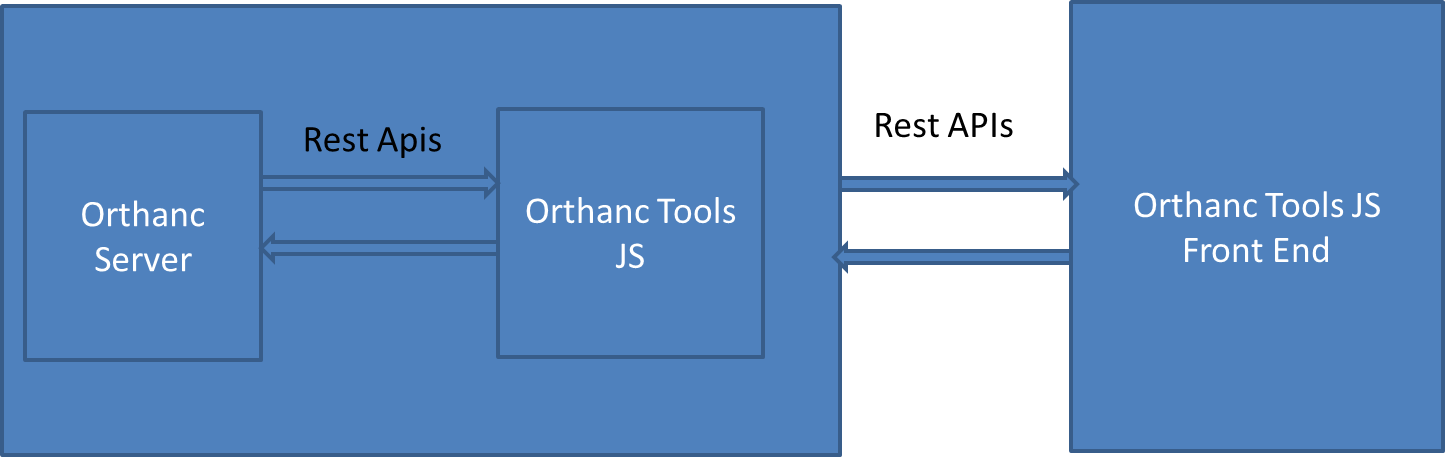
***Orthanc-Tools-Js***

***Documentation Guide***

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1. ***Architecture***



Orthanc Tools JS create a Restful API server on the top of Orthanc, this server extends Orthanc capabilities of Orthanc server to add some automation features like user identification and automations of tasks like anonymization or batch retrieve.

This server exposes new APIs that can be used by different client. One of these possible clients is the provided web Front end which is a React web app that can be accessed by simple connexion at the server address on port 4000 with any browser.

This web app notably includes OHIF as dicom viewer.

1. ***Installation & upgrade***
   1. ***On Windows / Mac OS***

Requirement:

Install NodeJS LTS version: <https://nodejs.org/fr/>

Nb : In case of failed install, deactivate ETW option in the NodeJS installer (see https://github.com/nodejs/node/issues/17025)

Orthanc installed with Osimis installer (<https://www.orthanc-server.com/download.php>)

1. Download Orthanc-Tools-JS from GitHub :
   1. Go To : <https://github.com/salimkanoun/Orthanc-Tools-JS/releases>
   2. In the last Release, in the assets download : OrthancToolsJS.zip
2. Extract zip content in a folder with write access granted (ex : user folder)
3. Open the terminal and put the current directory the extracted folder (cmd in windows than “cd c:\{my\_Destnation}” )
4. Download and Install dependencies by running : “npm install” in terminal (internet access is required)
5. Start Orthanc-Tools-JS server by running “npm start” in terminal
6. Browser should open automatically or go to http://{you-server-ip}:4000 (The interface can be accessed remotely)
7. Configure Orthanc (orthanc.json)

To Benefit for AET/Peers declaration from OrthancToolsJS and to benefit for OHIF integration, edit the following settings in orthanc JSON

* ORTHANC\_\_DICOM\_MODALITIES\_IN\_DATABASE: "true"
* ORTHANC\_\_ORTHANC\_PEERS\_IN\_DATABASE: "true"
* *ORTHANC\_\_DICOM\_WEB\_\_ENABLE: "true"*
* *ORTHANC\_\_DICOM\_WEB\_\_ROOT: "/dicom-web/"*
* *ORTHANC\_\_DICOM\_WEB\_\_ENABLEWADO: "true"*
* *ORTHANC\_\_DICOM\_WEB\_\_WADOROOT: "/wado"*
* *ORTHANC\_\_DICOM\_WEB\_\_STUDIESMETADATA: "MainDicomTags"*
* *ORTHANC\_\_DICOM\_WEB\_\_SERIESMETADATA: "Full"*

*Italicized item are for OHIF integration*

* 1. ***With Docker***

Orthanc deployment is preferred as it ship a full install ready to use (NodeJS + OrthancToolJs)

The Docker Image name is: salimkanoun/orthanctoolsjs

A docker compose sample for deployment of Orthanc and OrthancToolsJs is available here: https://github.com/salimkanoun/Orthanc-Tools-JS/blob/master/docker-compose.yml

* 1. ***Upgrade***

To upgrade :

* For windows install download new source and replace existing file by new ones, execute npm install et npm start
* For Docker : update container

Warning: Until version 1.0.0 will be reached, the database schema is not stable. If upgrading for a version <1.0.0 you will have to manually erase the database file in the data/database/database.sqlite3

And so you preferences will be lost at upgrade. Starting 1.0.0 the database versioning will be managed to provide a smooth upgrade.

