



DCMimport 3.0

Installation and User Manual

Import and reconciliation of external DICOM studies

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1 Introduction

DCMimport imports DICOM studies that come from outside the hospital – on a CD or DVD, a USB stick, a folder or from another DICOM system – and makes them fit for the local PACS. The patient and order data of the external study are replaced by the local ones (reconciliation) before the study is sent to one or more DICOM servers.

DCMimport never changes the original media. It works on working copies in its own data folder and records every import, change, send and removal in its history.

1.1 Typical workflow

1. A patient brings a CD with images from another hospital. Insert it and click **Quick Import**: the studies appear in the tree on the left.
2. Select the patient. The left column shows the data on the media (*Dicom info from Media*), the right column the values that will be written (*Edit patient data*).
3. Click **Query PACS** or **Get Dicom Worklist** to look up the patient (or the order) in the local systems, and **Select** the right one: the fields on the right are filled in.
4. Click **Change Patient Data**. The working copies are reconciled according to IHE Import Reconciliation; the patient turns blue in the tree.
5. Check the patient (or only some studies or series) and click **Store Selected Patient**. The images are sent to all configured DICOM servers; the patient turns green.
6. Click **Clear list**, or start the next Quick Import, to begin with an empty list.

1.2 Main features

- **Import** from CD/DVD/USB (Quick Import), from any folder (DICOM files, JPEG/BMP/PNG/TIFF images, MP4 and MPEG-2 video) and through the built-in **DICOM gateway** (C-STORE SCP).
- **Reconciliation** with the modality worklist (C-FIND MWL) or with the PACS (C-FIND patient/study), with match stars, search on part of a name or ID, and warnings when birth date or sex differ.
- **IHE Import Reconciliation Workflow**: previous values in Original Attributes Sequence, the external patient ID in Other Patient IDs Sequence, order attributes in Request Attributes Sequence.
- **Sending** of the checked patients, studies, series or images to all DICOM servers at once or to one server, with the send status per image and per server, and resending of only what failed.
- **History** of every import, change, send and removal; image preview with a slider through the series.
- Runs as a normal Windows user; user interface in English, Dutch, French and German.

1.3 Intended use

Important: DCMimport is **not intended for diagnostic use**. The image preview only helps to recognise the study; it is not a diagnostic viewer. The user remains responsible for choosing the right patient and order during reconciliation.

2 System requirements

Item	Requirement
Operating system	Windows 10 (version 1809 or later), Windows 11, Windows Server 2019 or later – 64-bit (x64).
.NET	Standard setup: not required, the .NET runtime is included. Framework-dependent setup: Microsoft .NET 10 Desktop Runtime (x64) must be installed (the setup checks this).
Visual C++ runtime	Microsoft Visual C++ 2015-2022 Redistributable (x64) , version 14.44 or later, for the image codecs (JPEG, JPEG-LS, JPEG 2000). Both setups install it when it is missing or older.
Rights	Administrator rights for installation only. DCMimport itself runs as a normal user.
Memory / CPU	4 GB RAM and 2 CPU cores are sufficient.
Disk space	About 150 MB for the program (standard setup; 8 MB with the framework-dependent setup). For data: the working copies of the imported studies, typically the size of the CDs that are imported at the same time. Keep a few GB free.
Media	A CD/DVD drive or USB port for Quick Import (the drive is chosen in Setup → General).
Network	Outgoing connections to the worklist, PACS query and DICOM servers (their DICOM ports). For the DICOM gateway: an inbound TCP port, default 4001.
Optional	FFmpeg (ffprobe.exe, and ffmpeg.exe for a preview) for Import MPeg . FFmpeg is not included in the setup.

3 Installation

3.1 Which setup

Setup file	When to use
DCMimport-Setup-3.0.1.exe (about 70 MB)	The standard setup. It contains the .NET runtime and works on every supported Windows version without other prerequisites.
DCMimport-Setup-3.0.1-framework-dependent.exe (about 28 MB)	For computers that already have the .NET 10 Desktop Runtime (x64), or where it is deployed centrally. If the runtime is missing, the setup shows the download link and stops.

Both setups contain the Microsoft Visual C++ runtime (24 MB) and install it only when it is missing.

Both setups install the same program in the same place; either one can be used to update the other.

3.2 Digital signature and Windows SmartScreen

The setups, `DCMimport.exe`, `Dicom.Native.dll` and the uninstaller are digitally signed by **Cleys, Patrick** (the owner of Sup-C), with a Certum code signing certificate. The Windows security prompt (UAC) shows *Verified publisher: Cleys, Patrick*.

A new version can still get a SmartScreen warning for a while when it is started from a download, until Windows knows the file: *Windows protected your PC*. Click **More info**: the publisher is shown as *Cleys, Patrick*. Then click **Run anyway** and confirm the UAC prompt.

Tip: To check a setup: right-click the file → **Properties** → **Digital Signatures**. The signer must be *Cleys, Patrick*. If the tab is missing, or the UAC prompt shows *Unknown publisher*, do not run the file and contact info@sup-c.com.

3.3 Running the setup

The setup wizard is shown in English, Dutch, French or German, following the language of Windows.

- 1. License Agreement** – read the End User License Agreement and select *I accept the agreement*. Without acceptance the installation cannot continue.
- 2. Select Destination Location** – default `C:\Program Files\SUP-C\DCMimport`. Change it only when required.
- 3. Select Additional Tasks** – see the table below.
- 4. Ready to Install** – click Install. When DCMimport is still running, the setup asks to close it first. When the Microsoft Visual C++ runtime is missing, the setup installs it silently; if that fails, a message explains what to do and DCMimport is installed anyway.
- 5. Finish** – optionally open DCMimport right away.

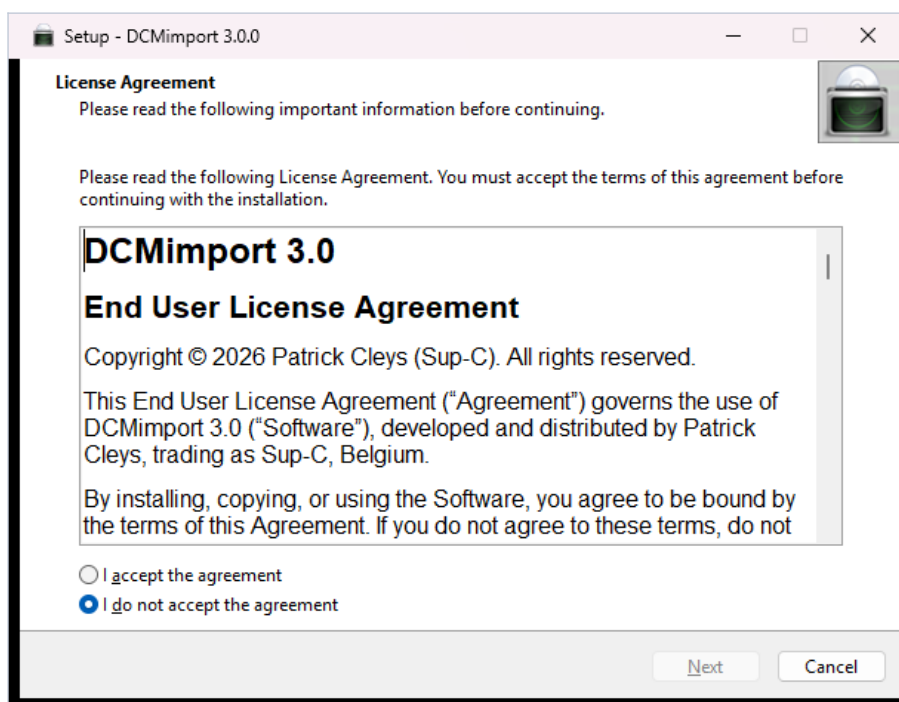


Figure 1 – Setup – License Agreement

Task	Meaning
Allow the DICOM gateway through Windows Firewall	Adds the inbound rule <i>SUP-C DCMimport DICOM gateway</i> for the program <i>DCMimport.exe</i> only, on any port: a port change in Setup → Dicom Server needs no new rule. The rule is replaced on an update and removed on uninstall. Checked by default, because the gateway is on by default.
Create a desktop shortcut	Adds a DCMimport icon to the desktop. Not checked by default.

