MBG File User Guide

Version History

Date	Version	Release by	Reason for changes
15-08-2016	1.0	J Metcalf	Document originated (1st proposal)
20/09/2016	1.1	J Metcalf	Update for V2.2.3.2
22/01/2019	2.0	J Metcalf	GV rebrand and update for V4.0.0.20
30/03/2021	2.1	J Metcalf	Post-Belden Rebrand

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1. Definitions, Acronyms and Abbreviations

Table 1: Table of Terminology

Term	Definition
API	Application Programming Interface. An API specifies how some software components should interact with each other
FIMS	Framework for Interoperable Media Services. A framework of service definitions for implementing media related operations using a Service Orientated Architecture (SOA)
License file	Defines the quantity of products available
License Server	Manages product licenses
Locking code	Lock code based on specific locking criteria. GV File products are locked to host machine the sentinel service is installed on
MBG	Acronym for 'Media Biometric Generator'. An application that generates Media Biometric Fingerprints from video media.
Mongodb	Mongo Database: A Open Source database system, employed by MBG-FILE as a repository for Media Biometric fingerprints.
Profile	A Profile defines how a piece of media is processed / transformed / converted. **Default** profiles and **User** profiles are available.
REST	**Representational state transfer**. Rest is a simple way of sending and receiving data between client and server. A RESTful web service is a web API implemented using HTTP and REST principles. Request methods include GET, POST, PUT, DELETE
GV File Browser	A service within the MBG-FILE system that allows the User to easily browse to and select a source file or, browse to a destination folder
GV File Client	The User Interface for the **GV File** framework
GV File Node	Service which executes the jobs within the job queue. It performs all data processing (image/audio/metadata).
GV File Watcher	Service which monitors user specified watch folder and automatically adds them to the job queue. Monitoring can based on file system notifications or dedicated polling. The User specifies a Profile to be applied to each asset which is copied to watch folder and then writes the output fingerprint file to a specific Mongo Database.
GV File Server	The GV File application that orchestrates any GV File process.
GV File	The Snell OD name has been rebranded to GV File. There is no functional difference between GV File and Snell OD.
Watch Folder	A repository folder for source files, where the action of moving a file to the folder, will initiate an automated GV File process
Watch Folder Configuration	The process that is initiated when a source folder is placed in the associated Watch Folder. The **Watch Folder Configuration** will convert the source file using the associated Profile and will place the generated fingerprint into an associated

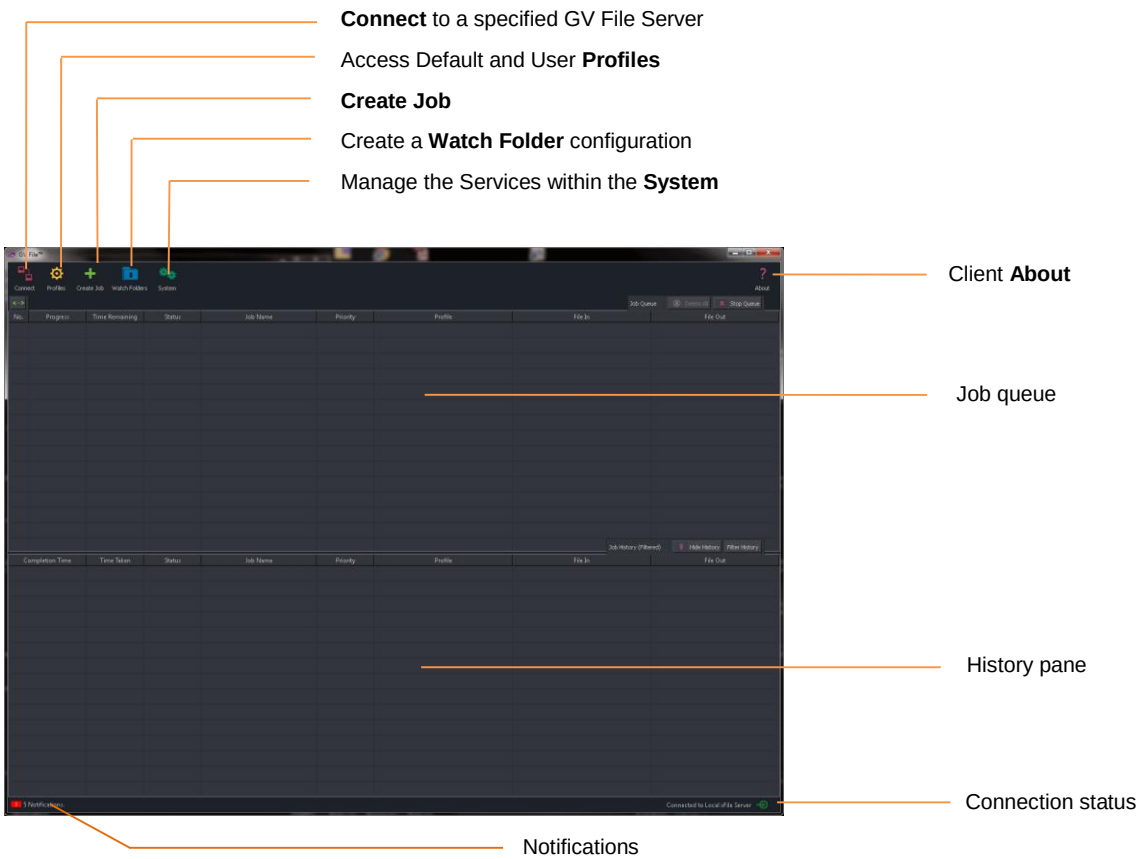
2. Overview

Using GV's unique technology, MBG (Media Biometrics Generator) File, enables the generation of Media Biometric signatures from file based assets. Newly created signatures are seamlessly ingested into the Media Biometrics Database for future use within a Media Biometrics Assurance Point bringing intelligent monitoring to any media production facility.

A revolution in production system efficiency, Media Biometrics provides assurance that the right media is in the right place at the right time. It can automatically detect and correct for Lip-sync issues and provide confidence monitoring without the need to analyse the actual media itself. Finally a robust, intelligent technology exists for truly automated monitoring by exception in complex media environments.

The control application for the GV File system is commonly referred to as the GV File Client. The Client can either be run locally on the GV File server, or can be run from a remote PC.

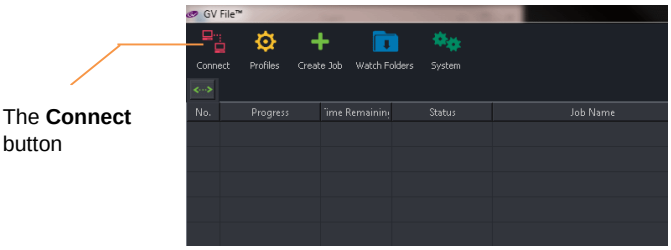
The GV File Client easily launched via the desktop icon, which is created as part of the installation process.



GV File Client Overview

The GV File Client is a generic control device for GV File products, which includes MBG File.

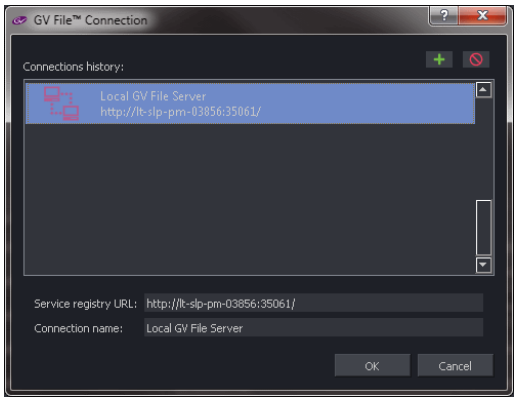
The **Connect** button is used to configure a connection to a specified GV File Server.



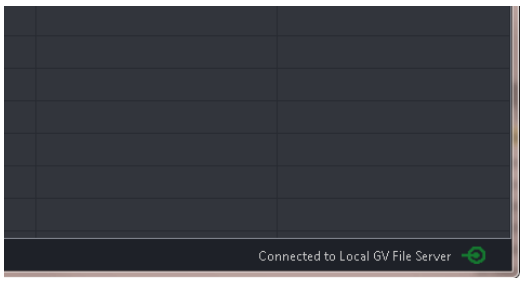
Selecting the **Connect** button will open the **GV File Connection** window. Here the connection of Client to the GV File Server can be configured.

Only one Server can be connected to, at any one time, but multiple Server configurations can be stored.

Note that multiple Clients may be run on a single work station and each may connect to different GV File Servers.



Confirmation that the GV File Client has successfully connected to the GV File Server, is shown at the bottom of the Client GUI:



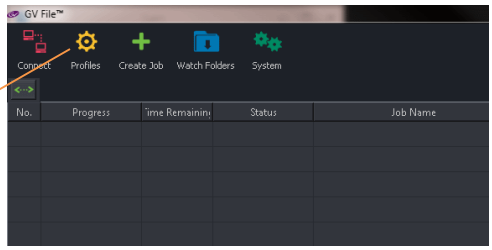
3. Profile Management

3.1 Introduction

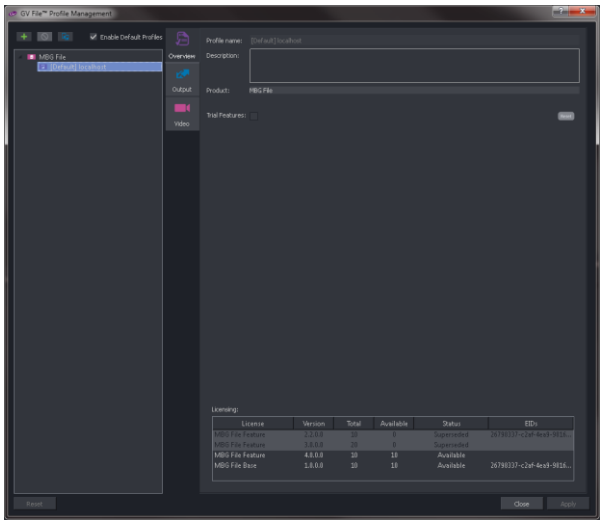
Profiles are used to control the process of generating Media Biometric Fingerprints.

The **Profile** button

The **Profiles** button

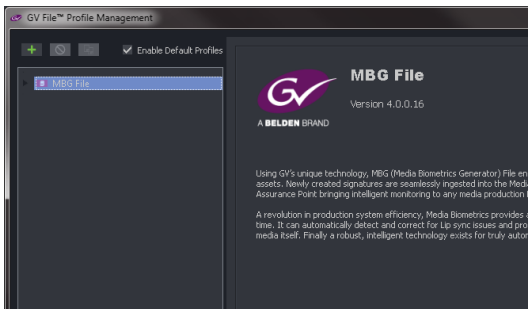


Selecting the **Profiles** button will open the **Profile Management** window.



The licensed products will be listed in the left hand pane.

Expanding the MBG File icon will reveal the MBG File Profiles.



Note – initially there will only be a single default Profile called: **[Default] localhost**

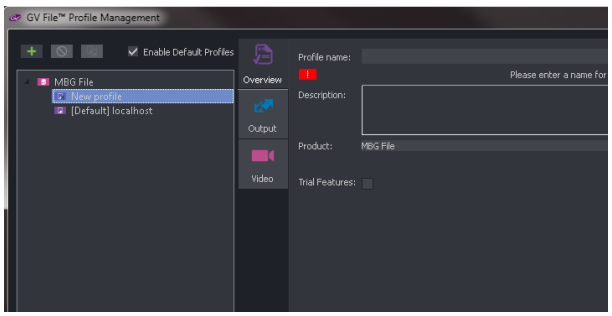
This default Profile will have all parameters set to default and will be writing Fingerprints to a BioBank located on the Localhost. In many circumstances, this default profile will be all that is needed.

3.2 Create a new Profile

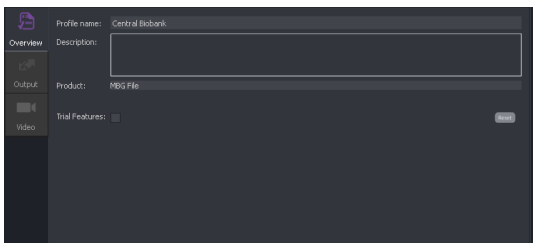
1. Select the MBG File Product in the left hand pane.

2. Select the **New Profile** icon

The **Profile Management** window will now be in a mode where it can be edited. All parameters will be at their default value.



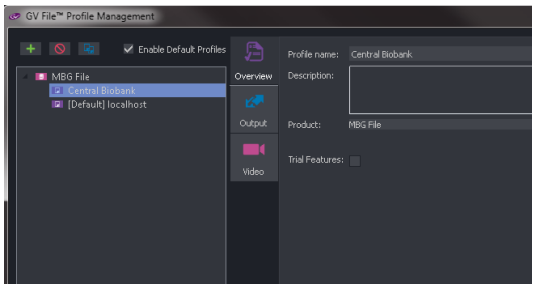
You will be prompted to give the new Profile a name. This can be anything the User chooses, but it is often useful for the Profile name to describe the properties of the Profile.



In this example the name of the Profile uses the name of the BioBank that the profile is writing to.

3. The Profile is now ready to be edited (editing is explained below – section 4: Managing Profiles). Once editing is complete, pressing the **Apply** button will complete the Profile building process.

   The new Profile will now appear alongside the Default Profile in the Client.

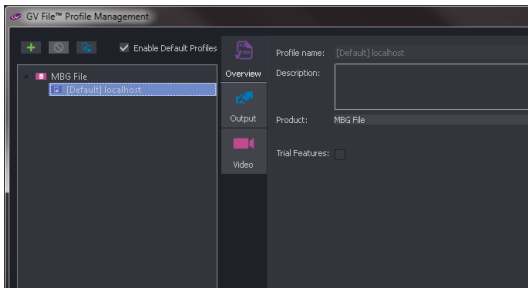


3.3 Copying an existing Profile

As an alternative to building a new Profile from scratch, the **Copy** feature may be used. This is usually a quicker method of producing the required Profile.

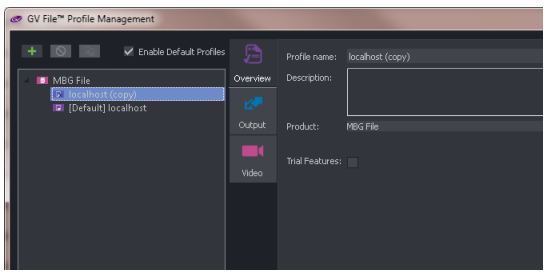
The following procedure explains how to copy and edit the Default Profile, although any existing Profile, be it Default or User, maybe copied and edited.

1. Click once on the Default Profile, to highlight it.

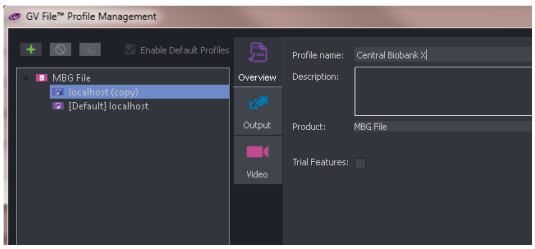


2. Click on the **Copy** symbol

   This will make a copy of the selected Profile. Note that the name of the Profile will now be appended with the word ‘copy’ in brackets. Also, note that the parameters within the Profile that the text is now white and can now be edited.

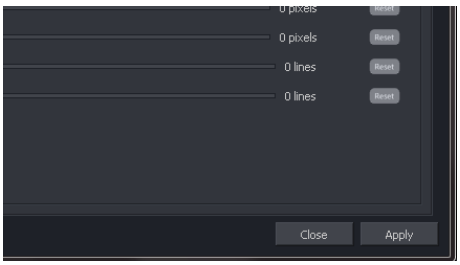


3. Now the copied Profile can be edited as required.

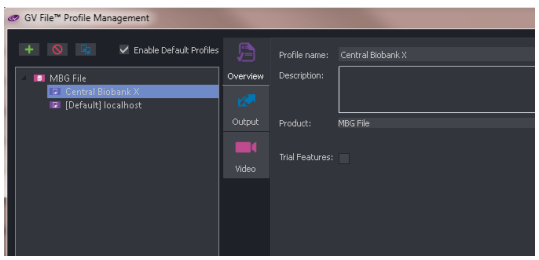


In this example the name has been edited to something meaningful.

