iQ-VIEW / PRO

ADMINISTRATION GUIDE

Version 2.8.0 INT EN 002R

CE 0482

IMAGE Information Systems Ltd.

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1 INTRODUCTION

iQ-VIEW / PRO is a DICOM 3.0 compliant software application for viewing and processing medical image data. With the help of this software data from every DICOM 3.0 compliant modality can be queried, retrieved and imported, but also from other sources, like email, CD or DVD.

Each kind of medical image data can then be viewed and processed with iQ-VIEW / PRO. Thus, different studies can be compared, measurements can be made and all usual and useful image processing functions (windowing, zoom/pan, rotation/flipping, color remapping, etc.) can be used. Presentation States (PR) are used for the display of the images and the modifications made in them. With iQ-VIEW PRO it is additionally possible to store these Presentation States and send them via DICOM, e.g. to a PACS system for archiving. Structured reporting is used for the documentation of medical findings.

Also the iQ-3D module is implemented for 3D image processing. Interfaces to further post-processing modules are integrated (iQ-NUC, OrthoView™). The iQ-STITCH module for image stitching is delivered directly within the iQ-VIEW installation package.

Images can either be printed on Windows® printers or via DICOM Print, burned on CD or DVD, exported to memory stick and to iQ-ROBOT or sent via DICOM or Email. They can also be exported to other image formats (JPEG, BMP, TIFF) and video files (AVI).

The software can use any kind of network line and is therefore suitable for use in telemedicine or teleradiology. An implemented flexible TWAIN driver makes it possible to connect cameras, scanners and CR readers and to capture images from those devices for viewing and storing. Images can further be imported from the iQ-CR ACE scanner.

The iQ-VIEW PRO version additionally includes a Modality Worklist Client and a DirectShow® interface (iQ-CAPTURE). Using IMAGE DISPLAYS PRO in combination with iQ-GRAFIX makes it possible to view radiological images in true 12 bit gray-scale mode. Individual hanging protocols as well as hanging protocol sequences can be created, stored and used.

NOTE:

This guide explains the DICOM configuration and configuration settings for the proper use of iQ-VIEW / PRO. The user manual of iQ-VIEW / PRO explains how to import, export, store, display and process medical image data.

WARNING 1:

Due to a fair number of internal and external dependencies, the support of DICOM encapsulated PDF (as SOP class) is still limited in this software version. The manufacturer cannot guarantee the full functioning of DICOM encapsulated PDF objects throughout the application and, therefore, does not assume liability for any incorrect behavior.

WARNING 2:

Please note that iQ-VIEW is a 32 bit application. It can therefore not allocate more than 2 GB RAM to process DICOM images. This may lead to limitations in processing huge multi-frame objects. The following effects are possible:

– It might become impossible to decompress images received via DICOM or imported via "Filesystem". This will result in failures to store these images in the local imagebox.

– Uncompressed or successfully decompressed images will be stored in the local imagebox but the viewer may no longer be able to handle this data. This will result in a corrupted image display and issues while trying to process this data (e.g. browsing through the series, zooming, windowing, etc.).

To keep the effects on iQ-VIEW and on the opportunity to read these objects as low as possible, we recommend the following actions:

– If you set up an iQ-VIEW workstation in an environment where such huge multi-frame data volumes are possible, please use a 64 bit Windows 7 operating system and more than 4 GB RAM.

– Be sure to limit the number of other processes and applications running at the same time as iQ-VIEW, so that the full 2 GB RAM can really be allocated to the processing of these objects.

– Be careful to use image compression. Best use uncompressed data to avoid memory overrun during an image decompression process.

– If a study contains several such huge multi-frame objects in different series, you may load them individually (one after the other) into the viewer. This will keep the required RAM at a limit.

2 SYSTEM REQUIREMENTS

2.1 MINIMUM SYSTEM REQUIREMENTS

Minimum system requirements are:

- CPU Intel® Pentium® Dual Core
- 3 GB main memory
- 80 GB hard disk drive (HDD) or solid state drive (SSD)
- Network connection with 100 Mbit/s
- Graphics card, resolution of ≥ 1024x768, True Color mode (24 bit) or at least 8 bit gray output, any nVidia or ATI graphics card with ≥ 256 MB RAM
- Analog color or grayscale monitor, ≥ 17" for demonstration, high-resolution monitor for diagnostic purposes
- Windows XP Professional, 32 bit; Windows 7 Professional, 32 or 64 bit
- Adobe Acrobat Reader, min. version 6.0
- CD/DVD writer for the creation of patient media

2.2 RECOMMENDED SYSTEM REQUIREMENTS

For iQ-VIEW recommended hardware requirements are:

- CPU Intel® Core™ i5
- 4 GB main memory
- ≥ 500 GB S-ATA II hard disk drive (HDD)
- Network connection of at least 100 Mbit/s
- Graphics card, resolution of 1280x1024 or more, True Color mode (24 bit) or at least 8 bit gray output, any nVidia or ATI graphics card with ≥ 1 GB RAM (e.g. iQ-GRAFIX)
- 1x digital color or grayscale display with ≥ 19" for workflow tasks + 1 or 2 IMAGE DISPLAYS BASIC as diagnostic displays
- Windows 7 Professional (or higher editions), 64 bit
- Adobe Acrobat Reader, version 9.0
- CD/DVD writer for the creation of patient media
- Mouse with scroll wheel
- PostScript printer
- DELL hardware

For iQ-VIEW PRO recommended hardware requirements are:

- CPU Intel® Core™ i7
- 8 GB main memory
- ≥ 500 GB S-ATA II hard disk drive (HDD)
- Network connection of 1 Gbit/s
- Graphics card, resolution of 1280x1024 or more, True Color mode (24 bit) or at least 8 bit gray output, any nVidia or ATI graphics card with ≥ 1 GB RAM and ≥ 256 bit memory bandwidth (e.g. iQ-GRAFIX PRO)
- 1x digital color display ≥ 19" for workflow tasks + 2x IMAGE DISPLAYS PRO or PREMIUM as diagnostic displays
- Windows 7 Professional (or higher editions), 64 bit
- Adobe Acrobat Reader, version 9.0

- CD/DVD writer for the creation of patient media
- Mouse with scroll wheel
- PostScript printer
- DELL hardware

2.3 SPECIFIC SYSTEM REQUIREMENTS FOR UNICODE LANGUAGES

Specific system requirements for use with Unicode languages (Japanese, Russian, etc.) are:

- Min. Windows® 7 Professional operating system, 32 bit, in native language
- For a correct display of patient and study information (information on DICOM level) in the study list and in the text overlay, as well as for using native language characters in "Modify", the original DICOM data has to be correctly encoded with the appropriate DICOM character set (e.g. for Japanese DICOM sets encoding in the DICOM character sets ISO 2022 IR 13, ISO 2022 IR 87 and/or ISO 2022 IR 159).

NOTE:

For a complete list of all generally supported specific character sets supported by iQ-VIEW (i.e. DICOM objects already encoded with a specific character set), please consult the iQ-VIEW DICOM Conformance Statement.

If using third-party applications, higher system requirements may apply. We recommend consulting the system requirement documents of all modules and select the highest level. It is also possible that certain third-party applications do not support specific operating systems. In such a case, please use an operating system that is referenced for all applications you wish to install.

Furthermore, we recommend the use of up-to-date anti-virus software on the computer on which iQ-VIEW / PRO is run. The virus definitions must be updated regularly (they should not be older than 2 weeks).

NOTE:

Due to known issues / incompatibilities (e.g. regarding the blocking of system files and ports), we do not recommend using the software AntiVir as an anti-virus software.

To keep constant power supply voltage we strongly recommend the use of an uninterruptible power supply (UPS). The interposition of such a device prevents data losses and data inconsistencies that can be produced at the occurrence of fluctuations in the power supply voltage.

3 INSTALLING THE SOFTWARE

iQ-VIEW / PRO runs on Microsoft Windows XP Professional (32 bit) or Windows 7 Professional (32 or 64 bit) or higher editions as its operating systems. For more information about Windows XP/7 and its hardware system, see Windows XP/7's user's guide and online help.

iQ-VIEW / PRO can either be installed from CD-ROM or downloaded from the website and installed afterwards.

NOTE:

The iQ-VIEW installation file does provide the application with single as well as concurrent licensing. The decision which license type shall be installed must be made during the installation process. The default installation is done with single license functionality. Alternatively, using the "Custom" option, concurrent licensing can be selected for both iQ-VIEW and iQ-3D during the installation process.

If iQ-VIEW was installed with one license type but you wish to switch to the other at a later time, you can simply run the installer again and modify the existing installation.

For further information regarding concurrent licensing, also see 5.2.2.3 Getting the concurrent iQ-VIEW application.

WARNING:

No special training is necessary to be able to install iQ-VIEW/PRO. General computer literacy should exist. The configuration settings, however, should be made by the system administrator with technical know-how and experience concerning the in-house procedures and processes.

3.1 INSTALLATION AFTER DOWNLOAD

The iQ-VIEW / PRO software download includes all installation files.

To install iQ-VIEW / PRO on your hard disk, follow the instructions given here:

- Download the iQ-VIEW / PRO software into a directory of your choice.
- Locate the directory using the Windows Explorer and execute the installation file.
- Follow the instructions of the installation wizard to install the iQ-VIEW / PRO viewer on your hard disk. It is recommended to install the software in the default directory. For installing in a different folder, use "Custom" installation and select the desired directory.

3.2 INSTALLATION FROM CD-ROM

The iQ-VIEW / PRO software CD includes all installation files.

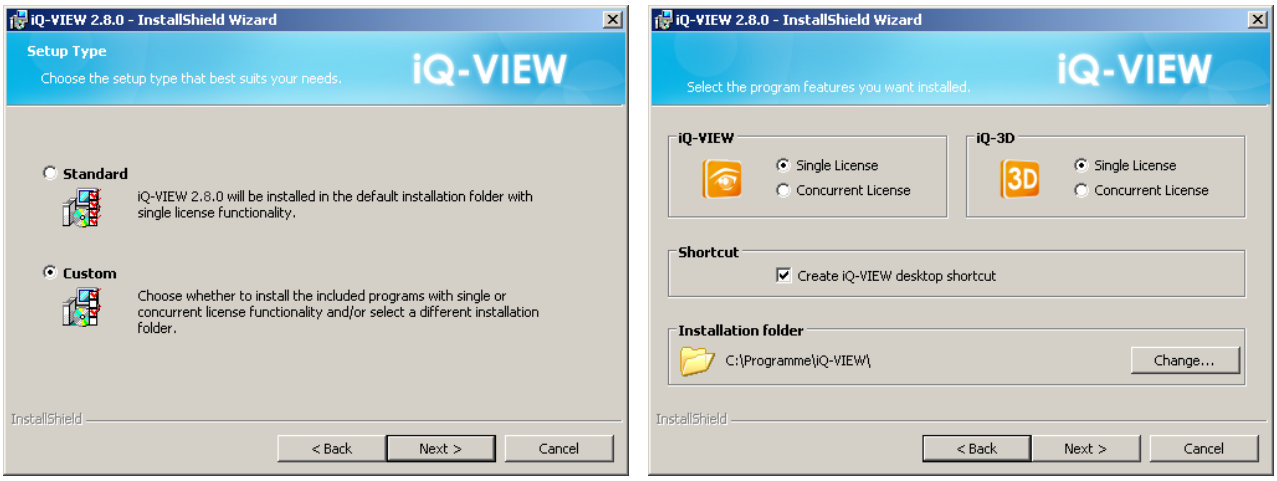
Make the installation by following the instructions given here:

- Insert the iQ-VIEW / PRO Installation CD into the CD drive of your PC.
- Use the Windows Explorer to execute the installation file, which is located on the CD.
- Follow the instructions of the installation wizard to install the iQ-VIEW / PRO viewer on your hard disk. It is recommended to install the software in the default directory. For installing in a different folder, use "Custom" installation and select the desired directory.

3.3 SELECTING THE iQ-VIEW LICENSE TYPE DURING INSTALLATION

The iQ-VIEW / PRO software is available with different forms of licensing – single seat licenses (bound to one workstation) and concurrent licenses (also called floating licenses, which are not bound to a specific workstation). For all details, see chapter 5 Licensing.

The license type can be selected during the installation process:



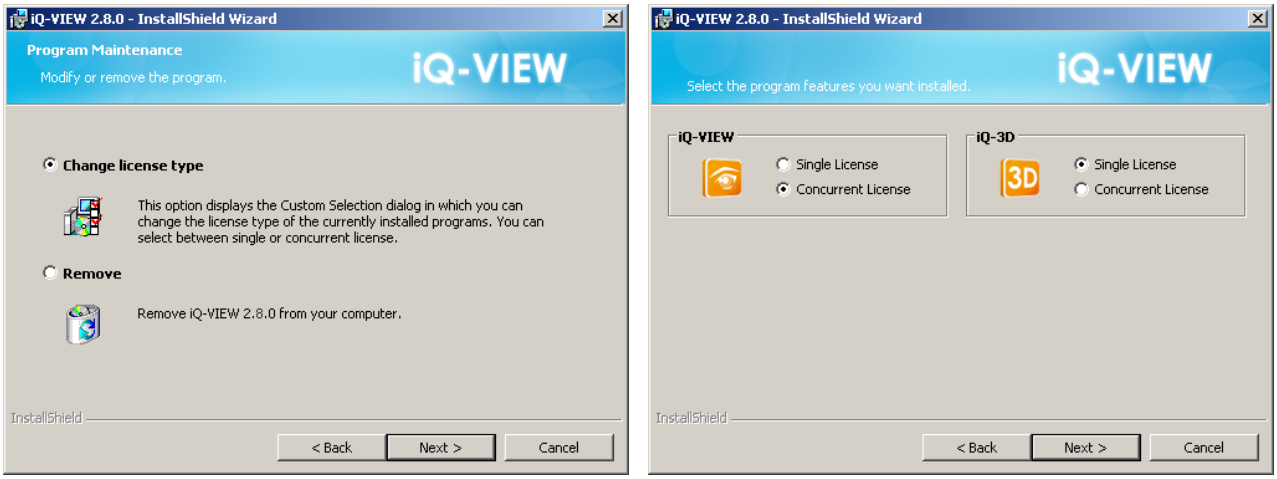
Installation wizard with standard and custom installation (optional license type selection)

- Using the "Standard" installation, iQ-VIEW will be installed with single license functionality only. This option should be selected if you plan to use iQ-VIEW as a workstation with its own license. The license is immediately available after installation. iQ-VIEW will be installed in the default installation path (on 32 bit systems: "C:\Program Files\iQ-VIEW"; on 64 bit systems: "C:\Program Files (x86)\iQ-VIEW").
- Using the "Custom" option, iQ-VIEW will be installed with concurrent license functionality instead. This includes also all the license server parts with which each of these iQ-VIEW stations can be turned into the concurrent license server. A concurrent license will not be available immediately after installation. The iQ-VIEW will run with a default single license trial. For information on how to obtain a concurrent license, please see section 5.2.2 Concurrent licenses. The "Custom" option also allows the installation in a different folder.

3.4 CHANGING THE iQ-VIEW LICENSE TYPE

It is possible to change the license type of the iQ-VIEW / PRO software also for an already existing installation. Switching from single license to concurrent or vice versa can be done in the following way:

- Log into the system with an Administrator account.
- Open the "Control Panel" and select "Add or Remove Programs".
- Scroll down to the entry of the iQ-VIEW software and click on it.
- The iQ-VIEW installation wizard gives you the option to either "Change license type" or "Remove" the application. Select "Change license type".
- The following dialog will allow you to select the license type you wish to use. Afterwards follow the instructions of the installation wizard to complete the installation.



Changing the license type of an existing installation

3.5 LAUNCHING iQ-VIEW / PRO

To launch iQ-VIEW / PRO, use one of the three methods below:

- Click on the Windows “Start” button, select “All Programs” and then “iQ-VIEW” and the iQ-VIEW execution file.
- Click on the “iQ-VIEW” icon on the desktop.
- Launch Windows Explorer, and find the folder (C:\Program Files\iQ-VIEW), and then double-click iQ-VIEW.exe.

3.6 UPGRADING iQ-VIEW / PRO

3.6.1 GENERAL

From a technical point of view, an upgrade from an existing iQ-VIEW / PRO installation to a newer software version is very easy.

Simply run the new iQ-VIEW installation file and install the new software version on top of the existing installation. All configuration files as well as the local imagebox and database file will be maintained during the upgrade.

In case you had installed the earlier version in a custom path (not the default path C:\{Program Folder}\iQ-VIEW), be sure to select the same path for the new installation. This ensures that all configuration files can still be used and that the imagebox is correctly connected.

3.6.2 UPGRADING SINGLE LICENSES

Keep in mind that a license valid for one software version will not be valid for a newer software version. That means, after the upgrade you will be able to use the new version for the default 30 day trial period. Afterwards you will need a new full license to run the new version.

WARNING:

Upgrade fees may apply for the software upgrade and also specific license procedures will have to be observed before the new license can be delivered. Therefore, please contact your local reseller for instructions BEFORE upgrading your software.

3.6.3 UPGRADING CONCURRENT LICENSES

For concurrent license networks special requirements apply.

All iQ-VIEW clients as well as the iQ-VIEW functioning as concurrent license server MUST be upgraded at the same time for the concurrent license to be functioning. iQ-VIEW stations that are not equipped with the same software version as the iQ-VIEW used as concurrent license server will NOT be covered by the concurrent license.

Keep in mind that a concurrent license valid for one software version will not be valid for a newer software version. That means, after the upgrade you will need a new license for the concurrent license server. Until the license is provided and installed, the client iQ-VIEWs will run with a 30 day default single trial period.

WARNING:

Upgrade fees may apply for the software upgrade and also specific license procedures will have to be observed before the new license can be delivered. Therefore, please contact your local reseller for instructions BEFORE upgrading your software.

4 UNINSTALLING THE SOFTWARE

4.1 UNINSTALLING iQ-VIEW

The iQ-VIEW / PRO software can, at any time, be removed easily and safely from the system.

Follow the steps below to remove iQ-VIEW / PRO from the computer:

- Open the "Control Panel" and select "Add or Remove Programs".
- Scroll down to the entry of the iQ-VIEW software and click on it.
- Select "Remove" to uninstall the software.
- Afterwards you may have to delete the iQ-VIEW installation folder (by default: C:\Program Files\iQ-VIEW) manually in the Windows Explorer because, even after uninstalling the software, it will exist and contain the iQ-VIEW configuration files and the database / imagebox containing the studies with their respective images.

NOTE:

If the imagebox and database were moved to another location, they would have to be deleted or saved from there, if desired.

4.2 PARTICULARITIES OF UNINSTALLING THE SOFTWARE RUNNING WITH CONCURRENT LICENSE

If you wish to uninstall the iQ-VIEW / PRO software that also functions as concurrent license server in a concurrent network, the procedure of uninstalling is exactly the same as described in section 4.1 Uninstalling iQ-VIEW.

During the uninstalling process the concurrent server service is automatically shut down and removed from the system.

WARNING:

Make sure that no client iQ-VIEW / PRO needs to connect to the concurrent server. After the service is uninstalled, a warning will be shown at the running clients indicating the loss of the connection to the concurrent license server. If the connection cannot be reestablished, the client applications will be terminated and cannot be started again.

5 LICENSING

5.1 iQ-VIEW / PRO LICENSING SYSTEM

There exist different forms of licenses for the iQ-VIEW / PRO software:

LICENSE TYPE	DURATION	DESCRIPTION
Single licenses (application can only be run on the computer on which the application was installed)		
Trial license iQ-VIEW / PRO	30 days	Is online available as free download for evaluation purposes. This version is limited in time. It runs 15 days in the iQ-VIEW PRO version with all features included in iQ-VIEW PRO and afterwards an additional 15 days in the BASIC version corresponding to iQ-VIEW.
Full license iQ-VIEW	Unlimited	Can be gained only by purchasing a full license and activating the software. iQ-VIEW comprises all basic functions of the iQ-VIEW medical image processing software, including DICOM Print, TWAIN and Report Module. This license is a life-time license.
	Time-limited	Can be gained only by purchasing a full license and activating the software. iQ-VIEW comprises all basic functions of the iQ-VIEW medical image processing software, including DICOM Print, TWAIN and Report Module. This license runs for a specified time period and will expire afterwards unless a follow-up license is purchased.
Full license iQ-VIEW PRO	Unlimited	Can be obtained only by purchasing a full license and activating the software. iQ-VIEW PRO includes all functions/features of iQ-VIEW but additionally contains further features such as a DICOM Worklist Client, Hanging Protocols, enhanced PR handling, the iQ-CAPTURE module and more. This license is a life-time license.
	Time-limited	Can be obtained only by purchasing a full license and activating the software. iQ-VIEW PRO includes all functions/features of iQ-VIEW but additionally contains further features such as a DICOM Worklist Client, Hanging Protocols, enhanced PR handling, the iQ-CAPTURE module and more. This license runs for a specified time period and will expire afterwards unless a follow-up license is purchased.
Demo license iQ-VIEW	Time-limited	Is not for sale and only handed out to distributors and resellers. The functional range fully corresponds to an iQ-VIEW license.
Demo license iQ-VIEW PRO	Time-limited	Is not for sale and only handed out to distributors and resellers. The functional range fully corresponds to an iQ-VIEW

		PRO license.
Concurrent licenses (several users can work with the application on different computers at the same time, depending on the number of available licenses); max. 255 concurrent licenses		
Trial license iQ-VIEW / PRO	30 days	The trial license coming with the downloaded iQ-VIEW installation package can only be used as a single license (see above), i.e. it can only be run on the computer on which the application was installed. For a trial period of concurrent licenses, please contact your local reseller. Mention the number of licenses you need to run concurrently (≤ 255).
Full license iQ-VIEW	Unlimited	Can be gained only by purchasing a full license and activating the software. iQ-VIEW comprises all basic functions of the iQ-VIEW medical image processing software, including DICOM Print, TWAIN and Report Module. This license is a life-time license. Mention the number of licenses you need to run concurrently (≤ 255).
	Time-limited	Can be gained only by purchasing a full license and activating the software. iQ-VIEW comprises all basic functions of the iQ-VIEW medical image processing software, including DICOM Print, TWAIN and Report Module. This license runs for a specified time period and will expire afterwards unless a follow-up license is purchased. Mention the number of licenses you need to run concurrently (≤ 255).
Full license iQ-VIEW PRO	Unlimited	Can be obtained only by purchasing a full license and activating the software. iQ-VIEW PRO includes all functions/features of iQ-VIEW but additionally contains further features such as a DICOM Worklist Client, Hanging Protocols, enhanced PR handling, the iQ-CAPTURE module and more. This license is a life-time license. Mention the number of licenses you need to run concurrently (≤ 255).
	Time-limited	Can be obtained only by purchasing a full license and activating the software. iQ-VIEW PRO includes all functions/features of iQ-VIEW but additionally contains further features such as a DICOM Worklist Client, Hanging Protocols, enhanced PR handling, the iQ-CAPTURE module and more. This license runs for a specified time period and will expire afterwards unless a follow-up license is purchased. Mention the number of licenses you need to run concurrently (≤ 255).

Demo license iQ-VIEW	Time-limited	Is not for sale and only handed out to distributors and resellers. The functional range fully corresponds to an iQ-VIEW license. Mention the number of licenses you need to run concurrently (≤ 255).
Demo license iQ-VIEW PRO	Time-limited	Is not for sale and only handed out to distributors and resellers. The functional range fully corresponds to an iQ-VIEW PRO license. Mention the number of licenses you need to run concurrently (≤ 255).

5.2 ACTIVATION OF THE iQ-VIEW / PRO SOFTWARE

After downloading and installing the iQ-VIEW software, the application runs by default as an evaluation version with a single license that is limited in time.

After 30 days the application stops working unless a full license for either iQ-VIEW or iQ-VIEW PRO is obtained and the software is activated with a specifically created activation key. The activation can either be done for a single license or for a concurrent license.

5.2.1 SINGLE LICENSES

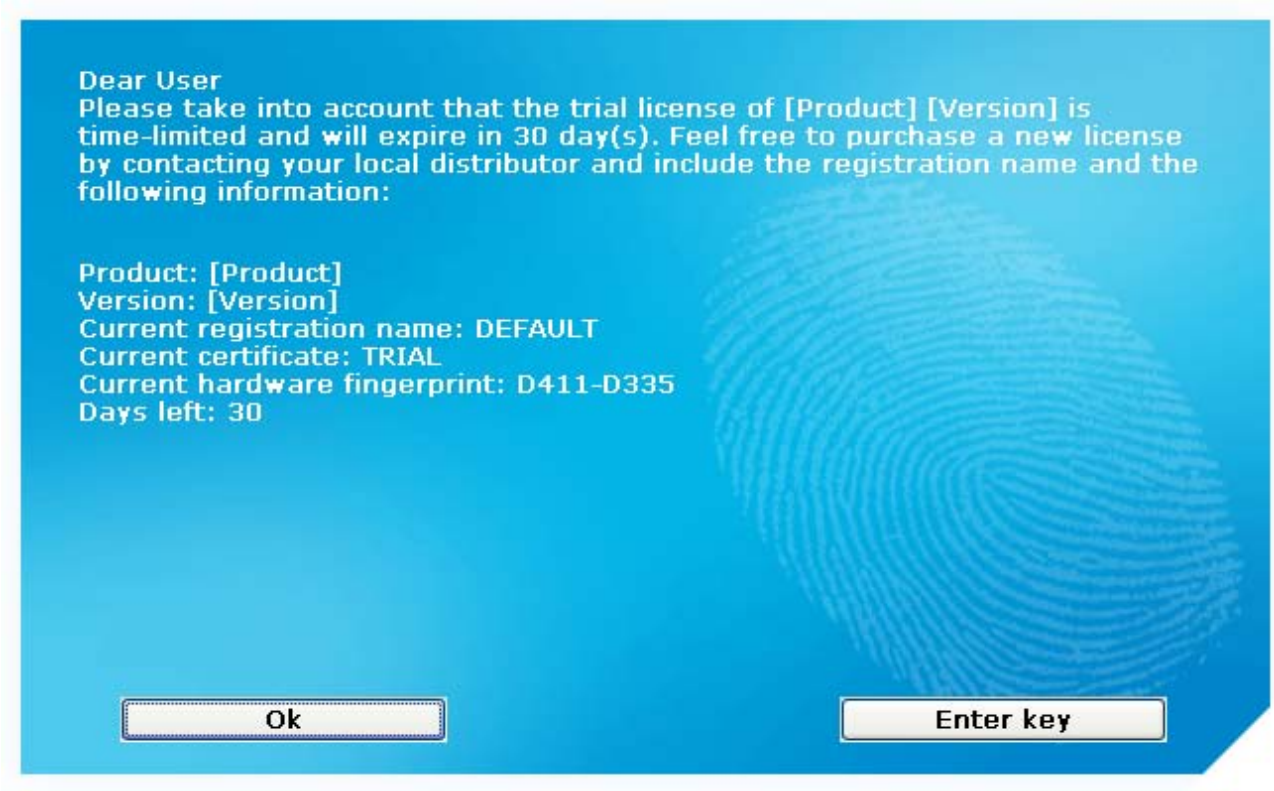
5.2.1.1 WHAT IS A SINGLE LICENSE?

A single license is a software license that is bound to the computer on which the licensed application is installed. The license that is created on the basis of the hardware fingerprint (the system's hardware configuration) is only valid for the iQ-VIEW / PRO station for which the license was requested. Another iQ-VIEW station cannot use this license but needs its own activation data.