3.4 What is installed where

Location	Content
C:\Program Files\SUP-C\DCMimport	DCMimport.exe (the program, with the translations and icons inside), Dicom.Native.dll (image codecs), e_sqlite3.dll (database engine), EULA.rtf, and in docs this manual and the DICOM Conformance Statement (PDF)
Start menu	SUP-C DCMimport, SUP-C DCMimport Manual and SUP-C DCMimport License Agreement
Windows	The Microsoft Visual C++ 2015-2022 Redistributable (x64), only when it was missing or older than 14.44. It is a shared Windows component: Windows Update keeps it up to date and uninstalling DCMimport does not remove it.
C:\ProgramData\SUP-C\DCMimport	Database, license, working copies, received files and logs (chapter 11.1). All users of the computer may write here: DCMimport runs without administrator rights, and every Windows user sees the same list.
Windows Firewall	The rule <i>SUP-C DCMimport DICOM gateway</i> (when the task was selected)

The setup contains no settings, database or license: a new installation starts empty.

3.5 First start

1. Start **SUP-C DCMimport** from the start menu.
2. Without a license a message explains the demo mode and shows the hardware ID of the computer (chapter 4). You can configure and test in demo mode.
3. Click **Setup** and configure at least the External Dicom Servers, the Dicom Query Connection and/or the Dicom Worklist Connection, and the Quick Import drive (chapter 5).
4. Register DCMimport's calling AE title (default DCMIMPORT) and, where required, its IP address in the PACS/worklist systems. To send images to the DCMimport gateway, configure its AE title, IP address and gateway port (default 4001) in the sending system.

3.6 Updating to a new version

Run the setup of the new version. Close DCMimport first; the setup asks for it when DCMimport is still running. The database, the settings, the license and the working copies are kept. The license stays valid as long as the hardware is the same.

3.7 Upgrading from DCMimport 2.x

DCMimport 3.0 is a new program. It is installed next to 2.x and does not read the data of 2.x:

- **Settings** of 2.x (*Settings.ini*, *dicom.ini*) are not read: enter the Dicom Server, the Worklist and Query connections and the External Dicom Servers again in Setup.
- **Own worklist request tags** are not taken over. Setup → Dicom Worklist Request Tags starts with the default list: the 8 tags of 2.x plus Accession Number, Issuer of Patient ID, Study Description and Referring Physician's Name. Tags that were added in 2.x, and their standard values, must be entered again.
- The **2.x license** is not valid for 3.0: request a 3.0 license (chapter 4).
- Uninstall 2.x when 3.0 is configured and tested.

3.8 Uninstalling

Use Windows Settings → Apps → *SUP-C DCMimport*. The program and the firewall rule are removed. You are then asked whether the DCMimport data must also be deleted – the default answer is **No**.

Important: The data folder contains the working copies of imported studies, i.e. patient data. Answer Yes only when these may be deleted. The license file is always kept, so a re-installation on the same computer is licensed immediately.

3.9 Silent installation

For deployment tools the setup supports the standard Inno Setup command-line options, for example:

```
DCMimport-Setup-3.0.1.exe /VERYSILENT /SUPPRESSMSGBOXES /NORESTART /TASKS="firewall" /LOG="C:\Temp\dcimport-setup.log"
```

Option	Meaning
/VERYSILENT	No wizard and no progress window. Use /SILENT to show only the progress window.
/TASKS="..."	Comma-separated tasks: firewall , desktopicon . Tasks that are not listed are not selected. The Visual C++ runtime is installed silently when needed, whatever the tasks.

Option	Meaning
/DIR="..."	Installation folder.
/LANG=...	Language of the setup: english, dutch, french or german.
/LOG="..."	Writes a setup log file (useful for troubleshooting).

Tip: With /VERYSILENT the license agreement is accepted implicitly. Make sure the customer has agreed to the EULA in another way. A silent uninstall (unins000.exe /VERYSILENT) never deletes the data.

4 Licensing

DCMimport is licensed per computer. A license is a small file (`DCMimport.lic`) that is issued by Sup-C for the hardware ID of one specific computer. It is digitally signed: it cannot be changed and it is not valid on another computer.

4.1 License types

Type	Description
Lifetime	Valid without time limit on the licensed computer.
Valid until (date)	Valid up to and including the end date. From 30 days before the end date DCMimport shows a warning when it is started and the license text in the status bar turns orange. After the end date DCMimport switches to demo mode.
Demo (no license)	Everything works with the real data, but the patient name and patient ID of every image that is sent are replaced (chapter 4.5).

4.2 The license window

Click the license text at the bottom right of the main window (status bar), or click **Info** and then **License...**, to open the license window.

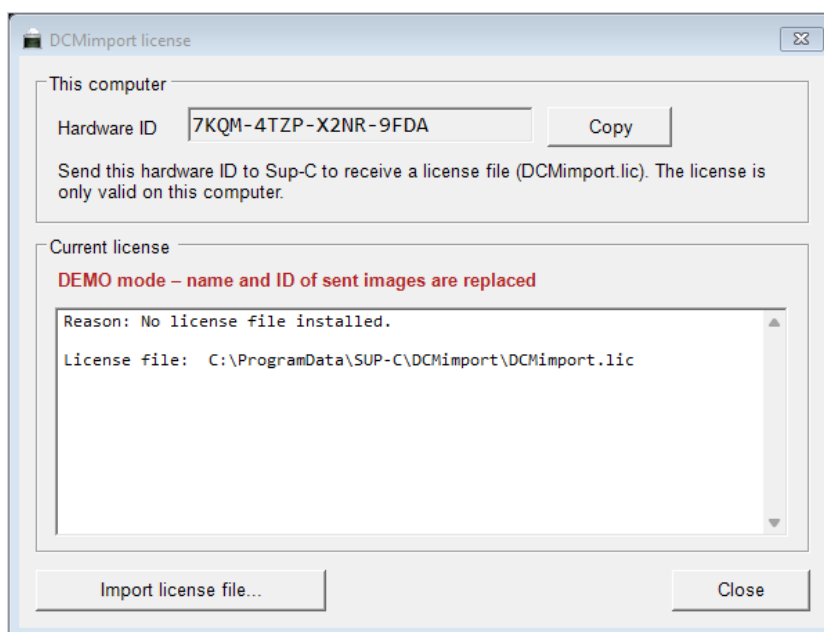


Figure 2 – License window in demo mode, with the hardware ID of this computer

Element	Purpose
Hardware ID	Unique ID of this computer (format XXXX-XXXX-XXXX-XXXX), calculated from the motherboard, system UUID and processor. It does not change when Windows is reinstalled. It is the same ID as the one DCMrouter shows on the same computer.
Copy	Copies the hardware ID to the clipboard, so you can paste it in an e-mail to Sup-C.
Current license	Shows whether DCMimport is licensed and, if not, why: no license file, license for another computer, expired, damaged file, or a license for another product (for example a DCMrouter license).
Import license file...	Selects the received <code>DCMimport.lic</code> . The file is checked first; only a valid license for this computer is installed. An installed license is not replaced by an invalid file.

4.3 Requesting and installing a license

1. Open the license window and click **Copy** next to the hardware ID.
2. Send the hardware ID, the customer name and the site to Sup-C (info@sup-c.com).
3. You receive a license file `DCMimport.lic`. Save it on the computer.
4. Open the license window, click **Import license file...** and select the file.
5. The status bar shows *Licensed to ...* in green and the title bar no longer shows *Demo*.

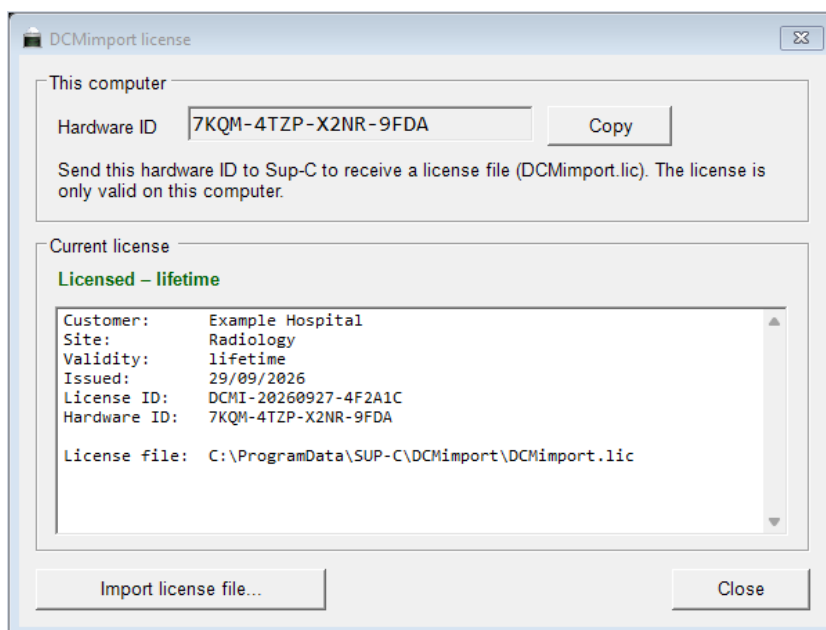


Figure 3 – License window with a valid lifetime license

Tip: The license is checked again every minute: a license that expires while DCMimport is open switches to demo mode without a restart. The hardware ID changes when the motherboard or the processor is replaced, and for a virtual machine when it is recreated or cloned. Request a new license with the new hardware ID in that case.

