

QLS Archive (CatDV-XenData)



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CatDV – SquareBox – <http://www.squarebox.com>

XenData - <http://www.xendata.com>

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Foreword

Reading of this document is **highly recommended** to understand how to deploy QLSArchive, configure all components and commission the build. The preparatory tasks are provided in order of action, as it will not be possible to display archive status information in CatDV until some test archive submissions are performed.

Overview

XenData digital video archives integrate with a wide range of products and workflows used in the media and entertainment industry. The QLSArchive (CatDV-XenData) solution leverages the power of CatDV Workgroup/Enterprise Server and XenData to provide an intuitive user interface to the complex task of archive and retrieval of digital assets.

This document relates specifically to the QLSArchive (CatDV–XenData) solution and references to the product name QLSArchive will be used in that context.

QLSArchive primarily deals with media location, whether online, cached or committed to archive for long-term storage. Considering the cost of high bandwidth storage, QLSArchive may also be employed for ‘edit with proxy’ workflows where the high definition media is required for final conform tasks.

CatDV provides first class media asset management and is the essential control component for your metadata, including file location and historical events relating to archive operations. Whilst QLSArchive directs media by operator request, CatDV receives tracking metadata detailing the media location at any point in time. Please ensure you have a means of periodic back up of your CatDV Server database and XenData, as the information contained represents your media asset management investment.

The user interface consists of additional CatDV Tools to empower nominated operators with archive related tasks. The product aims to be simple in use but incorporates sophisticated routines for validity checking and early reporting to keep the user aware of archive related events.

Whilst the Archivist can initiate archive jobs, the CatDV Worker is employed for queuing, processing and communication with XenData. The XenData appliance accommodates the Worker node in this solution thereby reducing the hardware requirement. This method permits the use of multiple Archivists without imposing additional load on the client workstations by offloading the chore of file movement to the Worker node.

QLSArchive supports Mac and Windows file paths. Operations are performed at the CatDV asset level, the individual record of a CatDV import. XenData may be used with a wide variety of storage systems, the design accommodates SAN technologies from volume to file level write access, details will be shown later in this document.

The QLSArchive solution comprises additional programs to a CatDV Enterprise/Workgroup Server deployment.

A CatDV Worker is installed on the XenData appliance to assist in archive related functions.

CatDV Client system requirements are as CatDV Pro/Pegasus10

System Requirements

At least CatDV Server 6.9.4, CatDV Pro 10, CatDV Worker 5.1.3

XenData SX-10 or above

XenData Workflow API

Java 1.7 and above

Supported Tape Devices – Please refer to XenData documentation.

The following diagram illustrates a typical CatDV Workgroup/Enterprise deployment and identifies where additional software is required.

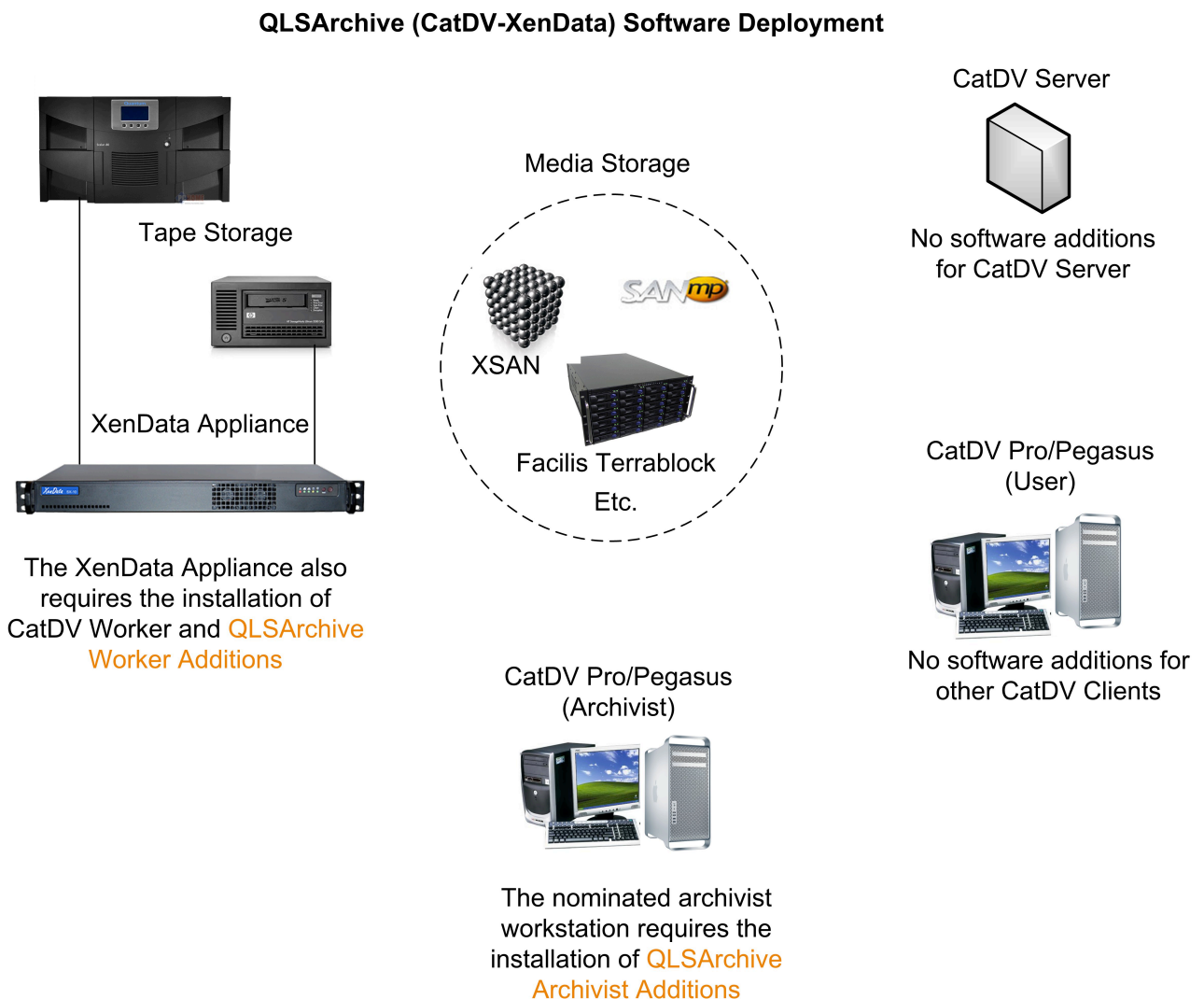


Figure 1 Software Deployment

The diagram should be considered conceptual as the distribution of CatDV components provides flexibility, please refer to CatDV documentation for details.

Component Description

QLSArchive Worker Additions – This component provides configuration, queuing and communications between CatDV and XenData.

QLSArchive Archivist Additions – This component adds archive tools to nominated CatDV Pro/Pegasus clients.

The archive solution offers a number of optional enhancements to the expected archive and restore operations. These may prove beneficial in your deployment and will be described later in this document. It is important here to convey that the XenData node carries out file movement (and provides archive intelligence), whilst you choose who to empower with the responsibility of archive.

QLSArchive provides integration between CatDV and XenData. It is therefore essential that CatDV and XenData are functioning prior to introducing additional software with such dependencies. This fact appears throughout the documentation, sometimes emphasised **in red** and a basic understanding of both applications is assumed as the minimum installation skill requirement.

The Archivist tools provided by **QLSArchive Archivist Additions** may be given to any CatDV Client although you may wish to limit each Archivist to particular Production Groups to avoid duplication of effort. This is not necessary but may help to save some investigative work if a conflict situation arises.

Preparatory Steps for QLSArchive Installation

CatDV components and XenData are best installed, tested and ready for the introduction of QLSArchive, configuration is the simplest yet, but knowing core components are functional will ease deployment. [Please refer to XenData and CatDV documentation for installation guidance.].

The XenData CatDV Worker requires access to the media referenced by CatDV in order to achieve file movement. This may consist of fibre or Ethernet accessible storage with SAN agents providing connectivity. Storage accessible to the client is accessible to CatDV and can be referenced by the archive solution.

Test storage connectivity to ensure that the volumes holding high-resolution media are accessible by the Worker. Archiving and retrieval operations require file movement so the highest bandwidth medium is preferred. Consider path mappings and thoroughly test if you need to support Windows and Mac clients as clips imported to CatDV from opposing operating systems will require path mappings in some Worker actions. Please refer to 'QLSArchive in a Mixed Environment' for more detail. CatDV supports the use of proxies, which are not affected by archive or backup operations.

Install CatDV Worker and license to the XenData appliance. Configure the Worker to connect to CatDV Server where the login account has sufficient permissions to access/modify any clip in the system considered for archive or retrieval.

Refer to CatDV documentation for information on how to install and license the Worker. QLSArchive will automatically add the required archive actions during 'Preflight' configuration.

There are no preparatory steps for CatDV Server as new fields to reflect archive status will be generated as required. Likewise, existing CatDV clients require no preparation for the introduction of QLSArchive unless they are to become archivists.

Once the environment is established and tested, please download the QLSArchive bundle referenced by the link sent via email.

Installation of QLSArchive

QLSArchive Archivist Additions must be performed on the CatDV Pro/Pegasus clients that require archive tools and is available for the Mac and Windows platforms.

QLSArchive Worker Additions provides configuration, administration, queuing and communication – it can be considered the centre of archive intelligence and must be installed on the XenData appliance along with the CatDV Worker.

A QLSArchive installation is essentially a two-part process requiring a CatDV Worker for the archive engine components and CatDV Pro/Pegasus clients to receive archive tools.

Install **QLSArchive Worker Additions** on the XenData [CatDV Worker] appliance. The installer will require administrative account credentials. Installation will add a program to C:\Program Files (x86)\QLSArchive\. You should have received an email containing license files for QLSArchive in zip format. This must be extracted to C:\ProgramData\QLSArchive\License. QLSArchive cannot be configured if the license files are not valid or cannot be found.

As this section of the documentation refers to software deployment, the CatDV Client installation will also be introduced. Although configuration will be accomplished later, it is time to consider who you will empower with the ability to archive, restore and more. Experience has shown that such a responsibility is best issued to archive savvy personnel, an understanding of XenData and tape change procedure is of major benefit. Restore jobs may require an understanding of network storage space, allowing a free for all may result in a bad day at work for the administrator...

Install **QLSArchive Archivist Additions** on the designated CatDV Pro/Pegasus Client, please choose the appropriate installer for the resident operating system, Mac or Windows. The installer will require administrative account credentials with any late breaking news added as guidance notes.

The installation will add a program to /Library/Java/Extensions for Mac or %SYSTEMROOT%\Sun\Java\lib\ext in the case of Windows, it will be named QLSArchive_catdv.jar in either case. This completes software installation; it is now necessary to configure the archive solution to your environment.

Quickstart Instruction

The following example environment will be used as a reference for the deployment of QLSArchive. Screen shots have been taken from a live system to illustrate the relationship between XenData File Groups and QLSArchive configuration.

QLSArchive (CatDV-XenData) Example Deployment

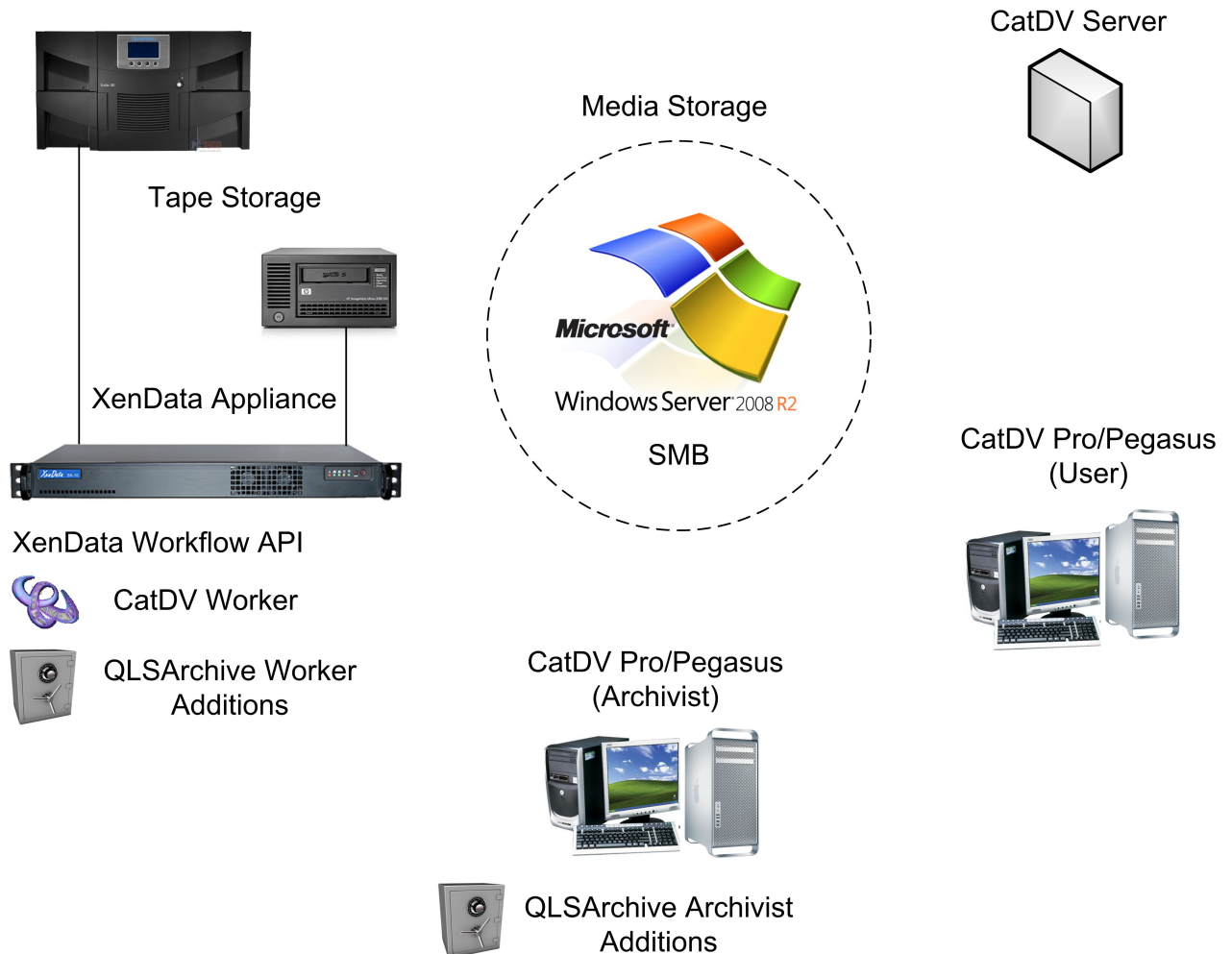


Figure 2 QLSArchive Example Deployment

XenData Configuration for this Example

The XenData Management Console is used to configure File Group and Volume Sets for archive integration. This example illustrates the use of multiple File Groups, CatDV (Tape Library) and SA_CatDV (Stand Alone LT04 Tape device). Default settings are used to simplify deployment and may be modified once the system is fully commissioned; please refer to XenData documentation for more information on the options available.

File Group CatDV:

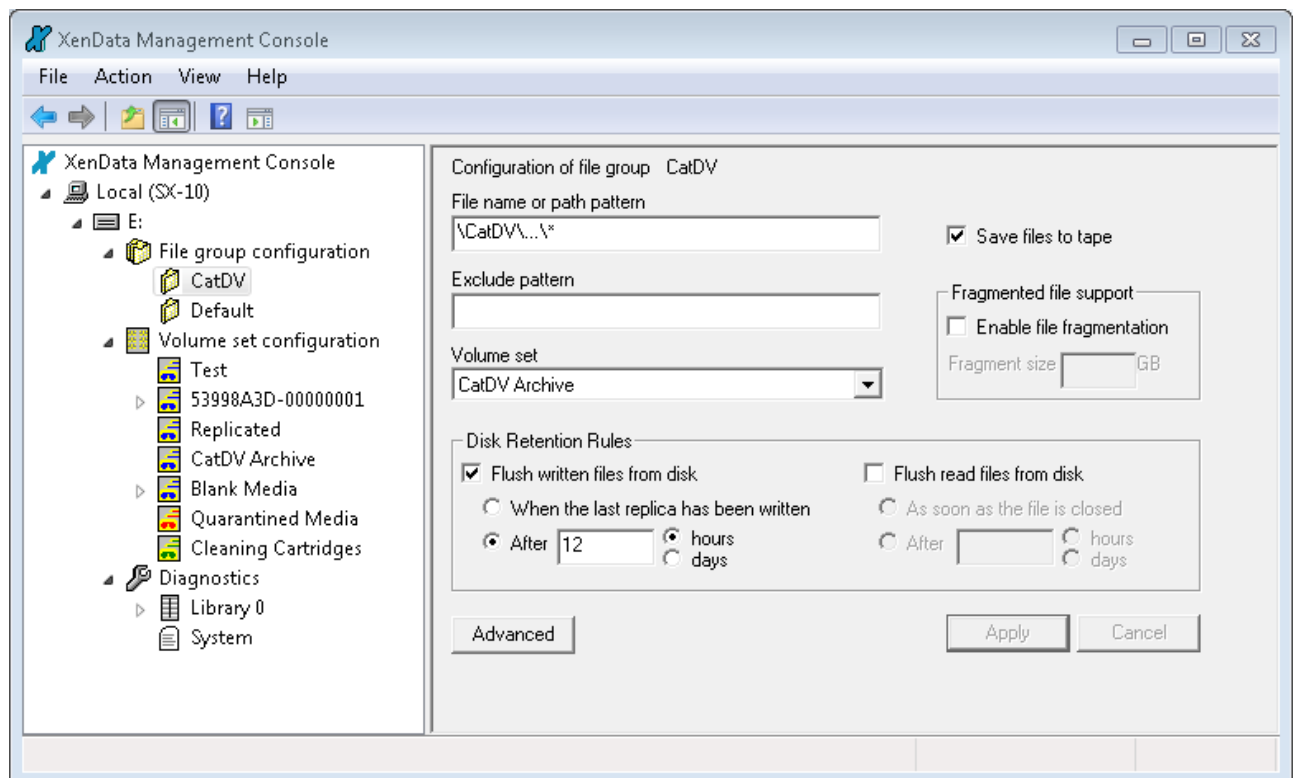


Figure 3 XenData File Group CatDV

File Group CatDV – Advanced (default values shown)

