. 10-204: Workflow Element Waiting/Stopped Tasks Tab

- 5 Retrieve the required information about the tasks. if a task is currently in Processing, a percentage value of the work completed is displayed in the **Remark** field.

## Performing Task Actions

To change the status of a task, change its priority or move the task onto another element:

- 1 Double-click the specific task of interest, or use the Select drop-down menu to select multiple items.

When you select a task, the task frame is outlined in blue and its associated checkbox is checked.

The **Actions** drop-down menu becomes active for the selected task(s).

- 2 Use the options in the **Actions** menu to manage the task.

You can take the following actions, depending on the current status of the task:

- **Resume:** Resume a task in stopped or waiting status.
- **Stop:** Stop a task in processing or waiting status.
- **Change priority:** Change the priority of individual tasks, or the entire job. You can select from: low, medium, high, urgent, or immediate.
- **Skip to:** Progress the task to one of the available ports without completing the current task, in order to move directly to another element or to exit the workflow.

For more information on the Actions menu, see Section 3.6.2 Performing Task Actions on page 53.

- 3 On completion close the dialog box.

## Monitoring Processing Statistics for a Workflow Element

Each workflow element on the canvas includes a **Statistics** tab, which displays a graphical report of the time that the element needed to process each task. Double-click a workflow element and select the **Statistics** option from the left-hand menu to display this dialog box.

You can use the Statistics tab to set a target time threshold for the processing of the task on that element, and set the element to generate an alert email if the threshold is exceeded.

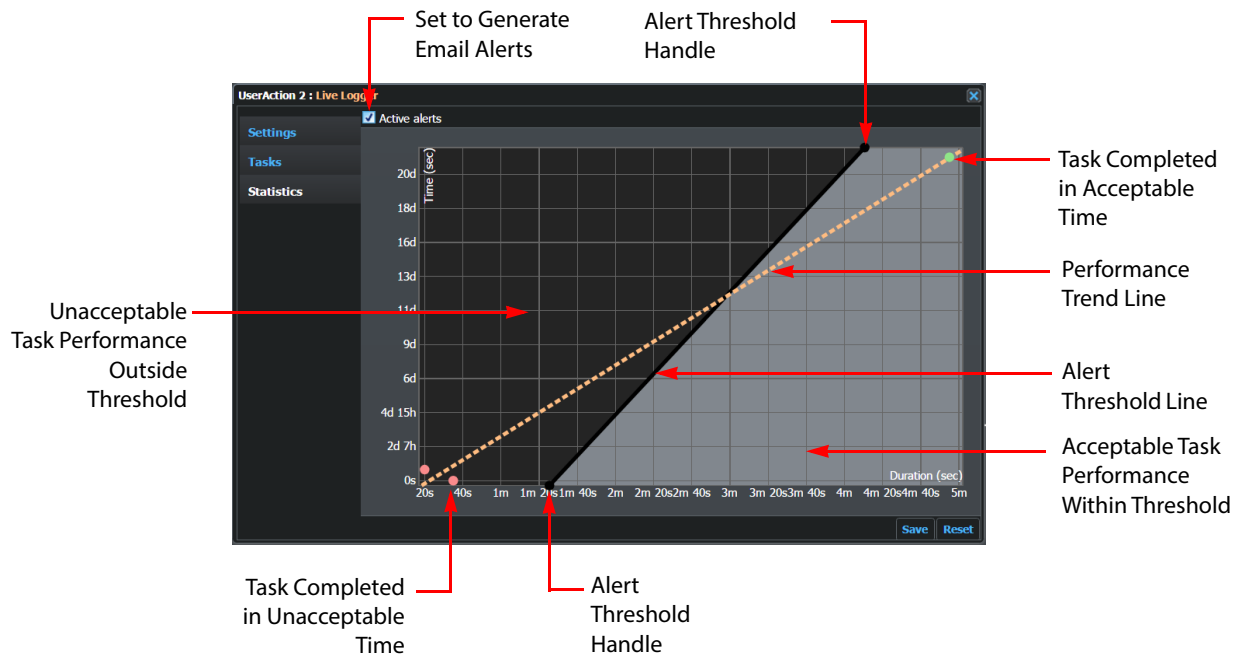


Fig. 10-205: Processing Statistics for a Workflow Element

The Statistics graph is structured as follows:

- **X-axis:** Displays the duration of the material related to each task.
- **Y-axis:** Reports the time needed to process the task.

- **Trend:** Dashed line represents the trend of the distribution of the tasks.
- **Alert Threshold:** Solid black line with two circular handles - represents the current alarm threshold. You can change the position of the threshold by re-positioning either of the handles along the outer frame of the grid.
- **Acceptable Area:** Light-gray area includes all the tasks that are completed within the alert threshold.
- **Green spots:** Represent the tasks that are processed in a time within the acceptable threshold.
- **Red spots:** Represent the tasks that are processed in a time outside the area delimited by the alert threshold. If the active alerts option These require an alert message, if the option is active.

You can zoom (using the mouse wheel) or pan the canvas of the graph (by clicking and dragging the cursor) to change your view of the graph.

## To Set Up Alerts on an Element

To activate the monitoring feature to generate alerts on unacceptable task processing times:

- 1 Select the **Active Alerts** checkbox.
- 2 Set an alert threshold by hovering the cursor over the black threshold line or either of its handles then click and drag to reach the desired values.

When the new position is reached, the light area changes so that tasks included within the acceptable area change to a green color, showing that no alert message is generated for them. In the same way, the tasks that fall outside the threshold change to a red color, signaling that a mail alert needs to be sent for tasks having similar values.

- 3 Click **Save** to store the new settings, or **Reset** to frame all data available into the graph and reset the threshold line to its initial position.

---

**Note:** The Alert email to be generated when a threshold is exceeded is configured in the section **<Alarms>** - **<taskProcesingThreshold>** of the file **C:\Mantrics\MantricsServer.xml**, see Figure 10-206

---

```
- <Alarms>
  <SmtpServer>smtp.example.com</SmtpServer>
  <SmtpUser>example user</SmtpUser>
  <SmtpPwd>example password</SmtpPwd>
  <SmtpSSL>true</SmtpSSL>
  <SmtpAuthenticate>true</SmtpAuthenticate>
- <taskProcesingThreshold>
  <Recipients>exampleuser1@example.com,exampleuser2@example.com</Recipients>
  <AlarmSubject>Task Threshold Alarm</AlarmSubject>
  <AlarmMessage>A task has exceeded the time processing threshold. Task ID = '{TASKID}' Material ID = '{MATERIALID}'
  File Name = '{FILENAMEHQ}' Brick Name = '{Brick.Name}' Page Name = '{Brick.PageName}' </AlarmMessage>
  <TimeNotificationInterval>5</TimeNotificationInterval>
  </taskProcesingThreshold>
</Alarms>
```

Fig. 10-206: Alerts Configuration in Alarms Section of MantricsServer.xml

## Monitoring Tasks from the Catalog Page

The **Relationships** pane of the **Catalog** page contains displays a **Tasks** tab (**Has *n* Tasks**) if the selected material has any tasks being processed through the workflow. This tab lists all the tasks (by job number) which are related to the selected material.

- 1 Open the **Tasks** tab in the **Relationships** pane.

Element	Element Type	Agent	Media asset	In Date	Start Date	End Date	Status	Result	Remark
Job: J000008									
WatchFolder	WatchFolder	127.0.0.1 - WatchFolder	---	11:54:13.394 03/04/20...	11:54:41.881 03/04/20...	11:54:52.446 03/04/20...	completed	ok	ok
FFmpeg Pro...	FFmpeg Proxy	127.0.0.1 - FFmpeg Transcoder	---	11:54:52.365 03/04/20...	11:55:14.568 03/04/20...	11:55:18.892 03/04/20...	completed	ok	ok
Thumb Gen...	Thumb Generator	127.0.0.1 - Thumb Generator	---	11:54:52.414 03/04/20...	11:55:10.385 03/04/20...	11:55:16.973 03/04/20...	completed	ok	ok

Fig. 10-207: Catalog Page - Relationships Pane - Tasks Tab

- 2 Click **Open in window**.

The **Material /Title** dialog opens in a standalone window, listing the current tasks for the selected material as shown in Figure 10-208:

Element	Element Type	Agent	Media asset	In Date	Start Date	End Date	Status	Result	Remark
Job: J000008									
WatchFolder	WatchFolder	127.0.0.1 - WatchFolder	---	11:54:13.394 03/04/20...	11:54:41.881 03/04/20...	11:54:52.446 03/04/20...	completed	ok	ok
FFmpeg Pro...	FFmpeg Proxy	127.0.0.1 - FFmpeg Transcoder	---	11:54:52.365 03/04/20...	11:55:14.568 03/04/20...	11:55:18.892 03/04/20...	completed	ok	ok
Thumb Gen...	Thumb Generator	127.0.0.1 - Thumb Generator	---	11:54:52.414 03/04/20...	11:55:10.385 03/04/20...	11:55:16.973 03/04/20...	completed	ok	ok
Job: J000020									
WatchFolder	WatchFolder	127.0.0.1 - WatchFolder	---	17:19:45.286 03/04/20...	17:20:16.444 03/04/20...	17:20:28.196 03/04/20...	completed	ok	ok
FFmpeg Pro...	FFmpeg Proxy	127.0.0.1 - FFmpeg Transcoder	HQ	17:20:27.182 03/04/20...	17:20:48.816 03/04/20...	17:21:05.458 03/04/20...	completed	ok	ok
Thumb Gen...	Thumb Generator	127.0.0.1 - Thumb Generator	HQ	17:20:27.760 03/04/20...	17:20:47.781 03/04/20...	17:20:59.685 03/04/20...	completed	ok	ok
UserAction	UserAction	---	HQ	17:20:58.626 03/04/20...	---	---	waiting	ok	ok
UserAction	UserAction	administrator - UserAction	HQ	17:21:04.346 03/04/20...	---	---	stopped	ok	Stopped

Fig. 10-208: Catalog Page - Tasks Tab Pane in Window View

- 3 Click the element name link in the **Element** column to open a Workflow page in a new tab, centered on the selected element.

In this view, tasks are grouped by Jobs and each job can be collapsed or expanded for clarity. Color tags, if configured, are shown next to the name of each workflow element. The following data is displayed for each element in a job:

- **Element:** Name of the element (with active link.)
- **Element Type:** Specifies the type of the element.
- **Agent:** IP address and description of the agent node processing the task.
- **Media asset:** Media asset submitted for a task on a particular element (with active link.)
- **In Date:** Time and date when the task entered the element.
- **Start Date:** Time and date when the task started the processing on the element.
- **End Date:** Time and date when the task processing was completed.

- **Status:** Status of the task on the related element.
- **Result:** Out port used to move the task out of the element to the next element in the workflow.
- **Remark:** Reasons for the use of out port reported into the Result field.

## Using the Dashboard for Task Monitoring

The **Dashboard** page enables you to monitor the progress of the workflows and associated tasks created in the Workflow page.

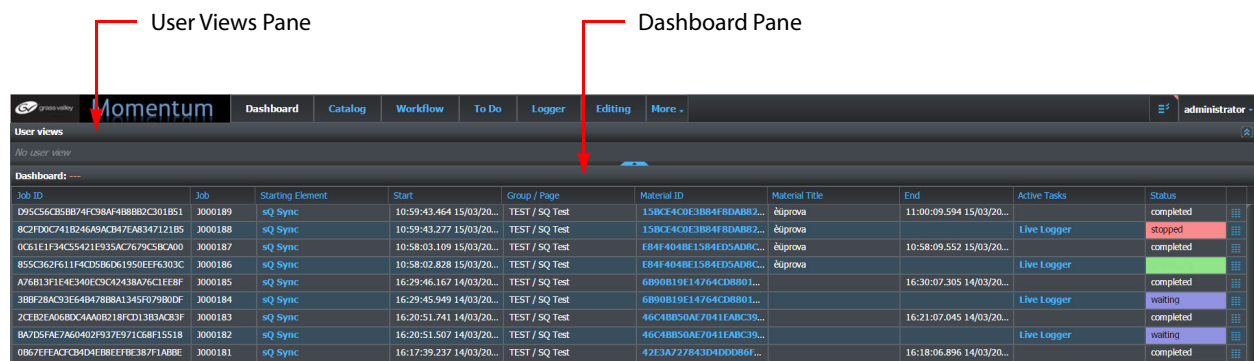



Fig. 10-209: Dashboard Page

The main Dashboard area displays the information available on the current jobs in a table. The Dashboard reports the following items:

## Jobs

The set of tasks performed by a group of connected workflow elements on the available material is defined as a **job**. In the Dashboard, each job is represented by a row and includes the following information:

- **Job ID:** Reports the ID number assigned to the job.
- **Job:** Sequential number assigned to the job in the order of processing.
- **Starting Element:** First workflow element of the job. This is an active link to open a new **Workflow** page in which the element is selected.
- **Start:** Reports the time and date at which the job started.
- **Group / Page:** Reports the group of workflow pages and the name of the specific workflow page containing the job.
- **Material ID:** Reports the name of the material subject to the listed jobs. The material's name is an active link that switches to the Catalog page, populating the panes automatically using the data of the selected material.

- **Material Title:** Reports the Title associated with the Material.
- **End:** Reports the time and date at which the job ended.
- **Active Tasks:** List of tasks currently running on the workflow for that job. Each listed task is an active link to the workflow element in a new **Workflow** page, where the element on which the task is running is selected.
- **Status:** Reports the actual status of the selected job, see Section 3.6 Working with Task Actions and Task Statuses on page 51.
- **View tasks list:**  Opens a new pane which reports the details of all tasks applied in the workflow for the material object of the selected job.

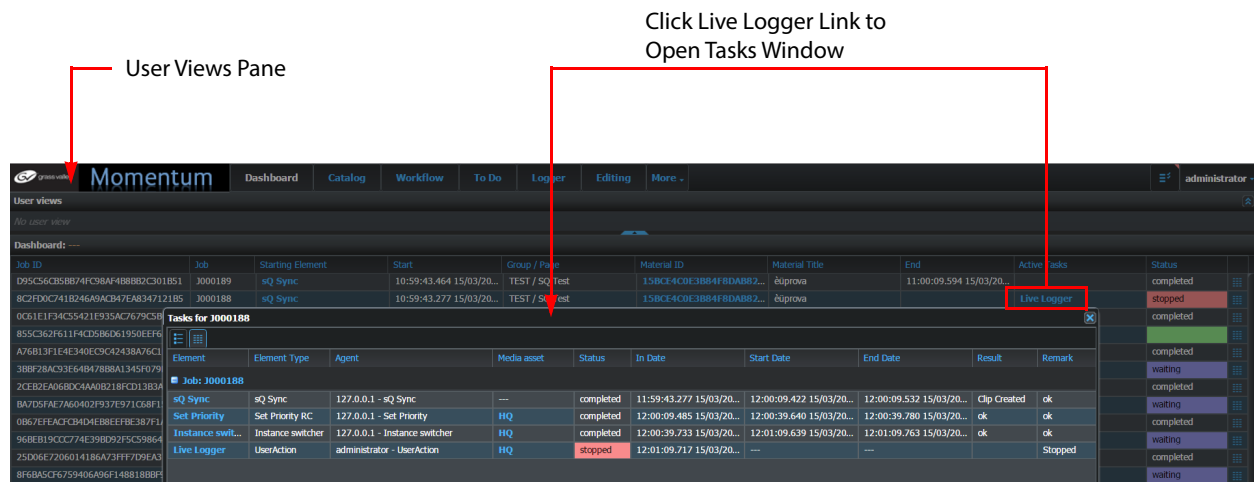


Fig. 10-210: Link to Job Tasks from Dashboard View Options

In the **Tasks** pane, Momentum reports the details of each single task. At the top left side of the pane, you can use the buttons to switch the thumbnails or the default table view.

All the rules for managing the layout of a standard table apply. See the section [Working with Momentum Tables](#), on page 10 for more details. A filter option is available on the header of each column of the table.

---

**Note:** Jobs related to material deleted from the database are not visible on the Dashboard.  
Jobs started on workflow pages but subsequently deleted, are not visible on the Dashboard.

---

## Filtering Displayed Data Using the Column Filter Options

Each column header includes a drop-down menu containing options that you can use to filter the displayed content. The options available in the drop-down menu vary, depending on the type of data displayed in the column, e.g., text string, date, task status, etc.

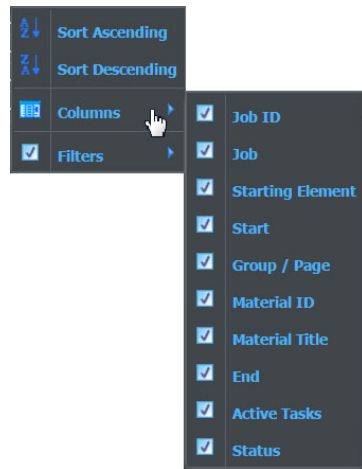


Fig. 10-211: Dashboard Column Filter Drop-down Menu

### Using the Text String Filters Option

A **Filters** option is available in the Filter drop-down menu for columns containing text strings that enables you to filter the displayed data based on a matching string. Open the **Filters** field for the column of interest and enter a target string to match. Momentum then displays only those jobs that match the specified filter string, see Figure 10-212.

---

**Note:** You can use the percentage character (%) as a wildcard in the **Active Tasks** column when defining a filter text string.

---



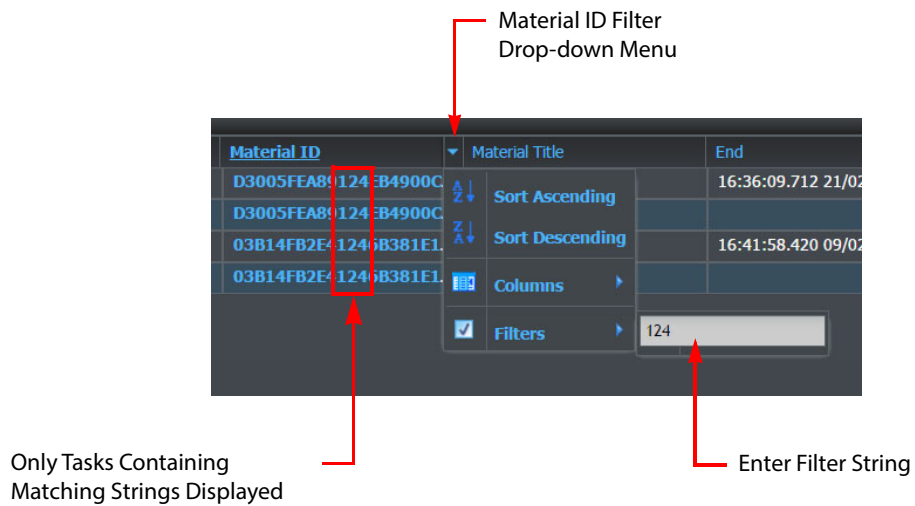


Fig. 10-212: Dashboard Filtering Data Using a String

### Using the Date Filters Option

On a column containing a date, the options shown in Figure 10-213 are available:

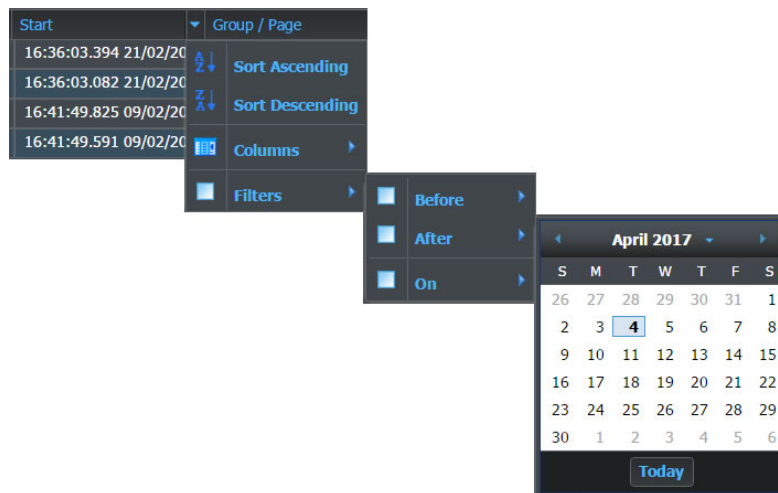


Fig. 10-213: Dashboard Filtering Column Data by Date

You can select one of the available parameters: **Before** a selected day, **After** a selected day or **On** a specific date. For each of these options, a calendar opens enabling you to select a specific date. The **Today** button automatically selects the current date.