5.2.1.2 ACTIVATING SINGLE LICENSES

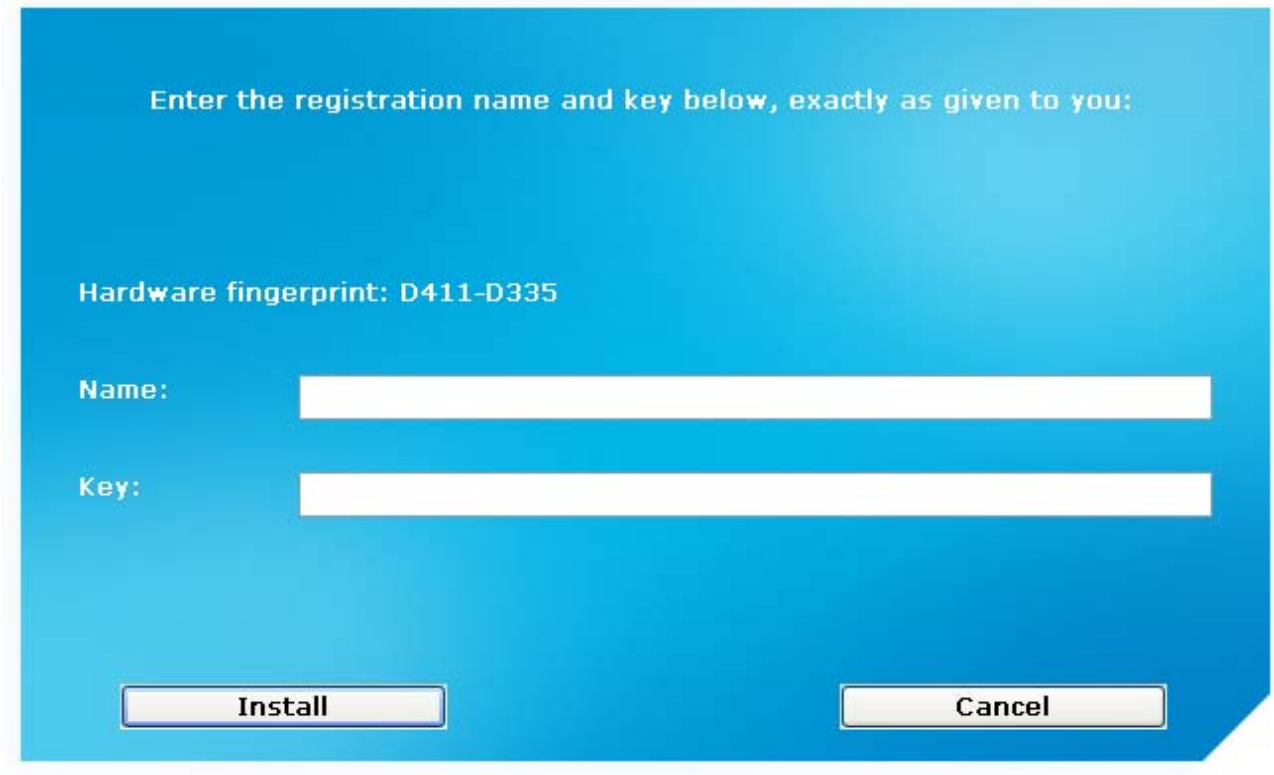
The activation process for a single license to be used on one computer is quite simple:

- Purchase a full license for iQ-VIEW or iQ-VIEW PRO (unlimited or time-limited license).
- Look up the hardware fingerprint, which is created when the iQ-VIEW software is first installed on a computer. You find it in the reminder that is displayed at each start of the application:



Reminder dialog

or also in the "Enter key" dialog that opens when you click on the "Enter key" button in the reminder:



Empty "Install License" dialog

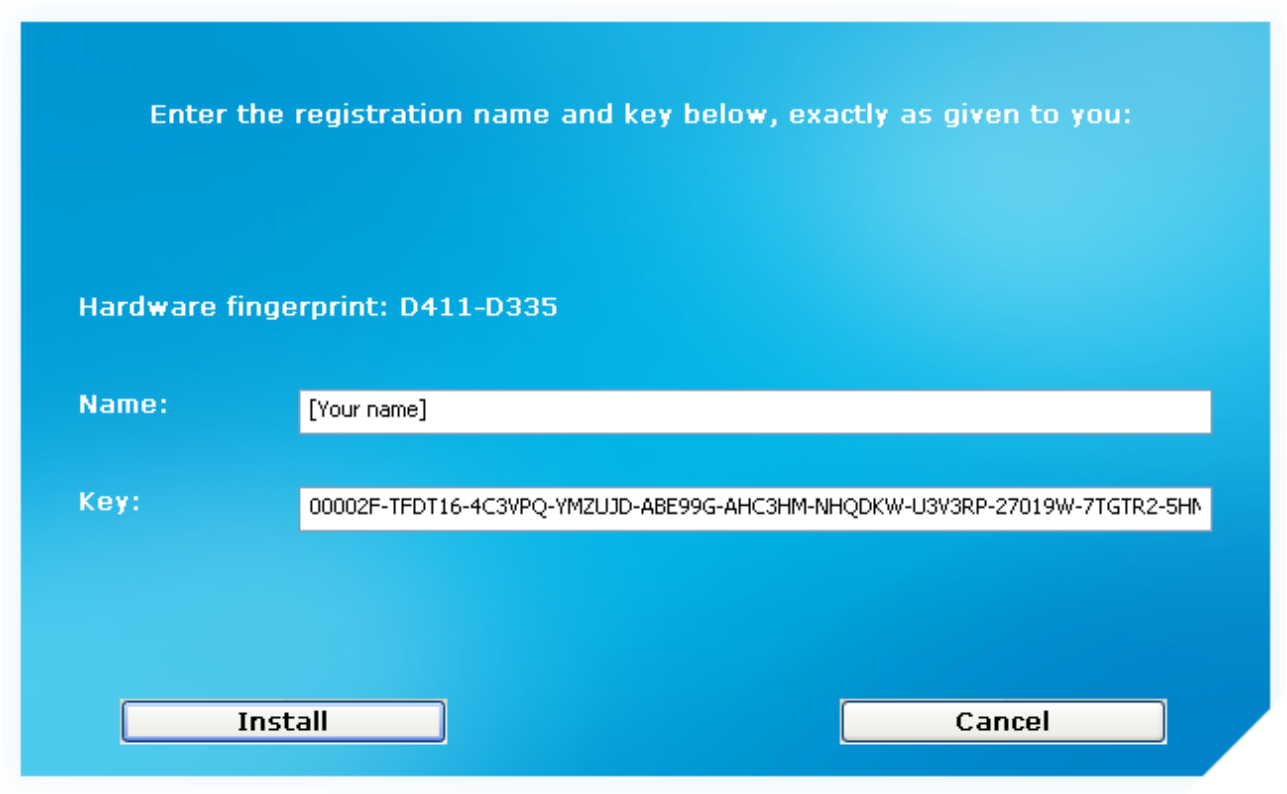
WARNING:

Make sure to read out the hardware fingerprint when logged in as Administrator on the computer. Also ensure that no components of the machine are deactivated, for instance due to energy saving modes. Otherwise it might be that the fingerprint will be different when you try to activate the license as previously inactive components are recognized or not all hardware information can be read when being logged in as a restricted user.

- Copy and paste the hardware fingerprint into an email and send this email to your reseller for activation. Your email should include the following information:
  - whether you want an iQ-VIEW or an iQ-VIEW PRO single license
  - whether you want an unlimited (in time) license or a time-limited license (e.g. 1-year)
  - the software version you have installed
  - your name and contact details
  - the name for which the software shall be registered
- An email will be received in return with the registered name and activation key.
- Enter the information in the respective fields of the “Enter key” dialog.

WARNING:

When you receive the activation data, log in as Administrator again, make sure all components are active and enter the received user name and activation key. In case of an “invalid key” information, check first if the hardware fingerprint is still the same that you provided when asking for the activation.



“Enter key” dialog with example entries

- Afterwards press “Install” to apply the license. The following information will appear:

Information window “Key valid” for a full, time-limited iQ-VIEW basic license

- The key will be stored on the PC and does not have to be entered each time the application is started. Hardware modifications are still possible without invalidation of the license (max. three components).
- The current certificate and hardware fingerprint can be looked up in the local settings dialog of the iQ-VIEW / PRO application and are shown as follows:

"Certificate info" field

WARNING:

Do not press "Reset" unless you really wish to reset your license. During this process, the hardware fingerprint will change and your previous activation data will become invalid. You will have to request a replacement key, which might require a fee.

5.2.2 CONCURRENT LICENSES

5.2.2.1 WHAT IS A CONCURRENT LICENSE?

Concurrent licensing (i. e. floating licensing or network licensing) is an alternative licensing model contrary to the usual single seat licensing. It allows you to use a specified number of iQ-VIEW / PRO applications installed within a network at the same time without having to license each application individually.

The heart of such a concurrent network is the concurrent license server. When an iQ-VIEW / PRO application within the network (i.e. a client) is started, it connects at first to the concurrent license server and asks for permission to start. The server, on the other hand, checks the number of iQ-VIEW / PRO applications that are already running. If that number has not yet reached the maximum number of allowed active licenses, then the requesting application is granted the permission to start. Otherwise the client does not start and shows a corresponding warning message. If a client is shut down, the server automatically recognizes that and frees the previously used license. Thus, the number of free licenses increases and an iQ-VIEW / PRO on another computer may be used instead.

The major benefit of concurrent licensing is the fact that you only have to activate a single license key for the concurrent license server, not for all the different clients. In doing so, the maximum number of permitted clients

in a concurrent network can individually be specified and is part of the license key you can purchase from your local reseller.

Although the maximum number of client applications that can access the server at the same time is limited, you can use a lot more running installations of iQ-VIEW / PRO in your network.

5.2.2.2 SYSTEM REQUIREMENTS

The computer you wish to use as concurrent server has to meet the following requirements:

- Windows XP Professional SP3 as operating system (an installation is also possible on Windows 7 Professional SP1, but note that using the concurrent server GUI may in some instances be limited on the system)
- Network access with only one physical IP address. No additional or virtual IP addresses are allowed.
- The IP address of the system where the concurrent license server is running must be permanent (in DHCP networks IP addresses may change periodically; this will invalidate the concurrent license).
- The user logged into the system needs Administrator rights to make the necessary configurations and to work with the concurrent license server.

WARNING:

For security reasons, the iQ-VIEW / PRO installation that is selected to be used as concurrent license server shall NOT be used as a regular workstation but should ONLY be the dedicated concurrent license server. This ensures that the concurrent license server will always be available for communication with the client stations. Additionally,

5.2.2.3 GETTING THE CONCURRENT iQ-VIEW APPLICATION

The iQ-VIEW installation package contains the necessary iQ-VIEW.exe files for both single licenses and concurrent licenses. If you wish to run iQ-VIEW with a concurrent license, you will need to select the "Custom" installation during the iQ-VIEW installation process. This option will install the correct iQ-VIEW.exe file as well as all concurrent license server files. For details, please see section 3.3 Selecting the iQ-VIEW license type during installation.

The software modules provided together with the iQ-VIEW installation package – iQ-3D and iQ-STITCH – come with their own licensing. Only iQ-3D also provides concurrent license functionality. This feature is, however, not available for iQ-STITCH. During the "Custom" installation of iQ-VIEW, also iQ-3D can be selected to be installed with concurrent licensing instead.

IMPORTANT NOTE:

Make sure to install the iQ-VIEW with concurrent license functionality on ALL stations that shall be included in the concurrent license network. That means that you will have to install it on every workstation that shall act as a client as well as on the computer that is supposed to work as the license server.

5.2.2.4 INSTALLING THE CONCURRENT LICENSE SERVER

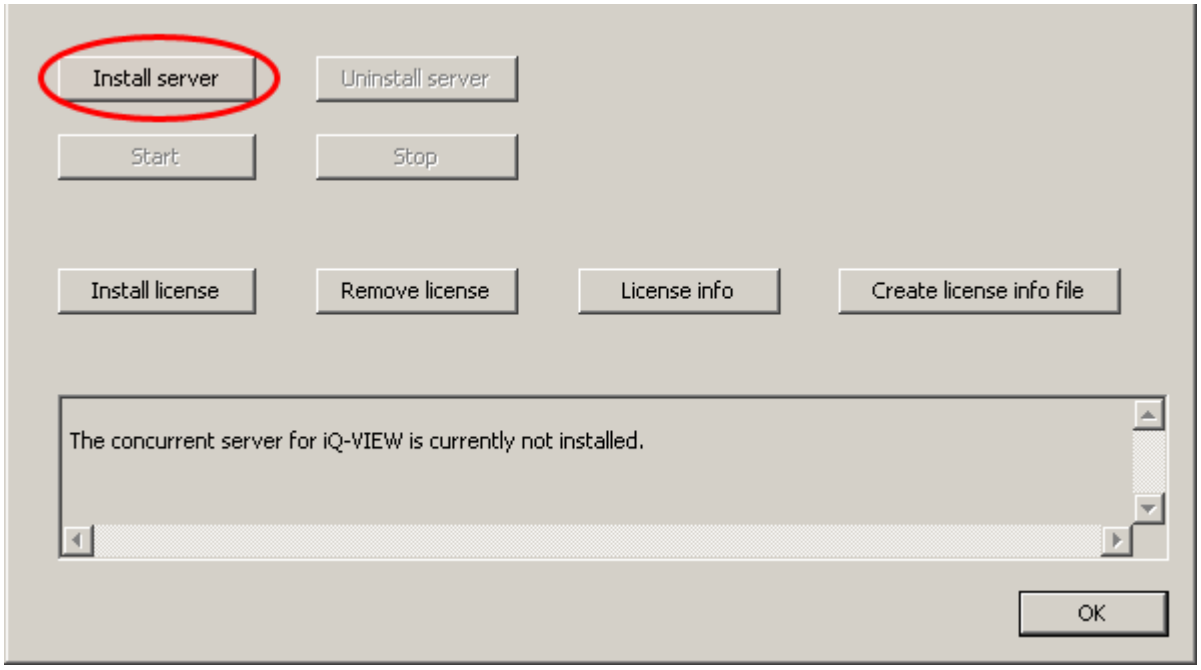
To use iQ-VIEW with a concurrent license you only need to install the application with concurrent license functionality as described in section 3.3 Selecting the iQ-VIEW license type during installation.

You DO NOT have to install an extra server application on your server machine. Every iQ-VIEW / PRO station outfitted with the concurrent license functionality has the capability to act as a concurrent license server. All you have to do is to choose a system that you prefer to act as the concurrent server system.

To install the concurrent license server:

- Log into the system as Administrator.
- Open the Windows Explorer and select the iQ-VIEW installation folder (by default: C:\Program Files\iQ-VIEW\).
- You will find the concurrent server application in the subfolder "License" of the iQ-VIEW root folder. It is called "ConcurrentServer.exe".
- Double-click onto the file "ConcurrentServer.exe" to open the application.
- Click on the "Install" button of the main window.

The concurrent server is now installed and runs as a Windows® service.



Main window of the concurrent server tool

WARNING:

Please keep in mind that once you activated the concurrent license server it is tied to the local IP address of the machine. Make sure to use a machine with a static IP address.

The iQ-VIEW / PRO installation selected to work as concurrent license server, needs free access to the network, with which the clients are connected with the license server, to keep the concurrent network running.

Therefore, the "iQ-VIEW.exe" must be granted free network access by adding the executable to the exception list of your firewall. Usually, if you are using the Windows® firewall, this will already be done automatically during the installation. In case iQ-VIEW is not yet listed you will have to do it **manually**. If you use the Windows® firewall please follow the steps below:

- Click "Start" in your Windows® taskbar.
- Go to "Settings" and select the "Control Panel".
- Click on the entry "Windows Firewall".
- Select the tab "Exceptions" and check if the iQ-VIEW.exe is already listed.
- If iQ-VIEW is not yet listed, select the button "Add Program".
- With "Browse" you can then navigate to the "iQ-VIEW.exe" in the iQ-VIEW installation folder (by default C:\Program Files\iQ-VIEW\).
- Select the "iQ-VIEW.exe" and confirm by clicking "Open".
- Confirm all open dialogs with "Ok".

The executable is now added to the exception list and the concurrent network

In case you use a firewall of another vendor, please consult the corresponding manual.

WARNING:

If you do not add the "iQ-VIEW.exe" to the (Windows) Firewall exception list, as described above, the concurrent clients cannot connect to the concurrent license server and the network cannot work correctly. Also make sure to be logged in as Administrator when working with the concurrent license server. Otherwise some errors may occur.

5.2.2.5 ACTIVATING A CONCURRENT LICENSE

By default, iQ-VIEW will always start with a single seat trial license after first installation. A trial license for the concurrent license server is not available automatically.

If you wish to test iQ-VIEW in a concurrent license network you will need an activation key to provide a trial period. For concurrent license networks it is **required** to first run a trial period to test the faultless functioning of the concurrent network before purchasing a full license.

Please contact your local reseller to request a free trial license. Also mention how many iQ-VIEW or iQ-VIEW PRO clients you wish to run simultaneously, so that you will receive an appropriate license.

NOTE:

Please note that it is not possible to mix iQ-VIEW and iQ-VIEW PRO clients within one concurrent network. It is only possible to either activate iQ-VIEW or iQ-VIEW PRO licenses.

In general, to retrieve or purchase a concurrent license activation key you have to, at first, send the necessary license information to your local reseller. To obtain the license information, follow the steps below:

- Log into the concurrent license server machine as Administrator.
- Open the main window of the concurrent license server tool.

- Click onto the “Create license info file” button. A file called “license_information_concurrent.txt” will be created in the folder “%ALLUSERSPROFILE%\iQ-VIEW”. This file contains the information needed for the generation of a concurrent license (such as the IP of your concurrent server machine).
- As a second step, click onto the “Install License” button. In the next dialog, look up the hardware fingerprint, which is created when iQ-VIEW / PRO is first installed on the computer. Copy that hardware fingerprint.
- Paste the hardware fingerprint into an email, attach the “license_information_concurrent.txt” file, add a registration name and the number of desired concurrent clients and send this email to your local reseller.

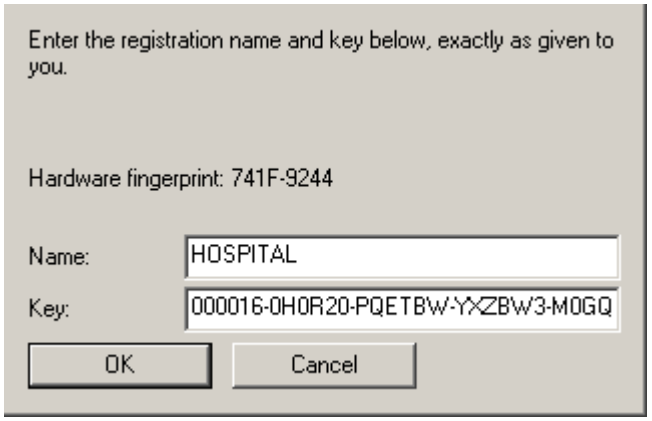
WARNING:

Make sure to read out the hardware fingerprint when logged in as Administrator on the computer. Also ensure that no components of the machine are deactivated, for instance due to energy saving modes. Otherwise it might be that the fingerprint will be different when you try to activate the license as previously inactive components are recognized or not all hardware information can be read when being logged in as a restricted user.

- An email will be received in return with the registration name and the activation key.
- Enter the information in the respective fields of the “Install License” dialog.

WARNING:

When you receive the activation data, log in as Administrator again, make sure all components are active and enter the received user name and activation key. In case of an “invalid key” message, please check first if the hardware fingerprint is still the same one you provided when asking for the activation.



“Enter key” dialog with example entries

- Afterwards press “OK”. The following information will appear:

Information window “Key valid”

- The key will be stored on the PC and does not have to be entered each time the application is started. Hardware modifications are still possible without invalidation of the license (three times).

- The current license information can be looked up in the “License information” dialog by clicking on the “License info” button in the main window of the concurrent server. For full license details you may create a “license_information_concurrent.txt” file by clicking onto the button “Create license info file”.

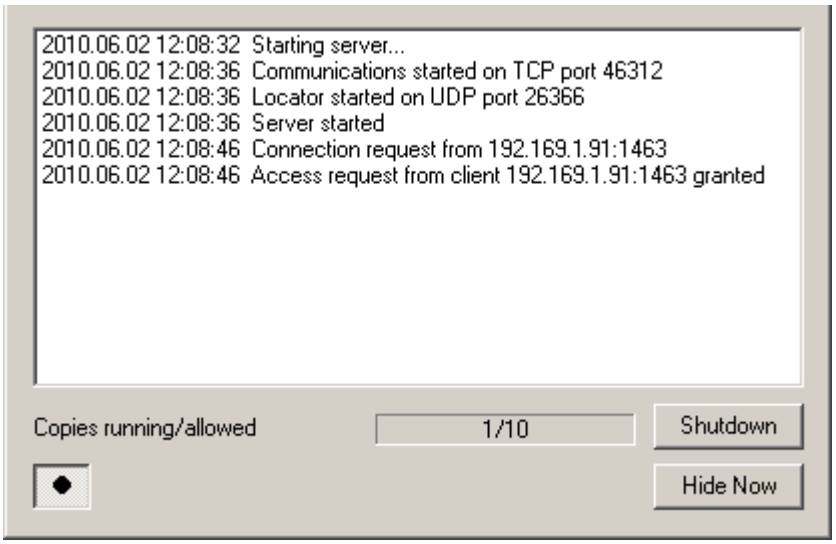
WARNING:

Do not press “Remove license” unless you really wish to reset your license. During this process, the hardware fingerprint will change and your previous activation data will become invalid. You will have to request a replacement key, which may require a fee.

5.2.2.6 STARTING AND USING THE CONCURRENT LICENSE SERVER

To finally start the concurrent license server, simply click onto the “Start” button of the concurrent server’s main window.

The “Access dialog” opens and shows information of the connected clients. The concurrent license server is now running. You may start several clients in the network and will see them connecting to the server. The entry “Copies running/allowed” indicates how many clients are possible and how many are currently running.



“Access dialog”

Since the concurrent license server is a service that runs in the background of the operating system, it is possible to simply close both dialogs – the concurrent server keeps on working (even if you restart the server machine, the service will start up again automatically).

To close the dialog windows click the “Hide now” button in the “Access dialog”’ and the “Ok” button in the concurrent server’s main window.

To stop the concurrent license server from working, click the “Shutdown” button in the “Access dialog” or the “Stop” button in the concurrent server’s main window.

5.2.2.7 IDLE PERIOD FOR CONCURRENT LICENSE CLIENTS

When an iQ-VIEW client is started with a concurrent license, one available license out of the purchased number of concurrent licenses is allocated to this client. This license becomes unavailable for other clients and if the maximum number of licenses is reached, no other client can be started as long as no license becomes available.

To make sure that all licenses that are not needed are free to be used at the clients, an iQ-VIEW running with a concurrent license would have to be shut down to make its allocated license available again for other iQ-VIEW clients. In case, an iQ-VIEW is left running but nobody works with it, there is a defined idle period after which iQ-VIEW terminates itself automatically. With that, the license becomes free for use by another iQ-VIEW client.

Idle means that no mouse or key action is executed within either of the iQ-VIEW dialogs (e.g. study browser or viewer). By default the use of the idle period is deactivated. To activate the idle period, please follow the steps below:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [License].
- There, search for the parameter "ConcurrentAutoLogoffIdlePeriod=", which is – by default – set to "0" (= deactivated)
- Enter the desired period (number of minutes) after the "=", e.g. "120" for two hours. If set to "0", the automatic termination is disabled.
- Afterwards save the changes and restart iQ-VIEW.

If an iQ-VIEW application was terminated due to the expiration of the idle period, an information dialog is shown at the next application start.

5.2.2.8 CONCURRENT LICENSING FAQ AND TROUBLE-SHOOTING

Q: I installed the concurrent license server and have also activated concurrent licensing with an appropriate license. But when I start an iQ-VIEW client, the concurrent license is not used.
A: Be sure to install iQ-VIEW with concurrent license functionality on all workstations that you wish to include in your concurrent network. An iQ-VIEW running with single license functionality will not connect to the license network but will only start with its own license. To change the license type of the installed iQ-VIEW, run the installer again and modify your installation. See section 3.4 Changing the IQ-VIEW license type for further details.

Q: What happens to a concurrent client, if it cannot find the concurrent license server?
A: When you start a client application it first checks an internal list searching for a license. At first, it looks for a concurrent license server in the network. If it cannot find a server, it looks for a single license installed on the client machine. If it cannot find such a license either, it starts the trial license (if still available and not yet expired).

Q: I installed a concurrent licensing server and several clients in a network, but the clients cannot connect to the server. What shall I do?
A: The concurrent network needs a TCP/IP network to work correctly. Make sure that your LAN works without problems and that the connection between client and concurrent server is not blocked. Do not forget to add the iQ-VIEW.exe of the concurrent server installation to the exception list of the Windows firewall as described in section 5.2.2.4 Installing the concurrent license server. Make sure that the latest Microsoft Windows Service Packs are installed on all your computers.

Q: What is the maximum number of concurrent clients in a concurrent network?
A: The maximum number of concurrent clients you can order for your concurrent license is limited to 255. This means that you may have an unlimited number of iQ-VIEW / PRO installations in your network, but only 255 applications can run simultaneously.

Q: Can I use different software versions of iQ-VIEW / PRO applications within a concurrent network?
A: No, all iQ-VIEW / PRO software versions of the concurrent server and the clients have to be the same to keep them working together. For example if you use version 2.7.0 of an application as the server and version 2.6.0 as the client, the client cannot connect to the server.

Q: My network consists of several subnets. Can I install the server and the clients in different subnets?
A: Yes. However, in that special case you have to tell the clients where to find the server in the network. Browse to the root folder of your iQ-VIEW / PRO client application and open the file “iQ-VIEW.ini” in a text editor. Look for the line “Server=” in the section “[License]”. Add the IP address of the concurrent license server to the line, for example “server=192.168.1.91”. Save the changes in the file. After restarting the iQ-VIEW / PRO client, it can connect to the server in the other subnet.

Q: Is the hardware fingerprint delivered by iQ-VIEW / PRO the same as the one delivered by the concurrent license server of the same installation?
A: No, even if both applications run on the same computer, they deliver different hardware fingerprints. Therefore always make sure to report the correct hardware fingerprint for your use case to your distributor.

Q: I read that once the concurrent license server is activated, it is tied to the IP address of the server machine. What happens if the IP changes for some reason?
A: In fact, another IP does not have any effect on the server itself. It keeps on running. But the clients refuse to start and show an error message stating the failing connection to the server. Therefore make sure that you use a server machine with a static IP address. However, if your IP address changes, please contact your local reseller informing about the new IP address.

Q: Is it possible to use two or more concurrent servers at the same time in the same network?
A: No, if you start a second server in the same network, it shows an error message and refuses to start.

Q: What happens if I disable the network connection between client and server?
A: The client needs a constant connection to the concurrent license server to work correctly. If the connection is disabled, the client will show a warning message one minute after the incident. If you do not reestablish the connection within the next 10 minutes the client will shut down and can only be reactivated after the connection to the concurrent license server was reestablished.

Q: I activated an iQ-VIEW / PRO with a single license some time ago. Now I would like to establish a concurrent network in the same network. Can I still use the single license?

A: It depends. If the iQ-VIEW / PRO software version of your installation with the single license and the one of the concurrent license server are the same, then your application will be recognized as part of the concurrent network and your single license is not usable. In such a case, please contact your local reseller.

Q: I want to remove the license from the concurrent license server by clicking the "Remove license" button. The "uninstall_license_concurrent.txt" is generated and the "Enter Key" dialog is displayed correctly, but the "Unregister Program" dialog does not show up. Why?
A: The file and the "Enter Key" dialog will be created every time you click the button, no matter if the license has been reset or not. If the "Unregister Program" does not show up you probably have not installed a license. However, if you are sure that you have installed a license, then please close the concurrent license tool, install and uninstall the server once again and try to click the "Remove license" button again.

6 LICENSE MIGRATION AND RENEWAL

6.1 MIGRATING SINGLE LICENSES

If you want to move your purchased iQ-VIEW license from one computer to another you need to follow the instructions given here:

- Install the iQ-VIEW software on the new computer.
- Reset the iQ-VIEW license on the old computer. To do that open the "Local settings" dialog and select the "Information/Upgrade" button. Click the "Reset license" button to deactivate the license key. When the license is reset it will no longer be valid on that machine. The hardware fingerprint will change and the previously used activation key becomes invalid.
- During the "Reset" a configuration file (INI) is created in the "ALL USERS" directory (C:\Documents and Settings\All Users\iQ-VIEW\), called "uninstall_license_iQ-VIEW_[VERSION NUMBER].ini". This file contains an uninstall key verifying the license reset. Send this file together with the hardware fingerprint of the new iQ-VIEW installation by email to your reseller. For details regarding the licensing process and the necessary information you need to provide, see section 5.2.1 Single licenses.
- You will receive an email in return with the registered name and activation key.

NOTE:

*Please keep in mind that for replacement keys a fee might be charged. Therefore, please contact your reseller **BEFORE** you transfer your iQ-VIEW license to a new computer!*

6.2 CHANGING AN EXISTING SINGLE LICENSE

In some cases it may become necessary to change an existing single license, i.e. to enter new activation data even though a license is currently active. This may happen if:

- you wish to upgrade an iQ-VIEW (basic) license to iQ-VIEW PRO
- you wish to downgrade an iQ-VIEW PRO license to iQ-VIEW (basic) status
- you wish to renew a time-limited license that is about to expire

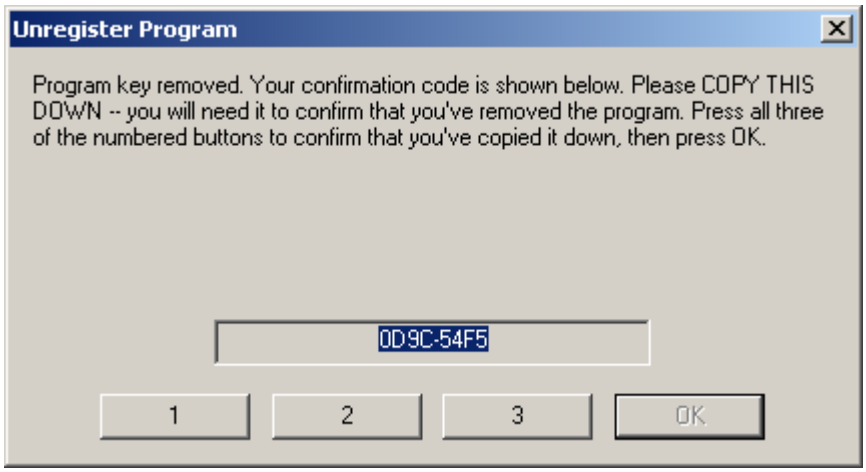
After you have received the new license activation data from your local reseller (registration name and activation key), go to the "Local settings" and select the "Information/Upgrade" button and then click on "Install license". There, you can then enter the new registration name and activation key. Click on "Install" to confirm the activation.