4. When editing is complete, select **Apply** to save the new Profile.



5. The new user Profile will now appear along side the default Profile.

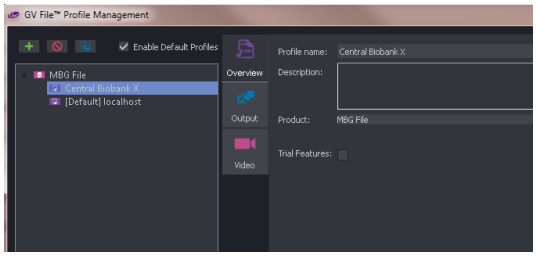


The new Profile is now available for any future job. It will remain so until such time as it is deleted.

3.3.1 Deleting Profiles

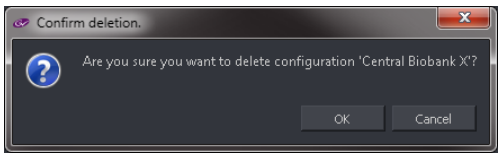
Only custom made Profiles can be deleted. Default Profiles cannot be deleted.

1. Click once on the Profile to be deleted, to highlight it.



2. Click on the **Delete** symbol.

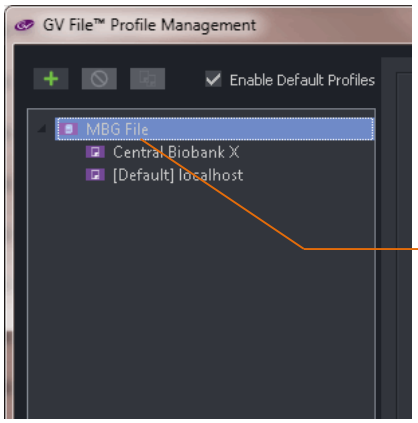
A **Confirm deletion** message will appear



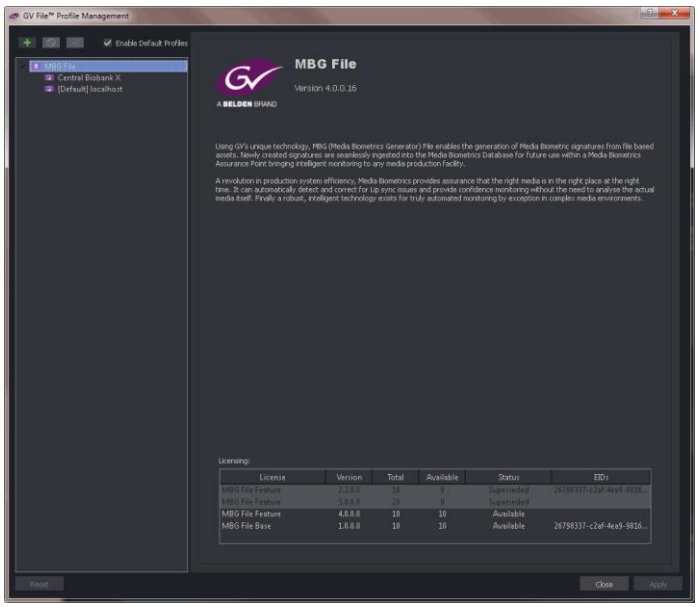
Click **OK** to complete the deletion.

3.4 License Check

Click on the Product to view the License details.



The Product overview window will inform the user of the license type, quantity, status and entitlement ID.

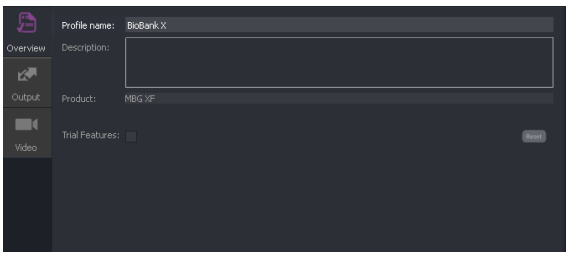


4. Profile Management

4.1 Overview Tab

4.1.1 Profile Name

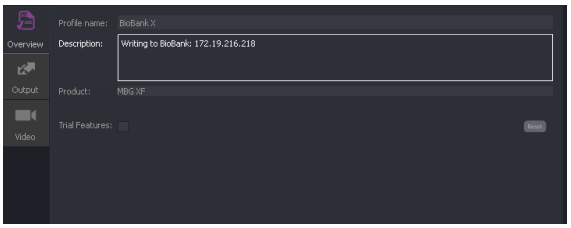
Any new Profile will require a unique name. This can be anything the User chooses, but it is often useful for the Profile name to describe the properties of the Profile.



In this example, the Profile name is based upon the BioBank name that the Profile is writing fingerprints to.

4.1.2 Profile Description

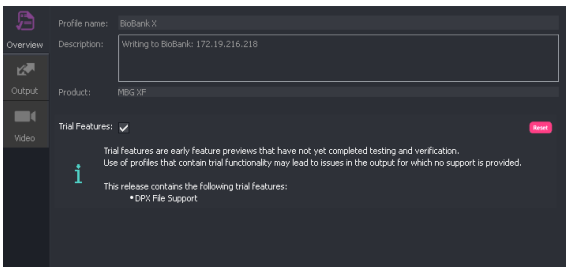
A description can be entered if required. This is often useful for future reference. This field is optional.



In this example, the details of the BioBank that the Profile is writing fingerprints to, has been added.

4.1.3 Trial Feature

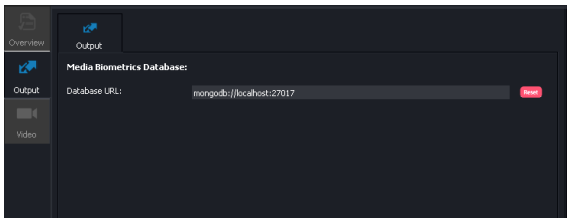
Trial features may be enabled or disabled. A **Trial feature** is one which may not have been fully developed or validated. The user can use and experience the feature prior to it becoming a released feature.



Note: **Trial features** should not be confused with the trial version of MBG-FILE. These are completely different things!

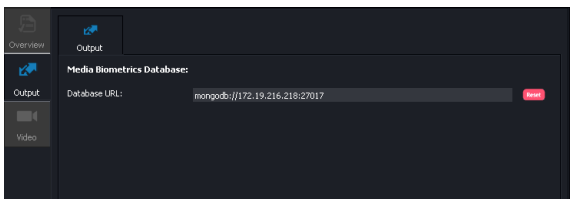
4.2 Output/Output Tab

Here the User can define the URL path to the appropriate BioBank

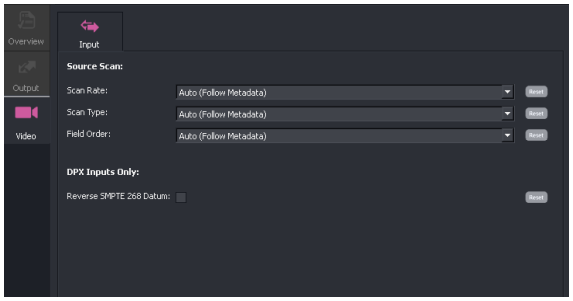


In this example, the **mongodb** (mongo database) resides on the GV File local host. This is the default setting.

Alternatively, an external mongo database can be specified, by either configuring the URL path, or Resolved Name:



4.3 Video/Input Tab

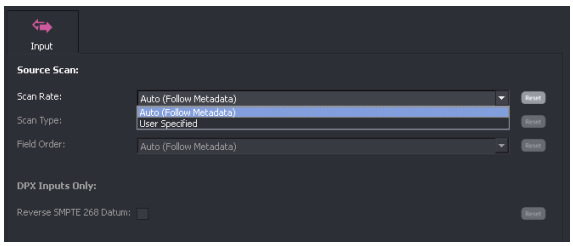


Under normal circumstances, the controls of the Video/Input tab can be left in default. The source file will be processed relying upon its associated metadata.

However, in circumstances where the metadata cannot be fully relied upon, some custom controls are included. This maybe because the source metadata is inaccurate, or is insufficient.

4.3.1 Video/Input/Source Scan/Scan Rate

This control has two possible settings: **Auto (Follow Metadata)** and **User Specified,** selectable from a drop down menu.

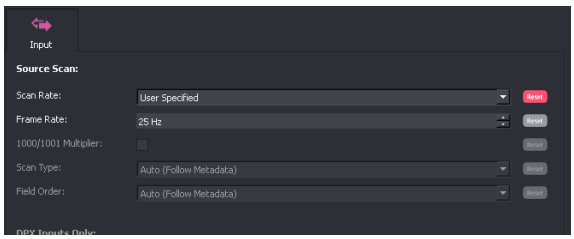


When set to Auto, the source frame rate will be determined from the source file metadata.

In circumstances where the metadata in the source file is deemed to be incorrect with respect to frame rate, a User can choose to over-ride the metadata and process the file, manually defining the correct source frame rate. Setting this control to **User Specified** will make the **Frame Rate** control (below) active.

4.3.2 Video/Input / Source Scan / Frame rate

This control is only visible when the **Scan Rate** control (above) is set to **User Specified**. Once active, the User can manually set the source frame rate.

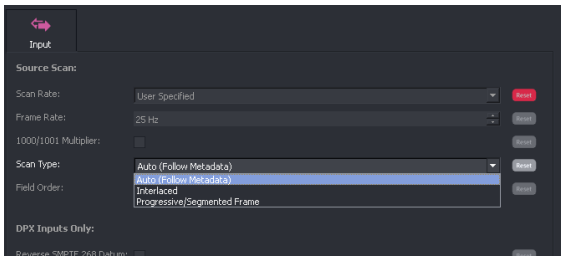


4.3.3 Video/Input / Source Scan / 1000/1001 Multiplier

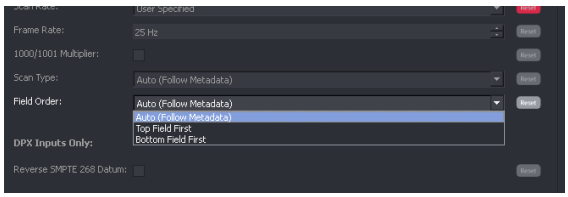
This control is only visible when the **Scan Rate** control (above) is set to **User Specified**. Once active, the User can use this control to define a frame rate that uses the 1000/1001 multiplier (i.e. 59.94 – set 60Hz and enable multiplier).

4.3.4 Video/Input / Source Scan / Scan Type

This control has three possible settings: **Auto**, **Interlaced**, or **Progressive/PsF**.



4.3.5 Video/Input/Source Scan/Field order: Auto/Top field first/Bottom field first



The purpose of this control is to allow the User to force the field order. This is useful if the associated metadata incorrectly describes the actual video essence.

The control has three settings:

- Auto (follow metadata)
- Top field first (TFF)
- Bottom field first (BFF)

When set to **Auto (follow metadata)** the field order will be treated as described by the metadata.

- The setting **Top field first** will process the file as **top field first** and will ignore the metadata (with respect to this parameter).
- The setting **Bottom field first** will process the file as **bottom field first** and will ignore the metadata (with respect to this parameter).

4.3.6 Video/Input/DPX Inputs only/Reverse SMPTE 268 Datum

This control will be disabled unless **Trial features** are enabled (see section 4.1.3, above).

DPX files are not wrapped into a file wrapper which offers metadata describing the frame rate. For this reason the User must specify the input frame rate (part 4.3.2, above).

DPX files can either conform the SMPTE268, or to an alternative specification, DVS. The control **Reverse SMPTE 268 datum** should be selected when source DPX files conform the DVS specification.

For additional information regarding DPX support, see Appendix D at the end of this document (page 67).

5. Browser Configuration

5.1 Introduction

The GV File framework benefits from a Service Orientated Architecture (SOA) which has been engineered to support a wide range of deployments from a single node through to a cluster of nodes within a data center.

One of the services in the framework is called the **GV File Browser** and this enables the user to **browse** both local and remote shares. Whilst not a mandatory service, the Browser alleviates the need for the User to type explicit file paths, making job creation a simple and quick process.

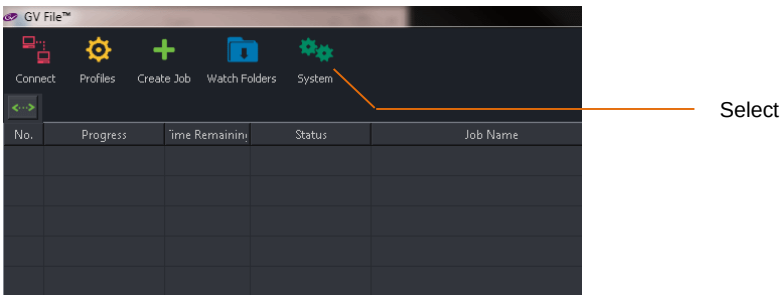
Before the Browser can be used, it must first be configured. It is assumed that the GV File Browser has been successfully installed using the Installation Guide.

The following procedure describes how to add a **Shared** location to the **Browser**. This location may then easily be used as a repository for source, or converted files.

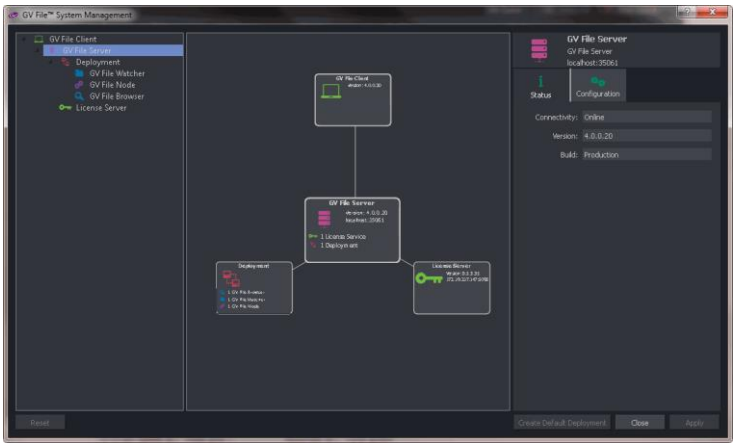
Note that a share location may be remote from the server. In such circumstances the location must be identified by a complete URL path. A remote share cannot be identified as a **mapped** drive on the host machine.

5.1.1 Browser Configuration

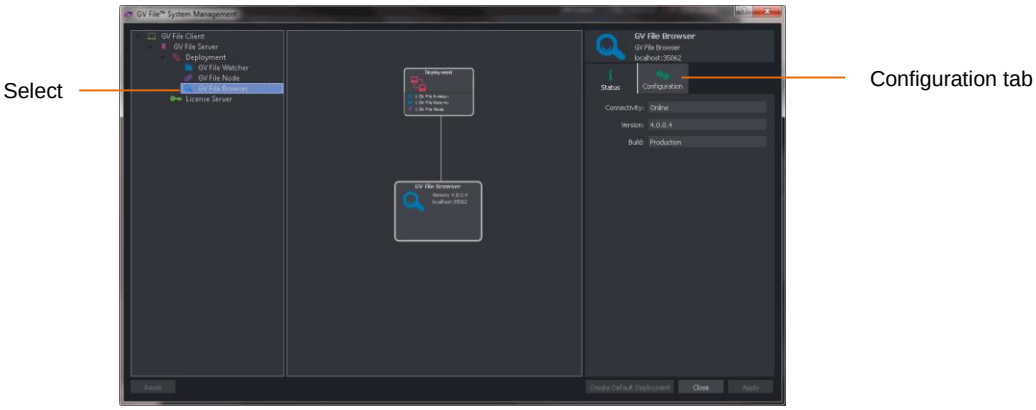
1. In the GV File Client click on the **System** icon.



This will open the **System Management** window.