### Using the Status Filters Option

The drop-down filter on the Status column enables you to select which statuses appear in the Dashboard table, see Figure 10-214. Unselected statuses are hidden.

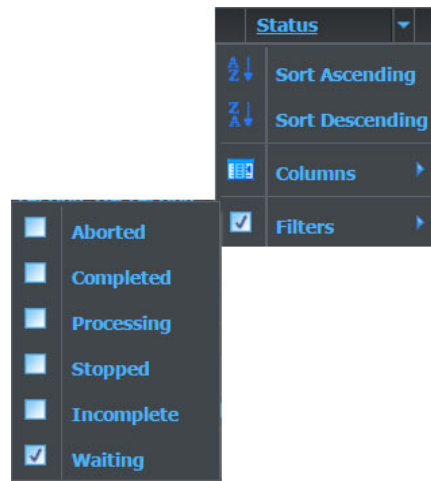


Fig. 10-214: Dashboard Status Column Filter

## Changing the Layout of the Dashboard Page

The **User Views** functions of the Dashboard page enable you to modify the layout of the Dashboard, for example, by moving, hiding or displaying columns, using column filters or changing column sort directions. Once you have modified a layout **view** you can choose to save your changes to the current view or to create a new view.

The aim of this feature is to enable you to dedicate each view to a specific area of interest, perhaps representing critical stages of your workflows. This can provide a manageable overview of key tasks and help to identify any failures quickly, as they occur. When a failure is identified, you can take the appropriate actions as necessary to resolve the problem.

Momentum assigns each new Dashboard view a label and displays it as an active button in the **User views** pane above the Dashboard pane, see Figure 10-215. If you have been assigned the correct permissions you can then switch between alternative views, by clicking the corresponding button, as required.

---

**Note:** Depending on the roles assigned to a user, the Dashboard page will display only those views that can be accessed by that user.

---

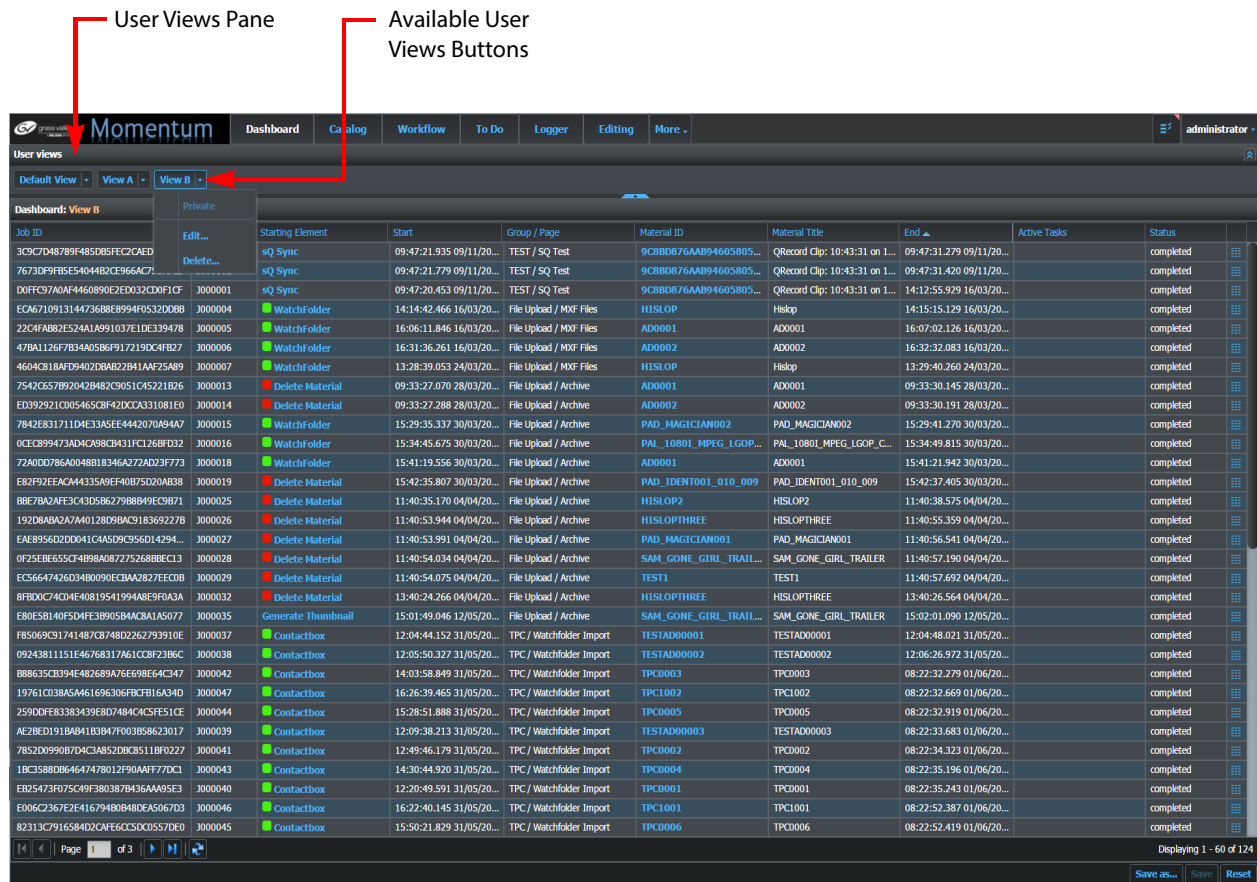


Fig. 10-215: Dashboard Page Showing Switchable User Views

You can modify the layout of the Dashboard pane by:

- Changing the order of columns (by dragging and dropping a column to a new position.)
- Changing the default sort direction
- Setting column filters, for more information see Section Filtering Displayed Data Using the Column Filter Options on page 178.
- Hiding and/or showing columns, using the **Columns** drop-down checkboxes.
- Resizing columns to improve the data display.

### Saving Changes to a Dashboard User View

After making any changes to the current view, you can either:

- Click **Reset** to revert the view to the initial configuration, and ignore any changes.
- Click **Save** to save any modifications to the current view, without creating a new view.

- Click **Save as...** to create a new view, enter a name, and define which other users can have access to the view.

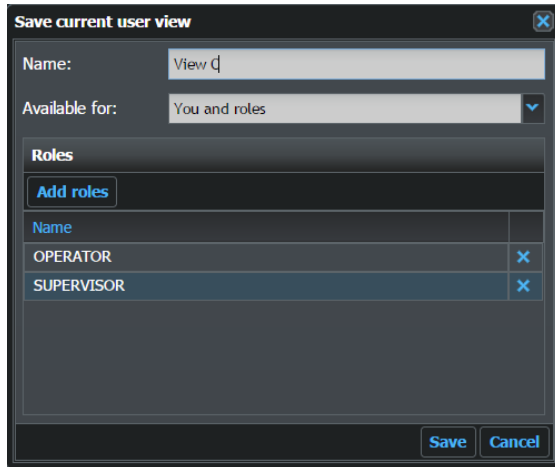


Fig. 10-216: Dashboard Page - Saving the Current User View

You can also delete or edit a view and/or change the accessibility of the view by clicking the drop-down menu available to each User View button. The menu displays the current availability of the view (Public, Shared, or Private), and **Edit...** and **Delete...** options, see Figure 10-217.

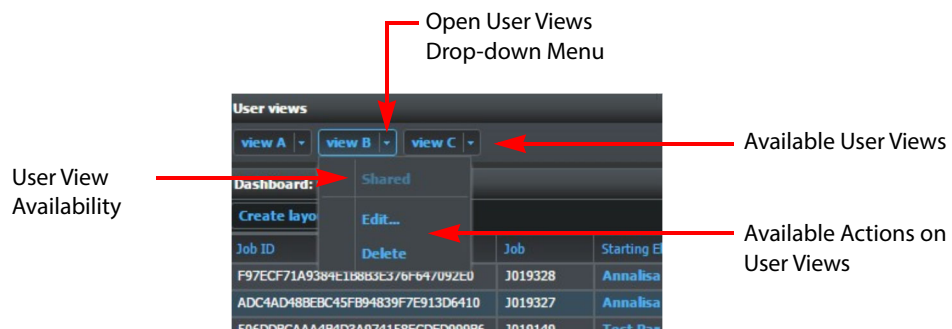


Fig. 10-217: Dashboard Page - User Views Menu

When you access the **Dashboard** page, Momentum displays the last layout you selected on your last visit to the page.

## Using the Services Page

The **Services** page is dedicated to the monitoring and management of the nodes configured in a Momentum installation. This page displays the following information about the nodes:

- Identification details, including IP address, communication port, software version, etc.
- The workload of every node, including a count of currently processing tasks and a count of pending tasks.
- The status of the machine on which each node is installed.

In addition to this information, an **Actions** menu enables you to make changes to the working conditions of the nodes.

Select: **More > Services** to open the Services page, see Figure 10-218:

Application Name	Port	Node Version	Third Party Version	Pool	Slots Count	Processing Tasks Count	Pending Tasks Count	Status	Actions
Ip: 127.0.0.1 (21 Items)									
Ffmpeg Transcoder	8097	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
Thumb Generator	8105	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
Sleep	8107	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
Script	8113	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
Copy	8119	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
Instance switcher	8123	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
Send To	8125	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
FTP	8127	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
WatchFolder	8137	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
SetMetadata	8139	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
Decisional	8143	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
Go To	8147	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
Add To Project	8151	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
End	8155	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
Material Deletion	8159	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
Set Priority	8163	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
Audio Morph	8191	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
Remove From Project	8215	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
Search Evaluator	8217	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
sq Sync	8417	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞
TechnicalMetadataRetriever	8643	5.0.0.0164			4	0	0	Online	⊞ ⊞ ⊞ ⊞

Fig. 10-218: Services Page - Grouped by Node Type Display

The Services page reports the following information:

- The name and version number of the application node.
- The IP address of the node.
- The port number (used by the node to communicate with the Momentum Server.)
- The pool to which the node belongs.
- The number of slots available for processing node tasks.
- The number of tasks being processed.
- The number of pending tasks.
- The current status of the node e.g., online, offline, etc.
- The actions that can currently be performed on the node, e.g., take offline, take online, edit pool and slots count.

At the bottom left corner of the page are the options for managing the organization of the displayed data and their updates as described below:

- **Group By IP:** Lists all nodes with the same IP number in a single section

- **Group By Application Name:** Lists all nodes with the same application name in a single section.
- **Group by Pool:** Lists all nodes in the same pool in a single section.
- **Hide Grouping:** Removes any grouping and creates one list containing all nodes.
- **Show grouping:** Displays the information based on the previous grouping selection.

You can also group the information by column header as follows:

- 1 Select the header of the column as required.
- 2 Open the column drop-down menu, see Figure 10-219.

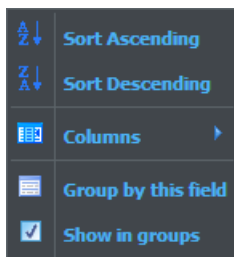


Fig. 10-219: Service Page - Column Drop-down Menu Header Menu

- 3 Select the **Group by this field** option. The page updates automatically.

## Working with Nodes in the Service Page

The Status column reports the changes in the status of each node in real-time. A color and a message describe the current status which corresponds to an action selected from the options in the **Actions** column as follows:

- Green background and **Online** message - the node is working properly. The **Make Offline** action is available.







- Yellow background and **Going Offline** blinking message - the node is still working but when the current task is completed, no new task is accepted. The **Make Online** action becomes active.
- Yellow background and **Offline** message - while Offline, the server does not assign new tasks to the node and the **Edit** action becomes active.




- Red background and **Reconnecting** message - the server is trying to connect to a specific node. The message displays the number of attempts so far and also the maximum of attempts available before considering the node unreachable. No action is possible in this mode.
- Red background and **Unreachable** message - the server failed to connect to the node. The **Delete** action becomes active.

The following icons are available in the Actions column (depending on the current status of the node):

	<b>Make offline:</b>	Disconnect the node.
	<b>Make online:</b>	Reconnect the node.
	<b>Edit Pool and Slots Count:</b>	Modify the pool and slots count settings and save the changes in the node configuration file: <code>MantricsNode.xml</code> .
	<b>Delete:</b>	Delete the node and/or close the pane.

## Taking a Node Offline

To take a node offline:

- 1 Click the **Disconnect** icon .
- 2 The system runs a check on the IP address of the node. If other type of nodes are running, the following dialog appears:

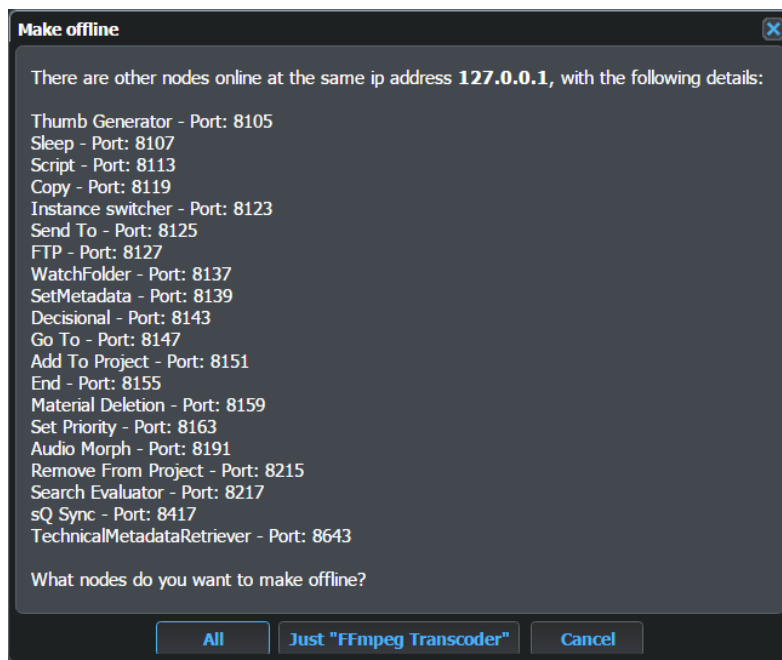


Fig. 10-220: Services Page - Taking a Node Offline

The dialog lists all of the running modes and enables you to select whether:

- To take all active nodes offline, or

- To take only the specified node offline, e.g., **Just "FFmpeg Transcoder"** in Figure 10-220.


Click **All** to take all nodes offline, or **Just "<Node\_name>"** to take only the selected node offline. Click **Cancel** to abort the action.

If the node is currently processing a task, it enters the **Going Offline** status until the process ends at which point it becomes offline.

While offline, the server does not assign tasks to the user but the user can still modify the node. The **Edit** and **Make Online** icons become active.

### Editing a Node

While in offline mode, you can modify some of the node parameters and save the new values in the node configuration file. To edit the node parameters:

- 1 Take the node offline.
- 2 Click the **Edit** icon .
- 3 Modify the values for Pool and Slots Count in the Node Details dialog, see Figure 10-221:

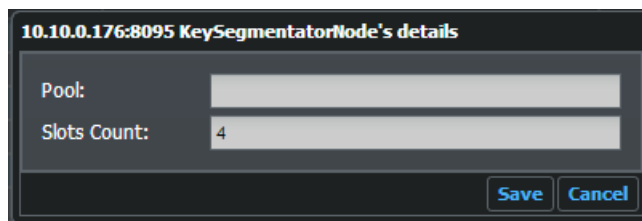


Fig. 10-221: Services Page Editing Node's Parameter

- 4 Click **Save** to confirm the changes and save them in the configuration file: `MantricsNode.xml` or click **Cancel** to exit without saving.

### Deleting a Node

When in Unreachable mode, it is possible to delete a node from the list. This can be useful when you want to stop the server from attempting to connect to a node that it is no longer available. To delete a node:

- 1 Click the **Delete** icon: . The following dialog appears:

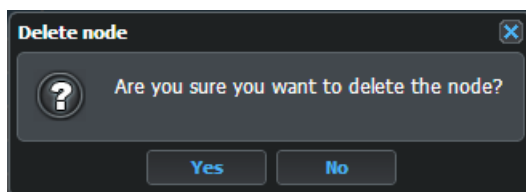



Fig. 10-222: Services Page Delete A Node Confirmation

- 2 Click **Yes** to delete the node or **No** to cancel the operation.



## Taking a Node Back Online

To take an offline node back online, click the **Connect** icon: .

The connection between server and node starts and, if successfully established, the node becomes online. The **Disconnect** icon also becomes active.

## Using the Statistics Page to Monitor Workflow Activities

The **Statistics** page provides information about the Momentum workflow activities. The page updates automatically according to system activity in order to present an updated status of the processes.

---

**Note:** The Stats page is available only to those users assigned the role **Has\_Stats\_Page**.

---

To access the Statistics page, select: **More > Stats**.

The aim of the Statistics page is to help identify any potential delays or bottlenecks in the workflow by presenting the waiting and processing times for the tasks in the workflow. The Stats page also enables you to predict the amount of time needed to complete all tasks and to modify the workflow in order to fix any inefficiencies.

The Statistics page is organized in four sections:

- **Elements**
- **Users**
- **Schemas**
- **Materials**

In switching between the Elements, Users and Schemas sections, you can select a target item (workflow element, user, or schema) and view any of the following statistical graphs for the selected item:

- Waiting and processing
- Longest Waiting
- Longest processing
- Task vs Material duration

## Statistics on Workflow Elements

The following sections describe typical statistical analyses that you can perform when you select Elements in the left-hand Statistics menu.

### Creating a Graphic or a Chart

- 1 Select an element from the tree structure in the **Elements** pane.
- 2 This is the same structure used in the Elements pane of the Workflow page.
- 3 Choose one of the four tabs at the top of the Graph pane as follows:
  - **Waiting and processing**

- **Longest waiting**
- **Longest processing**
- **Task vs Material duration.**

4 Using the **Time span** selector below the tabs, select the time span for collecting the data for the graph or chart. The following options are available:

- Last 7 days
- Last 30 days
- Last year
- Custom

If you select the Custom time span, the **Start** and **End** fields are activated in which you can enter a date range.