1. ***Login***

Default Access :

Login : admin

Password : admin

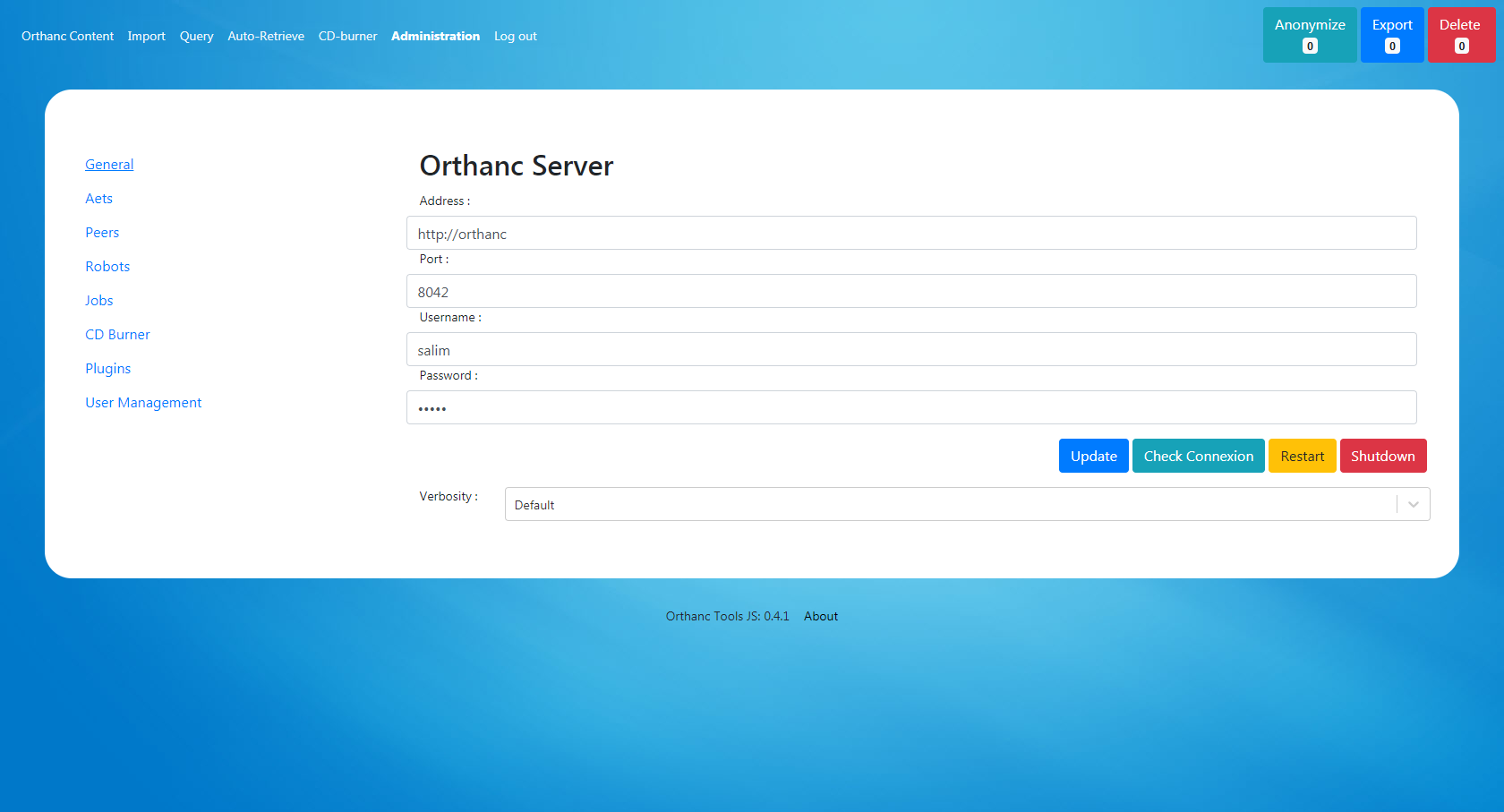


1. ***Orthanc Server declaration***

By default the Orthanc server connexion settings is set to <http://localhost:8042>, with no login or password.

If you have a different Orthanc location or if you add login / password, go to Administration -> General and fill the form accordingly, click “update” to apply new connexion settings.

Press “test connexion” to check that your Orthanc server can be correctly reached



1. ***Main features***
   1. ***Orthanc Content***

This panel allows you to search dicoms in your Orthanc server (using various filters).

The Action button allows you several tasks like :