4.4 Title bar and status bar

Where	Licensed / demo
Title bar	<i>DCMimport version 3.0 – in demo mode DCMimport version 3.0 - Demo.</i>
Status bar (right)	<i>Licensed to <customer> – lifetime or – valid until <date> in green (orange from 30 days before the end date), or DEMO – click to license in red. Click it to open the license window.</i>
At start-up	In demo mode: the reason, an explanation of the demo mode and the hardware ID, with <i>Open the license window now?</i> . With a license that ends within 30 days: a warning.

4.5 Demo mode in detail

In demo mode everything works normally with the real data: import, the tree, Query PACS, the worklist, Change Patient Data and History. Only what **leaves DCMimport** is changed: every image sent by Store Selected Patient (also a resend) gets

- Patient's Name ``DEMO_yyyymmddhhmmsszzz``
- Patient ID ``ID_yyyymmddhhmmsszzz`` (the same date, time and milliseconds)

This is done on a copy in memory at the moment of sending: the working copies and the database keep the real data. Every patient gets one time stamp, so all images and studies of the same patient get the same values on every server, also when they are sent again. At the first send in demo mode DCMimport shows a message once.

In the images that are sent, these attributes are removed as well:

Tag	Name	In demo
(0010,1000)	Other Patient IDs (retired)	removed
(0010,1001)	Other Patient Names	removed
(0010,1002)	Other Patient IDs Sequence	removed
(0010,1005)	Patient's Birth Name	removed
(0010,1060)	Patient's Mother's Birth Name	removed
(0010,2297)	Responsible Person	removed
(0010,2298)	Responsible Person Role	removed
(0400,0561)	Original Attributes Sequence	removed (holds the old name and ID)
(0038,0010) / (0038,0014)	Admission ID / Issuer of Admission ID Sequence	removed
(0040,0275)	Request Attributes Sequence	kept; scanned by the safety net

As a safety net the whole dataset, all sequences and private tags included, is then searched for the real name and ID. Matching text values are emptied; private binary elements that contain them are removed. Birth date, sex, study data and the names of physicians and operators are kept.

Important: Text burnt into the image pixels (for example on ultrasound or secondary capture images) cannot be removed by DCMimport.

5 Setup

Click **Setup** in the toolbar. The page list on the left has six pages; every page has its own **Save** button (the External Dicom Servers page saves every change at once). **Close** closes the window.

5.1 Dicom Server

Figure 4 – Setup – Dicom Server

Field	Meaning
Hostname / IP-Address	Name and IP address(es) of this computer. Give them, with the AE title and the port, to the administrators of the systems that must send to DCMimport or accept its images.
AE Title	The AE title of DCMimport (default DCMIMPORT , 1–16 characters). It is used as calling AE title for queries and sends, and as called AE title of the gateway.
Port	TCP port of the DICOM gateway (default 4001). The firewall rule of the setup is for DCMimport.exe on any port, so it stays valid when the port changes.
Incoming Compression	What the gateway does with received images: Do not change (keep the transfer syntax of the sender), Uncompress (Explicit VR Little Endian) or Jpeg Lossless .
Gateway	Receive studies via C-STORE (DICOM gateway) : when checked, DCMimport receives studies from other DICOM systems (chapter 9).
Security	Accept only own AE-title : associations to another called AE title are rejected. Accept only known senders (External Dicom Servers) : only calling AE titles that are in the External Dicom Servers list are accepted. AE titles are compared without surrounding spaces and without regard to case. Both off = accept every sender (as DCMimport 2.x). Rejected associations are listed in History.

Tip: When *Accept only known senders* is on and no External Dicom Servers are defined, Setup asks for confirmation: the gateway would then reject every sender.

5.2 Dicom Worklist Connection

Figure 5 – Setup – Dicom Worklist Connection

Field	Meaning
Copy from server	Fills in the fields below from one of the External Dicom Servers (a copy, not a link).
IP-Address / AE Title / Port	The modality worklist server (for example the RIS). DCMimport sends Modality Worklist C-FIND requests to it.
ISO IR 100 / UTF-8	Specific Character Set in the query: Latin-1 (ISO_IR 100) or UTF-8 (ISO_IR 192), for names with accents. None checked = no character set (plain ASCII). Use what the worklist server supports.
Echo	Tests the connection with C-ECHO.

5.3 Dicom Worklist Request Tags

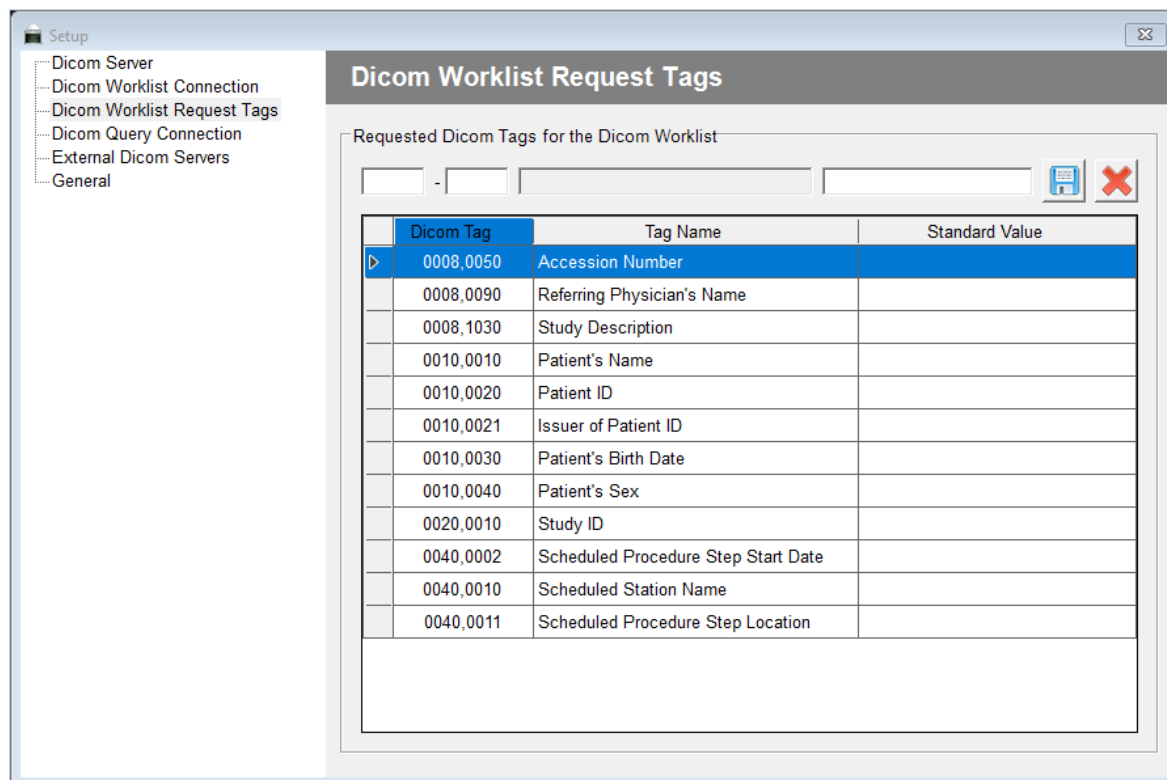


Figure 6 – Setup – Dicom Worklist Request Tags

The request tags are the attributes that are asked from the worklist, shown in the worklist window and offered as editable fields in the main window. Each tag has an optional **standard value**: a matching key that is used as a filter in every worklist query (for example Scheduled Station AE Title = DCMIMPORT).

1. Enter the group and the element (4 hex digits each) and leave the field: the name from the DICOM dictionary appears. An unknown tag cannot be saved.
2. Enter the standard value, or leave it empty (no filter).
3. Click the disk icon (**Save Dicom Tag**). Click a row to edit it; the red cross (**Delete Dicom Tag**) deletes the selected tag.

Close Setup: the main window shows an extra field for every new tag. Tags of group 0040 (scheduled procedure step, requested procedure) are written in the Request Attributes Sequence of the images (chapter 11.2).

5.4 Dicom Query Connection

Figure 7 – Setup – Dicom Query Connection

The PACS that is searched by **Query PACS**. The fields are the same as for the worklist connection, plus:

Field	Meaning
Query model	Study Root (supported by most PACS) : patient data are asked at study level and grouped per patient. Patient Root : patient-level query, when the PACS supports it.