5 Click the **Filter** button to update the graph or chart.

## Waiting and Processing Tasks

This graph shows the number of tasks which are waiting or processing and also the number of workload slots for the selected element for the configured timescale. Hover the mouse over a reading in order to see the exact task count as shown in the example below:

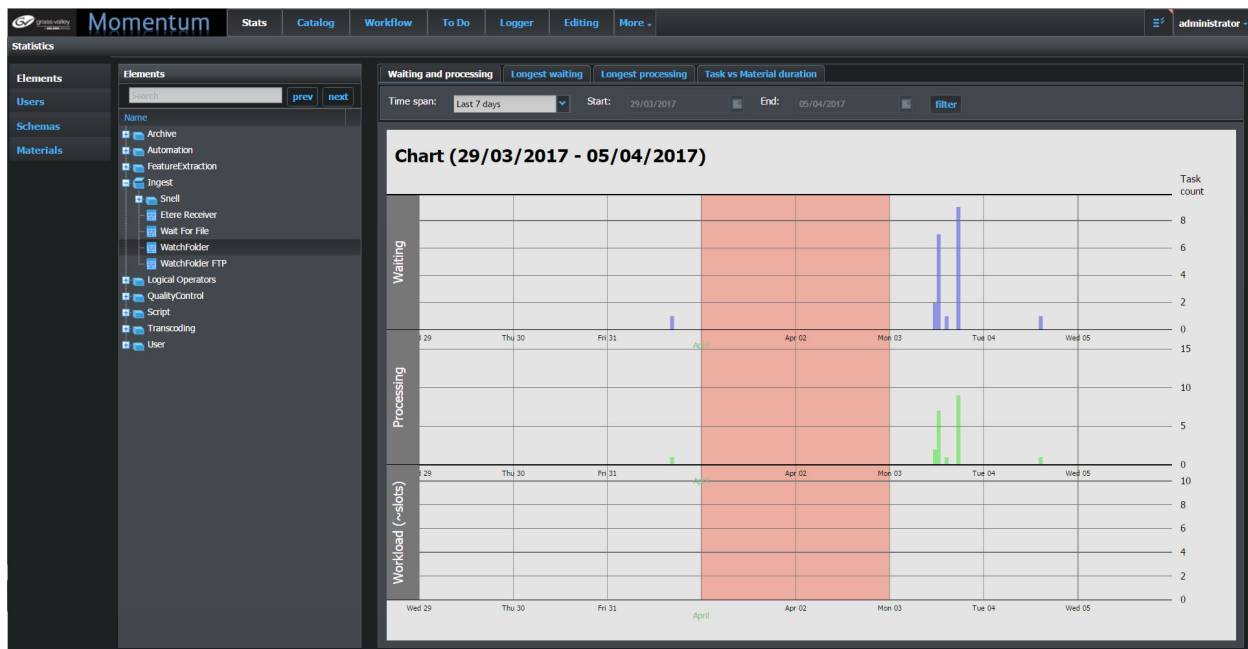


Fig. 10-223: Statistics Page - Watchfolder Element Tasks Waiting and Processing

While moving the cursor pointer on the diagram, a vertical line highlights the intersection of the boundaries with the bars of each of the three charts. The intersection point is marked by a yellow dot and a numeric value next to the dot. This value reports the current number of tasks represented by the colored bars. At the top of the vertical line, the date and time corresponding to the actual position of the mouse pointer is reported.

Saturdays and Sundays are reported using an orange background color.

## Longest Waiting Times

This graph shows the longest waiting times for the selected element over the selected time span. Hover the mouse over the graph in order to see the task details, see Figure 10-224.

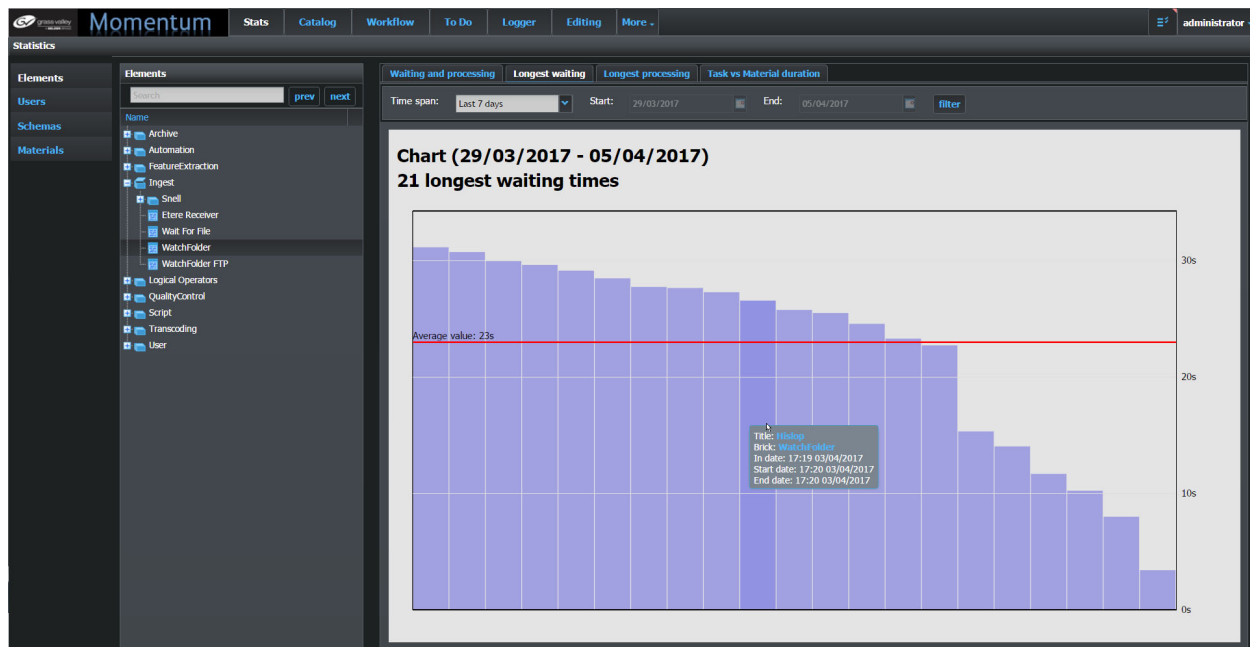


Fig. 10-224: Statistics Page - Longest Waiting Times

The chart displays the longest waiting times for a task in the selected time span on that workflow element. Momentum can display values for up to a hundred elements. A straight red line indicates the average task waiting time.

## Longest Processing Times

This graph shows the longest processing times for the selected element. Hover the mouse over the graph in order to see the task details.

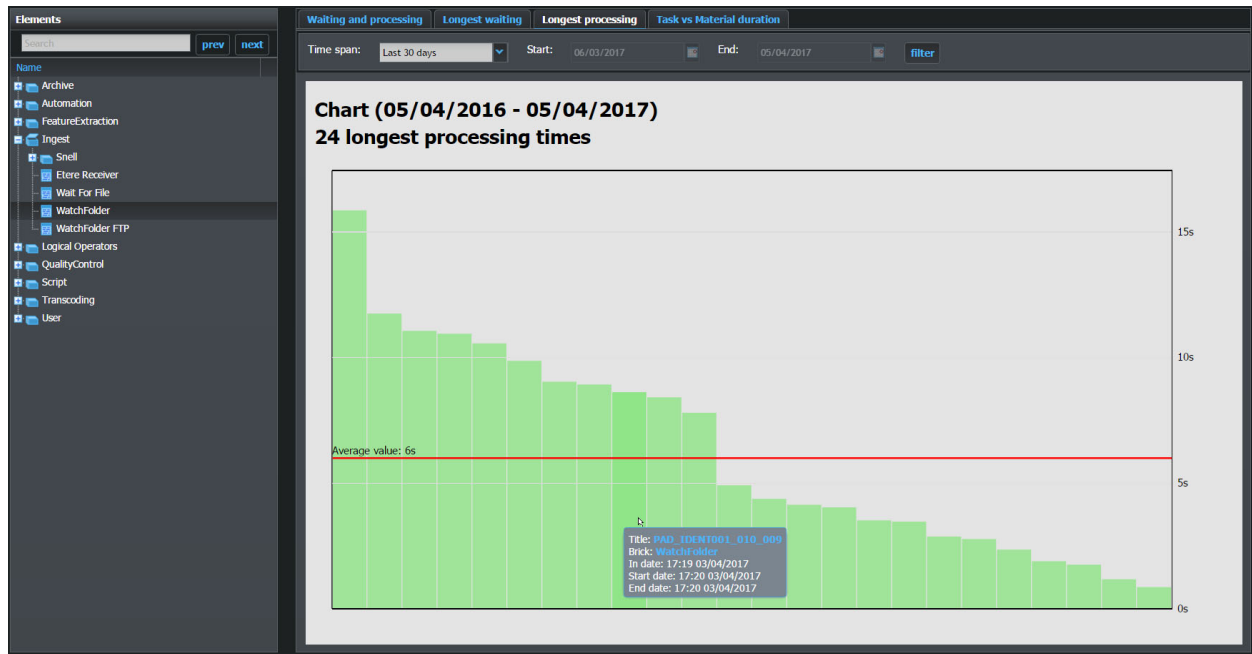


Fig. 10-225: Statistics Page - Longest Processing Times

The chart displays the longest values of processing time of a task for the selected element in the specified time span. Momentum displays a maximum of 100 elements. A straight red line indicates the average value.

### Task vs Material Duration

This graph compares the duration of the material against the length of time taken to process each task on the selected element, see Figure 10-226:

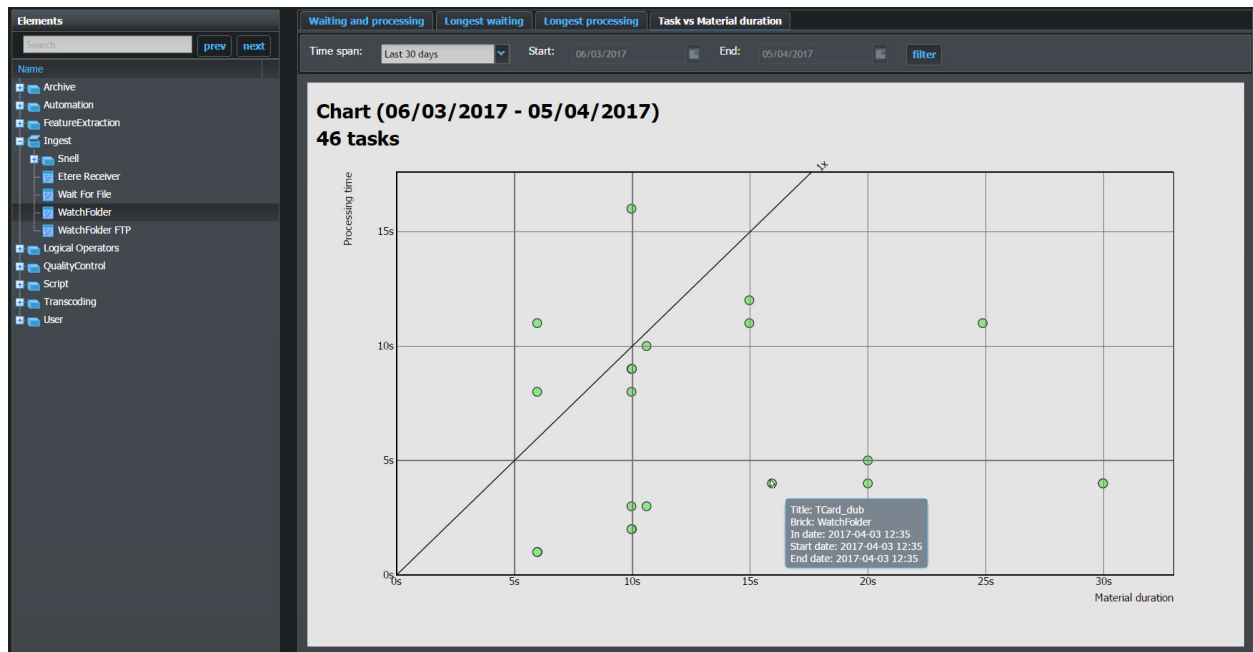


Fig. 10-226: Statistics Page - Tasks vs Material Duration

The x-axis represents the material's duration and the y-axis represents the time spent processing the material.

A calculated reference line, labeled **1x** and starting at the origin of the axes, subdivides the graph area: points above this line represent processing time higher than the material duration, while points below the line mark processing times shorter than the material duration.

## Working with Users' Data

The **Users** page has the same structure as the Elements page:

- **Users** pane                      Lists all of the existing users. Select a user from the list to display statistical data related to the selected user.
- **Graph** pane                      Displays a graphical representation of the statistical data.

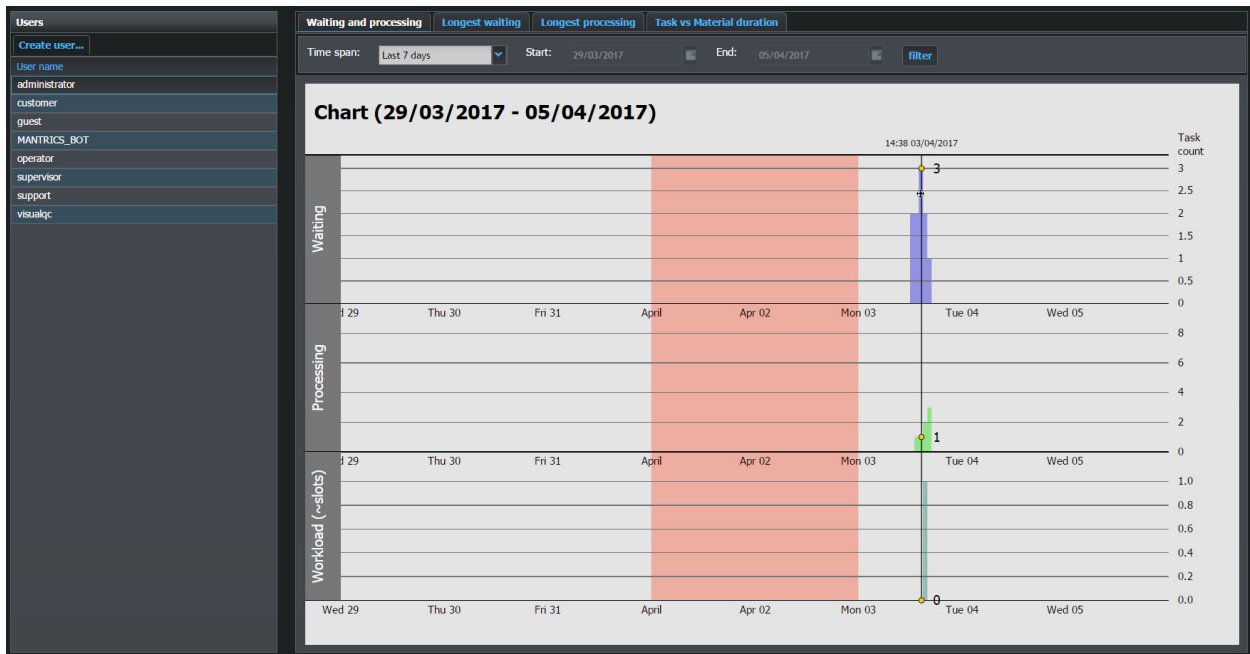


Fig. 10-227: Stats Page - Users Sub-page

## Working with Schema Data

The Schema sub-page has the same two panes structure of the Elements sub-page:

- **Schema** pane: Lists all of the existing schemas. Select a schema from the list to display statistical data related to the selected schema.
- **Graph** pane: Displays a graphical representation of the statistical data.

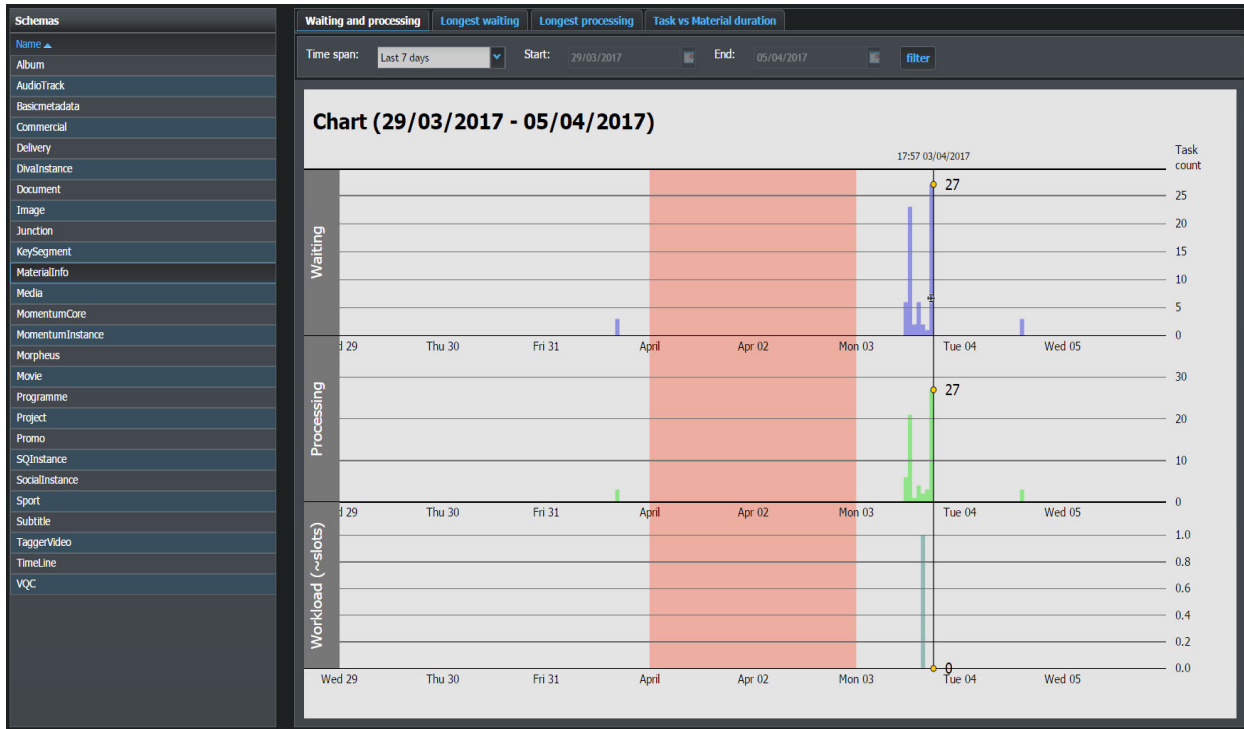


Fig. 10-228: Stats Page - Schema Sub-page

## Statistics for Material Tasks

In the **Materials** section, you can search for an item of material and view the tasks that are currently assigned to the selected material as shown below:

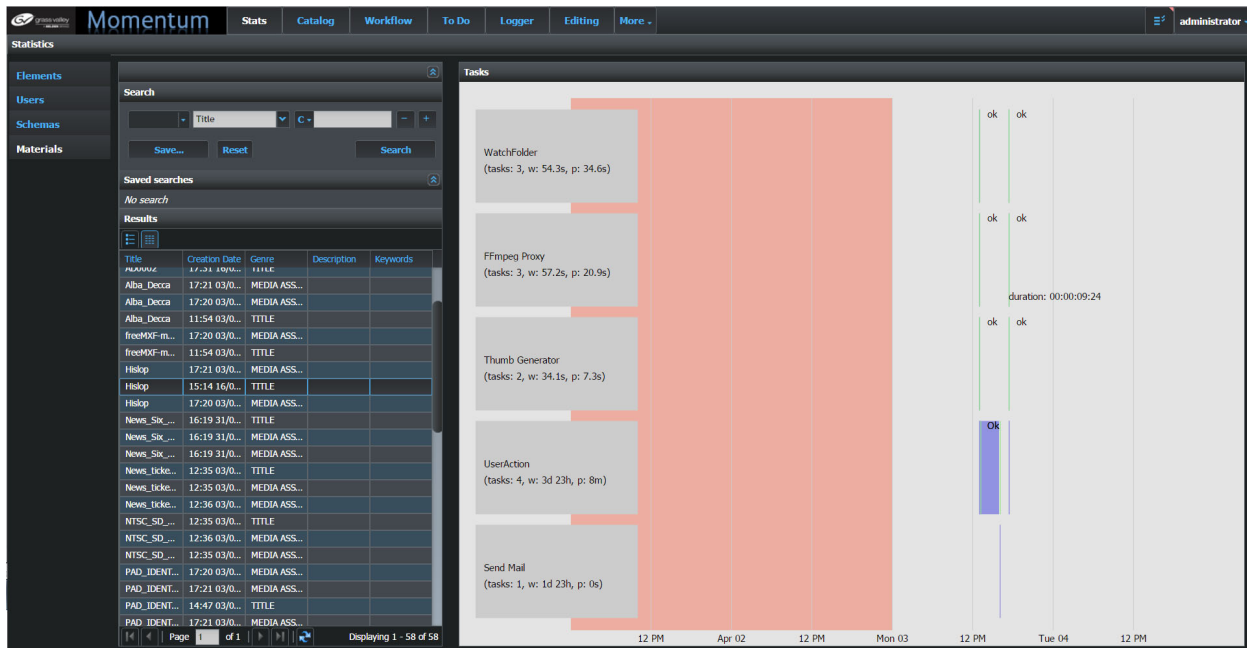


Fig. 10-229: Stats Page - Material and Tasks

The **Materials** sub-page summarizes the lifespan of an item of material in the workflow. Each workflow element involved with processing the material is identified by a gray box containing the following information:

- Element name
- Number of tasks carried out
- Waiting time
- Processing time

For each element, a bar graph displays the tasks performed using the standard task status colors. The graph enables you to compare the processing time and waiting time for the selected material, identify the most time-consuming tasks and understand whether there are interruptions or bottlenecks in the workflow. This is useful for estimating the production costs for each item of material.

