



Storage Archives and Storage Tasks

This guide goes into details of the various options for setting up Storage Archives and Storage Tasks. If you are looking for simple ‘recipes’ for handling your data, for example “Automatically archiving all studies older than 7 years to a separate folder”, then please see the *Image Center Study Data Management* guide. If you’re looking to set up the main storage for your Image Center, i.e. Image Directories, please see the *Image Directory Creation and Maintenance* guide.

This guide is useful for a deeper understanding of the options available to you to handle large amounts of data.

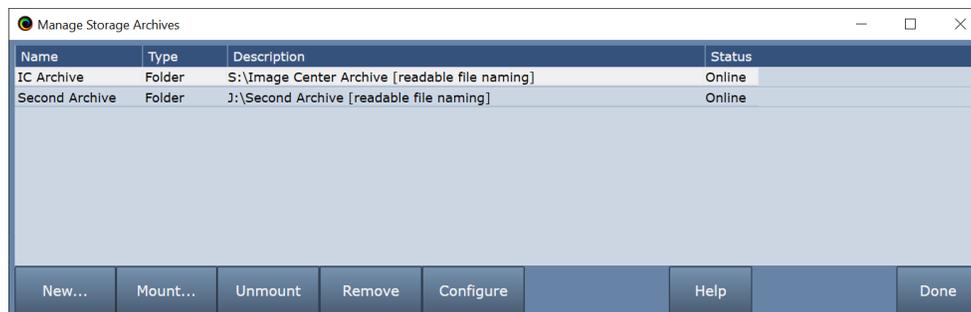
Storage Archives

An Image Center Storage Archive is a secondary storage option for studies. It complements an Image Directory, which is the primary storage option for studies. Image Directories are designed for high-performance; to immediately serve up studies for reading, copying, etc. Storage Archives still allow access to studies but fetching a study from a storage archive can be much slower. Storage Archives are a great place to keep studies you still would like to get to but may not need to get to immediately.

The Image Center currently supports one kind of storage archive: Folder Archives. A Folder Archive is a structured file system for storing studies where you can control the naming conventions and compression settings for the archive.

Managing Storage Archives

Open the Image Center Console, click the **Manage Storage** button and select **Manage Storage Archives**. A window will pop up:



It provides a list of your archives, their Name, Type, Description, and Status. If you’re having trouble with an archive this is the first place to go – look at the Status column to see if there are indications of what might be wrong. The options for Archive Management are:

New... – Click this to create a new archive.

Mount... - Allows you to mount an Unmounted archive. You use the Mount... / Unmount buttons when you want to move an archive from one location to another. See the section *Moving a Folder Archive* in the *Image Center Study Management* guide document for details on moving archives.

Unmount – Allows you to unmount an active archive so you can move the folder containing it. See the section *Moving a Folder Archive* in the *Image Center Study Management* guide document for details on moving archives.

Remove – Click this to completely remove an archive from the system. Note that if you remove an archive that is currently storing *Archived* studies, it will also remove studies from the Image Center itself. See the section on Storage Tasks for what archiving a study means.

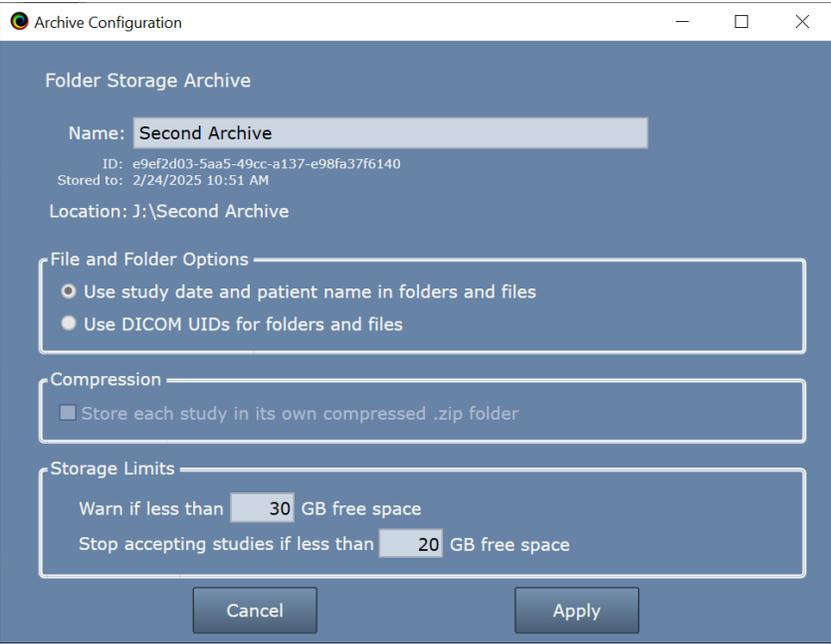
Configure – Select an archive and click this option to change its settings. You can also double-click on an archive to get to its configuration.

Help – Brings up this guide.

Done – Closes the window.

Folder Archives

Open the Image Center Console, click the **Manage Storage** button and select **Manage Storage Archives**. Click the **New...** button and select **Folder Archive**. A folder selector will pop up. Choose a folder for your archive and click OK. A configuration window will pop up.