5.5 External Dicom Servers

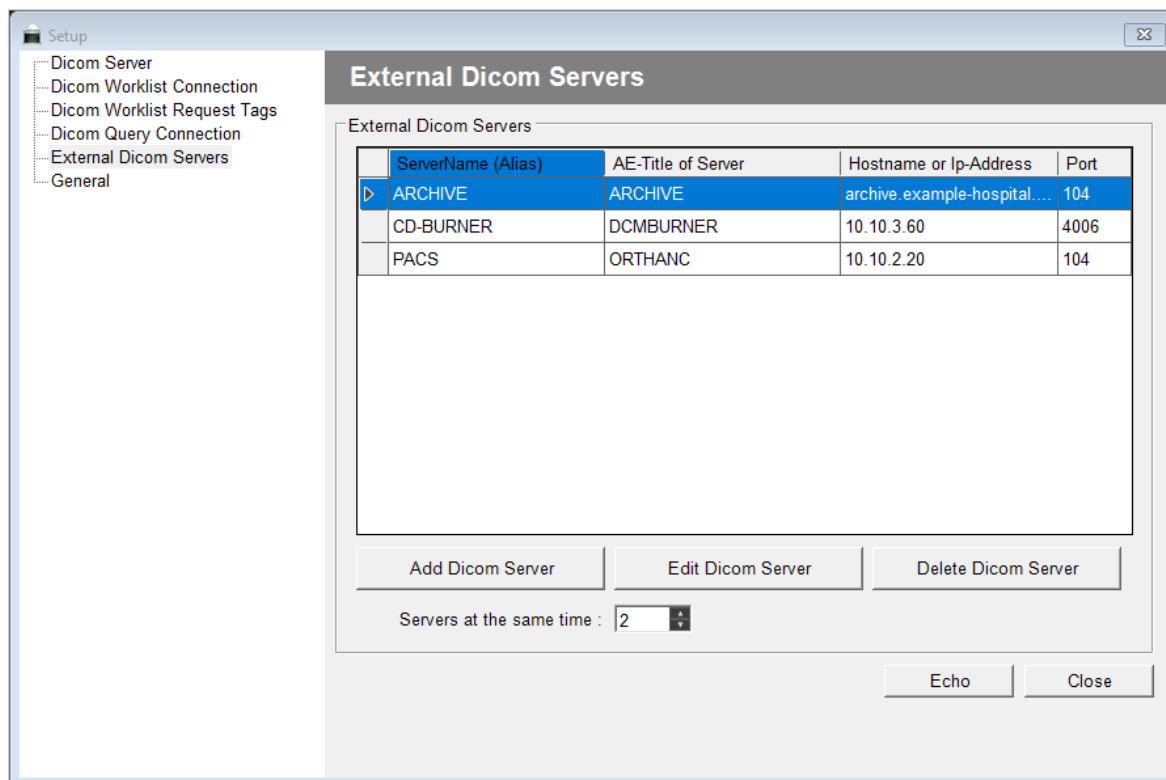


Figure 8 – Setup – External Dicom Servers

The DICOM servers that DCMimport sends to (PACS, archive, CD burner...). **Store Selected Patient** sends to all of them; the arrow next to the button sends to one of them (chapter 8).

Element	Meaning
Add / Edit / Delete Dicom Server	Opens the server window, or deletes the selected server after confirmation. A double-click on a row edits it. Deleting a server also deletes its send status.
Echo	C-ECHO test of the selected server.
Servers at the same time	Store Selected Patient sends to all servers; this many servers are sent to at the same time (1–8, default 2). Every server has its own association; a slow or unreachable server does not hold up the others.

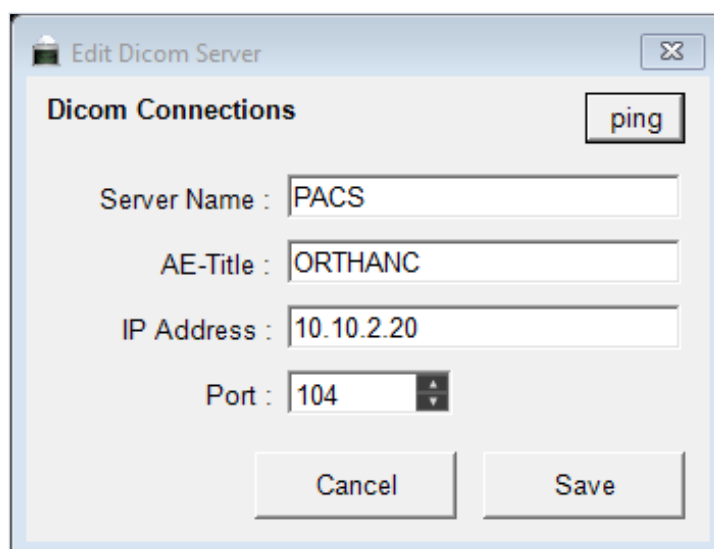


Figure 9 – Edit Dicom Server

In the server window: **Server Name** (the alias shown in DCMimport), **AE-Title**, **IP Address** (or host name) and **Port**. **ping** tests the connection with C-ECHO.

5.6 General

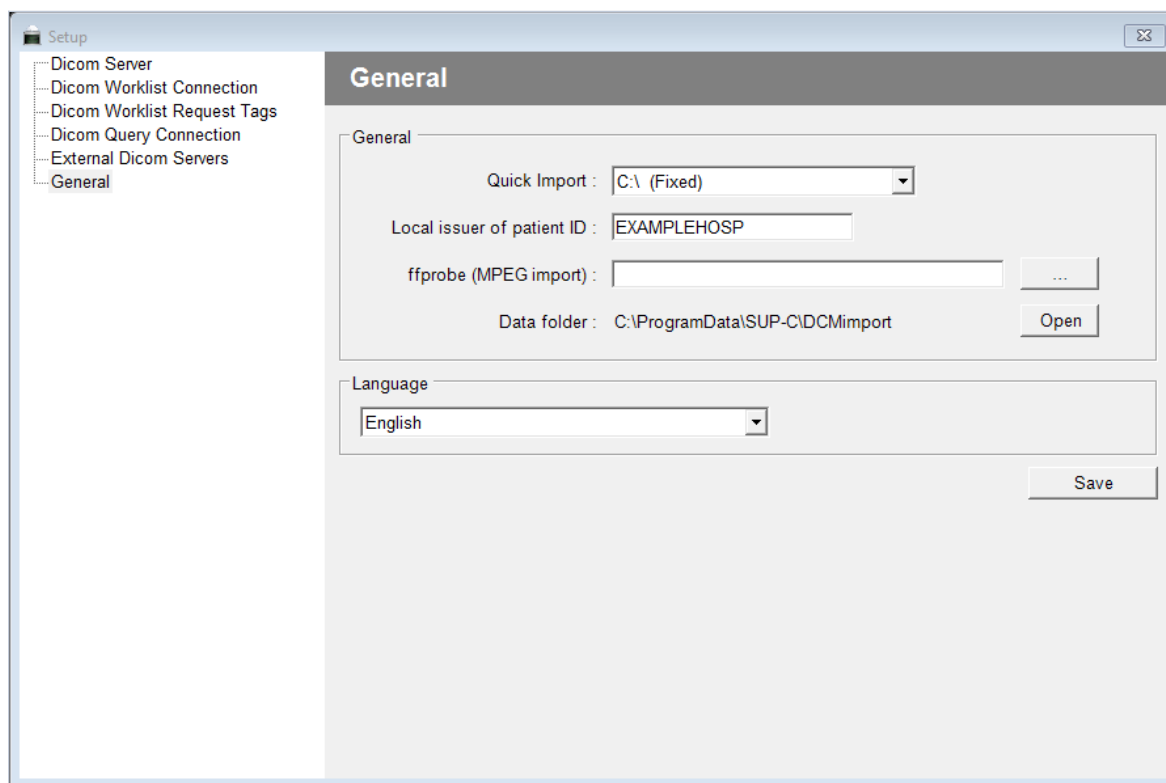


Figure 10 – Setup – General

Field	Meaning
Quick Import	The drive that Quick Import reads (CD/DVD drive or USB stick).
Local issuer of patient ID	Issuer of Patient ID that is used when the PACS or the worklist does not return one.
ffprobe (MPEG import)	Path to ffprobe.exe of FFmpeg, for Import MPeg. Empty = look next to DCMimport and on the PATH; what is found is shown in grey. ... browses for the file.
Data folder	The folder with the database, the license and the working copies (read-only). Open opens it in Explorer.
Language	English, Nederlands, Français or Deutsch. The new language is used after DCMimport is restarted.