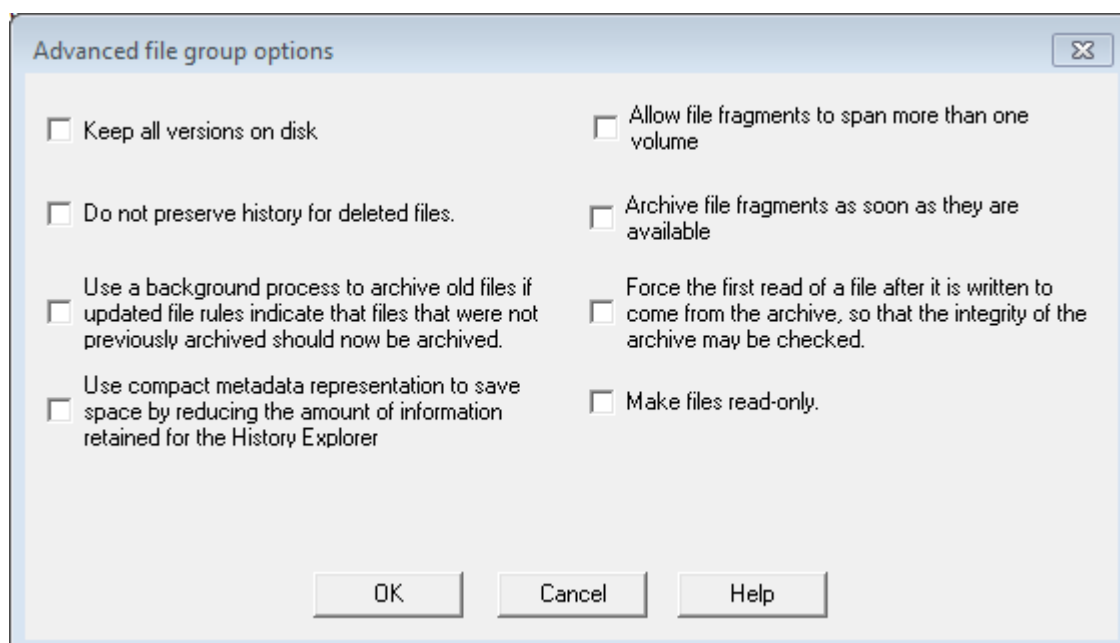


Figure 4 XenData Advanced File Group Options

The Volume Set associated with File Group CatDV has been renamed 'CatDV Archive' –
Note a tape has been added

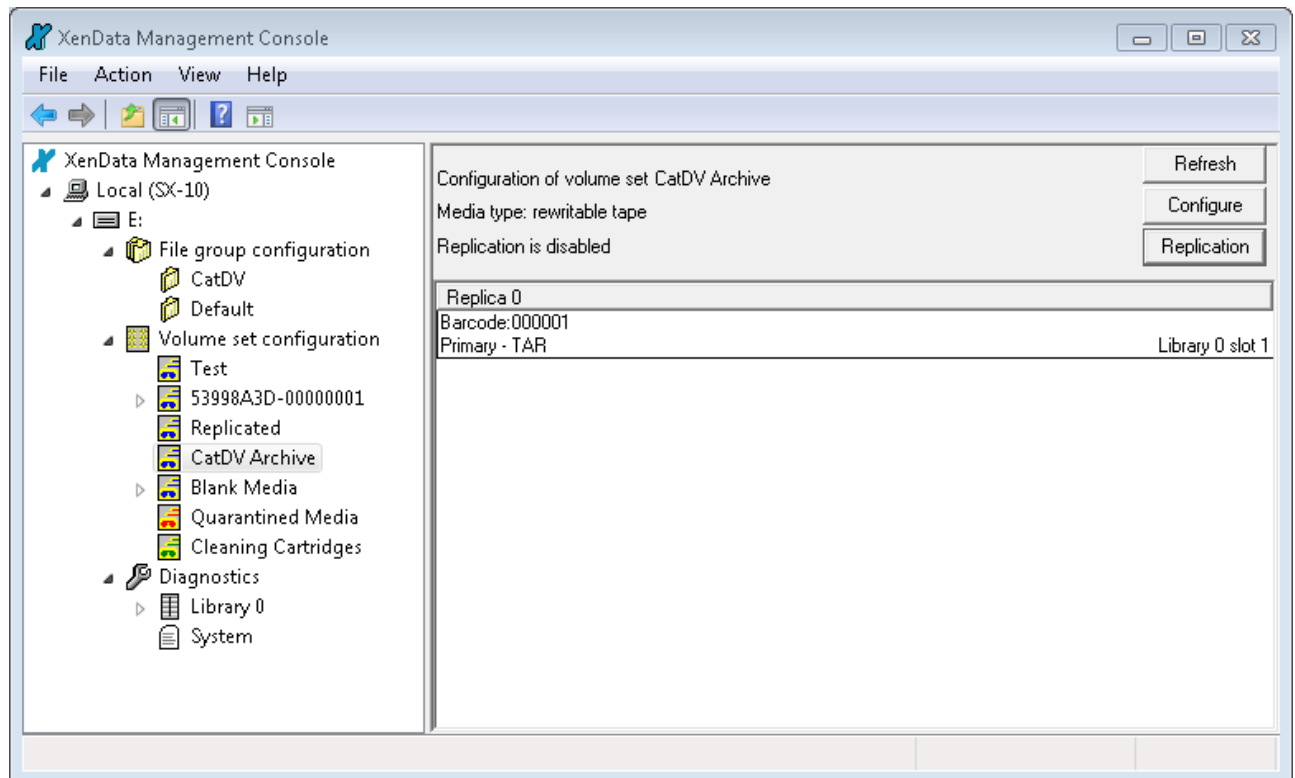


Figure 5 XenData Volume Set

File Group SA_CatDV:

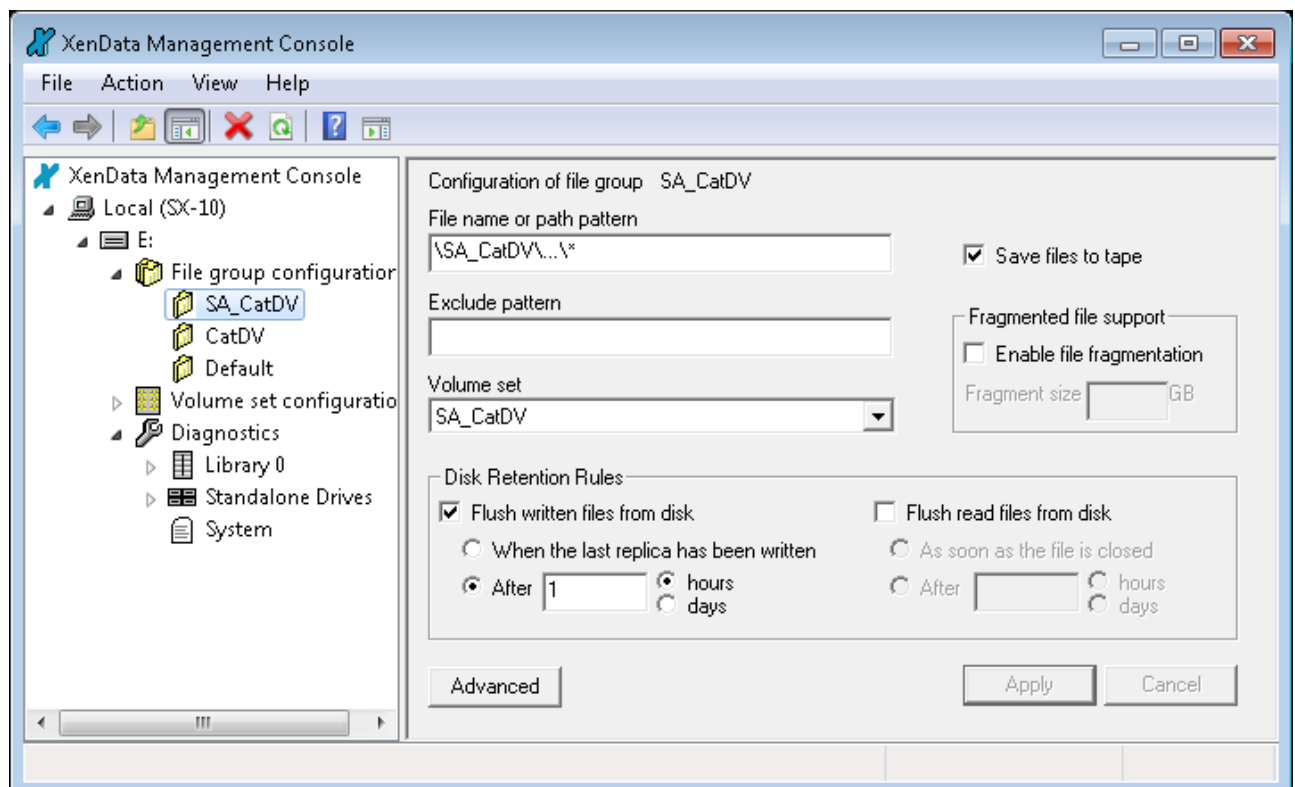


Figure 6 XenData File Group SA_CatDV

File Group SA_CatDV– Advanced

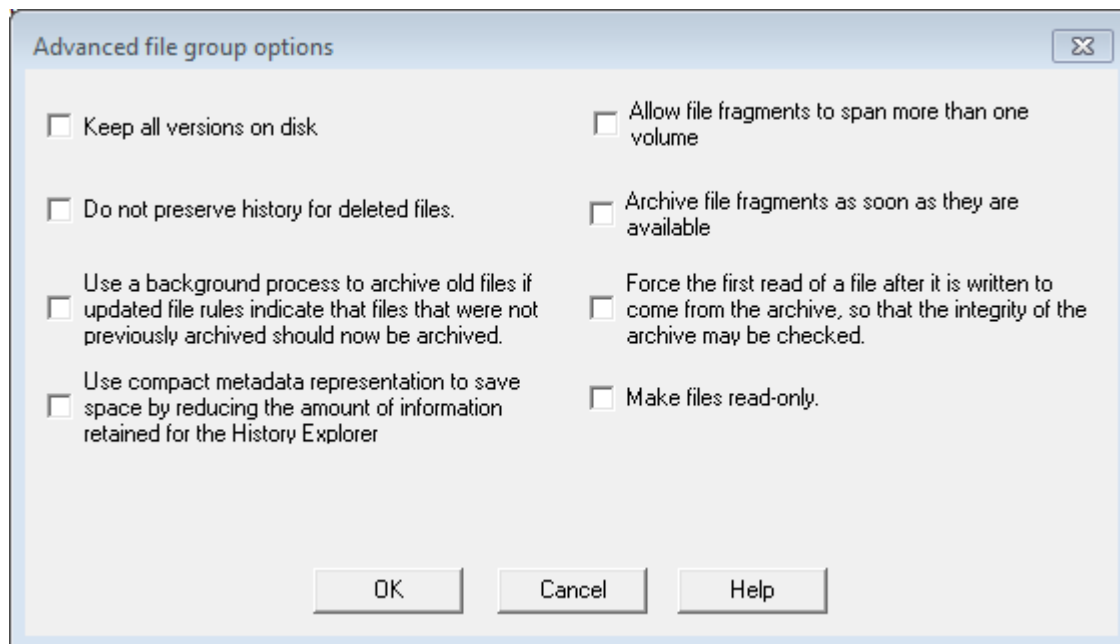


Figure 7 XenData Advanced File Group Options

Volume Set associated with File Group SA_CatDV – Note a tape has been added

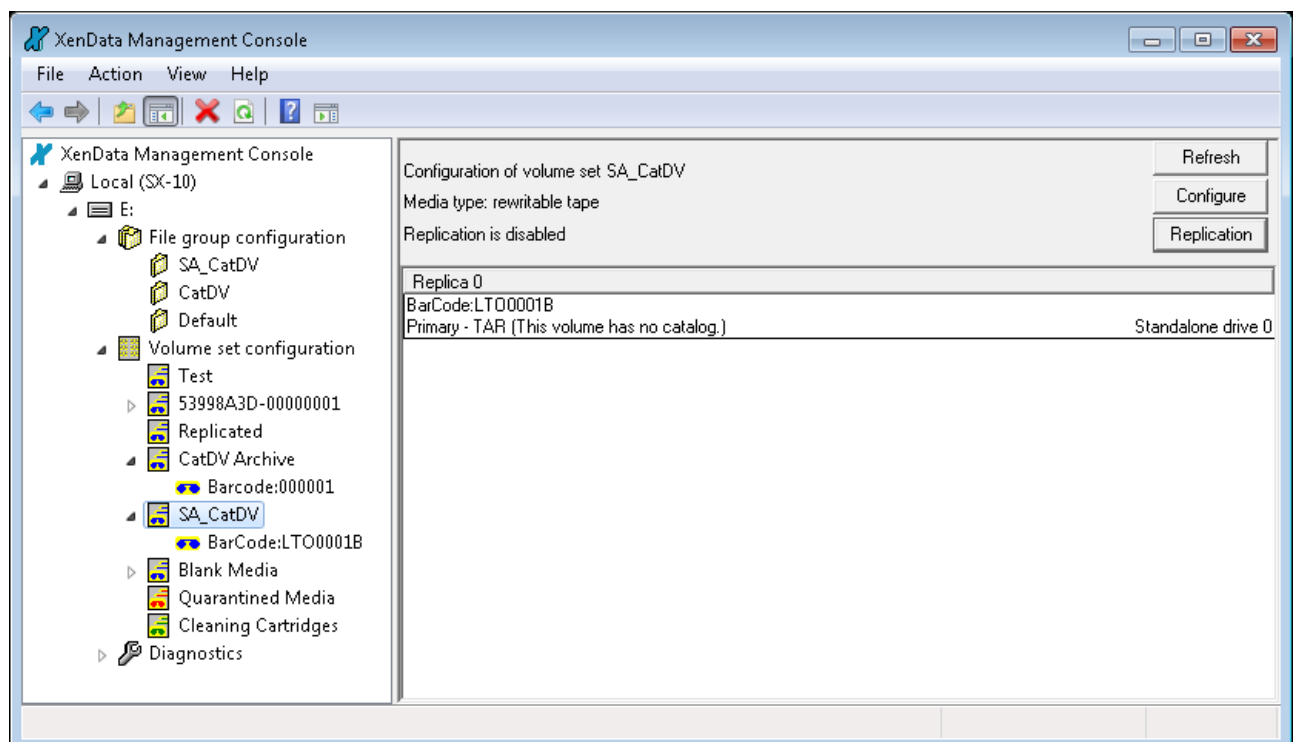


Figure 8 XenData Volume Set for SA_CatDV

A manual archive test is highly recommended prior to configuring QLSArchive. Copying test files to the File Group or Groups should result in XenData committing to them to tape. This simple test is a useful diagnostic for future reference:

If manual archiving is not successful then QLSArchive processing will fail.

QLSArchive Configuration

Launch C:\Program Files (x86)\QLSArchive\QLSArchive.jar on the XenData appliance. QLSArchive provides a means of integration configuration; it also provides background process engines to fulfil archive related requests. The CatDV Worker and QLSArchive must be launched and remain running for the archive integration to function.

A valid license for QLSArchive must be found at application launch otherwise a warning message will result:

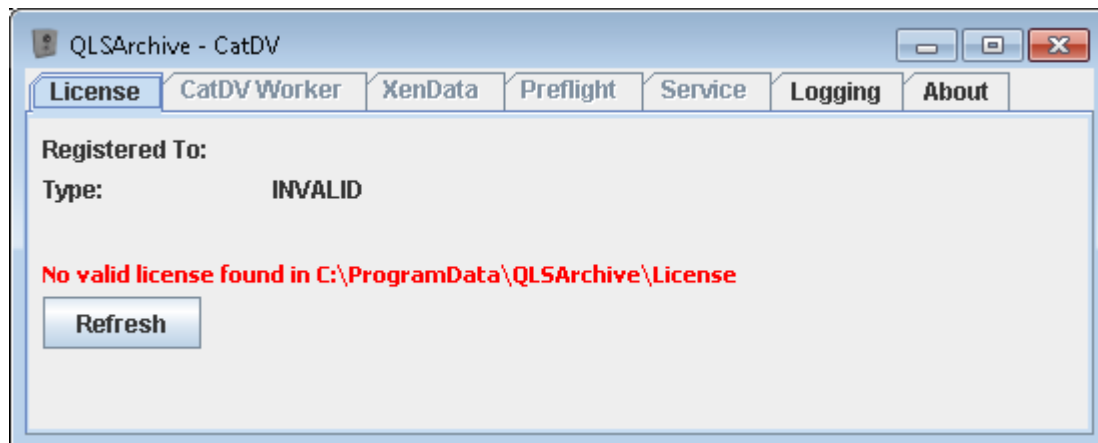


Figure 9 No Valid License Found

QLSArchive requires a license, which is normally conveyed as an email file attachment from QLS Distribution. The license files will be in zip format and require extraction to C:\ProgramData\QLSArchive\License directory on the XenData appliance. The 'Refresh' button allows a license test without quitting QLSArchive.

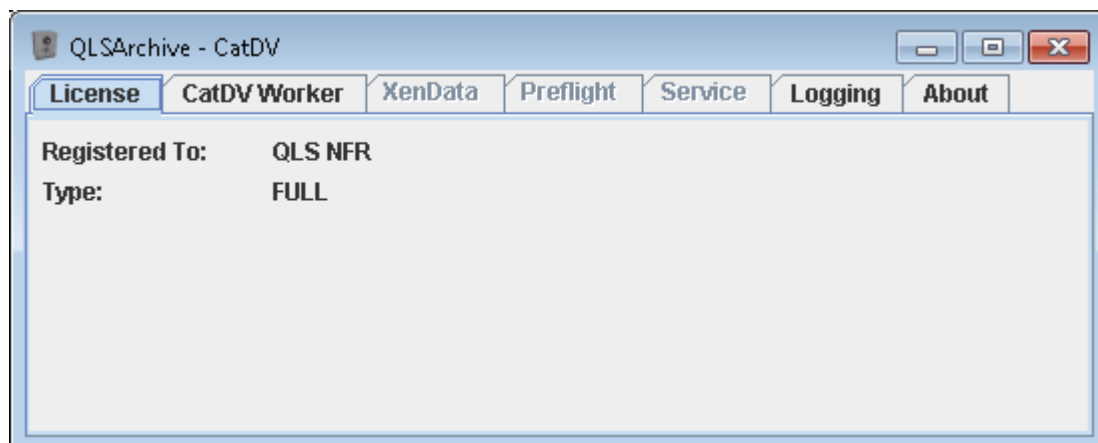


Figure 10 Valid License Detected

QLSArchive reveals configuration tabs as the customer provides information on the local environment. The 'CatDV Worker' tab becomes available when a valid license has been detected.