6.3 MIGRATING CONCURRENT LICENSES

If you wish to move your purchased iQ-VIEW / PRO concurrent license from one computer to another you need to follow the instructions given here:

- Install iQ-VIEW / PRO on the new computer. Remember to use the "Custom" installation to install the iQ-VIEW with concurrent licensing.

- Afterwards uninstall the license from the previously used concurrent license computer by clicking onto the "Remove license" button in the main window of the concurrent server tool. When the license is reset it will no longer be valid for that server. The hardware fingerprint will change and the previously used activation key becomes invalid.
- During the uninstalling process, a file called "uninstall_license_concurrent.txt" will be created in the folder "%ALLUSERSPROFILE%\iQ-VIEW". It contains most of the information required to get a new license.
- Afterwards the "Unregister program" dialog will show up containing the confirmation code that is needed to confirm the uninstalling process.



"Unregister program" dialog

- Copy this confirmation code. Afterwards open the "uninstall_license_concurrent.txt" with a text editor and paste the code into the line that says "uninstall_key=" (at the bottom of the file).
- Next you need to confirm that you have copied the uninstall code by checking all three numbered buttons one after the other and finally by clicking 'OK'. Afterwards, the regular "Enter key" dialog will be displayed. Simply close this dialog.
- The next information needed in the "uninstall_license_concurrent.txt" is the hardware fingerprint that was created when the concurrent license was reset. Therefore please click on the "Install License" button in the main window of the old concurrent server, copy the new fingerprint and paste it into the line "new_fingerprint_after_reset=" in the text file.
- The last information needed in the "uninstall_license_concurrent.txt" is the old registration name. Therefore please click on the "License info" button in the main window of the concurrent server tool, copy the line underneath "This program is registered to:" and paste it into the respective line of the text file.
- The "uninstall_license_concurrent.txt" does now include all necessary data to verify the license reset.
- As a last step, you need to obtain the license information from the new concurrent license server. To do that, please follow the steps described in section 5.2.2.5 Activating a concurrent license.
- After you have collected all information, send an email to your local reseller including the "uninstall_license_concurrent.txt" file of the old server and the "license_information_concurrent.txt" file of the new server. Also include the number of allowed clients of the new concurrent server.

You will receive an email in return with the registered name and activation key.

NOTE:

Please keep in mind that replacement keys will only be delivered for a fee. Therefore, please contact your reseller ***BEFORE*** *you transfer your iQ-VIEW / PRO license to a new computer!*

6.4 CHANGING AN EXISTING CONCURRENT LICENSE

In some cases it may become necessary to change an existing concurrent license, i.e. to enter new activation data even though a concurrent license is currently active. This may happen if:

- you wish to upgrade a concurrent iQ-VIEW (basic) license network to iQ-VIEW PRO
- you wish to downgrade a concurrent iQ-VIEW PRO license network to iQ-VIEW (basic) status
- you wish to renew a time-limited concurrent license that is about to expire
- you wish to increase or decrease the number of concurrent licenses

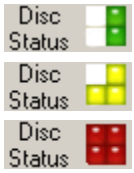
After you have received the new license activation data for the specified number of concurrent clients from your local reseller (registration name and activation key):

- Log into the concurrent license server machine as Administrator.
- Open the main window of the concurrent license server tool and select the button “Install license”.
- Enter the information in the respective fields of the “Install License” dialog.
- Afterwards press “OK” to confirm.

7 MAINTENANCE

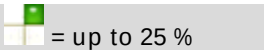
The software itself needs no maintenance.

However, you should check regularly – once per quarter is recommended – the hard disk space to ensure that enough storage capacity is available to store patient studies in the local iQ-VIEW database.



The "Disc Status" is stated in the lower right corner of the Study Browser and gives information about the available hard disk space of the hard disk where the iQ-VIEW imagebox (i.e. the DICOM images) is stored in a graphic. The more hard disk space is already occupied the more fields are colored. The color will change from green to yellow to red the less space there is left.

The thresholds where the light turns from one status to the next are as follows. The numbers indicate the amount of full hard disc space:

 = up to 25 %
 = up to 50 %
 = up to 75 %
 = up to 87 %
 = from 88 %

Furthermore it must be ensured that there are not more than a maximum of 10.000 patient studies stored in the local iQ-VIEW database. If there is more than the maximum allowed, the data consistency cannot be guaranteed.

NOTE:

Keep in mind that iQ-VIEW is a workstation software and not an archiving station (PACS). The local imagebox should therefore always only have the data stored that is currently really needed (for viewing and diagnostic purposes). Other data can be retrieved at any time from the PACS. High amounts of image data can influence the performance of the iQ-VIEW application.

To save hard disk space it may be necessary once in a while to check the "Logs" folder in the iQ-VIEW directory and the IQSERVER and auto-routing log files (if activated; location depending on path set in the Server Administration) and to delete old log files that are no longer needed.

To adhere to the laws and regulations concerning image viewing devices it is necessary to regularly (re)calibrate the displays and monitors of the iQ-VIEW workstations accordingly.

Anti-virus checks should be run regularly on the computer where iQ-VIEW is installed. Keep the virus definitions updated (they should not be older than 2 weeks).

NOTE:

Due to known issues / incompatibilities (e.g. regarding the blocking of system files and ports), we do not recommend using the software AntiVir as an anti-virus software.

There are no special maintenance requirements regarding the concurrent license server. It only has to be assured that the server's IP address does not change (static IP) and that all client stations in the concurrent network can access the concurrent license server station.

8 FOLDERS

The chart of the folders of iQ-VIEW / PRO components and their description (including folders exclusively used by iQ-3D, iQ-STITCH, iQ-CAPTURE, iQ-ROBOT, iQ-CR ACE and IMAGE DISPLAYS):

FOLDER	DESCRIPTION
...\iQ-VIEW	iQ-VIEW / PRO application root folder
...\iQ-VIEW\3D	iQ-3D application folder
...\iQ-VIEW\Attach	Temporary data folder
...\iQ-VIEW\CAPTURE	iQ-CAPTURE application folder
...\iQ-VIEW\CD-Projects	Folder containing created CD projects
...\iQ-VIEW\Config	Folder containing specific configuration files of iQ-VIEW
...\iQ-VIEW\Converter	Cache folder for DICOM file conversion processes; holds backup files.
...\iQ-VIEW\CR-ACE	iQ-CR ACE application folder
...\iQ-VIEW\Data	Temporary data folder
...\iQ-VIEW\DISPLAYS	IMAGE DISPLAYS application folder
...\iQ-VIEW\ExternalViewerTools	Folder for external tool configuration
...\iQ-VIEW\Hangings	Folder for storing the configuration files of hanging protocols
...\iQ-VIEW\Lang	Language file folder
...\iQ-VIEW\Library	Folder containing specific library files used by iQ-VIEW
...\iQ-VIEW\License	Folder for the concurrent license server files
...\iQ-VIEW\License\Lang	Language file folder for the license-related dialogs
...\iQ-VIEW\Logs	Folder for stored process log files
...\iQ-VIEW\ROBOT	iQ-ROBOT client folder
...\iQ-VIEW\Server	Server administration and database registration folder
...\iQ-VIEW\Server\Database	Local database / imagebox folder (image folder)
...\iQ-VIEW\Spooler	Cache folder for DICOM and Windows print bitmap files that will be transferred to the printer and for images imported from the “Import” dialog into the imagebox
...\iQ-VIEW\STITCH	iQ-STITCH application folder

WARNING:

Modifying these folders' location and name without considering other parts may cause problems in the functioning of iQ-VIEW / PRO.

9 SOFTWARE ADMINISTRATION

This chapter describes how iQ-VIEW / PRO must be configured and how DICOM configurations are made and changed. The respective menu items and their functions of iQ-VIEW / PRO are explained.

iQ-VIEW / PRO can query and retrieve as well as transfer medical image and patient data from/to DICOM modalities and remote archives. Furthermore, it can be used to print out images on DICOM printers. Therefore, the appropriate DICOM configurations and local settings need to be made to allow for those operations to work properly.

This chapter covers the following topics:

- Initial configuration
- Local DICOM settings (Server Admin Tool)
- Local settings
- DICOM configuration
- Password protection of sensitive areas
- Display configuration
- Controlling iQ-VIEW from a HIS/RIS
- Configuration of Study Browser functions
- Configuration of Viewer functions
- Configuration of Import functions
- Configuration of Export functions
- Configuration of Print Manager functions
- Process and log information
- Connecting other modules to iQ-VIEW
- List of available iQ-VIEW configuration parameters

The following figure is the initial screen and the main window of iQ-VIEW, called the Study Browser. It is used to access all important functions and dialogs as well as to administer the local imagebox.

The Study Browser main window

9.1 INITIAL CONFIGURATION

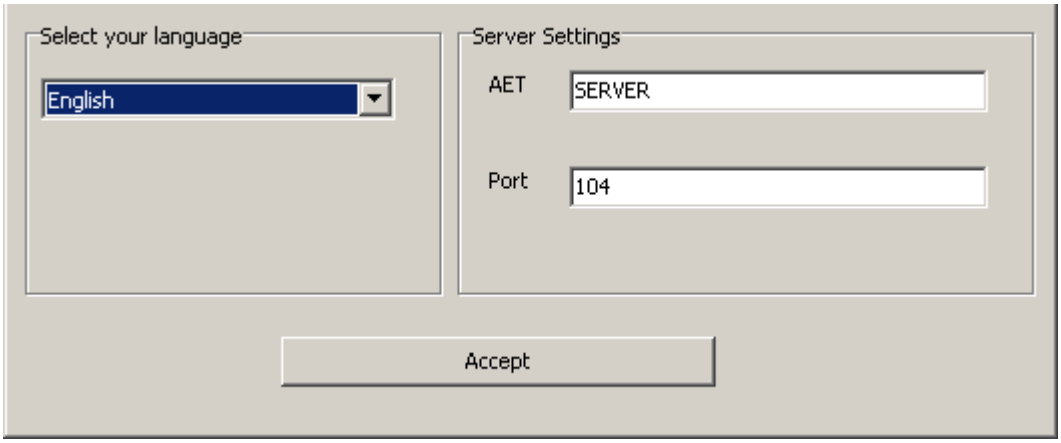
When the iQ-VIEW / PRO application is started for the first time the initial configuration dialog appears and requires the user to select:

- the DICOM Application Entity Title of iQ-VIEW (by default = SERVER)
- the port on which the iQ-VIEW server is listening (by default = 104)

In case you are running several iQ-VIEW / PRO stations within a network, you need to make sure that no AE title is used twice. Therefore select unique AE titles for each station, e.g. SERVER1 and SERVER2. Make sure to not use any spaces in the name.

If the default port 104 is already used by another application or blocked for some reason, you may use any other free port available on your system. In case the selected port is already in use or blocked (e.g. by a firewall or anti-virus system) the iQ-VIEW server will not start and the DICOM communication will fail.

Since iQ-VIEW / PRO is available in different languages also the language in which the user interface shall be displayed must be chosen when first starting the application. All available languages are given in the drop-down menu. Make your choice and click “Accept”.



Initial configuration dialog

After pressing "Accept" the user interface will be adapted to the selected language.

To change the language of the iQ-VIEW / PRO user interface after the initial choice was made already, execute the following steps:

- Open the "Local settings" from the iQ-VIEW Study Browser.
- Select the desired language from the drop-down box "Language for the user interface". The language will be adapted immediately.
- Save the settings.

The iQ-VIEW and the iQ-LITE user manuals are, by default, provided in English language in the iQ-VIEW installation package. However, the user documentation is often available also in other languages (e.g. German and Spanish). After completing the iQ-VIEW installation it is, thus, possible to integrate the user manuals in other languages into iQ-VIEW, so that it is possible to access them directly from the application.

To do that, please follow the steps below:

- Go to the "Download Center" of the manufacturer's website at www.image-systems.biz.
- For the section "Manuals" a login is required. If you have no login data yet, please register first in the user forum. The registration is for free.
- Download the iQ-VIEW and iQ-LITE user manuals of the correct version from the "Download Center".
- Afterwards copy the downloaded PDF files into the iQ-VIEW installation directory (by default: C:\Program Files\iQ-VIEW\).
- Rename the downloaded iQ-VIEW user manual into "manual.pdf". The existing English version may either be overwritten or renamed.
- Rename the downloaded iQ-LITE user manual into "CD-Viewer-Manual.pdf". The existing English version may either be overwritten or renamed.

NOTE:

Only when the manuals are stored with the correct file names will it be possible to access them directly from the iQ-VIEW and iQ-LITE applications. Only with the correct file name, the iQ-LITE manual can be burned automatically to patient media.

9.2 LOCAL DICOM SETTINGS (SERVER ADMIN TOOL)

The iQ-VIEW DICOM server process, executed by the IQSERVER.exe, is the DICOM SCP component of iQ-VIEW. The IQSERVER is therefore responsible for all SCP processes (Service Class Provider processes). It realizes all incoming DICOM communication as well as the auto-routing. It additionally handles database regenerations done via STORE SCU. The IQSERVER is, however, NOT responsible for any outgoing DICOM communication (i.e. SCU processes, such as sending of DICOM data, printing to DICOM imagers).

The iQ-VIEW server can comfortably be configured using the GUI application "Server Administration".

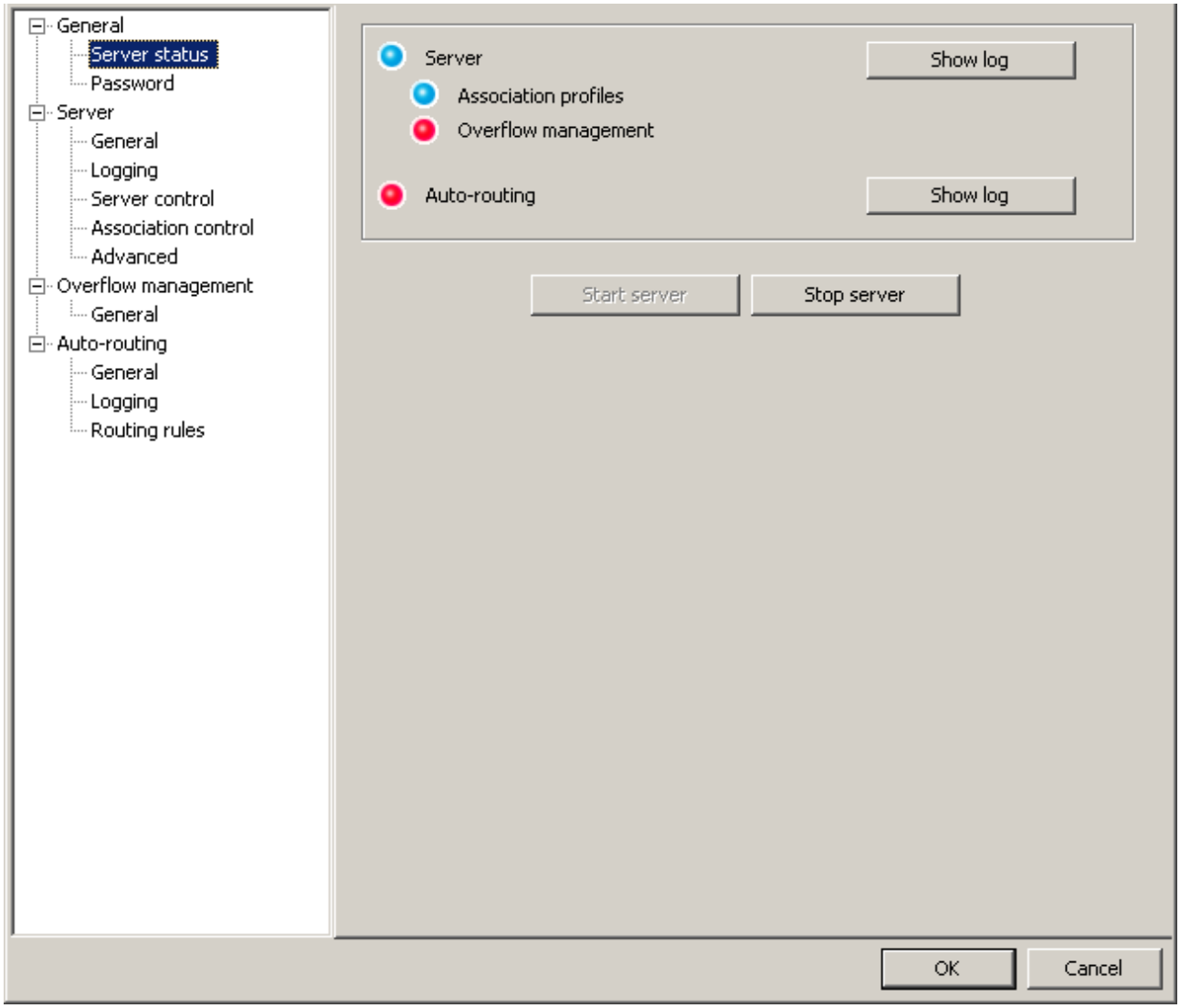
You can start it directly ([Start] → [All Programs] → [iQ-VIEW] → [Administration] → "Server Administration") or out of the main application by clicking on the "Local settings" dialog in the upper right-hand corner and then choosing the "Server Admin Tool".

NOTE:

All changes in the configuration of the iQ-VIEW Server Administration require a restart of the iQ-VIEW server process to apply the changes. This can be done manually or by simply clicking the "OK" button. By clicking the "OK" button the server will restart, in case modifications were made in the Server Administration.

The Server Administration is divided into four different sections:

- "General": used for general information and settings concerning the iQ-VIEW server
- "Server": used for the configuration of all iQ-VIEW server settings and parameters
- "Overflow management": used for the configuration of an overflow management
- "Auto-routing": used for the configuration of the auto-routing options



iQ-VIEW Server Administration main window

9.2.1 "GENERAL" SECTION

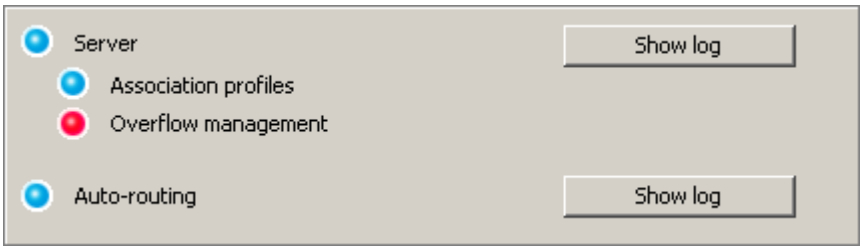
The "General" section of the Server Administration shows and defines the server status and allows setting up a password protection for accessing the server administration.

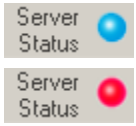
9.2.1.1 SERVER STATUS

The server status is given in the "General" section of the Server Administration. Under "Server status" you find the following status information:

- "Server": indicates, whether the DICOM server itself is running (blue light) or not (red light); "Show log" displays the DICOM communication log in a text editor window.
- "Association profiles": indicates, whether the association profiles are used (blue light) or not (red light)

- "Overflow management": indicates, whether overflow management is enabled (blue light) or not (red light)
- "Auto-routing": indicates, whether auto-routing is enabled (blue light) or not (red light); "Show log" displays the auto-routing log in a text editor window.





In the bottom right corner of the Study Browser the server status is also given with either a blue light (= server is running) or a red light (= server stopped). This gives the opportunity to check the server status without opening the Server Admin Tool. Double-clicking on the status display opens the Server Admin Tool so that the server can be started or stopped.

Additionally, there are options to start and stop the DICOM server manually.

- "Start server": used to manually start the iQ-VIEW server
- "Stop server": used to manually stop the iQ-VIEW server

NOTE:

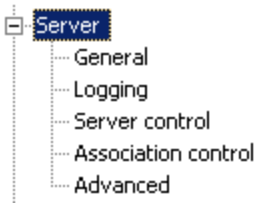
Depending on whether the server is controlled by iQ-VIEW or by the Windows system (running as a service), it is started or stopped accordingly. When running as a Windows service, you may also perform these actions in the system's administrative tools under "Services".

9.2.1.2 PASSWORD PROTECTION

In the sub-section "Password" it is possible to set a password that limits the access to the Server Administration to those knowledgeable of the password. This restriction stops unauthorized personnel from accessing and modifying the iQ-VIEW server configuration.

For further details please refer to section 9.5.3 Activating password protection for the "Server Admin Tool".

9.2.2 "SERVER" SECTION

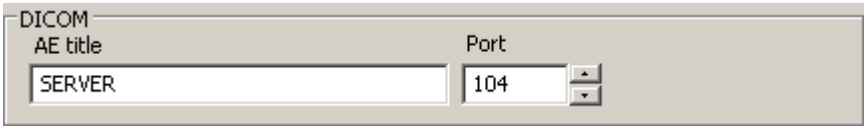


The "Server" section of the Server Administration shows and defines the general server settings, allows options for the writing of log files and offers possibilities for advanced server configuration (additional parameters).

9.2.2.1 GENERAL SERVER SETTINGS

Under "General" in the "Server" section it is possible to configure the main DICOM settings for the iQ-VIEW server:

1. DICOM



- "AE title": Application Entity Title of the STORE SCP process (by default = SERVER). The AET is supposed to be a unique identifier of the DICOM application. Therefore avoid multiple usage of the same AET within the same DICOM network.

NOTE:

Make sure to not use any spaces in the AE title as this is not allowed according to the DICOM standard and may otherwise lead to problems in the communication.

- "Port": the network port that the STORE SCP process is listening to (by default = 104)

NOTE:

Keep in mind that an AE title value is limited to 16 characters. Only alphanumeric characters and the underscore are allowed according to the DICOM standard. No spaces must be used in the AE title. Also make sure that the AE title is unique within the entire network. Non-adherence may otherwise lead to problems in the communication.

2. Storage location

- "Imagebox (image folders)" = the directory path of the "Imagebox" where received images will be stored; if changed the "Imagebox" (i.e. the folders that contain the images) can be moved to another directory

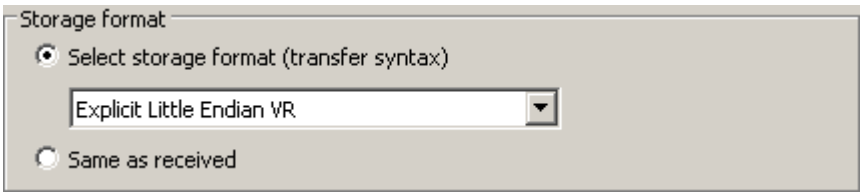
or hard disk but the database structure and the database file will remain in the default directory ...\iQ-VIEW\Server\Database\.

- "Database file (KPStudy.dir)" = the directory path of the iQ-VIEW database file (KPStudy.dir) that contains the registration entries for all images stored in the "Imagebox"; if changed in addition to the directory path of the "Imagebox", the whole database structure can easily be transferred together with the "Imagebox" to a new directory or hard disk.

NOTE:

*It is highly recommended to store both the Imagebox folders **and** the database file KPStudy.dir in the same directory.*

3. Storage format



- "Select storage format (transfer syntax)": to define a specific transfer syntax with which all DICOM images coming via STORE SCU shall be written, independent of their original transfer syntax; default is Little Endian Explicit.
- "Same as received": used to not change the original transfer syntax (TS) of the DICOM image data during import via STORE SCU. All images that are either retrieved from a remote archive or are sent to iQ-VIEW will be stored using their original transfer syntax.

For additional information also see section 9.11.1.2 Compressed image import via DICOM.

WARNING:

Please keep in mind that images with compressed transfer syntaxes, such as JPEG 2000, may not be (fully) supported by the viewer or by connected post-processing modules. It is therefore recommended to use the default decompression to Little Endian Explicit to store image data locally in iQ-VIEW.

9.2.2.2 CHANGING THE DIRECTORY OF iQ-VIEW'S LOCAL IMAGEBOX AND DATABASE FILE

By default the local imagebox (= image folders) is placed in the iQ-VIEW installation directory in the folder "Server":

...\Program Files\iQ-VIEW
\Server
\Database

This folder also contains the database file "KPStudy.dir", which registers all studies, series and images available in the local imagebox with the respective patient and study information, such as the patient name and ID, study date, accession number, referring physician, etc.

The "KPStudy.dir" is read by iQ-VIEW to display all patients with the available studies, series and images in the study table. When images are previewed in the study browser or studies and series are loaded into the viewer, iQ-VIEW accesses the image folders and displays the requested images.

NOTE:

The logged-in iQ-VIEW user must have full rights for the folders in which the database file KPStudy.dir and the imagebox (image folders) are stored. Otherwise maybe the patient / study information cannot be displayed or the access to the images fails and the previews and viewer remain blank.

It is possible to change the default path of both the local imagebox and the database file manually and to select a directory of your choice in which to store the locally available studies and the database file "KPStudy.dir".

NOTE:

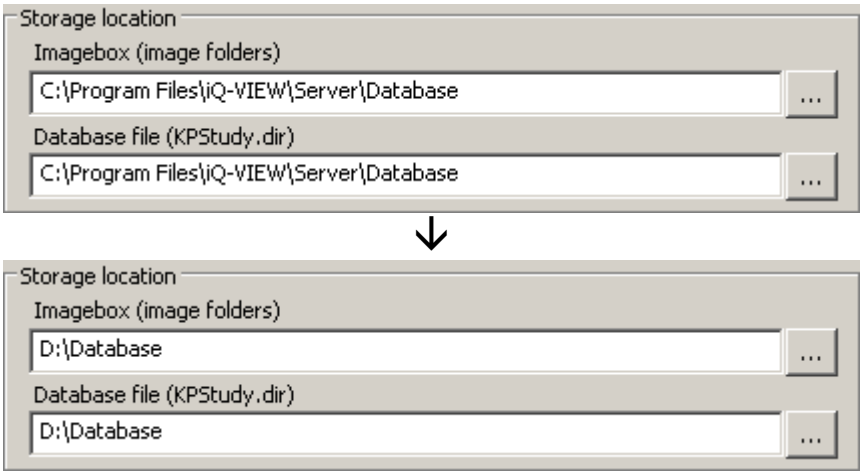
*It is strongly recommended to store both the imagebox folders **and** the database file KPStudy.dir in the same directory.*

WARNING:

Also make sure to use a folder that is not located too deep within the system's tree structure as Windows does only allow a certain number of characters within a file path (max. 260) and the file path can become very long due to iQ-VIEW's use of the DICOM files' unique IDs as safest way to store DICOM objects. One UID can use up to 64 characters, three UIDs are used (study instance UID, series instance UID and SOP instance UID), amounting already to 192 characters (without the necessary backslashes "\"). If the maximum number of characters is exceeded, the object / image cannot be stored in the local imagebox.

Change the paths by following the instructions given here:

- Close iQ-VIEW.
- Create a new directory that you wish to use for the local database and the database file.
- Copy the content of the local imagebox folder (...\Program Files\iQ-VIEW\Server\Database\), including the database file "KPStudy.dir" to the new directory on your hard disk, e.g. D:\Database\.
- Go to [Start] → [All Programs] → [iQ-VIEW] → [Administration] → "Server Administration".
- In section "Server" go to the sub-section "General".
- Under "Storage location" you can define the new paths.
- Select the entry "Imagebox (image folders)" and browse in the directory tree to the correct folder that you wish to use as the local "Imagebox" (i.e. the folders that contain the images):
  e.g. C:\Program Files\iQ-VIEW\Server\Database\ to
  D:\Database\
- Then select the entry "Database file (KPStudy.dir)" to also browse to the directory path of the iQ-VIEW database file that contains the entries for all images stored in the "Imagebox". It is recommended to store it in the same folder as the "Imagebox".
  e.g. C:\Program Files\iQ-VIEW\Server\Database\ to
  D:\Database\



Configuration example

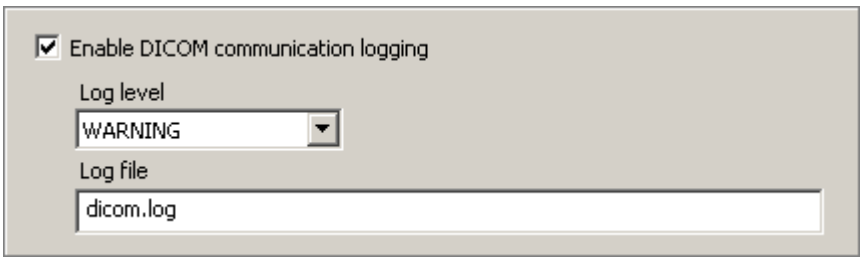
- Click "OK" to store the changed settings and to automatically restart the server.
- Afterwards restart the iQ-VIEW application.

NOTE:

If the database file "KPStudy.dir" is moved together with the imagebox, it is not necessary to execute a database regeneration. The database regeneration is only necessary if the database file remains in the default database folder in the iQ-VIEW installation directory. To perform the regeneration, select "Local settings" and then "Regenerate database".

9.2.2.3 LOGGING DICOM SERVER COMMUNICATION

The SCP activities of the iQ-VIEW server can be written directly into a file. The writing of the SCP information to a file can be activated in the sub-section "Logging":



- "Enable DICOM communication logging": if selected, the server's DICOM communication with other stations is logged.

The SCP logging is possible on different levels. If the logging is activated, the default log level is "WARNING" where all errors and warnings are logged. In case of technical problems it might become useful to increase the log level ("DEBUG" or "TRACE") to log all available information and make trouble-shooting easier. The log levels are set using the drop-down box under "Log level".