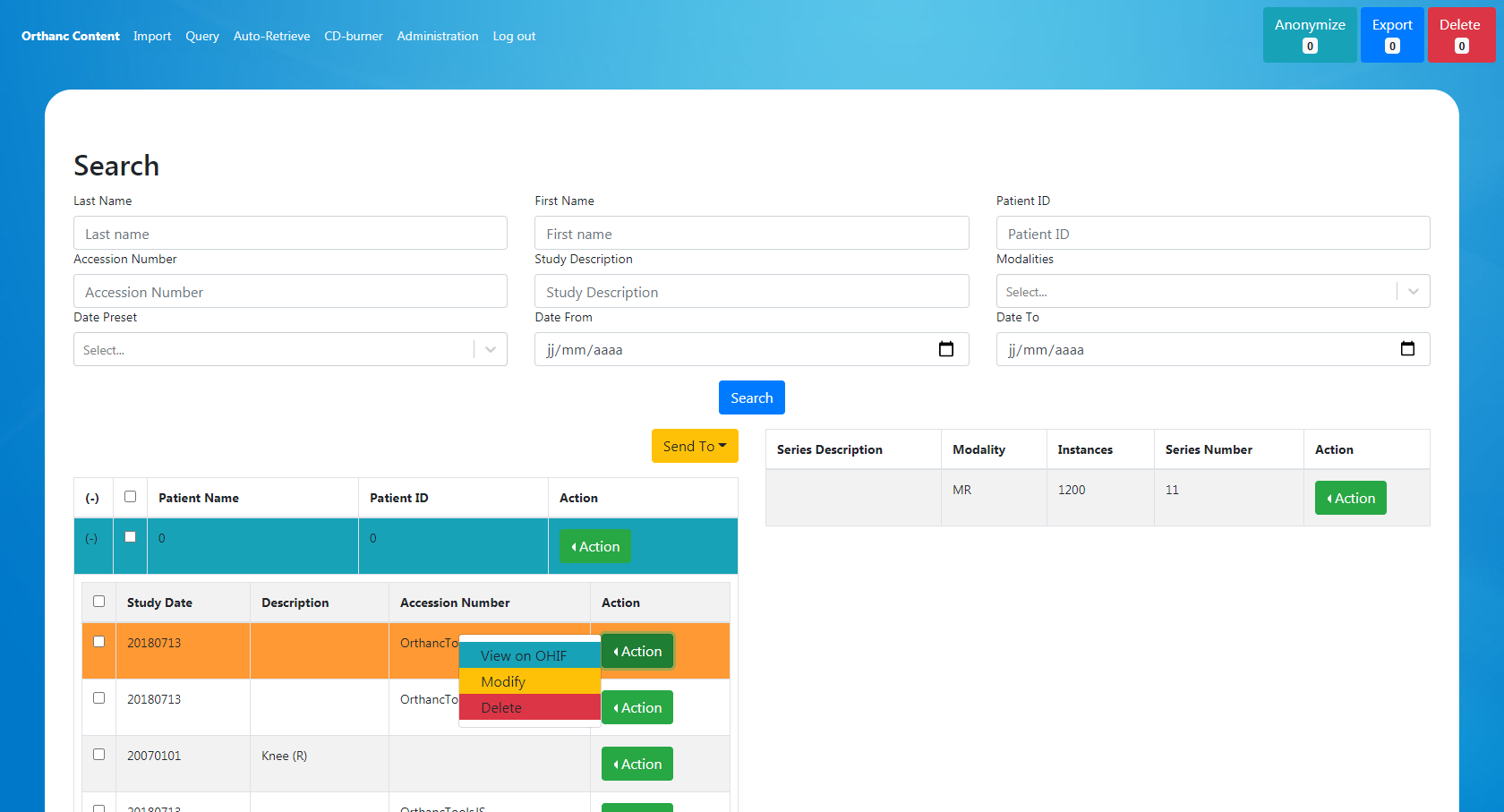
Modify (Patient / Study and Series Level) to edit DICOM tags

View on OHIF (Study only) to view images in OHIF viwer

Delete (Patient / Study / Series) to delete a sigle resource

Metadata (Series only) to see Instances dicom metadata

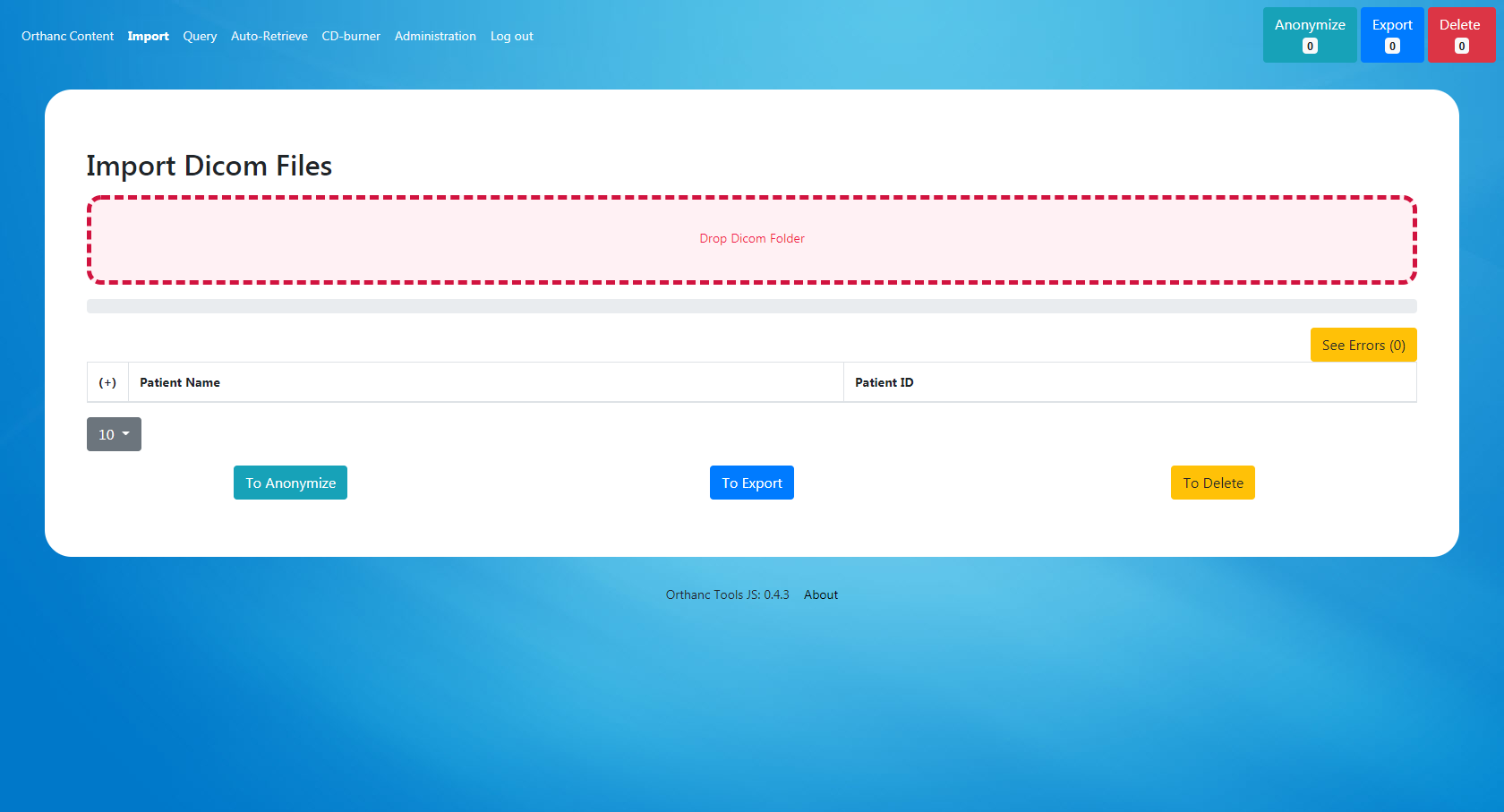
The checkbox in the first column allows you to select multiple ressources (patients and/or studies) and send them to Anon / Export / Delete Tools (see further)