6 Working with DCMimport

6.1 The main window

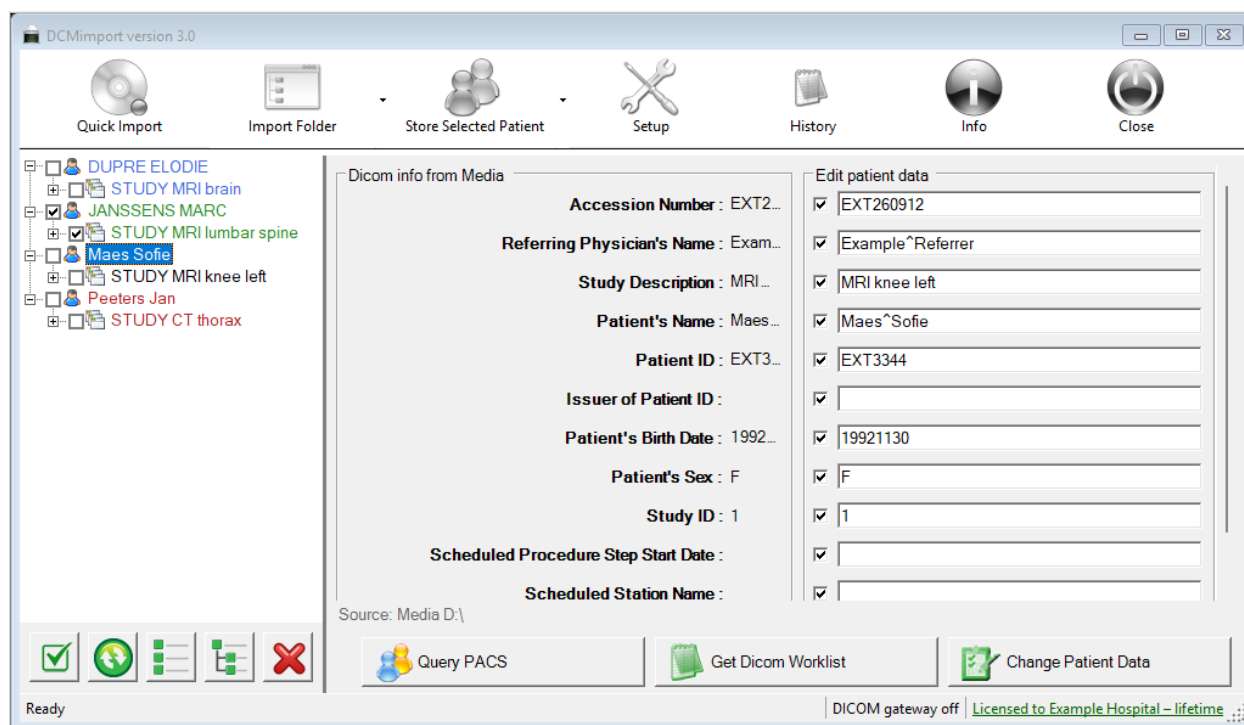


Figure 11 – Main window with four patients (imported, reconciled, sent, send error)

Toolbar button	Function
Quick Import	Imports the media in the drive of Setup → General at once and replaces the list (chapter 6.2).
Import Folder	Adds studies to the list. The arrow offers Import Dicom , Import Jpeg/Bmp and Import MPeg (chapter 6.3); the button itself is Import Dicom.
Store Selected Patient	Sends the checked items to all External Dicom Servers; the arrow chooses All servers or one server (chapter 8).
Setup	Settings (chapter 5).
History	The history of all actions (chapter 10).
Info	Version, data folder and links; License... opens the license window.
Close	Closes DCMimport. When a task is still running, DCMimport asks first.

Below the toolbar: the tree with the imported studies on the left, the patient panel or the image on the right. The status bar shows the progress of the current task (with **Cancel**), the state of the DICOM gateway and the license.

6.2 Quick Import

Quick Import imports the media in the drive that is set in Setup → General – without further questions:

1. DCMimport first checks whether the media holds at least one DICOM image. If not, the list is left as it is and the message *No DICOM files found* appears. No media in the drive: *No media found in D:*.
2. When the list still holds studies that were not sent, DCMimport asks *x studies not yet sent will be removed. Continue?*. No = nothing changes.

3. The current list is cleared (all sources: media, Import Folder, gateway) and the media is imported. The clearing is recorded in History with the number of patients, studies and images.

All files on the media are examined, also without a DICOMDIR; the DICOMDIR itself and files that are not DICOM are skipped. The images are copied to the working folder: the media is never changed. An image that is already in the list (same SOP Instance UID) replaces the existing one as long as that one was not reconciled or sent; otherwise the existing one is kept.

6.3 Import Folder

Menu item	What it does
Import Dicom	Imports all DICOM files of a folder and its subfolders, as Quick Import but without clearing the list : the studies are added.
Import Jpeg/Bmp	Converts the JPEG, BMP, PNG and TIFF images of a folder into one Secondary Capture study, with a placeholder patient IMPORT^<FOLDER NAME> . Reconcile it before sending.
Import MPeg	Converts MP4 (H.264) and MPEG-2 files (.mp4, .m4v, .mpg, .mpeg, .m2v, .ts) into Video Photographic Image Storage objects (modality XC), one study per import with a placeholder patient. Needs ffprobe (Setup → General).

Import MPeg keeps the video stream as it is (no re-encoding) and chooses the DICOM transfer syntax from the profile and level:

Video	Transfer syntax
H.264 High Profile or lower, up to level 4.1	MPEG-4 AVC/H.264 High Profile / Level 4.1 (1.2.840.10008.1.2.4.102)
H.264, level 4.2	MPEG-4 AVC/H.264 High Profile For 2D Video (1.2.840.10008.1.2.4.104)
MPEG-2 Main/Simple Profile, Low/Main Level	MPEG2 Main Profile / Main Level (1.2.840.10008.1.2.4.100)
MPEG-2 High/High-1440 Level	MPEG2 Main Profile / High Level (1.2.840.10008.1.2.4.101)

Other videos (High 10, 4:2:2, 4:4:4 profiles, level 5.x, HEVC, H.264 outside MP4) are refused with the reason per file; the rest of the selection is imported. The preview of a video shows its first frame when **ffmpeg.exe** is next to ffprobe.

Tip: FFmpeg is not included with DCMimport. Install it separately and set the path to ffprobe.exe in Setup → General.

6.4 The tree and its colours

The tree shows patient → study (*STUDY <description>*) → series (*SERIE <description>*) → image (*Image Number <n>*). The images of a series are listed when the series is expanded. When two patients have the same name, the patient ID is shown after the name. The tooltip of a node shows details (patient ID, birth date, source; study date, accession; the send status per server).

Colour	Meaning
Black	Imported, still with the patient data of the media.
Blue	Reconciled (Change Patient Data was applied).
Green	Sent successfully to every server it was sent to.
Red	The send failed on at least one server. The tooltip shows the error per server.

The check boxes select what is sent or removed (chapter 8.1). The highlighted node is what the right side shows and what Change Patient Data applies to.

6.5 The buttons below the tree

Button	Function
Select all / none	Checks or unchecks everything in the tree; the icon changes.
Refresh	Reads the list again from the database.
Collapse	Collapses the tree to the patients.
Expand	Expands every patient and study down to the series.
Clear list (red cross)	Clears the whole list (working copies and database records, every source) after confirmation. The question mentions the number of studies not sent yet. The original media is never touched. Disabled (grey) while a task runs.

6.6 Right-click menu

Item	Function
Remove selected...	Removes the checked images from the list, after confirmation. Nothing checked: <i>Nothing selected. Check the patients, studies or series you want to remove.</i>
Clear sent	Removes the images that were sent successfully to every server they were sent to (green).
Colours: ...	A reminder of the meaning of the colours.