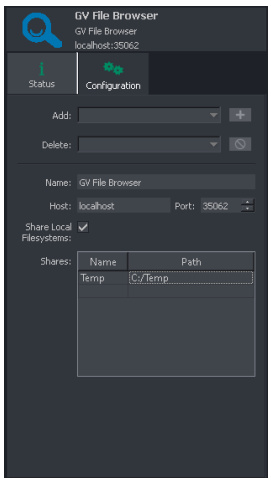
2. In the pane on the left hand side, click on the **Local Browser**. This will bring up the **GV File Browser** on the right hand side:



Note: If the **GV File Browser** has been installed as per the **Installation Guide**, it will appear in the **System Management** window as **Local Browser**. However, an alternative name could have been used in which case the **GV File Browser** will appear by that alternative name in the **System Management** window.

3. In the **GV File Browser** pane, select **Configuration.**

The view will change:



In this example the Browser has been previously configured with the credentials of a **Share** location:

Temp

4. To add share locations:

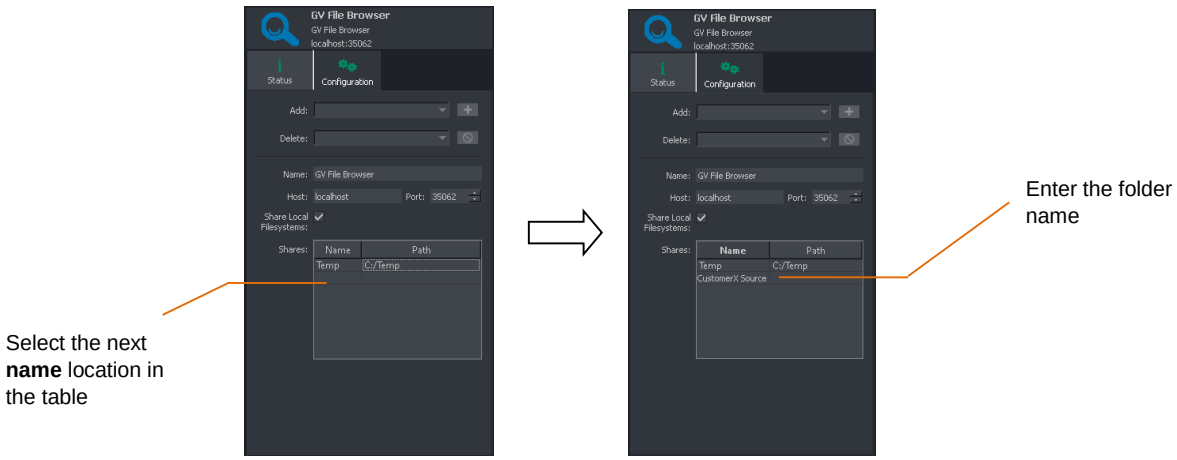
Consider a folder has been created on the *C: drive* of the MBG-FILE Server, called:

- *CustomerX-Source*

It is desired that these folders can be accessed via the **GV File Browser**.

Note: The C: drive mentioned above is the C: drive of the MBG-FILE server. If a **GV File Client** is running on a remote work station, this work station will have its own C: drive. It is important to understand that these are different locations.

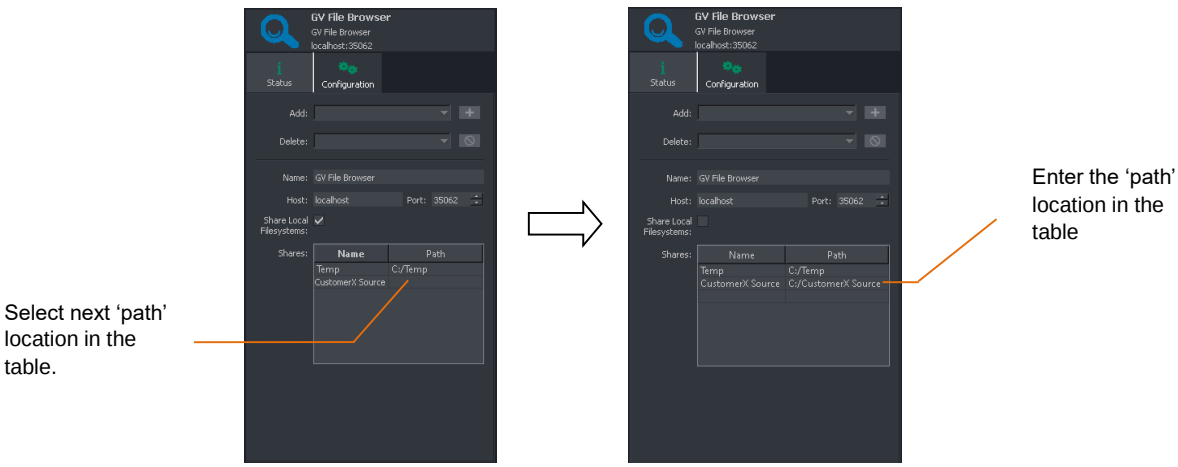
5. In the Browser **Configuration** tab, select the next **name** location in the table:



Enter the name of the new share location. In this example: *CustomerX Source*

Note: The name entered must not contain special characters such as: - , . ( ) # ; : / < >

6. In the **Path** location, enter the path to the folder being added, in this example: *C:/CustomerX-Source*

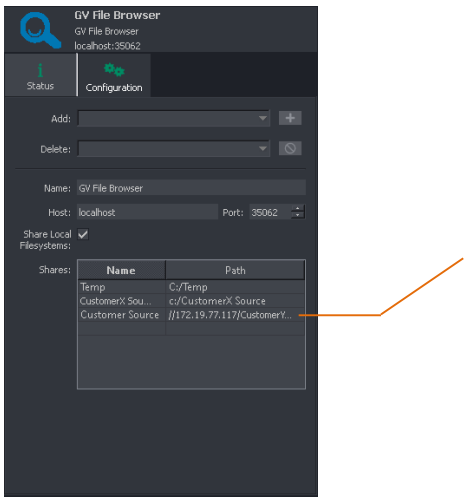


7. Click **Apply** to update the Browser.

   Now when creating new jobs, the location *CustomerX-Source* and will be available from the Browser tool in the **Create job** window.

   Note: To access remote shares the service must be configured with the correct logon credentials otherwise it will not have permission to browse and serve the directory structure to the Client.

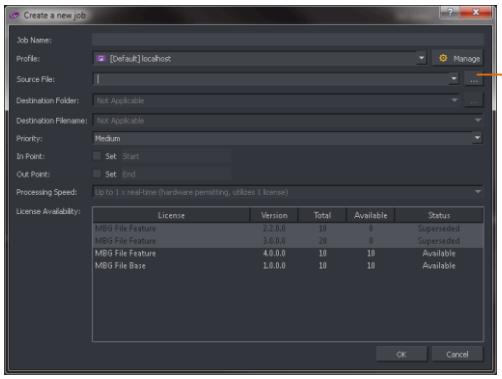
8. To add a remote **share** where logon credentials have been configured, the full URL path must be entered:



Name and **path** entered for the remote **share**.

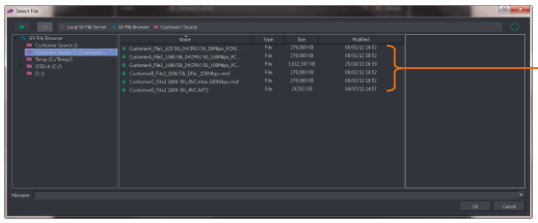
5.1.2 Using the Browser to Select a Source File

1. In the **Create a new job** window, click the **Source file** browse button to search for files.



Select

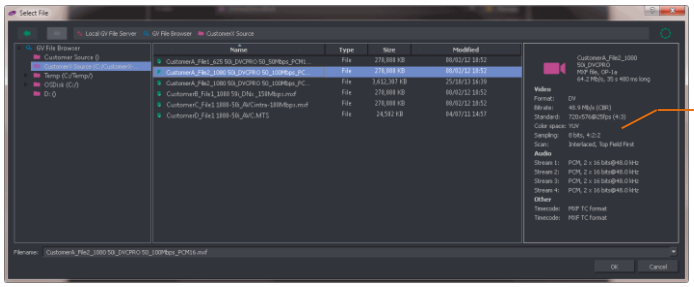
The Browser will list the files located in the chosen directory.



Source files available via the Browser

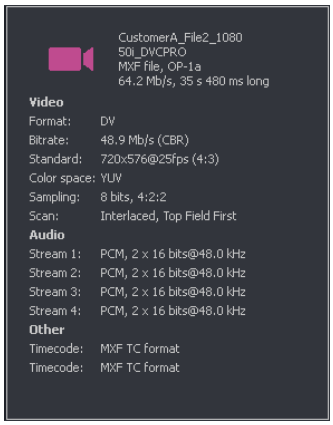
Note: The Browser may be used like Windows Explorer. Sub-folders below the directory configured in the Browser, may be accessed via the Browser.

2. To select a file, click on it to highlight it.



Selected source file metadata

Note that the metadata of the source file will be displayed in the right-hand pane of the **Select File** window.

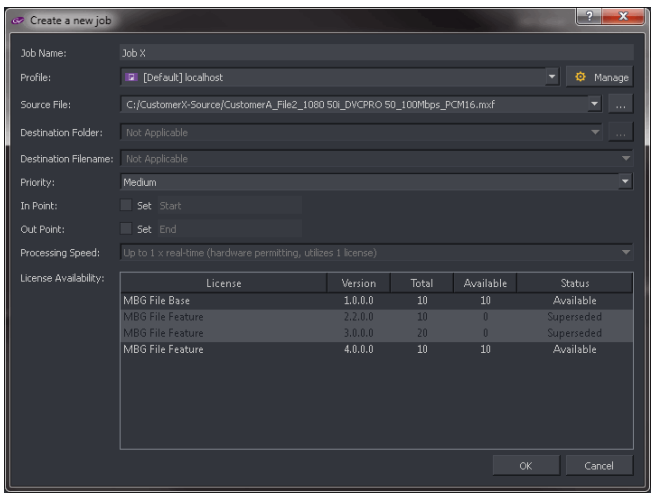


From the metadata, important parameters of the source file such as: video standard, codec, file wrapper, bit rate, etc. can be seen. This metadata can be compared to the table of supported file types (Table 3, Appendix A, below) to confirm compatibility with MBG File.

Note: DPX files do not contain metadata and when selected as a source file, this pane will not populate.

Click **OK** to select the file.

3. Now in the **Create a new job** window**,** the **Source File** field will be populated.



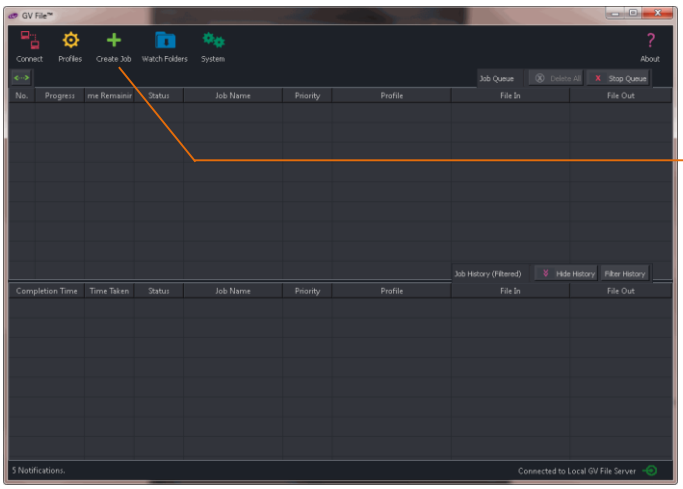
6. Creating a Job

6.1 Introduction

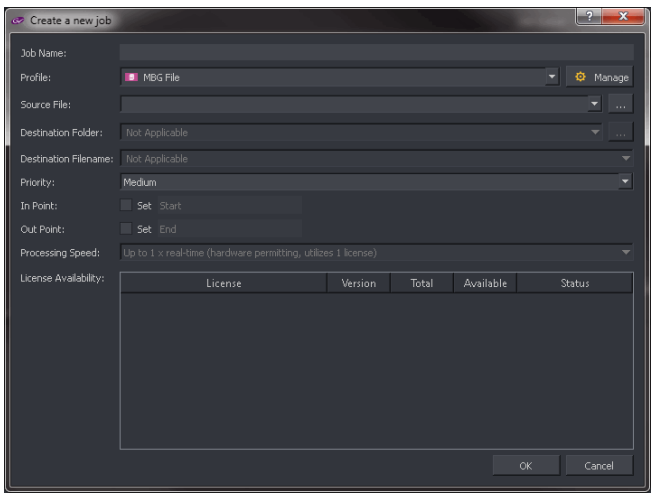
The procedure described below, explains the simple process to manually add a job to the job queue. The procedure assumes that the Browser has been configured (as described above in section 5) and that the source file exists in a location configured in the Browser.

6.2 Create Job Procedure

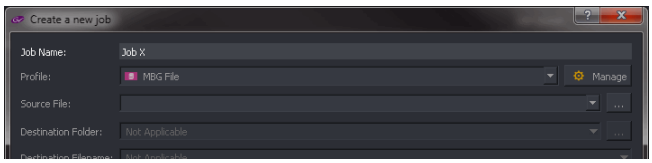
1. In the GV File Client, click on the **Create job** icon**.**



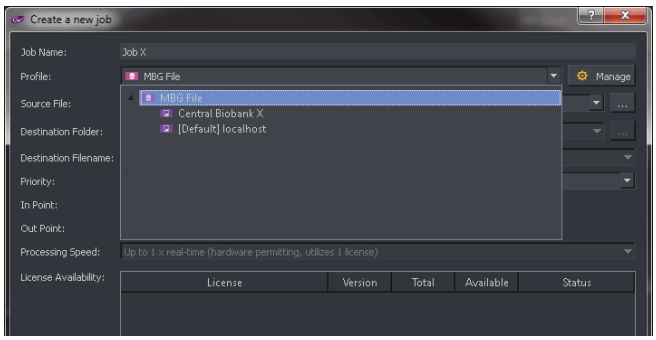
The **Create a new job** window will now open.



2. **Job Name:** Enter an appropriate job name. This name will appear when the job is added to the job queue and is useful for future reference.



3. Profile must be selected from the list of available Profiles:



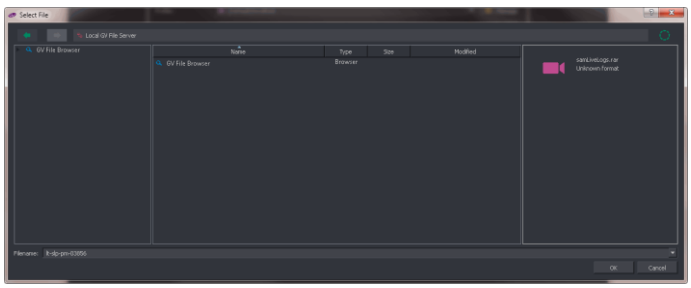
4. **Source file:** The name and path of the source file needs to be entered into the **Source file** field. The easiest method to do this is via the Browser. See section 5 above.

   Alternatively, the source file can be selected by entering the full URL path and file name.

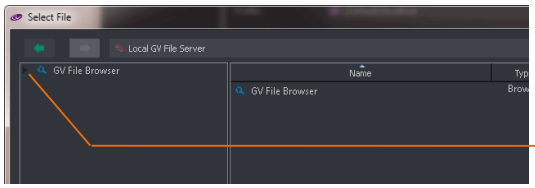
   Click on the **Source file** browse icon:

Select to initiate source file **Browse** feature

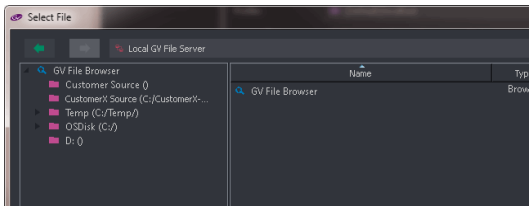
   The Browser will now open.