The screenshot shows a window titled "Archive Configuration" with a blue background. The main heading is "Folder Storage Archive". Below this, there are several sections:

- Name:** A text input field containing "Second Archive".
- ID:** e9ef2d03-5aa5-49cc-a137-e98fa37f6140
- Stored to:** 2/24/2025 10:51 AM
- Location:** J:\Second Archive
- File and Folder Options:** Two radio buttons are present. The first, "Use study date and patient name in folders and files", is selected. The second is "Use DICOM UIDs for folders and files".
- Compression:** A checkbox labeled "Store each study in its own compressed .zip folder" is currently unchecked.
- Storage Limits:** Two input fields are shown. The first is "Warn if less than" with a value of "30" and the unit "GB free space". The second is "Stop accepting studies if less than" with a value of "20" and the unit "GB free space".

At the bottom of the window are two buttons: "Cancel" and "Apply".

Name

The name you give the archive, which will appear in error messages and the systems UI. You can change this at any time.

Location

The location of the archive. You specify this when you create the archive. You can change it later using the Mount and Unmount buttons in the Archive Management console.

File and Folder Options

Use study date and patient name in folders and files

With this option, the studies in your folder archive will be stored in folders like this:

<archive folder>\studies\<study year>\<patient name>.<study date>.<MRN>

For example:

S:\Image Center Archive\studies\2018\Abbott, Dorothy M.Feb-05-2018.618-50-403

Inside the study folder it looks like this:

(S:) > Image Center Archive > studies > 2018 > Abbott, Dorothy M.Feb-05-2018.618-50-4039

Name	Date modified	Type
imagesdc	2/6/2025 7:47 AM	File folder
DICOMDIR	2/6/2025 7:47 AM	File

The study is stored in standard DICOM format, with a DICOMDIR file and an imagesdc folder that contains your DICOM files for that study.

This archive file naming is particularly useful if you want to be able to search through your archive using Windows File Explorer and find a particular study by patient name, MRN, study date, etc. and copy the study to removable media in a form that can be easily read by any DICOM viewer.

Use DICOM UIDs...

With this option, studies will be stored in a folder structured like this:

<archive folder>\studies\<study year>\<studyUID>

Inside the folder there will be a set of DICOM files, named with their DICOM UID with the suffix '.dcm'. For example, the study folder will be something like:

J:\UID Archive\studies\2015\1.2.840.113857.2025227.9317.9643125

And the files inside the folder will look like this:

(J:) > UID Archive > studies > 2015 > 1.2.840.113857.2025227.9317.9643125

Name	Date modified	Type	Size
1.2.840.113857.2025227.9317.9643125.1.1.dcm	2/27/2025 9:31 AM	DCM File	124 KB
1.2.840.113857.2025227.9317.9643125.1.2.dcm	2/27/2025 9:31 AM	DCM File	121 KB
1.2.840.113857.2025227.9317.9643125.1.3.dcm	2/27/2025 9:31 AM	DCM File	144 KB
1.2.840.113857.2025227.9317.9643125.1.4.dcm	2/27/2025 9:31 AM	DCM File	135 KB
1.2.840.113857.2025227.9317.9643125.1.5.dcm	2/27/2025 9:31 AM	DCM File	126 KB
1.2.840.113857.2025227.9317.9643125.1.6.dcm	2/27/2025 9:31 AM	DCM File	124 KB

Dicom study UIDs and file UIDS tend to be very long and not particularly useful to the human eye. They are, however, guaranteed to be unique and do not expose PHI in your file system.

Warning: Due to the length of study UIDs and file UIDs, it is important that the path to the root folder of your archive not be very long to avoid exceeding the maximum path length in Windows, which is 256 characters.

Compression

If you select compression for your folder archive, all files for a given study will be stored together in one compressed ".zip" file. For example, if you are using the *study date and patient name* option above, each study will be stored like this:

S:\Image Center Archive\studies\2018\Abbott, Dorothy M.Feb-05-2018.618-50-4039.zip

If you're using the *Use DICOM UIDs...* option, each study will be stored like this:

J:\UID Archive\studies\2015\1.2.840.113857.2025227.9317.9643125.zip

The advantage of using compression is that your folder archive will take up less space. The downside is that the files are no longer in DICOM part 10 format, and you cannot easily index or look at a study using standard DICOM tools. You'll have to 'unzip' the study first.

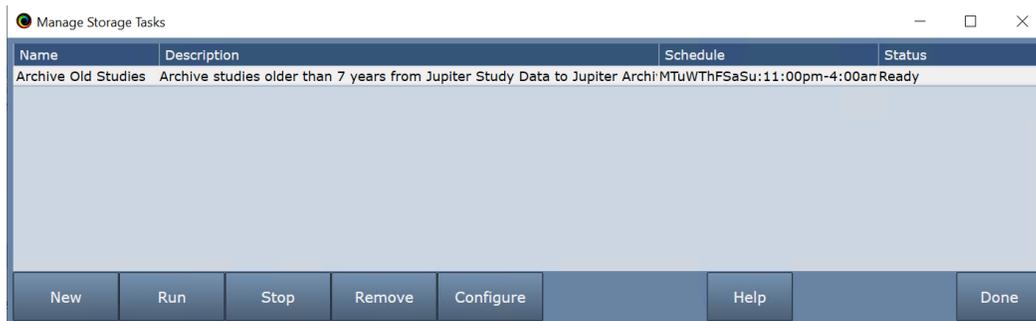
Storage Limits

The storage limits for the archive specify when you want the system to show warning messages when the archive gets low, and when to completely prevent the archive from accepting studies.