Select the CatDV Worker tab

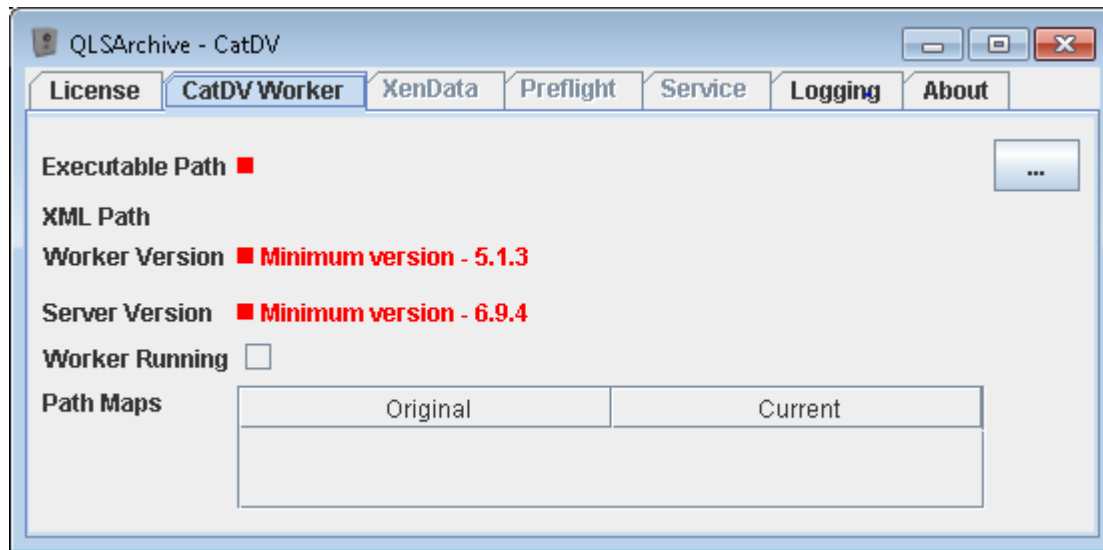



Figure 11 CatDV Worker tab requires user input

QLSArchive (CatDV – XenData) requires minimum versions of CatDV components to be employed and are indicated within the panel. Select the browser button  adjacent to 'Executable Path' to open a file finder utility to select the installed production version of CatDV Worker.

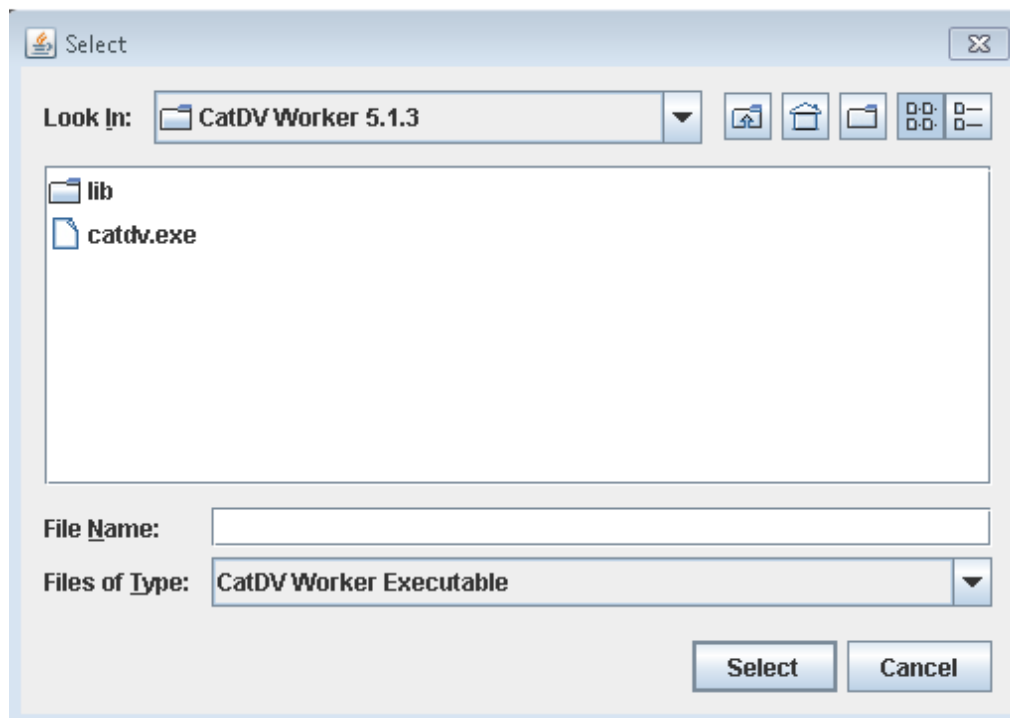


Figure 12 Informing of the CatDV Worker in use

This operation must be repeated if the CatDV Worker is upgraded in the future.

Highlight 'catdv.exe' and press Select, this will commit your choice and populate the CatDV Worker panel with additional information on your CatDV environment. Note that a visual indicator is provided in this panel to reflect the active state of CatDV Worker, this will be unchecked when the Worker is not running.

Selecting the CatDV Worker Path causes all fields to populate automatically

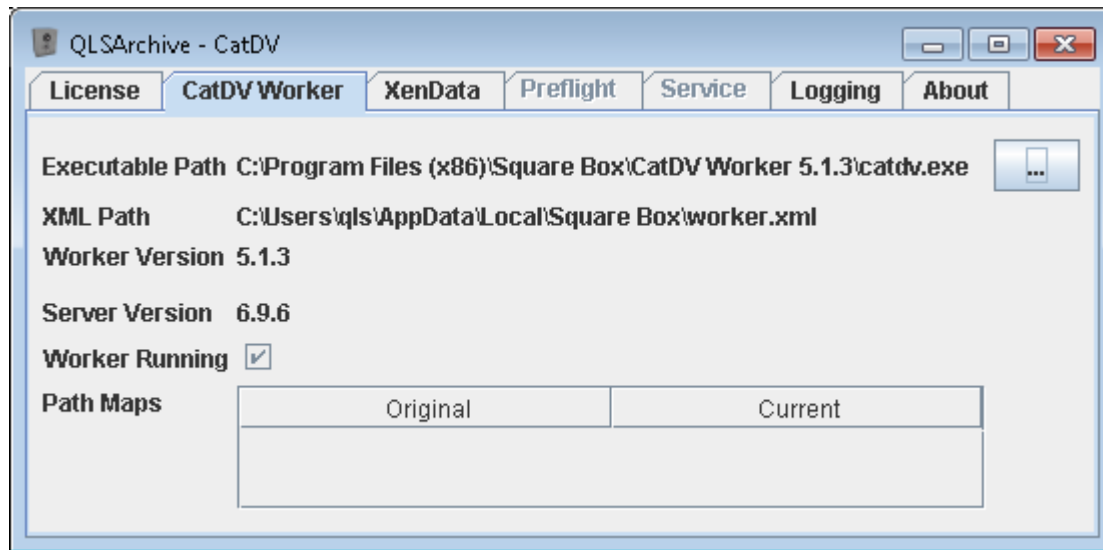


Figure 13 QLSArchive - CatDV Worker selection entered

Path Maps become populated when Worker Actions are modified for cross platform support, this topic will be covered in a later chapter.

The XenData tab may now be selected

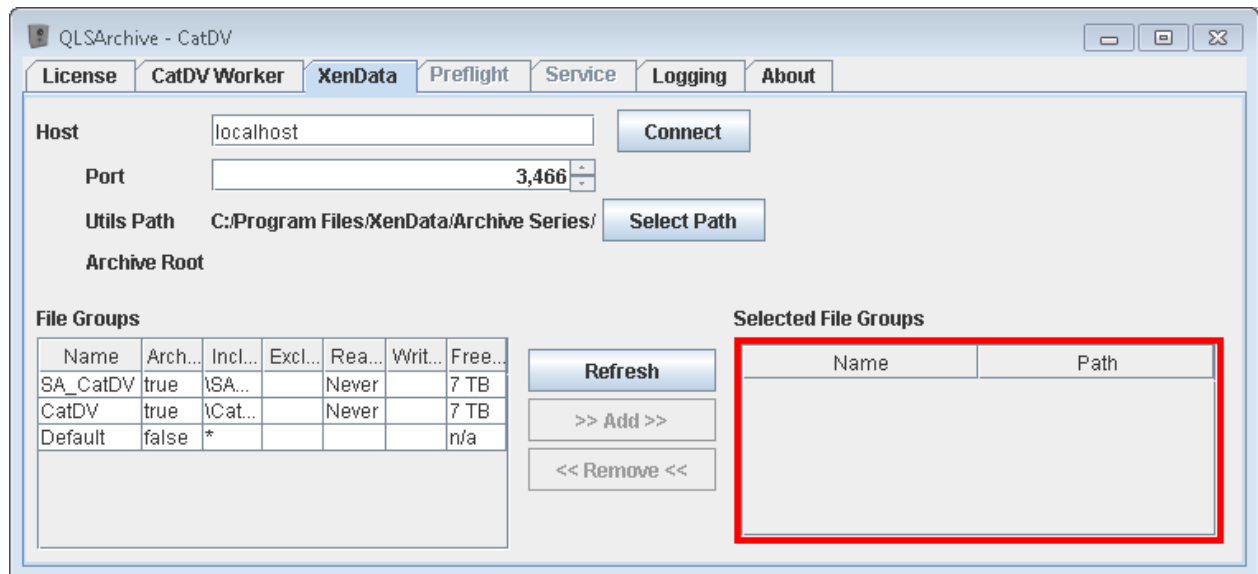


Figure 14 XenData contains Default Connection Information

This panel contains default 'Host', 'Port' and 'Utils Path' to enable communication with XenData, modification should not be required. The File Groups panel should reflect the File Groups previously configured with the XenData Management Console, the 'Connect' button can be used to re-establish communication. The 'Refresh' button will update the displayed information if modifications are made to File Groups in XenData Management Console. The red boarder in 'Selected File Groups' indicates that user input is required.

Select an entry in the left 'File Groups' table then >>Add>> to 'Selected File Groups' and repeat as desired. QLSArchive will present one or more File Groups to the Archivist as a choice during archive submission, the presentation order is determined by the order of your selection:

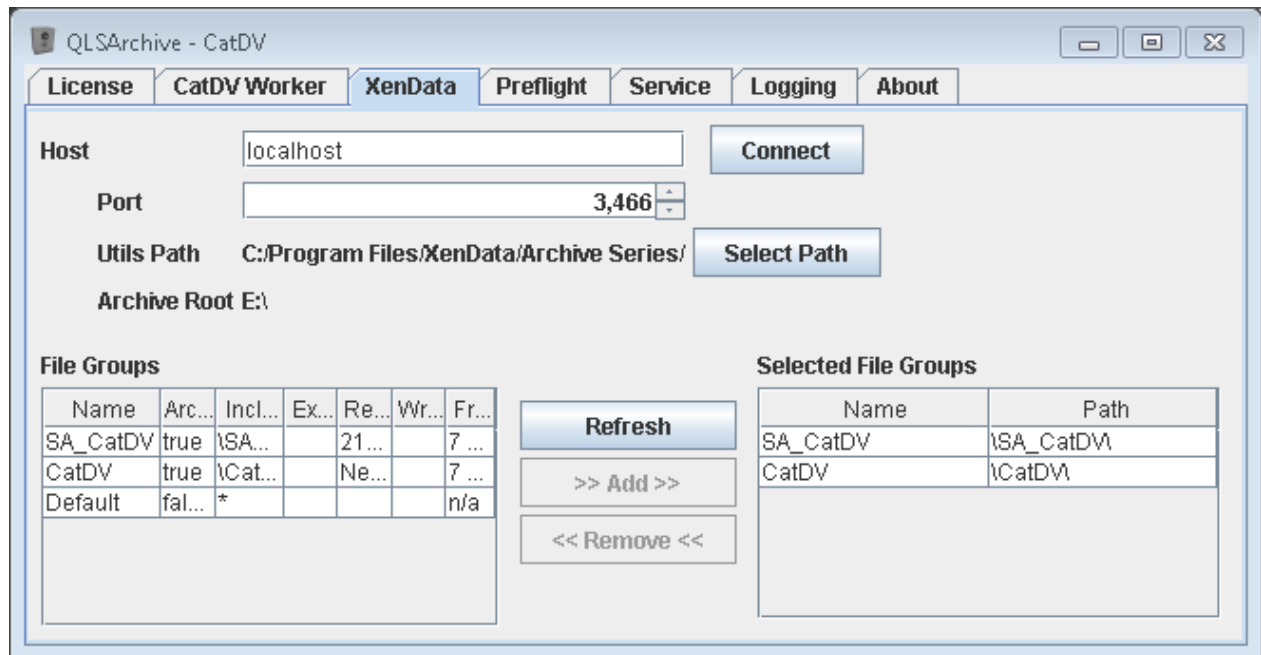


Figure 15 Declaring File Groups to QLSArchive

Once the XenData panel contains your declared 'Selected File Group' or Groups, the remaining QLSArchive tabs become enabled.

Please quit the CatDV Worker if it is currently running, the following procedure will install archive related Worker Actions that are loaded at re-launch of CatDV Worker.

Select the Preflight tab – Run Preflight:

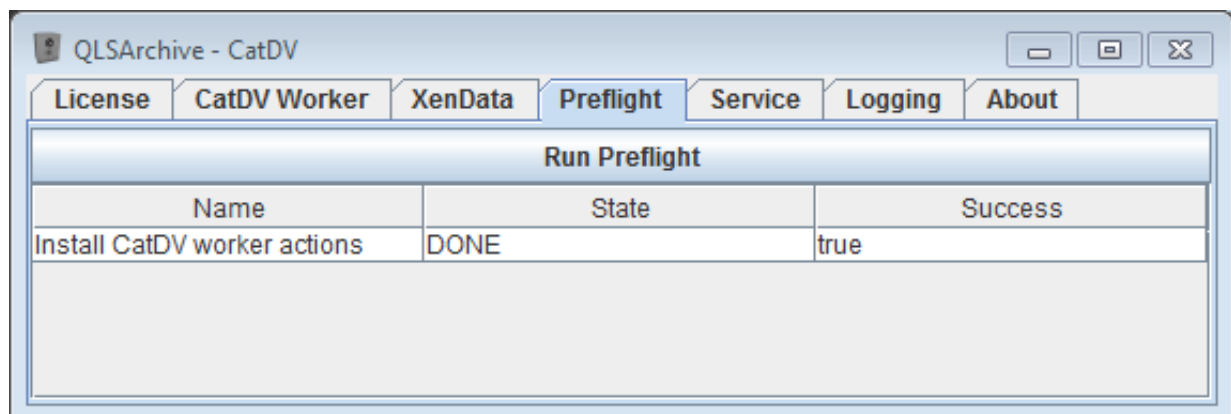


Figure 16 Run Preflight installs Worker Actions for archive support

The Preflight tab is used to deliver a set of CatDV Worker Actions in support of archive operations. Although CatDV Worker is installed, licensed and configured to attach to the CatDV Server, it has yet to be given any tasks to perform. This will be accomplished when 'Run Preflight' is selected, the delivery of Worker Actions will be reported on a new deployment, subsequent attempts will verify the existence of archive related Worker Actions or redeploy any missing actions.

Launch the CatDV Worker on the XenData appliance, select 'Edit Config', the 'Watch Actions' tab should appear similar to the following:

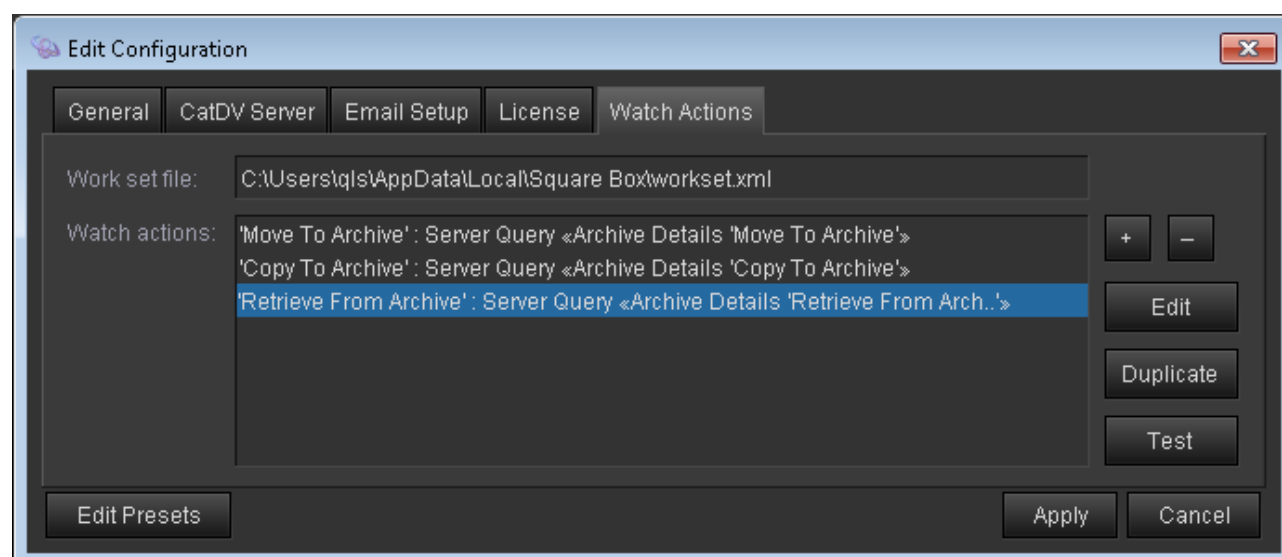


Figure 17 Verify the archive related CatDV Worker Watch Actions

The use of CatDV Worker in archive integration provides a means of Path Mapping to translate file paths between operating systems; more information is available in the chapter 'QLSArchive in a Mixed Environment'. CatDV Worker also allows the scheduling of Actions which may be used to delay archive tasks to a suitable time. Please refer to CatDV documentation for more information.

Select the 'Service' tab to control background archive services.