## Using the Logs Page

Every new process submitted to the workflow is constantly monitored, tracked and reported in the **Logs** page.

---

**Note:** The Logs page is available only to those users assigned the role **Has\_Logs\_Page**.

---

To access the Logs page, select: **More > Logs**.

The Momentum logging system reports logs with the following labels:



- Info
- Warning - highlighted in orange
- Error - highlighted in red

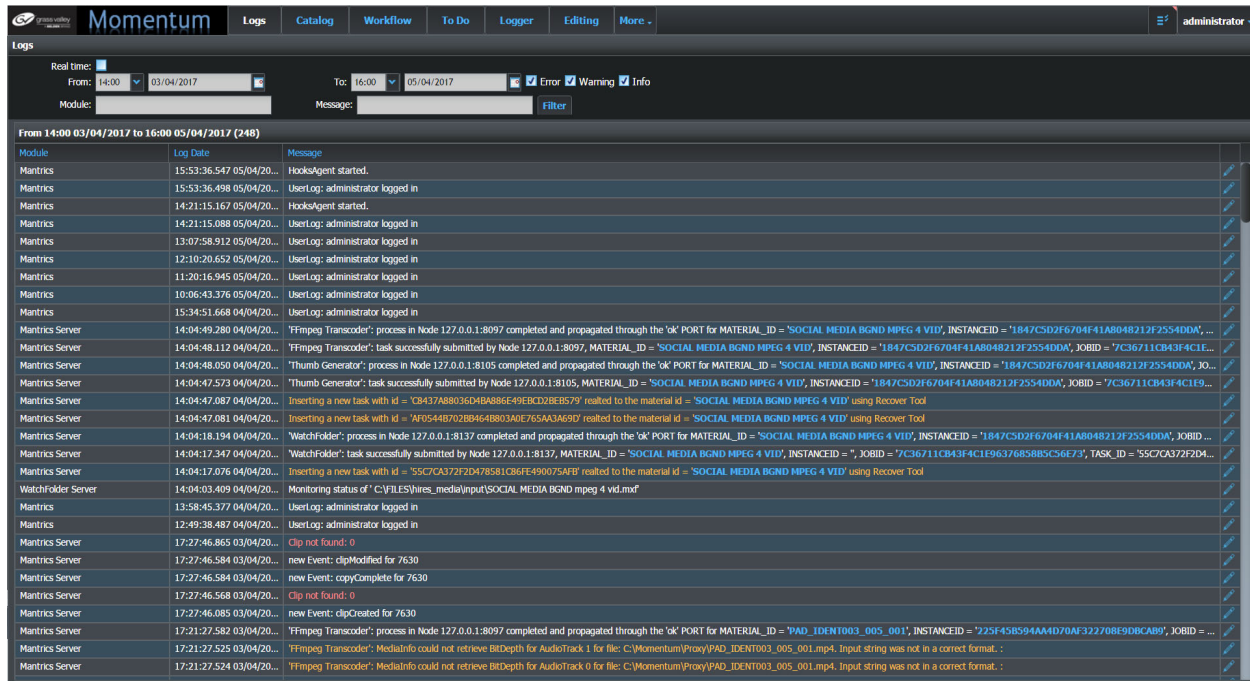


Fig. 10-230: Example Logs Page

**Note:** Each Momentum module generates a log entry; however, most of the log information is generated by the workflow activity and concerns the Transcoder Service, the Workflow service and the Watchfolder service.

## Using the Logs Control Panel

The control panel along the top of the Logs page enables you to switch between a static or real-time display of log messages and to set different criteria on which to filter the displayed messages.

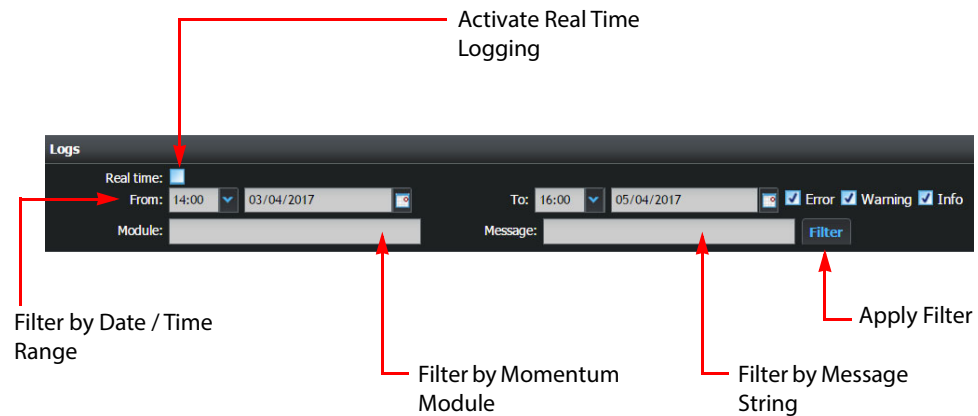


Fig. 10-231: Logs Page Control Panel

Using the filters options, you can filter the list of displayed log messages by:

- Date and time
- Log message type (Info, Warning or Error)
- Module - Momentum server, Momentum node, Watchfolder server, etc.
- Message string

The **real time** checkbox, when activated, enables you to choose to display log messages in real-time, as they are registered on the system.

To submit a query using filters:

- 1 Select date and time by clicking on the **From** and **To** fields and by using the calendar and the time drop-down list.
- 2 Select the type of logs to see in the result list by clicking the **Error**, **Warning** or **Info** options.
- 3 Enter a keyword in the module field to refine the search of a single module, for example, **transcoder**.
- 4 Enter a target text string in the **Message** field to search on the content of the message column.
- 5 Click **Filter** button to apply the filter criteria to the list.

If necessary, click the Details icon:  to display more information about the log entry, see Figure 10-232.

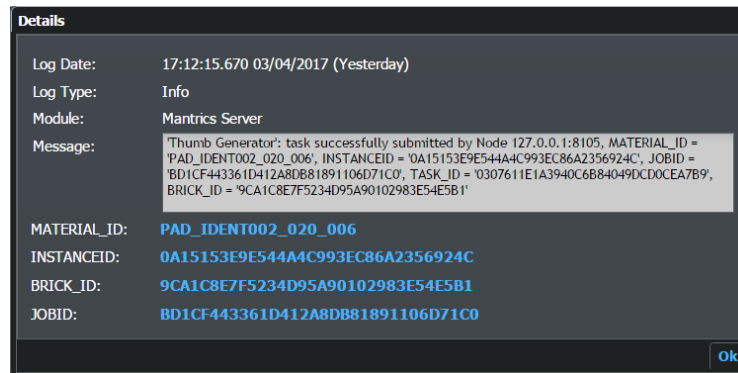


Fig. 10-232: Log Message Details

## Using the About Page

The Momentum **About** page provides information about the installed version of Momentum, currently connected users and license expiry dates.

To access the Logs page, select: **More > About**.

The **About** page contains the following information:

- The installed version of Momentum software
- A list of currently connected users
- Any configured licenses for Momentum components
- Details of all third-party license agreements.

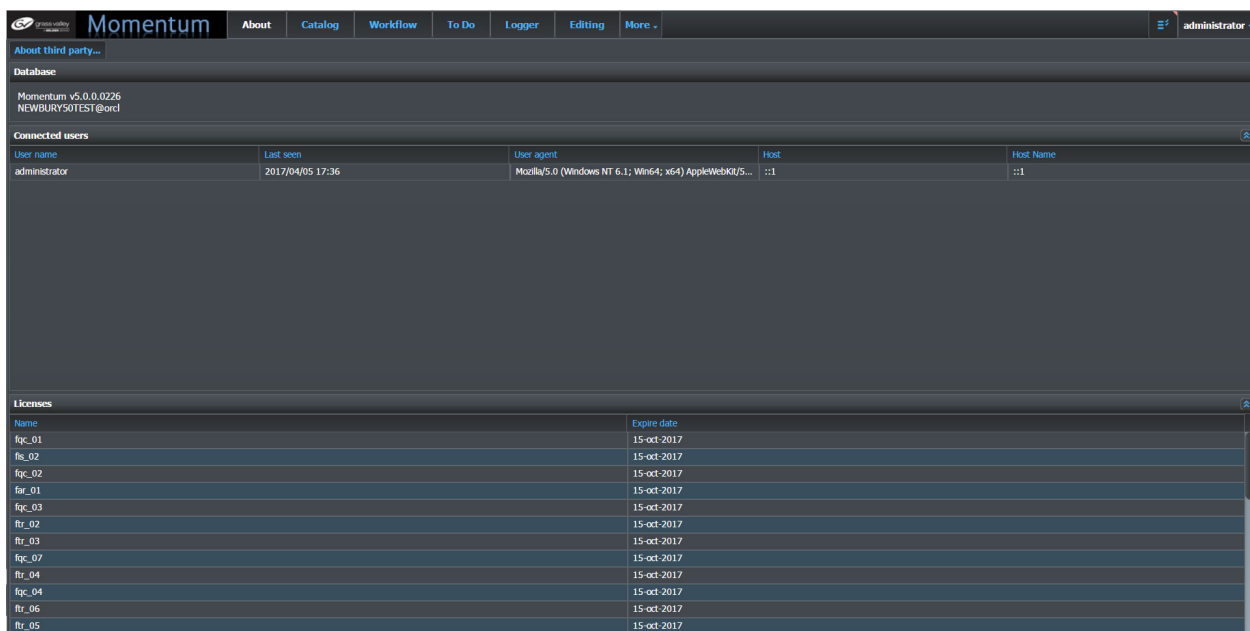


Fig. 10-233: Example About Page

The **Database** area contains the following information:

- the **release** of the Momentum software that is running
- the **Oracle User** that Momentum is using to connect to the database

The **Connected users** area displays, in real-time, all users currently connected to the Momentum system. For each user, the following information is displayed:

- User name
- **Date and time of the last activity** of this user
- **Agent** in use for the connection
- Host IP address
- **Host name**

The Licenses area lists all the active feature's licenses running on the server and their expiration date.

At the top left-hand corner of the page, the **About third party** button enables you to display license information for all installed third-party components.

## Monitoring the Transfers Page

The Momentum **Transfers** page is intended to report material that is required for air but is missing from a Morpheus play-out database. As an operator with the correct permissions, you can monitor the list for urgent pending items, filter on available categories, and export data. You can also configure the Momentum workflow to make missing material available to Morpheus for play-out.

---

**Note:** The Transfers page is available only to those users assigned the role **Has\_Transfers\_Page**.

---

To access the Transfers page, select: **More > Transfers**.

Channel Name	Material ID	Title	Type	First Air Date	Duration	In Point	Target Device
Channel1	P17139	---	PROGRAMME	02:06 02/05/2016 (expired)	00:05:02:00	00:00:00:00	KCA
Channel1	PS0110	---	JUNCTION	04:08 02/05/2016 (expired)	00:00:22:00	00:00:00:00	KCA
Channel1	927717	---	JUNCTION	04:47 02/05/2016 (expired)	00:00:47:00	00:00:00:00	KCB
Channel1	PS0095	---	JUNCTION	04:48 02/05/2016 (expired)	00:00:22:00	00:00:00:00	KCA
Channel1	PS5828	---	PROGRAMME	04:53 02/05/2016 (expired)	01:02:35:00	00:00:00:00	KCA
Channel2	PS4929	---	PROGRAMME	05:58 02/05/2016 (expired)	00:00:20:00	00:00:00:00	KCB
Channel2	PS7612	---	JUNCTION	06:39 02/05/2016 (expired)	00:00:15:00	00:00:00:00	KCA
Channel1	PS4740	---	JUNCTION	07:48 02/05/2016 (expired)	00:00:15:00	00:00:00:00	KCB
Channel1	PS2421	---	PROGRAMME	09:53 02/05/2016 (expired)	00:15:00:00	00:00:00:00	KCA
Channel1	PS15811	---	JUNCTION	10:09 02/05/2016 (expired)	00:00:20:00	00:00:00:00	KCB
Channel1	PS2089	---	PROGRAMME	10:09 02/05/2016 (expired)	00:00:48:00	00:00:00:00	KCA
Channel1	PS3013	---	PROGRAMME	10:10 02/05/2016 (expired)	00:04:40:00	00:00:00:00	KCA
Channel1	PS1784	---	JUNCTION	10:18 02/05/2016 (expired)	00:23:08:00	00:00:00:00	KCB
Channel1	PS27711	---	PROGRAMME	10:42 02/05/2016 (expired)	00:00:44:00	00:00:00:00	KCB
Channel1	PS2276	---	PROGRAMME	10:43 02/05/2016 (expired)	00:05:05:00	00:00:00:00	KCA
Channel1	PS27274	---	PROGRAMME	10:48 02/05/2016 (expired)	00:24:35:00	00:00:00:00	KCA
Channel1	PS18844	---	PROGRAMME	13:01 02/05/2016 (expired)	00:00:30:00	00:00:00:00	KCA
Channel1	PS19764	---	PROGRAMME	13:02 02/05/2016 (expired)	00:00:30:00	00:00:00:00	KCA
Channel1	PS2038	---	PROGRAMME	14:09 02/05/2016 (expired)	00:01:25:00	00:00:00:00	KCA
Channel1	PS7622	---	PROGRAMME	14:20 02/05/2016 (expired)	00:00:11:00	00:00:00:00	KCA
Channel1	PS4027	---	PROGRAMME	14:21 02/05/2016 (expired)	00:00:51:00	00:00:00:00	KCA
Channel1	PS24101	---	PROGRAMME	14:27 02/05/2016 (expired)	00:00:57:00	00:00:00:00	KCA
Channel1	PS2246	---	JUNCTION	17:49 02/05/2016 (expired)	00:08:17:00	00:00:00:00	KCB
Channel2	SHORTFILE	1FILETEST	PROGRAMME	13:26 03/05/2016 (expired)	00:04:39:24	00:00:00:00	KCC
Preview	PS2080	T35782_TESTCLIP_02_201...	PROGRAMME	15:14 04/05/2016 (expired)	00:00:05:24	00:00:00:00	KCC
Channel1	SHORTFILE	---	PROGRAMME	18:21 04/05/2016 (expired)	00:04:39:24	00:00:00:00	KCA
Channel1	PS4841	---	PROGRAMME	01:01 06/05/2016 (expired)	00:00:15:00	00:00:00:00	KCA
Channel1	PS2359	---	PROGRAMME	01:02 06/05/2016 (expired)	00:01:11:00	00:00:00:00	KCA
Channel1	PS4726	---	JUNCTION	02:15 06/05/2016 (expired)	00:00:20:00	00:00:00:00	KCB
Channel1	PS4082	---	PROGRAMME	02:15 06/05/2016 (expired)	00:00:15:00	00:00:00:00	KCA
Channel1	PS3977	---	PROGRAMME	02:20 06/05/2016 (expired)	00:28:31:00	00:00:00:00	KCA
Channel1	PS4827	---	JUNCTION	02:48 06/05/2016 (expired)	00:00:15:00	00:00:00:00	KCB
Channel1	PS0024	---	JUNCTION	02:59 06/05/2016 (expired)	00:35:08:00	00:00:00:00	KCB
Channel1	PS0139	---	JUNCTION	03:26 06/05/2016 (expired)	00:00:40:00	00:00:00:00	KCB
Channel1	PS7815	---	JUNCTION	04:38 06/05/2016 (expired)	00:00:13:00	00:00:00:00	KCB
Channel1	PS0097	---	JUNCTION	04:55 06/05/2016 (expired)	01:00:21:00	00:00:00:00	KCB
Channel2	PS8999	---	PROGRAMME	15:20 06/05/2016	00:28:31:00	00:00:00:00	KCA
Channel3	SHORTFILE	PROGRAMME	PROGRAMME	12:15 08/05/2016	00:04:59:24	00:00:00:00	KCC

Fig. 10-234: Transfers Page Showing Missing Materials

The Transfers page monitors the status of the transfer requests received as BXF messages from a Morpheus system. The page is structured as a table, showing a different transfer request on each row with each request defining content that has been identified as missing from the Morpheus play-out database. New transfer requests are added to the list when received and ordered by descending Request date. You can manage the transfer requests from this page. Momentum shows transfer requests in **gray** if they are **expired**, and in **white** if they are **active**.

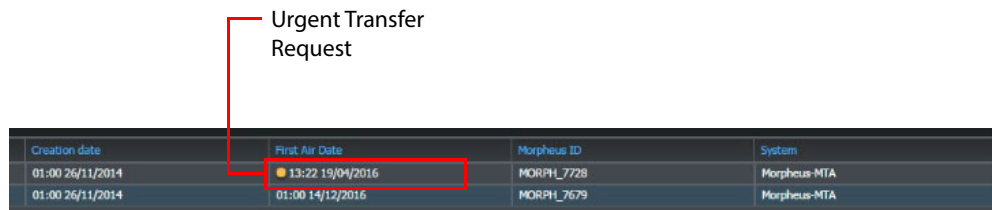
Use the checkbox **Include expired** to toggle the display of expired transfer requests on or off, without removing them from the table. To clear expired transfer requests from the table permanently, click the **Remove expired transfer request...** button.

The content of the Transfers page is defined in the configuration file `C:\Mantrics\TransferRequestsConfig.xml` and can be customized as required. The default Transfers page displays the data contained in the transfer request in the following configurable columns:

Column	Description
<b>Network</b>	Identifies the intended playout network or channel.
<b>Type</b>	Defines the type of missing material.
<b>First Air Date</b>	Planned to-air date by which Morpheus requires the missing material.

Column	Description
<b>Morpheus ID</b>	Identifier of the material in the Morpheus database.
<b>Actions</b>	Click to delete a transfer request from the displayed list.

A transfer request that has a **First Air Date** falling within a pre-configured deadline time threshold (for example, four hours or less to on-air) is considered urgent. If configured, Momentum can highlight any urgent transfer requests on the Transfers page using a yellow bullet next to the time and date in the **First Air Date** column, as shown in Figure 10-235.



Creation date	First Air Date	Morpheus ID	System
01:00 26/11/2014	13:22 19/04/2016	MORPH_7728	Morpheus-MTA
01:00 26/11/2014	01:00 14/12/2016	MORPH_7679	Morpheus-MTA

Fig. 10-235: Highlighting of Urgent Transfer Requests


You can set the deadline for urgent transfer requests, in hours, using the tag **<deadlineHours>** in the configuration file: `TransferRequestsConfig.xml`. If the tag **<deadlineHours>** is not present in the configuration file, or is set to zero (0) then Momentum will not display a highlight.

You can choose to export data from the Transfers page using either of the following methods:

- **Export CSV...** enables you to export the content of the Transfers table to a file as comma separated values
- **Export as...** enables you to export the content of the Transfers table to an HTML format file in which Momentum converts the dates and times to UTC form. When an operator opens the exported file in a browser, an automated script converts the dates to the local timezone.