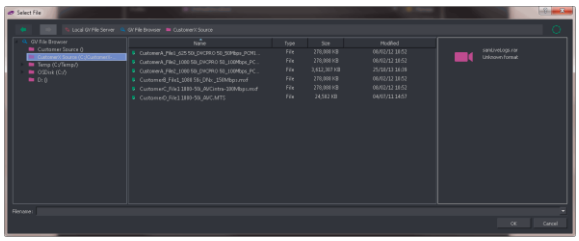
5. Click on the Browser to reveal the configured folders.



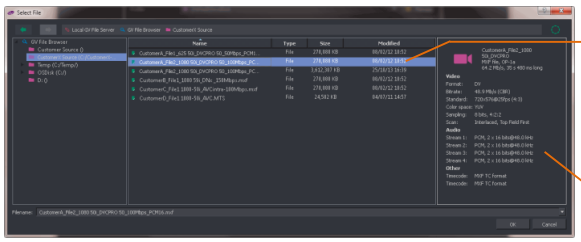
The configured source folders will now be visible.



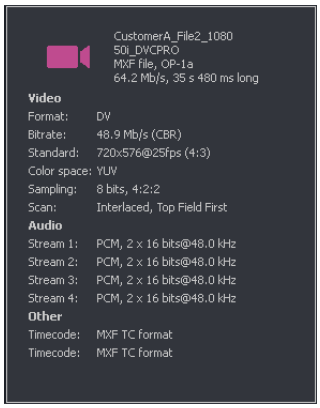
6. Double click on the appropriate folder to reveal the files within.



7. Select the appropriate source file.



Note that upon selecting the source file, the right hand pane will populate with selected metadata from the source file.



From the metadata we can see important parameters of the source file such as: video standard, codec, file wrapper, bit rate, etc. This metadata can be compared to the table of supported file types (table 3, Appendix A below) to confirm compatibility with xFile Products.

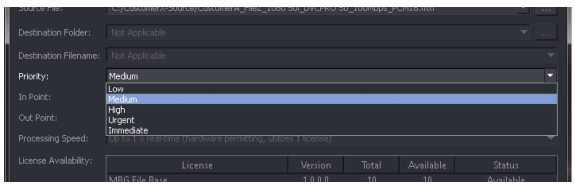
Note: DPX files do not contain metadata and when selected as a source file, this pane will not populate.

The **Source file** field will now be configured.

8. **Destination folder**: In an MBG File configuration, this field is not applicable.

9. **Destination filename:** In an MBG File configuration, this field is not applicable.

10. The **Priority** of the job can be selected from a drop-down menu.



Setting a higher priority will promote the job up the job queue. Setting a priority of **High** will ensure that the job is processed before all **Medium**, and **Low** priority jobs currently in the queue. Similarly, a job given a priority of **Urgent** will be processed before all **High**, **Medium** and **Low** jobs currently in the job queue.

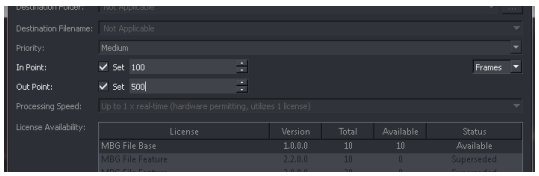
Any job that is not, in anyway, critical with regard to availability can be given a **low** priority.

The default value is **Medium.**

11. **In Point / Out Point**

    In normal circumstances any job configured will process the source file from start to finish. However, MBG File offers the ability to define an **In Point** and **Out Point,** so enabling a User to process just part of a source file.

    It is debatable how useful this feature is for an MBG-File process, but the feature is available.

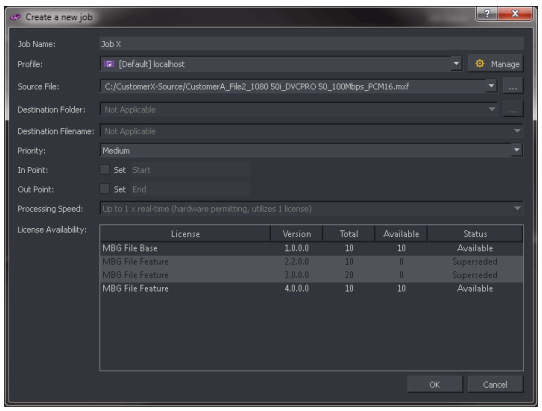


In this example, an **In Point** of 100 frames, and an **Out Point** of 500 frames, has been configured. So the output file will start 100 frames into the source file and will have duration of 400 frames.

The User can choose to define the **In Point** and **Out Point** by: **Frame** count, **Timecode** or **Time.**

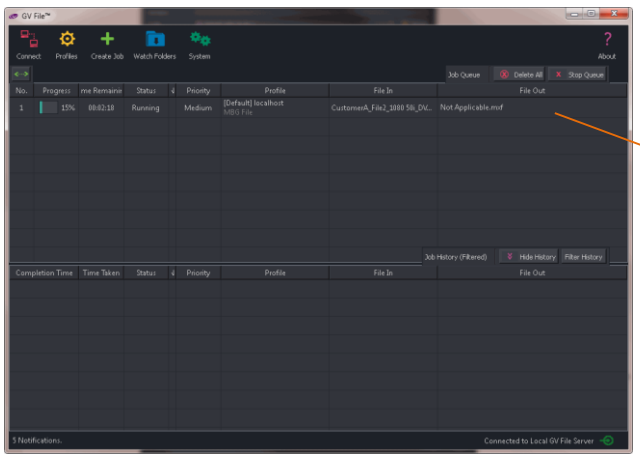
12. **Processing Speed:** In an MBG File configuration, this field is not applicable.

13. The **Create a new job** window has now been configured.



Note: Confirmation of available licensing is displayed in the **License availability** field.

Click on **OK** and the job will now be added to the job queue in the GV File Client.



Job added to the Job queue

The job will process automatically when it reaches the top of the job queue.

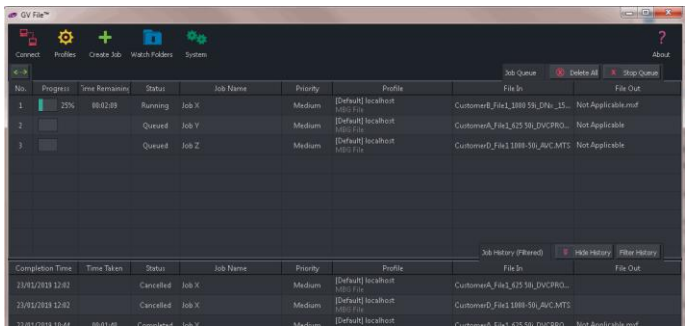
7. The Job Queue

7.1 Description

Jobs can be added to the job queue either via manual configuration (described in section 6 above), or via a Watch Folder Configuration (see section 8 below). There is no limit to the number of jobs that can be added to the job queue.

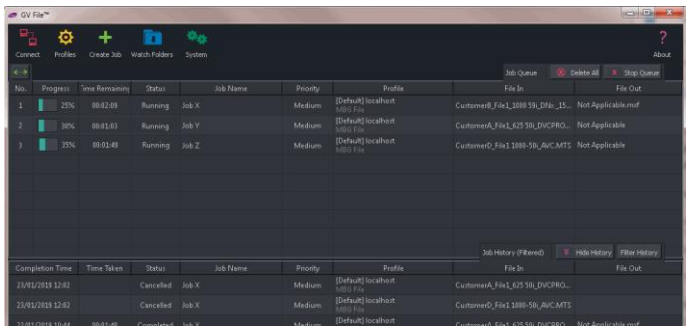
Jobs may be prioritised, cancelled, resubmitted and the job queue may be stopped at any time.

The following example depicts a GV File Client connected to a GV File system with a single license.



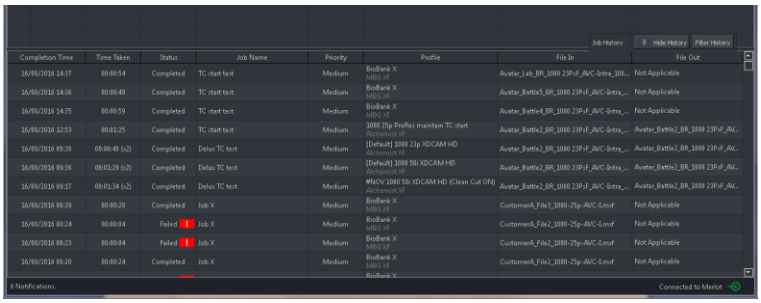
When only a single license is available, MBG-File will process the job queue, one job at a time.

However, if multiple licensed Nodes are available, then GV File can simultaneously process multiple jobs. In the following example, three licenses are available and so three jobs are processed simultaneously.

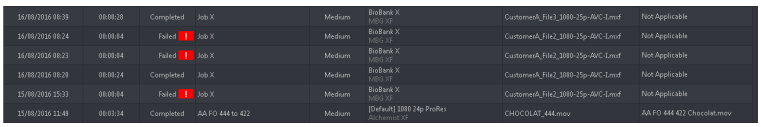


7.2 History Pane

All processed, jobs will appear in the History pane, in the bottom half of the **GV File Client**.

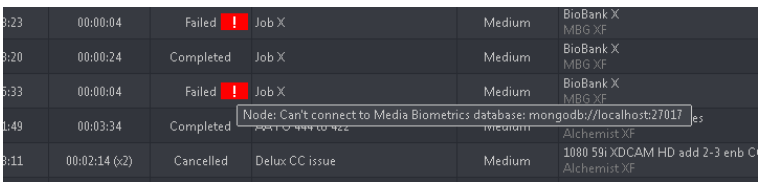


7.3 Failed Jobs



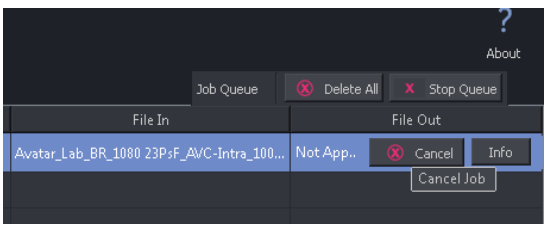
Any failed job will also appear. Failed jobs will be tagged with status **Failed** and will be associated with a red exclamation mark.

Hovering the mouse over the red exclamation mark will cause a **reason for failure** message to pop-up.



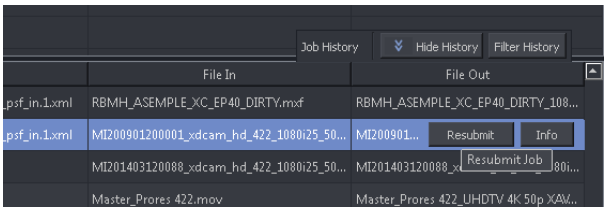
7.4 Cancelling a Job

A job in progress or one in the queue waiting to be processed can be cancelled anytime by clicking on the job **Cancel** button.



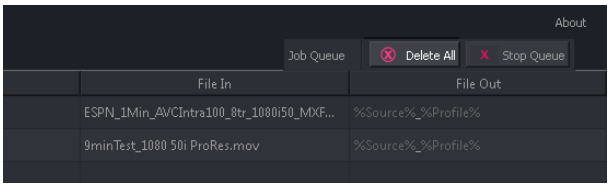
7.5 Resubmit a Job

Any Job in the History pane can be submitted to the queue but clicking on the job followed by the **Resubmit** button. Profiles may be modified during the resubmit process.



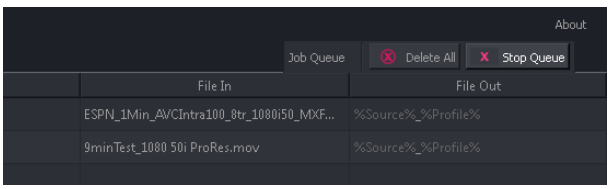
7.6 Delete the Job Queue

The entire current job queue can be deleted by clicking on the **Delete All** button.



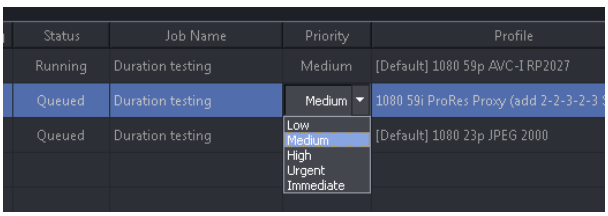
7.7 Stop the Job Queue

The entire job queue can be stopped by clicking on **Stop Queue**.



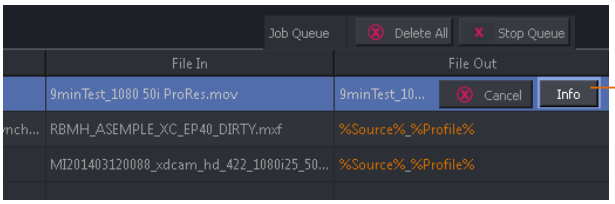
7.8 Re-prioritise a Job

Jobs which are queued may have their priority modified by clicking on the **Priority** cell of the relevant job.

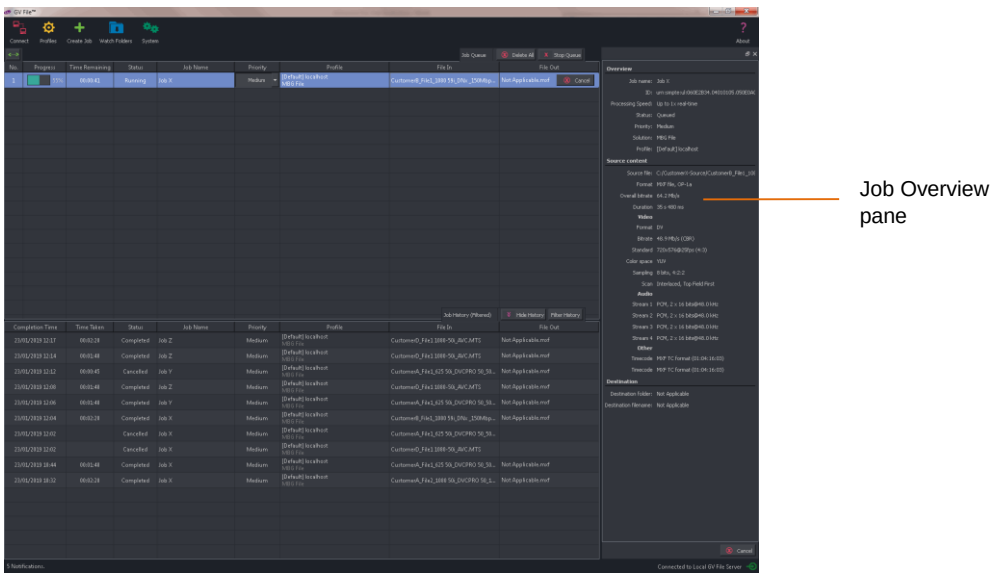


7.9 Job Info/Overview

A job overview of any job can accessed by selected a particular job and clicking on the **Info** button.



Upon clicking **Info,** an **Overview** pane will open.



8. Watch Folders

8.1 Introduction

There is another optional service in the framework called the GV File Watcher. This enables automatic population of the job queue using specified Watch Folders and associated Drop Folders.

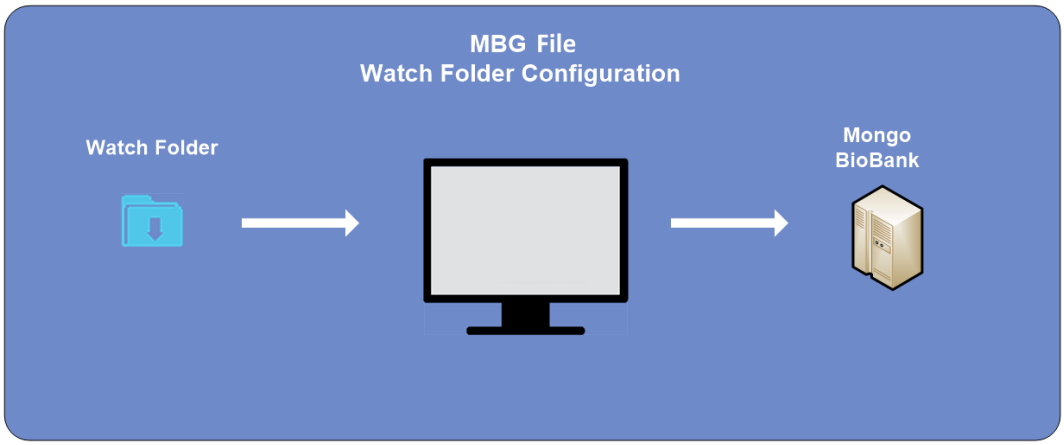
Before the Watcher can be used, it must first be configured. It is assumed the **GV File Watcher** has been successfully installed using the Installation Guide.