* 1. ***Import Dicom files***

This Panel allows you to import dicoms files to your Orthanc Server.

Simply drag and drop your local folder containing dicoms file to be stored (the import will be recursive)



* 1. ***Anonymize / Export / Delete***

For various place in the application you can send dicom ressources to the Anonymize / Export / Delete tools, allowing you to perform this operations on dicom batches.

* + 1. ***Anonymize***

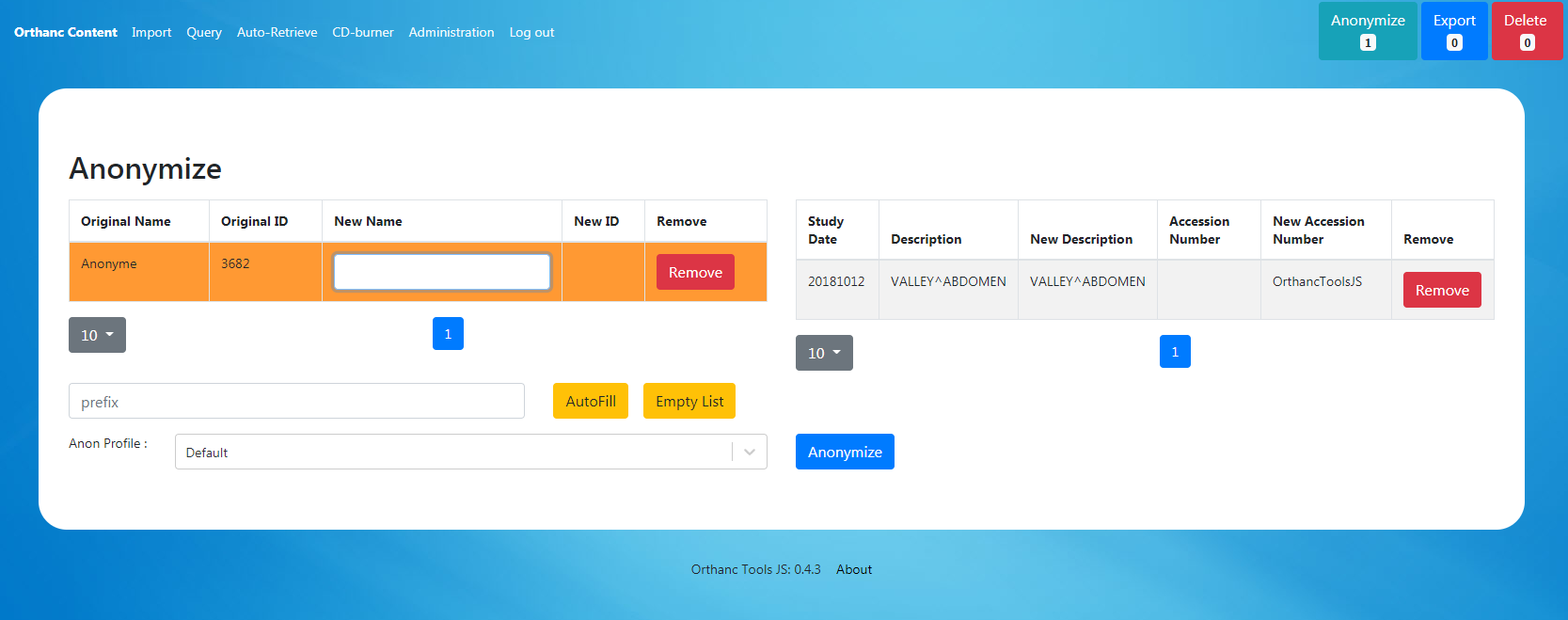
The anonymization tool allows you to anonymize a batch of studies.