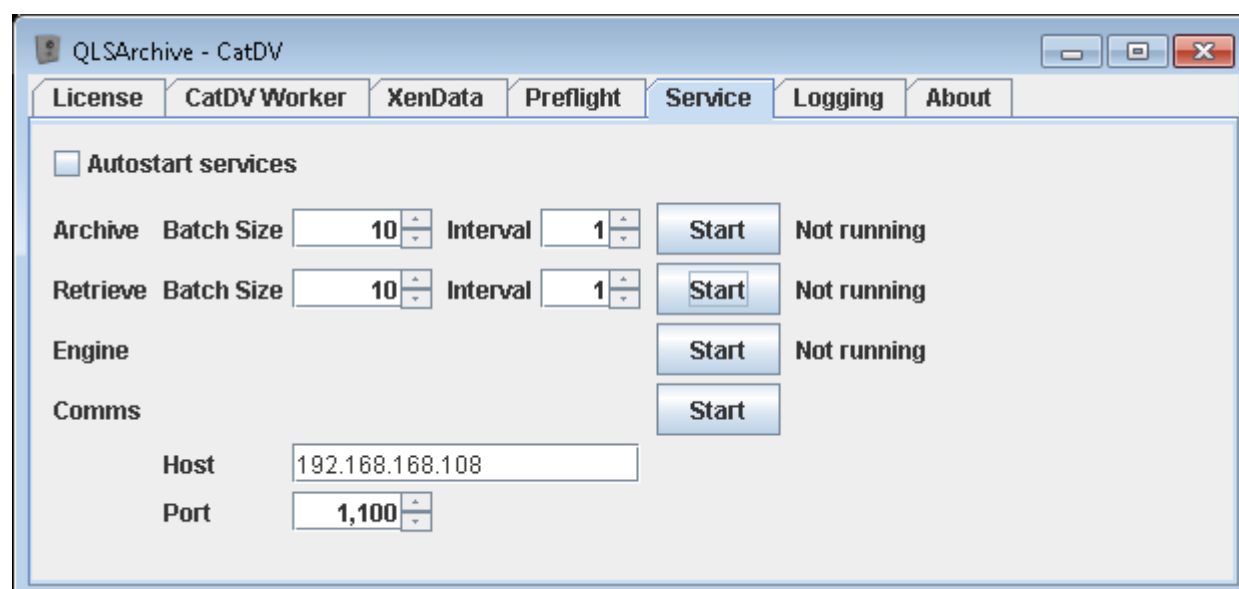


Figure 18 QLSArchive Service

Whilst the use of the term 'Service' normally refers to automated Windows processes (login is not necessary for the process to run) QLSArchive (and CatDV Worker) can only be launched after login to the XenData appliance. The owner may elect to configure automatic login and program launch to ensure continuity of operation, be sure to test the

system behaviour at power on in conjunction with other network services e.g. file storage, tape systems and CatDV Server may have also suffered a power outage, a race condition could prevent the system regaining sanity.

The Service panel permits granular control of archive related services. Whilst each component may be controlled individually, once the system has been fully configured and 'AutoStart Services' has been enabled, all services will assume the running state when QLSArchive is launched. It is suggested that all configuration and testing be completed prior to setting this auto start feature. **Remember to revisit this window as the default behaviour is to manually start each service.**

Controls are provided to regulate the size and frequency of submissions to XenData. Archive and Retrieve Batch Sizes limit the maximum number of clips in any one submission, the 'Interval' specifies the frequency of submissions in minutes.

It is recommended to reduce the 'Archive' and 'Retrieve' default interval from 10 to 1 minute whilst configuration is in progress, as this will allow quicker system responses, they can be reset to 10 minutes after system testing, modification is allowed during the 'stopped' state.

The 'Engine' is responsible for posting status changes to CatDV and occurs every 60 seconds when started.

'Comms' provides a CatDV Client to Worker communications service to aid validity checking during archive request submission. The 'Host' box requires the Worker IP address of the Ethernet port used to communicate with CatDV Server and Client machines. e.g. more than one Ethernet interface is connected to the XenData appliance. The interface with IP address 192.168.168.108 is used to connect to the CatDV network. Another interface has an address of 10.10.10.1 and is used to connect to storage and/or public internet. QLSArchive must be informed that 192.168.168.108 handles CatDV network traffic. Note – the use of IP addresses is preferred in a multi homed machine scenario.

The 'Port' entry defaults to 1100 but may be modified if this is in use by another application. Make a note of the IP address and port values entered, as they will be needed to configure an Archivist's machine in the next chapter.

The 'Logging' tab exposes a section of current archive process activities. The amount of detail captured is controlled by the 'Level' drop box. Logging also occurs to file in C:\Users\logged_in_user\AppData\Roaming\QLSArchive\Logs providing a compressed, date stamped file on a daily basis.

The 'About' tab reveals the installed version of QLSArchive and contact information.

Start all services and visit a CatDV client who is to become an Archivist.

QLSArchive Archivist

The initial setup will be simplified by selecting a Windows CatDV Client that utilises the same media paths as the Worker, although this may not be possible in your environment.

Cross platform archive operations are supported but media path equivalences are required in Worker Actions, this topic will be covered later in this document.

Install **QLSArchive Archivist Additions** on the designated CatDV Pro/Pegasus Client (if not already accomplished from earlier reading) please choose the appropriate installer for the resident operating system, Mac or Windows. The installer will require administrative account credentials with any late breaking news added as guidance notes.

The installation will add a program to /Library/Java/Extensions for Mac or C:\Windows\Sun\Java\lib\ext in the case of Windows, it will be named QLSArchive_CatDV.jar in either case. The installation location is chosen to honour different users logging on to the same machine and upgrades to the CatDV version, hopefully, eliminating support calls to administration staff.

Note - The installation will add archive functions to the CatDV Tools menu on the Archivist machine, named Move To Archive, Copy To Archive, Purge Online, Retrieve From Archive, Clip Info and Archive Status/Statistics. Pegasus may display some additional archive tools named Archive/Purge/Retrieve Media Files etc. as they are embedded in CatDV Pegasus and sometimes the Pro version. If this is the case your CatDV Tools may be similar to the following:

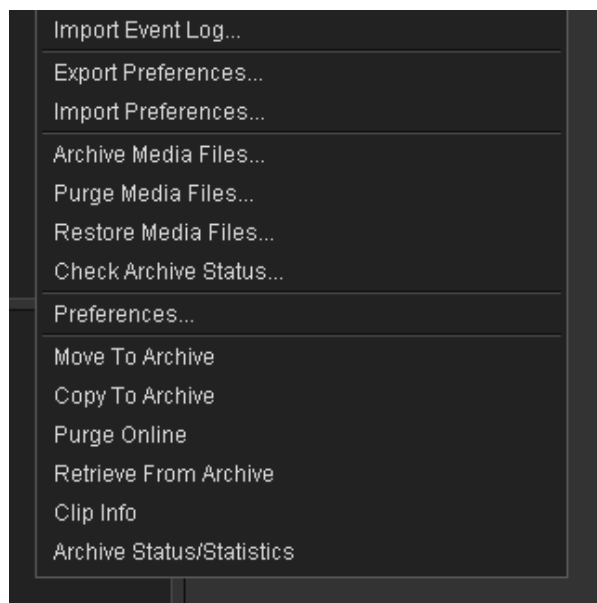


Figure 19 CatDV Tools may contain multiple Archive Functions

CatDV Preferences may be modified to remove the built in CatDV Archive Tools and help avoid confusion. Launch CatDV Prefs, uncheck the option box for 'Archive option' in 'User Interface' and Save. You may Save this preference to CatDV Server for permanent use – please refer to CatDV documentation on Preferences, particularly if you are using multiple Production Groups.

Launch CatDV Pro/Pegasus, login to CatDV Server and select 'Archive Status/Statistics' from the CatDV Tools menu, a 'Comms' dialogue window results:

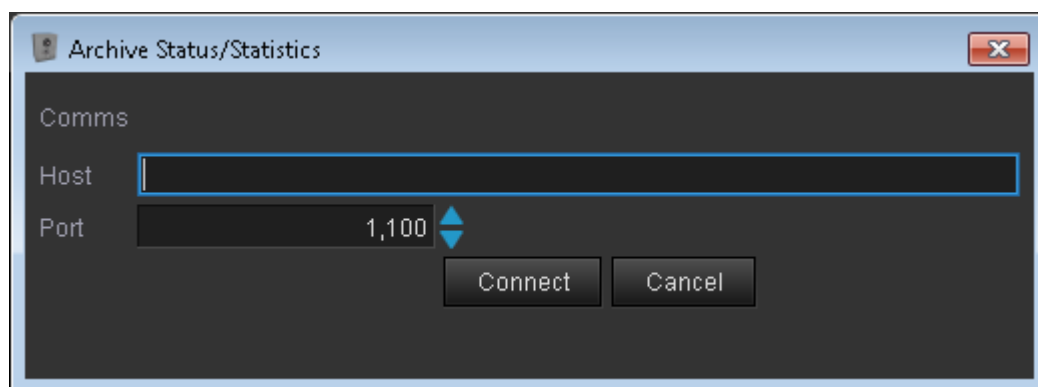


Figure 20 Archivist Host Dialog (unpopulated)

The 'Host' entry requires the IP address of the Worker (XenData appliance) running QLSArchive, and the associated port, 1100 is the default. Enter the appropriate value for your deployment and select 'Connect' - Example:

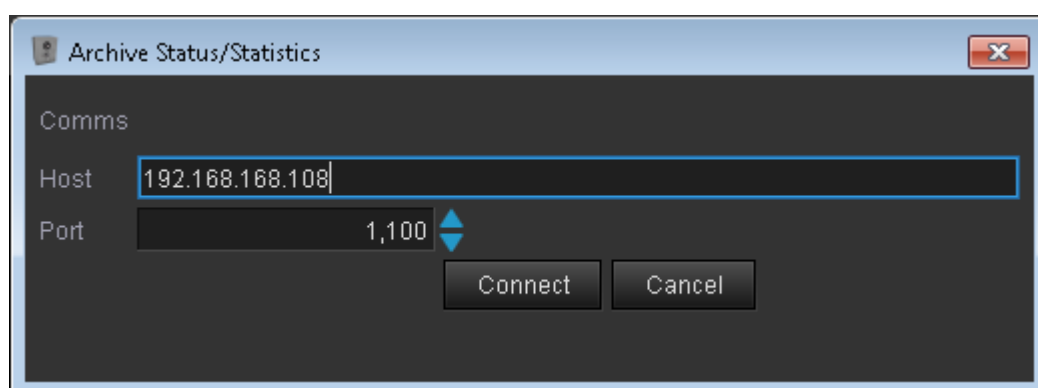


Figure 21 Archivist Host Dialog (IP and Port entered)

After 'Connect':

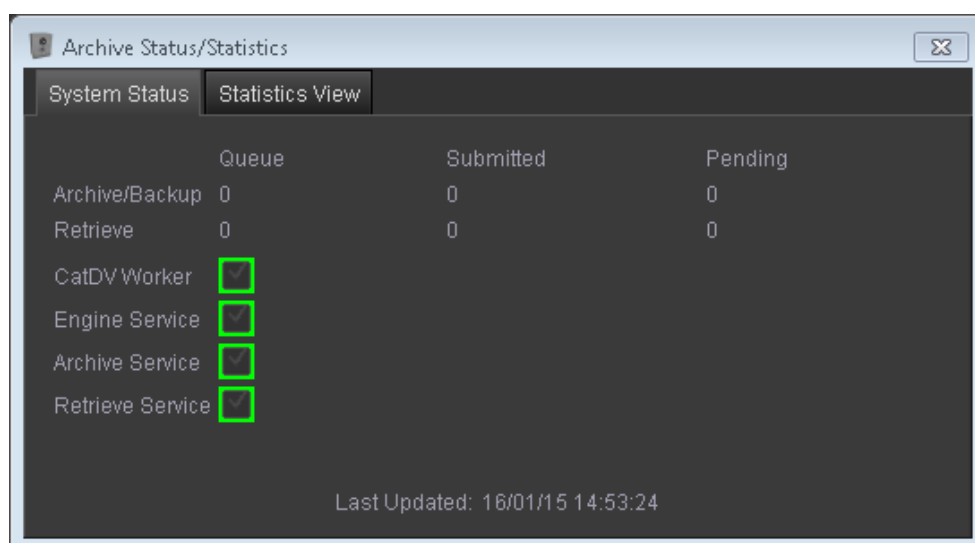


Figure 22 Archivist Info Window

Successful access to 'Archive Status/Statistics' is recorded by the client. The saved target and port will be passed automatically in subsequent requests. The connection information is also used for all archive functions, not simply 'Archive Status/Statistics'.

The upper section displays archive function requests and the number of jobs at varying states of processing.

Indicators are used to represent the current state of services related to archive functions. CatDV Worker, QLSArchive Engine, Archive and Retrieve Service display the current state, check marks/green boarder indicate the running state.

This information panel is also available from any archive related tool in the CatDV Tools menu. It provides real time status indication to the Archivist and will include important XenData messages which will include tape change requests.

A 'Statistics' tab is also available and this panel will be discussed later as it currently contains no useful archive data.

Close the 'Archive Status/Statistics' box to return to CatDV. Import some test master clips to CatDV from network storage common to the CatDV Client and Worker, then save the catalog. The system requires priming with a few test archive operations so that new CatDV archive status fields are generated and may be associated with Views and Details Panels.

CatDV Pro/Pegasus Configuration/Usage

Generating Archive Status Fields

An important benefit of QLSArchive is that no action is needed in CatDV to prepare for deployment. The use of User Fields is avoided, as assignment in a mature CatDV site using multiple Production Groups can be problematic. CatDV metadata fields will be generated by QLSArchive on a needs basis, only assets processed by QLSArchive will contain archive status metadata.

Open the test catalog and select the first clip. The archive functions are available in the Tools menu and right click context, using either method select 'Move To Archive'.

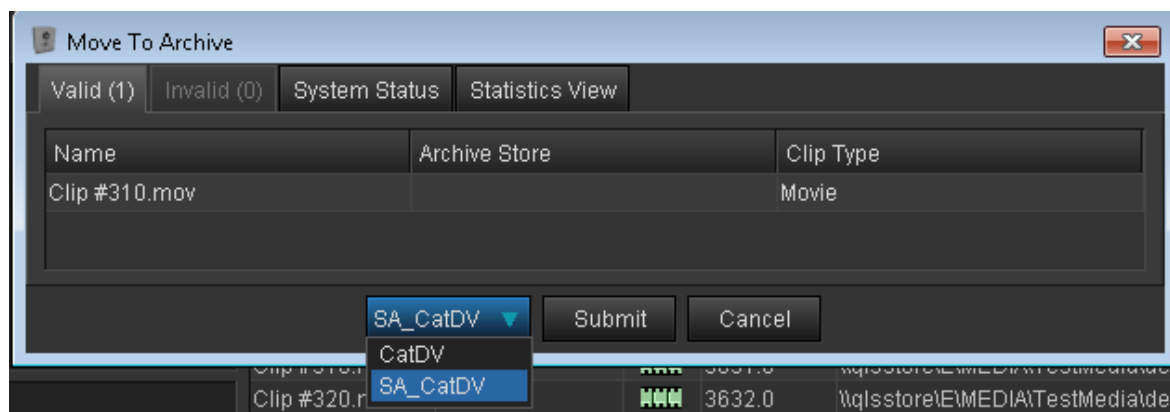


Figure 23 Archivist Move To Archive

The information window that appears reports the validity of your clip selection. Each clip will be listed if your selection contained multiple clips. Note that this window will not be displayed if communication to the Worker is not established (similar to the 'Archive Status/Statistics' panel in the previous section).

The clip selected in CatDV has been subjected to validity checks from the Worker perspective, not the CatDV Client. Hence the importance of 'Comms', communication between Client and Worker.

QLSArchive will display potential problems of current archive requests if test results received from the Worker indicate a low possibility of success. e.g. if the Worker does not have access to the selected files, an error will occur during XenData handling and cause a subsequent job failure. Better to have knowledge before the request is submitted, this will reduce the detective work required for failed jobs. Clips that cannot be processed by the archive service will be listed in the 'Invalid' tab with a reason for the problem. Where multiple clips have been selected, and some are deemed 'Invalid', only the clips listed in the 'Valid' tab will be processed when 'Submit' is selected.

Clip type selection is analysed e.g. sub clips and sequences will be reported as invalid types but clips that are valid may still be submitted. Process logic is also provided e.g. selecting a clip for retrieval when it has not been committed to archive will also be reported. The intention is to minimise the risk of job failures when they reach XenData as the clips you select now are some time away from being processed due to current tape activity.

A XenData File Group is displayed in the lower section of the window. If you have imported more than one File Group in QLSArchive – XenData – Selected File Groups then they are presented for selection in this dropdown. Note that all valid clips in this selection will be directed by your choice. The 'System Status' tab is available and offers real time information regarding process queues and XenData messages.

Select 'Submit' to instruct QLSArchive to process the selected clip. There will be no acknowledgement at this stage of commissioning until the system has been 'primed' by the test clips you are submitting.

Your request has placed status changes on a CatDV record to initiate archive handling. The opportunity is taken here to show the sequence of events to fulfil the request. You may verify the workflow against your installation, but things happen quickly.