Log levels available in the drop-down box are (from highest log level down to none):

- TRACE
- DEBUG
- INFO
- WARNING
- ERROR
- FATAL
- OFF

The log file created is called, by default, "dicom.log" and can be found in the "Server" folder of the iQ-VIEW installation directory. Under "Log file" you may set the path to and the name of the log file.

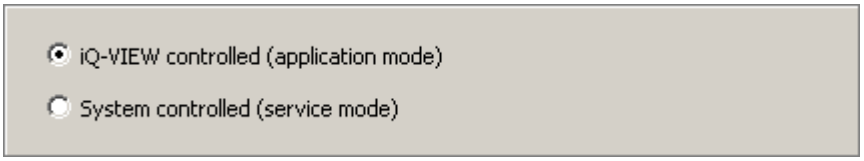
9.2.2.4 SERVER CONTROL

By default the iQ-VIEW server does not run as a service but as a regular software application handled by its main application iQ-VIEW. Therefore it only starts when iQ-VIEW is started as well. On the other hand, the iQ-VIEW server is not automatically terminated when iQ-VIEW is shut down. It runs until it is either terminated manually in the Server Administration or when the computer is shut down.

However, in some cases it might be useful to have the iQ-VIEW server running even if iQ-VIEW itself is not worked with, e.g. in case auto-routing jobs are sent via the server. For such scenarios it is possible to configure the iQ-VIEW server to start as a Windows service.

Therefore the iQ-VIEW server can be set to be controlled in either of two different ways – by the main application iQ-VIEW or by the Windows system itself. For the latter, the server will be installed as a Windows service and will be handled as such.

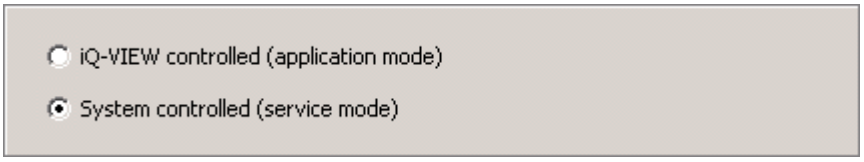
- "iQ-VIEW controlled (application mode)": this means that the server is controlled by the main application iQ-VIEW. When iQ-VIEW is started, the server automatically starts as well. The Server Administration shows in the status information that the server is running.



NOTE:

However, the server will not terminate automatically when the iQ-VIEW application is shut down. It will be stopped when the system itself is shut down or the server process is stopped in the Server Administration.

- "System controlled (service mode)": in this mode the iQ-VIEW server is run as a Windows service. It will then start automatically as soon as the system is booted and remains running also if no user is logged in.



When selecting the option "System controlled (service mode)", the iQ-VIEW server is automatically installed as a Windows service. You can find it as "IQSERVER" under "Services" in the system's administrative tools. After the first manual start, the iQ-VIEW server will then always start up together with Windows and must not be started manually by starting the iQ-VIEW application itself.

The server can be started by clicking onto the "Start server" button in the Server Administration under "General" → "Server status" or by simply clicking onto the "OK" button in the Server Administration to store the settings and to automatically start the server. Alternatively, you can handle the service also under "Services" in the system's administrative tools.

If the iQ-VIEW server is installed as service and controlled by the system and you select the option "iQ-VIEW controlled (application mode)", the service is uninstalled automatically and the iQ-VIEW server is again handled by the main application.

NOTE:

Alternatively, the iQ-VIEW server can be installed and uninstalled from the Windows command prompt with the following parameters:

-i = to install the server as service

-u = to uninstall the server as service

-c = to run the server as application (console application).

When using the command prompt, remember to add quotation marks ("...") for a path that contains spaces. If no spaces exist, the quotation marks are not needed.

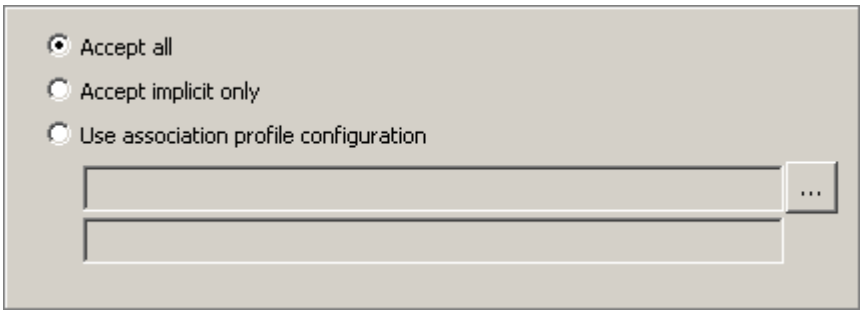
9.2.2.5 ASSOCIATION CONTROL

The DICOM standard specifies a special protocol for association management. It is called Association Control Service Element (ACSE) and is an OSI application layer protocol. However, since the Open Systems Interconnection (OSI) is not commonly used anymore, DICOM defines another protocol, called DICOM Upper Layer (DUL) protocol. This protocol provides the DICOM Upper Layer DUL service and can be considered a full equivalent of ACSE for TCP/IP. These protocols do not only handle the negotiation for an association, they also provide a data transmission service utilized by DICOM for network exchange.

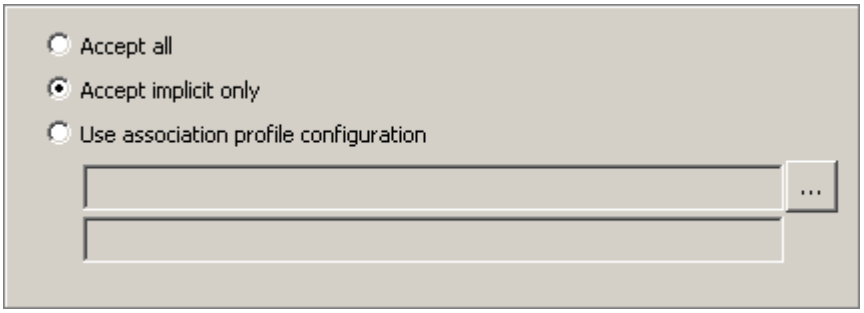
When a DICOM association has been established the two communicating application entities (AEs) are ready to exchange SOP instances. This is done using the DICOM Message Service Element (DIMSE) protocol. Using DIMSE, an AE can request operation to be performed upon an SOP instance residing on the peer AE. It may, for instance, query the peer AE for an image using the C-FIND service and then request the image to be transferred to it using the C-MOVE service. It may also store an image on the peer AE using the C-STORE service.

The iQ-VIEW Server Administration offers three options of association control:

- "Accept all": accepts all supported transfer syntaxes when negotiating DICOM data transmission between iQ-VIEW and a remote station (cannot be used in connection with the "setup.cfg" configuration file).



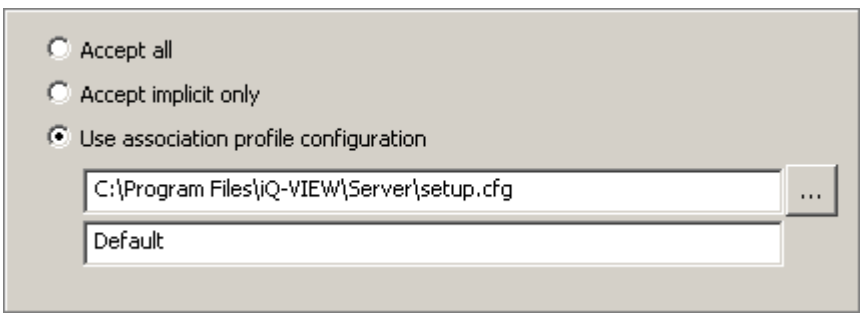
- "Accept implicit only": accepts the Implicit VR Little Endian transfer syntax only when negotiating DICOM data transmission between iQ-VIEW and a remote station (cannot be used in connection with the "setup.cfg" configuration file).



- "Use association profile configuration": this is the default setting and uses the iQ-VIEW server configuration file "setup.cfg", which is located in the "Server" folder of every iQ-VIEW installation. The "setup.cfg" regulates the DICOM communication by defining which transfer syntaxes, SOP classes and presentation contexts are supported by the iQ-VIEW server. It states a number of transfer syntaxes that the server will accept when negotiating the transmission of DICOM data.

  By default all supported transfer syntaxes are proposed, if necessary, when a remote station wants to send data to the iQ-VIEW server. However, it would be possible to comment out one or several transfer syntaxes to prevent another station to even sent images using this transfer syntax.

  The profile name for the configuration stated in the "setup.cfg" is "Default".



NOTE:

This is the only profile available. If necessary, the "setup.cfg" can be adjusted to match specific requirements. This should only be done by authorized and knowledgeable personnel as wrong configurations can lead to problems in the DICOM communication between iQ-VIEW and remote stations. It is therefore generally recommended to not alter the configuration.

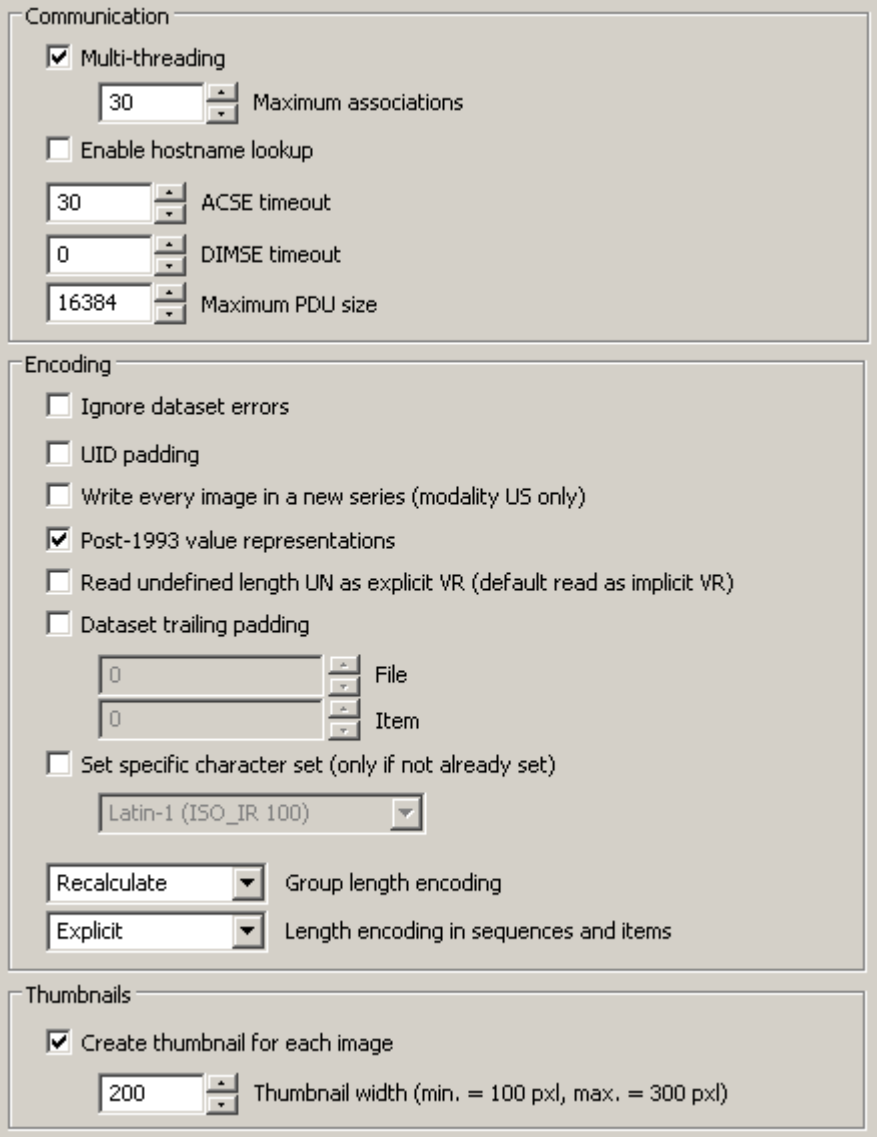
9.2.2.6 ADVANCED SERVER SETTINGS

By default the iQ-VIEW server runs with specific settings optimized for the usual DICOM data transmissions from remote stations to the server as well as for auto-routing purposes.

However, for particular purposes as well as trouble-shooting, it is possible to modify the default settings and to enable parameters in case that specific DICOM transfer actions are needed.

WARNING:

Such modifications to the server configuration should always only be done by authorized and experienced technical personnel.



NOTE:

Some parameters (options) cannot be used in combination with others. If these options are enabled, the incompatible parameters are automatically grayed-out.

In section "Communication", the following options are available:

- "Multi-threading": this option is enabled by default; a fork child thread is started for each association; if disabled, the server will only run a single thread, which may lead to time-outs in the transmissions
- "Maximum associations": defines how many associations can run at a time
- "Enable hostname lookup": enables the hostname look-up; this option is disabled by default as a failing or a long-lasting hostname look-up may hinder the data transmission and lead to time-outs
- "ACSE timeout": defines the time-out for ACSE messages in seconds (integer values only); default is 30 (seconds)
- "DIMSE timeout": defines the time-out for DIMSE messages in seconds (integer values only); default is 0 (= unlimited)
- "Maximum PDU size": sets the maximum number of bytes for received PDUs; possible are integer values between 4096 and 131072; default is 16384

In section “Encoding”, the following options are available:

- “Ignore dataset errors”: if set, parsing errors during the reading of datasets are ignored
- “UID padding”: if enabled, space-padded UIDs are silently corrected
- “Write every image in a new series (modality US only)”: if enabled, writes every (multi-frame) image into a separate series, even if the series instance UID in all images is the same; this option only applies to the handling of ultrasound images and does not work with the bit preserving mode (under “Server” → “General”)
- “Post-1993 value representations”: enables support for new VRs (UN/UT); if unchecked, disables support for new VRs and converts to OB; this option is enabled by default and does not work with the bit preserving mode (under “Server” → “General”)
- “Read undefined length UN as explicit VR (default read as implicit VR)”: if enabled, data with undefined length UN is read as explicit VR; by default reading as implicit VR is used
- “Dataset trailing padding”: by default, no padding is used; if enabled aligns a file on multiple of file bytes and items on multiple of item bytes; cannot be used together with the bit preserving mode
  - “File”: defines the file pad (integer values)
  - “Item”: defines the item pad (integer values)
- “Set specific character set (only if not already set)”: by default disabled; this option should be used very carefully; if enabled it will add the selected character set to any DICOM objects received by the IQSERVER that do not yet contain the DICOM attribute 0008,0005 (SpecificCharacterSet). This attribute is responsible for the interpretation of the character sets and how the letters/characters are displayed in the application

NOTE:

If the DICOM objects you receive do not contain the necessary DICOM attribute 0008,0005 (SpecificCharacterSet), the first step to correct this would be at the modality that creates such objects. This assures that the images/objects are created correctly and can therefore be successfully transferred and used at other stations. Please contact the device manufacturer for solutions. Only if this is not possible, you may use the option in the iQ-VIEW server administration. This configuration should only be done by authorized personnel, as using the wrong character set can lead to image corruption and wrong information display. Also note that simply stating a specific character set does not necessarily mean that the DICOM data is actually encoded with this character set in mind or that the DICOM information included in the object corresponds with the selected character set.

- “Group length encoding”: default setting is to recalculate group lengths if present (“Recalculate”); other options are to always write with group length elements (“Create”) or to always write without group length elements (“Remove”); cannot be used together with the bit preserving mode
- “Length encoding in sequences and items”: default setting is to write with explicit lengths (“Explicit”); further option is to write with undefined lengths (“Undefined”); cannot be used together with the bit preserving mode

In section “Thumbnails”, the following options are available:

- “Create thumbnail for each image”: by default enabled; for each DICOM image received a BMP thumbnail is created, which is used in the preview icons panel of the study browser as well as the viewer; if disabled, these thumbnails will later have to be created by iQ-VIEW itself, which may take some time and delay the preview icon display.

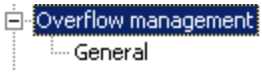
WARNING:

In case iQ-MAMMO is used to view studies handed over by iQ-VIEW, it is recommended to leave this option activated, as iQ-MAMMO depends on the thumbnails and will otherwise not be able to make available previews of the loaded series.

- "Thumbnail width (min. = 100 pxl, max. = 300 pxl)": defines the thumbnail width in pixel; default width is 200 pixel; the height is set according to the width-height ratio to maintain the image's dimensions

All changes require a restart of the server. Click "OK" to store the changed settings and to automatically restart the server.

9.2.3 SETTING UP OVERFLOW MANAGEMENT

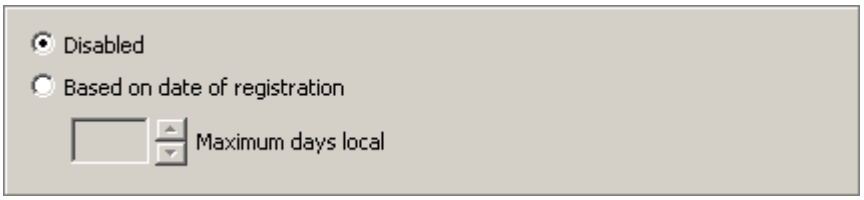


The "Overflow management" section of the Server Administration is used to enable and configure the overflow management for the local iQ-VIEW imagebox.

Overflow management is used to automatically clean the iQ-VIEW imagebox from studies that are no longer needed locally and to keep enough free space on the hard disk used for the local imagebox to allow for new studies to be stored. In addition to automatically deleting the DICOM objects and removing the respective folders and sub-folders, the iQ-VIEW database file (KPStudy.dir) is cleaned from the removed studies so that their entries do no longer populate the study browser's study list.

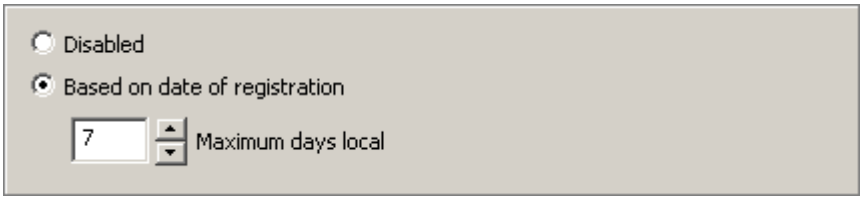
There are only two options that can be set concerning the overflow management for the local iQ-VIEW imagebox:

- "Disabled": no overflow management is used; if necessary studies no longer needed locally would have to be deleted manually from the local imagebox



- "Based on date of registration": = if enabled, the overflow management is activated and studies will be automatically deleted from the local database and from the image folders (imagebox) when the current date minus registration timestamp exceeds the number of days given in the "Maximum days local" input field.

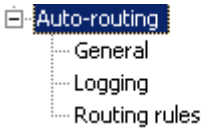
  In the field "Maximum days local" enter the number of days that you wish to keep your studies available locally, e.g. "7", if you wish to automatically delete every study that has been stored locally for a week.



NOTE:

The overflow management can only work when the logged-in iQ-VIEW user has full rights for the folders in which the database file KPStudy.dir and the imagebox (image folders) are stored. In addition iQ-VIEW must be restarted to run the overflow management because this function is executed at application start.

9.2.4 AUTOMATIC ROUTING WITH iQ-VIEW



The "Auto-routing" section of the Server Administration is used to enable and configure a potential automatic routing of DICOM objects from a source station via the iQ-VIEW server to a target station. During that process a copy of the routed data is also registered and stored locally.

9.2.4.1 GENERAL

Into iQ-VIEW is integrated a simple auto-routing feature that makes it possible to automatically forward studies of a specific modality, e.g. CT or MRI, to a predefined destination, e.g. a PACS. All studies auto-routed by use of this forwarding feature will also be stored in the local database of iQ-VIEW. Make sure that enough hard disk space is available.

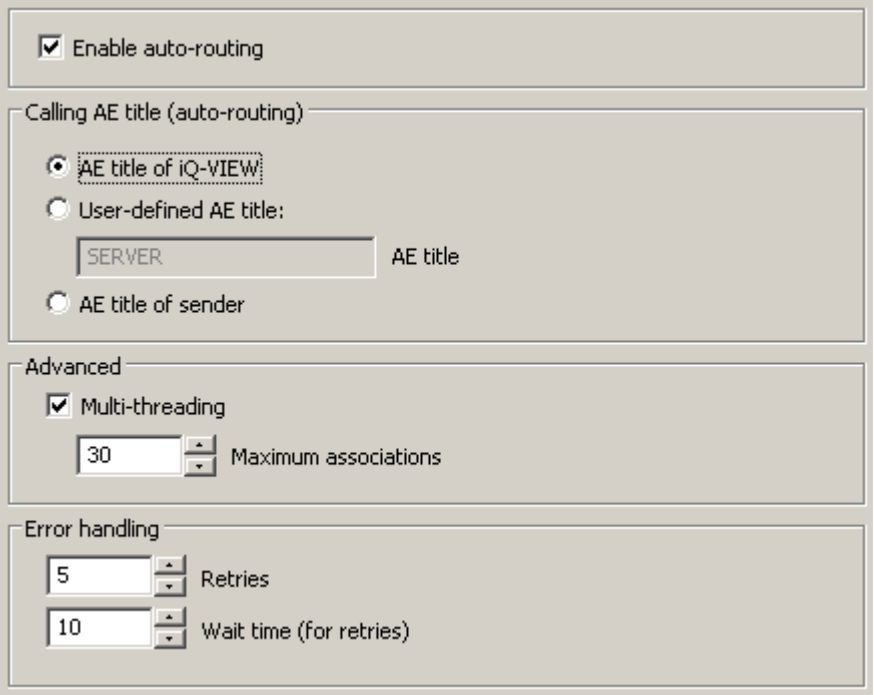
9.2.4.2 MULTI-THREADING

By default the automatic routing will use multi-threading in a network to process several DICOM thread jobs simultaneously. This speeds up the routing process considerably and minimizes the potential of time-outs due to transmission delays. See below for options to configure multi-threading.

9.2.4.3 ACTIVATING AUTO-ROUTING

Follow the instructions given here to use the auto-route function:

- Go to [Start] → [All Programs] → [iQ-VIEW] → [Administration] → "Server Administration".
- In section "Auto-routing" go to the sub-section "General".
- Mark the checkbox "Enable auto-routing" to activate the auto-routing for the iQ-VIEW server:



Sub-section "General" for auto-routing

In the section "Calling AE title (auto-routing) you can define which AE title will be used when iQ-VIEW connects to the target station. This is called "calling AE title".

- "AE title of iQ-VIEW" = the AE title of the iQ-VIEW server will be used as calling AE title in the communication; nothing else has to be defined in the target station if iQ-VIEW was already configured there
- "User-defined AE title:" = you can define yourself a specific AE title that is only used for auto-routing as calling AE title in the communication; this AE title will have to be configured in the target station so that it will accept associations coming from the AE title
- "AE title of sender" = the AE title of the station originally sending the images (source station) will be used as calling AE title in the communication; the AE title(s) of the source station(s) will have to be configured in the target station so that it will accept associations coming from the AE title

For further details and information on manipulating the calling AE title for auto-routing communication, please see section 9.2.4.7 Manipulating the calling AE for auto-routing.

NOTE:

Keep in mind that many archives do only accept associations from DICOM stations that they "know", i.e. stations that are defined in their own DICOM settings as communication partners.

In the section "Advanced" you may configure the available options for multi-threading, i.e. the simultaneous execution of auto-routing jobs (associations):

- "Multi-threading": this option is enabled by default; a fork child thread is started for each association; if disabled, the server will auto-route data only single-threaded, that means one association at a time; other jobs will have to wait until the previous is finished
- "Maximum associations": defines how many associations can run at a time

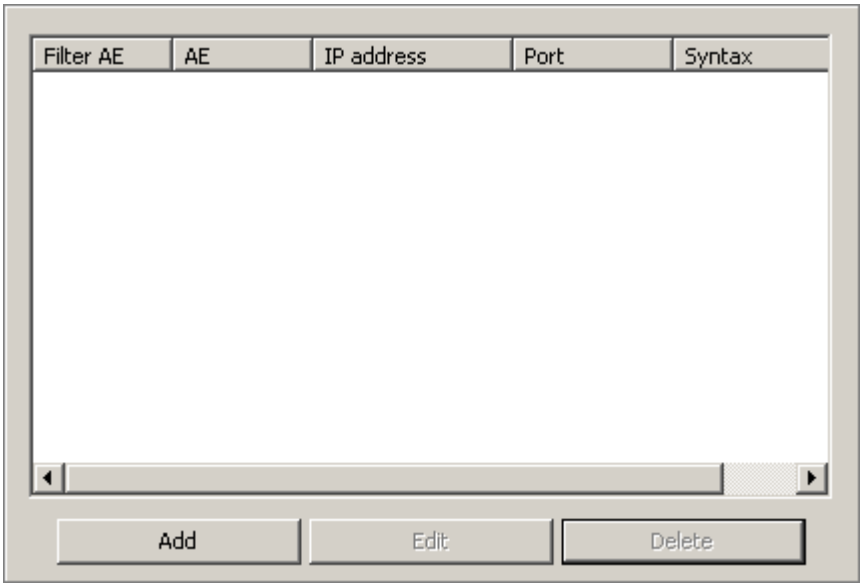
In the section “Error handling” you can set up the following parameters:

- “Retries” = defines the number of retries for auto-routing jobs in case the first transmission fails
- “Wait time (for retries) = defines the waiting time between retries

9.2.4.4 SETTING UP AUTO-ROUTING RULES

To use auto-routing, at least one auto-routing rule must be set up. This is done in the sub-section “Routing rules”:

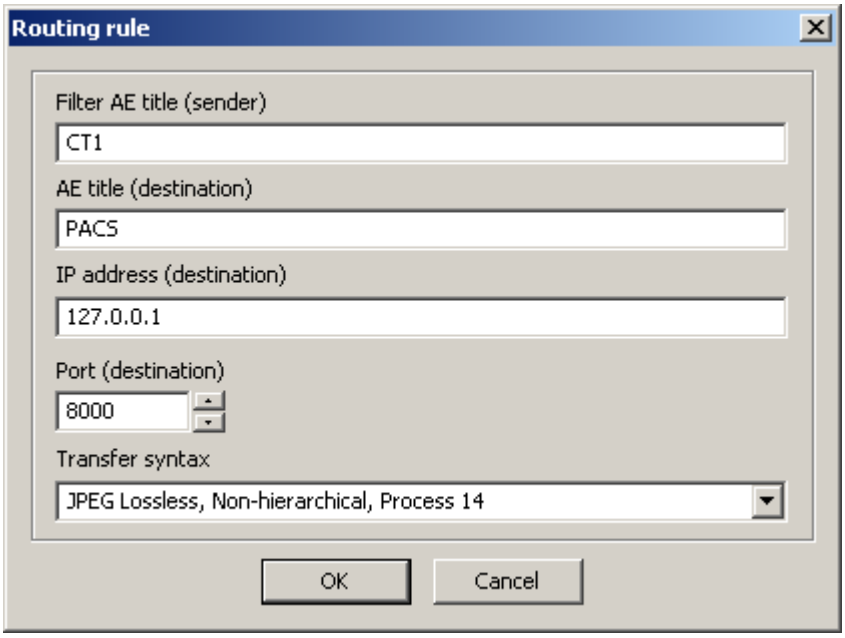
- Go to [Start] → [All Programs] → [iQ-VIEW] → [Administration] → “Server Administration”.
- In section “Auto-routing”, go to the sub-section “Routing rules”. At first, no rules exist:



Sub-section “Routing rules” for auto-routing

- Click onto the “Add” button to open the “Routing rule” dialog for setting up a new auto-routing rule
- Enter the necessary information for setting up the desired routing of DICOM data from a specific source station to a target station, using the iQ-VIEW server:

1. “Filter AE title (sender)” = for entering the AE title of the source modality from which you wish to forward studies, e.g. from a CT → CT1.
2. “AE title (destination)” = for entering the AE title of the destination station, e.g. a PACS → PACS.
3. “IP address (destination)” = for entering the IP address of the destination station, e.g. 127.0.0.1.
4. “Port (destination)” = for entering the port number of the destination station, e.g. 8000.
5. “Transfer syntax” = for selecting the uncompressed or compressed transfer syntax with which the images shall be forwarded to the destination AE title. The transfer syntax can be selected easily from the drop-down menu. Possible are all transfer syntaxes supported by the iQ-VIEW server. Please refer to the iQ-VIEW DICOM Conformance Statement for detailed information.

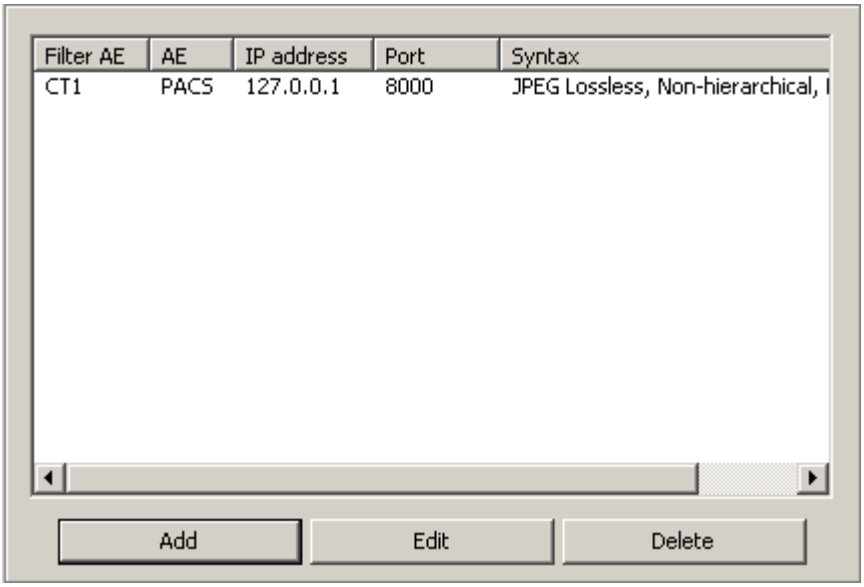


"Routing rule" dialog with sample entries

NOTE:

The transfer syntax can be defined individually for each destination station. Thus, it is possible to use a different transfer syntax (TS) for a station that does only support certain TS, for instance to set JPEG 2000 compression for sending to another iQ-VIEW station but JPEG lossless to a PACS that does not yet support JPEG 2000. Of course, images can also be sent uncompressed, e.g. for uncompressed storage on an archive.