6.7 Image preview

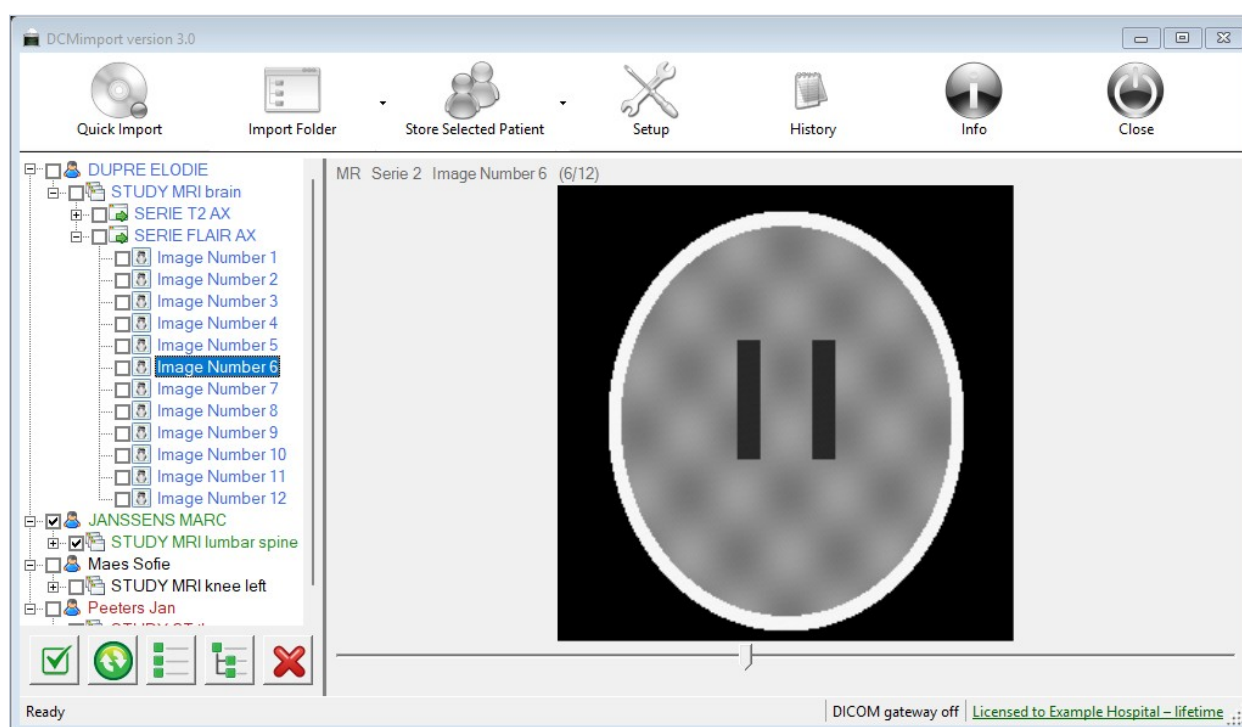


Figure 12 – An image selected in the tree: the preview with the slider through the series

Click an *Image Number* in the tree: the image fills the right side. The slider below the image (or the arrow keys, Page Up/Down, Home/End when it has the focus) browses through the series; the label above shows modality, series, image number and position. When an image cannot be shown, the label shows *no preview* (<reason>) and browsing continues.

Tip: While dragging the slider only the last position is rendered: fast browsing through large series stays smooth. The preview is not a diagnostic viewer.

7 Reconciliation

7.1 The patient panel

When a patient, study or series is highlighted, the right side shows two columns:

- **Dicom info from Media:** the values as found on the media (they never change).
- **Edit patient data:** the values that Change Patient Data will write. The check box in front of a field decides whether it is written; changed fields turn yellow.

The fields are the request tags of Setup → Dicom Worklist Request Tags (chapter 5.3); by default Accession Number, Referring Physician's Name, Study Description, Patient's Name, Patient ID, Issuer of Patient ID, Patient's Birth Date, Patient's Sex, Study ID, Scheduled Procedure Step Start Date, Scheduled Station Name and Scheduled Procedure Step Location. The line below the panel shows the source of the study (*Source: Media D:*) and, once reconciled, the values on the media (*Reconciled – on media: ...*).

7.2 Get Dicom Worklist

Dicom Worklist

Name: Patient ID:

On media: Maes^Sofie ID EXT3344 30/11/1992 F ★ = match on family name, given name, birth date, sex

Match	Accession Number	Referring Physician's Name	Study Description	Patient's Name	Patient ID	Issuer of Patient
▶ ****	ACC260927001	Example^Referrer	MRI knee left	MAES^SOFIE	LOC0033441	EXAMPLEHOSP
★	ACC260927002	Example^Referrer	CT abdomen	MERTENS^LOTTE	LOC0040021	EXAMPLEHOSP
	ACC260927003	Example^Referrer	MRI shoulder right	WOUTERS^PIETER	LOC0019876	EXAMPLEHOSP

3 result(s)

Refresh Cancel Select

Figure 13 – Dicom Worklist: the orders of today, the best match first

Get Dicom Worklist queries the worklist server (Setup → Dicom Worklist Connection). The columns are the request tags. **Today** limits the result to the orders scheduled today; **Name** and **Patient ID** search on part of the name or the ID. The line *On media* shows the patient on the media.

Select (or a double-click) fills in all fields of the order, including the order attributes (accession number, requested procedure, scheduled procedure step). **Refresh** repeats the query; **Cancel** closes the window without changes.

7.3 Query PACS

The screenshot shows the 'Query PACS' window. At the top, there are input fields for 'Name' (containing 'Maes'), 'Patient ID', and 'Birth date'. Below these, a status bar shows 'On media: Maes^Sofie ID EXT3344 30/11/1992 F' and a legend '★ = match on family name, given name, birth date, sex'. The main area contains a table with two rows of results. The first row is highlighted with a dark green background and four stars, indicating the best match. The second row has a light green background and three stars. At the bottom, it says '2 result(s)' and has buttons for 'Refresh', 'Cancel', and 'Select'.

Match	Patient's Name	Patient ID	Patient's Birth Date	Patient's Sex	Issuer of Patient ID	Info
★★★★	MAES^SOFIE	LOC0033441	19921130	F	EXAMPLEHOSP	1 study(ies), last 10/03/2025
★★★	MAES^SOFIA	LOC0033987	19921130	F	EXAMPLEHOSP	1 study(ies), last 02/01/2024

Figure 14 – Query PACS: a search on the family name, the best match first

Query PACS searches the patient in the PACS (Setup → Dicom Query Connection). The window opens with empty search fields and does not query yet: type a name, a patient ID and/or a birth date and click **Refresh** (or press Enter). A search without any value is not sent, as it would return the whole PACS. Select a patient to fill in the patient fields (name, ID, birth date, sex, issuer); a PACS patient is not an order, so the order fields stay as they are.

7.4 Match stars and colours

Every result gets one star (★) per match with the media: family name, given name, birth date and sex. The results are sorted with the best match first. Four stars: dark green background; three stars: light green.

7.5 Searching on part of a name or ID

Text typed in Name or Patient ID finds names and IDs that **contain** it: pré becomes *pré*. Type * or ? yourself for your own pattern (Dupr* = starts with Dupr). The birth date is always matched exactly (YYYYMMDD).

7.6 Change Patient Data

Change Patient Data writes the checked fields into the working copies of the highlighted node:

Highlighted	Applies to
Patient	All studies of the patient.
Study	All series of the study.
Series	The whole study of the series: a study must never be split between two patients. The status bar says (<i>whole study</i>).

- The birth date must be YYYYMMDD, the sex M, F, O or empty, and the patient ID cannot be empty. A backslash (\) is refused, because DICOM uses it to separate values.
- When the birth date or the sex differs from the media, DCMimport shows the differences and asks *Are you sure this is the same patient?*

- The previous values are kept in the images according to IHE (chapter 11.2). History records the new values.
- The patient turns blue and stays highlighted, also when its name and ID changed. Values typed but not yet applied are kept when the gateway refreshes the list.

8 Sending

8.1 What is sent: the check boxes

Selected means **checked** in the tree, as in DCMimport 2.x. The highlighted node is not sent.

- A checked patient, study or series stands for all images below it – also for images of a series that was never expanded.
- When a series is expanded and only some of its images are checked, only those images are sent.
- An image that falls under several checked levels is sent once.
- Checking or unchecking a node does the same for everything below it. Unchecking a child removes the check of its parents; checking the last child checks them again. A check on a parent therefore always means *everything below*.
- The checks are kept when the tree is refreshed (gateway, Change Patient Data).
- Nothing checked: *No patients selected. Check the patients, studies or series you want to send.* – nothing is sent.

8.2 To all servers or to one server

The **Store Selected Patient** button sends the checked images to **all** External Dicom Servers. The arrow next to it offers **All servers** and every server separately: choose a server to send only to that server. Without servers: *No Dicom servers configured. Add them in Setup → External Dicom Servers.*

Before sending, DCMimport asks for confirmation when images still carry the patient data of the media (not reconciled). An image is not sent again to a server where it already arrived; when everything already arrived everywhere, DCMimport asks *The checked images were already sent to ... Send them again?*