Several Worker Actions are monitoring Archive requests; the detection of a 'Move To Archive' request is shown here for reference:

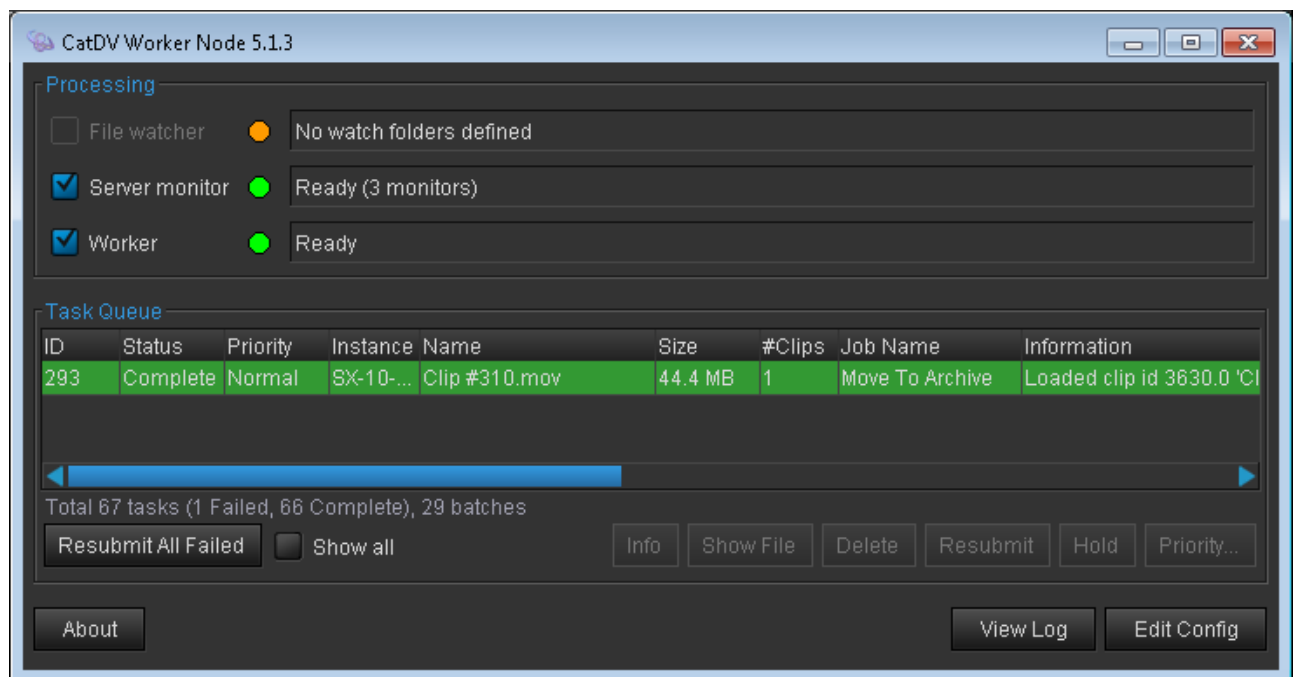


Figure 24 CatDV Worker – Move To Archive Detection

This does not mean that archiving of the file has been achieved; it is only the start of a queuing process for the orderly submission of jobs to XenData. The following screen shot of 'Archive Status/Statistics' was taken immediately after Worker detection to illustrate the queuing system employed:

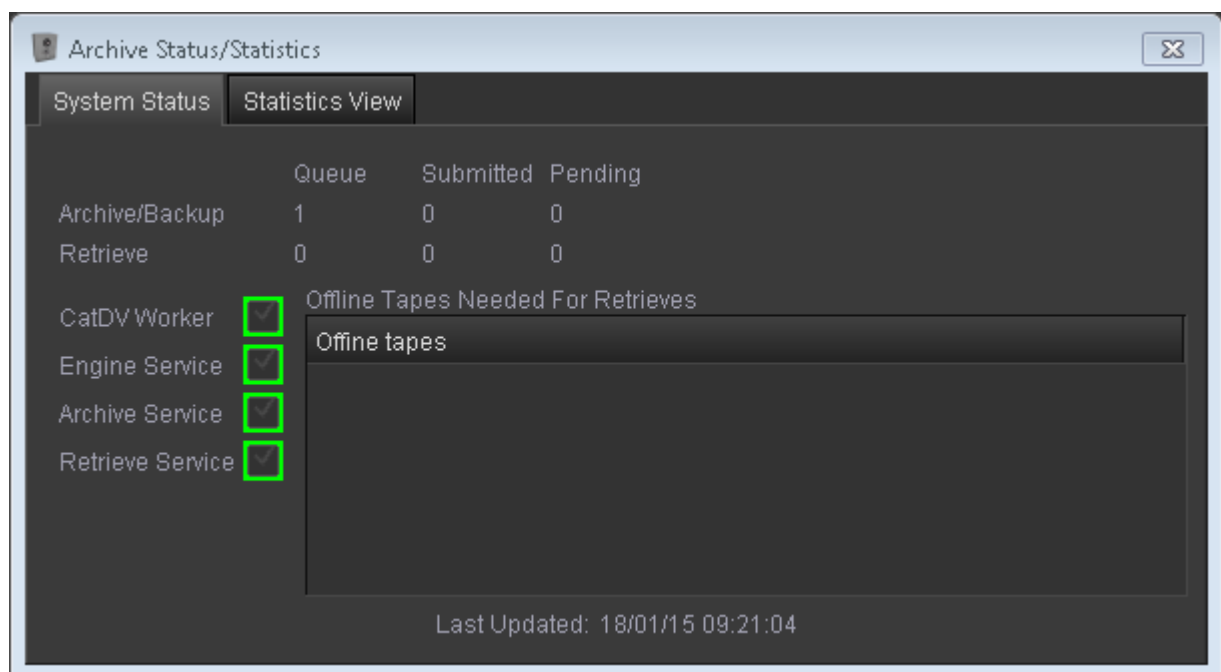
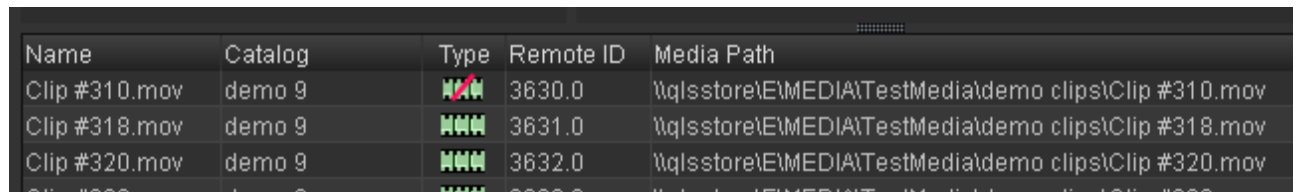


Figure 25 System Status - Queued items and Service condition

Queue information is automatically updated and can change rapidly in a busy system. This feedback of system activity and service state is an indicator of archive system health.

Refresh the CatDV Client window after a few minutes. The 'Move To Archive' request should result in the clip being copied to tape and the removal of the online file.

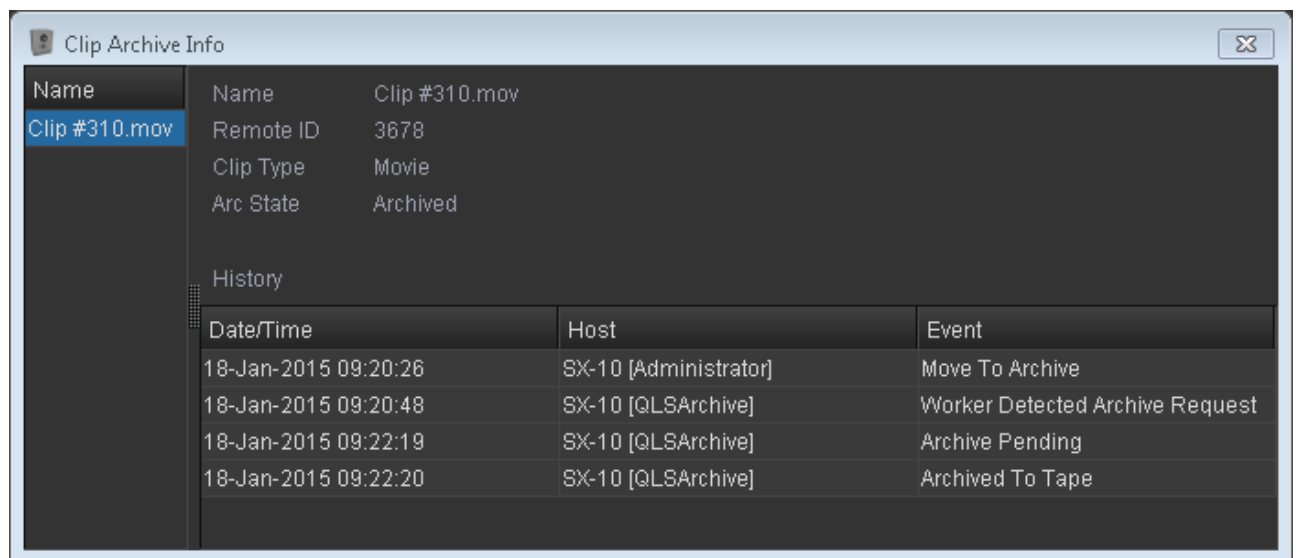


| Name | Catalog | Type | Remote ID | Media Path |
|---------------|---------|----------------|-----------|--|
| Clip #310.mov | demo 9 | MOV | 3630.0 | \\qlsstore\EMEDIA\TestMedia\demo clips\Clip #310.mov |
| Clip #318.mov | demo 9 | MOV | 3631.0 | \\qlsstore\EMEDIA\TestMedia\demo clips\Clip #318.mov |
| Clip #320.mov | demo 9 | MOV | 3632.0 | \\qlsstore\EMEDIA\TestMedia\demo clips\Clip #320.mov |

Figure 26 CatDV Window Refreshed

The archive request has been fulfilled but there is more work to do before we can view archive status in CatDV.

Remember to refresh the CatDV window to view the latest clip state and metadata, as changes are not automatically updated on the client, you could be left viewing stale information. Note that the Worker applies status changes to CatDV records on the CatDV Server, the client must re-read the CatDV record to display the latest changes. The clip has been removed from online storage. Note that the clip representation has a single strike and not an 'X'. Right click the clip and select 'Clip Info', the resulting window offers a detailed analysis of the request through time.



| Clip Archive Info | | | |
|----------------------|-----------------------|---------------------------------|--|
| Name | Clip #310.mov | | |
| Clip #310.mov | Remote ID | 3678 | |
| | Clip Type | Movie | |
| | Arc State | Archived | |
| History | | | |
| Date/Time | Host | Event | |
| 18-Jan-2015 09:20:26 | SX-10 [Administrator] | Move To Archive | |
| 18-Jan-2015 09:20:48 | SX-10 [QLSArchive] | Worker Detected Archive Request | |
| 18-Jan-2015 09:22:19 | SX-10 [QLSArchive] | Archive Pending | |
| 18-Jan-2015 09:22:20 | SX-10 [QLSArchive] | Archived To Tape | |

Figure 27 Archivist Clip Info Viewer

The archive process transitions are logged and time stamped. This information is used to produce archive statistics, details appear later in 'QLSArchive Statistics'.

Close the Archive History Viewer window. Highlight the clip that has just been archived and select 'Retrieve From Archive' in the Tools menu.

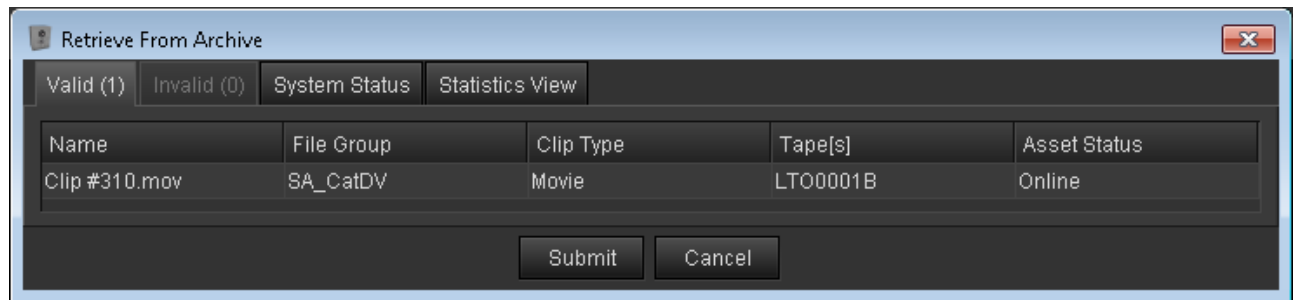


Figure 28 Archivist Retrieve Request

The request undergoes validity checking; note the display of tape name (barcode) and XenData's classification of Asset Status. Proceed by selecting 'Submit' to enter your request.

The following screen shot was taken from the XenData CatDV Worker after 20 seconds of submitting the retrieve request. The 'Retrieve From Archive' task has started the retrieve process by placing items into QLSArchive queues.

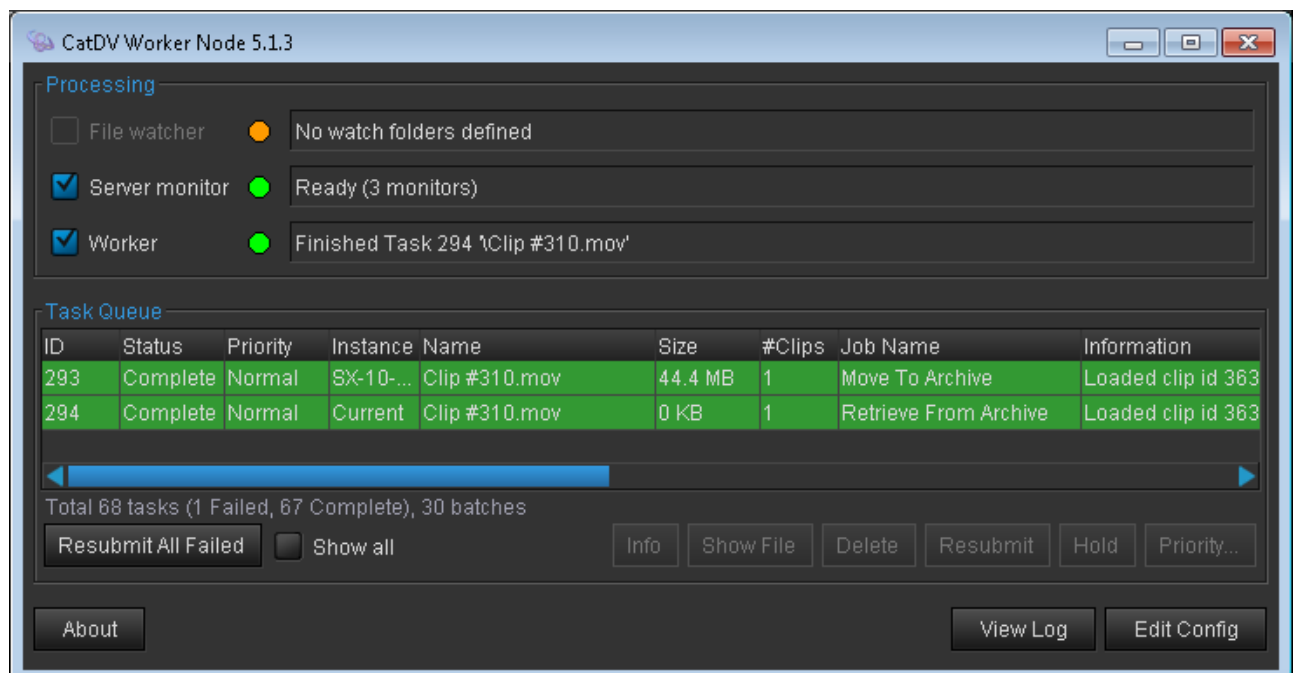


Figure 29 CatDV Worker Restore Detection

The retrieve detection processed in less than a second, but this does not mean the file is restored, merely the start of the retrieve process.

The request is then prepared for XenData submission to retrieve from tape.

Several minutes later, after a CatDV screen refresh, the archived clip is back online.

| Name | Catalog | Type | Remote ID | Media Path |
|---------------|---------|------|-----------|---|
| Clip #310.mov | demo 9 | HHH | 3630.0 | \\qlsstore\E\MEDIA\TestMedia\demo clips\Clip #310 |
| Clip #318.mov | demo 9 | HHH | 3631.0 | \\qlsstore\E\MEDIA\TestMedia\demo clips\Clip #318 |
| Clip #320.mov | demo 9 | HHH | 3632.0 | \\qlsstore\E\MEDIA\TestMedia\demo clips\Clip #320 |
| Clip #322.mov | demo 9 | HHH | 3633.0 | \\qlsstore\E\MEDIA\TestMedia\demo clips\Clip #322 |
| Clip #304.mov | demo 9 | HHH | 3634.0 | \\qlsstore\E\MEDIA\TestMedia\demo clips\Clip #304 |

Figure 30 CatDV View Panel Post Restore

A round-trip test has been completed with the benefit of generating archive status fields that may now be applied to CatDV.

Adding Archive Status to CatDV Views

Ensure you have administrative login to CatDV, the Views that you modify or create may then be saved for all connecting users. All future archive operations will display archive status once this preparatory step is completed,

This example will show how to copy the existing 'Normal' View to incorporate archive status information. You can of course create new Views solely focussing on archive information or a mix of fields for any purpose.

Select 'Customise Views' from CatDV Preferences, you will notice that several selections are available to modify existing and create new. 'Normal' has been chosen and 'Copy View', give your view a unique name.

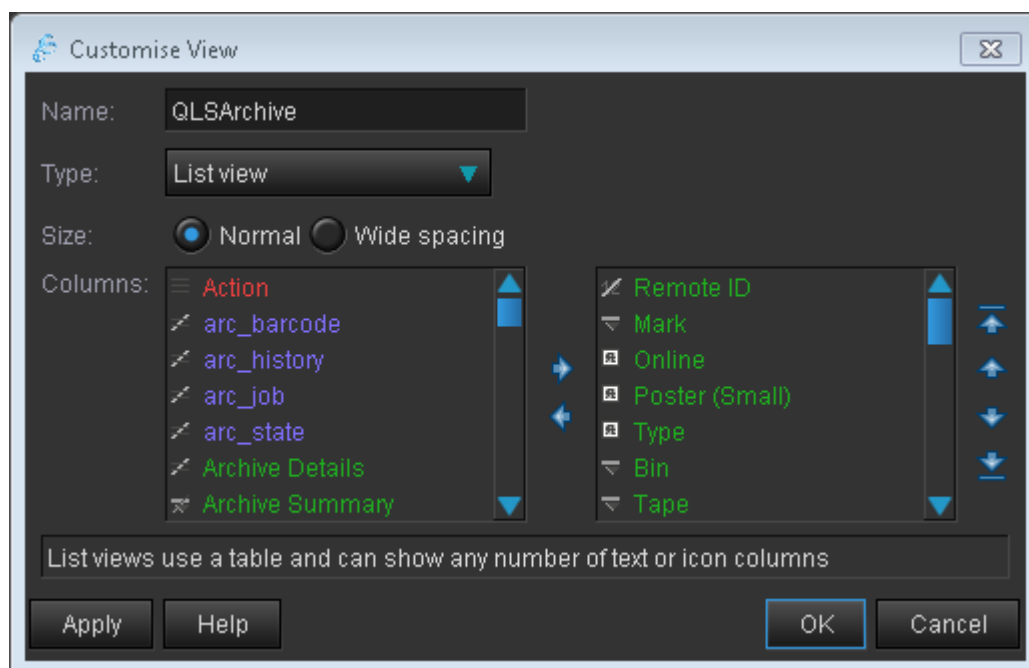


Figure 31 CatDV Customise View

The archive status fields are readily seen in our example but you may have to scroll the 'Columns' box to reveal 'arc_job' etc. on your system. Select the fields arc_job, arc_state, 'arc_barcode' and ret_job, then choose the right arrow symbol to insert into the View. Use the up/down arrow tools to arrange the viewing order you prefer.

The field 'arc_barcode' applies to bar coded tapes and tape labels on stand-alone tape devices. Be sure to physically label tape media to match the volume name as the tape must be identified for future file retrievals.