- It is possible to define an unlimited number of different destinations. After completing the configuration, click the "OK" button to add this new rule to your list of auto-routing rules. All set-up rules will be displayed here:



Sub-section "Routing rules" with sample entry

- Select "Add" to add another auto-routing rule.
- Select "Edit" to edit a currently selected auto-routing-rule.

- Select “Delete” to delete a currently selected auto-routing rule.
- After you have finished setting up all necessary rules, click “OK” to store all changes and to automatically restart the server.

In the example given above everything coming from the source modality “CT1” will directly be rooted to the defined destination “PACS”, using JPEG lossless as transfer syntax.

As soon as iQ-VIEW receives an image in its local imagebox and realizes that the AE title corresponds with one of those configured as “Filter AE” in the “Routing rules” section, iQ-VIEW will forward the image directly and without delay to the station with the destination settings “AE”, “IP address” and “Port”, using the selected transfer syntax defined in “Syntax”.

NOTES:

1. The source and destination AE titles defined for the auto-routing of studies do not have to be entered into the DICOM configuration of iQ-VIEW.

2. Please make sure that the destination station is available and that the iQ-VIEW server of the iQ-VIEW that does the auto-routing is running. It has to be started manually or be configured as a service. For the latter see section 9.2.2.4 Server control.

3. There is no message to indicate that the routing process was finished.

4. Errors occurring during the routing processes are, if activated, logged in a separate log file. See below for more information.

9.2.4.5 DEACTIVATING AUTO-ROUTING

To deactivate the entire auto-routing, you only need to unmark the checkbox “Enable auto-routing” in the Server Administration (Server Admin Tool), section “Auto-routing”, sub-section “General”. You can leave the configured auto-routing rules, in case you wish to use them at a later time.

To deactivate individual auto-routing rules, simply delete the respective configuration entries from the Server Administration, section “Auto-routing”, sub-section “Routing rules”. Mark the rule you wish to disable and click “Delete”.

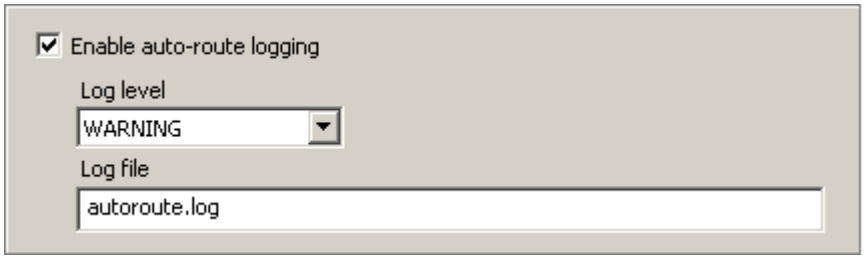
Afterwards click “OK” to store the changed configuration and to automatically restart the server.

9.2.4.6 LOGGING OF AUTO-ROUTING

All auto-routing activities can be logged in a separate log file. By default this log file is called “autoroute.log” and can be found in the “Server” folder of the iQ-VIEW directory.

The logging is activated as follows:

- Go to [Start] → [All Programs] → [iQ-VIEW] → [Administration] → “Server Administration”.
- In section “Auto-routing”, go to the sub-section “Logging”.
- Mark the checkbox “Enable auto-route logging”.



Under “Log level” different log levels can be set to log the auto-routing activities performed by the iQ-VIEW station. The default log level, when logging is activated, is “WARNING” where all errors and warnings are logged. In case of technical problems it might become useful to increase the log level (“DEBUG” or “TRACE”) to log all available information and make trouble-shooting easier.

Log levels available in the drop-down box are (from highest log level down to none):

- TRACE
- DEBUG
- INFO
- WARNING
- ERROR
- FATAL
- OFF

Under “Log file”, the path to and the name of the auto-routing log can be defined. By default, the log file is stored as “autoroute.log” in the “Server” sub-folder of the iQ-VIEW installation directory.

9.2.4.7 MANIPULATING THE CALLING AE FOR AUTO-ROUTING

By default, the AE title of the iQ-VIEW server (default = “SERVER”) is used as a calling AE in the communication on DICOM level between the source application (from where the images come originally) to the iQ-VIEW and then on to the target application (to which the images shall be routed).

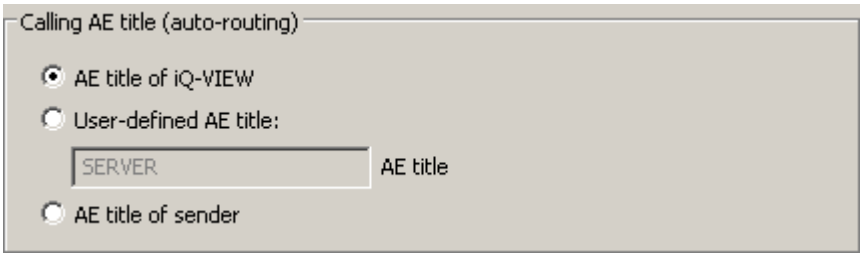
Thus, the target station (e.g. PACS) only needs to have the iQ-VIEW’s settings (AE title, IP address, port) configured in its DICOM configuration, but not the settings of all source stations from where images are auto-routed.

It is, however, possible to manipulate the calling AE in two different ways:

- by setting a specific AE title only used for auto-routing purposes
- by using the AE title of the source station as calling AE

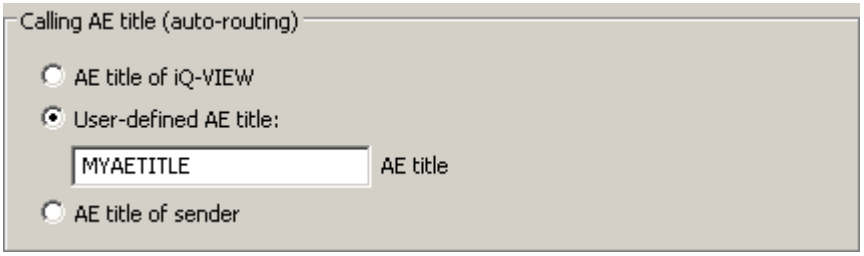
Default use of iQ-VIEW AE title:

- Go to [Start] → [All Programs] → [iQ-VIEW] → [Administration] → “Server Administration”.
- In section “Auto-routing”, go to the sub-section “General”.
- Select the option “AE title of iQ-VIEW”.
- Afterwards click “OK” to store the settings and to automatically restart the server.



How to set a specific AE title only used for auto-routing via iQ-VIEW:

- Go to [Start] → [All Programs] → [iQ-VIEW] → [Administration] → "Server Administration".
- In section "Auto-routing", go to the sub-section "General".
- Select the option "User-defined AE title" and then type in your own AE title in the field below.
- Afterwards click "OK" to store the settings and to automatically restart the server.



From now on all auto-routing processes from a source station via iQ-VIEW to a target station will be done using the calling AE title you defined.

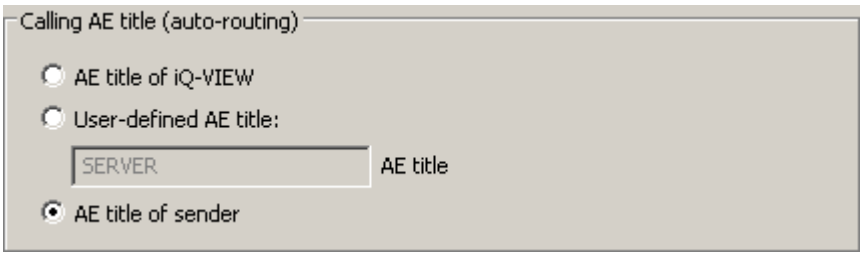
For some DICOM devices it is not important whether they know the calling application's AE title or not, others will need to know the DICOM configuration (AE title, IP address and port) of every station that tries to communicate with them. In the latter case, the defined auto-routing AE title would have to be configured in the target application for a successful auto-routing.

NOTE:

Therefore, make sure to make this AE title known to your target station (entry in its DICOM configuration), in case this station does not accept images from unknown sources.

How to use the AE title of the source station:

- Go to [Start] → [All Programs] → [iQ-VIEW] → [Administration] → "Server Administration".
- In section "Auto-routing", go to the sub-section "General".
- Select the option "User-defined AE title" and then type in your own AE title in the field below.
- Afterwards click "OK" to store the settings and to automatically restart the server.



From now on all auto-routing processes from a source station via iQ-VIEW to a target station will be done using the AE title of the source application.

For some DICOM devices it is not important whether they know the calling application's AE title or not, others will need to know the DICOM configuration (AE title, IP address and port) of every station that tries to communicate with them. In the latter case, each of the source applications, for which auto-routing is set up in iQ-VIEW would have to be configured in the target application for a successful auto-routing. Example:

> Images from CT1 (AE title = CT1) are routed through iQ-VIEW (AE title = SERVER) to the PACS (AE title = PACS)
>
> → iQ-VIEW does not need the DICOM settings of CT1 in its DICOM configuration, as the information is stored in the Server Administration.
> → PACS must know the DICOM settings of CT1 in its DICOM configuration; otherwise it will reject the association from this "unknown" station.

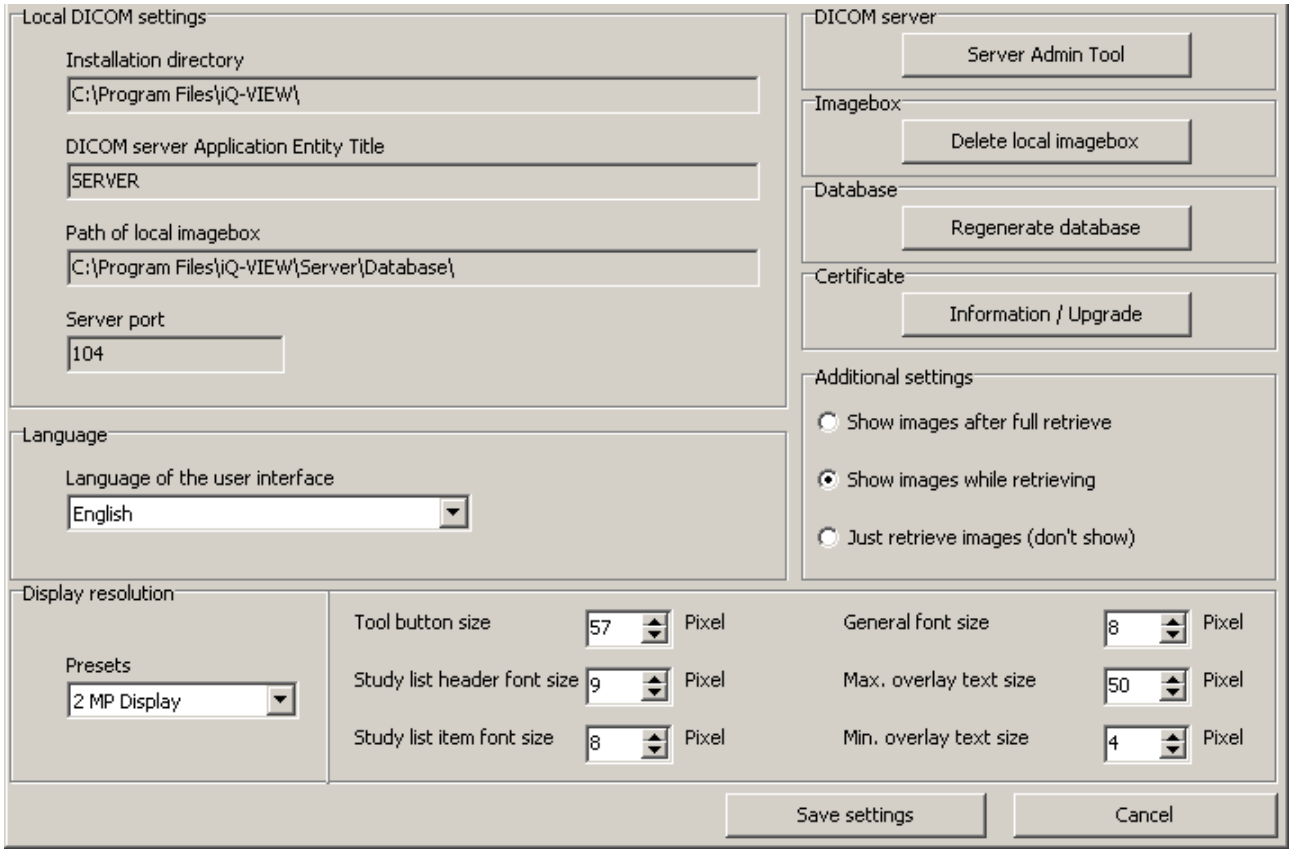
NOTE:

Therefore, make sure to make the AE title(s) of the source station(s) known to your target station (entry in its DICOM configuration), in case this station does not accept images from unknown sources.

9.3 LOCAL SETTINGS

You can change local settings by choosing the main application's "Local settings" button in the upper right-hand corner.

Access to this section can also be limited by setting an administrator password. For more information see section 9.5 Password protection of sensitive areas.



"Local settings" dialog with example entries

9.3.1 "LOCAL DICOM SETTINGS" GROUP

This section is read-only as it simply displays the local (DICOM) settings of the iQ-VIEW station that can be changed in the Server Admin Tool:

- "Installation directory" read-only field = states the directory path where iQ-VIEW is installed (by default: C:\Program Files\iQ-VIEW).
- "iQ-VIEW Server Application Entity Title" read-only field = states the AE Title of the iQ-VIEW server (by default: SERVER).
- "Path of local imagebox" read-only field = states the directory path where the iQ-VIEW local imagebox (= image folders) is placed (by default: C:\Program Files\iQ-VIEW\Server\Database).
- "Server port" read-only field = states the port on which the iQ-VIEW server is running (by default: 104).

9.3.2 "DICOM SERVER"

"Server Admin Tool" button = accesses the iQ-VIEW server administration for viewing or changing the settings of the iQ-VIEW server.

NOTE:

Alternatively, the Server Admin Tool can be accessed via [Start] → [All Programs] → [iQ-VIEW] → [Administration] → "Server Administration".

9.3.3 “Imagebox”

Clicking the “Clear local imagebox” button, you can delete the entire content of the local imagebox. Both the images and the entries in the database file are deleted. A security question assures that the content is really only deleted if the user confirms this action.

Access to this section can also be limited by setting an administrator password. For more information see section 9.5 Password protection of sensitive areas.

WARNING:

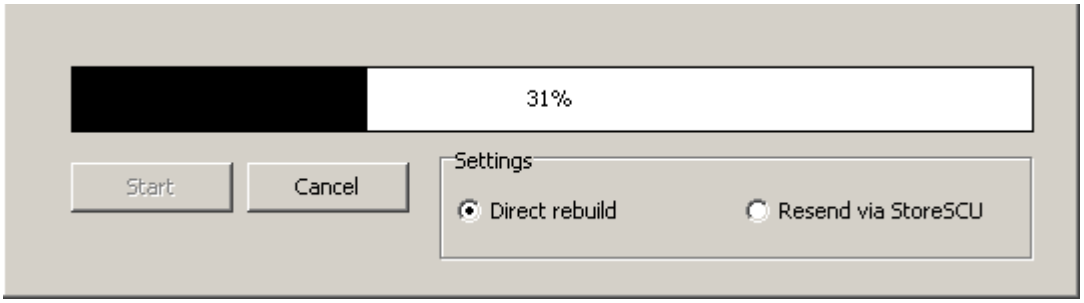
Please note that, once the local imagebox is cleared, the images are deleted entirely. There is no way to restore them, once the security question was confirmed and the deletion took place.

9.3.4 “Database”

It is possible to regenerate the database using the “Regenerate database” button. This function allows rebuilding the KPStudy.dir in case of corruption or after changing the path of the imagebox without changing the path of the database file accordingly.

Access to this section can also be limited by setting an administrator password. For more information see section 9.5 Password protection of sensitive areas.

The local database can be regenerated using two different methods (settings):



“Regenerate database” dialog

- “Direct rebuild” = the database will be reorganized by way of reading in the header data and writing it into tables (similar to importing DICOM data via “Filesystem”).
- “Resend via StoreSCU” = iQ-VIEW will send the content of the database via DICOM Store and the iQ-VIEW server back into its own database. This method takes longer; non-DICOM compliant images will be ignored.

More information will be logged in the process log (see section 9.14 Process and log information).

9.3.5 “Certificate”

The button “Information/Upgrade” under “Certificate” lets you install a (new) license, lets you reset your current license and shows details about your current license status. For these actions, three buttons are available:

- “Show license”: for displaying the current license information. These details include:
  - the product name and software version
  - the current certificate the software uses (e.g. TRIAL during the trial period),
  - the user name with which the software was activated along with the key (as long as the software is not activated the standard user name is “DEFAULT”),
  - the current activation key,
  - the current hardware fingerprint,
  - as well as the days left, the number of days that a time-limited license will still be running before the license expires. Afterwards a new license key must be purchased to use the iQ-VIEW station again. This information is not given in case an unlimited license was activated.
- “Install license”: leads to the “Enter key” dialog for the activation of a single software license by entering the registration name and activation key. If a concurrent license is active, this button is grayed-out; the license must be installed in the concurrent license server tool. For further details, please review section 5.2.1.2 Activating single licenses.
- “Reset license”: for the resetting (deactivation) of the currently installed single license in case of license migration. If a concurrent license is active, this button is grayed-out; the license must be reset in the concurrent license server tool. For further details, see section 6.1 Migrating single licenses.

Access to the sections “Install license” and “Reset license” can also be limited by setting an administrator password. For more information see section 9.5 Password protection of sensitive areas.

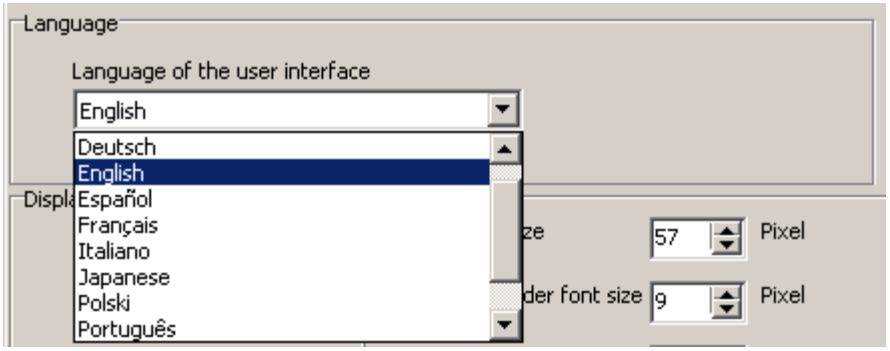
9.3.6 “ADDITIONAL SETTINGS” GROUP

- “Show images after full retrieve” = when retrieving images from a remote archive, the application will wait until all images of the requested study are retrieved before opening the viewer window.
- “Show images while retrieving” = the viewer will be opened immediately after the retrieve process is started and all already retrieved images can be viewed while the actual retrieving process runs in the background until all images are received in the local imagebox. This option will only be used when images are retrieved via DICOM from a remote archive. It is not available for import via “Filesystem”.
- “Just retrieve images (don’t show)” = during a retrieve from a remote archive the images of the study are loaded but not shown in the study table. The “View” button will turn into “Retrieve”. To view the study you

will have to switch from network to database mode. This option may be used for data collection, e.g. to later burn the collected images on CD or to view them at a later time.

9.3.7 "LANGUAGE" GROUP

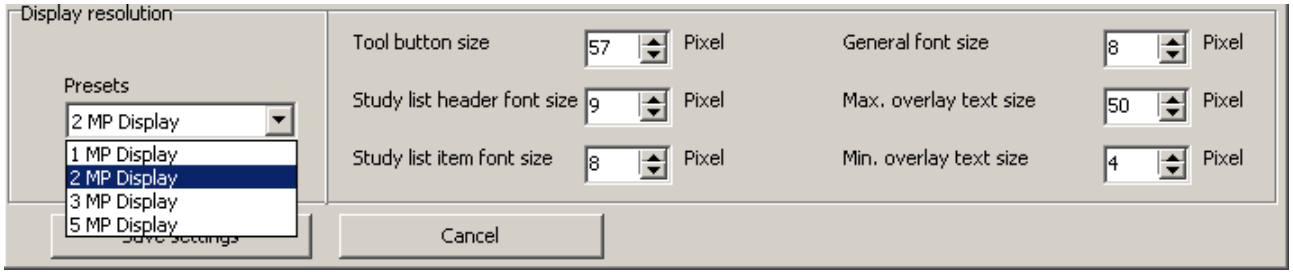
- "Language of user interface" = the drop-down box offers the possibility to directly change the language settings for the iQ-VIEW user interface. All available languages are listed. The change is immediate. To keep the newly made settings, you need to save them.



Local settings dialog with language options

9.3.8 "DISPLAY RESOLUTION"

Especially when using high-resolution monitors, the display of menu items, patient and study information as well as buttons may become too small to work comfortably with the application. For this reason, iQ-VIEW offers to change the font size both of menus and table items as well as the size of the buttons.



Local settings dialog with display resolution options

Several presets are available to adjust to:

- 1 MP monitor
- 2 MP monitor
- 3 MP monitor
- 5 MP monitor

If the presets do not meet the user's requirements, individual settings can be made to adjust the following items:

- changing the size of the tool buttons
- changing the font size of the study list headers
- changing the font size of the study list items (patient / study information)
- changing the general font size (menus of study browser and viewer); max. 12 pixel
- changing the maximum and minimum overlay text size (for viewer); for information on how to change the scaling in both viewer and print manager, see section 9.3.9 Changing the overlay font size and text scaling)

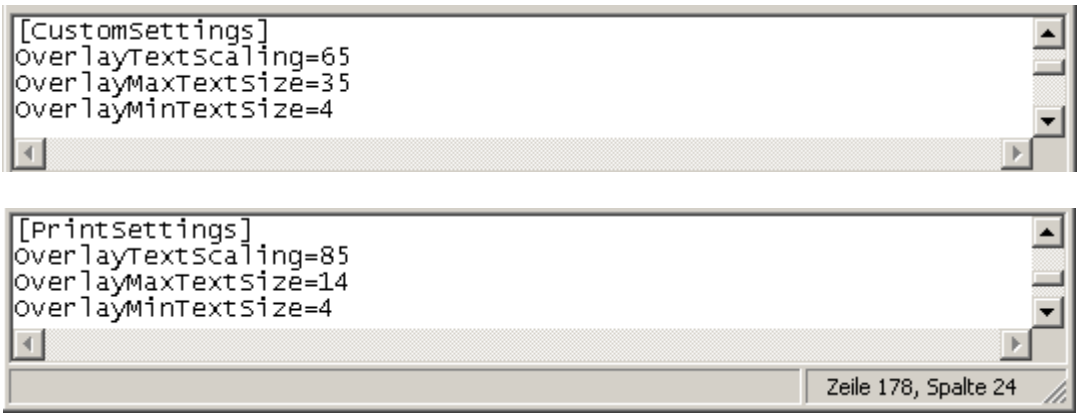
NOTE:

It is recommended to rather change the text scaling value than the maximum and minimum text size. Please refer to section 9.3.9 Changing the overlay font size and text scaling for details.

9.3.9 CHANGING THE OVERLAY FONT SIZE AND TEXT SCALING

It is possible to change the font size of the image overlay in the viewer and on the printouts created by iQ-VIEW.

The iQ-VIEW configuration file iQ-VIEW.ini offers the opportunity to change the following settings:



iQ-VIEW.ini with default settings for font size and text scaling (viewer and print manager)

For the viewer:

[CustomSettings] – Default settings
OverlayTextScaling=65 is used for the calculation of the overlay size
OverlayMaxTextSize=14 maximum size of the text overlay in pixel
OverlayMinTextSize=4 minimum size of the text overlay in pixel

NOTE:

The overlay text settings made in the iQ-VIEW.ini do not only apply to the viewer's text overlay but also to any measurements and annotations made in the images in the image processing area.

For the print manager:

[PrintSettings] – Default settings
OverlayTextScaling=85 is used for the calculation of the overlay size
OverlayMaxTextSize=14 maximum size of the text overlay in pixel
OverlayMinTextSize=4 minimum size of the text overlay in pixel

NOTE 1:

The lower the value for text scaling, the bigger are the fonts on the printouts.

NOTE 2:

Since the resolution of the print-outs is much higher than those of the previews, it might be that a high value for "MinTextSize" leads to strange overlay displays in the preview, but well-readable overlays in the printouts. We therefore recommend to only changing the "OverlayTextScaling" value.

9.4 DICOM CONFIGURATION

To configure the remote DICOM node parameters of a remote archive (PACS, workstation, modality), DICOM printer or imager or DICOM Modality Worklist you can use the main application's "DICOM settings" dialog in the upper right-hand corner.

9.4.1 CONFIGURATION OF REMOTE DICOM NODES

If iQ-VIEW is supposed to communicate with other DICOM nodes in a network, e.g. modalities (CT, MR, US, etc.), archives (PACS) or other workstations, the connection between iQ-VIEW and these DICOM nodes must be configured.

To build a DICOM association (= connection) between two DICOM nodes, both ends have "to know" each other. Therefore both stations need to know the general DICOM settings of the respective other station to be able to communicate with it:

- the Application Entity (AE) title of the Application Entity
- the IP address of the system on which the station runs
- the port on which the station listens

Example:

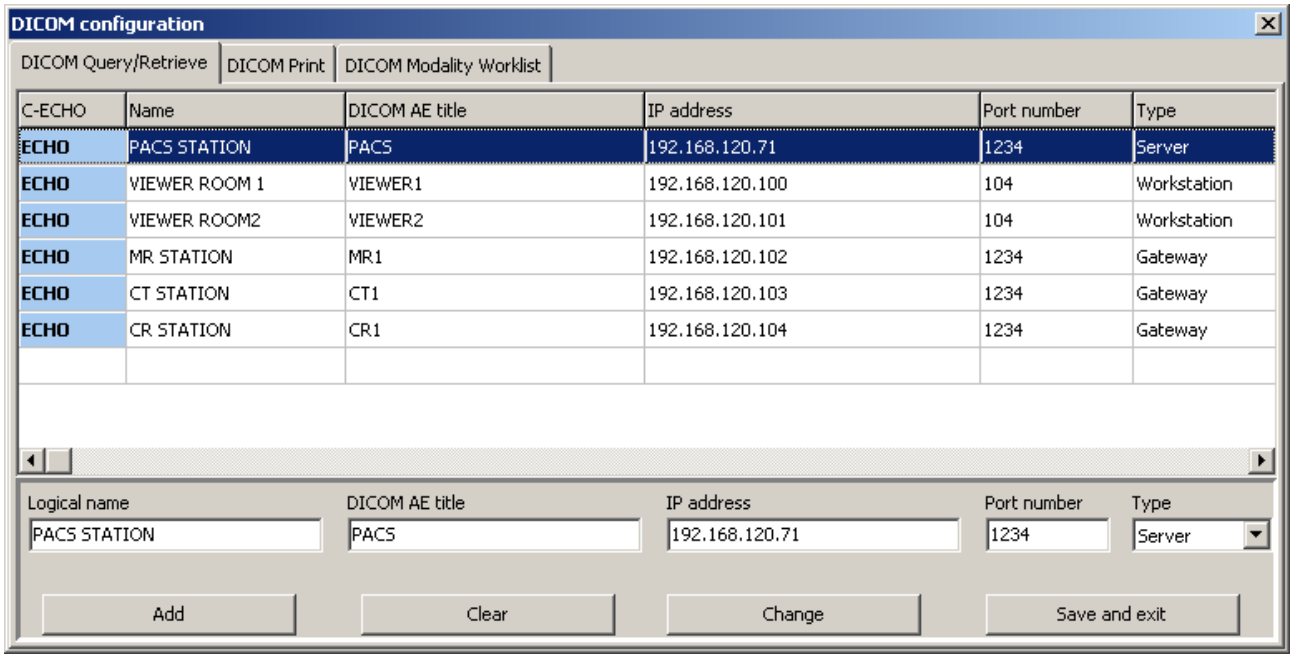
To connect iQ-VIEW to a PACS server you need to:

- enter the correct AE title, IP address and port of your PACS server in the DICOM settings of iQ-VIEW
- enter the correct AE title, IP address and port of your iQ-VIEW station in the respective DICOM station configuration of your PACS

NOTE:

Make sure that the made settings (AE title, IP, port) are correct on both sides, otherwise the association will fail. Also ensure that the port on which the applications run are free and not blocked by firewalls or anti-virus programs, otherwise images cannot be transmitted and you will receive errors.