The term **Watch Folder** refers to a specified folder which is 'watched' or monitored.

A **Watch Folder Configuration** describes the combination of associated Watch Folder, the URL path to the associated BioBank and the associated MBG File Profile.

Once the **Watch Folder Configuration** is complete, any media file placed in the Watch Folder will automatically create a job and add it to the queue. When the job reaches the top of the queue, it will be processed in accordance with the associated Profile.

Watch Folders



Note: currently the Watch Folder feature does not support DPX file types.

With respect to MBG File, the Watch Folder feature is extremely useful. It is almost certain that all Fingerprints will be written to the same BioBank. This means that large quantities of source files can simple be placed in a Watch folder, in order to generate required fingerprints, rather than manually configuring each job in turn.

8.2 Watch Folder Configuration

A Watch Folder Configuration has the following parameters associated with it:

- Watch Folder:
- Profile:
- Mongo DatabaseDrop

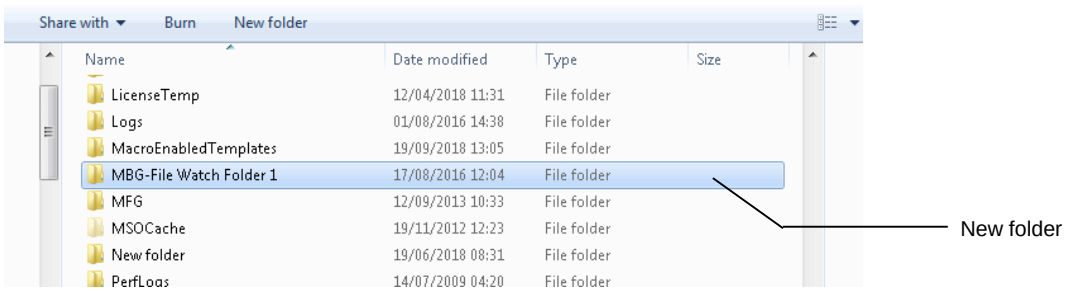
8.3 How to Setup a Watch Folder Configuration

The following procedure explains how to setup a Watch Folder Configuration with Watch Folder residing on the local host. Media Biometric Fingerprints will be written to an external Mongo database.

A folder will be created which will act as the Watch Folder:	*MBG-FILE Watch Folder 1*
A Profile will defined as:	*Profile X*
An external Mongo database will be defined:	mongodb://172.19.216.218:27017

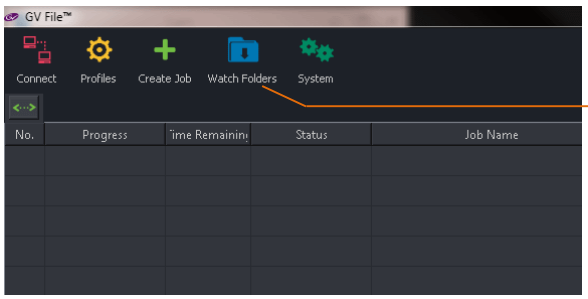
8.3.1 Create the Physical Watch Folder

Create a folder on the local c: drive called: *MBG-FILE Watch Folder 1*

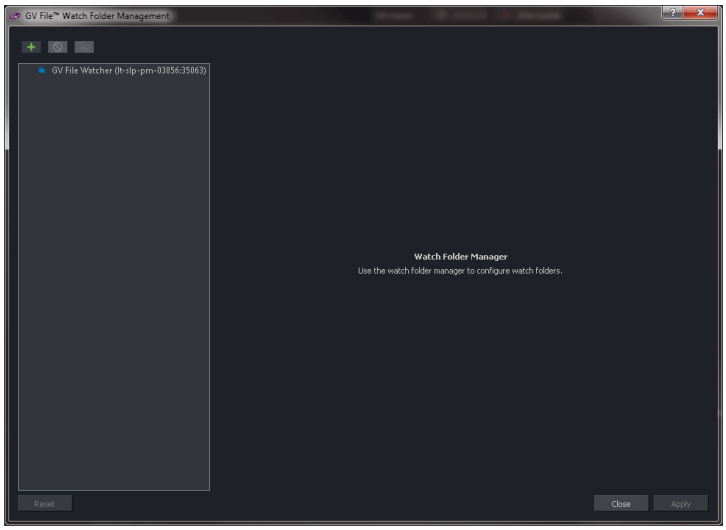


8.3.2 Create the Watch Folder Configuration

1. In the GV File Client, click on the **Watch folders** icon.



The following window will now open.

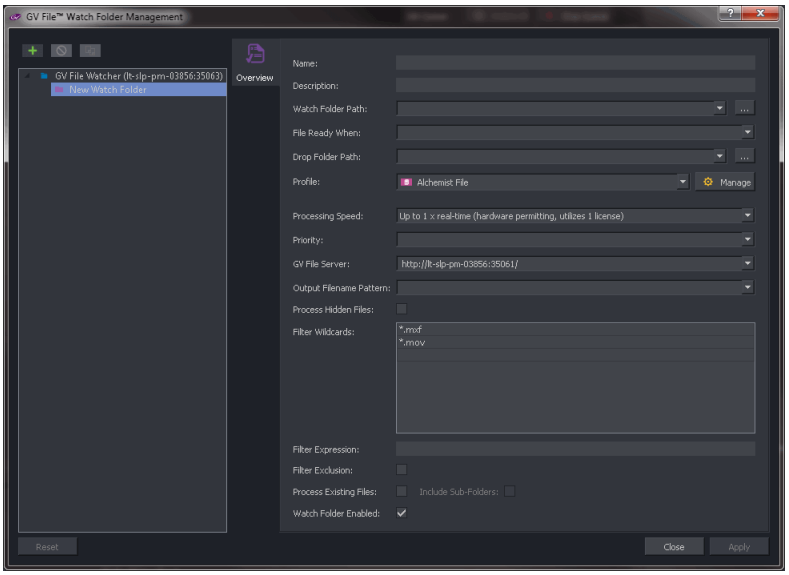


In this example there is only one Watcher called: **GV File Watcher (lt-slp-pm-03856:35063)**

Note - **lt-slp-pm-03856:35063** is the Name and Port of the host computer.

2. Click on the **New Watch Folder** symbol.

This will modify the window.



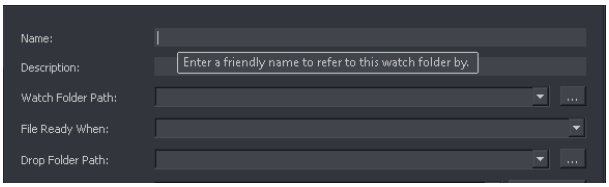
It is now necessary to populate this window with the parameters of the **Watch Folder Configuration**.

8.4 Watch Folder Configuration Parameters

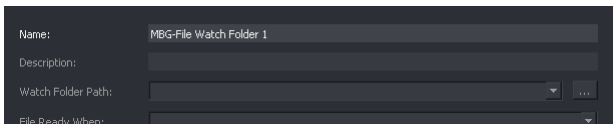
8.4.1 Name

Any new Watch Folder Configuration will need a name. This can be anything the User chooses.

Note whenever the cursor is hovered over a configurable parameter, a hint will pop-up:

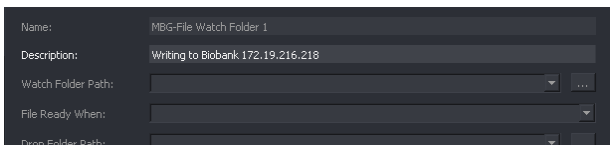


Enter a name for the Watch Folder.



8.4.2 Description

A **Description** of the Watch Folder Configuration may be entered.

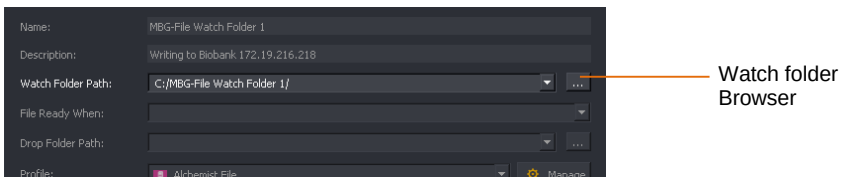


This is often useful for future reference. This field is optional.

In this example a description of which BioBank the Fingerprints are being written to has been entered.

8.4.3 Watch Folder Path

Specify the URL of the Watch Folder Path. This is where the source file will be read from.

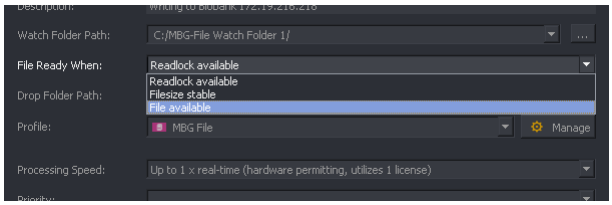


This field can easily be configured via the Browser.

8.4.4 File ready when

The **File Ready When** control is used when large files are moved into the Watch Folder. Two options are offered:

- **Readlock available**
- **Filesize stable**
- **File available**



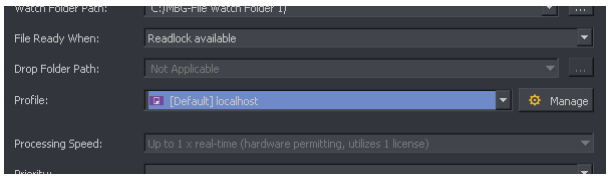
The **Readlock available** option is only applicable in a Windows environment. When selected, a process can commence once the **Readlock** code is available.

In a Linux system, there is no concept of a **Readlock** code, so it is recommended that one of the other options; **Filesize Stable** or **File available** is selected in a Linux environment.

8.4.5 Drop Folder Path

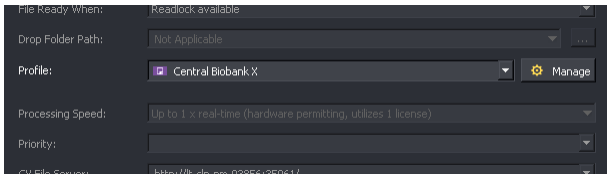
For an MBG-FILE Watch Folder configuration, the Drop Folder is not applicable.

Once an MBG-FILE Profile has been selected



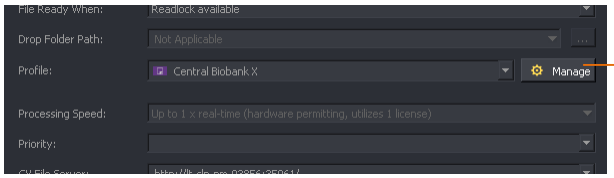
8.4.6 Profile

Specify the **Profile** to be associated with the Watch Folder Configuration.



8.4.7 Manage

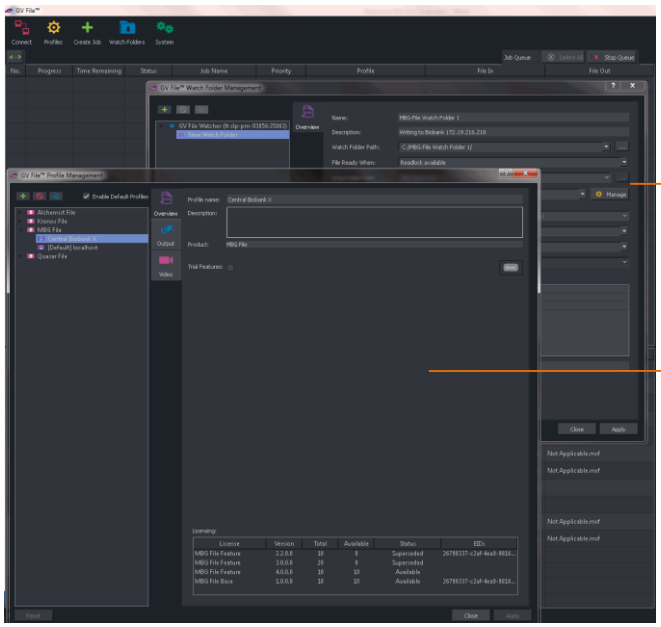
The Profile **Manage** feature box can be used to create or edit a Profile whilst in the middle of creating a Watch Folder Configuration.



Manage Profile

If the Watch Folder Configuration is part way through and the desired Profile does not currently exist, it is not necessary to end the Watch Folder Configuration process, build a new Profile and then start the Watch Folder Configuration from the beginning.

Selecting the **Manage** icon will bring up the **Profile Management** window, without closing the Watch Folder Management window.



Watch Folder Management
(semi-completed and still open)

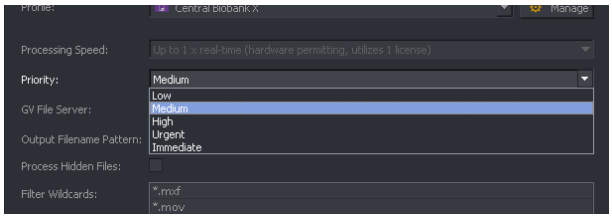
Profile Management
window now open

8.4.8 Processing Speed

For an MBG-File Watch Folder configuration, the **Processing Speed** control is not applicable. A single licensed Node will allow one media asset to be processed at a time. The speed of processing will be dictated solely by the speed of computer hardware of the host machine. There is no concept of rate limiting.

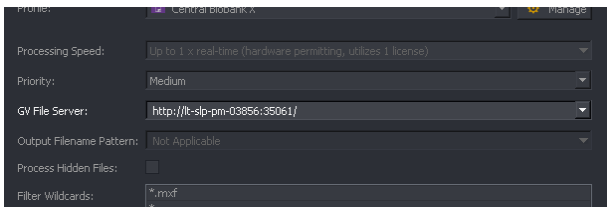
8.4.9 Priority

The priority of any job initiated via the Watch Folder Configuration can be set in this field. The default value is **Medium**. All jobs originating from this particular Watch Folder Configuration will be set to the priority as set in this field.



8.4.10 GV File Server

This field will be automatically populated.

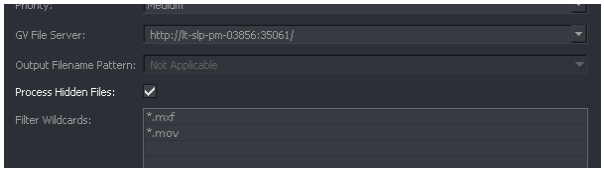


In systems where multiple GV File Servers have been configured, this control allows a specific GV File Server to be set, with respect to the Watch Folder Configuration.

8.4.11 Output Filename Pattern

For an MBG-File Watch Folder configuration, the **Output Filename Pattern** control is not applicable.

8.4.12 Process Hidden Files



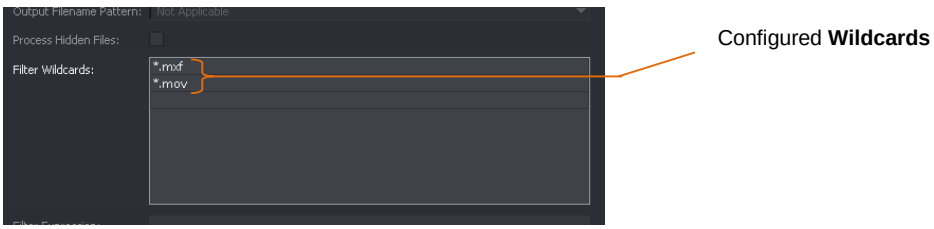
Where source media files are defined to be hidden, in normal circumstances GV File will ignore these files when placed in a Watch Folder. However, enabling the control **Process Hidden Files**, will ensure that these files are **processed.**

8.4.13 Filter Wildcards

Because a Watch Folder is just a folder on a PC, or server, files may be added to the folder that are not video files and it would be undesirable that such files should initiate an MBG-File process.