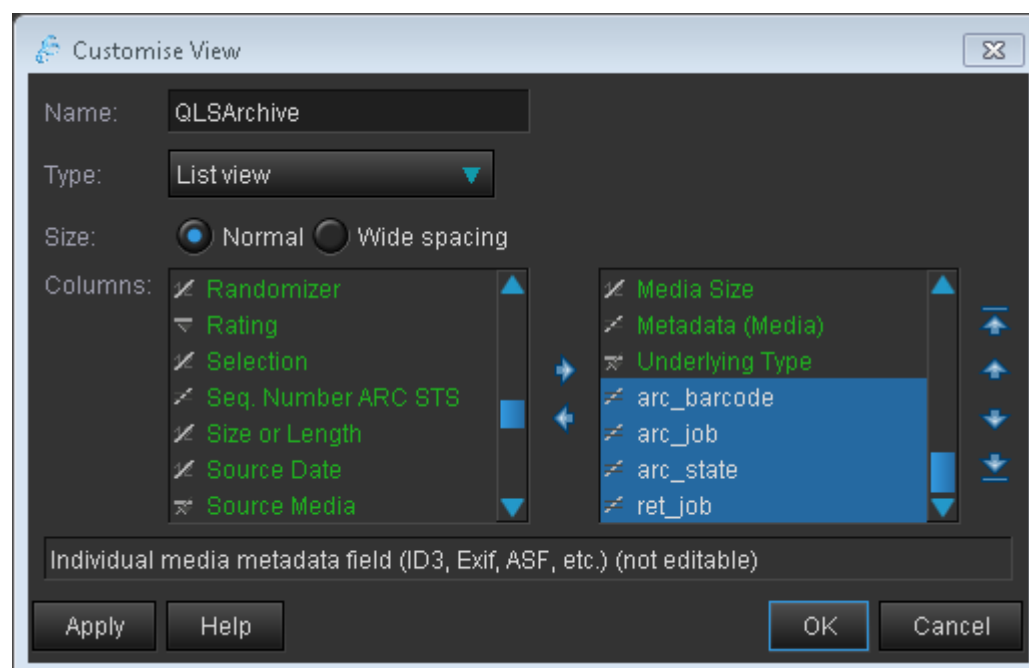


Figure 32 CatDV Customise View Column Re-Ordering

If you are unhappy with the final presentation in CatDV, simply revisit Preferences and repeat the ordering procedure. Selecting OK will return to the CatDV User Preferences window where you have the option to 'Save Local/To Server' for your modifications. Saving locally may be useful for testing but bear in mind that logging on to a Production Group can overwrite your local settings. Saving to server will update a Production Group and be delivered to other users when they login. When you return to CatDV after saving Preferences, you may need to temporarily switch Views before seeing your changes in the CatDV window.

| Name | M | O/L | Pic | Type | arc_job | arc_barcode | ret_job | arc_state | Re |
|---------------|---|-----|-----|------|-----------------------|-------------|--------------------------|-----------|-----|
| Clip #310.mov | | | | MM | cached@18/01/15 09:21 | LTO0001B | requested@18/01/15 09:27 | Retrieved | 367 |
| Clip #318.mov | | | | MM | | | | | 367 |
| Clip #320.mov | | | | MM | | | | | 368 |
| Clip #322.mov | | | | MM | | | | | 368 |

Figure 33 CatDV QLSArchive View Customised

We can now view a wealth of information relating to archive operations. The 'arc_job' contains the time that XenData prepared for archive. 'ret_job' is populated with the request time stamp and 'arc_state' reflects the current archive status. The field 'arc_barcode' reveals the tape barcode if a tape library is in use.

Be aware that Preferences are held in a Production Group. If you have multiple Production Groups then Views require modification in more instances. Archive status is important to the Archivist but also has value to CatDV users. Consider providing a normal user with at least 'arc_state' so they can see why a clip is not online.

Now that a CatDV View has been created to display archive status, repeat a selection of one or more clips from your test catalog and select 'Move To Archive'. You will notice that the CatDV window will update with an arc_state of 'A_Requested' as soon as the 'Submit' button is pressed. You now have immediate feedback of your request in the CatDV window

| Name | M | O/L | Pic | Type | arc_job | arc_barcode | ret_job | arc_state | Remote |
|---------------|--------------------------|-----|-----|------|-----------------------|-------------|--------------------------|-------------|--------|
| Clip #310.mov | <input type="checkbox"/> | | | HHH | cached@18/01/15 09:21 | LTO0001B | requested@18/01/15 09:27 | Retrieved | 3678.0 |
| Clip #318.mov | <input type="checkbox"/> | | | HHH | | | | A_Requested | 3679.0 |
| Clip #320.mov | <input type="checkbox"/> | | | HHH | | | | A_Requested | 3680.0 |

Figure 34 A_Requested - Immediate Archive Status in the CatDV window

The archive status 'A_Requested' will change to 'A_Detected' after Worker detection but a screen refresh of the CatDV client will be required to view the change. QLSArchive updates the archive status of CatDV records within one minute of registering a change. It may be difficult to see other intermediate archive status as some stages are transitory, but the final archive request should culminate in 'Archived', 'Retrieved' etc. depending on the function selected.

Adding Archive Status to CatDV Details Panel

A bespoke Archivist Detail Panel may be constructed in CatDV. The process is similar to Views and achieved through CatDV Preferences – 'Customise Details Panel'. Select 'New Panel' and decorate as you see fit:

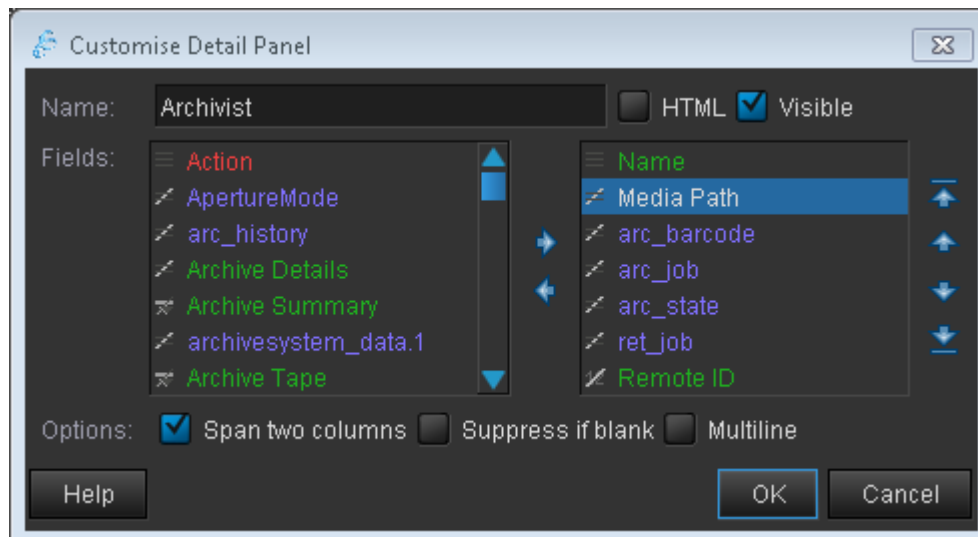


Figure 35 CatDV Create a Details Panel

Some archive status fields such as arc_history are for use with internal tools and their content may not be directly readable, they have not been selected here for use in the Details Panel. Saving is subject to the same options as 'Views' and may be needed in more Production Groups.

'Archivist' Details Panel viewed in CatDV:

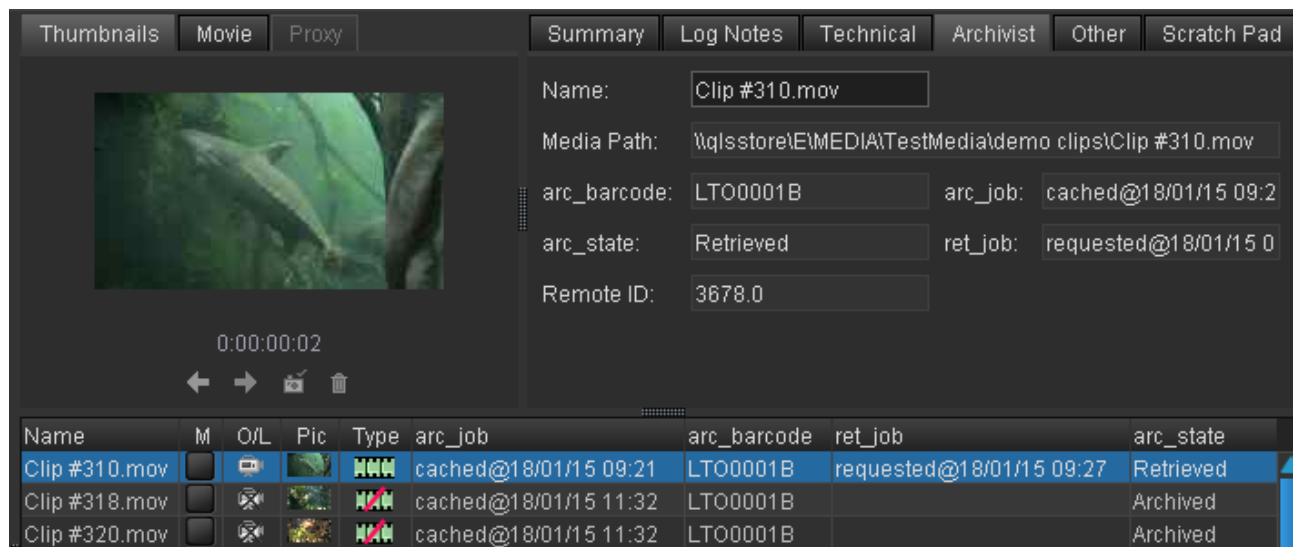


Figure 36 CatDV View And Details Panel

Searching and Filtering Archive Status in CatDV

An assortment of searching based on Archive status may be achieved, across the entire database or by filtering the current window.

Selecting 'Perform Query...' from the CatDV Server menu and setting the search criteria similar to the following example (Advanced option checked) will reveal clips that have an 'arc_state' across all accessible Production Groups (Only restricted by logged in user permissions).

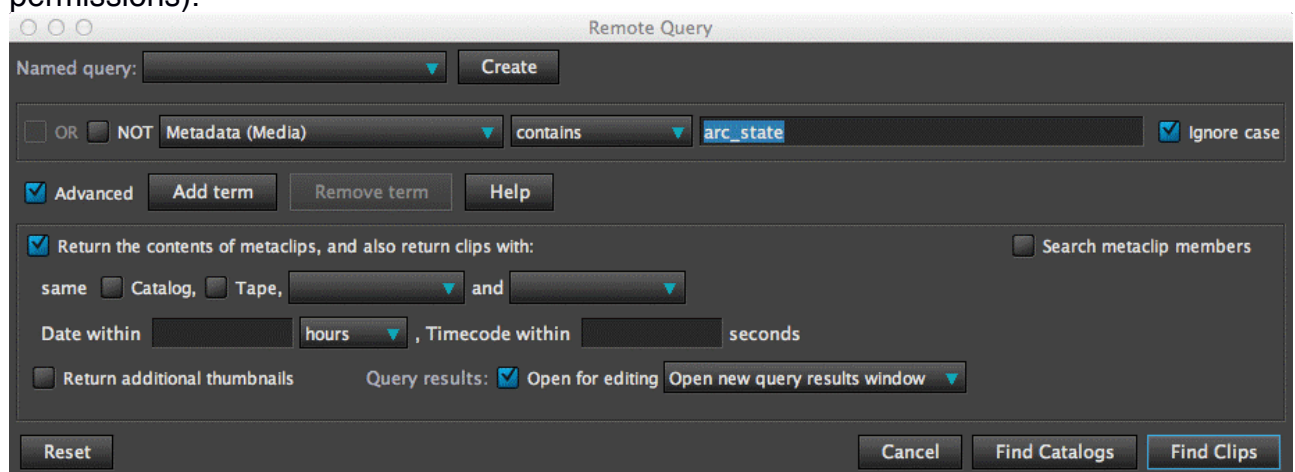


Figure 37 CatDV Remote Query arc_state

The resulting window may be further sorted by selecting column headers or by applying filters. You may elect to 'Create' Named queries for subsequent use.

| Name | M | O/L | Pic | Type | arc_job | arc_barcode | ret_job | arc_state |
|--------------------------------|--------------------------|-------------------------------------|-----|------|-----------------------|-------------|---------|-----------|
| bat2.mov | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:31 | LTO0001B | | Archived |
| dock_1.mov | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:31 | LTO0001B | | Archived |
| Ox patterson missed chanc... | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:03 | LTO0001B | | Backedup |
| ox patterson post match int... | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:03 | LTO0001B | | Backedup |
| ox patterson pre match inte... | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:03 | LTO0001B | | Backedup |
| Ox patterson TCU.mov | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:03 | LTO0001B | | Backedup |
| Ox patterson TCU1.mov | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:03 | LTO0001B | | Backedup |
| ox pissed off patt.mov | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:03 | LTO0001B | | Backedup |
| Ox player head in hands.mov | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:03 | LTO0001B | | Backedup |
| Ox v cambridge patterson i... | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:03 | LTO0001B | | Archived |
| Ox v cambridge winning go... | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:03 | LTO0001B | | Archived |

Figure 38 CatDV Query arc_state Results

It is wise to attempt more specific searches across the database, as the server response can be a high clip count. An exact archive state query may be performed for Archived, Backedup, Retrieved or 'A_ManDelReq' (A special case described later). Modify the search to:

Remote Query

Named query: Create

☐ OR ☒ NOT Metadata (Media) contains arc_state = Archived ☒ Ignore case

☒ Advanced Add term Remove term Help

☒ Return the contents of metaclips, and also return clips with: ☐ Search metaclip members

same ☐ Catalog, ☐ Tape, and

Date within hours, Timecode within seconds

☐ Return additional thumbnails Query results: ☒ Open for editing Open new query results window

Reset Cancel Find Catalogs Find Clips

Figure 39 CatDV Remote Query arc_state = Archived (space inserted either side of =)

Now only Archived clips will be returned:

| Name | M | O/L | Pic | Type | arc_job | arc_barcode | ret_job | arc_state | Re |
|-------------------------------|--------------------------|-------------------------------------|-----|------|-----------------------|-------------|---------|-----------|----|
| ape_6.mov | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:31 | LTO0001B | | Archived | 40 |
| aq_1.mov | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:31 | LTO0001B | | Archived | 40 |
| aq_2.mov | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:31 | LTO0001B | | Archived | 40 |
| aq_3.mov | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:31 | LTO0001B | | Archived | 40 |
| aq_4.mov | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:31 | LTO0001B | | Archived | 40 |
| bat.mov | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:31 | LTO0001B | | Archived | 40 |
| bat2.mov | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:31 | LTO0001B | | Archived | 40 |
| dock_1.mov | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:31 | LTO0001B | | Archived | 40 |
| Ox v cambridge patterson i... | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | | cached@18/01/15 11:03 | LTO0001B | | Archived | 38 |

Figure 40 CatDV Query Specific arc_state Results

The same principle applies to 'Smart Folders' in CatDV. In fact, if you have named and saved any of the previous queries, they will appear in the 'Server' tab of CatDV, under 'My Saved Queries'.

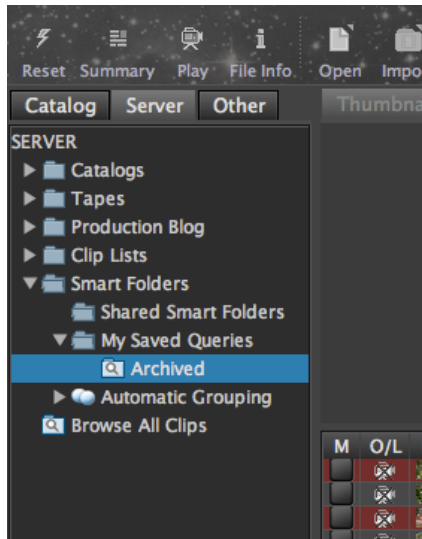


Figure 41 CatDV Saved Queries

The 'Shared Smart Folders' may be used to form the same query and be available to other users. The query format is the same as the preceding 'Perform query..' examples, please refer to CatDV documentation for more detail.

Filtering of clips in the current window is readily achieved if the archive status metadata fields are changed to 'Grouping'. Launch CatDV Preferences and select 'Field Definitions' – 'Metadata Columns'.

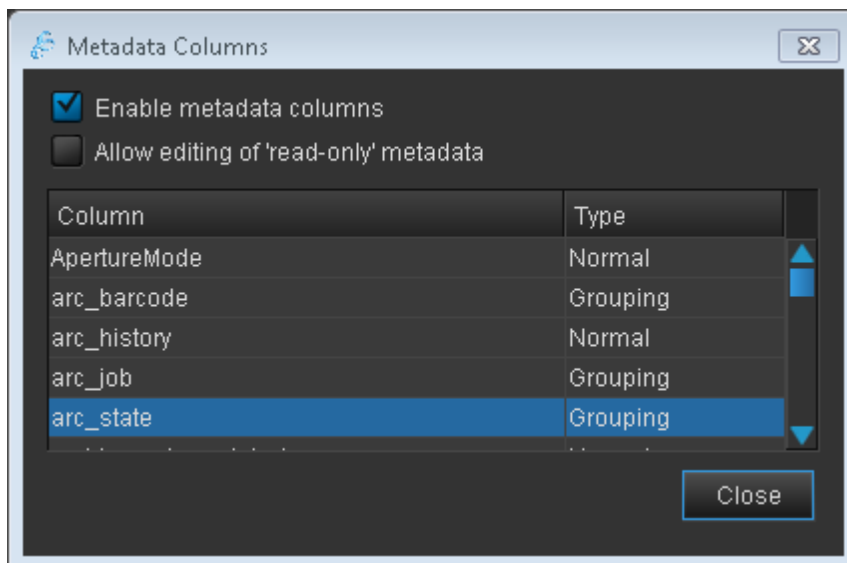


Figure 42 CatDV Metadata Columns - Grouping

Change the "Type" of arc_job, arc_state, arc_barcode and ret_job to 'Grouping' and save as previously described. The FILTERS panel of CatDV now provides sorted archive status.



Figure 43 CatDV Filters

Specific filters may also be created and applied. Select 'Edit filters' from the Filter drop down in CatDV.

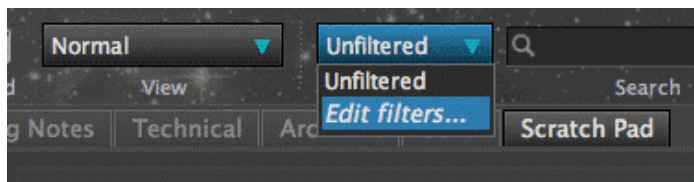


Figure 44 CatDV Edit Filters Option

Then create a filter similar to the following:

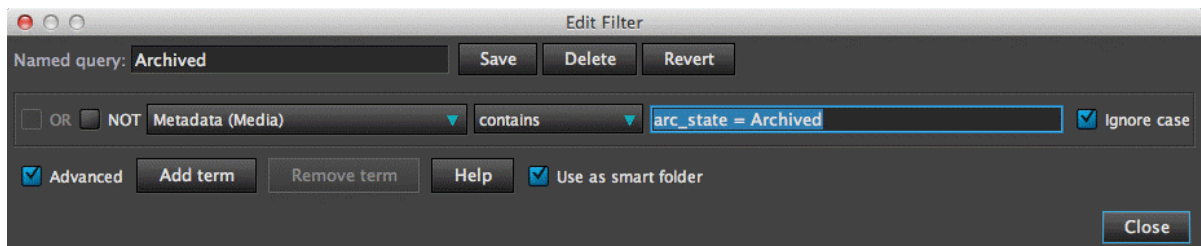


Figure 45 CatDV Edit Filter

Note that checking 'Use as smart folder' adds the filter name to 'My Saved Filters' in 'FILTERS' of CatDV.