To configure the DICOM Query/Retrieve settings, open the tab "DICOM Query/Retrieve":



Remote DICOM nodes dialog with example entries

Enter the following information for each station that you would like to connect to iQ-VIEW:

- Logical name = a freely chosen name (alias) for the remote DICOM node. The name is only used internally to identify the station.
- DICOM AE title = Application Entity Title of the remote DICOM node.
- IP address = hostname or IP network address of the remote DICOM node. If a hostname is used, be sure that the local DNS service or the DNS in the network is able to translate this hostname. Using the IP address is recommended.
- Port number = network port of the remote DICOM node.
- Type = defines what the station can be used for:
  - Gateway → station can only be used for Query/Retrieve (requesting studies from remote archives)
  - Workstation → station can only be used for Transfer (sending studies from iQ-VIEW to the target station)
  - Server → station can be used both for Query/Retrieve and Transfer

NOTE:

The ability to receive DICOM data from another DICOM station (sent to iQ-VIEW by this station) is not defined or limited by these types. DICOM data can be received for any set type.

The "ECHO" button allows sending a C-ECHO request (on click) to the selected DICOM node to verify the association (connection). Please note that a C-ECHO is also successful if the port number is incorrect or the port is blocked.

You can add an unlimited number of remote DICOM nodes.

When more than one remote DICOM node is entered, it is possible to change their order by dragging the individual entries to another line in the table. The order used in the "DICOM Query/Retrieve" tab will then also be used in the list of available DICOM archives on the "Network" table and on the "Transfer" button.

NOTE:

The DICOM node parameters will be written into a configuration file named "DICOM.txt"". To import DICOM node settings from another iQ-VIEW installation, simply copy and replace this file.

9.4.1.1 MULTI-THREADING

By default the DICOM SCP interface will use multi-threading in a network to process several DICOM thread jobs (query/retrieve, print, send, etc.) simultaneously. Therefore individual jobs can be processed as they are initiated – at the same time. If, for some reason, multi-threading must be deactivated, it can be done by using a server parameter. The possible parameters are listed in the Server Administration and can either be activated or deactivated. For further details, please refer to section 9.2.2.6 Advanced server settings.

9.4.1.2 BUTTON FUNCTIONS

- "Add" = adds the information entered in the text fields to the Query/Retrieve list as a new station; to store the settings for the station, click "Save and exit".
- "Clear" = clears the fields of the selected station; to delete this station permanently, click "Save and exit".
- "Change" = changes the entries made for an existing station in the Query/Retrieve list; to change the settings for the station permanently, click "Save and exit".
- "Save and exit" = stores all information in the configuration file "DICOM.txt" and closes the dialog window.

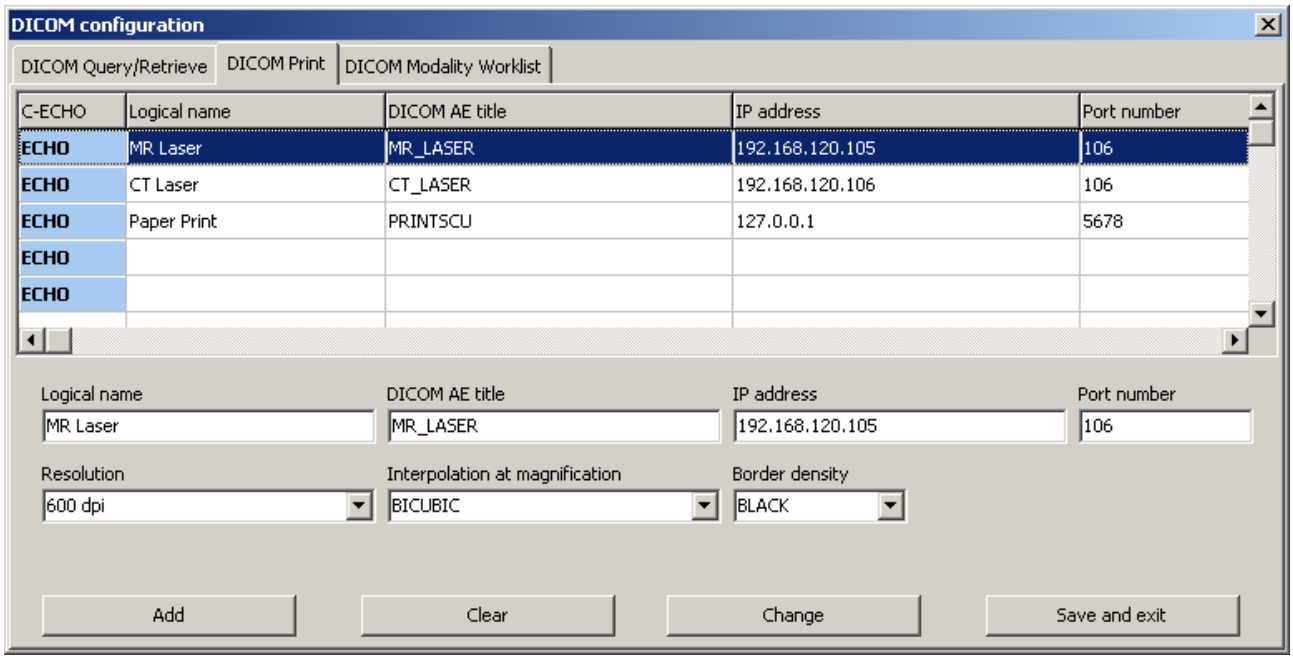
9.4.2 CONFIGURATION OF DICOM PRINT NODES

iQ-VIEW offers the option to print DICOM images either on paper or film using DICOM printers and film imagers. To be able to use this function, it is necessary to set up the DICOM printer / imager in the DICOM print settings.

NOTE:

iQ-VIEW currently only supports the Grayscale Print Management Meta SOP class. It is therefore only possible to hand over gray-scale DICOM print jobs from iQ-VIEW to a connected DICOM printer / imager. For details please refer also to the iQ-VIEW DICOM Conformance Statement.

To configure the DICOM Print settings, open the tab “DICOM Print”:



DICOM print dialog with example entries

Enter the following information for each DICOM printer / image that you would like to connect to iQ-VIEW:

- Logical name = a freely chosen name (alias) for the DICOM Print Server. The name is only used internally to identify the DICOM printer / imager easily.
- DICOM AE title = Application Entity title of the DICOM printer / film imager.
- IP address = hostname or IP network address of the DICOM print server. If a hostname is used, be sure that the local DNS service or the DNS in the network is able to translate this hostname. The use of the IP address is recommended.
- Port number = network port of the DICOM print server.

For the correct processing of print jobs additional settings regarding “Resolution”, “Interpolation at magnification” and “Border density” are necessary.

- Resolution = predefined options are: 100, 200, 300, 600 and 1200 dpi; but you may enter any other value that corresponds with the dpi value of your printer/imager.
- Interpolation at magnification = options are: REPLICATE, BILINEAR, BICUBIC, CUBIC, NONE.
- Border density = options are: 150, 20, BLACK, WHITE.

NOTE:

Please check the DICOM Conformance Statement(s) of the DICOM printers / imagers to make sure which configurations are supported by your device. E.g. Fuji DryStar imagers usually only support CUBIC as interpolation. An incorrect interpolation will lead to a failed association and the print jobs cannot be executed. If a print job still fails after correcting these settings, it may be caused by selecting a wrong paper format in the iQ-VIEW Print Manager. The DICOM Conformance Statement of the printer / imager will give information on the supported paper formats.

The “ECHO” button allows sending a C-ECHO request (on click) to the selected DICOM print server to verify the association (connection).

When more than one remote DICOM printer/imager is entered, it is possible to change their order by dragging the individual entries to another line in the table.

9.4.2.1 BUTTON FUNCTIONS

- “Add” = adds the information entered in the text fields to the DICOM Print list as a new printer; to store the settings for the printer, click “Save and exit”.
- “Clear” = clears the fields of the selected printer; to delete this printer permanently, click “Save and exit”.
- “Change” = changes the entries made for an existing printer in the DICOM Print list; to change the settings for the printer permanently, click “Save and exit”.
- “Save and exit” = stores all information in the configuration file “printer.txt” and closes the dialog window.

9.4.2.2 ADDITIONAL CONFIGURATION OPTIONS

When performing a DICOM print job, iQ-VIEW will send default values for specific DICOM attributes, such as the “MediumType”. In some cases, these default values may not be supported by the connected DICOM imager; it might expect different values.

To provide more compatibility with the variety of DICOM imagers available on the market, iQ-VIEW allows the configuration of various DICOM print attributes in addition to the general settings explained in section 9.4.2 Configuration of DICOM print nodes.

NOTE:
For a correct configuration please consult the DICOM Conformance Statement of your DICOM imager.

The following DICOM attributes, necessary for the creation of a film session, film box or image box of a print job, can be manipulated to ensure that the print job can be executed successfully and as intended. These DICOM attributes can be configured in the iQ-VIEW main configuration file “iQ-VIEW.ini”.

ATTRIBUTE NAME	ATTRIBUTE TAG	VR	VM	POSSIBLE VALUES
Film Session Attributes				
Number of Copies	(2000,0010)	IS	1	1 (Default) n (n = specified number)
Print Priority	(2000,0020)	CS	1	LOW MED (Default) HIGH
Medium Type	(2000,0030)	CS	1	PAPER CLEAR FILM BLUE FILM (Default) MAMMO CLEAR FILM

				MAMMO BLUE FILM
Film Destination	(2000,0040)	CS	1	MAGAZINE PROCESSOR (Default) BIN_i (i = bin number)
Film Box Attributes				
Empty Image Density	(2010,0110)	CS	1	0 (Default) n (n = specified number)
Min Density	(2010,0120)	US	1	Default = attribute not sent n (n = specified number)
Max Density	(2010,0130)	US	1	Default = attribute not sent n (n = specified number)
Trim	(2010,0140)	CS	1	YES NO (Default)
Image Box Attributes				
RequestedDecimateCropBehavior	(2020,0040)	CS	1	CROP (Default) DECIMATE FAIL

These parameters do not yet exist in the default iQ-VIEW.ini but will have to be added to the section [PrintSettings] of the iQ-VIEW.ini, if necessary. They will look as follows:

[PrintSettings]
NumberOfCopies=
PrintPriority=
MediumType=
FilmDestination=
MinDensity=
MaxDensity=
EmptyImageDensity=
Trim=
RequestedDecimateCropBehavior=[1]

The value for each of these parameters must be added after the "=", e.g. MediumType=CLEAR FILM.

NOTE:

It is recommended to only add those parameters that really need to be configured. For all others, the default values should be applied.

[1] The attribute "RequestedDecimateCropBehavior" (2020,0040) will only be sent in combination with the attribute "RequestedImageSize" (2020,0030), which exists only in case of a real-size print job. If the iQ-VIEW.ini parameter is empty (no value), the entire attribute will not be sent.

iQ-VIEW will behave as follows:

- If a particular parameter does not exist in the iQ-VIEW.ini, then the default value for this DICOM attribute will be sent, e.g. “BLUE FILM” as medium type.
- If a particular parameter is added to the iQ-VIEW.ini and contains a valid value (see table above), then this value will be sent instead of the default value, e.g. “CLEAR FILM” as medium type.
- If a particular parameter is added to the iQ-VIEW.ini but contains an invalid value, the iQ-VIEW process log will state this as an error. The print job will then fail.

To apply any of these parameters for all your DICOM print jobs, please follow the instructions below:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [PrintSettings].
- There, add the parameter you need and enter the correct value after the “=”.
- Add further parameters with their values, if necessary.
- Save the changes and restart iQ-VIEW.

NOTE:

Please keep in mind that these settings made in the iQ-VIEW.ini are globally used for all DICOM imagers and printers connected to iQ-VIEW.

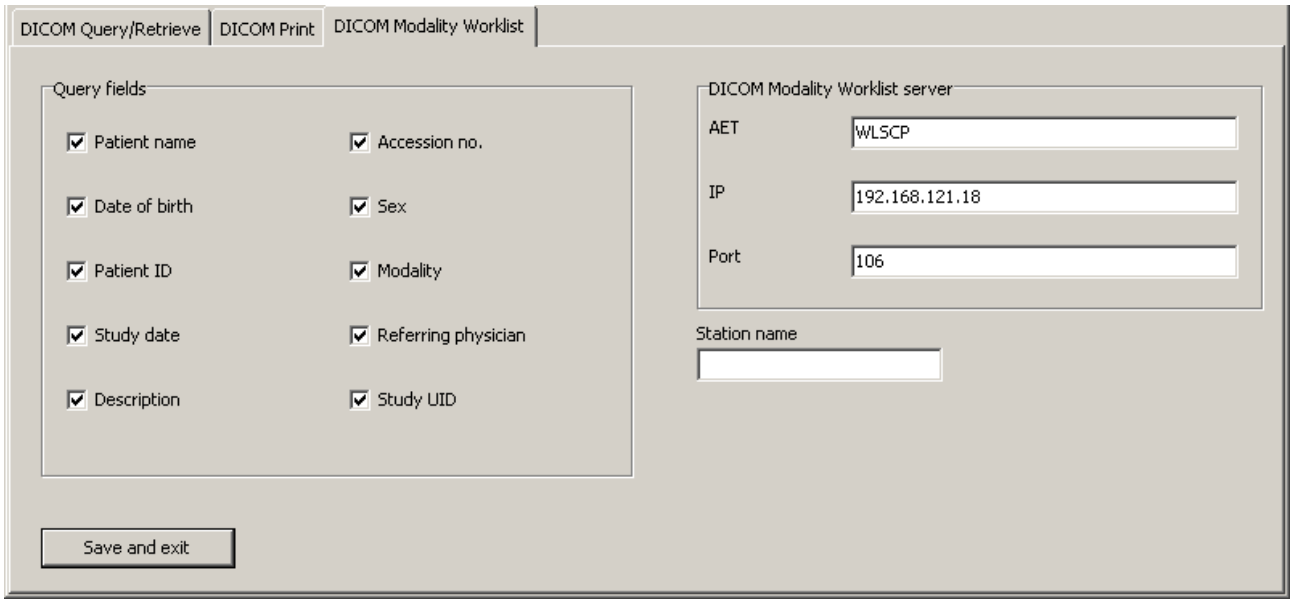
9.4.3 DICOM MODALITY WORKLIST SETTINGS

iQ-VIEW PRO includes a DICOM Modality Worklist client and can therefore be connected to a DICOM Modality Worklist. This makes it possible to query the worklist, e.g. created by the HIS/RIS.

Worklist information can be used to:

- modify patient / study / series data on either study or series level, using the “Modify” function
- import patient and study information and matching them with imported image files before converting them to DICOM, using the “Import” dialog

To configure the DICOM Modality Worklist settings, open the tab “DICOM Modality Worklist”:



DICOM Modality Worklist dialog with example entries

Enter the following information for the DICOM Modality Worklist that you would like to connect to iQ-VIEW:

- AET = Application Entity title of the DICOM Modality Worklist server.
- IP = hostname or IP network address of the DICOM Modality Worklist server. If a hostname is used, be sure that the local DNS service or the DNS in the network is able to translate this hostname. The use of the IP address is recommended.
- Port = network port of the DICOM Modality Worklist server.

Further settings are:

- Station name:
  Further enter the name of the station (modality) in the “Station name” field, in case you wish to display only patient information concerning a specific modality.

- Query fields:
  Choose your query parameters by selecting the query fields you wish to include. The activated parameters will be taken over into the “Modify” dialog or into the DICOM text fields of the “Import” dialog. Parameters that were not selected will either remain in the original and will not be changed (“Modify”) or will be left blank (“Import”).

  Available parameters are:
  - Patient name
  - Date of birth
  - Patient ID
  - Study date
  - Description
  - Accession number
  - Sex
  - Modality

- Referring physician
- Study UID

- "Save and exit":
  To store the configuration that was made and automatically then close the dialog.

9.4.4 OPTIONS TO CONFIGURE C-FIND SCU REQUESTS

To receive DICOM information from connected DICOM nodes, such as archives or DICOM Modality Worklists, the SCU component of iQ-VIEW sends C-FIND requests to the called station to query for this information. Sometimes, the request does not have the outcome that the user expects. This can happen when:

- iQ-VIEW sends a query parameter (i.e. search filter) that the called station does not understand or support, or
- the user would like to receive certain information that is, however, not queried by default.

With the help of a particular configuration file, it is possible to configure the various query forms according to the requirements of the user and/or to the limitations of the connected DICOM stations.

WARNING:

This configuration should only be performed by personnel with sufficient knowledge and expertise about DICOM processes in general, the medical network in which this configuration is to be used and particularly about the query behavior of the involved DICOM stations. If configured wrongly, the queries may not work at all.

The configuration of queries (C-FIND) is currently possible for the following operations:

- queries to remote DICOM archives
- queries to DICOM Modality Worklists

Queries to remote DICOM archives can be configured both on study level (which results in the listing of all matching DICOM studies in the "Network" patient or study list) and on series level (performed when selecting specific studies and retrieving them into the local imagebox). Theoretically, also image level queries can be configured. However, this form of query is currently not used by iQ-VIEW.

To configure one or more query operations for iQ-VIEW's SCU component, follow the steps below:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Then go to the subfolder "Config" and select the configuration file "NetworkTagExposition.ini", which can be opened in any text editor.
- There select the category for which you would like to adapt the queries:
  - [FindSCUStudy]: to alter the queries on study level (clicking "Search" when on "Network")
  - [FindSCUSeries]: to alter the queries on series level (used while retrieving DICOM data from a remote DICOM archive)
  - [FindSCUImage]: not yet used

- [FindSCUWorklist]: to alter the queries made to a connected DICOM Modality Worklist (clicking "Search" when in "DICOM Modality Worklist" dialog)

- Two different options are available to adapt the default queries:
  - You may exclude specific DICOM attributes from being sent by default in a query by using the command "[GroupNumber,ElementNumber]=0"; e.g. your PACS does not support the attribute "BodyPartExamined" (0018,0015); therefore, you exclude this attribute by entering the following command: 0018,0015=0
  - You may exchange a DICOM attribute sent by default in a query for another attribute whose information you would like to receive; e.g. you are working in a hospital and the information where a patient is currently located is more important to you than knowing the referring physician; therefore, you exchange the attribute for "ReferringPhysiciansName" (0008,0090) for that of the "CurrentPatientLocation" (0038,0300).

  The configuration file already provides examples for better understanding.
- After you have made all adaptations, save the changes and restart iQ-VIEW.

NOTE:

Be sure to verify that the configurations made (the DICOM attributes set/altered) are supported by the connected DICOM stations. Consult the DICOM Conformance Statements of the respective DICOM devices. In case the configuration leads to issues performing the respective queries successfully, simply open the configuration file "NetworkTagExposition.ini" again and disable/delete the responsible settings. Afterwards restart iQ-VIEW.

Effects on search filters:

When the network queries on study level (section [FindSCUStudy]) or the queries to a DICOM Modality Worklist (section [FindSCUWorklist]) are adapted, this also has influence on the search filters in the respective dialogs:

- the search filter section in the study browser
- the search filter section in the "DICOM Modality Worklist" dialog

If an attribute was removed from the default query, the corresponding search filter will not work anymore. For example, if the referring physician is no longer included in the queries sent to the connected archive/worklist, then entering a referring physician's name into the search filters will not have any effect.

If a default attribute was exchanged for another attribute, the search filter for the default attribute will now be used for the new attribute. For example, if the referring physician query was exchanged for the query for the current patient location, any entry in the "referring physician" search filter will now be applied to current patient location.

NOTE:

You may adapt the iQ-VIEW language files to alter the labels for the affected search filters. Please note, however, that by updating the application to a newer version, these adaptations will be lost due to an update of the language files. They will have to be applied again after the update.

9.4.5 ALWAYS RELOADING IMAGES FROM REMOTE ARCHIVES

When querying a remote archive, a list of available studies matching the search filters will be shown in the study table.

If a study found in a remote archive is marked for loading, iQ-VIEW checks first whether this study is already available in the local imagebox. If it is, the study will by default directly be loaded from the local imagebox. The loading will therefore be faster than from a remote archive.

If only one series of a study is marked for loading, iQ-VIEW will not check whether the series is available locally. They will be loaded from the archive.

If all series of a study are marked, iQ-VIEW will check again locally for availability, as if a study is marked. All series are then loaded from the local imagebox in case it is stored there.

WARNING:

iQ-VIEW will not realize whether a local study contains all series that the same study on the remote archive contains. If on the remote archive a new series (e.g. an SR) was added AFTER you loaded the study into the local imagebox and you mark the whole study for loading, iQ-VIEW will instead use the study from your local imagebox that does not include the newly added series.

To load the updated study, including all series, from the remote archive, it is usually necessary to first delete the existing study from the local imagebox of iQ-VIEW. The study can then be imported again from the remote archive.

To always reload studies from the remote archive, no matter if they already exist in the local imagebox and without having to delete the existing study, you need to make the appropriate setting in the iQ-VIEW.ini configuration file:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [CustomSettings].
- There, search for the parameter “AlwaysReload=”, which is – by default – set to “0” (false).
- Change the setting to “AlwaysReload=1” to activate the reload.
- Save the changes and restart iQ-VIEW.

NOTE:

We recommend using this feature only if necessary, because it may heavily increase the network traffic and therefore may lead to cut-backs in the performance of iQ-VIEW (becomes slower).

9.4.6 USING IMAGE COMPRESSION FOR SENDING FROM iQ-VIEW (SECOND PROPOSED TRANSFER SYNTAX)

In iQ-VIEW you can define with which transfer syntax you would like to send images to another station. iQ-VIEW, or rather the DICOM component responsible for sending images via DICOM, will then propose this transfer syntax as the first possible transfer syntax to the target station.

If the target station accepts this transfer syntax, the images will be sent using it. If this transfer syntax is not supported by the target station and the receiving station gives back this information to iQ-VIEW to further negotiate, iQ-VIEW will then propose:

- first the transfer syntax in which the images are stored in the local imagebox (by default Little Endian Explicit)
- secondly Little Endian Implicit, the transfer syntax that every DICOM compliant station must support

By default, the second proposed transfer syntax is JPEG lossless (1.2.840.10008.1.2.4.70). In that case, when sending image data stored uncompressed in the local imagebox to another station iQ-VIEW will then propose:

Proposed transfer syntax: 1.2.840.10008.1.2.4.70
Proposed transfer syntax: 1.2.840.10008.1.2.1
Proposed transfer syntax: 1.2.840.10008.1.2

If you want to change this setting, follow the instructions below:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [AdditonalSettings].
- There, search for the parameter "SecondProposedTransferSyntax=", which is – by default – set to "1.2.840.10008.1.2.4.70" (JPEG lossless).
- Change the setting "SecondProposedTransferSyntax=" to your preferred transfer syntax, using the UID (see list below).
- Save the changes and restart iQ-VIEW.

9.4.6.1 POSSIBLE TRANSFER SYNTAXES

The transfer syntax must be defined by its UID, not its name, e.g. 1.2.840.10008.1.2.4.90 (for JPEG 2000 compression). Possible are all transfer syntaxes supported by the DICOM component responsible for outgoing data transmission:

- 1.2.840.10008.1.2 (Implicit VR Little Endian)
- 1.2.840.10008.1.2.1 (Explicit VR Little Endian)
- 1.2.840.10008.1.2.2 (Explicit VR Big Endian)
- 1.2.840.10008.1.2.4.50 (JPEG lossy)
- 1.2.840.10008.1.2.4.51 (JPEG lossy Extended)
- 1.2.840.10008.1.2.4.70 (JPEG lossless)
- 1.2.840.10008.1.2.4.80 (JPEG-LS (lossless))
- 1.2.840.10008.1.2.4.81 (JPEG-LS lossy (near lossless))
- 1.2.840.10008.1.2.4.90 (JPEG 2000)
- 1.2.840.10008.1.2.4.91 (JPEG 2000 lossless and lossy)

Please also refer to the iQ-VIEW DICOM Conformance Statement for detailed information.

For the selection of lossy transfer syntaxes as second proposed TS, i.e. JPEG lossy, JPEG lossy Extended as well as JPEG 2000 lossless and lossy, there also exist parameters in the iQ-VIEW.ini, section "[AdditionalSettings]", that allow the setting of the compression ratio/quality.

- "StoreJ2KLossyCompressionRatio=" is used to define the compression quality when sending DICOM objects, if parameter "SecondProposedTransferSyntax=" is set to "1.2.840.10008.1.2.4.50" (JPEG lossy baseline) or "1.2.840.10008.1.2.4.51" (JPEG lossy extended); default is 80 (80% image quality)
- "StoreJ2KLossyCompressionRatio=" is used to define the compression ratio for sending DICOM objects, if parameter "SecondProposedTransferSyntax=" is set to "1.2.840.10008.1.2.4.91" (JPEG 2000 lossy and lossless); default is 4 (four times compression)

9.5 PASSWORD PROTECTION OF SENSITIVE AREAS

To limit the access of regular users to sensitive areas it is possible to protect those areas by password. The password protection can be set for:

- the "Local settings" dialog,
- the "DICOM settings" dialog,
- the data deletion and database regeneration functions
- the license installation and reset functions, and
- the "Server Admin Tool".

9.5.1 ACTIVATING PASSWORD PROTECTION FOR "LOCAL SETTINGS" AND "DICOM SETTINGS"

The password for the "Local settings" and the "DICOM settings" must be set in the configuration file iQ-VIEW.ini:

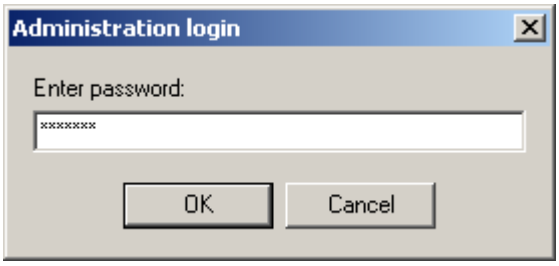
- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [CustomSettings].
- Manually add the parameter "AdminPassword=".
- Select your password and type it after '='. The password can be freely chosen, e.g. AdminPassword=viewer2
- Save the changes and restart iQ-VIEW.

iQ-VIEW.ini with AdminPassword example

WARNING:

Please note that the iQ-VIEW configuration file as well as the password dialog does NOT support UNICODE characters. Please make sure to not use such characters when selecting your password.

Afterwards when trying to access the “Local settings” or the “DICOM settings” dialog, you will be prompted to type in the password:



Password prompt

NOTE:

If the entry is set, but no password is selected, the Administrator Login prompt will not be displayed.

9.5.2 ACTIVATING PASSWORD PROTECTION FOR DATA DELETION, DB REGENERATION AND LICENSE FUNCTIONS

The password set for the “Local settings” and “DICOM settings” as described above in section 9.5.1 Activating password protection for “Local settings” and “DICOM settings”, does also apply to the following functions:

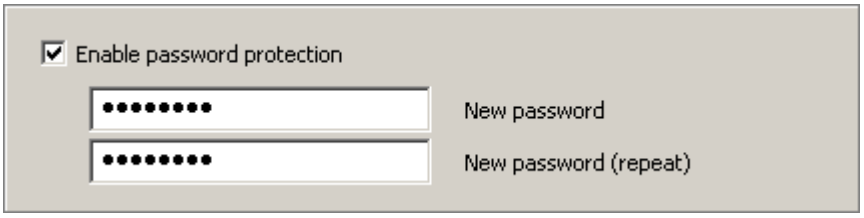
- “Delete local imagebox” in the “Local settings” for the deletion of the entire imagebox (all studies stored locally),
- “Regenerate database” in the “Local settings” for executing a regeneration of the iQ-VIEW database.
- “Install license” and “Reset license” in the “Local settings” section “Certificate” for installing a new license or resetting an existing license. The display of current license information (“Show license”) remains unaffected.

In all cases, the “Administration login” dialog will be displayed and the user will be prompted to enter the password.

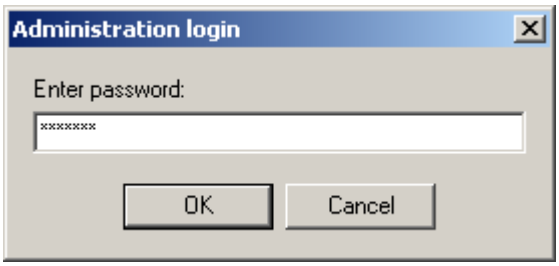
9.5.3 ACTIVATING PASSWORD PROTECTION FOR THE “SERVER ADMIN TOOL”

To also activate the password protection for accessing the “Server Admin Tool”, the appropriate setting must be made in the server administration. Follow the steps below to apply password protection:

- Open the Server Admin Tool and go to the “General” section.
- There select the sub-section “Password”.
- Mark the checkbox “Enable password protection”.
- Add the password you would like to use in the field “New password” and then repeat it in the line “New password (repeat)”.
- At last click “OK” to save the settings and to automatically restart the server.