The Anonymization process follows the NEMA 2017c guidelines.

2 Anonymizing profiles are defined in OrthancToolsJS :

* “Full” will remove all tags according to the NEMA 2017c
* “Default” will keep patient body characteristics (Weight, Height…), Dates (acquisitions Dates…), Study and Series description.

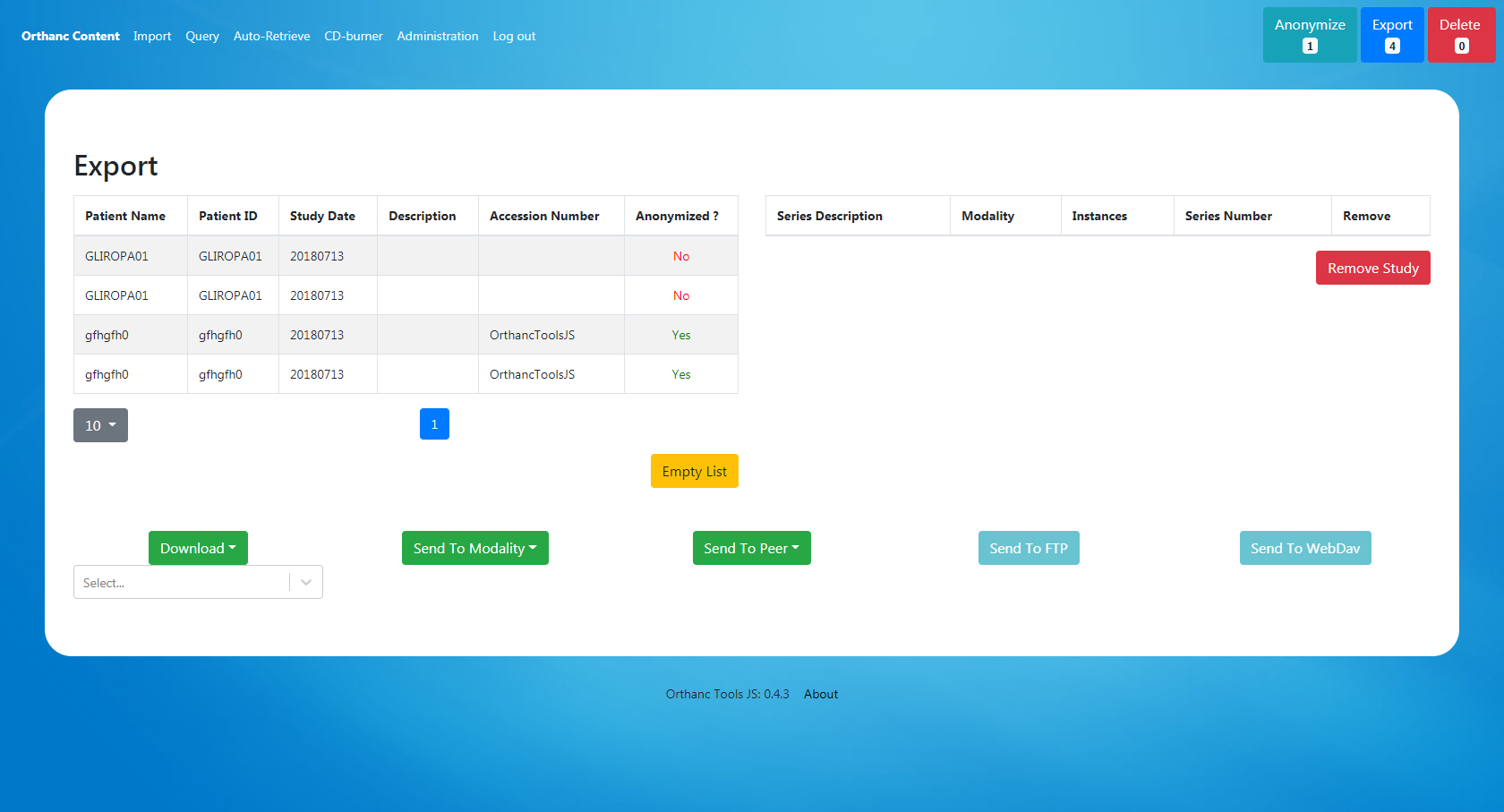
In all cases you will need to defined new PatientID, patientName. Study description and Accession number can be (not mendatory) manually defined as well.