8.3 The send window

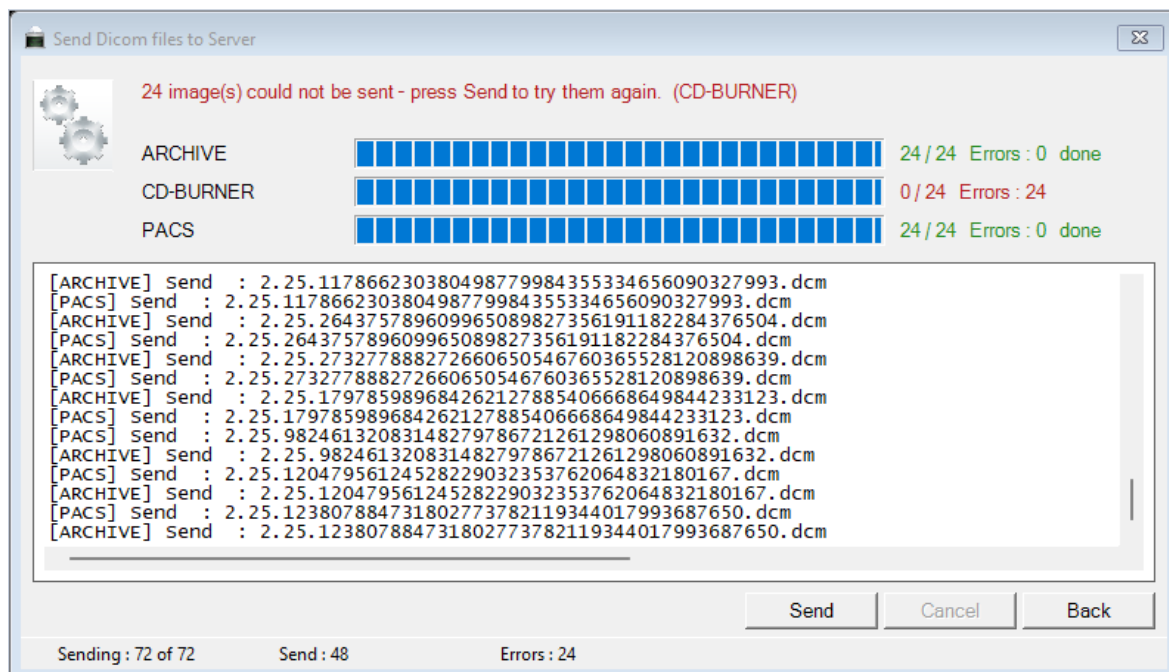


Figure 15 – Send window: two servers received everything, CD-BURNER rejected the association

- One line per server: the name, a progress bar and *sent / total Errors : n* – green when everything arrived, red when there are errors.
- The log below shows every image, each line starting with the server: [PACS] Send : ... or [CD-BURNER] Error : ... – <reason>.
- The status bar shows the totals (Sending / Send / Errors).
- **Send** sends the failed images again – only to the servers where they failed. **Cancel** stops the send. **Back** closes the window.

8.4 Status per server and resending

- DCMimport keeps the result of the last send of every image to every server. The tree is green when an image arrived on every server it was sent to, red when a server failed; the tooltip lists every server.
- After the send, the images that arrived on every target server are unchecked; failed images stay checked. A second **Store Selected Patient** therefore sends only what did not arrive, only to the servers where it failed.
- Change Patient Data on a sent image clears its send status: it must be sent again to every server.
- History records one line per server with the number of images sent and failed.

Tip: Up to *Servers at the same time* servers (default 2) are sent to in parallel, each with its own association. A slow or unreachable server does not hold up the others.

Important: In demo mode the name and ID of the images sent are replaced (chapter 4.5). The same values are used for every server.

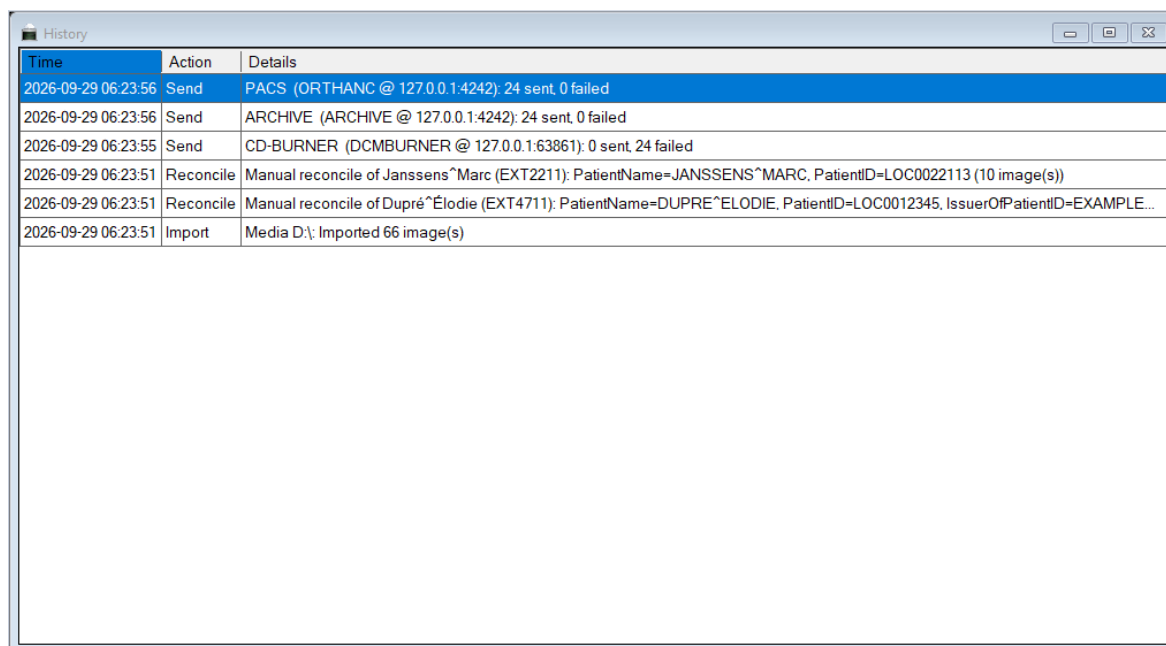
9 The DICOM gateway

With **Receive studies via C-STORE (DICOM gateway)** checked (Setup → Dicom Server), DCMimport receives studies from other DICOM systems – for example a modality, a viewing station or the PACS of another hospital. Configure the sender with the AE title, the IP address and the port of DCMimport (default DCMIMPORT, port 4001).

- DCMimport accepts C-ECHO and C-STORE for the Storage SOP Classes supported by fo-dicom 5.2.6, in the transfer syntax the sender proposes. **Incoming Compression** can convert received images to an uncompressed syntax or to JPEG Lossless.
- A received file is first written to the *incoming* folder, then registered and moved to the working folder; only then the sender receives *success*. Files that were received but not registered (for example after a crash) are registered at the next start.
- New patients appear in the tree automatically; the highlighted node, the checks and values being typed are kept.
- The same image received twice replaces the existing one as long as that one was not reconciled or sent (recorded as *Duplicate* in History).
- The status bar shows *Gateway DCMIMPORT : 4001*, or *Gateway error (port ...)* when the port is in use.
- The security options of chapter 5.1 decide which senders are accepted; rejected associations are recorded in History with calling AE, called AE and IP address.

Tip: The gateway needs an inbound firewall rule. The setup can create it for DCMimport.exe (chapter 3.3).

10 History



Time	Action	Details
2026-09-29 06:23:56	Send	PACS (ORTHANC @ 127.0.0.1:4242): 24 sent, 0 failed
2026-09-29 06:23:56	Send	ARCHIVE (ARCHIVE @ 127.0.0.1:4242): 24 sent, 0 failed
2026-09-29 06:23:55	Send	CD-BURNER (DCMBURNER @ 127.0.0.1:63861): 0 sent, 24 failed
2026-09-29 06:23:51	Reconcile	Manual reconcile of Janssens^Marc (EXT2211): PatientName=JANSSENS^MARC, PatientID=LOC0022113 (10 image(s))
2026-09-29 06:23:51	Reconcile	Manual reconcile of Dupré^Élodie (EXT4711): PatientName=DUPRE^ELODIE, PatientID=LOC0012345, IssuerOfPatientID=EXAMPLE...
2026-09-29 06:23:51	Import	Media D:\: Imported 66 image(s)

Figure 16 – History

History shows every action, newest first:

Action	Recorded
Import	Source (media, folder, gateway) and the number of images imported, skipped and failed. Also <i>no DICOM files found – list kept</i> .
Duplicate	Images already in the list: replaced or kept.
Reconcile	Change Patient Data: the patient and the new values.
Send	Per server: <server>: <i>n sent, m failed</i> (in demo mode with <i>(demo: name and ID replaced)</i>).
Remove / Clear	Removed images; the list cleared by Quick Import or Clear list, with the number of patients, studies and images.
Gateway	Rejected associations (calling AE, called AE, IP address).
License / Setup	License installed or refused; changes of servers and request tags.

Important: History contains patient names and IDs. Treat screenshots and exports of it as confidential patient data.

11 Technical appendix

11.1 Data folder and files

```
C:\ProgramData\SUP-C\DCMimport\
dcmimport.db      list of imported images, send status, settings, history (SQLite)
DCMimport.lic     license file
work\            working copies of the imported studies (DICOM)
incoming\        files being received by the gateway
logs\            crash-yyyyMMdd.log (only after an unexpected error)
```

The program folder `C:\Program Files\SUP-C\DCMimport` contains no data. All users of the computer can write the data folder (set by the setup).