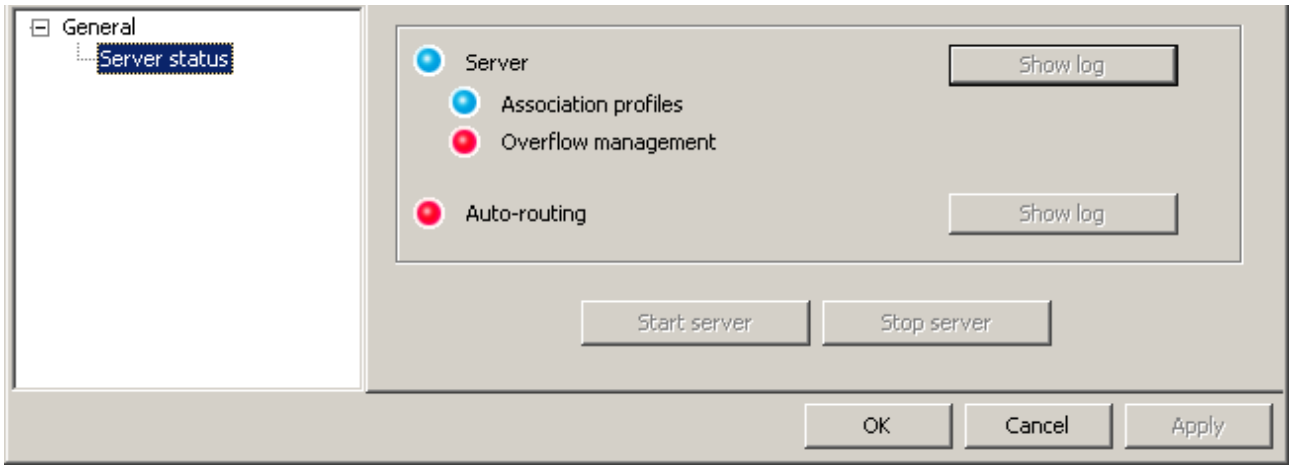
Afterwards when trying to access the "Server Admin Tool" dialog – either from inside the iQ-VIEW application or via the "Server Administration" entry in the "All programs" list, you will be prompted to type in the password:



Password prompt

NOTE:
If the password protection option is activated, but no password is selected, the Administration login prompt will not be displayed.

If the user does not know the password to access the server administration, a click on "Cancel" will, nevertheless, at least show the server status. No other configuration details can be accessed:



Server status

9.6 DISPLAY SETUP

9.6.1 DISPLAY SETUP OPTIONS

iQ-VIEW can be set up across several displays. A dual display configuration is possible as well as a configuration with three displays. The following setups are possible:

- Using iQ-VIEW on one display: both the Study Browser and the Viewer window are placed on the same screen.
- Using iQ-VIEW on a dual display system: the Study Browser (usually) runs on the primary display and the Viewer window is dragged across both displays.
- Using iQ-VIEW with three displays:
  - the Viewer window is dragged across two displays and the Study Browser runs on one of them; on the third display a RIS client is set up
  - the Study Browser runs on one display (often a smaller color display) and the Viewer window is dragged across two displays (often high-resolution displays, e.g. IMAGE DISPLAYS)

9.6.2 POSITIONING THE STUDY BROWSER

By default the Study Browser will come up on the primary display. You can either set it up as full screen by maximizing the window or changing the size of the window by dragging the frame with the pressed mouse-button to the desired size. Using the program bar you can drag the window to the correct position.

In case you wish to place the Study Browser on a secondary display you first have to deactivate the full screen mode. Afterwards grab the window by clicking into the program bar with the left mouse-button and drag it over onto the secondary display (holding left mouse-button). After you drop it on the screen you can adjust the size and position or reactivate the full screen mode.

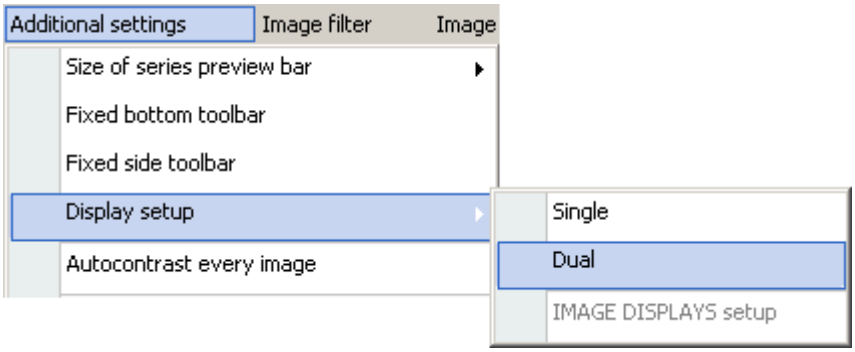
Afterwards restart iQ-VIEW. In either case, the size and position of the Study Browser window is stored in the iQ-VIEW.ini configuration file and will be remembered with the next application start.

9.6.3 POSITIONING THE VIEWER WINDOW

By default the Viewer window will come up on the primary display. You can either set it up as full screen by maximizing the window or changing the size of the window by dragging the frame with the pressed mouse-button to the desired size. Using the program bar you can drag the window to the correct position.

In case you wish to place the Viewer window on one secondary display only, you can do so by first deactivating the full screen mode of the window. Afterwards grab the window by clicking into the program bar with the left mouse-button and drag it over onto the secondary display (holding left mouse-button). After you drop it on the screen you can adjust the size and position or reactivate the full screen mode.

When setting up the Viewer window across two displays, you first need to open the viewer. Make sure that the Viewer window does not run maximized in full screen mode. Then go to the “Additional Settings” menu, select “Display setup” and then “Dual” to activate the dual monitor mode. The viewer will then automatically extend the viewer window across the two screens. This creates two virtual windows, each with its own thumbnail preview bar and its own bottom tool bar.



For the rare case that the viewer window is not extended automatically, simply drag the frame of the window with the left mouse-button across the two screens onto which you wish to spread the viewer. Adjust the size and position of the window to fill the two screens. Do **NOT** maximize the window to full screen mode.

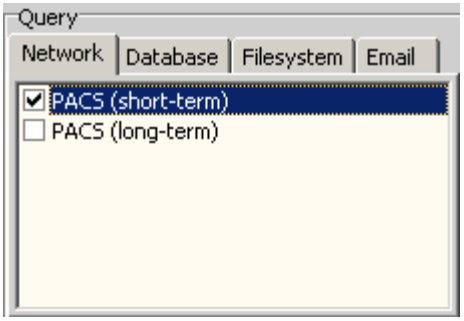
Afterwards restart iQ-VIEW. The size and position of the Viewer window is stored in the iQ-VIEW.ini configuration file and will be remembered with the next application start.

NOTE:

Make sure to use the same kind of displays (same size, same resolution) for spreading the viewer, otherwise it will not be possible to correctly adjust the window across two screens with the center of the window remaining right between display one and two.

9.7 CONTROLLING THE VIEWER FROM A HIS/RIS

iQ-VIEW accepts requests from a HIS or RIS in form of accession numbers or patient IDs (GDT files) to directly open a needed study in the viewer or display a list of available studies in case of several hits for one patient ID. The requested studies can be available in the local imagebox of iQ-VIEW or in an activated remote archive to which the iQ-VIEW station has a DICOM connection.



Example: Activated connection to short-term PACS

9.7.1 HIS/RIS REQUEST VIA ACCESSION NUMBER

9.7.1.1 REQUESTING A SINGLE ACCESSION NUMBER

It is possible to open iQ-VIEW directly from a HIS/RIS by starting a request in the command line, using the accession number assigned to the study.

The request in the command line must define both the path to the iQ-VIEW.exe and the accession number for which a search shall be performed, e.g.:

"C:\Program Files\iQ-VIEW\iQ-VIEW.exe" -29570092

NOTE:

Please remember to add quotation marks ("…") for a path that contains spaces. If no spaces exist, the quotation marks are not needed.

If not yet open, iQ-VIEW will start upon the request and search for all available studies matching the requested accession number. If already started, iQ-VIEW will immediately search for available studies. The search is executed in all previously selected DICOM archives ("Network" tab) first and secondly, in the local imagebox ("Database" tab).

The results are directly loaded into the viewer. If no match was found, iQ-VIEW will only open the study browser and display the information that no study was found.

9.7.1.2 REQUESTING MULTIPLE ACCESSION NUMBERS

iQ-VIEW can also process more than one accession number as parameter. To start a request from a HIS/RIS for several accession numbers at once, you only need to add them to the command line, e.g.:

"C:\Program Files\iQ-VIEW\iQ-VIEW.exe" -12345 -23456 -34567

9.7.2 HIS/RIS REQUEST VIA BDT/GDT INTERFACE

With some practice administration systems it is only possible to start a program but not to use variable parameters like patient IDs. In this case a HIS/RIS request for iQ-VIEW can only be done using a GDT file, in which the patient ID is stored.

The patient ID is the only necessary parameter iQ-VIEW needs to search for a study. However, a GDT file can include a number of different parameters (see below for more information).

9.7.2.1 REQUESTING A PATIENT ID USING A GDT FILE

The syntax of a complete command line in a BDT/GDT file is as follows:

[Line length incl. CR LF][Line contents field label][BDT field contents]

For the patient ID 1234, this would mean the following command line:

[013][3000][1234] = 01330001234

This parameter would have to be stored in a GDT file, e.g. import.gdt. The command is a combination of the GDT file request and a file name. The GDT file must be preconfigured and stored in the stated path to make the correct request.

The command would be:

[directory path to iQ-VIEW.exe] [parameter –g + directory path to GDT file]

Example:

"C:\Program Files\iQ-VIEW\iQ-VIEW.exe" –g C:\GDT\import.gdt

NOTE:

Please remember to add quotation marks ("…") for a path that contains spaces. If no spaces exist, the quotation marks are not needed.

When receiving this request, iQ-VIEW retrieves the patient ID from this file. Using the found patient ID, iQ-VIEW searches all selected remote archives as well as its local imagebox for studies of the patient with this patient ID.

If only one study is found it will be displayed in the viewer. If more than one study is available for this patient ID, iQ-VIEW will list them all in the Study Browser. This way it is easily possible to select the desired study or studies.

9.7.2.2 DESCRIPTION OF THE BDT/GDT INTERFACE

Commercial German, Austrian and Swiss practice software packages often use the German "BDT/GDT interface" to send patient and study information to modalities and other DICOM stations. iQ-VIEW can interact with these systems using this standard.

The "BDT/GDT-interface" is a defined description to transfer patient and examination related data between medical systems via text files or serial communication.

Reference documents for the BDT/GDT interface in iQ-VIEW are:

- German version: Anbindung von medizinischen Messgeräten (GDT – Gerätedaten-Träger). Schnittstellenbeschreibung zum systemunabhängigen Datentransfer zwischen Praxis-EDV Systemen und Messgeräten. Version 2.1 (5/2001). Qualitätsring Medizinische Software, Kassenärztliche Vereinigung Hessen, Darmstadt
- English version: Connecting Medical Measuring Instruments. Interface Description for system-independent Data Transfer between electronic Data Processing Systems in Surgeries and Measuring Instruments. Version 2.1 (5/2001). Quality Associocation [sic] for Medical Software

iQ-VIEW supports the GDT interface based on text files as defined in the GDT version 2.1. A practice application has to be able to launch a command as shown below:

COMMAND: iQ-VIEW.exe –g « filename »

The command has three parts. The first is the iQ-VIEW application call. The second parameter ("-g") indicates to load a GDT file and the third names the related file containing the data. The file name of the GDT file may be enclosed by quotation marks when it is containing blanks.

The GDT file has to contain a patient ID which is defined in GDT 2.1 as parameter 3000 (line 4 in the sample below) but often includes further parameters. The following shows a sample of a GDT file:

01380006301	→ set type "Root Data Transfer"
014810000227	→ file size
014921802.00	→ version number GDT
0183000000001234	→ patient ID
0143101Smith	→ patient's last name
0133102John	→ patient's first name
017310301011950	→ patient's date of birth
024310616160Publictown	→ patient's address (city)
0253107Public Street 16	→ patient's address (street name, house number)
0138402PACS	→ modality

A description of the GDT standard can be found at www.qms-de.org.

9.7.3 BDT/GDT REQUEST TO IMPORT DIALOG

In addition to the accession number and patient ID requests for patient studies iQ-VIEW also supports BDT/GDT requests directly to the "Import" dialog. It can be used to automatically access the "Import" dialog and to transfer patient and study information into the DICOM tag entry fields. This way image files can be imported from iQ-CR ACE, iQ-CAPTURE, a TWAIN source or from a directory while the patient and study information is already provided by GDT file and must not be entered manually or queried using the DICOM Modality Worklist.

In contrast to the DICOM Modality Worklist client integrated only into iQ-VIEW PRO, this BDT/GDT request function is available also in the basic version iQ-VIEW.

The iQ-VIEW.ini includes default parameters to be used in a BDT/GDT file to populate the DICOM information in the "Import" dialog in section [BDTGDT]. If necessary these parameters can be modified to adapt them to the created GDT files.

The defined default parameters (according to the BDT/GDT standard) are:

[BDTGDT] PARAMETERS	LINE CONTENTS FIELD LABEL
PatientLastNameField=	Field label for patient's last name, default 3101
PatientFirstNameField=	Field label for patient's first name, default 3102
PatientIDField=	Field label for patient ID, default 3000
PatientBDField=	Field label for patient's date of birth, default 3103
PatientSexField=	Field label for patient's sex, default 3110; possible values are: 1 = male 2 = female

	3 = other
StudyDateField=	Field label for study date, default 6200
StudyDescriptionField=	Field label for study description, default 6220
ModalityField=	Field label for modality, default 8402
AccessionNumberField=	Field label for accession number, default 6302
StudyInstanceUIDField=	Field label for study instance UID, default 6227
ReferringPhysicianField=	Field label for referring physician's name, default 3701

Also for the BDT/GDT request sent to the "Import" dialog, the syntax of a complete command line in a BDT/GDT file is as follows:

[Line length incl. CR LF][Line contents field label][BDT field contents]

For the patient ID "1234" and the patient's last name "Smith", this would mean the following command lines:

[013][3000][1234] = 01330001234
[014][3101][Smith] = 0143101Smith

To populate all DICOM fields in the "Import" dialog, the GDT file would have to contain all of the above parameters. These parameters then must be stored in a GDT file, e.g. import.gdt. The command is a combination of the GDT file request and a file name. The GDT file must be preconfigured and stored in the stated path to make the correct request.

The command would be:

[directory path to iQ-VIEW.exe] [parameters –g –i + directory path to GDT file]

Example:

"C:\Program Files\iQ-VIEW\iQ-VIEW.exe" –g –i C:\GDT\import.gdt

NOTE:
Please remember to add quotation marks ("…") for a path that contains spaces. If no spaces exist, the quotation marks are not needed.

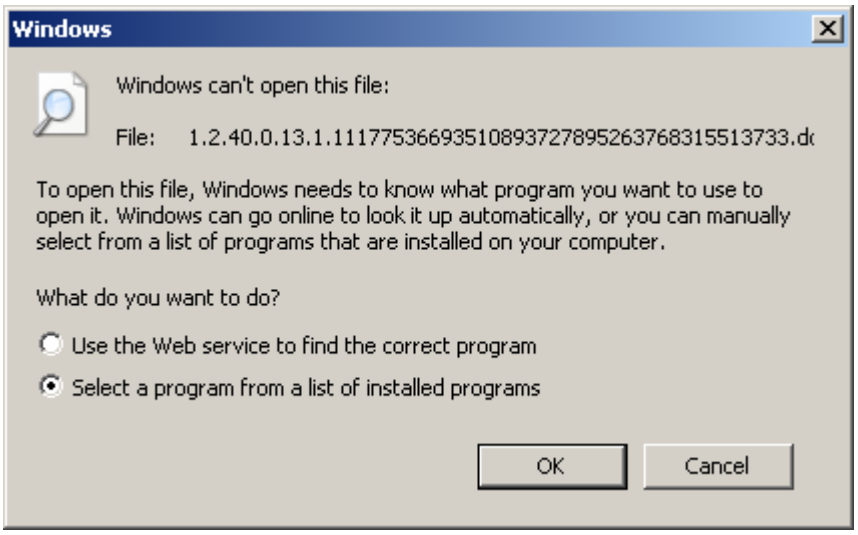
When receiving this request, iQ-VIEW starts (if not yet done) and opens the "Import" dialog. There the parameters contained in the GDT file are automatically entered in the respective DICOM fields. Parameters that are not included have to be entered manually.

Afterwards you can import the images that shall be part of that study and convert them into DICOM.

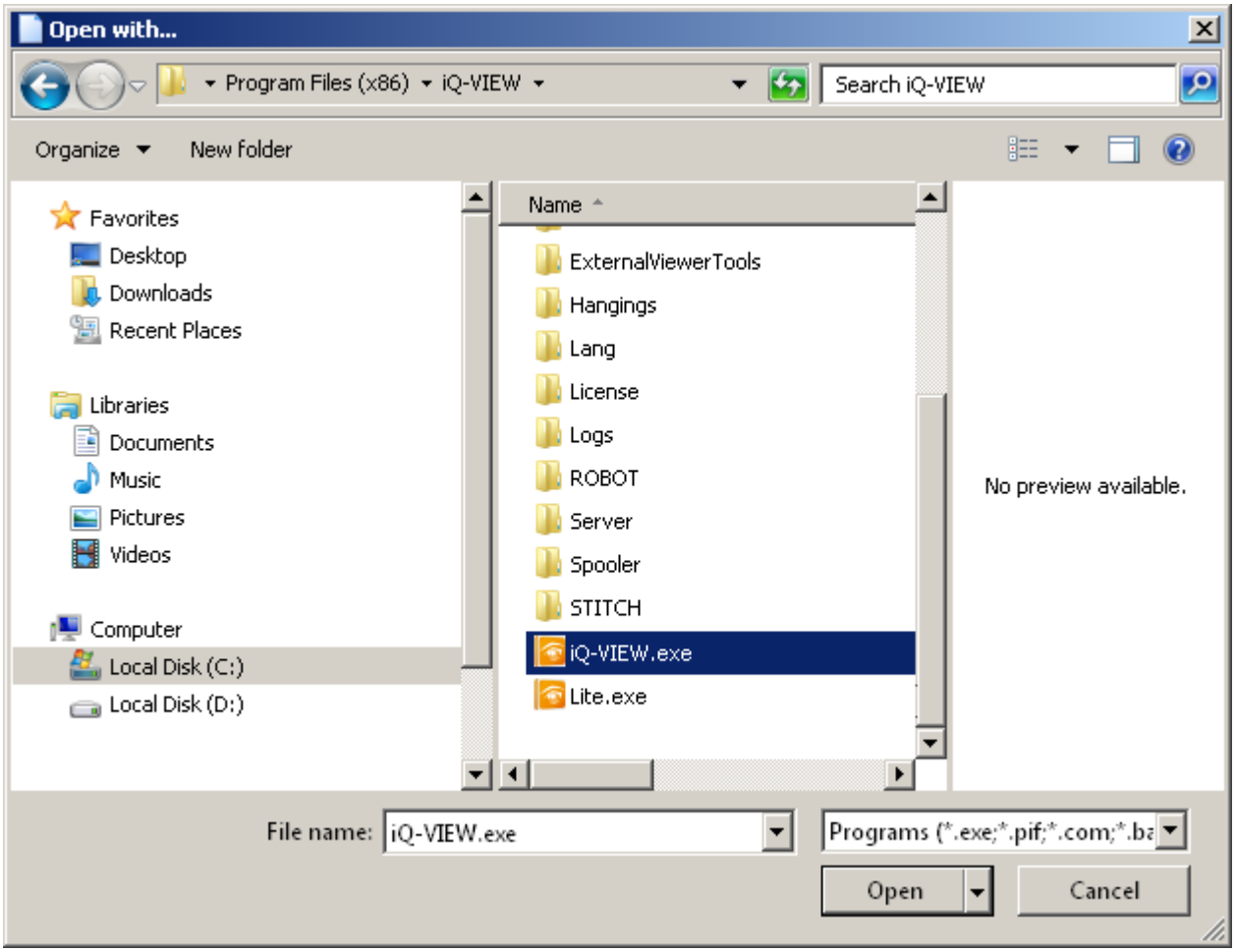
9.8 LOADING SPECIFIC DICOM FILES INTO iQ-VIEW / PRO BY EXTERNAL CALL

9.8.1 DIRECT LOADING FROM DIRECTORY

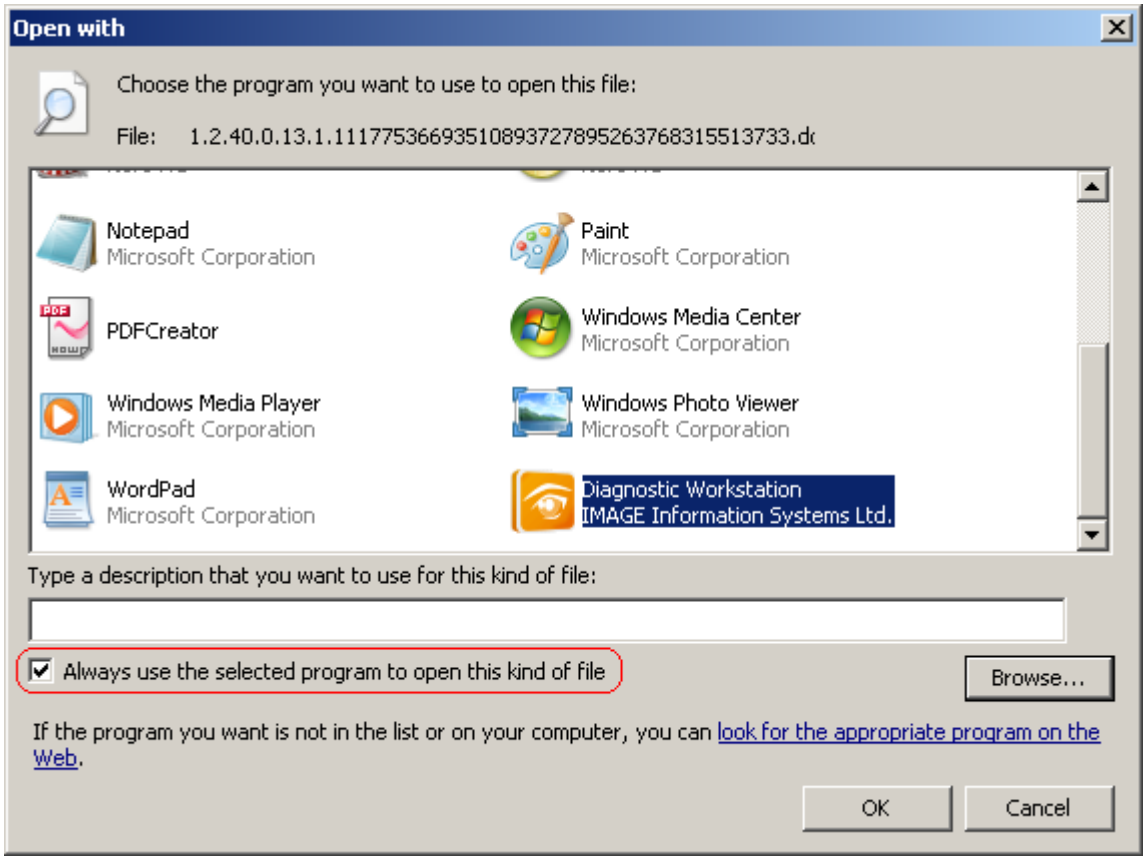
It is possible to load an individual DICOM file directly from a local directory (on your hard disk or from removable media). Simply double-click a DICOM file. When DICOM files are not yet automatically associated with iQ-VIEW, you will receive the following dialog:



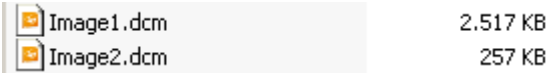
Choose “Select a program from a list of installed programs” and click “OK”. On the next screen, browse to the iQ-VIEW installation folder (by default C:\Program Files\iQ-VIEW) and select the “iQ-VIEW.exe” as application with which to open the DICOM file:



Click “Open” to confirm your selection.



The iQ-VIEW Diagnostic Workstation will then be added to the available applications. Tick the checkbox "Always use the selected program to open this kind of file" to always use iQ-VIEW for "*.dcm" files. The file type will then be associated with the iQ-VIEW icon:



Click "OK" after finishing the selection. If not yet running, iQ-VIEW will be started and the selected DICOM file will be imported into the local imagebox. The viewer opens to display the imported DICOM object directly.

WARNING:

Please keep in mind that loading only one or a few images of a patient study may not give sufficient information to be usable for diagnostic purposes. To be sure that all relevant images will be read, import the entire study into iQ-VIEW (e.g. import via "Filesystem", retrieve from connected DICOM archive).

9.8.2 LOADING VIA COMMAND CALL

It is possible to load one or more specific DICOM files using a command call. This can be helpful when wanting to open DICOM files with the help of another application.

The command that needs to be used is a combination of the loading request and a file name or folder name. The path and the name of the file(s) to be loaded or the directory where the requested files are stored must be known to make the correct request.

The loading request can be made in different ways:

- by using the parameter "/load"
- by using the parameter "/l"
- by just stating the path to and name of the file(s) or image folder to be loaded

The commands would then look like this:

- for loading individual DICOM files

  [directory path to iQ-VIEW.exe] [parameter /load + directory path and name of DICOM file] or
  [directory path to iQ-VIEW.exe] [parameter /l + directory path and name of DICOM file] or
  [directory path to iQ-VIEW.exe] [directory path and name of DICOM file]

  Examples:

  "C:\Program Files\iQ-VIEW\iQ-VIEW.exe" /load C:\DATA\dcmfile1.dcm or
  "C:\Program Files\iQ-VIEW\iQ-VIEW.exe" /l C:\DATA\dcmfile1.dcm or
  "C:\Program Files\iQ-VIEW\iQ-VIEW.exe" C:\DATA\dcmfile1.dcm

- for loading all DICOM files stored in a folder (including sub-folders)

  [directory path to iQ-VIEW.exe] [parameter /load + directory path and name of folder] or
  [directory path to iQ-VIEW.exe] [parameter /l + directory path and name of folder] or
  [directory path to iQ-VIEW.exe] [directory path and name of folder]

  Examples:

  "C:\Program Files\iQ-VIEW\iQ-VIEW.exe" /load C:\DATA\DICOM1 or
  "C:\Program Files\iQ-VIEW\iQ-VIEW.exe" /l C:\DATA\DICOM1 or
  "C:\Program Files\iQ-VIEW\iQ-VIEW.exe" C:\DATA\DICOM1

NOTE:

Please remember to add quotation marks ("...") for a path that contains spaces. If no spaces exist, the quotation marks are not needed.

When executing the command, iQ-VIEW will be started, if it is not yet running, and the selected DICOM file(s) will be imported into the local imagebox. The viewer opens to display the imported DICOM object(s) directly.

If more than one DICOM object or more than one folder shall be loaded at the same time, simply add the other files to the command (with a space in between):

- "C:\Program Files\iQ-VIEW\iQ-VIEW.exe" /load C:\DATA\dcmfile1.dcm C:\DATA\dcmfile2.dcm C:\DATA\dcmfile3.dcm or
- "C:\Program Files\iQ-VIEW\iQ-VIEW.exe" /load C:\DATA\DICOM1 C:\DATA\DICOM2 or
- "C:\Program Files\iQ-VIEW\iQ-VIEW.exe" /load C:\DATA\dcmfile1.dcm C:\DATA\dcmfile2.dcm C:\DATA\DICOM1

WARNING:

Please keep in mind that loading only one or a few images of a patient study may not give sufficient information to be usable for diagnostic purposes. To be sure that all relevant images will be read, import the entire study into iQ-VIEW (e.g. import via "Filesystem", retrieve from connected DICOM archive).

9.9 CONFIGURATION OF STUDY BROWSER FUNCTIONS

9.9.1 CUSTOMIZING THE STUDY BROWSER

The Study Browser with its patient and study table can be adapted to the user's needs. The settings are stored in the application's main configuration file iQ-VIEW.ini and are loaded again the next time the application is started.

The following modifications are possible:

- Changing the size and position of the Study Browser window itself.
- The Study Browser will be opened always on either "Network", "Database" or "Filesystem", depending on which tab was active when iQ-VIEW was closed the last time.
- The modality filters set in the search filter when the application is closed will also be remembered.
- If the patient table and/or the preview icon panel (in "Database" or "Filesystem" mode) were open when iQ-VIEW was closed, they will also remain open when the application is started the next time.
- The patients available in the patient table and the studies available in the study table can be sorted in ascending and descending order for all columns, e.g. ordering according to Patient name, Patient ID, Study date, Modality, etc.
- Changing the width of the different columns in the study table and patient table according to your wishes.
- Changing the order of the study table and patient table columns by dragging and dropping them into the desired place.

NOTE:

The "Modality" column of the study table is the root column that also includes the navigation down to series and image level. Therefore its position should not be changed (no other column dragged into first position).

9.10 CONFIGURATION OF VIEWER FUNCTIONS

9.10.1 CHANGING AND AMENDING OVERLAY INFORMATION OF IMAGES

The file "OverlayMapping.script" that can be found in the iQ-VIEW main directory allows to change the information that is given in the text overlay of the images displayed in the viewer. If not changed in this file, iQ-VIEW will display the default DICOM tags for each modality.

Using the "OverlayMapping.script" it is possible to define the text overlay individually for each modality and to adapt the displayed DICOM tags to the needs of the radiologist. This way it is possible to also include information about the compression level of images, the S-Value of CR images, the use of contrast agents or any other DICOM tag.

The “OverlayMapping.script” provided with the iQ-VIEW installation package already contains sample configurations for CT and CR.

NOTE:

For security reasons the text overlay will always display lossy compression for images. This is necessary because lossy compressed images may no longer have diagnostic quality and therefore cannot be used to make medical findings. Therefore, no matter if any compression tags are defined or not in the “OverlayMapping.script”, the information will always be available in the viewer.