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* + 1. ***Export***

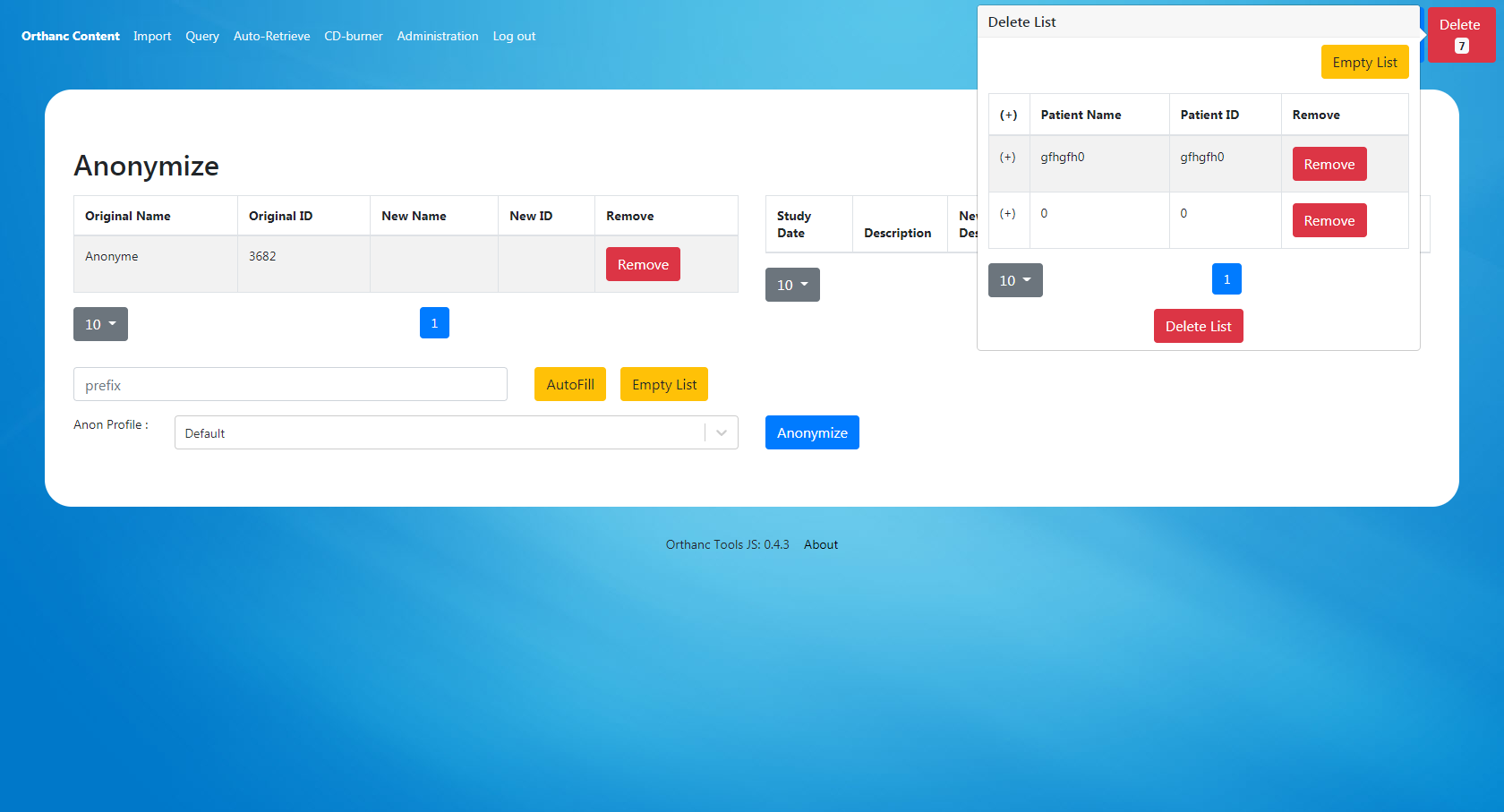
The export tool allows you to export a batch of dicoms

* Locally (download in browser)
* To a DICOM AET
* To a DICOM Peer
* To a remote server (FTP/SFTP/WebDAV) (No yet ready)



* + 1. ***Delete***

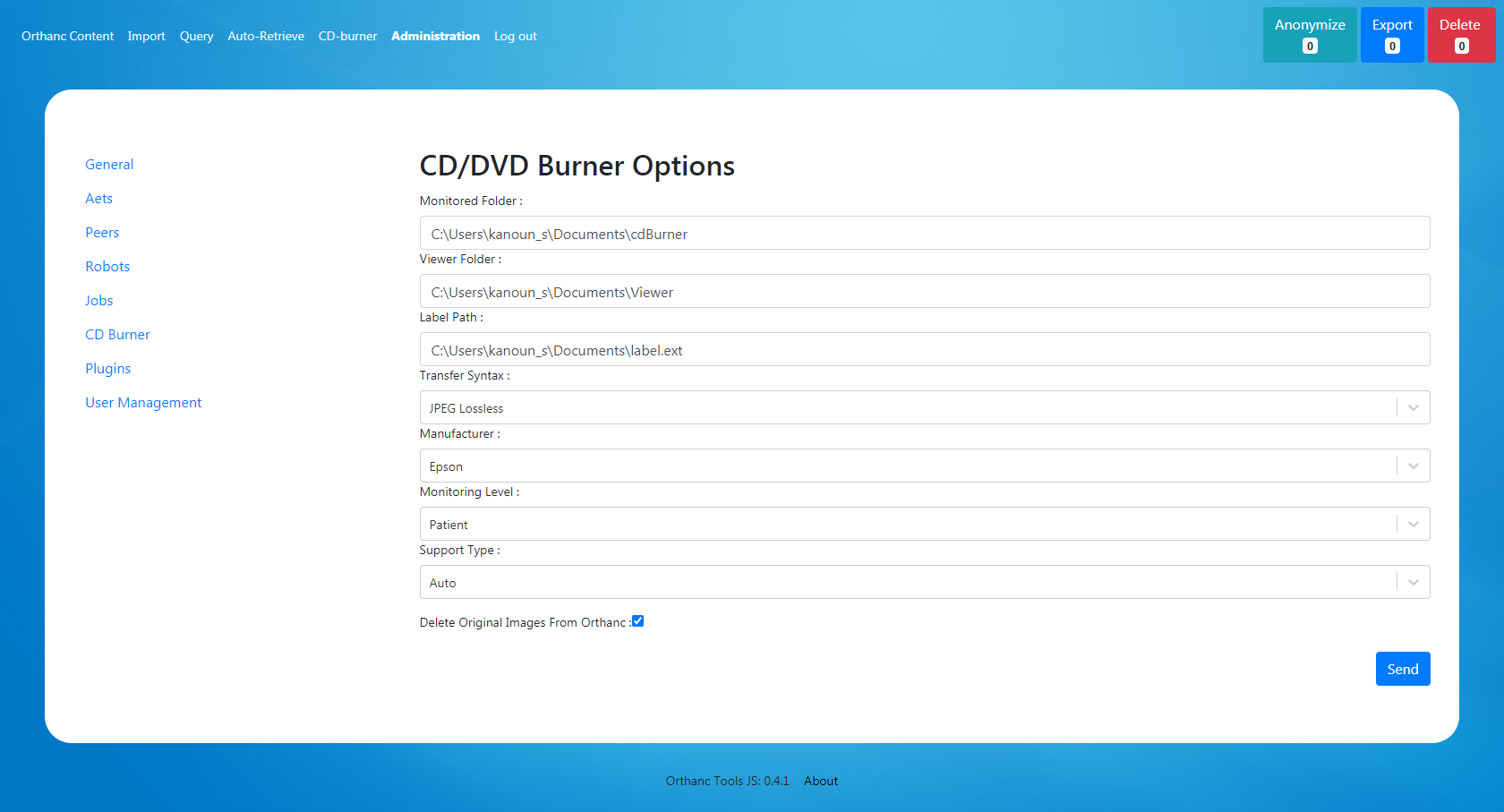
The deletion list allows you to delete several ressources from Orthanc