If you use filters to change the data displayed in the table, the button **Reset filters** becomes active. Click **Reset filters** to de-activate all filters.

The header of the Transfer Requests table reports the time of the last update of the displayed list. Time reported is local time, so that it is consistent with the system time for operators consulting the page.

If you have been assigned the correct permission, you can delete a transfer request from the list by clicking .

## Changing the Layout of the Transfers Page

The **User Views** functions of the Transfers page enable you to modify the layout of the screen, for example, by moving, hiding or displaying columns, using column filters or changing column sort directions. Once you have modified a layout **view** you can choose to save your changes to the current view or to create a new view.

The aim of this feature is to enable you to dedicate each view to a specific area of interest, perhaps representing specific channels, or transmission types. This can provide a manageable overview of key transfer requests and help to identify high-priority requests quickly, as they arrive.

Momentum assigns each new view a label and displays it as an active button in the **User views** pane above the Transfer Requests pane, see Figure 10-215. If you have been assigned the correct permissions you can then switch between alternative views, by clicking the corresponding button, as required.

---

**Note:** Depending on the roles assigned to a user, the Transfer Requests page will display only those views that can be accessed by that user.

---

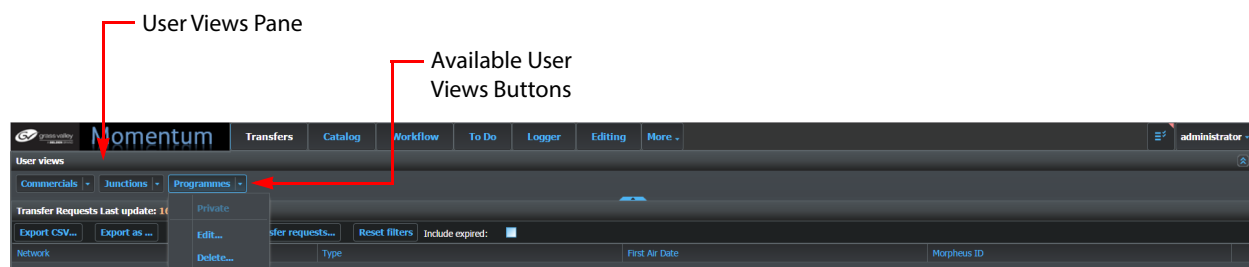


Fig. 10-236: Transfer Requests Page Showing Switchable User Views

You can modify the layout of the Transfer Requests pane by:

- Changing the order of columns (by dragging and dropping a column to a new position.)
- Changing the default sort direction
- Setting column filters, for more information see Section Filtering Displayed Data Using the Column Filter Options on page 178.
- Hiding and/or showing columns, using the **Columns** drop-down checkboxes.
- Resizing columns to improve the data display.

### Saving Changes to a Transfer Request User View

After making any changes to the current view, you can either:

- Click **Reset** to revert the view to the initial configuration, and ignore any changes.
- Click **Save** to save any modifications to the current view, without creating a new view.
- Click **Save as...** to create a new view, enter a name, and define which other users can have access to the view.

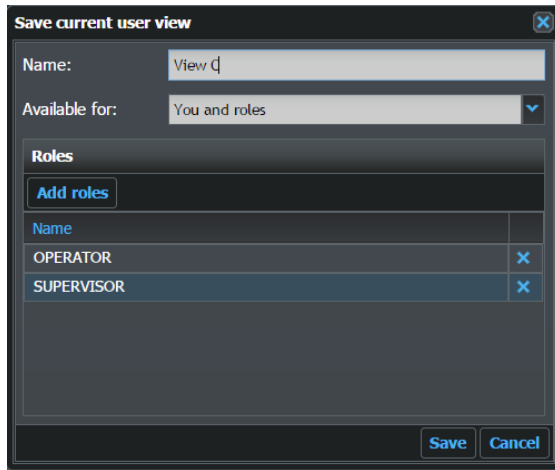


Fig. 10-237: Transfers Page - Saving the Current User View

You can also delete or edit a view and/or change the accessibility of the view by clicking the drop-down menu available to each User View button. The menu displays the current availability of the view (Public, Shared, or Private), and **Edit...** and **Delete...** options.

When you access the **Transfer Requests** page, Momentum displays the last layout you selected on your last visit to the page.

## Working with Play-out Schedules

The Momentum **Schedules** page enables you to import playlist schedule files (generally exported by a Morpheus Playout Automation system and having a **.SCH** file extension) into Momentum. Operators need to check these advance schedules to determine whether any scheduled material is missing from either the attached NAS or an incoming watchfolder.

You can filter the schedule view by channel, schedule file, material availability in the database, first, or all occurrences and then choose to include or exclude expired schedule entries.

When required, you can export schedule reports in CSV or XML format using a predefined template.

---

**Note:** The Schedules page is available only to those users assigned the role **Has\_Schedules\_Page**.

---

To access the Schedules page, select: **More > Schedules**, see Figure 10-238.



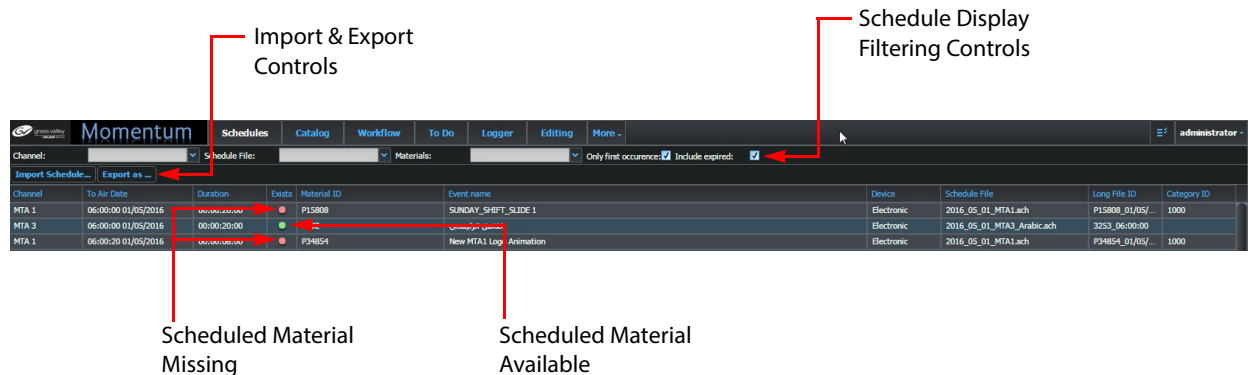


Fig. 10-238: Schedules Page

## Importing a Schedule File

Import a playlist schedule into Momentum as follows:

- 1 In the Schedules page, click **Import Schedule...**

This opens the Upload Schedule dialog, see Figure 10-239.

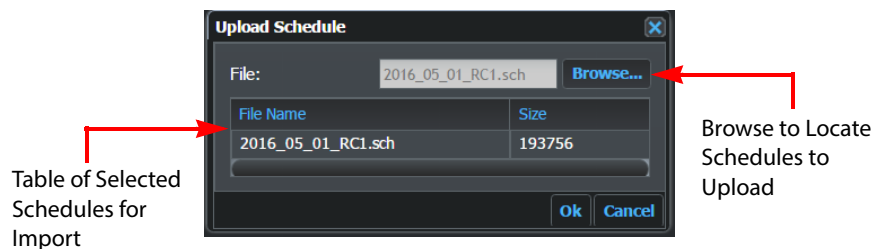


Fig. 10-239: Schedules Upload Dialog

- 2 Click **Browse...** to locate the desired schedule file(s).
- 3 Click **Ok** to upload the schedule.

Momentum lists the schedule details in the Schedule table and reports the following information, by default:

- **Channel:** Lists all nodes with the same IP number in a single section
- **To Air Date:** Date and time on which the scheduled material is due to go on air.
- **Duration:** Duration of the scheduled material.
- **Exists:** Indicates whether the scheduled material is available or not. A green spot shows that the material is available, a red spot shows that the material is missing.
- **Material ID:** Material ID of the scheduled material.
- **Event name:** Description of the scheduled event; includes both primary and secondary (subtitles, graphic stills and audio files) events.

The following optional columns may be displayed, depending on the configuration of SchedulesConfig.xml :

- **Device:** Device generating the schedule, for example, ICE.
- **Schedule file:** Name of the imported schedule file.
- **Creation Date:** Date on which the Schedule file was generated.
- **Error/Failed:** Displays the most recent errors which the system has encountered.
- **QC\_STATUS:** Displays the quality checking status of the material.
- **Long File ID:** Reference ID for the schedule file in the database.

## Exporting Schedule Data

As required, you can export the current view of the Schedules page in CSV or XML format using the appropriate template located in the folder:

C:\Mantrics\ExportTemplates\TransferRequests

The missing materials **XML** template (Missing Materials.xml) contains the following detail:

```
<BROADCAST_SCHEDULE>
  <BROADCAST_DATE_TIME>{ [0] .StartDate.ToString("yyyy-MM-dd
    HH:mm:ss") }</BROADCAST_DATE_TIME>
  <DATE>{YYYY}</DATE>
  {#ForEach()}<PROGRAM>
    <TID>{MaterialId}</TID>
    <PID>{MaterialId}</PID>
    <START_DATE_TIME>{StartDate.ToString("dd/MM/yyyy
      HH:mm:ss")}</START_DATE_TIME>
    <DURATION>{Duration.Substring(0, 8)}</DURATION>
    <FORMAT>{DeviceId}</FORMAT>
    <EPG>0</EPG>
    <TITLE>{EventName}</TITLE>
    <DESCRIPTION/>
    <CatID>{CategoryId}</CatID>
  </PROGRAM>
  {/ForEach}
</BROADCAST_SCHEDULE>
```

The missing materials **CSV** template (Missing Materials.csv) contains the following detail:

```
Channel,Time to Air,Duration,Material ID,Title,Device ID,Reason,
{#ForEach()}{#EscapeCSV()}{ChannelName} ({ChannelId}){/
EscapeCSV},{StartDate.ToString("dd-MMM-yyyy
HH:mm:ss:00").ToUpper()},{#EscapeCSV()}{MaterialId}{/
EscapeCSV},{#EscapeCSV()}{EventName}{/
EscapeCSV},{#EscapeCSV()}{DeviceId}{/EscapeCSV},Not in database,
{/ForEach}
```

The exported report includes the content required for these playlists which is not currently stored in Momentum. The report should be ordered by ascending transmission time and show the transmission times, Material IDs, Titles and Channel Names of the missing items.

Export playlist schedule data from Momentum as follows:

- 1 In the Schedules page, click **Export as...**

This opens the **Export as...** dialog, see Figure 10-239.

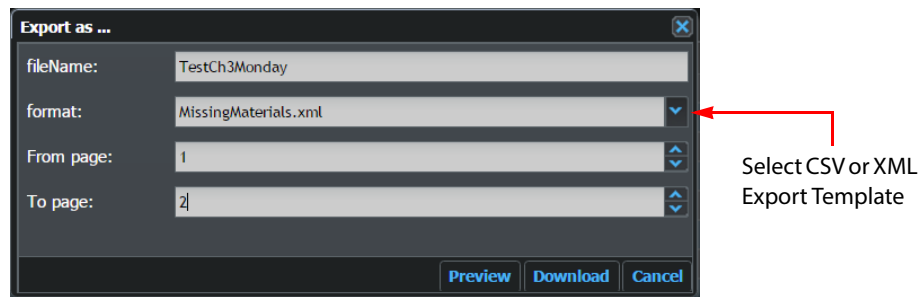


Fig. 10-240: Schedule Export Dialog

- 2 Enter the file name of the exported file without an extension.
- 3 Select the export template from the format drop-down menu.  
You can choose either the XML template (`MissingMaterials.xml`) or the CSV template (`MissingMaterials.xml`).
- 4 Set the page range of the data to include in the exported report using the **From page** and **To page** selectors.
- 5 Click **Preview** to view a preview of the missing materials report before it is exported.  
The Export as dialog opens two fields, logger and preview, see Figure 10-241.

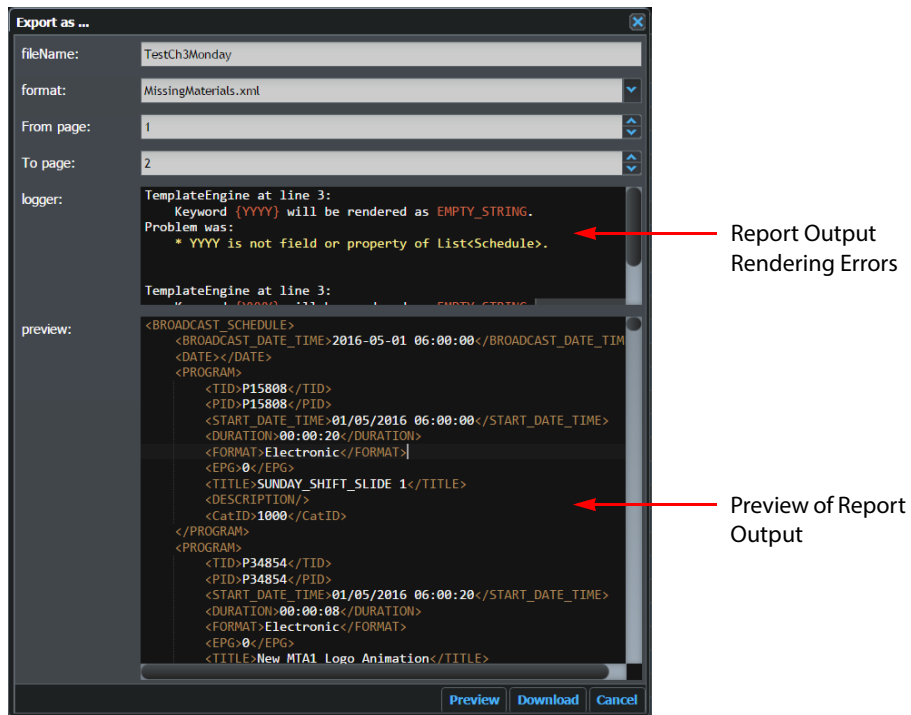


Fig. 10-241: Schedule Export Dialog

The **logger** field lists any issues occurring in rendering the output by line number.

The **preview** field displays a preview of the XML or CSV output in the missing materials report.

- 6 Click **Download** to export the missing materials report.

Momentum exports the specified file to your browser's **Downloads** folder.

# Archiving to an Telestream DIVArchive System

## Overview of the DIVArchive System

Momentum is designed to integrate with an Telestream DIVArchive<sup>1</sup> digital archive solution for the archiving of digital media assets and assistance in providing material for production workflows.

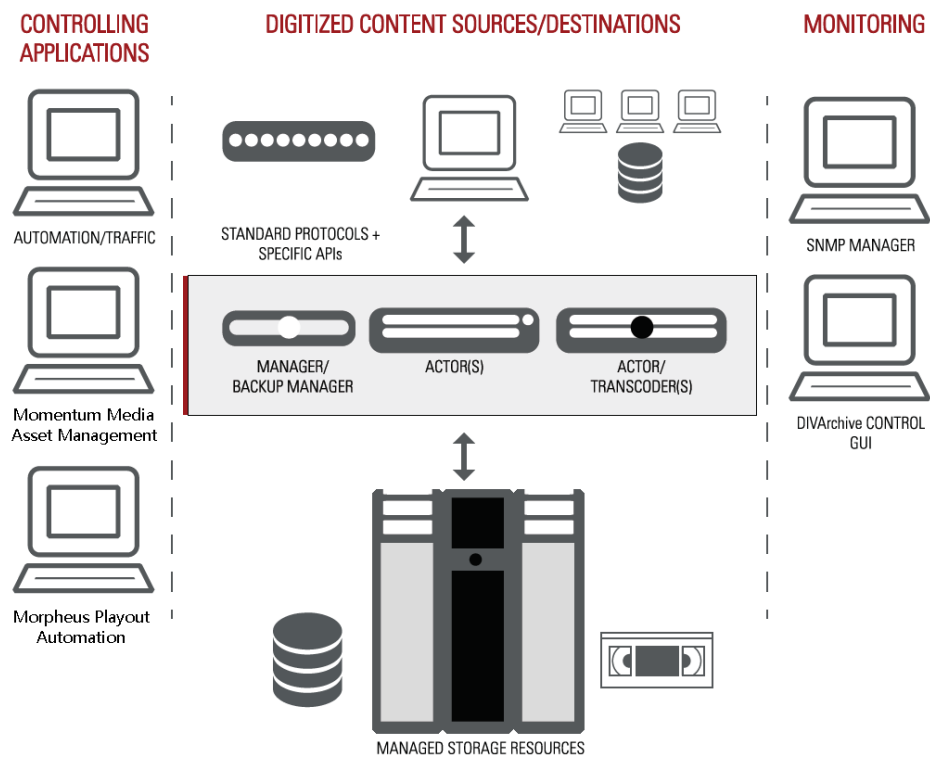


Fig. 11-242: Overview of a Typical DIVArchive System

The Telestream DIVArchive solution has interfaces to broadcast and post-production devices; it understands how content is organized on the device, and stores all files belonging to this content as a single object. The DIVArchive system supports the storage and management of several instances of the same object, for example, it can store and track one instance on disk, one instance on tape within a robotic tape library, and one instance on tape stored on an external shelf.

The DIVArchive solution consists of, and uses, a number of related DIVA products.

1. Formerly known as Front Porch Digital DIVA and acquired by Oracle and later by Telestream..

The following are the most relevant to a Momentum Installation:

- **DIVArchive Manager:** Manages the overall archive solution. It also hosts the archive system database. Typically runs on dedicated hardware.
- **DIVArchive Partial File Restore:** Allows restoration of a segment of a piece of content that is managed by the DIVArchive. This is specified by an **in** timecode and an **out** timecode and is more efficient than restoring a full media asset when only a short clip is required.
- **DIVArchive Application Filter:** Limits access to DIVArchive managed content by third-party systems based on user permissions.
- **DIVAnet:** Facilitates a direct connection between separate DIVArchive Systems and automatically replicates content from one site to the other, typically for disaster recovery (DR) purposes.
- **DIVAdirector:** Asset Management System that provides direct interfaces into edit systems and provides some workflow management and search with low resolution proxy viewing, thumbnails and metadata management. This module also allows file upload with time-code based logging and tagging.

## Configuring the DIVA Workflow Elements

Momentum provides four workflow elements (Archive, Delete, Restore and Partial Restore) to integrate workflows with the DIVArchive archiving system. These elements are available from the **Workflow** page in the elements folder: **Archive > Oracle**, see Figure 11-243.

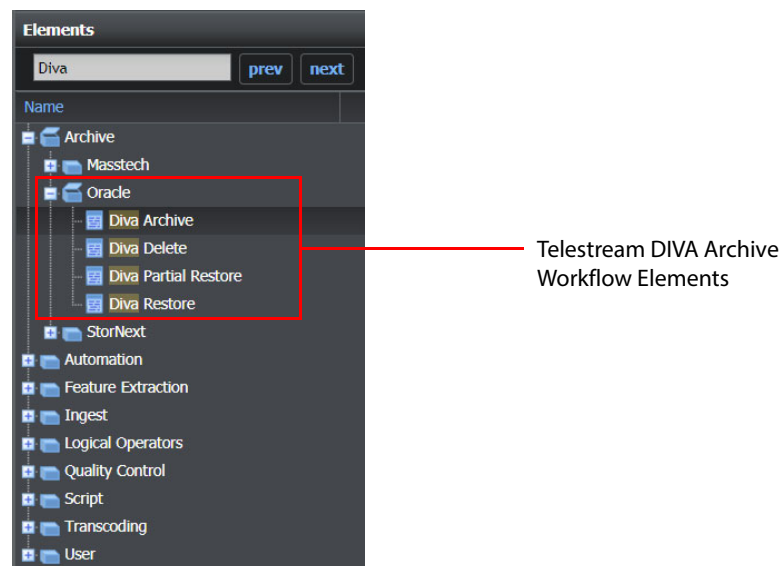


Fig. 11-243: DIVA Archive Workflow Elements

The location of the DIVArchive Manager is configured for each of these archiving elements in the configuration files: `MantricsServer.xml` and `MantricsNode.xml`.