Important: The working folder and the database contain patient data. Back them up and delete them according to the policies of your organization. Clear the list (or use Quick Import) when the studies have been sent.

11.2 IHE Import Reconciliation

Change Patient Data follows the IHE Import Reconciliation Workflow (IRWF):

Attribute	Content
Original Attributes Sequence (0400,0561)	One item per reconciliation: the previous values of the changed attributes (Modified Attributes Sequence), Source of Previous Values (the institution on the media), Attribute Modification DateTime, Modifying System <i>SUP-C DCMIMPORT</i> and Reason <i>COERCE</i> . A second reconciliation adds an item.
Other Patient IDs Sequence (0010,1002)	The external patient ID (with its issuer and Type of Patient ID TEXT) when the patient ID is changed.
Request Attributes Sequence (0040,0275)	Order attributes from the worklist: Requested Procedure ID and Description, Scheduled Procedure Step ID and Description, and the other request tags of group 0040.
Study ID / Study Description	From the worklist: Requested Procedure ID and Requested Procedure Description (IHE mapping).

11.3 Character sets

- Imported images keep their Specific Character Set. When a new value does not fit (for example é in an ASCII image, or Ł in a Latin-1 image), the image is switched to UTF-8 (ISO_IR 192) and the existing values are kept.
- Worklist and PACS queries use the character set of their connection (ISO_IR 100, ISO_IR 192 or none). Names with accents are shown correctly in the tree and the search windows.
- Dates are shown in the short date format of Windows; DICOM and the database always use YYYYMMDD.

11.4 Transfer syntaxes

DCMimport imports and receives DICOM objects in the transfer syntaxes supported by the included foficom codecs and sends them in their stored transfer syntax whenever accepted by the destination. The preview decodes:

Transfer syntax	UID
Implicit / Explicit VR Little Endian, Explicit VR Big Endian	1.2.840.10008.1.2 / .1.2.1 / .1.2.2

Transfer syntax	UID
Deflated Explicit VR Little Endian	1.2.840.10008.1.2.1.99
JPEG Baseline, Extended, Lossless (Process 14, SV1)	1.2.840.10008.1.2.4.50 / .51 / .57 / .70
JPEG-LS Lossless and Near-Lossless	1.2.840.10008.1.2.4.80 / .81
JPEG 2000 Lossless and lossy	1.2.840.10008.1.2.4.90 / .91
RLE Lossless	1.2.840.10008.1.2.5
MPEG-2 and MPEG-4 AVC/H.264 (video)	1.2.840.10008.1.2.4.100 – .104 (first frame via FFmpeg)

11.5 Network ports

Connection	Direction	Port
DICOM gateway	inbound	4001 (Setup → Dicom Server)
Worklist server	outbound	as set in Dicom Worklist Connection (often 104)
PACS query	outbound	as set in Dicom Query Connection (often 104)
External Dicom Servers	outbound	as set per server

The DICOM connections are not encrypted (no TLS). Use DCMimport inside the hospital network.

12 Troubleshooting

Symptom	Cause and solution
Echo fails (timeout, <i>connection refused</i>)	Wrong IP address or port, the server is down, or a firewall blocks the connection. Check the values with the administrator of the server and test again with Echo / ping.
Echo or send: <i>Association rejected: calling AE not recognized</i>	The server does not know DCMimport. Register DCMimport's calling AE title (Setup → Dicom Server) and, where required, the IP address of this computer in that server.
<i>Association rejected: called AE not recognized</i>	The AE title of the server in DCMimport is wrong (AE titles are case-sensitive on many servers). Correct it in Setup.
Nothing arrives through the gateway	Check that the gateway is on (status bar <i>Gateway DCMIMPORT : 4001</i>), that the sender uses the right AE title, IP address and port, and that the Windows Firewall rule exists and is enabled: Windows Defender Firewall → Advanced settings → Inbound rules → <i>SUP-C DCMimport DICOM gateway</i> (program DCMimport.exe in the installation folder).
The gateway rejects a sender	History shows <i>Association rejected</i> with calling AE, called AE and IP address. With <i>Accept only own AE-title</i> the sender must use DCMimport's AE title; with <i>Accept only known senders</i> its AE title must be in External Dicom Servers.
<i>Gateway error (port ...)</i>	The port is used by another program (for example another DICOM application). Choose another port or stop the other program.
Quick Import: <i>No media found in D:\</i>	No disc in the drive, or the wrong drive in Setup → General.
Quick Import: <i>No DICOM files found</i>	The media holds no DICOM images (only a viewer, documents or JPEG files). The list is not changed.
Worklist or PACS query finds nothing	Check the connection with Echo, the standard values of the request tags (they filter every query), Today, and the query model (Study Root works with most PACS). For names with accents choose the character set the server supports.
Demo mode although a license is installed	The license window shows the reason: license for another computer (the hardware changed), expired, a license for another product (for example DCMrouter), or a damaged file. Request a new license with the hardware ID shown.
Import MPeg: <i>ffprobe was not found</i>	Install FFmpeg and set the path to ffprobe.exe in Setup → General.
<i>no preview (...)</i> next to an image	The image cannot be decoded for the preview (unsupported or damaged pixel data, or a video without ffmpeg.exe). Import and sending are not affected.
DCMimport does not start, or JPEG images show <i>no preview</i>	Run the self-test (chapter 12.2). A virus scanner or AppLocker may block DCMimport.exe, Dicom.Native.dll or e_sqlite3.dll in the installation folder, or have quarantined one of them: allow these three files (or the folder C:\Program Files\SUP-C\DCMimport) and repair the installation by running the setup again.
Self-test: <i>Visual C++ runtime missing</i>	The Microsoft Visual C++ 2015-2022 Redistributable (x64) is missing or too old, so JPEG, JPEG-LS and JPEG 2000 images cannot be decompressed. Run the DCMimport setup again (it installs the runtime) or install vc_redist.x64.exe from https://aka.ms/vs/17/release/vc_redist.x64.exe .
A video fails to send while images succeed	The server does not accept the video's transfer syntax (MPEG-2 or MPEG-4). DCMimport cannot convert video, so it does not send it rather than send it without images. Ask the administrator of the server to accept the MPEG transfer syntaxes.
DCMimport closes unexpectedly	See chapter 12.1.

12.1 Crash log and Windows event log

An unexpected error is written to `C:\ProgramData\SUP-C\DCMimport\logs\crash-yyyyMMdd.log`: the error, the program stack, the versions and the transfer syntax and SOP Instance UID of the image shown last (no patient name or ID). Where possible DCMimport shows a message with the location of the log.

An error in native code (for example in a graphics or codec library) closes the program without a message and cannot be logged by DCMimport. It is recorded by Windows: Event Viewer → Windows Logs → Application, sources *Application Error* and *.NET Runtime* for DCMimport.exe.

12.2 Self-test

`DCMimport.exe --selftest` checks, without opening a window, what DCMimport needs on this computer: the image codecs (a built-in JPEG Lossless, JPEG-LS, JPEG 2000 and RLE image is decompressed and compared), the Visual C++ runtime, the database engine, the icons, the translations and the license file. It changes nothing. It can run while DCMimport is open. In a Command Prompt:

```
cd "C:\Program Files\SUP-C\DCMimport"
start /wait DCMimport.exe --selftest
echo %errorlevel%
```

Every check shows OK or FAIL with the reason; exit code 0 means that all checks passed. The result is also written to `C:\ProgramData\SUP-C\DCMimport\logs\selftest-yyyyMMdd.log` (or `%LOCALAPPDATA%\SUP-C\DCMimport\logs` when that folder cannot be written). No license (demo mode) is not a failure.

Tip: DCMimport is one program file with two libraries next to it, and does not unpack anything at start. It therefore also works where the TEMP folder is read-only or blocked, as long as the three files in the installation folder may run.

12.3 Information for support

- Version (Info window) and hardware ID (license window).
- What was done, and the time.
- The self-test log (chapter 12.2), the crash log of that day and, when relevant, the Application events of DCMimport.exe.
- A screenshot of History. History contains patient data – see chapter 11.1 before sending it.

Contact: Sup-C – info@sup-c.com – sup-c.com

Appendix A About DCMimport



Figure 17 – About window

Info shows the version, the license, the data folder, the third-party components and the contact links, followed by the End User License Agreement (Appendix B). **License...** opens the license window.

Appendix B License agreement

DCMimport is licensed software. The full End User License Agreement is shown during installation, is installed as `EULA.rtf` in the program folder, can be opened from the start menu (*SUP-C DCMimport License Agreement*) and is shown in the Info window (Appendix A).

DCMimport uses fo-dicom (Microsoft Public License) and Microsoft.Data.Sqlite (MIT).

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