The **Filter Wildcard** feature allows the User to specify only certain file types to initiate an MBG-File process.

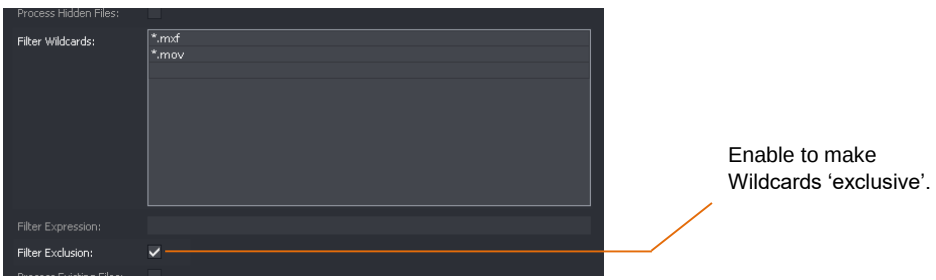
In the example below the default wildcards are depicted. Only files with the file extension .**mxf** or .**mov** moved into the Watch Folder, will initiate an automated MBG-File process.



Note: currently the Watch Folder feature does not support DPX file types. DPX files are effectively excluded by the default setting of the **Filter Wildcards** feature, meaning that if DPX files are written to an active Watch Folder, they will not initiate an MBG-File process. If the settings of the **Filter Wildcards** feature are set such that DPX files are no longer excluded, then DPX files written to the Watch Folder will initiate an MBG-File process. However, the results will be very undesirable and it's important that this scenario is avoided.

Alternatively, the Wildcard Filter may be used to exclude certain file types from initiating an MBG-File process.

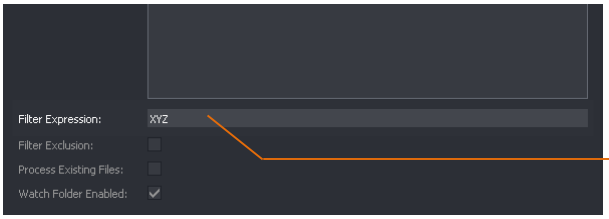
In the following example, word documents have been excluded.



To make Wildcards excluded, the **Filter Exclusion** box should be ticked

8.4.14 Filter Expression

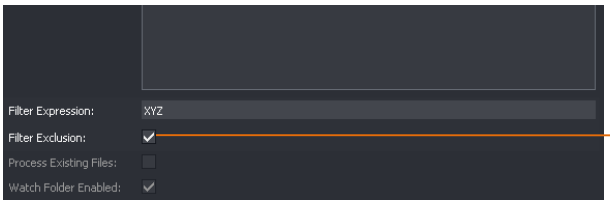
Similar to the **Filter Wildcards** feature, the **Filter Expression** feature allows the User to exclusively process only files where the file name contains a specific expression. In the following example only file names containing the word **XYZ** dropped into the Watch Folder will initiate an MBG-File process.



Configuring a **Filter Expression**

Alternatively, the **Filter Expression** feature may be used to exclude certain file names from initiating an MBG-File process.

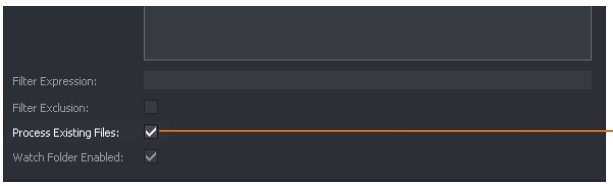
In the following example, documents with a file name containing **XYZ** have been **excluded.**



Making the **Filter Expression** exclusive.

8.4.15 Process Existing Files

The default setting of this control is **disabled**. When disabled, at the point in time that the Watch Folder is made active, any files currently residing in the Watch Folder will not initiate an MBG-File process. Only new files added to the Watch Folder from this time will initiate an MBG-File process.

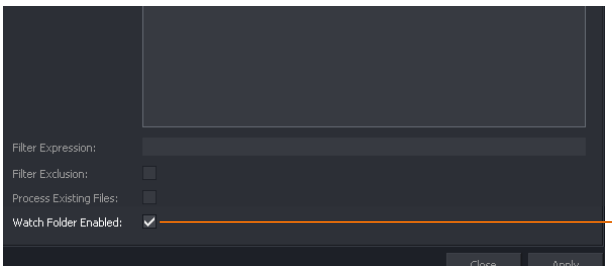


Process Existing Files enable.

If **enabled** any file currently residing in the Watch Folder will initiate an MBG-File process. Multiple files will initiate multiple jobs to the job queue.

8.4.16 Watch Folder Enabled

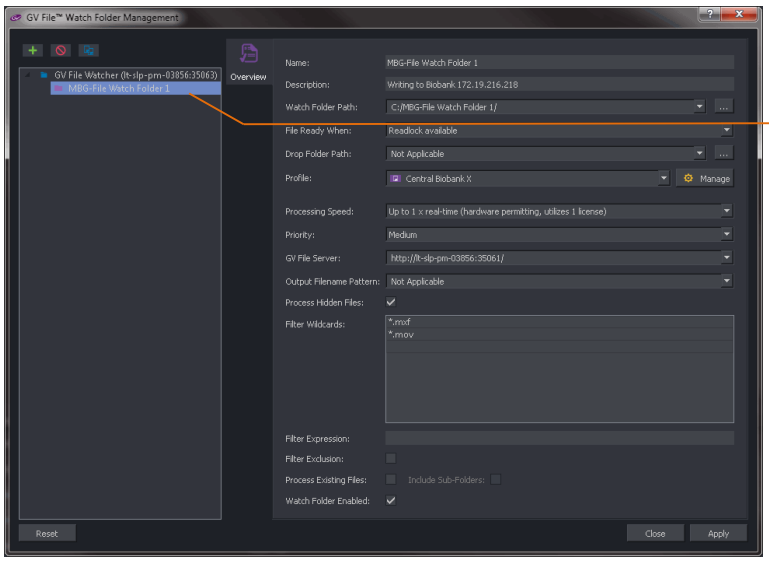
When **enabled,** the Watch Folder is active. Any file (except excluded files) written to the Watch Folder will initiate an automated Alchemist XF conversion. When **disabled** the Watch Folder is inactive. Any files written to the Watch Folder will not cause an Alchemist XF conversion event to occur.



Enabling the Watch Folder

Select **Apply** to complete the Watch Folder Configuration.

The new Watch Folder will now appear in the Watch Folder Management window.



Confirmation of new Watch Folder Configuration

Once the Watch Folder Configuration has been completed and enabled, the act of moving a file into the Watch Folder will initiate the creation of a job automatically, removing the need for the user to create jobs manually.

A GV File system can be setup with many Watch Folder Configurations. For customers with requirements to process large numbers of files, careful use of the Watch Folder feature can drastically reduce the need for human interaction.

Appendix A. Supported File Types

Table 2: Supported File Types

Resolution	Codec	File Format	Supported Frame Rate	Supported Audio	CC Support
SD 525	D10 IMX 30 Mbps / 40 Mbps / 50 Mbps	MXF OP1a MOV	59i, 29psf	1s x 2,4 or 8ch	CEA608 L21 in MXF OP1a only
SD 525	MPEG2 DVB / DVD / 80Mbp I-frame Only	MPG TS	59i, 29psf	1s x 2ch	No
SD 525	DV DV25 / DVCPro 25 / DV50 / DVCPro 50	MXF OP1a MOV	59i, 29psf	Mov: 32s x 24ch Mxf: 32s x 16ch	CEA608 L21 in MXF OP1a only
SD 525	ProRes 422 Proxy / 422 LT / 422 / 422 HQ / 4444 / 4444 XQ	MOV	59i, 29psf, custom 12 to 300 fps	32s x 32ch	No
SD 525	H.264 Long GOP DVB / HQ **	MP4	59i	24s x 8ch	No
SD 525	H.264 Long GOP DVB /Flash / Silverlight / HQ **	MP4	29psf	24s x 8ch	No
SD 525	JPEG 2000 Lossy / Lossless	MXF OP1a MOV MJ2	29psf	Mov:24s x 24ch Mxf: 24s x 16ch MJ2: 24s x 16ch	No
SD 525	Uncompressed	DPX	59i, 29psf, custom 12 to 300 fps	None	No
SD 525	Uncompressed 8bit YUV2 / 8bit 2VUY /10bit V210/ 16bit V216	MOV	50i, 29psf, custom 12 to 300 fps	32s x 32ch	No
SD 625	D10 IMX 30 Mbps / 40 Mbps / 50 Mbps	MXF OP1a MOV	50i, 25psf	1s x 2,4 or 8ch	CEA608 L21 in MXF OP1a only
SD 625	DV DV25 / DVCPro 25 / DV50 / DVCPro 50	MXF OP1a MOV	50i, 25psf	1s x 2ch	No
SD 625	ProRes 422 Proxy / 422 LT / 422 / 422 HQ / 4444 / 4444 XQ	MOV	50i, 25psf, custom 12 to 300 fps	mov: 32s x 32ch mxf: 32s x 16ch	CEA608 L21 in MXF OP1a only
SD 625	MPEG2 DVB / DVD / 80Mbp I-frame Only	MPG TS	50i, 25psf	32 s x 32ch	No
SD 625	JPEG 2000 Lossy / Lossless	MXF OP1a MOV MJ2	25psf	Mov:24s x 24ch Mxf: 24s x 16ch MJ2: 24s x 16ch	No
SD 625	H.264 Long GOP DVB / HQ **	MP4	50i	24s x 8ch	No
SD 625	H.264 Long GOP DVB/ Flash/ Silverlight/ HQ **	MP4	25psf	24s x 8ch	No
SD 625	Uncompressed	DPX	50i, 25psf, custom 12 to 300 fps	None	No
SD 625	Uncompressed 8bit YUV2/ 8bit2VUY/ 10bit V210/ 16bit V216	MOV	50i, 25psf, custom 12 to 300 fps	Mov:24s x 24ch Mxf: 24s x 16ch MJ2: 24s x 16ch	No
HD 720	ProRes 422 Proxy / 422 LT / 422 / 422 HQ / 4444 / 4444 XQ	MOV	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	32s x 32ch	No
HD 720	MPEG2 MP2 HDV / 80Mbp I-frame Only	MPG TS	23p, 25p, 29p	1s x 2ch	No
HD 720	MPEG2 80Mbp I-frame Only	MPG TS	50p, 59p	1s x 2ch	No
HD 720	AVC-I 50 Mbps / 100 Mbps	MXF OP1a MOV (i/p only)	23p, 25p, 29p, 50p, 59p	24s x 16ch	Yes
HD 720	AVC-I RP2027 50 Mbps / 100 Mbps / 200 Mbps	MXF OP1a MOV (i/p only)	23p, 25p, 29p, 50p, 59p	24s x 16ch	Yes
HD 720	AVC-HD	MTS	25p, 29p, 50p, 59p	1s x 2,4 or 8ch	No
HD 720	DNxHD 60Mbps 8bit / 90Mbps 8 bit / 90Mbps 10bit	MXF OP1a MOV	23p, 24p, 25p	mov: 32s x 32ch mxf: 32s x 16ch	VANC CEA 608 CB & CEA708 in MXF OP1a only
HD 720	DNxHD 75Mbps 8bit / 110Mbps 8bit / 110Mbps 10bit	MXF OP1a MOV	29p, 30p	mov: 32s x 32ch mxf: 32s x 16ch	VANC CEA 608 CB & CEA708 in MXF OP1a only
HD 720	DNxHD 120Mbps 8bit /185Mbps 8bit / 185Mbps 10bit	MXF OP1a MOV	50p	mov: 32s x 32ch mxf: 32s x 16ch	VANC CEA 608 CB & CEA708 in MXF OP1a only
HD 720	DNxHD 145Mbps 8bit/ 220Mbps 8bit /220Mbps 10bit	MXF OP1a MOV	59p, 60p	mov: 32s x 32ch mxf: 32s x 16ch	VANC CEA 608 CB & CEA708 in MXF OP1a only
HD 720	JPEG 2000 Lossy / Lossless	MXF OP1a MOV MJ2	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p	Mov:24s x 24ch Mxf: 24s x 16ch MJ2: 24s x 16ch	No
HD 720	DV DVCPro 100	MXF OP1a MOV	50p, 59p	mov: 32s x 32ch mxf: 32s x 16ch	VANC CEA 608 CB & CEA708 in MXF OP1a only

Resolution	Codec	File Format	Supported Frame Rate	Supported Audio	CC Support
HD 720	XDCam HD 50 Mbps/50 Mbps Closed GOP	MXF OP1a MOV	50p, 59p	1s x 2,4, 8, or 16ch	VANC CEA 608 CB & CEA708 in MXF OP1a only
HD 720	H.264 Long GOP DVB / HQ**	MP4	23p, 24p, 25p, 29p, 30p, 60p	AAC:24 s x 8ch	No
HD 720	H.264 Long GOP DVB/ IPTVFJ STD-0004/ Blu-ray Disc /HQ **	MP4	50p, 59p	AAC24 s x 8ch	No
HD 720	XAVC CBG Class 100 / XAVC Long GOP	MXF OP1a	50p, 59p	8s x 1ch	No
HD 720	Uncompressed	DPX	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p,custom 12 to 300 fps	None	No
HD 720	Uncompressed 8bit YUV2 / 8bit2VUY / 10bit V210 / 16bit V216	MOV	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	32 s x 32ch	No
HD 1080	DNxHD 35 Mbps 8bit/115 Mbps 8bit/175 Mbps 8bit/ 175 Mbps 10 bit	MXF OP1a MOV	23p, 24p,	mov: 32s x 32ch mxf: 32s x 16ch	VANC CEA 608 CB & CEA708 in MXF OP1a only
HD 1080	DNxHD 40 Mbps 8bit/75 Mbps 8bit /185 Mbps 8bit / 185 Mbps 10bit	MXF OP1a MOV	25p	mov: 32s x 32ch mxf: 32s x 16ch	VANC CEA 608 CB & CEA708 in MXF OP1a only
HD 1080	DNxHD 45Mbps 8bit/145Mbps 8bit/220 Mbps 8bit/ 220 Mbps 10bit	MXF OP1a MOV	29p, 30p	mov: 32s x 32ch mxf: 32s x 16ch	VANC CEA 608 CB & CEA708 in MXF OP1a only
HD 1080	DNxHD 145Mbps 8bit / 220 Mbps 8bit / 220 Mbps 10bit	MXF OP1a MOV	29psf	mov: 32s x 32ch mxf: 32s x 16ch	VANC CEA 608 CB & CEA708 in MXF OP1a only
HD 1080	DNxHD 120Mbps 8bit / 185Mbps 8bit / 185Mbps 10bit	MXF OP1a MOV	25psf, 50i	mov: 32s x 32ch mxf: 32s x 16ch	VANC CEA 608 CB & CEA708 in MXF OP1a only
HD 1080	DNxHD 75Mbps 8bit/ 240 Mbps 8bi /365 Mbps 8bit/ 365 Mbps 10bit	MXF OP1a MOV	50p	mov: 32s x 32ch mxf: 32s x 16ch	VANC CEA 608 CB & CEA708 in MXF OP1a only
HD 1080	DNxHD 90 Mbps 8bit /290Mbps 8bit /440 Mbps 8bit/ 440 Mbps 10bit	MXF OP1a MOV	59p, 60p	mov: 32s x 32ch mxf: 32s x 16ch	VANC CEA 608 CB & CEA708 in MXF OP1a only
HD 1080	MPEG2 MP2 HDV / 80Mbp I-frame Only	MPG TS	23p, 25psf, 25p, 29psf, 29p, 50i, 59i	1s x 2ch	No
HD 1080	AVC-I 50 Mbps / 100 Mbps	MXF OP1a MOV (i/p only)	23p, 25p, 25psf, 29p, 29psf, 50i, 59i	32s x 16ch	No
HD 1080	AVC-I RP2027 50 Mbps / 100 Mbps / 200 Mbps	MXF OP1a MOV (i/p only)	23p, 25p, 25psf, 29p, 29psf, 50i, 59i, 50p, 59p	1s x 2,4 or 8ch	No
HD 1080	AVC-HD	MTS	25p, 29p, 50p, 59p	mov: 32s x 32ch mxf: 32s x 16ch	VANC CEA 608 CB & CEA708 in MXF OP1a only
HD 1080	DV DVCPro 100	MXF OP1a MOV	25psf, 29psf, 50i, 59i	1s x 2,4, 8, or 16ch	VANC CEA 608 CB & CEA708 in MXF OP1a only
HD 1080	XDCam HD 50 Mbps/50 Mbps Closed GOP	MXF OP1a MOV	25psf, 29psf, 50i, 59i	8s x 1ch	No
HD 1080	XAVC CBG Class 50	MXF OP1a	23p, 25psf, 25p, 29psf, 29p, 50i, 59i	8s x 1ch	No
HD 1080	XAVC CBG Class 100/ CBG Class 200 / Long GOP	MXF OP1a	23p, 25psf, 25p, 29psf, 29p, 50i, 59i, 50p, 59p	32s x 32ch	No
HD 1080	ProRes 422 Proxy / 422 LT / 422 / 422 HQ / 4444 / 4444 XQ	MOV	23p, 24p, 25psf, 25p, 29psf, 29p, 30p, 48p, 50i, 59i, 50p, 59p, 60p, custom 12 to 300 fps.	Mov:24s x 24ch Mxf: 24s x 16ch MJ2: 24s x 16ch	No
HD 1080	JPEG 2000 Lossy / Lossless	MXF OP1a MOV MJ2	23p, 24p, 25p, 25psf, 29p, 29psf, 30p, 48p, 50p, 59p, 60p	24 s x 8ch	No
HD 1080	H.264 Long GOP DVB / Blu-ray / HQ **	MP4	23p, 24p	24 s x 8ch	No
HD 1080	H.264 Long GOP DVB / Flash / HQ **	MP4	25p, 29p	24 s x 8ch	No
HD 1080	H.264 Long GOP DVB/ Blu-ray Disc/ IPTVFJ/ Flash / HQ **	MP4	50i, 59i	24 s x 8ch	No
HD 1080	Uncompressed	DPX	23p, 24p, 25p, 25psf, 29p, 29psf, 30p, 48p, 50i, 59i, 50p, 59p, 60p, custom 12 to 300 fps	None	No
HD 1080	Uncompressed 8bit YUV2 /8bit2VUY /10bit V210 / 16bit V216	MOV	23p, 24p, 25p, 25psf, 29p, 29psf, 30p, 48p, 50i, 59i, 50p, 59p, 60p, custom 12 to 300 fps.	32s x 32ch	No
2K 1998x1080	ProRes 422 Proxy / 422 LT / 422 / 422 HQ / 4444 / 4444 XQ	MOV	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p,custom 12 to 300 fps	32s x 32ch	No
2K 1998x1080	DNxHR 422LB / 422SQ / 422HQ / 422HQX	MOV	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p	mov: 32s x 32ch mxf: 32s x 16ch	No
2K 1998x1080	DNxHR 422LB / 422SQ / 422HQ / 422HQX	MOV	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p	mov: 32s x 32ch mxf: 32s x 16ch	No