In addition, the configuration file `Diva.xml` contains a list of the DIVA error codes together with their associated error descriptions. The file `MantricsNode.xml` defines the default communication port between Momentum and the DIVArchive system as port **9763**.

See the Momentum *Configuration Guide* for details on configuring the individual workflow elements.





# A Scripting

## Overview

Momentum supports the use of scripts in order to allow a greater degree of customization of a workflow. The following programming languages are supported:

- Visual Basic (.NET)
- C#
- Python
- IronPython 2.7

Adding a Script element to the workflow enables the user to write a script directly into the Settings pane or paste the script in from an external editor. The script field of the pane can be maximized using the **Open in window** button.

For Visual Basic and C# you can import external DLLs as follows:

- 1 Copy all the referenced DLL files into a folder that can be accessed by the Momentum system
- 2 Enter this path into the External DLLs Folder field.

This chapter contains a reference of the Objects available in Momentum and their related methods. At the end of this chapter, there are some examples.

## Object: MaterialPeer

The MaterialPeer object has the following options:

- **String MaterialId**  
Gets/sets the materialId for the associated task.
- **string InstanceId**  
Gets/sets the instanceId for the associated task.
- **bool RemoveMaterial (string materialId)**  
Returns true if a specific material is deleted, false in all the other cases.
- **string AddInstance(int type, string label, string instPath)**  
Adds a new instance to the current material.
- **Type 0 > HQ; 1 > LQ**  
Returns the ID of the newly created instance.
- **InstancePeer Instance**  
Gets/sets the InstancePeer for the associated task.
- **List<string>getProjectIdsList()**

- Returns the projectId for current materialId.
- **String getMetadata(String name)**  
Returns a metadata for current materialId using fullName metadata.
- **public void setMetadata(String name, Object value)**  
Sets the metadata called 'name' for the current materialId.
- **public void setMetadata(String materialId, String name, Object value)**  
Sets the metadata called 'name' for the specified materialId.
- **MaterialPeer CreateVideoMaterial(string title)**  
Returns a new MaterialPeer object with the same schema of materialpeer object which has invoked it.
- **MaterialPeer CreateVideoMaterial(string title,string schemaId)**  
Returns a new MaterialPeer object with a specific title and schema.
- **MaterialPeer CreateVideoMaterial(string title,List<string>projectIds,string schemaId)**  
Returns a new MaterialPeer object with a specific title and schema. the newly created material is also added to the list of specified projects.
- **double GetTotalSecsFromTimecode**  
Returns a double variable containing the seconds corresponding to the input timecode.
- **string GetTotalSecsFromTimecode**  
Returns a string containing the string representation of a timecode corresponding to the number of seconds in input.

## Object: InstancePeer

This object is accessible using methods of MaterialPeer. This object has the following methods:

- **string Instanceld**  
Get/sets the instanceld of the peer.
- **int getWidth()**  
Returns the Width attribute for current instanceld.
- **int getHeight()**  
Returns the Height attribute for current instanceld.
- **int getSampleRate()**  
Returns the SampleRate attribute for current instanceld.
- **string getAr()**  
Returns the Aspect Ratio attribute for current instanceld.
- **string getFrameRate()**  
Returns the FrameRate attribute for current instanceld.
- **string getBitrate()**  
Returns the birRate attribute for current instanceld.
- **int getChannels()**

- Returns the channels attribute for current instanceld.
- **string getLocalPath()**  
Returns the localPath attribute for current instanceld.
- **void setLocalPath(string path)**  
Sets the localPath attribute for current instanceld.
- **string getFileName()**  
Sets the filename associated to current instanceld (for example, \\10.10.0.221\myShare\sample.mxf > sample.mxf).
- **string getType()**  
Type 0 > HQ; 1 > LQ  
Gets the type of current instanceld.
- **public double getDuration()**  
Returns the duration for current instanceld.
- **public string getCodecName()**  
Returns the codec name attribute for current instanceld.
- **string getEssenceType()**  
Returns the essence type attribute for current instanceld.
- **string getMediaType()**  
Returns the media type.
- **string GetDurationInTimecode()**  
Returns the duration of the media asset in timecode format.

## Object: ScriptPeer

This object is accessible using the variable **script**. This object has the following methods:

- string Choice  
Gets/sets the exit port of the script.
- string ErrorString  
Returns the last known error if any.
- string CurrentTaskId  
Returns the ID of the current task.
- XmlDocumentgetPreviousTaskList  
Returns an XML document describing the task list. For example:

```
<TasksList>
  <task id='823482346'>
    <nodeId>387453463847634</nodeId>
    <priority>5</priority>
    <materialId>3874837634</materialId>
    <instanceId>74383875387</instanceId>
    <Data_operation_in>20132003</Data_operation_in>
    <Data_operation_end>20132003</Data_operation_end>
    <jobId>78234628</jobId>
    <ErrorCode>
      <![CDATA[Error1]]>
    </ErrorCode>
    <BrickName>
      <![CDATA[Send Mail to Joe]]>
    </BrickName>
    <TaskIsProcessing>true</TaskIsProcessing>
  </task>
</TasksList>
```

- **string OutMaterialId**  
Gets/sets the MaterialId associated to the task propagated to the next element.
- **string OutInstanceId**  
Gets/sets the InstanceId associated to the task propagated to the next element.

## Object: LoggerPeer

This object is accessible using the variable **logger**. This object has the following methods:

- **void log(string toLog)**  
Logs the message as INFO to Momentum logger.
- **void logToEventViewer(string toLog)**  
Logs the message as INFO to the Windows EventViewer.

## Object: FileWatcherPeer

This object is accessible using the variable **fileWatcher**. This object has the following methods:

- **String wait(string fname)**  
Wait for a specific file (check every 3 seconds).  
This is a blocking thread. Always returns null.

## Object: FileManagerPeer

This object is accessible using the variable **filemanager**. This object has the following methods:

- **string getExtension(string fName)**  
Returns the extension of the fName specified.
- **string GetFileNameWithoutExtension(string fName)**  
Returns the filename of the fName specified without extension (C:\windows\clock.avi > clock).
- **string GetDirectoryName(string fName)**  
Returns the directory of the fName specified (C:\windows\clock.avi > C:\windows).
- **string Combine(string dir, string fname)**  
Combines in a safe way, the directory and fname with correct slash.
- **bool Rename(string old, string newfname)**  
Renames old in newfname (can be used also for move).

## Object: ConsolePeer

This object is accessible using the variable **console**. Used only for development purposes. This object has the following methods:

- **void writeLine(string toPrint)**  
Writes a line to console.
- **void write(string toPrint)**  
Writes to console (no new line).
- **void readLine()**  
Reads a line from the console.

## Examples

The following examples demonstrate how to add useful features to a workflow.

## Connecting to the utils.asmx Web Service

This is a version of the script which works on x86 servers only. After connecting to the utils.asmx Web Service, the script passes the userId and then retrieves a unique ID.

```
Public Function EvaluateIt()  
  
    dim oXMLHTTP = CreateObject("MSXML2.XMLHTTP.6.0")  
    dim oXMLDoc = CreateObject("MSXML2.DOMDocument")  
    dim param  
    dim metadataName  
    metadataName = "Core.Description"  
    param = ""  
    call console.WriteLine("----- Script CallWS -----")  
    call oXMLHTTP.open("POST", "http://localhost/Momentum/WebAPI/  
        WebAPI.asmx/GetValidLabels", false)  
    call oXMLHTTP.setRequestHeader("Content-Type", "application/x-www  
        -form-urlencoded")  
    oXMLHTTP.send("" & param)  
    dim response  
    response = oXMLHTTP.responseText  
    'call console.WriteLine(response)  
    call oXMLDoc.loadXML(response)  
    if(oXMLDoc.parseError.errorCode <> 0) then  
        call console.WriteLine("ERROR")  
        response = oXMLHTTP.responseText & " " &  
            oXMLDoc.parseError.reason  
        call console.WriteLine(oXMLDoc.parseError.reason)  
        script.ErrorString = oXMLDoc.parseError.reason  
        script.Choice = "failed"  
    else  
        response = oXMLDoc.selectSingleNode("//  
            node").getAttribute("label")  
        logger.log("The returned value for label is: " & response)  
        call material.setMetadata(material.MaterialId,  
            metadataName, response)  
        script.Choice = "ok"  
    end if  
Catch e As Exception  
    script.ErrorString = e.Message  
    script.Choice = "failed"  
End Try  
End Function
```

## The SD/HD Router Script

Here is the script used in the Virtual SD/HD Router element.

The 'HDPORT' and 'SDPORT' values are the names of the two custom ports added to the element and through which the materials (having the appropriate Width values) are sent.

```
'route the flow checking the HD/SD property  
'declare a function to be used in the body
```

```
Public Function isHD()  
isHD = true  
if (material.INSTANCE.getWidth <> 1920) Then  
    isHD = false  
end if  
if (material.INSTANCE.getHeight <> 1080) Then  
    isHD = false  
end if  
End Function  
  
Public Function EvaluateIt()  
if isHD=true then  
    script.Choice = "HDPORT"  
else  
    script.Choice = "SDPORT"  
end if  
End Function
```

## Fill Empty Metadata

The following short Python script takes the current material, makes a check to verify if some of its metadata are empty (the metadata to check are those into the toCheck list) and, finally, the empty ones are filled using the value of a specified string (defaultStr).

```
toCheck = ["Core.Title" , "Core.CreationDate" , "Core.Genre" ,  
"Core.Description" , "Core.Keywords" , "Core.CreatedBy"]  
  
defaultStr = "THIS FIELD IS EMPTY"  
  
for metadata in toCheck:  
str = material.GetMetadata(metadata)  
if not str:  
material.SetMetadata(material.MaterialId, metadata, defaultStr)  
  
script.Choice = "ok"
```

## Creating a Custom Log File

The following Python script creates a custom Log file (CustomBricLog.txt) and writes in it the title of the current material.

```
fileAddress = "C:/Users/andrea/Desktop/CustomBricLog.txt" # NB: insert a  
correct path here!!!  
  
fileName = open(fileAddress , "a+")  
  
title = material.GetMetadata("Core.Title")  
  
str = "Title: " + title + " under processing. \n"  
  
fileName.write(str)
```

```
fileName.close()

script.Choice = "ok"
```

## Using the Logger Windows

The following Python script modifies the title of a material and uses the logger windows to log a message reporting the result of this action.

```
oldTitle = material.GetMetadata("Core.Title")
newTitle = ""

for index, letter in enumerate(oldTitle):
    newTitle += letter.upper() if (index%2 == 0) else letter.lower()

material.SetMetadata(material.MaterialId, "Core.Title", newTitle)

logger.log("Title changed from " + oldTitle + " to " + newTitle)

script.Choice = "ok"
```



# Supported File Formats



## Supported Container Formats

Momentum supports the following media container or wrapper formats:

Wrapper	Description	Wrapper For	Filename
MPEG-TS (also MTS, TS)	MPEG-2 Transport Stream	Audio, Video, Data	.ts, .tsv, .tsa
MPEG-PS (also PS)	MPEG-2 Program Stream	Audio, Video, Data	.mpg, .mpeg, .m2p, .ps
MPEG-4 Parts 1, 14 and 15	MPEG-4	Audio, Video, Text	.mp4, .m4a, .m4p, .m4b, .m4r and .m4v
3GPP	3rd Generation Partnership Project	Audio, Video, Text	.3gp, .3gpp
MOV	QuickTime File Format (QTFF)	Audio, Video, Text	.mov, .qt
ASF	Advanced Systems Format (Microsoft digital audio / video container format.)	Windows Media Audio, Windows Media Video	.asf, .wmv, .wma,
BXF	Broadcast eXchange Format (SMPTE standard)	XML-based communication schema for near-real-time messaging of Schedule and as-run data, content metadata, content movement instructions.	.bxf
GXF	General eXchange Format	Container format for the transfer of simple and compound audiovisual clips between television program storage systems.	.gxf
MXF	Material eXchange Format (SMPTE standard)	Container format for audiovisual material and rich metadata.	.mxf

## Supported Video Formats

Momentum supports the following video file formats:

## Supported File Formats

## Supported Video Formats

Video Format	Codec	Bitrates (Mb/s)	Resolution & Standard	Notes
<b>Sony XDCAM</b>				
SD	DVCAM	25	50i, 59.94i	
	MPEG IMX	30, 40, 50		
HD	MPEG-2	18,25,35	1080 @ 50i, 59.94i	MP@HL
	MPEG-2	50	720 @ 50p, 59.94p	4:2:2P@HL
EX	DVCAM	25	50i, 59.94i	
	MPEG-HD	25	1080 @ 50i, 59.94i	MPEG-2 MP@HL
	MPEG-HD	35	1080 @ 50i, 59.94i 720 @ 50p, 59.94p	MPEG-2 MP@HL JVC HM-650 camera
<b>Panasonic P2 (Professional Plug-in Storage Media)</b>				
SD	DV	25	50i, 59.94i	
	DVCPRO	25		
	DVCPRO	50		
HD	DVCPRO HD	100	1080 @ 50i, 59.94i	
	AVC-Intra Class 50	50	720 @ 50p, 59.94p	
	AVC-Intra Class 100	100		
<b>Canon MXF</b>				
HD	MPEG-2 4:2:2	50	1080i / 720p	422@HL
	MPEG-2 4:2:0	35		MP@HL
	MPEG-2 4:2:0	25	1080i	MP@H14
<b>XAVC - I frame</b>				
HD	H.264	50	1080 @ 50/59.94i	
		100	1080 @ 25/50p, 29.97/59.94p, 50/ 59.94i	
		100	720 @ 50p, 59.94p	
2K	H.264	100	2K @ 25/50p, 29.97/ 59.94p	
UHD	H.264	600	UHD @ 25/50p, 29.97/59.94p	
4K	H.264	300	4K @ 25/50p, 29.97/ 59.94p	
		480		

Video Format	Codec	Bitrates (Mb/s)	Resolution & Standard	Notes
<b>XAVC-S</b>				
HD	H.264	100	1080 @ 25/50p, 29.97/59.94p	
	H.264	100	2K @ 25/50p, 29.97/ 59.94p	
<b>XAVC Long GOP</b>				
HD	H.264 High422, 4:2:2 10-bit	50	1280 x 720 @ 50p, 59.95p	
	H.264 High422, 4:2:2 10-bit	50	1920 x 1080 @ 25p, 29.97p, 50p, 59.94p, 50i, 59.94i	
	H.264 High422, 4:2:2 10-bit	25,35	1920 x 1080 @ 25p, 29.97p, 50i, 59.94i	
4K	H.264	188	3840 x 2160 @ 25p, 29.97p	
	H.264	300	3840 x 2160 @ 50p, 59.94p	
<b>Sony F55 DNxHD (Digital Nonlinear Extensible High Definition)</b>				
HD	DNxHD	145 / 220X	1080 @ 29.97p, 59.94i	OP1a
		120 / 185X	1080 @ 25p, 50i	OP1a
<b>Ikegami GFCAM</b>				
SD	MPEG-2 (IMX)	30 / 40 / 50	50i, 59.94i	OPAtom
HD	MPEG-2	50 (Long-GOP) 100 (Intra)	1080 @ 25/50p, 29.97/59.94p, 50i, 59.94i	OPAtom
<b>AVC-LongG</b>				
HD	H.264 (4:2:0 8bit)	G6, G12	1080 @ 50i, 59.94i, 50p, 59.94p 720 @ 50p, 59.94p	OP1b
	H.264 (4:2:2 10bit)	G25, G50	1080 @ 25/50p, 29.97/59.94p, 50i, 59.94i 720 @ 50p, 59.94p	OP1b

## Supported File Formats

## Supported Video Formats

Video Format	Codec	Bitrates (Mb/s)	Resolution & Standard	Notes
<b>AVC-Ultra</b>				
UHD	H.264 4K 422	400	UHD @ 25/50p, 29.97/59.94p	OP1b
4K	H.264		4K @ 25/50p, 29.97/ 59.94p	OP1b
2K	H.264 2K 422	220	2K @ 25/50p, 29.97/ 59.94p	OP1b
<b>DNxHD (SMPTE-VC3)</b>				
HD	10 bit	175 / 220	720p @ 50, 59.94	OP1a
	8 bit	175, 115 / 220, 145		
	10 bit	185 / 220	1080i @ 50, 59.94	
	8 bit	185, 120 / 220, 145		
	10 bit	365 / 440		
	8 bit	340, 365, 75 / 90, 290, 440		



# Standard Metadata Fields

Momentum supports the use of scripts in order to allow a greater degree of customization of a workflow.