Create more named filters to display Retrieved and Backedup status by substituting the word 'Archived' in `arc_state = Archived`. Just beware of filtering your already applied filter in CatDV as the result can appear puzzling.

QLSArchive Functions

The previous chapter accomplished the presentation of archive status in CatDV with a single archive and retrieve exercise. It is time to explain more of the functionality available so you can decide how to make best use of the product in your environment.

A 'Move To Archive' and 'Copy To Archive' tool is available. The former is considered a “commit to archive and remove the online full-res version” - the online version meaning the file (or Files) held by CatDV media path records.

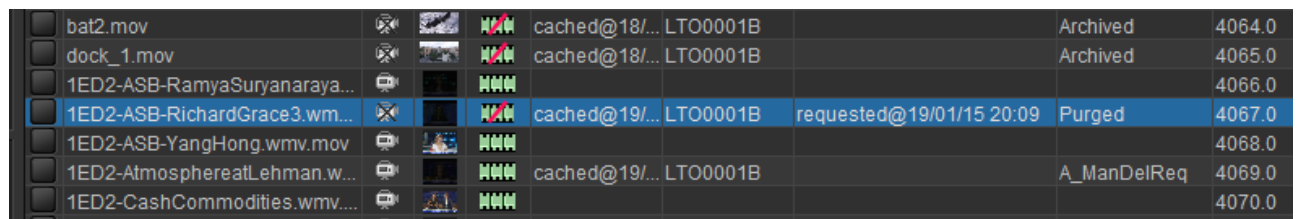
'Copy To Archive' achieves just that, the online media is not removed, hence the term 'Backedup' - this will appear in archive status after you have performed some more tests.

Every CatDV record represents the Archivist's means of initiating an archive or retrieve operation, do not delete the CatDV record itself as you will lose any reference to XenData's archive, if it has undergone an archive process.

The deletion of online media is handled by QLSArchive, and for good reason, situations can arise which may hinder file deletion. The CatDV Tools menu contains a 'Purge Online' utility which is responsible for checking archive existence prior to deletion. There will be occasions when you are left with 'Retrieved' assets that are no longer required online. Whilst you may readily delete the items occupying space on your NAS or SAN, CatDV would be unaware of the operation and leave arc_state displaying 'Retrieved' even though you have used the file system to delete the files. The assets may still be retrieved (again and again) but another method exists for the safe removal of retrieved clips, it is known as 'Purge Online'. The Archivist may select clips for deletion from online storage and select 'Purge Online' from the Tools menu or right click context. Archive status will be checked and a results window will indicate whether purge will be attempted or not.

Select some of your test clips, include the one that has been archived and retrieved and others which have not yet been archived. Choose 'Purge Online' from the Tools menu. A window is presented containing 'Valid' and 'Invalid' tabs. The assignment of clips should reflect whether or not the clip appears in archive or online. Submitting the request sets a request to 'Purge Online' valid clips and update archive status to 'Purged'. This example focussed on 'Retrieved' clips but the function can also be applied to 'Backedup' items. The system also supports purging when online clips were locked, in use or lacking delete permission on storage, this can be the case where volume access storage may be limited to read only (to the Worker) during an archive attempt. The archive request will still commit your selections to tape, however, the delete online phase may be prevented. If this case is detected, QLSArchive will place an arc_state of 'A_ManDelReq' (Manual Delete Required) on clips which are known to be on tape. QLSArchive indicates whether any clips are in this state and may be located in CatDV by searches or Smart Folders discussed in the previous chapter.

Example of 'Purged' and 'A_ManDelReq'



| | | | | | | |
|------------------------------|--|---------------|----------|--------------------------|-------------|--------|
| bat2.mov | | cached@18/... | LTO0001B | | Archived | 4064.0 |
| dock_1.mov | | cached@18/... | LTO0001B | | Archived | 4065.0 |
| 1ED2-ASB-RamyaSuryanaraya... | | | | | | 4066.0 |
| 1ED2-ASB-RichardGrace3.wm... | | cached@19/... | LTO0001B | requested@19/01/15 20:09 | Purged | 4067.0 |
| 1ED2-ASB-YangHong.wmv.mov | | | | | | 4068.0 |
| 1ED2-AtmosphereatLehman.w... | | cached@19/... | LTO0001B | | A_ManDelReq | 4069.0 |
| 1ED2-CashCommodities.wmv.... | | | | | | 4070.0 |

Figure 46 CatDV View Panel Purged/A_ManDelReq

Perform more test archiving using 'Copy To Archive', 'Move To Archive' and 'Retrieve From Archive', gain experience of the workflow by viewing the presentation of archive status in CatDV.

Media retrieval (Retrieve From Archive) is achieved to the storage endpoint, the CatDV Media Path where the files were originally imported. XenData offers the ability to repack for tape space savings or tape migration depending on the customers' hardware. QLSArchive will query the current media location in archive every time a Retrieve From Archive is attempted, providing the Archivist with accurate information. The retrieve workflow is further enhanced by restricting the release of retrieval jobs where the media is not accessible to the tape device e.g. tape out of library or not currently in a stand-alone drive. The Archivist is informed of media locations and accessibility during retrieve selections:

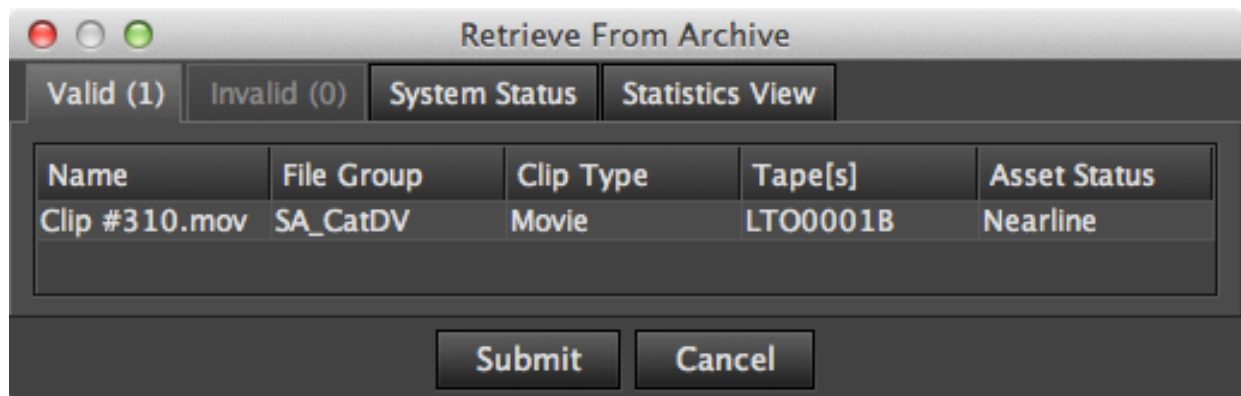


Figure 47 Retrieve requests inform of required media

The example above informs that tape LT00001B is required and XenData has an asset status of Nearline, indicating the media is accessible to the tape device.

Asset Status may contain a value of Nearline – File(s) reside on an accessible tape

Online - File(s) reside on an accessible tape and XenData cache

Offline - File(s) reside on a tape, which is not accessible at this time

The Archivist should consider an Offline condition as a prompt to manipulate tapes for the request to be fulfilled. The request may still be submitted, but the QLSArchive engine will hold the job until the tape appears Nearline e.g. the Archivist has loaded the tape.

Example of an Archivist's request to Retrieve From Archive when XenData reports the tape is not accessible. Information exists during selection but does not prevent submission:

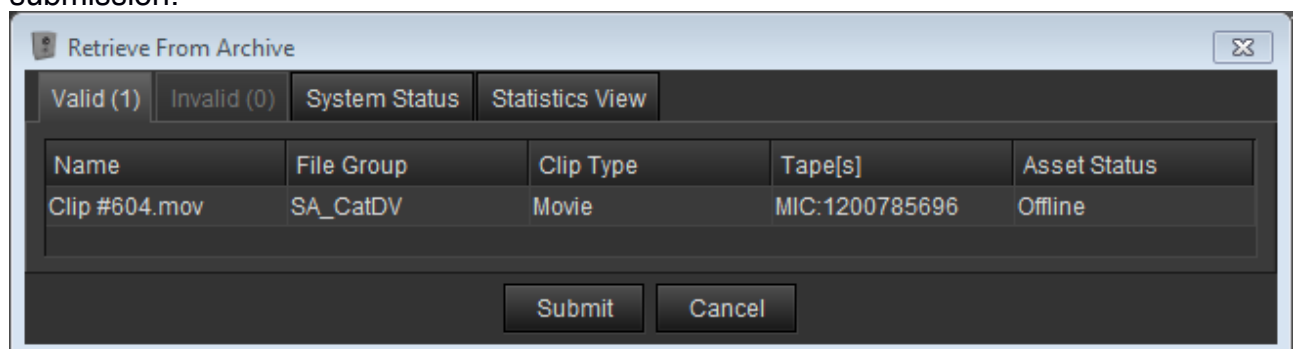


Figure 48 Retrieving a clip with an Asset Status of offline

If no action is taken regarding the offline tape, QLSArchive will not present the job to XenData and reminds the Archivist whenever he views 'System Status' in 'Archive Status/Statistics'

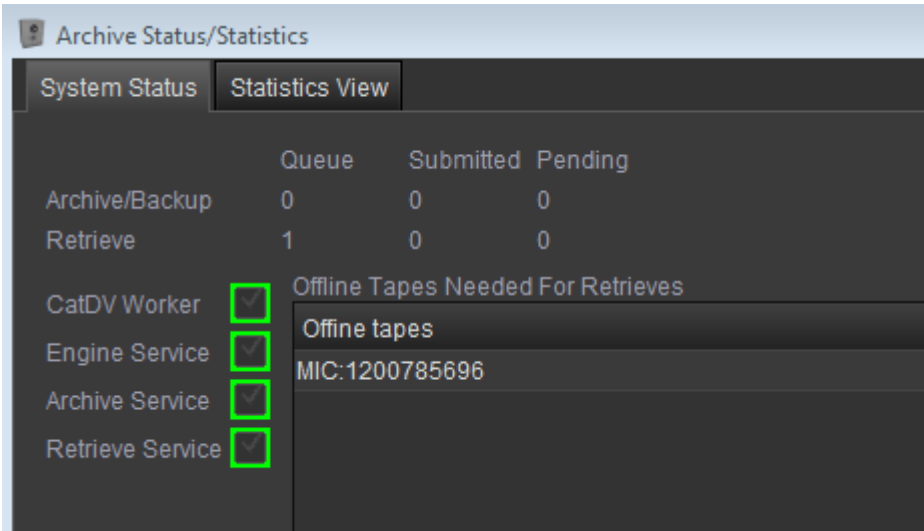


Figure 49 Tapes required to continue Retrieve From Archive

QLSArchive will check tape availability at every Retrieve engine interval but will not issue a job to XenData until the tape becomes Nearline. The Archivist may elect to stop the Archive engine, ensure the current job is completed, and then re-introduce the offline tape to the library or stand-alone device for the job to complete automatically.

Behaviour of Clips with Same Media Path

CatDV permits the use of assets in multiple catalogs. This situation requires some special attention as archiving will affect the online status of all clips having the same media path. QLSArchive will interrogate the database after an archive operation to establish whether the media path is associated with other CatDV entries. Archive status is then added to the affected clips that exist at that time. A simple example will be illustrated where the same clip has been used in two catalogs. The behaviour is the same if the clip exists in more catalogs.

Two catalogs named 'Original' and 'Replica' have been created, the same clip has been added to both.

Original:

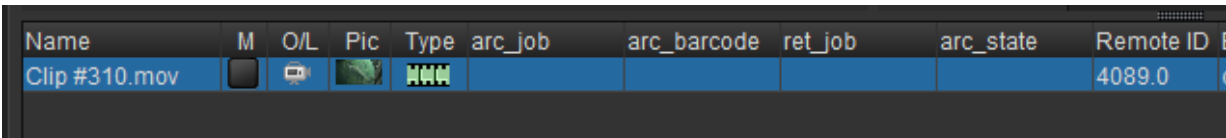


Figure 50 CatDV Original Catalog View Panel (pre-archive)

Replica:

| Name | M | O/L | Pic | Type | arc_job | arc_barcode | ret_job | arc_state | Remote... |
|---------------|---|-----|-----|------|---------|-------------|---------|-----------|-----------|
| Clip #310.mov | | | | HHH | | | | | 4095.0 |

Figure 51 CatDV Replica Catalog View Panel (pre-archive)

An archive request was placed against 'Clip #310.mov' in catalog 'Original'. The screen shots illustrate the archive status after archive completion.

Original: (After archive and screen refresh in CatDV)

| Name | M | O/L | Pic | Type | arc_job | arc_barcode | ret_job | arc_state | Remot... Bi |
|---------------|---|-----|-----|------|-----------------------|-------------|---------|-----------|-------------|
| Clip #310.mov | | | | HHH | cached@19/01/15 14:57 | LTO0001B | | Archived | 4089.0 de |

Figure 52 CatDV Original Catalog View Panel (post archive)

Replica: (After screen refresh in CatDV)

| Name | M | O/L | Pic | Type | arc_job | arc_barcode | ret_job | arc_state | Remote... Bin |
|---------------|---|-----|-----|------|---------|-------------|---------|------------------------|---------------|
| Clip #310.mov | | | | HHH | | LTO0001B | | Archived - Due to 4089 | 4095.0 der |

Figure 53 CatDV Replica Catalog View Panel (post archive)

The Replica is updated with the arc_barcode of the tape used and 'arc_state = Archived – Due to 4089' indicating that the CatDV record with a Remote ID of 4089 has undergone archive and affected the online status of this clip. Retrieve the original Remote ID 4089, and the archive status of this clip becomes:

| Name | M | O/L | Pic | Type | arc_job | arc_barcode | ret_job | arc_state | Remote... |
|---------------|---|-----|-----|------|---------|-------------|---------|-------------------------|-----------|
| Clip #310.mov | | | | HHH | | LTO0001B | | Retrieved - Due to 4089 | 4095.0 |

Figure 54 Replica Catalog - Affected due to Retrieve

Purge Online receives the same treatment:

| Name | M | O/L | Pic | Type | arc_job | arc_barcode | ret_job | arc_state | Remote... |
|---------------|---|-----|-----|------|---------|-------------|---------|----------------------|-----------|
| Clip #310.mov | | | | HHH | | LTO0001B | | Purged - Due to 4089 | 4095.0 |

Figure 55 Replica Catalog - Affected due to Purge Online

Use the information provided by 'affected' clips to apply archive actions to the originals.

Clip Types Supported by QLSArchive

QLSArchive may be used to archive master clips, non media file types (dependant upon CatDV import analysis) and metaclips. Please refer to CatDV documentation for an explanation of these terms.

Whilst QLSArchive primarily deals with media, non media file types may also undergo archive requests in QLSArchive. Please beware that some file 'collections' or 'bundles'

may undergo parsing and not expose all media paths of components to achieve a successful archive, e.g. .rtfd files, be sure to test by performing archive and retrieves on your files of interest.

Metaclips may be manually created but are more often used for the presentation of complex media in CatDV. The parsing of P2, XDCAM (EX), Avid and RED exists in Pegasus but a license extension is required for CatDV Pro. Preference settings exist within CatDV to control import behaviour of many file types, archiving may be affected by file type and preference settings so please take time to thoroughly test sample CatDV imports to ensure operation is as desired. QLSArchive currently adopts CatDV's metaclip presentation, which incorporates a collection of separate files, each 'child' is referenced as an absolute path on storage. Beware that CatDV may ignore some items within Avid folders or card based media during import, such that retrieving all CatDV referenced files does not constitute the true folder content and may not be suitable for repurposing, however, their use in CatDV should be maintained. QLSArchive attempts to include the unreferenced files in the case of P2 media, on the proviso that the entire card has been imported into CatDV.

Metaclips may be archived in the same manner as master clips. Any or all metaclips may be selected for archive and QLSArchive will use the information supplied by CatDV to either store or retrieve files. Likewise, individual retrieval of metaclips is supported, these will contain sufficient file references to fulfil their role in CatDV. If an entire P2 structure is desired back online, simply restore all archived metaclips related to the card.







| Name | Catalog | Type | Remote ID | Media Path | Media Size | Poster Frame | arc_job | arc_state | ret_job | project_arch... | arc_barcode |
|--------|--------------|---|-----------|-----------------------|------------|--------------|---------------|-----------|---------------|-----------------|-------------|
| 0008TV | xendata_test |  | 3424.0 | \\qlsstore\EMEDIAL... | 94.9 MB | 4:16:47:10 | cached@19/... | Retrieved | requested@... | SA_CatDV | LTO0001B |
| 0006X3 | xendata_test |  | 3416.0 | \\qlsstore\EMEDIAL... | 73.4 MB | 4:16:19:18 | cached@19/... | Retrieved | requested@... | SA_CatDV | LTO0001B |
| 000174 | xendata_test |  | 3377.0 | \\qlsstore\EMEDIAL... | 183.8 MB | | cached@16/... | Archived | | SA_CatDV | LTO0001B |
| 0017JR | xendata_test |  | 3496.0 | \\qlsstore\EMEDIAL... | 35.3 MB | 4:18:14:14 | cached@16/... | Archived | | SA_CatDV | LTO0001B |
| 002039 | xendata_test |  | 3520.0 | \\qlsstore\EMEDIAL... | 67.6 MB | 4:18:51:02 | | | | | |
| 00239G | xendata_test |  | 3544.0 | \\qlsstore\EMEDIAL... | 34.4 MB | 4:19:22:06 | | | | | |

Figure 56 Metaclips and archive status

Whilst Sub clips and sequences contain media path references, they will result as 'Invalid' in the archive submission window. These objects are essentially metadata with pointers to media, however, the media is presented as clips in CatDV, select the clips for archive operations instead.

QLSArchive Statistics

Use 'Archive Status/Statistics' in the CatDV Tools menu to gain access to the Statistics tab. The information displayed is a daily throughput summary of archive events.

| Archive Status/Statistics | | | | | |
|-----------------------------------|----------|--------------|------------|-----------|--------------------|
| System Status Statistics View | | | | | |
| Date | Type | No. Of Files | Total Size | Avg Size | Avg Time |
| 20-Jan-2015 | archive | 35 | 3.5 GiB | 102.8 MiB | 0 Hours 2 Minutes |
| 20-Jan-2015 | backup | 4 | 902.4 MiB | 225.6 MiB | 0 Hours 1 Minutes |
| 20-Jan-2015 | retrieve | 36 | 3.9 GiB | 112.2 MiB | 0 Hours 2 Minutes |
| 17-Jan-2015 | archive | 1 | 202.9 MiB | 202.9 MiB | 0 Hours 1 Minutes |
| 17-Jan-2015 | backup | 1 | 202.9 MiB | 202.9 MiB | 0 Hours 1 Minutes |
| 17-Jan-2015 | retrieve | 6 | 1.0 GiB | 172.5 MiB | 2 Hours 11 Minutes |
| Last Refreshed: 20/01/15 16:05:08 | | | | | |

Figure 54 Archivist Statistics

Every Move To Archive, Copy To Archive and Retrieve operation contributes data to provide system archive performance, presented as daily totals for operation type. Statistics are maintained for the last 30 days and represent request submission to completion of the archive operation. If you elect to delay Worker detection by Scheduling Worker Actions for archive functions to later in the day, the additional wait time will affect the reported average times.