Resolution	Codec	File Format	Supported Frame Rate	Supported Audio	CC Support
2K 1998x1080	JPEG 2000 Lossy / Lossless	MXF OP1a MOV MJ2	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p	Mov:24s x 24ch Mxf: 24s x 16ch MJ2: 24s x 16ch	No
2K 1998x1080	Uncompressed	DPX	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	None	No
2K 1998x1080	Uncompressed 8bit YUV2 / 8bit2VUY / 10bit V210 / 16bit V216	MOV	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	32s x 32ch	No
2K 2048x858	ProRes 422 Proxy / 422 LT / 422 / 422 HQ /444 / 4444 XQ (input only)	MOV	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	32s x 32ch	No
2K 2048x858	DNxHR 422LB / 422SQ / 422HQ / 422HQX	MOV MXF OP1a	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p	mov: 32s x 32ch mxf: 32s x 16ch	No
2K 2048x858	JPEG 2000 Lossy / Lossless	MXF OP1a MOV MJ2	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p	Mov:24s x 24ch Mxf: 24s x 16ch MJ2: 24s x 16ch	No
2K 2048x858	Uncompressed	DPX	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	None	No
2K 2048x858	Uncompressed YUV2 8bit / 2VUY 8bit / V210 10bit / V216 16bit	MOV	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	32s x 32ch	No
2K 2048x1080	ProRes 422 Proxy / 422 LT / 422 / 422 HQ / 444 / 4444 XQ (input only)	MOV	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	32s x 32ch	No
2K 2048x1080	DNxHR 422LB / 422SQ / 422HQ / 422HQX/ 444	MOV MXF OP1a	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p	mov: 32s x 32ch mxf: 32s x 16ch	No
2K 2048x1080	JPEG 2000 Lossy / Lossless	MXF OP1a MOV MJ2	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p	Mov:24s x 24ch Mxf: 24s x 16ch MJ2: 24s x 16ch	No
2K 2048x1080	XAVC CBG Class 100 / VBG Class 100	MXF OP1a	23p, 24p, 25p, 29p, 50p, 59p	8s x 1ch	No
2K 2048x1080	Uncompressed	DPX	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p custom 12 to 300 fps	None	No
2K 2048x1080	Uncompressed YUV2 8 bit / 2VUY 8bit / V210 10 bit / V216 16bit	MOV	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	32s x 32ch	No
2K 2048x1107	ProRes 422 Proxy / 422 LT / 422 / 422 HQ / 444 / 4444 XQ (input only)	MOV	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	32s x 32ch	No
2K 2048x1107	DNxHR 422LB / 422SQ / 422HQ / 422HQX / 444	MOV MXF OP1a	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p,	mov: 32s x 32ch mxf: 32s x 16ch	No
2K 2048x1107	JPEG 2000 Lossy / Lossless	MXF OP1a MOV MJ2	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p	Mov:24s x 24ch Mxf: 24s x 16ch MJ2: 24s x 16ch	No
2K 2048x1107	Uncompressed	DPX	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	None	No
2K 2048x1107	Uncompressed YUV2 8bit / 2VUY 8bit / V210 10bit/ V216 16bit	MOV	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	32s x 32ch	No
2K 2048x1152	ProRes 422 Proxy / 422 LT / 422 / 422 HQ / 444 / 4444 XQ (input only)	MOV	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	32s x 32ch	No
2K 2048x1152	DNxHR 422LB / 422SQ / 422HQ / 422HQX / 444	MOV MXF OP1a	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p	mov: 32s x 32ch mxf: 32s x 16ch	No
2K 2048x1152	JPEG 2000 Lossy / Lossless	MXF OP1a MOV MJ2	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p	Mov:24s x 24ch Mxf: 24s x 16ch MJ2: 24s x 16ch	No
2K 2048x1152	Uncompressed	DPX	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	None	No
2K 2048x1152	Uncompressed YUV2 8bit / 2VUY 8bit / V210 10bit / V216 16bit	MOV	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	32s x 32ch	No

Resolution	Codec	File Format	Supported Frame Rate	Supported Audio	CC Support
2K 2048x1536	ProRes 422 Proxy / 422 LT / 422 / 422 HQ / 4444 / 4444 XQ (input only)	MOV	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	32s x 32ch	No
2K 2048x1536	DNxHR 422LB / 422SQ / 422HQ / 422HQX / 444	MOV MXF OP1a	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p	mov: 32s x 32ch mxf: 32s x 16ch	No
2K 2048x1536	JPEG 2000 Lossy / Lossless	MXF OP1a MOV MJ2	23p, 24p, 25p, 30p, 29p, 48p, 50p, 59p, 60p	Mov:24s x 24ch Mxf: 24s x 16ch MJ2: 24s x 16ch	No
4K UHDTV	XAVC CBG Class 300 / CBG Class 480 / VBR Class 300/ VBR Class480/ Long GOP	MXF OP1a	23p, 25p, 29p, 50p, 59p	8s x 1ch	No
4K UHDTV	Uncompressed	DPX	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p,custom 12 to 300 fps	None	No
4K UHDTV	Uncompressed YUV2 8bit / 2VUY 8bit / V210 10bit / V216 16bit	MOV	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	32s x 32ch	No
4K 3996x2160	ProRes 422 Proxy / 422 LT / 422 / 422 HQ / 444 / 4444 XQ (input only)	MOV	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	32s x 32ch	No
4K 3996x2160	DNxHR 422LB / 422SQ / 422HQ / 422HQX / 444	MOV MXF OP1a	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p	mov: 32s x 32ch mxf: 32s x 16ch	No
4K 3996x2160	DNxHR 422LB / 422SQ / 422HQ / 422HQX / 444	MOV MXF OP1a	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p	mov: 32s x 32ch mxf: 32s x 16ch	No
4K 3996x2160	JPEG 2000 Lossy / Lossless	MXF OP1a MOV MJ2	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p	Mov:24s x 24ch Mxf: 24s x 16ch MJ2: 24s x 16ch	No
4K 3996x2160	Uncompressed	DPX	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	None	No
4K 3996x2160	Uncompressed YUV2 8bit / 2VUY 8bit / V210 10bit / V216 16bit	MOV	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	32s x 32ch	No
4K 4096x2160	ProRes 422 Proxy / 422 LT / 422 / 422 HQ /444 / 4444 XQ (input only)	MOV	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p, custom 12 to 300 fps	32s x 32ch	No
4K 4096x2160	DNxHR 422LB / 422SQ / 422HQ / 422HQX/ 444	MOV MXF OP1a	23p, 24p, 25p, 29p, 30p, 48p, 50p, 59p, 60p	mov: 32s x 32ch mxf: 32s x 16ch	No
4K 4096x2160	XAVC CBG Class 300/ CBG Class 480/ VBR Class 300/ VBR Class 480 / Long GOP	MXF OP1a	23p, 24p, 25p, 29p, 50p, 59p	8s x 1ch	No
Custom	ProRes 422 Proxy / 422 LT / 422 / 422 HQ / 444 / 4444 XQ (input only)	MOV	12 to 300 fps	32s x 32ch	No
Custom	Uncompressed	DPX	12 to 300 fps	None	No
Custom	Uncompressed YUV2 8bit / 2VUY 8bit / V210 10bit / V216 16bit	MOV	12 to 300 fps	32s x 32ch	No

** For more information regarding H264 Long GOP/MP4 parameters, see Table 3 below

Table 3: H264 Long GOP Information

		DVB					Blu-ray Disc					Flash					Silverlight					IPTVFJ STD-0004					High Quality				
		Profile	Level	Bit-rate	M	N	Profile	Level	Bit-rate	M	N	Profile	Level	Bit-rate	M	N	Profile	Level	Bit-rate	M	N	Profile	Level	Bit-rate	M	N	Profile	Level	Bit-rate	M	N
525	59i	Main	3.1	CBR (2Mbps)	2	#																					High	3.0	Var (10Mbps)		
	29psf	Main	3.1	CBR (2Mbps)	2	#						Baseline	3.1	Var (0.4Mbps)	1	#	High	3.1	Var	4	#						High	3.0	Var (10Mbps)		
625	50i	Main	3.0	CBR (2Mbps)																							High	3.0	Var (10Mbps)		
	25psf	Main	3.0	CBR (2Mbps)								Baseline	3.1	Var (0.4Mbps)	1	#	High	3.0	Var	4	#						High	3.0	Var (10Mbps)		
1280x720	23p	High	4.1	CBR (10Mbps)																							High	4.1	Var (50Mbps)		
	24p	High	4.1	CBR (10Mbps)																							High	4.1	Var (50Mbps)		
	25p	High	4.1	CBR (10Mbps)								Main	3.1	Var (0.87Mbps)	4	#											High	4.1	Var (50Mbps)		
	29p	High	4.1	CBR (10Mbps)	2	#						Main	3.1	Var (0.87Mbps)	4	#											High	4.1	Var (50Mbps)		
	30p	High	4.1	CBR (10Mbps)	2	#																					High	4.1	Var (50Mbps)		
	50p	High	4.1	CBR (10Mbps)	2	#	High	4.1	Var (24Mbps)	3	#											High	4.0	Var (8Mbps)	2	33	High	4.1	Var (50Mbps)		
	59p	High	4.1	CBR (10Mbps)	2	#	High	4.1	Var (24Mbps)	3	#											High	4.0	Var (8Mbps)	2	33	High	4.1	Var (50Mbps)		
	60p	High	4.1	CBR (10Mbps)	2	#																					High	4.1	Var (50Mbps)		
1920x1080	59i	High	4.1	CBR (10Mbps)	2	#	High	4.1	Var (24Mbps)	3	#	Main	4.0	Var (0.87Mbps)	4	#						High	4.0	Var (12Mbps)	2	33	High	4.1	Var (50Mbps)		
	50i	High	4.1	CBR (10Mbps)			High	4.1	Var (24Mbps)	3	#	Main	4.0	Var (0.87Mbps)	4	#						High	4.0	Var (12Mbps)			High	4.1	Var (50Mbps)		
	23p	High	4.1	CBR (10Mbps)			High	4.1	Var (24Mbps)	3	#																High	4.1	Var (50Mbps)		
	24p	High	4.1	CBR (10Mbps)			High	4.1	Var (24Mbps)	3	#																High	4.1	Var (50Mbps)		
	25p	High	4.1	CBR (10Mbps)								Main	4.0	Var (0.87Mbps)	4	#											High	4.1	Var (50Mbps)		
	29p	High	4.1	CBR (10Mbps)	2	#						Main	4.0	Var (0.87Mbps)	4	#											High	4.1	Var (50Mbps)		

M = I or P frame interval

N = GOP length

Appendix B. Glossary

Table 4: Glossary of Terms

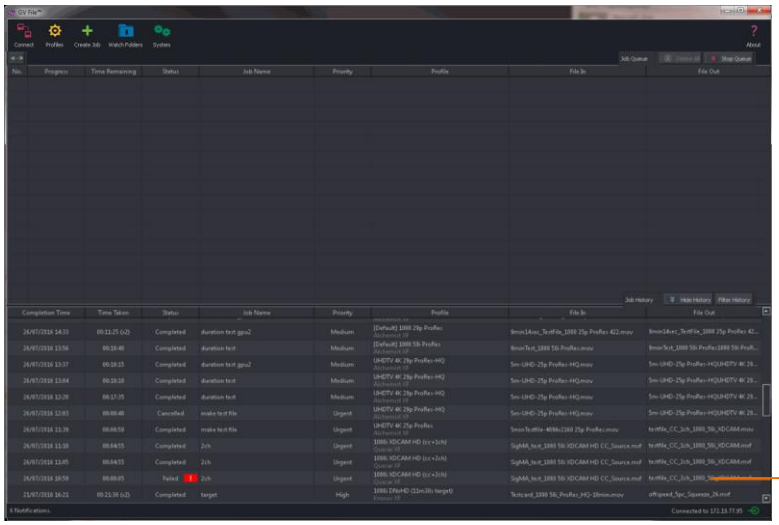
Term	Definition
Aliasing	An **artefact** associated with sampled signals. This undesirable effect is caused by sampling frequencies being too low to faithfully reproduce the frequencies present in the original signal.
AVC-Intra	**Advanced Video Codec - Intra:** A professional, high efficient, codec developed by Panasonic
AVC-HD	A consumer version of the AVC codec, developed by Panasonic for consumer camcorders. Usually wrapped in an MTS container
Bit-rate	A phrase used to describe the data density of a video or audio file. Usually expressed in Mbps (10^6 bits of data per second)
Cadence	The pattern of video fields that create a net frame rate lower than the video frame rate that carries them. Typical cadences would include 1:1, 2:2 & 2:3
Closed Captions	**Closed captioning** is a term describing several systems developed to display text on a television or video screen to provide additional or interpretive information to viewers who wish to access it
Codec	**Codec** is derived from the words '**Co**mpression' and '**Dec**oder'. A codec performs the task of video compression
Color-space	**Color-space** is a system where the color of an individual pixel is defined by the percentage of its component colors. For example RGB color space defines a pixel's color by the percentages of red, green and blue contained there in
DNxHD	**Digital Nonlinear Extensible High Definition**. DNxHD is a professional HD video codec developed by AVID. DNxHD has a maximum bit-rate of 220Mbps
DVCPro	Is a professional video codec developed by Panasonic. DVCPro has a maximum bit-rate of 100Mbps
Essence (video essence).	Essence files are the actual video and audio files contained within the video file. The essence files may be compressed using a codec, or maybe uncompressed, prior to wrapping in the container file
Fallback	A term associated with motion compensated conversion. On the rare occassion complex motion may not yield useable motion vectors. **Fallback** allows such content to fall back to a more appropriate algorithm to create output frames. Advance solutions offer adaptive fallback modes
Fingerprint	An alternative term applied to Bia Biometric Signitures.
H.264	H.264 is a common video codec. H.264 is only ever wrapped with an MP4 container.
Interlace	Interlaced video is a technique of doubling the perceived frame rate of a video signal without consuming extra bandwidth. Since the interlaced signal contains the two fields of a video frame captured at two different times, it enhances motion perception to the viewer