Name	Metadata ID	Data Type
<b>AudioInstance</b>		
Channels	AudioInstance.AtrackInstance.CHANNELS	Number
Codec name	AudioInstance.AtrackInstance.CODECNAME	Text
DURATION	AudioInstance.AtrackInstance.DURATION	Timecode
LANGUAGE	AudioInstance.AtrackInstance.LANGUAGE	Text
Path	AudioInstance.AtrackInstance.PATH	Text
POSITION	AudioInstance.AtrackInstance.POSITION	Number
QCComment	AudioInstance.AtrackInstance.QCCOMMENT	Text
QCStatus	AudioInstance.AtrackInstance.QCSTATUS	Text
Sample rate	AudioInstance.AtrackInstance.SAMPLERATE	Number
Sample size	AudioInstance.AtrackInstance.SAMPLESIZE	Number
ARCHIVE	AudioInstance.MomentumCore.ARCHIVE	Text
ASPECT_RATIO	AudioInstance.MomentumCore.ASPECT_RATIO	Text
ASSIGNED_CHANNELS	AudioInstance.MomentumCore.ASSIGNED_CHANNELS	Text
CATEGORY_ID	AudioInstance.MomentumCore.CATEGORY_ID	Text
DURATION	AudioInstance.MomentumCore.DURATION	Text
EPISODE_NUMBER	AudioInstance.MomentumCore.EPISODE_NUMBER	Number
FILED_DATE	AudioInstance.MomentumCore.FILED_DATE	Date
FRAMERATE	AudioInstance.MomentumCore.FRAMERATE	Number
MATERIAL_TYPE	AudioInstance.MomentumCore.MATERIAL_TYPE	Text
MORPHEUS_ID	AudioInstance.MomentumCore.MORPHEUS_ID	Text
NOTES	AudioInstance.MomentumCore.NOTES	Text
NUMBER_OF_TAPES	AudioInstance.MomentumCore.NUMBER_OF_TAPES	Number
ON_AIR_DURATION	AudioInstance.MomentumCore.ON_AIR_DURATION	Text
OWNER_ID	AudioInstance.MomentumCore.OWNER_ID	Number
PURGE_DATE	AudioInstance.MomentumCore.PURGE_DATE	Date
REQUIRED_DATE	AudioInstance.MomentumCore.REQUIRED_DATE	Date

Standard Metadata Fields

Name	Metadata ID	Data Type
REVIEWED_BY	AudiolInstance.MomentumCore.REVIEWED_BY	Text
RUN_ON_DURATION	AudiolInstance.MomentumCore.RUN_ON_DURATION	Text
SCAVENGE	AudiolInstance.MomentumCore.SCAVENGE	Number
SOM	AudiolInstance.MomentumCore.SOM	Text
STATUS	AudiolInstance.MomentumCore.STATUS	Text
SUBTITLE_REF	AudiolInstance.MomentumCore.SUBTITLE_REF	Text
TITLE	AudiolInstance.MomentumCore.TITLE	Text
AUDIO_COMPRESSION	AudiolInstance.MomentumInstance.AUDIO_COMPRESSION	Number
AUDIO_MODE	AudiolInstance.MomentumInstance.AUDIO_MODE	Text
AUDIO_SAMPLE_RATE	AudiolInstance.MomentumInstance.AUDIO_SAMPLE_RATE	Number
AUDIO_SHUFFLING_ID	AudiolInstance.MomentumInstance.AUDIO_SHUFFLING_ID	Text
AUTO_QC	AudiolInstance.MomentumInstance.AUTO_QC	Date
CLIP_REF	AudiolInstance.MomentumInstance.CLIP_REF	Number
DELETE_AFTER	AudiolInstance.MomentumInstance.DELETE_AFTER	Date
DEVICE_ID	AudiolInstance.MomentumInstance.DEVICE_ID	Text
ENCODED	AudiolInstance.MomentumInstance.ENCODED	Number
INSTANCE_LABEL	AudiolInstance.MomentumInstance.INSTANCE_LABEL	Text
INSTANCE_STATUS	AudiolInstance.MomentumInstance.INSTANCE_STATUS	Number
LAST_AIRED_DATE	AudiolInstance.MomentumInstance.LAST_AIRED_DATE	Date
LAST_USED_DATE	AudiolInstance.MomentumInstance.LAST_USED_DATE	Date
LONG_FILE_ID	AudiolInstance.MomentumInstance.LONG_FILE_ID	Text
LTC	AudiolInstance.MomentumInstance.LTC	Text
MAT_ID	AudiolInstance.MomentumInstance.MAT_ID	Text
ProcAmp	AudiolInstance.MomentumInstance.ProcAmp	Text
QUALITY_CHECK	AudiolInstance.MomentumInstance.QUALITY_CHECK	Date
RECORDED_DATE	AudiolInstance.MomentumInstance.RECORDED_DATE	Date
RUN_ON	AudiolInstance.MomentumInstance.RUN_ON	Number
SCAN	AudiolInstance.MomentumInstance.SCAN	Number
SOURCE_DEVICE_ID	AudiolInstance.MomentumInstance.SOURCE_DEVICE_ID	Text
TECHNICAL_COMMENT	AudiolInstance.MomentumInstance.TECHNICAL_COMMENT	Text
TIMECODE_IN	AudiolInstance.MomentumInstance.TIMECODE_IN	Text
TIMECODE_OUT	AudiolInstance.MomentumInstance.TIMECODE_OUT	Text
TV_STD	AudiolInstance.MomentumInstance.TV_STD	Number
USAGE_COUNT	AudiolInstance.MomentumInstance.USAGE_COUNT	Number
VIDEO_COMPRESSION	AudiolInstance.MomentumInstance.VIDEO_COMPRESSION	Number

Name	Metadata ID	Data Type
VITC	AudioInstance.MomentumInstance.VITC	Text
<b>AudioTrack</b>		
Channels	AudioTrack.AtrackInstance.CHANNELS	Number
Codec name	AudioTrack.AtrackInstance.CODECNAME	Text
DURATION	AudioTrack.AtrackInstance.DURATION	Timecode
LANGUAGE	AudioTrack.AtrackInstance.LANGUAGE	Text
Path	AudioTrack.AtrackInstance.PATH	Text
POSITION	AudioTrack.AtrackInstance.POSITION	Number
QCComment	AudioTrack.AtrackInstance.QCCOMMENT	Text
QCStatus	AudioTrack.AtrackInstance.QCSTATUS	Text
Sample rate	AudioTrack.AtrackInstance.SAMPLERATE	Number
Sample size	AudioTrack.AtrackInstance.SAMPLESIZE	Number
<b>Basicmetadata</b>		
	Basicmetadata.Demo.TipoStringa	Text
	Basicmetadata.Topic.TipoStringa	Text
<b>Commercial</b>		
CAMPAIGN	Commercial.Commercial.CAMPAIGN	Text
ORIG_LANGUAGE	Commercial.Commercial.ORIG_LANGUAGE	Text
PRODUCT	Commercial.Commercial.PRODUCT	Text
PROD_YEAR	Commercial.Commercial.PROD_YEAR	Number
RIGHTS HOLDER	Commercial.Commercial.RIGHTS HOLDER	Text
SCHEDULING_REF_1	Commercial.Commercial.SCHEDULING_REF_1	Text
SCHEDULING_REF_2	Commercial.Commercial.SCHEDULING_REF_2	Text
SUPPLIER	Commercial.Commercial.SUPPLIER	Text
<b>Defect</b>		
defect_code	Defect.Defect.DEFECT_CODE	Text
<b>Delivery</b>		
DELIVERYDATE	Delivery.Delivery.DELIVERYDATE	Date
ENTRYPOINT	Delivery.Delivery.ENTRYPOINT	Text
METAXML	Delivery.Delivery.METAXML	Clob
NOTE	Delivery.Delivery.NOTE	Clob
ORIGDATE	Delivery.Delivery.ORIGDATE	Date
ROLE	Delivery.Delivery.ROLE	Text
STARTED	Delivery.Delivery.STARTED	Number

Standard Metadata Fields

Name	Metadata ID	Data Type
<b>DIVInstance</b>		
ARCHIVE_DATE	DivalInstance.DivalInstance.ARCHIVE_DATE	Date
CATEGORY	DivalInstance.DivalInstance.CATEGORY	Text
MEDIA	DivalInstance.DivalInstance.MEDIA	Text
OBJECT_FILE_SIZE	DivalInstance.DivalInstance.OBJECT_FILE_SIZE	Number
OBJECT_NAME	DivalInstance.DivalInstance.OBJECT_NAME	Text
SOURCE	DivalInstance.DivalInstance.SOURCE	Text
SOURCE_PATH	DivalInstance.DivalInstance.SOURCE_PATH	Text
<b>FlashnetInstance</b>		
GUID	FlashnetInstance.FlashnetInstance.GUID	Text
<b>ImageInstance</b>		
CODECNAME	ImageInstance.ImageInstance.CODECNAME	Text
HEIGHT	ImageInstance.ImageInstance.HEIGHT	Number
SAMPLESIZE	ImageInstance.ImageInstance.SAMPLESIZE	Text
WIDTH	ImageInstance.ImageInstance.WIDTH	Number
ARCHIVE	ImageInstance.MomentumCore.ARCHIVE	Text
ASPECT_RATIO	ImageInstance.MomentumCore.ASPECT_RATIO	Text
ASSIGNED_CHANNELS	ImageInstance.MomentumCore.ASSIGNED_CHANNELS	Text
CATEGORY_ID	ImageInstance.MomentumCore.CATEGORY_ID	Text
DURATION	ImageInstance.MomentumCore.DURATION	Text
EPISODE_NUMBER	ImageInstance.MomentumCore.EPISODE_NUMBER	Number
FILED_DATE	ImageInstance.MomentumCore.FILED_DATE	Date
FRAMERATE	ImageInstance.MomentumCore.FRAMERATE	Number
MATERIAL_TYPE	ImageInstance.MomentumCore.MATERIAL_TYPE	Text
MORPHEUS_ID	ImageInstance.MomentumCore.MORPHEUS_ID	Text
NOTES	ImageInstance.MomentumCore.NOTES	Text
NUMBER_OF_TAPES	ImageInstance.MomentumCore.NUMBER_OF_TAPES	Number
ON_AIR_DURATION	ImageInstance.MomentumCore.ON_AIR_DURATION	Text
OWNER_ID	ImageInstance.MomentumCore.OWNER_ID	Number
PURGE_DATE	ImageInstance.MomentumCore.PURGE_DATE	Date
REQUIRED_DATE	ImageInstance.MomentumCore.REQUIRED_DATE	Date
REVIEWED_BY	ImageInstance.MomentumCore.REVIEWED_BY	Text
RUN_ON_DURATION	ImageInstance.MomentumCore.RUN_ON_DURATION	Text
SCAVENGE	ImageInstance.MomentumCore.SCAVENGE	Number
SOM	ImageInstance.MomentumCore.SOM	Text



Name	Metadata ID	Data Type
STATUS	ImageInstance.MomentumCore.STATUS	Text
SUBTITLE_REF	ImageInstance.MomentumCore.SUBTITLE_REF	Text
TITLE	ImageInstance.MomentumCore.TITLE	Text
AUDIO_COMPRESSION	ImageInstance.MomentumInstance.AUDIO_COMPRESSION	Number
AUDIO_MODE	ImageInstance.MomentumInstance.AUDIO_MODE	Text
AUDIO_SAMPLE_RATE	ImageInstance.MomentumInstance.AUDIO_SAMPLE_RATE	Number
AUDIO_SHUFFLING_ID	ImageInstance.MomentumInstance.AUDIO_SHUFFLING_ID	Text
AUTO_QC	ImageInstance.MomentumInstance.AUTO_QC	Date
CLIP_REF	ImageInstance.MomentumInstance.CLIP_REF	Number
DELETE_AFTER	ImageInstance.MomentumInstance.DELETE_AFTER	Date
DEVICE_ID	ImageInstance.MomentumInstance.DEVICE_ID	Text
ENCODED	ImageInstance.MomentumInstance.ENCODED	Number
INSTANCE_LABEL	ImageInstance.MomentumInstance.INSTANCE_LABEL	Text
INSTANCE_STATUS	ImageInstance.MomentumInstance.INSTANCE_STATUS	Number
LAST_AIRED_DATE	ImageInstance.MomentumInstance.LAST_AIRED_DATE	Date
LAST_USED_DATE	ImageInstance.MomentumInstance.LAST_USED_DATE	Date
LONG_FILE_ID	ImageInstance.MomentumInstance.LONG_FILE_ID	Text
LTC	ImageInstance.MomentumInstance.LTC	Text
MAT_ID	ImageInstance.MomentumInstance.MAT_ID	Text
ProcAmp	ImageInstance.MomentumInstance.ProcAmp	Text
QUALITY_CHECK	ImageInstance.MomentumInstance.QUALITY_CHECK	Date
RECORDED_DATE	ImageInstance.MomentumInstance.RECORDED_DATE	Date
RUN_ON	ImageInstance.MomentumInstance.RUN_ON	Number
SCAN	ImageInstance.MomentumInstance.SCAN	Number
SOURCE_DEVICE_ID	ImageInstance.MomentumInstance.SOURCE_DEVICE_ID	Text
TECHNICAL_COMMENT	ImageInstance.MomentumInstance.TECHNICAL_COMMENT	Text
TIMECODE_IN	ImageInstance.MomentumInstance.TIMECODE_IN	Text
TIMECODE_OUT	ImageInstance.MomentumInstance.TIMECODE_OUT	Text
TV_STD	ImageInstance.MomentumInstance.TV_STD	Number
USAGE_COUNT	ImageInstance.MomentumInstance.USAGE_COUNT	Number
VIDEO_COMPRESSION	ImageInstance.MomentumInstance.VIDEO_COMPRESSION	Number
VITC	ImageInstance.MomentumInstance.VITC	Text
<b>Instance</b>		
On Air Date	Core.OnAirDate	Date

## Standard Metadata Fields

Name	Metadata ID	Data Type
LOCATION	Core.Path	Text
Qc Errors	Core.QCErrors	Number
Qc Infos	Core.QCInfos	Number
Qc Report	Core.QCReport	Text
Qc Status	Core.QCStatus	Text
Qc Warnings	Core.QCWarnings	Number
Type	Core.Type	Text
ARCHIVE_DATE	Instance.Archive.ARCHIVE_DATE	Date
BUILDING	Instance.Archive.BUILDING	Text
FLOOR	Instance.Archive.FLOOR	Text
NOTES	Instance.Archive.NOTES	Text
PROAVID	Instance.Archive.PROAVID	Text
RACK	Instance.Archive.RACK	Text
ROOM	Instance.Archive.ROOM	Text
SHELF	Instance.Archive.SHELF	Text
AURORA_ERROR_RESUME	Instance.Generic Instance.AURORA_ERROR_RESUME	Clob
Label	Instance.Generic Instance.LABEL	Text
INSTANCE_GENRE	Instance.InstanceGenre	Text
INSTANCE_STATUS	Instance.InstanceStatus	Number
<b>Junction</b>		
PRES_EVENT	Junction.Junction.PRES_EVENT	Text
SCHEDULING_REF_1	Junction.Junction.SCHEDULING_REF_1	Text
SCHEDULING_REF_2	Junction.Junction.SCHEDULING_REF_2	Text
<b>KeySegment</b>		
DURATION	KeySegment.Clip.DURATION	Number
INSTANCELABEL	KeySegment.Clip.INSTANCELABEL	Text
Timecode IN	KeySegment.Clip.TIMECODEIN	Timecode
<b>MaterialInfo</b>		
Created By	Core.CreatedBy	User
Creation Date	Core.CreationDate	Date
Description	Core.Description	Text
Genre	Core.Genre	Text
Keywords	Core.Keywords	Text
Preferred Page View	Core.PreferredPageView	Text
Title	Core.Title	Text

Name	Metadata ID	Data Type
<b>Media</b>		
AR	Core.AR	Text
Bit rate	Core.BitRate	Text
Channels	Core.Channels	Number
Codec name	Core.CodecName	Text
Duration	Core.Duration	Text
Essence type	Core.EssenceType	Text
Frame rate	Core.FrameRate	Text
Height	Core.Height	Number
ISDROPFrames	Core.IsDropFrame	Number
Sample rate	Core.SampleRate	Number
Sample size	Core.SampleSize	Number
Timecode IN	Core.TimecodeOut	Timecode
Width	Core.Width	Number
FILETYPE	Media.File.FILETYPE	Text
AFD	Media.MMIInstance.AFD	Text
<b>MomentumCore</b>		
ARCHIVE	MomentumCore.ARCHIVE	Text
ASPECT_RATIO	MomentumCore.ASPECT_RATIO	Text
ASSIGNED_CHANNELS	MomentumCore.ASSIGNED_CHANNELS	Text
CATEGORY_ID	MomentumCore.CATEGORY_ID	Text
DURATION	MomentumCore.DURATION	Text
EPISODE_NUMBER	MomentumCore.EPISODE_NUMBER	Number
FILED_DATE	MomentumCore.FILED_DATE	Date
FRAMERATE	MomentumCore.FRAMERATE	Number
XML	MomentumCore.KSStore.XML	Clob
MATERIAL_TYPE	MomentumCore.MATERIAL_TYPE	Text
MORPHEUS_ID	MomentumCore.MORPHEUS_ID	Text
NOTES	MomentumCore.MomentumCore.NOTES	Text
NUMBER_OF_TAPES	MomentumCore.MomentumCore.NUMBER_OF_TAPES	Number
ON_AIR_DURATION	MomentumCore.MomentumCore.ON_AIR_DURATION	Text
OWNER_ID	MomentumCore.MomentumCore.OWNER_ID	Number
PURGE_DATE	MomentumCore.MomentumCore.PURGE_DATE	Date
REQUIRED_DATE	MomentumCore.MomentumCore.REQUIRED_DATE	Date
REVIEWED_BY	MomentumCore.MomentumCore.REVIEWED_BY	Text

## Standard Metadata Fields

Name	Metadata ID	Data Type
RUN_ON_DURATION	MomentumCore.MomentumCore.RUN_ON_DURATION	Text
SCAVENGE	MomentumCore.MomentumCore.SCAVENGE	Number
SOM	MomentumCore.MomentumCore.SOM	Text
STATUS	MomentumCore.MomentumCore.STATUS	Text
SUBTITLE_REF	MomentumCore.MomentumCore.SUBTITLE_REF	Text
TITLE	MomentumCore.MomentumCore.TITLE	Text
BESCHREIBUNG	MomentumCore.TPCCustomDef.BESCHREIBUNG	Clob
CATEGORY	MomentumCore.TPCCustomDef.CATEGORY	Text
CLIP_FILE_DATE	MomentumCore.TPCCustomDef.CLIP_FILE_DATE	Date
DREHDATUM	MomentumCore.TPCCustomDef.DREHDATUM	Date
EBU_INHALT	MomentumCore.TPCCustomDef.EBU_INHALT	Text
EBU_SHOTLISTE	MomentumCore.TPCCustomDef.EBU_SHOTLISTE	Text
FORMAT	MomentumCore.TPCCustomDef.FORMAT	Text
KAMERA	MomentumCore.TPCCustomDef.KAMERA	Text
KOMMENTAR	MomentumCore.TPCCustomDef.KOMMENTAR	Text
ORIGINAL_ID	MomentumCore.TPCCustomDef.ORIGINAL_ID	Text
OWNER	MomentumCore.TPCCustomDef.OWNER	Text
QUELLE	MomentumCore.TPCCustomDef.QUELLE	Text
RECHTE	MomentumCore.TPCCustomDef.RECHTE	Text
REDAKTOR	MomentumCore.TPCCustomDef.REDAKTOR	Text
SCHNITT	MomentumCore.TPCCustomDef.SCHNITT	Text
AUDIOFORMATS	MomentumCore.sQTitle.AUDIOFORMATS	Text
CATEGORY	MomentumCore.sQTitle.CATEGORY	Text
CLIPGUID	MomentumCore.sQTitle.CLIPGUID	Text
CLIPID	MomentumCore.sQTitle.CLIPID	Number
CLIPNUMBER	MomentumCore.sQTitle.CLIPNUMBER	Number
CLONECLIPID	MomentumCore.sQTitle.CLONECLIPID	Number
CLONEZONE	MomentumCore.sQTitle.CLONEZONE	Number
COMPLETED	MomentumCore.sQTitle.COMPLETED	Date
CREATED	MomentumCore.sQTitle.CREATED	Date
DESTINATION	MomentumCore.sQTitle.DESTINATION	Text
DIVISION	MomentumCore.sQTitle.DIVISION	Text

Name	Metadata ID	Data Type
FRAMES	MomentumCore.sQTitle.FRAMES	Number
HASEDITDATA	MomentumCore.sQTitle.HASEDITDATA	Boolean
INPOINT	MomentumCore.sQTitle.INPOINT	Number
JOBID	MomentumCore.sQTitle.JOBID	Number
MODIFIED	MomentumCore.sQTitle.MODIFIED	Date
NUMAUDTRACKS	MomentumCore.sQTitle.NUMAUDTRACKS	Number
NUMVIDTRACKS	MomentumCore.sQTitle.NUMVIDTRACKS	Number
OUTPOINT	MomentumCore.sQTitle.OUTPOINT	Number
OWNER	MomentumCore.sQTitle.OWNER	Text
PLACEHOLDER	MomentumCore.sQTitle.PLACEHOLDER	Boolean
PLAYASPECT	MomentumCore.sQTitle.PLAYASPECT	Text
PLAYMODE	MomentumCore.sQTitle.PLAYMODE	Text
POOLID	MomentumCore.sQTitle.POOLID	Text
PUBLISHEDBY	MomentumCore.sQTitle.PUBLISHEDBY	Text
TAPE	MomentumCore.sQTitle.TAPE	Text
TEMPLATE	MomentumCore.sQTitle.TEMPLATE	Number
UNEDITED	MomentumCore.sQTitle.UNEDITED	Number
VDCPID	MomentumCore.sQTitle.VDCPID	Text
VIDEOFORMATS	MomentumCore.sQTitle.VIDEOFORMATS	Text
ZONEID	MomentumCore.sQTitle.ZONEID	Text
<b>MomentumInstance</b>		
AUDIO_COMPRESSION	MomentumInstance.AUDIO_COMPRESSION	Number
AUDIO_MODE	MomentumInstance.AUDIO_MODE	Text
AUDIO_SAMPLE_RATE	MomentumInstance.AUDIO_SAMPLE_RATE	Number
AUDIO_SHUFFLING_ID	MomentumInstance.AUDIO_SHUFFLING_ID	Text
AUTO_QC	MomentumInstance.AUTO_QC	Date
CLIP_REF	MomentumInstance.CLIP_REF	Number
DELETE_AFTER	MomentumInstance.DELETE_AFTER	Date
DEVICE_ID	MomentumInstance.DEVICE_ID	Text
ENCODED	MomentumInstance.ENCODED	Number
INSTANCE_LABEL	MomentumInstance.INSTANCE_LABEL	Text
INSTANCE_STATUS	MomentumInstance.INSTANCE_STATUS	Number
LAST_AIRED_DATE	MomentumInstance.LAST_AIRED_DATE	Date
LAST_USED_DATE	MomentumInstance.LAST_USED_DATE	Date