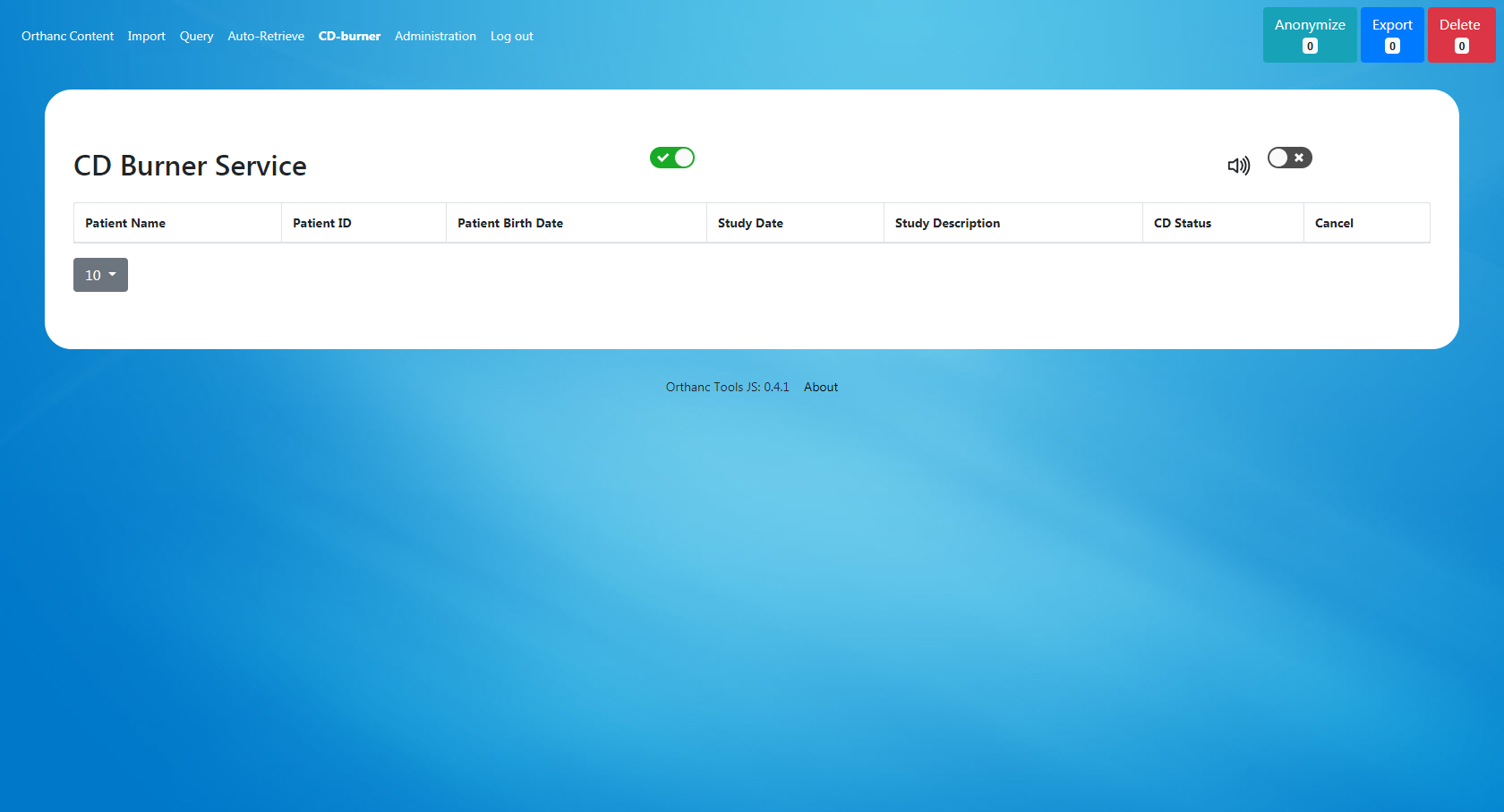
* 1. ***Query / Retrieve***
  2. ***Auto Retrieve***
  3. ***CD Burner – Epson / Primera DiscProducers***