QLSArchive in a Mixed Environment

A mixture of Macintosh and Windows CatDV clients/Workers are frequently required in production. CatDV uses a path equivalence model for path substitution when trying to locate media. CatDV Client Preferences provide path equivalence settings for full-res and proxy media locations. CatDV Worker Actions provides a 'Path Mapping' under the Parameters tab to declare full-res path equivalence.

The path equivalence preferences may be of use when you have relocated media, require Windows/Mac or Mac/Windows conversion or network mappings differ due to operating system versions. We will focus on the use of a mixed platform deployment and the configuration needed to support archiving.

QLSArchive (CatDV – XenData) employs XenData hardware as the CatDV Worker node and is limited to the Windows operating system. CatDV imports may originate from clients or Worker processes on Windows or Macintosh platforms. CatDV is populated with the file path of the asset during import, relative to that client. If this occurs on a Macintosh client, the Windows based CatDV Worker will need the help of path equivalence to achieve access (translate media path) to the asset.

Example - Path Mapping

A Macintosh CatDV Client has been used to import clips from network storage.

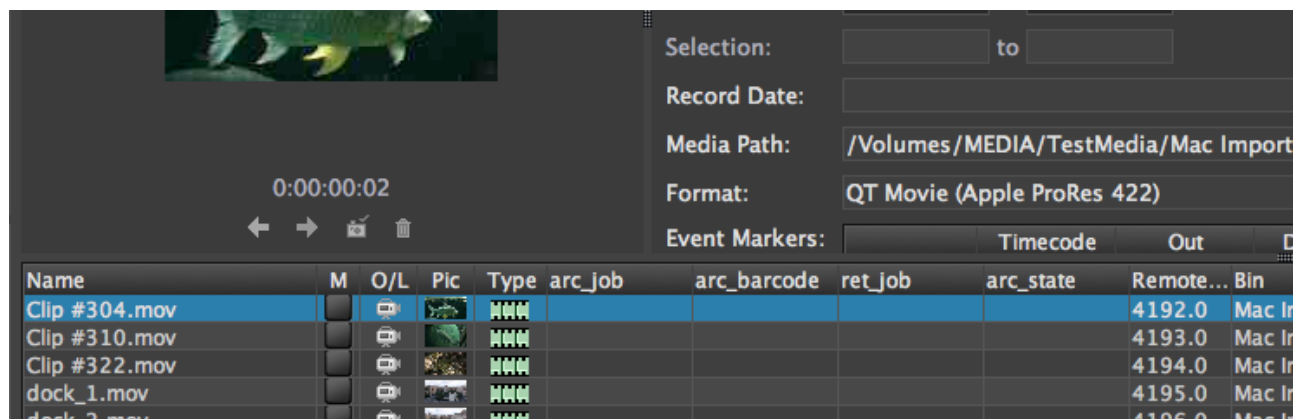


Figure 55 Files Imported on a Mac CatDV Client

The screen shot shows the Media Path relative to this client, /Volumes/Media/...

Archive operations will occur on the XenData Windows CatDV Worker where this path expression is meaningless without the help of Path Mapping.

A view of the same catalog from a Windows CatDV Client.

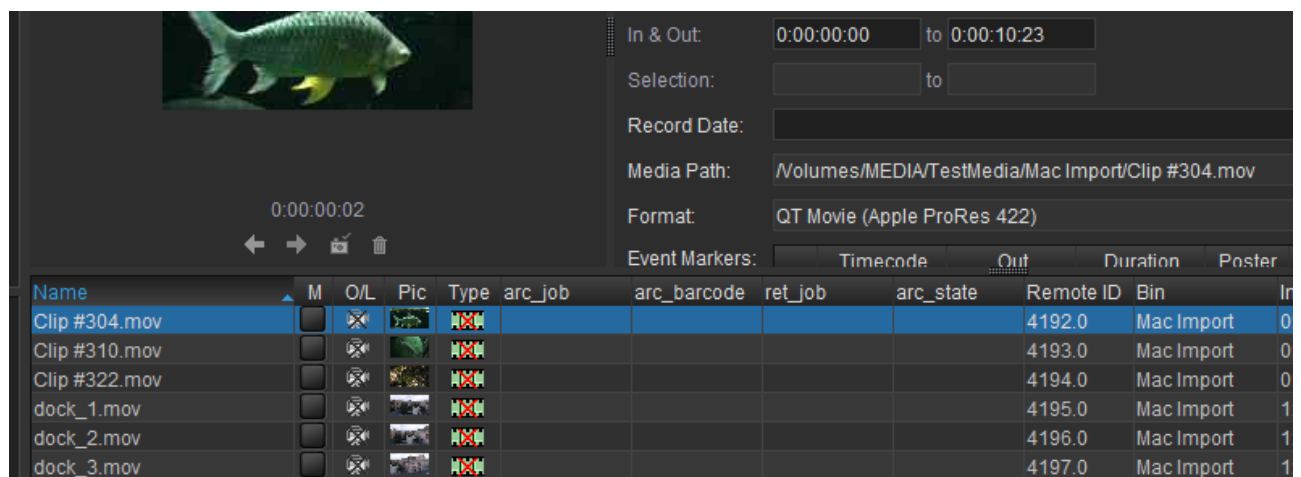


Figure 56 Files Appear offline to a Windows CatDV Client

Note the clips currently appear offline, CatDV Client Prefs handle equivalent paths to Full-Res Media but the Worker uses Path Mappings. Any attempts to archive will fail unless the Worker has access to the files referenced by the Mac client.

Edit the Worker Actions 'Move To Archive' and 'Copy To Archive' on the XenData appliance to contain Path Mappings for your environment. Our example requires an entry of /Volumes/MEDIA -> [\\qlsstore\MEDIA](#) for archive operations to be successful. The Parameters tab of the Move To Archive Action is shown for reference:

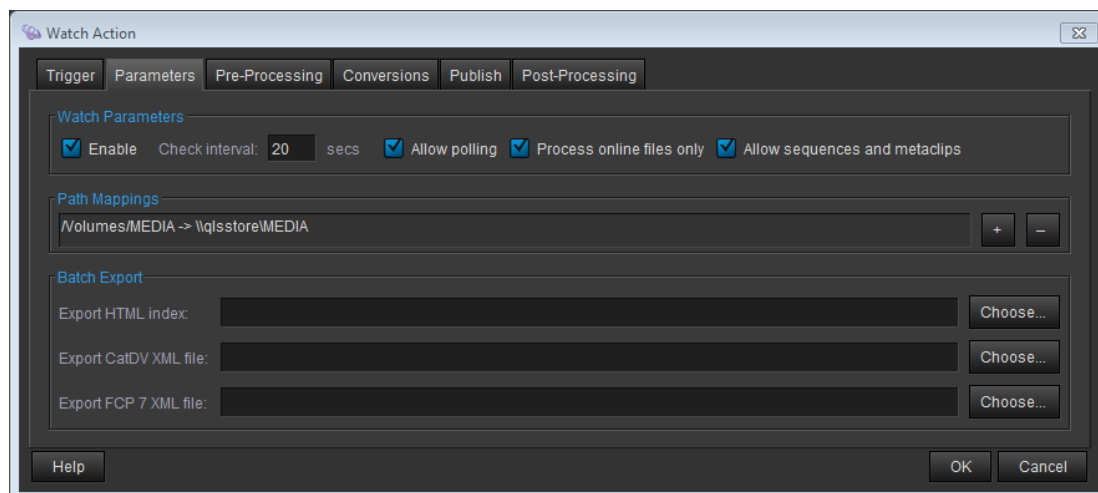


Figure 57 Worker Actions contain Path Mappings to translate paths

Note that Windows UNC paths have been used in the example but the same rules apply to path mappings where drive letters are used, ensure the same drive letters are in use to simplify administration and reduce the number of path equivalence entries required.

Attempting to archive from an Archivist's workstation can now be achieved. Note that if the Worker does not have a path mapping, is incorrect or a mount point has not been established, the clip would report 'Offline' during archive selection and cannot be submitted. This is due to the file existence test being processed on the Worker, irrespective of your client path equivalence entries.

If you are encountering problems setting up path equivalence, it may be useful to run a CatDV client on the Worker to check the results of path entries, and then apply your findings to the Worker Actions.

QLSArchive – Service Description

The services listed represent the core of archive integration. Explaining each service purpose and use will go some way to understanding the methods employed to achieve archive functions.

The act of archiving files in a CatDV environment must be considered asynchronous – there may be 500 files currently being committed to tape so any new selections for archive are really requests for future events.

The archive integration programs are designed to stage new requests, offer XenData new jobs on a regulated basis and report interim status changes to CatDV.

'Engine' provides a number of background tasks including CatDV status updates.

'Archive' offers the frequency of polling (minutes) and the maximum number of clips in any one archive job submission to XenData. An incremental control is provided for fine-tuning:



but the fields also accept numeric keyboard input.

The assets will have progressed through a queuing system (first in, first out) before they are considered for presentation to XenData. The polling value is normally low for configuration and testing. A value of 10 minutes in production offers a sensible balance of throughput to resource utilisation. Note that archiving will be attempted below the number of clips entered here, even one, it merely places a maximum job size on any single submission. The service must be stopped before the polling time or job size can be modified; starting the service after modification causes the new values to be implemented. One of the benefits of differentiating Archive and Retrieve operations is that 'Archive' can be stopped (suspended) to allow urgent retrieve jobs to take priority. If the service is left in the 'stopped' state, archive jobs are no longer submitted to XenData, however, Archivists may still submit archive requests which will be held by the queuing system.

'Retrieve' offers the frequency of polling (minutes) and the number of clips in any one job submission to XenData. The assets will have progressed through a queueing system (first in, first out) before they are considered for presentation to XenData. The polling value is normally low for configuration and testing. A value of 10 minutes in production offers a sensible balance of throughput to resource utilisation. Note that retrieval will be attempted below the number of clips entered here, even one, it merely places a maximum job size on any single submission. The service must be stopped before the polling time or job size can be modified, starting the service after modification causes the new values to be implemented. If the service is left in the 'stopped' state, retrieve jobs are no longer submitted to XenData, however, Archivists may still submit retrieval requests which will be held by the queuing system.

'Comms' offers a port value (default 1100) and start stop controls. The archive solution incorporates CatDV Client to Worker communications for validity checking of archive related requests and real time status reporting. Selecting items for archive and the crossing of fingers is yesterday's method of operation. Please ensure there are no firewalls in place that prevent communication, the port must be free for use on the Worker but may be modified if necessary, note the values as it will be required to configure the Archivist's workstation. The Archivist will experience submission difficulties if the Comms service is not running correctly.

The following screen shot shows the Service panel with all services started.

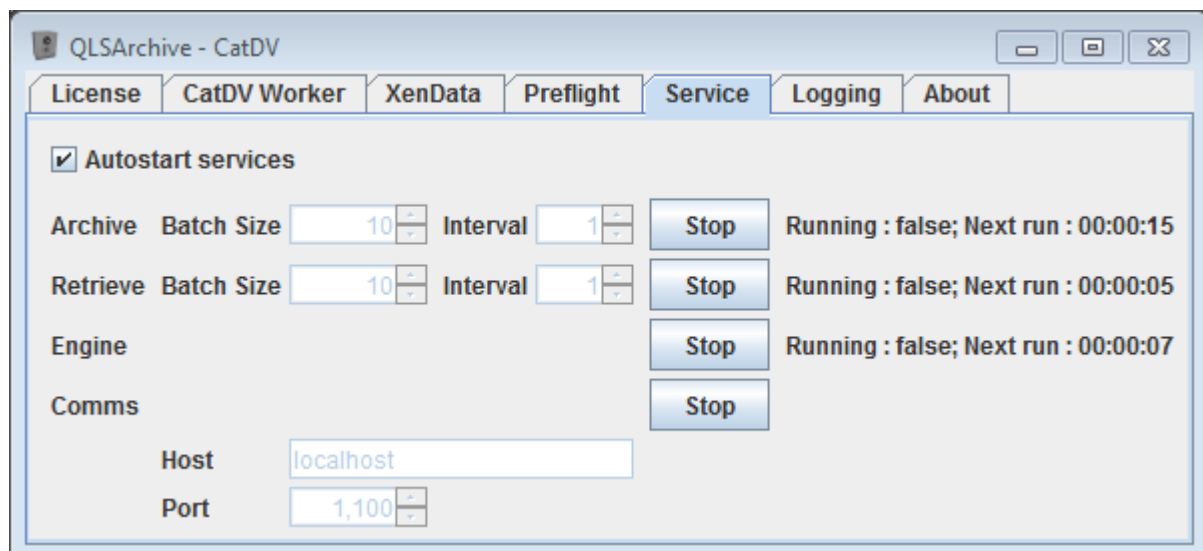


Figure 58 All Services Running

Note the additional status for scheduled Archive, Retrieve and Engine Services. The 'Running' state is 'false' until the elapsed interval counter which decrements in seconds is reached.

QLSArchive in Action

All services must be running to process archive functions including CatDV Worker. Although a visual running indicator is given in the 'Archive Status/Statistics' panel, login problems could prevent the Worker from processing archive requests. The Worker Actions must be enabled and running.

File queues, saved configuration settings, and logging by QLSArchive on the XenData Worker is accomplished in:

C:\Users\logged_in_user\AppData\Roaming\QLSArchive\

Whilst the generated log files are compressed, they will accumulate over time. Periodic removal of old information is recommended to reclaim disk space. The queue folder content is transitory in a healthy system and is only used for references to media, not the media itself.

The installation of QLSArchive Archivist Additions places additional files into a general Java extensions folder of the CatDV Pro/Pegasus client. This should allow for future upgrades to CatDV.

As the archive function includes a final deletion of the online file, the Worker must have the ability to delete items on the storage location indicated by CatDV media path (or path mappings if in a mixed environment). If the Worker has the volume mounted as read only then the file deletion will not be successful. This can occur in some SAN storage environments where read/write access is only given to a single user at any one time. The 'Purge Online' utility may be used when the Worker has read/write access to the volumes concerned. QLSArchive will set an archive status of 'A_ManDelReq' in arc_state if delete after archive has not been possible.

CatDV Pro on the Windows platform may exhibit a file lock by merely having the clip selected. This can be avoided by modifying CatDV Preferences to 'Avoid pre-loading movie' as shown.

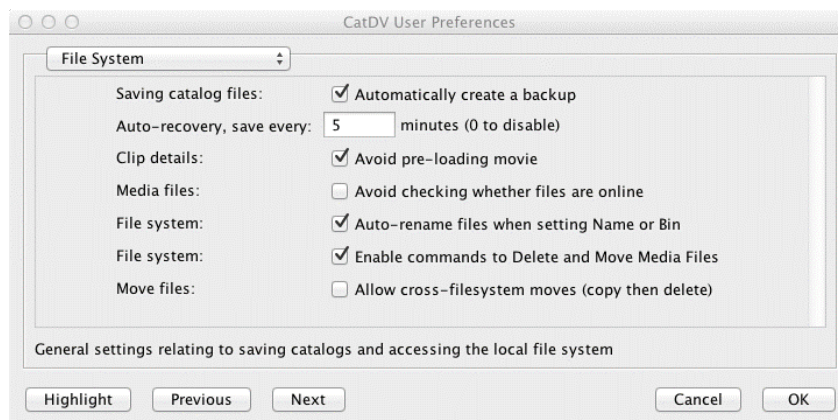


Figure 57 CatDV File System Prefs

QLSArchive does not prevent subsequent (valid) backup/archive requests, although if the 'Tape(s)' column is populated for the selection made, QLSArchive is indicating that it has previously committed the asset to tape.

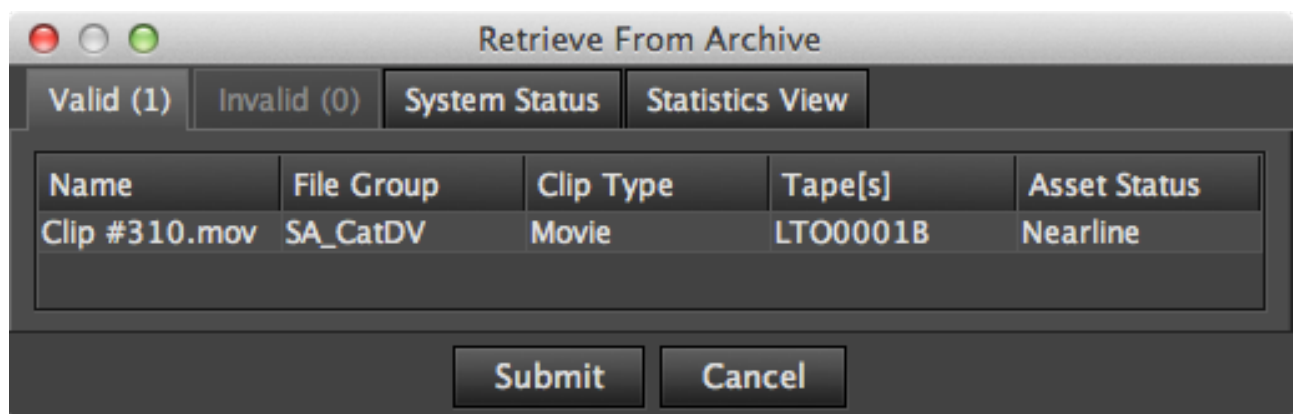


Figure 58 Archivist Move To Archive Reveals an Existing Tape

The validity checks will report if an operation cannot be completed due to the current archive status of the clips involved. E.g. it is not possible to restore clips, which have not yet been archived, or attempting to archive a clip that is currently offline.

Any problem encountered during 'Move To Archive' will result in 'A_Failed' displayed in arc_state and the clip will not be removed from online storage. If an arc_job accompanies the failed clip, use the time stamp information to refer to the XenData System event log for details. 'Copy To Archive' failures are indicated by 'B_Failed' being displayed in arc_state. Beware of file and path naming conventions, particularly in a mixed environment.

More information may be available in an arc_err field (visible in CatDV Client 'Other' Details Panel) or QLSArchive logs but failures may require close examination and repeat testing. Use the XenData file group to manually archive troublesome files for test purposes and examine the corresponding report.