Standard Metadata Fields

Name	Metadata ID	Data Type
LONG_FILE_ID	MomentumInstance.LONG_FILE_ID	Text
LTC	MomentumInstance.LTC	Text
MAT_ID	MomentumInstance.MAT_ID	Text
ARCHIVE	MomentumInstance.MomentumCore.ARCHIVE	Text
ASPECT_RATIO	MomentumInstance.MomentumCore.ASPECT_RATIO	Text
ASSIGNED_CHANNELS	MomentumInstance.MomentumCore.ASSIGNED_CHANNELS	Text
CATEGORY_ID	MomentumInstance.MomentumCore.CATEGORY_ID	Text
DURATION	MomentumInstance.MomentumCore.DURATION	Text
EPISODE_NUMBER	MomentumInstance.MomentumCore.EPISODE_NUMBER	Number
FILED_DATE	MomentumInstance.MomentumCore.FILED_DATE	Date
FRAMERATE	MomentumInstance.MomentumCore.FRAMERATE	Number
MATERIAL_TYPE	MomentumInstance.MomentumCore.MATERIAL_TYPE	Text
MORPHEUS_ID	MomentumInstance.MomentumCore.MORPHEUS_ID	Text
NOTES	MomentumInstance.MomentumCore.NOTES	Text
NUMBER_OF_TAPES	MomentumInstance.MomentumCore.NUMBER_OF_TAPES	Number
ON_AIR_DURATION	MomentumInstance.MomentumCore.ON_AIR_DURATION	Text
OWNER_ID	MomentumInstance.MomentumCore.OWNER_ID	Number
PURGE_DATE	MomentumInstance.MomentumCore.PURGE_DATE	Date
REQUIRED_DATE	MomentumInstance.MomentumCore.REQUIRED_DATE	Date
REVIEWED_BY	MomentumInstance.MomentumCore.REVIEWED_BY	Text
RUN_ON_DURATION	MomentumInstance.MomentumCore.RUN_ON_DURATION	Text
SCAVENGE	MomentumInstance.MomentumCore.SCAVENGE	Number
SOM	MomentumInstance.MomentumCore.SOM	Text
STATUS	MomentumInstance.MomentumCore.STATUS	Text
SUBTITLE_REF	MomentumInstance.MomentumCore.SUBTITLE_REF	Text
TITLE	MomentumInstance.MomentumCore.TITLE	Text
ProcAmp	MomentumInstance.MomentumInstance.ProcAmp	Text
QUALITY_CHECK	MomentumInstance.MomentumInstance.QUALITY_CHECK	Date
RECORDED_DATE	MomentumInstance.MomentumInstance.RECORDED_DATE	Date
RUN_ON	MomentumInstance.MomentumInstance.RUN_ON	Number
SCAN	MomentumInstance.MomentumInstance.SCAN	Number
SOURCE_DEVICE_ID	MomentumInstance.MomentumInstance.SOURCE_DEVICE_ID	Text

Name	Metadata ID	Data Type
TECHNICAL_COMMENT	MomentumInstance.MomentumInstance.TECHNICAL_COMMENT	Text
TIMECODE_IN	MomentumInstance.MomentumInstance.TIMECODE_IN	Text
TIMECODE_OUT	MomentumInstance.MomentumInstance.TIMECODE_OUT	Text
TV_STD	MomentumInstance.MomentumInstance.TV_STD	Number
USAGE_COUNT	MomentumInstance.MomentumInstance.USAGE_COUNT	Number
VIDEO_COMPRESSION	MomentumInstance.MomentumInstance.VIDEO_COMPRESSION	Number
VITC	MomentumInstance.MomentumInstance.VITC	Text
<b>Movie</b>		
CLASSIFICATION	Movie.Movie.CLASSIFICATION	Text
EPG_LONG	Movie.Movie.EPG_LONG	Text
EPG_SHORT	Movie.Movie.EPG_SHORT	Text
LANGUAGE	Movie.Movie.LANGUAGE	Text
ORIG_LANGUAGE	Movie.Movie.ORIG_LANGUAGE	Text
PART_NUMBER	Movie.Movie.PART_NUMBER	Number
PROD_YEAR	Movie.Movie.PROD_YEAR	Number
RIGHTS HOLDER	Movie.Movie.RIGHTS HOLDER	Text
SCHEDULING_REF_1	Movie.Movie.SCHEDULING_REF_1	Text
SCHEDULING_REF_2	Movie.Movie.SCHEDULING_REF_2	Text
SEQUENCE_NUMBER	Movie.Movie.SEQUENCE_NUMBER	Text
SEX	Movie.Movie.SEX	Text
SUPPLIER	Movie.Movie.SUPPLIER	Text
SYNOPSIS_LONG	Movie.Movie.SYNOPSIS_LONG	Text
SYNOPSIS_SHORT	Movie.Movie.SYNOPSIS_SHORT	Text
THEME	Movie.Movie.THEME	Text
TOTAL_PARTS_SEGMENTS	Movie.Movie.TOTAL_PARTS_SEGMENTS	Number
VERSION_TITLE	Movie.Movie.VERSION_TITLE	Text
VIOLENCE	Movie.Movie.VIOLENCE	Text
<b>Programme</b>		
CLASSIFICATION	Programme.Programme.CLASSIFICATION	Text
EPG_LONG	Programme.Programme.EPG_LONG	Text
EPG_SHORT	Programme.Programme.EPG_SHORT	Text
EPISODE_NUMBER	Programme.Programme.EPISODE_NUMBER	Number
EPISODE_TITLE	Programme.Programme.EPISODE_TITLE	Text
LANGUAGE	Programme.Programme.LANGUAGE	Text

Standard Metadata Fields

Name	Metadata ID	Data Type
ORIG_LANGUAGE	Programme.Programme.ORIG_LANGUAGE	Text
PART_NUMBER	Programme.Programme.PART_NUMBER	Number
PROD_YEAR	Programme.Programme.PROD_YEAR	Number
RIGHTS HOLDER	Programme.Programme.RIGHTS HOLDER	Text
SCHEDULING_REF_1	Programme.Programme.SCHEDULING_REF_1	Text
SCHEDULING_REF_2	Programme.Programme.SCHEDULING_REF_2	Text
SEQUENCE_NUMBER	Programme.Programme.SEQUENCE_NUMBER	Text
SERIES	Programme.Programme.SERIES	Text
SERIES_NUMBER	Programme.Programme.SERIES_NUMBER	Number
SERIES_TITLE	Programme.Programme.SERIES_TITLE	Text
SEX	Programme.Programme.SEX	Text
SUPPLIER	Programme.Programme.SUPPLIER	Text
SYNOPSIS_LONG	Programme.Programme.SYNOPSIS_LONG	Text
SYNOPSIS_SHORT	Programme.Programme.SYNOPSIS_SHORT	Text
THEME	Programme.Programme.THEME	Text
TOTAL_EPISODES	Programme.Programme.TOTAL_EPISODES	Number
TOTAL_PARTS_SEGMENTS	Programme.Programme.TOTAL_PARTS_SEGMENTS	Number
VERSION_TITLE	Programme.Programme.VERSION_TITLE	Text
VIOLENCE	Programme.Programme.VIOLENCE	Text
<b>Promo</b>		
AUTO_TEXT_1	Promo.Promo.AUTO_TEXT_1	Text
AUTO_TEXT_2	Promo.Promo.AUTO_TEXT_2	Text
AUTO_TEXT_3	Promo.Promo.AUTO_TEXT_3	Text
AUTO_TEXT_4	Promo.Promo.AUTO_TEXT_4	Text
AUTO_TEXT_5	Promo.Promo.AUTO_TEXT_5	Text
EPISODE_TITLE	Promo.Promo.EPISODE_TITLE	Text
PROD_YEAR	Promo.Promo.PROD_YEAR	Number
SCHEDULING_REF_1	Promo.Promo.SCHEDULING_REF_1	Text
SCHEDULING_REF_2	Promo.Promo.SCHEDULING_REF_2	Text
SERIES_TITLE	Promo.Promo.SERIES_TITLE	Text
VERSION	Promo.Promo.VERSION	Text
<b>sQInstance</b>		
AudioFormats	SQLInstance.SQLInstance.AUDIOFORMATS	Text
Category	SQLInstance.SQLInstance.CATEGORY	Text
ClipGUID	SQLInstance.SQLInstance.CLIPGUID	Text



Name	Metadata ID	Data Type
ClipId	SQInstance.SQInstance.CLIPID	Number
ClipNumber	SQInstance.SQInstance.CLIPNUMBER	Number
CloneClipID	SQInstance.SQInstance.CLONECLIPID	Number
CloneZone	SQInstance.SQInstance.CLONEZONE	Number
Completed	SQInstance.SQInstance.COMPLETED	Date
Created	SQInstance.SQInstance.CREATED	Date
Destination	SQInstance.SQInstance.DESTINATION	Timecode
Division	SQInstance.SQInstance.DIVISION	Text
Expiry	SQInstance.SQInstance.EXPIRY	Date
Frames	SQInstance.SQInstance.FRAMES	Number
HasEditData	SQInstance.SQInstance.HASEDITDATA	Boolean
Inpoint	SQInstance.SQInstance.INPOINT	Number
JobID	SQInstance.SQInstance.JOBID	Number
Modified	SQInstance.SQInstance.MODIFIED	Date
NumAudTracks	SQInstance.SQInstance.NUMAUDTRACKS	Number
NumVidTracks	SQInstance.SQInstance.NUMVIDTRACKS	Number
Outpoint	SQInstance.SQInstance.OUTPOINT	Number
Owner	SQInstance.SQInstance.OWNER	Text
PlaceHolder	SQInstance.SQInstance.PLACEHOLDER	Boolean
PlayAspect	SQInstance.SQInstance.PLAYASPECT	Text
PlayMode	SQInstance.SQInstance.PLAYMODE	Text
PoolId	SQInstance.SQInstance.POOLID	Text
PublishedBy	SQInstance.SQInstance.PUBLISHEDBY	Text
Tape	SQInstance.SQInstance.TAPE	Text
Template	SQInstance.SQInstance.TEMPLATE	Number
UnEdited	SQInstance.SQInstance.UNEDITED	Number
VDCPID	SQInstance.SQInstance.VDCPID	Text
VideoFormats	SQInstance.SQInstance.VIDEOFORMATS	Text
ZonId	SQInstance.SQInstance.ZONEID	Text
OriginalOwner	SQInstance.TPCOwnerDetect.ORIGINALOWNER	Text
OwnerChngCount	SQInstance.TPCOwnerDetect.OWNERCHNGCOUNT	Number
<b>SocialInstance</b>		
post_id	SocialInstance.SocialInstance.POST_ID	Text
post_text	SocialInstance.SocialInstance.POST_TEXT	Clob
<b>Sport</b>		

Standard Metadata Fields

Name	Metadata ID	Data Type
COMPETITION	Sport.Sport.COMPETITION	Text
KEYWORD1	Sport.Sport.KEYWORD1	Text
KEYWORD2	Sport.Sport.KEYWORD2	Text
KEYWORD3	Sport.Sport.KEYWORD3	Text
KEYWORD4	Sport.Sport.KEYWORD4	Text
KEYWORD5	Sport.Sport.KEYWORD5	Text
RESULT	Sport.Sport.RESULT	Text
SDATE	Sport.Sport.SDATE	Date
SPORT	Sport.Sport.SPORT	Text
SROUND	Sport.Sport.SROUND	Text
TEAM_A	Sport.Sport.TEAM_A	Text
TEAM_B	Sport.Sport.TEAM_B	Text
VENUE	Sport.Sport.VENUE	Text
<b>SubtitleInstance</b>		
FORMAT	Subtitle.Subtitle.FORMAT	
LANGUAGE	Subtitle.Subtitle.LANGUAGE	
TEXT	Subtitle.Subtitle.TEXT	
ARCHIVE	SubtitleInstance.MomentumCore.ARCHIVE	
ASPECT_RATIO	SubtitleInstance.MomentumCore.ASPECT_RATIO	
ASSIGNED_CHANNELS	SubtitleInstance.MomentumCore.ASSIGNED_CHANNELS	
CATEGORY_ID	SubtitleInstance.MomentumCore.CATEGORY_ID	
DURATION	SubtitleInstance.MomentumCore.DURATION	
EPISODE_NUMBER	SubtitleInstance.MomentumCore.EPISODE_NUMBER	
FILED_DATE	SubtitleInstance.MomentumCore.FILED_DATE	
FRAMERATE	SubtitleInstance.MomentumCore.FRAMERATE	
MATERIAL_TYPE	SubtitleInstance.MomentumCore.MATERIAL_TYPE	
MORPHEUS_ID	SubtitleInstance.MomentumCore.MORPHEUS_ID	
NOTES	SubtitleInstance.MomentumCore.NOTES	
NUMBER_OF_TAPES	SubtitleInstance.MomentumCore.NUMBER_OF_TAPES	
ON_AIR_DURATION	SubtitleInstance.MomentumCore.ON_AIR_DURATION	
OWNER_ID	SubtitleInstance.MomentumCore.OWNER_ID	
PURGE_DATE	SubtitleInstance.MomentumCore.PURGE_DATE	
REQUIRED_DATE	SubtitleInstance.MomentumCore.REQUIRED_DATE	
REVIEWED_BY	SubtitleInstance.MomentumCore.REVIEWED_BY	
RUN_ON_DURATION	SubtitleInstance.MomentumCore.RUN_ON_DURATION	

Name	Metadata ID	Data Type
SCAVENGE	SubtitleInstance.MomentumCore.SCAVENGE	
SOM	SubtitleInstance.MomentumCore.SOM	
STATUS	SubtitleInstance.MomentumCore.STATUS	
SUBTITLE_REF	SubtitleInstance.MomentumCore.SUBTITLE_REF	
TITLE	SubtitleInstance.MomentumCore.TITLE	
AUDIO_COMPRESSION	SubtitleInstance.MomentumInstance.AUDIO_COMPRESSION	
AUDIO_MODE	SubtitleInstance.MomentumInstance.AUDIO_MODE	
AUDIO_SAMPLE_RATE	SubtitleInstance.MomentumInstance.AUDIO_SAMPLE_RATE	
AUDIO_SHUFFLING_ID	SubtitleInstance.MomentumInstance.AUDIO_SHUFFLING_ID	
AUTO_QC	SubtitleInstance.MomentumInstance.AUTO_QC	
CLIP_REF	SubtitleInstance.MomentumInstance.CLIP_REF	
DELETE_AFTER	SubtitleInstance.MomentumInstance.DELETE_AFTER	
DEVICE_ID	SubtitleInstance.MomentumInstance.DEVICE_ID	
ENCODED	SubtitleInstance.MomentumInstance.ENCODED	
INSTANCE_LABEL	SubtitleInstance.MomentumInstance.INSTANCE_LABEL	
INSTANCE_STATUS	SubtitleInstance.MomentumInstance.INSTANCE_STATUS	
LAST_AIRED_DATE	SubtitleInstance.MomentumInstance.LAST_AIRED_DATE	
LAST_USED_DATE	SubtitleInstance.MomentumInstance.LAST_USED_DATE	
LONG_FILE_ID	SubtitleInstance.MomentumInstance.LONG_FILE_ID	
LTC	SubtitleInstance.MomentumInstance.LTC	
MAT_ID	SubtitleInstance.MomentumInstance.MAT_ID	
ProcAmp	SubtitleInstance.MomentumInstance.ProcAmp	
QUALITY_CHECK	SubtitleInstance.MomentumInstance.QUALITY_CHECK	
RECORDED_DATE	SubtitleInstance.MomentumInstance.RECORDED_DATE	
RUN_ON	SubtitleInstance.MomentumInstance.RUN_ON	
SCAN	SubtitleInstance.MomentumInstance.SCAN	
SOURCE_DEVICE_ID	SubtitleInstance.MomentumInstance.SOURCE_DEVICE_ID	
TECHNICAL_COMMENT	SubtitleInstance.MomentumInstance.TECHNICAL_COMMENT	
TIMECODE_IN	SubtitleInstance.MomentumInstance.TIMECODE_IN	
TIMECODE_OUT	SubtitleInstance.MomentumInstance.TIMECODE_OUT	
TV_STD	SubtitleInstance.MomentumInstance.TV_STD	
USAGE_COUNT	SubtitleInstance.MomentumInstance.USAGE_COUNT	

## Standard Metadata Fields

Name	Metadata ID	Data Type
VIDEO_COMPRESSION	SubtitleInstance.MomentumInstance.VIDEO_COMPRESSION	
VITC	SubtitleInstance.MomentumInstance.VITC	
<b>Thumb</b>		
height	Thumb.Thumb.HEIGHT	Number
offset	Thumb.Thumb.OFFSET	Number
path	Thumb.Thumb.PATH	Text
width	Thumb.Thumb.WIDTH	Number
<b>TimeLine</b>		
EdlContent	TimeLine.Editlist.Content	Clob
FRAMERATE	TimeLine.Editlist.FRAMERATE	Text
ISDROPPFRAME	TimeLine.Editlist.ISDROPPFRAME	Number
<b>WJZ</b>		
BROADCASTVIDEOFORMAT	WJZ.WJZ.BROADCASTVIDEOFORMAT	Text
EXPIREDDATE	WJZ.WJZ.EXPIREDDATE	Date
HASCONTENT	WJZ.WJZ.HASCONTENT	Boolean
IMPORTSTATUS	WJZ.WJZ.IMPORTSTATUS	Text
ISOFFLINE	WJZ.WJZ.ISOFFLINE	Boolean
ISPROTECTED	WJZ.WJZ.ISPROTECTED	Boolean



## Providing Information to Grass Valley

If you experience any technical or operational difficulties with a Grass Valley product please do not hesitate to contact us to request assistance.

There is a lot of information you can give us that will enable us to diagnose your problem swiftly. Please read the following guidelines, as these suggestions will help us to help you.

### Basic Information

- **For Units:** Provide the exact product Model, unit Serial Number and Software Version information.

### Software Application

- **Inputs:** Provide full details of the Input Signals being used including any references, etc., and where they are being generated.
- **Outputs:** Provide full details of the Output Signals required and how they are being monitored.
- **System:** Provide a brief description of the system in which your equipment is currently being used.

### Your Contact Details

In addition to the above, remember to provide us with your contact details to enable us to get in touch with you swiftly:

- Name(s)
- Telephone
- E-mail addresses
- Business address
- Contact Details

### Customer Support

For details of our Regional Customer Support Offices, please visit the Grass Valley website and navigate to Support/Contacts Support.

<http://www.grassvalley.com/support>

Customers with a support contract should call their personalized number, which can be found in the contract, and be ready to provide their contract number and details.





## **Grass Valley Technical Support**

For details of our Regional Customer Support Offices please visit the Grass Valley web site and navigate to: **Support > Customer Care.**

<https://grassvalley.com/support>

Customers with a support contract should call their personalized number, which can be found in their contract, and be ready to provide their contract number and details.

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