Before starting the service for the first time, In the Administration panel =>CD Burner define:

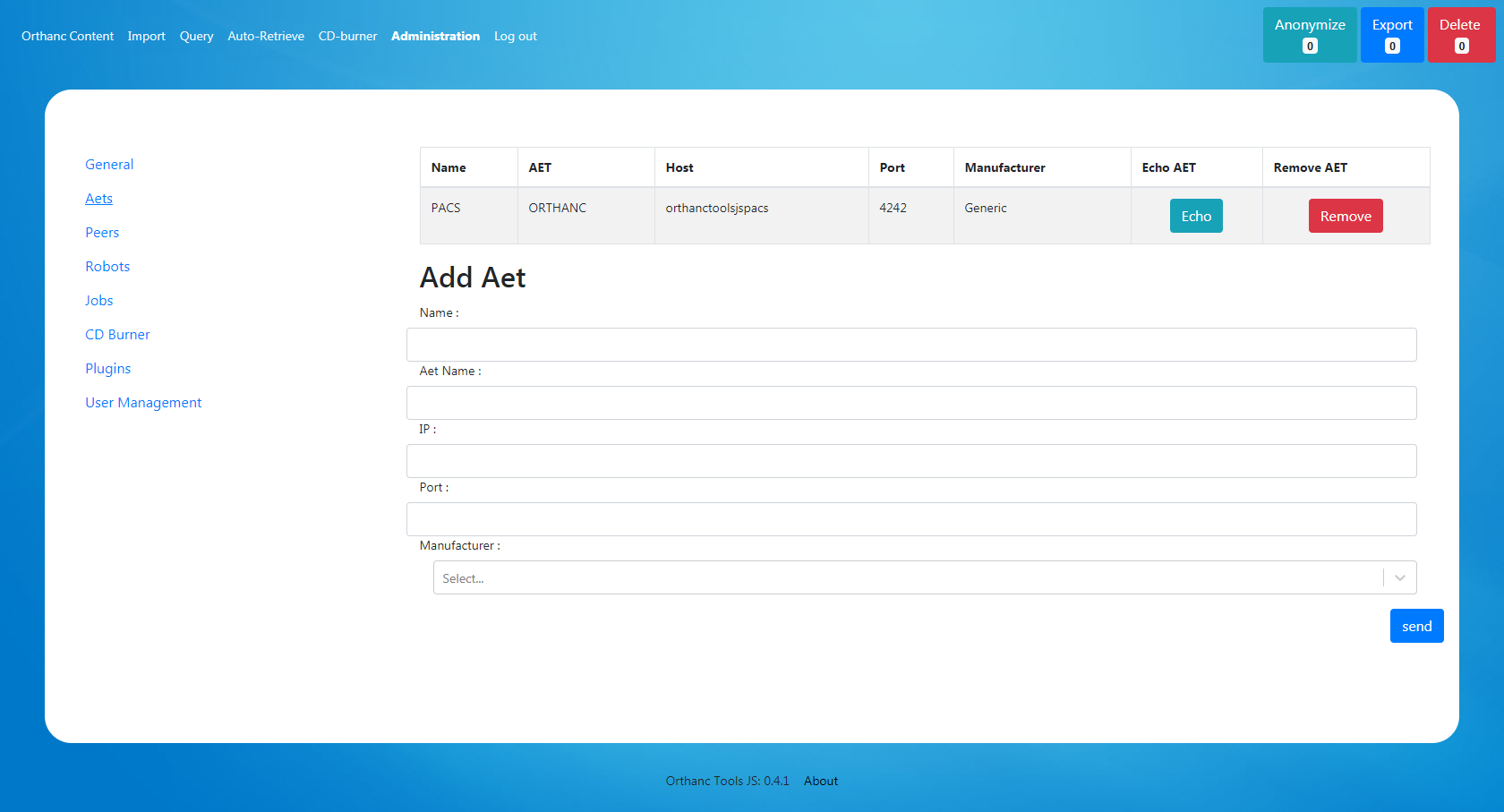
* The Monitored Folder (Monitored by Epson/Primera App)
* The Viewer Folder to be included with Dicoms
* The Label File (see Epson/Primera template editor)
* The Transfer Syntax of Dicoms (if transcoding wanted)
* The CD Burner Manufacturer (Epson or Primera)
* The monitoring Level (Studies or Patients)
* The Support Type (CD/DVD/Auto)



Go to “CD Burner” main tab to start the Service. Each time Orthanc will recieve a Study / Patient, a burning request will be triggered (the service continue to run even if the browser is closed)



1. ***Administration panel*** 
   1. ***User Access***
   2. ***AET / Orthanc Peers Declaration***



* 1. ***Orthanc Jobs / Plugins***

This interface allows you to see Orthanc asynchronous Jobs (and pause / cancel / resubit them)

The plugin page list the available plugin in the current orthanc installation

* 1. ***Auto Retrieve Robot***