Storage Tasks

Storage Tasks are operations that you define to manage your data. Storage Tasks can be scheduled to regularly run at specific times of day or can be run manually.

Open the Image Center Console, click the **Manage Storage** button and select **Manage Storage Tasks**. A window will pop up:



It provides a list of your Storage Tasks, their Name, Description, Schedule, and Status. The options for Storage Tasks Management are:

New... – Click this to create a new storage task.

Run – This will manually run a storage task. The task will run in the background in the Image Center. You will see the Status change as the task progresses.

Stop – If you select a running storage task and click Stop, the task will stop as soon as it can..

Remove – This removes your task from the task list.

Configure – Select a task and click this option to change its settings. You can also double-click on a task to get to its configuration.

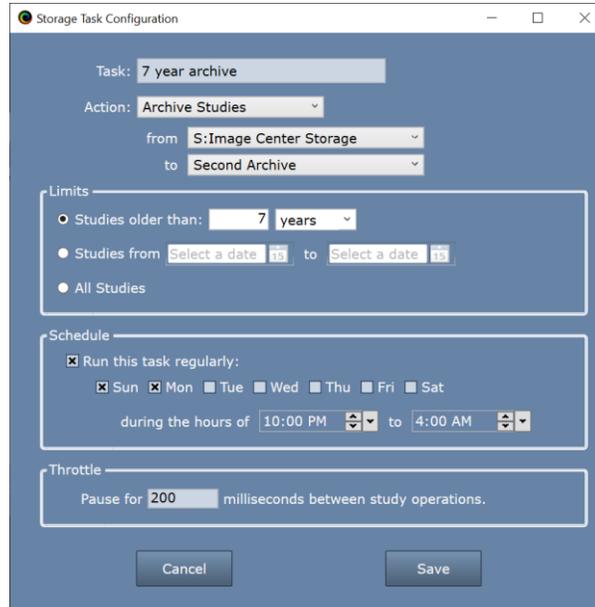
Help – Brings up this guide.

Done – Closes the window.

Creating Storage Tasks

1. Open the Image Center Console.
2. Click **Manage Storage**
3. Select **Manage Storage Tasks**. A dialog will appear with a list of storage tasks you have defined.

4. Click the **New** button



Task

The name that you give the task.

Action

There are several actions that a task can take. We will explore these in detail below.

Archive Studies

An **Archive Studies** task is used to archive studies from an Image Directory into an Archive. When a study is *archived*, the data for the study is moved into the Archive, freeing up space in your Image Directory. The study still appears in the Study List, but it will have a status of *archived*.

If you try to do something with the study, i.e. view it, copy it, etc. a dialog will appear telling you the study needs to be fetched and asks if you want to fetch it. If you click Yes, the Image Center will go about copying the study out of the archive and into the Image Directory. When it is done, the status of the study will change to *fetchd*. At that point, the study is now back in the Image Directory and can be viewed, copied, etc. You can even edit the study, and if you do edit the study, the changes will be re-archived into the archive at a later time (that you set in the settings for the Image Directory).

Move Studies

A **Move Studies** task can be used two ways:

Move a study from an Image Directory into another Image Directory

This task was created to move large numbers of studies from one Image Directory to another, even migrating an entire Image Directory into another in the background.

Move a study from an Image Directory into an Archive

When you move a study from an Image Directory into an Archive, the study data is physically moved into the archive and removed from the Image Directory and will no longer appear in the study list. The only way to access a study that has been moved into an Archive is to go into the archive itself and copy the study out by hand.

Copy Studies

A **Copy Studies** task will make a copy of a study in an Image Directory and place it into an archive. This task might be used for something like an audit or for research purposes – you could specify a range of study dates and have only those studies copied into an archive.

Delete Studies

A **Delete Studies** task will delete a study from an Image Directory **permanently**. It is generally recommended that you avoid creating a Delete Studies task unless you have a very specific reason for doing so.

If you do set up a Delete Studies Task, make sure you have completely researched the clinical and legal requirements for study retention for your practice and that you are conforming to them. Trillium Technology, Inc. is not responsible for any data loss should you use this task.

Limits

You can set what studies a task will affect by study age, study date range, or not at all, i.e. “all studies”.

Schedule

If the “Run this task regularly” box is checked, then this task will run on the specified days in the specified time range.

Throttle

This allows you to control the amount of time the system will pause in between studies when the task is working. Generally, we recommend leaving the throttle at 200 milliseconds. It gives the system ‘time to breath’ between studies. If you find that your tasks are really overloading your system, then consider increasing this to 500 or 1000 milliseconds.

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