Term	Definition
JPEG2000	A file compression system developed by the **Joint Photographic Experts Group** in year 2000
Linear (conversion)	Is a technique used for video standards conversion, where output field/frames are made by basic blending of input fields/frames. The technique is much simpler than motion prediction and is less demanding upon hardware, but yields inferior results
Motion Estimation	Is the process of deriving motion vectors, ususally from adjacent frames in a video sequence. For frame rate conversion these motion vectors are used during the generation of new output frames
MPEG IMX	Is an SD video codec developed by Sony. It is a development of the Sony Betacam tape format and can have a bit-rate up to 50Mbps
.mj2	Is a JPEG2000 file wrapper
.mov	Is the file extension for Apple QuickTime files
.mp4	MPEG-4 is a common video and audio container
.mts	Is a video file-wrapper usually associated with AVC-HD. Very similar to MT2S
.mt2s	Is a video file-wrapper usually associated with AVC-HD. Very similar to MTS
.mxf	MXF is an acronym of **Material eXchange Format**. MXF is a container format for professional digital video and audio media defined by a set of SMPTE standards
MXF OP1a	Is a specific video file-wrapper (also known as a **container**) type based on the MXF format
NAS	Is an acronym for **Network Attached Storage**. A NAS offers both storage and a file system and appears to a client OS as a file server which drives can be mapped to
Native (resolution)	The actual resolution of a video signal. If the native resolution is not supported by a display device, a form of rescaling maybe applied to make it viewable. Native resolution describes the resolution prior to any scaling
OS	An **Operating System** is the software that manages computer hardware and software resources
Progressive	Method of scanning a video picture where each line is scanned sequentially
Psf (progressive segmented frame)	Psf is a method of transporting a progressive video frame in an interlaced video system. Both fields of a psf frame represent the same temporal point. If the interlaced fields are merged, a perfect progressive frame can be formed. Also referred to as 2:2
SAN	Is an acronym for **Storage Area Network**. A SAN offers block based storage which appears to the client OS as a disk
SD	Acronym for **Standard Definition**. A standard definition television system usually refers to a PAL 625 or NTSC 525 interlaced systems
Slow-PAL	A PAL television standard defined as having a temporal resolution of less than 25 Hz. Usually applied to film originated content of 24, or 23.98 fps
Telecine	A process that converts optical film frames into video

Term	Definition
Teletext	Teletext is a television information retrieval service created in the UK in the early 1970s. Teletext is a means of sending text and diagrams to a properly equipped television screen. It offers a range of text-based information, typically including news, weather and TV schedules. Subtitle information is also transmitted within the television signal
XAVC	Is Sony's version of the AVC codec

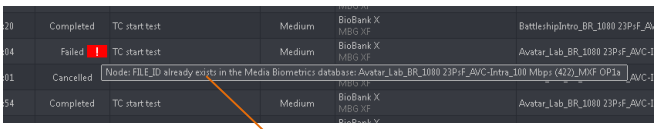
Appendix C. GV File Error Strings

If for any reason, a GV File system fails to process a particular job, an entry will be made in the GV File client history pane, where a **red exclamation mark** will be associated with the **failed** statement:



Failed job

When a User hovers the mouse cursor over the **red exclamation mark** an **error string** will appear, offering useful information as to the reason for the failure.



Error String message

Below, these **error strings** are listed and explained.

Table 5: GV File Error String Returns

No	Error String
1.	*GV File Node received an invalid parameter in the FIMS Transform request*
2.	*GV File Node received a request to process an unknown video format in the FIMS Transform request*
3.	*The capability of the GV File Node is unknown, cannot process FIMS Transform request*
4.	*GV File Node encountered an unexpected error when processing FIMS Transform request.*
5.	*GV File Node has encountered an unexpected error.*
6.	*GV File Node could not find the Solution Profile*
7.	*GV File Node could not find the Job Profile*
8.	*GV File Node could not find the Sink Profile*
9.	*GV File Node could not find the source file*
10.	*GV File Node failed to apply job specific settings*
11.	*GV File Node Worker failed to initialise*
12.	*GV File Node service was stopped during a running job*
13.	*GV File Node was unable to retrieve all profiles from the GV File Server*
14.	*GV File Node unable to obtain all required licenses*
15.	*GV File Node detected a Licensing Error during processing*
16.	*GV File Node Worker encountered an unexpected error during processing*
17.	*GV File Node could not start GV File Node Worker*
18.	*GV File Node Worker failed.*
19.	*Instance of GV File Node Worker already running*
20.	*GV File Node failed to create the Job Profile*
21.	*GV File Node cannot process the source file because it is an unsupported format*
22.	*Internal Error. Failed to cancel*
23.	*The file extension may not be valid or the file could be corrupt*
24.	*Node: File already exists in the Media Biometric database*
25.	*Node: Can't connect to Media Biometrics Database: Mongodb://…..*

The GV File Node returns errors as a string to the GV File Client to enable the client to display error hints to the user.

1. **Error Message:**

   GV File Node received an invalid parameter in the FIMS Transform request

   Reason:

   This failure message should only be seen if the GV File product is being controlled via a third party application through the FIMS Transform Service API.

   While processing a FIMS Transform Request the GV File Node detected an invalid parameter and could not continue.

   Suggestions:

   i. Check the parameters of the 3rd party application **request**.

   ii. Run the same job from the GV File client to check validity.

2. **Error message:**

   GV File Node received a request to process an unknown video format in the FIMS Transform request

   Reason:

   This failure message should only be seen if Alchemist XF is being controlled via a third party application through the FIMS Transform Service API.

   The FIMS Transform Request contained a request to process a video format that the GV File Node does not support.

   Suggestions:

   i. Check the parameters of the 3rd party application **request**.

   ii. Run the same job from the GV File client to check validity.

3. **Error message:**

   The capability of the GV File Node is unknown, cannot process FIMS Transform request

   Reason:

   It was not possible to detect the capability of the underlying hardware. Therefore the GV File Node is unable to process the FIMS Transform request.

   It could be a problem with the permissions of the profiles directory in the GV File Node installation, which prevented the GV File Node service from writing the Node Capability XML file. Or the GV File node has encountered unsupported hardware

   Suggestions:

   i. Check log file GV File Node Info.log in Snell logs directory.

   ii. Check the permissions of the directory <install path>/GV File Node/nodeinfo

   iii. Confirm the target hardware meets the target hardware specification.

4. **Error message:**

   GV File Node encountered an unexpected error when processing FIMS Transform request.

   Reason:

   This failure message should only be seen if Alchemist XF is being controlled via a third party application through the FIMS Transform Service API.

   While processing the FIMS Transform request the GV File Node encountered an unexpected error.

   Suggestions:

   i. Check the parameters of the 3rd party application **request**.

   ii. Run the same job from the GV File client to check validity.

5. **Error Message:**

   GV File Node has encountered an unexpected error.

   Reason:

   The GV File Node encountered an expected error either before or during processing.

   Suggestions:

   i. Try running the job again.

   ii. If job persistently fails contact Snell Support

6. **Error message:**

   GV File Node could not find the Solution Profile

   Reason:

   The GV File Node has not been able to load the Solution Profile from the <install path>/GV File Node/profiles directory. This may happen in a system where the GV File Node is running on a different PC/Server from the GV File Server and comms between the two has been lost. Or, the permissions of the <install path>/GV File Node/profiles directory have been modified.

   Suggestion:

   i. Check comms between GV File Server and GV File Node.

   ii. Check the permissions of the <install path>/GV File Node/profiles directory.

7. **Error Message**

   GV File Node could not find the Job Profile

   Reason:

   The GV File Node has not been able to load the Solution Profile from the <install path>/GV File Node/profiles directory. This may happen in a system where the GV File Node is running on a different PC/Server from the GV File Server and comms between the two has been lost. Or, the permissions of the <install path>/GV File Node/profiles directory have been modified.

   Suggestion:

   i. Check comms between GV File Server and GV File Node.

   ii. Check the permissions of the <install path>/GV File Node/profiles directory.

8. **Error Message:**

   GV File Node could not find the Sink Profile

   Reason:

   The GV File Node has not been able to load the Solution Profile from the <install path>/GV File Node/profiles directory. This may happen in a system where the GV File Node is running on a different PC/Server from the GV File Server and comms between the two has been lost. Or, the permissions of the **<install path>/GV File Node/profiles** directory have been modified.

   Suggestion:

   i. Check comms between GV File Server and GV File Node.

   ii. Check the permissions of the <install path>/GV File Node/profiles directory.

9. **Error Message**

   GV File Node could not find the source file

   Reason:

   The GV File Node has not been able to find the source file defined in the FIMS Transform request.

   Suggestions:

   i. The path entered for the Source File, in the Create Job window is incorrect.

   ii. The source file has been deleted or moved between time of configuration and running the job.

   iii. The source file is on an associated share which is no longer reachable from the host PC/Server.

10. **Error message:**

    GV File Node failed to apply job specific settings

    Reason:

    This failure message should only be seen if Alchemist XF is being controlled via a third party application through the FIMS Transform Service API.

    The GV File Node has failed to set job specific settings. Providing all files are available and the job specific setting conform to our API this should not occur.

    Suggestions:

    i. Check the parameters of the 3rd party application **request**.

    ii. Run the same job from the GV File client to check validity.

11. **Error message:**

    GV File Node Worker failed to initialise.

    Reason:

    The GV File Node failed to initialise the GV File Node Worker. This could be due to running a solution that is not compatible with the version of the GV File Node, or the underlying hardware is not capable of supporting the desired solution.

    Suggestions:

    i. Confirm source file is a supported file type. Example; although XDCam codec is supported and QuickTime file-wrapper is also supported, however XDCam with a QuickTime wrapper as a combination is not supported at the present time.

12. **Error message:**

    GV File Node service was stopped during a running job

    Reason:

    The GV File Node service was stopped, by the User, during a running job. As this prevents the license from being checked, the GV File Node Worker will also be stopped and the job terminated.

13. **Error message:**

    GV File Node was unable to retrieve all Profiles from the GV File Server

    Reason:

    The GV File Node was unable to retrieve all of the required profiles from the GV File Server. This may happen in a system where the GV File Node is running on a different PC/Server from the GV File Server and comms between the two has been lost.

    Suggestion:

    i. Check comms between GV File Server and GV File Node.

14. **Error message:**

    GV File Node unable to obtain all required licenses

    Reason:

    The GV File Node has not been able to check out all of the licenses defined in the Solution Profile. Or, a valid license is not present.

15. **Error Message:**

    GV File Node detected a Licensing Error during processing.

    Reason:

    The GV File Node has detected a licensing problem therefore the job will be terminated. This could be because the license server has become un-reachable, mid-job.

    Suggestion:

    i. If the license server is on a separate PC/Server, from the GV File Server, check comms link between the two.

16. **Error Message:**

    GV File Node Worker encountered an unexpected error during processing

    Reason:

    The GV File Node Worker has encountered an unexpected error. The error is written to the GV File Node log and a customer facing message is sent to the client. This is because the error message could be a low level system message such as an exception.

    Suggestion:

    i. Try running the job again.

    ii. If job persistently fails, make into Support issue.

17. **Error Message:**

    GV File Node could not start GV File Node Worker

    Reason:

    The GV File Node Worker failed to start the GV File Node Worker, maybe the program is missing or the permissions are not set correctly.

    Suggestion:

    i. Check the application <install path>/GV File Node/SnellOD_NodeWorker.exe exists and has the correct permissions to execute.

    ii. Check that there isn't already a SnellOD_NodeWorker application running.

18. **Error Message:**

    GV File Node Worker failed.

    Reason:

    The GV File Node Worker has failed. This is most likely caused by a crash due to an unhandled exception.

    Suggestion:

    i. Try running the job again.

    ii. If job persistently fails contact Snell Support

19. **Error Message:**

    Instance of GV File Node Worker already running.

    Reason:

    The GV File Node Worker has failed to start. This is due to an instance of the GV File Node Worker already running.

    Suggestion:

    i. This shouldn't happen in the field. If seen contact GV File Support.

    ii. Check that there isn't already a SnellOD_NodeWorker application running. If there is, try to terminate the SnellOD_NodeWorker application and try to run the job again.

20. **Error Message:**

    GV File Node failed to create the Job Profile

    Reason:

    The GV File Node failed to create the Job Profile. This could be due to permissions on the profile directory in the GV File Node installation or an invalid parameter.

    Suggestion:

    i. Check the permissions of the <install path>/GV File Node/profiles directory

    ii. If using a third party application test the job using the GV File Client

21. **Error Message:**

    GV File Node cannot process the source file because it is an unsupported format

    Reason:

    The GV File Node cannot process the source file because it does not have a suitable de-multiplexer available.
    The GV File Node cannot process the source file as it is in a format that is not supported.

    Suggestions:

    i. Check if the source file is a supported file type.
    ii. Check the source file is a supported combination of Codec and File Wrapper
    iii. Check the source file contains a supported video format.

22. **Error Message:**

    Internal Error. Failed to cancel

    Reason:

    Failed to cancel the job, use this error to try again.

23. **Error Message:**

    The file extension may not be valid or the file could be corrupt

    Reason:

    The source file may not be a compatible file type, or possibly the source is corrupt.

    Suggestions:

    i. Check that the source file is a supported file type (see supported file types table in the Alchemist User Guide)
    ii. If the file is a supported format, try running the file on a 3rd party application, to check the integrity of the file.

24. **Error Message:**

    Node: File already exists in the Media Biometric database.

    Reason:

    A previous GV File process has created a Media Biometric fingerprint for the selected source file.
    There is no reason to run this process again.

25. **Error Message:**

Node: Can't connect to Media Biometrics Database: Mongodb://…..

Reason:

The configured Media Biometric Database is unreachable, or does not exist.

Suggestion:

The URL path to the Media Biometric Database is configured in the Output Tab, of the selected MBG-FILE Profile. Check the configuration and check that the desired Media Biometric Database is contactable.

Appendix D. DPX Support

Input DPX support:

- RGBA planar
- Y Cb Cr planar (4:2:2)
- RGB interleaved
- RGBA interleaved
- ARGB interleaved
- CbYACrYA interleaved (4:2:2:4)
- CyYCr interleaved (4:4:4)
- CbYCrA (4:4:4:4)

Bit depths of 8, 10, 12, 16 and 32 are supported. Process from RGB to YUV assume Rec.709 colour space.

The character limit on the source file would be governed by the OS in use. For example Windows has a filename character limit of 260.

Output DPX support:

- RGB 10bit (little endian)

Other rules for DPX

- Underscores are not required. Our reader looks for the last number in the filename and uses this as the index number. For example “1080_50i_Test_0000001.dpx” the last number would be “0000001”.
- Source files do not need to start at zero, but the sequence must be sequential – a break in the sequence will stop the process
- At present all process from RGB to Rec.709 assume Rec.709 colour space