The following shows the “OverlayMapping.script” sample for CT Image Storage (text overlay of a CT image):

```
BEGIN

  SOPClassUID=1.2.840.10008.5.1.4.1.1.2;  // CT Image Storage

  LeftTopLabel1=[0010,0010]$BOLD; // Patient name
  LeftTopLabel2=[0010,0040] [0010,0030]; // Patient's sex + date of birth
  LeftTopLabel3=ID: [0010,0020]$BOLD; // Patient ID
  LeftTopLabel4=Acc: [0008,0050]; // Accession number

  RightTopLabel1=[0008,0080]; // Institution name
  RightTopLabel2=Ref: [0008,0090] / Perf: [0008,1050]; // Referring + performing physician
  RightTopLabel3=Date: [0008,0020]; // Study date
  RightTopLabel4=Time: [0008,0030]; // Study time

  MiddleTopLabel=[0008,103E];  // Series description

  LeftBottomLabel1=SP: [0020,1041] ST: [0018,0050]mm; // Slice position + slice thickness
  LeftBottomLabel2=mA: [0018,1151]; // X-ray tube current
  LeftBottomLabel3=kVP: [0018,0060]; // kV peak;
  LeftBottomLabel4=W{WINWIDTH} / C{WINCEN};  // Dynamic window width/center

  RightBottomLabel1=Zoom factor: {ZOOMFACTOR};  // Dynamic zoom factor
  RightBottomLabel2=[0020,0011] IMA [0020,0013];  // Series number + image number
  RightBottomLabel3=Pos: [0018,5100];  // Patient position
  RightBottomLabel4=[0018,0015]; // Body part examined

  MiddleBottomLabel1=[0020,4000];  // Image comments
  MiddleBottomLabel2=[0008,1080];  // Admitting diagnosis



END
```

9.10.1.1 CONFIGURABLE NUMBER OF TEXT OVERLAY LABELS

The maximum number of labels is fixed. For each modality there are available for use:

- four labels in the upper left corner
- four labels in the upper right corner
- four labels in the lower left corner
- four labels in the lower right corner
- one label in the top center position
- two labels in the bottom center position

Not all of them need to be used, but it is also not possible to add more than the maximum number of lines.

9.10.1.2 ADDING AND DELETING ENTIRE TEXT OVERLAY CONFIGURATIONS

The CT configuration is only a sample provided with the installation package. It is possible to add further configurations for other modalities:

- Open the "OverlayMapping.script" in a text editor.
- Simply copy the CT text overlay configuration from "BEGIN" to "END" and paste it into the file.
- Adapt the SOP class UID to the one of the modality for which to create an overlay configuration.
- Then populate the available labels with the DICOM tags you wish to display, using one of the following parameter syntaxes:

  [Label name and number]=[[DICOM tag]]; // [Tag name (for information only)]
  Example: LeftTopLabel1=[0010,0010]; // Patient name
  In this case the text overlay will only display the value stored for this tag in the DICOM header

  [Label name and number]=[Identifier]: [[DICOM tag]]; // [Tag name (for information only)]
  Example: LeftTopLabel3=ID: [0010,0020]; // Patient ID
  In this case the text overlay will identify the label for what it is (ID = patient ID) and display the value stored for this tag in the DICOM header

  It is also possible to combine several DICOM tags in one label (with or without identifier). Examples:

  LeftTopLabel2=[0010,0040] [0010,0030]; // Patient sex + date of birth
  RightTopLabel2=Ref: [0008,0090] Perf: [0008,1050]; // Referring + performing physician

- Store the changes and restart iQ-VIEW.

NOTE:

It would also possible to define text overlay items that are used for all DICOM objects, independent of their SOP class. In this case, the configuration would have to be marked to include ALL SOP classes. To do that, simply exchange the parameter "SOPClassUID={SOP Class UID};" (e.g. for CT: SOPClassUID= 1.2.840.10008.5.1.4.1.1.2;)" for the general parameter "SOPClassUID={ALL};".

To delete the text overlay configuration for a specific modality, simply mark the entire configuration section from "BEGIN" to "END" and delete it from the file. Afterwards store the changes and restart iQ-VIEW.

9.10.1.3 MODIFYING INDIVIDUAL TEXT OVERLAY LABELS

It is possible to only change individual labels in an already existing text overlay configuration. To do that:

- Open the "OverlayMapping.script" in a text editor.
- Select the overlay configuration and the correct script part (concerning the SOP class you want to adapt) and the label you wish to modify.
- Change the DICOM tag and adapt the tag name to make it easier to identify the tag later.
- Add, modify or delete the identifier, if necessary.
- Store the changes in the file and restart iQ-VIEW.

If an overlay label shall be left explicitly empty, the DICOM tag itself must be deleted, but the brackets must be kept. Example:

MiddleTopLabel=[];

9.10.1.4 HIGHLIGHTING INDIVIDUAL TEXT OVERLAY LABELS

It is further possible to highlight specific labels by turning the font bold. This can be done to any of the available labels by adding the parameter:

$BOLD

This parameter can be added in different positions within one label, e.g. at the beginning or at the end.

Example:

LeftTopLabel1=[0010,0010]$BOLD; // Patient name or
LeftTopLabel1=$BOLD[0010,0010]; // Patient name

NOTE:
Make sure to not add any spaces as those spaces would then be seen in the text overlay display of the viewer.

9.10.1.5 DISPLAYING INFORMATION FROM DICOM HEADER SEQUENCES

In a few cases, it might become useful to display DICOM information in the text overlay that is not a "regular" DICOM attribute but is an item of a DICOM attribute sequence. The display of such items must be configured specifically as the sequence to which the items belong must be referenced as well.

Such a sequence exists, for instance, to specify how an image was derived, which gives information about the status of compression of an image. This attribute (0008,9215 DerivationCodeSequence) contains different items that could, if desired, be configured to be displayed in the text overlay.

Example:

0008,9215 [DerivationCodeSequence]	
>>[ITEM1]	
>>0008,0100 [CodeValue]	131327
>>0008,0102 [CodingSchemeDesignator]	DCM
>>0008,0104 [CodeMeaning]	Full fidelity image, uncompressed or lossless Compressed

In case the code meaning shall be displayed in the viewer's text overlay, e.g. in the middle top label, both the sequence reference (0008,9215) and the specific attribute information (0008,0104) must be configured. The entry would have to look like this:

MiddleTopLabel1=$SEQ_BEG([0008,9215],0)[0008,0104]$SEQ_END; // Derivation Code Meaning

9.10.1.6 INCLUDING THE S-VALUE IN CR IMAGES

When CR images are processed, it might be necessary to include the S-Value in the images. The following excerpt of the OverlayMapping.script shows the sample settings for the display of the S-Value:

```
BEGIN

  SOPClassUID=1.2.840.10008.5.1.4.1.1.1;  // CR Image Storage

  LeftTopLabel1=[0010,0010]$BOLD; // Patient name
  LeftTopLabel2=[0010,0040] [0010,0030]; // Patient's sex + date of birth
  LeftTopLabel3=ID: [0010,0020]$BOLD; // Patient ID
  LeftTopLabel4=Acc: [0008,0050]; // Accession number

  RightTopLabel1=[0008,0080]; // Institution name
  RightTopLabel2=Dep: [0008,1040]; // Institutional department
  RightTopLabel3=Date: [0008,0020]; // Study date
  RightTopLabel4=Time: [0008,0030]; // Study time

  MiddleTopLabel=[0008,103E];  // Series description

  LeftBottomLabel1 = $IF(TAGEXISTS[0018,6000])S-Value: [0018,6000]; // FUJI dose indicator
  LeftBottomLabel1 = $IF(TAGEXISTS[0019,1015])S-Value: [0019,1015]; // AGFA dose indicator
  LeftBottomLabel1 = $IF(TAGEXISTS[0018,1405])S-Value: [0018,1405]; // OREX dose indicator

  LeftBottomLabel2=Plate: [0018,1004]; // Plate ID
  LeftBottomLabel3=Sensitivity: [0018,6000]; // Sensitivity
  LeftBottomLabel4=W{WINWIDTH} / C{WINCEN};  // Dynamic window width/center

  RightBottomLabel1=Zoom factor: {ZOOMFACTOR};  // Dynamic zoom factor
  RightBottomLabel2=[0020,0011] IMA [0020,0013];  // Series number + image number
  RightBottomLabel3=[0018,1402];  // Cassette orientation
  RightBottomLabel4=[0018,0015]; // Body part examined

  MiddleBottomLabel1=[0020,4000];  // Image comments
  MiddleBottomLabel2=[0008,1080];  // Admitting diagnosis


END
```

9.10.2 REMOVING RULER DISPLAY

In case the ruler display in the individual views disturbs your viewing / processing of the images, you may disable it:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [CustomSettings].
- There, search for the parameter “ShowRuler=” and set it to “0” (ShowRuler=0).
- Save the changes and restart iQ-VIEW.

NOTE:

The disabling of the ruler may make it harder to recognize whether measurements in an image are possible in mm (no ruler is shown in images without pixel spacing values) or if an image contains calibrated measurements (ruler turns red).

9.10.3 INVERSE MOUSE WINDOWING

Windowing in iQ-VIEW works as follows:

- move mouse to right = higher contrast
- move mouse to left = lower contrast
- move mouse up = image gets brighter
- move mouse down = image gets darker

For those who would like to work with an inverse windowing, iQ-VIEW offers the opportunity to configure an inverse mouse windowing. To switch to the inverse mouse windowing, the appropriate change must be made in the iQ-VIEW.ini:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [CustomSettings].
- There, search for the parameter “InverseMouseWindowing=”, which is – by default - set to “0” (false)
- Change the setting to “InverseMouseWindowing=1” (true).
- Save the changes and restart iQ-VIEW.

9.10.4 INVERSE STUDY SORT ORDER

By default, iQ-VIEW does automatically sort the studies loaded together into the viewer according to the study date and time, starting with the latest, most current study and ending with the oldest. The study tabs are given in that order and the latest study is displayed first on the primary display.

For those who would rather like to see the oldest study first and move from the oldest to the latest study loaded instead, iQ-VIEW offers the opportunity to configure the application accordingly. This is done by making the appropriate setting in the iQ-VIEW.ini:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [CustomSettings].
- There, search for the parameter “SortStudiesOldestFirst=”, which is – by default - set to “0” (false)
- Change the setting to “SortStudiesOldestFirst=1” (true).
- Save the changes and restart iQ-VIEW.

9.10.5 DELAYED INTERPOLATION

Large images, such as CR or mammography images, can need higher resources when they are processed on high-resolution displays, particularly with functions like stack mode, windowing or synchronized scrolling of several series.

By default, iQ-VIEW runs a routine that assures that also large images can be windowed without much delay on high-resolution displays, even if they are zoomed.

However, for some processing functions, like the scrolling through different series using synchronization, it might be useful to additionally activate a special function called “delayed interpolation” to speed up the processing of the images.

Delayed interpolation means that the images will first be scaled using a lower interpolation, e.g. when scrolling through a series, to improve the performance (especially on high-resolution monitors). After only 300 ms the images are focused again.

The delayed interpolation can be set in the iQ-VIEW.ini to be used as a general function for images of all modalities loaded into the viewer or it can be configured for modality specific Hanging Protocols (HP), e.g. for CR and mammography (HP only available in iQ-VIEW PRO).

To activate the delayed interpolation in the iQ-VIEW.ini, please follow the instructions below:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [CustomSettings].
- There, search for the parameter “DelayedInterpolation=”, which is – by default - set to “0” (false)
- Change the setting to “DelayedInterpolation=1” (true).
- Save the changes and restart iQ-VIEW.

9.10.6 SERIES DESCRIPTIONS FOR SECONDARY CAPTURE SEQUENCES

When secondary capture images and series are created in the viewer, iQ-VIEW automatically adds a standard series description to each image to distinguish the secondary capture series from the other series in a study. This series description is “Secondary Capture Sequence”.

However, it is possible to enter a customized series description for each secondary capture image that is created. If activated, each time a secondary capture image is made, a dialog will be opened where you can enter your own series description. This allows to further explain the content of the respective secondary capture and later helps to distinguish the different series.

To activate the secondary capture series description dialog, the appropriate change must be made in the iQ-VIEW.ini:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [CustomSettings].
- There, search for the parameter “SC_ShowSeriesDescrDialog=”, which is – by default - set to “0” (false)
- Change the setting to “SC_ShowSeriesDescrDialog=1” (true).
- Save the changes and restart iQ-VIEW.

9.10.7 SEARCHING FOR PREVIOUS STUDIES OF THE SAME PATIENT IN LOKAL IMAGEBOX

Normally, it is possible to query a remote archive for additional studies of the same patient (with the same patient ID) directly from the viewer window. This allows to easily finding previous studies of the same patient, for instance, to compare these to the current study.

iQ-VIEW can also be configured that further studies of the same patient can alternatively be searched for in the local imagebox. To do that, it is necessary to activate the responsible parameter in the iQ-VIEW.ini:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [CustomSettings].
- There, search for the parameter "PriorQueryIncludeImagebox=", which is – by default - set to "0" (false).
- Change the setting to "PriorQueryIncludeImagebox=1" (true).
- Save the changes and restart iQ-VIEW.

9.10.8 SENDING ALERT FOR USER-CREATED OBJECTS

In iQ-VIEW the user can create and store DICOM objects such as secondary capture images (OT), Structured Reports (SR) or Presentation States (PR – only iQ-VIEW PRO) in the local database / imagebox.

If the studies in which these objects are created and stored have been retrieved directly from a remote station and loaded into the viewer (and not from the local imagebox or filesystem), the user is asked whether or not these objects shall be sent back to the remote station where the images originated from either when switching to another study loaded into the viewer or when closing the viewer window. The user has to either confirm or reject the sending request.

NOTE:

For studies loaded from local imagebox ("Database") or "Filesystem", there exists a function (tool button) with which to manually send secondary capture series, Structured Reports and Presentation States to a selected remote archive as the destination is not known by iQ-VIEW and must be selected by the user.

In case that the user generally does not want to automatically send back user-created objects to the source DICOM station, the sending alert can be deactivated in the iQ-VIEW.ini:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [CustomSettings].
- There, search for the parameter "NoUserCreatedObjectsAlert=", which is – by default - set to "0" (false).
- Change the setting to "NoUserCreatedObjectsAlert=1" (true).
- Save the changes and restart iQ-VIEW.

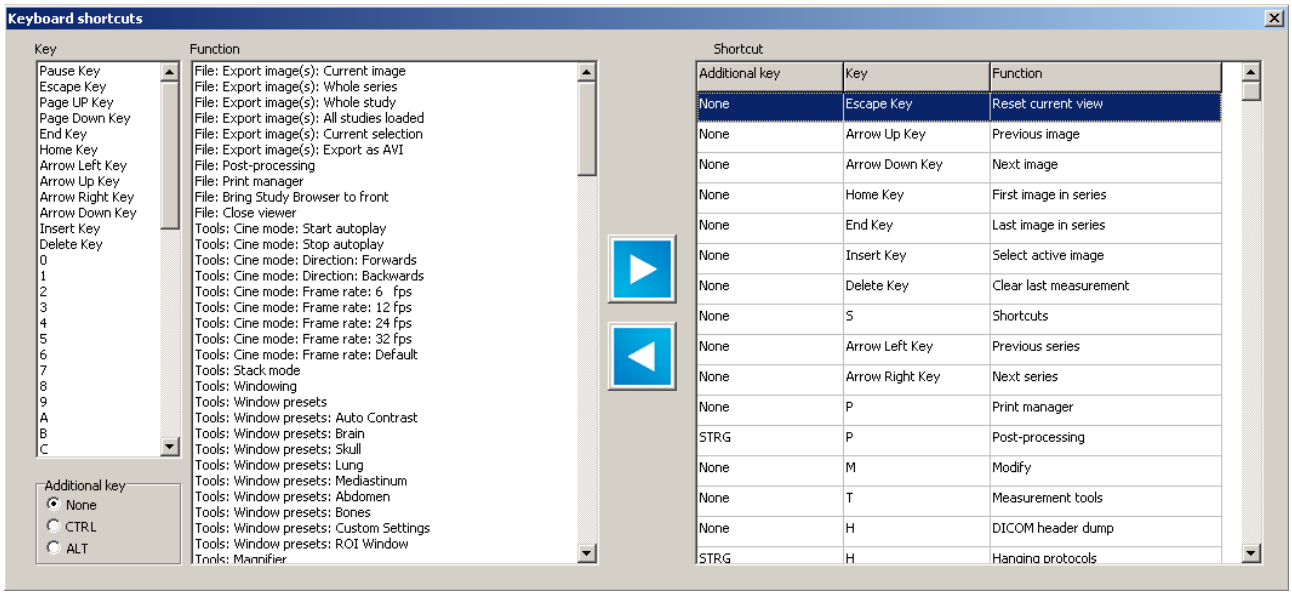
9.10.9 DEFINITION OF SHORTCUTS FOR VIEWER FUNCTIONS

For viewer functions, like navigation within series and studies, selection of menus, tiling, window settings, etc., it is possible to define shortcuts to allow the user to call up a specific function or action using a key or key combination and thus not needing to select the appropriate menu or toolbar entry with the mouse.

In the viewer the Shortcuts dialog can be opened using the menu item “Shortcuts” in the “Additional Settings” action or via the predefined shortcut [S].

To configure a function shortcut, simply select the keyboard key you wish to use, select whether or not to use an additional key (i.e. [CTRL] or [ALT]) and the function that this combination shall activate.

The arrow buttons can be used to either add (arrow to the right) or remove (arrow to the left) a shortcut.



Shortcuts dialog for adding and modifying shortcuts

iQ-VIEW already contains a number of default (predefined) shortcuts for specific functions. This list can be extended by adding or editing shortcuts.

Default shortcuts of iQ-VIEW include:

ADDITIONAL KEY + KEY	**FUNCTION**
[ESC]	Reset current view
Arrow key [UP]	Previous image
Arrow key [DOWN]	Next image
[HOME]	First image in a series
[END]	Last image in a series
[INSERT]	Select active image
[DELETE]	Clear last measurement

[S]	Shortcuts
Arrow key [LEFT]	Previous series
Arrow key [RIGHT]	Next series
[P]	Print manager
[CTRL] + [P]	Post-processing
[M]	Modify (of measurements)
[T]	Tool pop-up menu (measurements)
[H]	DICOM header dump
[CTRL] + [H]	Hanging protocols
[CTRL] + [F1]	Auto Contrast
[CTRL] + [F2]	Brain – base (window setting)
[CTRL] + [F3]	Brain (window setting)
[CTRL] + [F4]	Lung (window setting)
[CTRL] + [F5]	Abdomen (window setting)
[CTRL] + [F6]	-
[F1]	1x1 (tiling)
[F2]	2x1 (tiling)
[F3]	1x2 (tiling)
[F4]	2x2 (tiling)
[F5]	3x1 (tiling)
[F6]	1x3 (tiling)
[F7]	3x2 (tiling)
[F8]	2x3 (tiling)
[F9]	3x3 (tiling)
[F10]	4x1 (tiling)
[F11]	4x4 (tiling)
[F12]	Series pop-up list
[ALT]	Activation of 3D Localizer (3D position display)
[CTRL]	In combination with mouse-clicks into another than the activated viewer tile, will mark the other tile(s). Can be used to synchronize different series.
[CTRL]+[SPACE]	To create a secondary capture image and append it to an already existing secondary capture sequence
[SHIFT]+[SPACE]	To create a secondary capture image and store it in a new secondary capture sequence
[CTRL]+[S]	Marking/Unmarking of a whole study
[CTRL]+[J]	To open the “Jobs” dialog and access the log information

9.11 CONFIGURING THE IMPORT OF DICOM AND OTHER IMAGES

9.11.1 IMPORTING DICOM IMAGES WITHOUT PREVIOUS DECOMPRESSION

By default all DICOM images are automatically decompressed when imported into iQ-VIEW either by DICOM communication via the iQ-VIEW server (DICOM communication) or via "Filesystem" from another directory or removable media.

WARNING:

The decompression is done to assure that iQ-VIEW can display the imported images without any problems. For instance, the viewer may not entirely support the display of images with certain transfer syntaxes. Therefore, importing the images without previous decompression may lead to display problems or, in the worst case, even to the application hanging up and having to be terminated using the task manager. Further add-on modules, such as iQ-3D or iQ-STITCH, may not be able to correctly interpret compressed images. It is therefore recommended to not deactivate the default decompression for image import either via DICOM or "Filesystem".

In single cases, e.g. for support issues, it might be necessary to import DICOM data into iQ-VIEW without decompressing them first. This can be done in two ways:

9.11.1.1 COMPRESSED IMAGE IMPORT VIA "FILESYSTEM"

When importing via "Filesystem" (from another directory or removable media) the images are by default decompressed and stored with Little Endian Explicit as transfer syntax.

To not change the original transfer syntax of the DICOM image data during import, a specific value must be set in the configuration file iQ-VIEW.ini:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [CustomSettings].
- There, search for the parameter "NoTSConvertionOnImport=", which is – by default - set to "0" (false).
- Change the setting to "NoTSConvertionOnImport=1" (true).
- Save the changes and restart iQ-VIEW.

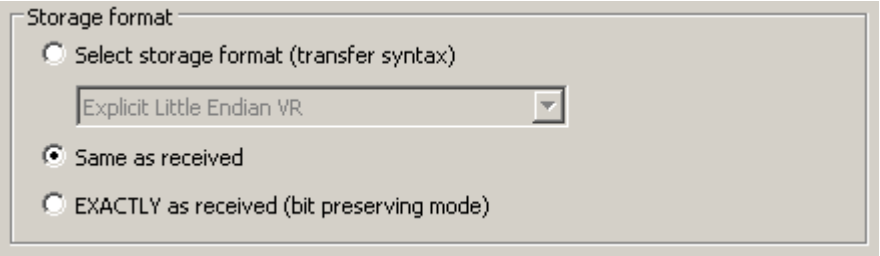
Afterwards iQ-VIEW will store all images that are either imported from another directory or from a removable medium using their original transfer syntax.

9.11.1.2 COMPRESSED IMAGE IMPORT VIA DICOM

By default, the iQ-VIEW server accepts images with all transfer syntaxes supported by the setup.cfg (for details see section 12.1 IQSERVER – setup.cfg configuration). When received, the images are decompressed and stored as Little Endian Explicit (LEE) in the local imagebox.

To not change the original transfer syntax (TS) of the DICOM image data during import via STORE SCU (iQ-VIEW server), the specific settings have to be made in the Server Admin Tool:

- Go to [Start] → [All Programs] → [iQ-VIEW] → [Administration] → "Server Administration".
- Go to the "Server" section and select the sub-section "General".
- Under "Storage format" enable the option "Same as received".

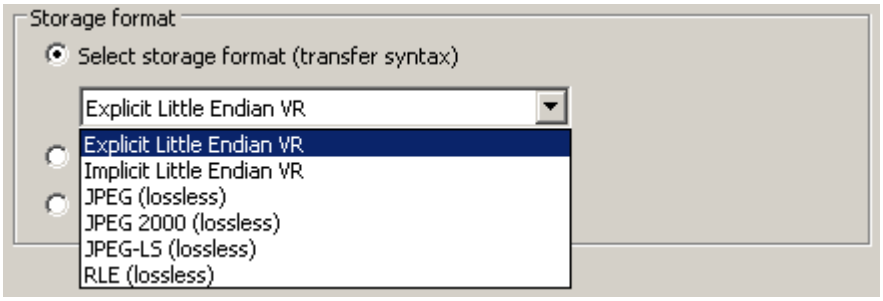


- At last click on "OK" to save the changes and to automatically restart the server.

Afterwards all images that are either retrieved from a remote archive or are sent to iQ-VIEW will be stored using their original transfer syntax.

In addition it would be possible to define a specific transfer syntax with which all DICOM images coming via STORE SCU shall be written, independent of their original transfer syntax:

- Go to [Start] → [All Programs] → [iQ-VIEW] → [Administration] → "Server Administration".
- Go to the "Server" section and select the sub-section "General".
- Under "Storage format" enable the option "Select storage format (transfer syntax)".



- Select your preferred storage format.
- At last click on "OK" to save the changes and to automatically restart the server.

WARNING:

Please keep in mind that images with compressed transfer syntaxes, such as JPEG 2000, may not be (fully) supported by the viewer or by connected post-processing modules. It is therefore recommended to use the default decompression to Little Endian Explicit to store image data locally in iQ-VIEW.

9.11.2 FORCING SPECIFIC TRANSFER SYNTAXES (FOR INCOMING IMAGES)

Instead of accepting images with any transfer syntax supported by the setup.cfg, the iQ-VIEW server can also be set to only accept certain transfer syntaxes or a preferred network transfer syntax.

The setup.cfg, which regulates the DICOM communication by defining which transfer syntaxes, SOP classes and presentation contexts are supported by the iQ-VIEW server, states a number of transfer syntaxes that it will accept when negotiated for a transmission of DICOM data.

By default all supported transfer syntaxes are proposed, if necessary, when a remote station wants to send data to the iQ-VIEW server. However, it would be possible to comment out one or several transfer syntaxes to prevent another station from even sending images using this transfer syntax.

- Go to [Start] → [All Programs] → [iQ-VIEW] → [Administration] → "Server Administration".
- Stop the server by clicking "Stop server".
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Switch to the subfolder "Server" and select the file "setup.cfg", which can be opened with the Editor or WordPad.
- In section [[TransferSyntaxes]]you can then comment out (use "#" in front of command) the necessary transfer syntaxes you don't want to have supported, e.g.:

  ```
  [AnyTransferSyntax]
  #TransferSyntax1 = JPEG2000
  #TransferSyntax2 = JPEG2000LosslessOnly
  TransferSyntax3 = JPEGExtended:Process2+4
  #TransferSyntax4 = JPEGBaseline
  TransferSyntax5 = JPEGLossless:Non-hierarchical-1stOrderPrediction
  TransferSyntax6 = RLELossless
  TransferSyntax7 = LittleEndianExplicit
  TransferSyntax8 = BigEndianExplicit
  TransferSyntax9 = LittleEndianImplicit
  ```

  To comment out both JPEG 2000 transfer syntaxes as well as JPEG Baseline.

- Save the changes in the file.
- Afterwards go back to the Server Admin Tool and restart the server by clicking "Start server".

NOTE:

It is very strongly recommended to not comment out the transfer syntax "Little Endian Implicit" since this is the transfer syntax that every DICOM compliant station must support.

9.11.3 USING PREFIXES FOR DICOM TAGS FOR IMPORT VIA FILESYSTEM

When importing DICOM studies created in other institutions, such as patient CDs/DVDs, it might become necessary to make it visible that these studies do not have their origin in your hospital or practice. This can be done by adding automatically prefixes to specific DICOM tags during the import procedure.

Using prefixes can also help to prevent that a patient ID or accession number already allocated in your system is used multiple times for other patients or studies. This would, in some cases, not only violate the DICOM standard but could also create problems for your archiving systems and when querying for studies of a particular patient using the patient ID and / or accession number.

In iQ-VIEW you can set string prefixes for the following DICOM tags when importing studies using “Filesystem”:

- Patient ID
- Accession number
- Study ID

To automatically attach a string prefix to the accession number when importing images via “Filesystem”:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [AdditionalSettings].
- There, search for the parameter “AccessionNumberPrefix=”.
- Enter the string that you wish to use as prefix: “AccessionNumberPrefix=[prefix]”.
- Save the changes and restart iQ-VIEW.

To automatically attach a string prefix to the patient ID when importing images via “Filesystem”:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [AdditionalSettings].
- There, search for the parameter “PatientIDPrefix=”.
- Enter the string that you wish to use as prefix: “PatientIDPrefix=[prefix]”.
- Save the changes and restart iQ-VIEW.

To automatically attach a string prefix to the study ID when importing images via “Filesystem”:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [AdditionalSettings].
- There, search for the parameter “StudyIDPrefix=”.
- Enter the string that you wish to use as prefix: “StudyIDPrefix=[prefix]”.
- Save the changes and restart iQ-VIEW.

9.11.4 DEFINING AN INSTITUTION NAME USED FOR IMAGE CREATION VIA IMPORT

For DICOM images created from JPEG, BMP, TIFF or RAW images as well as PDF files imported via the iQ-VIEW “Import” dialog, e.g. from directories, TWAIN sources, iQ-CAPTURE or iQ-CR ACE, the value for the DICOM tag “Institution name” can be defined.

To define the value used to populate the institution name tag with your own institution’s name:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [CustomSettings].
- There, search for the parameter “Institution Name=”.
- Enter the name that you wish to use for your institution: “Institution Name=[name]”.
- Save the changes and restart iQ-VIEW.

9.11.5 TWAIN CONFIGURATION

There are two different transfer modes that can be used to transfer images from a TWAIN source to iQ-VIEW:

- WindowsHandle (Native) mode (the image acquired by the TWAIN source is handed over to iQ-VIEW via memory)
- file-based mode (the TWAIN source itself stores the acquired image, which will then be imported by iQ-VIEW)

iQ-VIEW supports those two modes with the help of the same TWAIN library. In case the image capturing from the TWAIN source is not successful using one mode, we recommend trying the other mode. The WindowsHandle (Native) mode is used as the default.

To change the transfer mode you need to make the appropriate change in the iQ-VIEW.ini file:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [TWAINSettings].
- There, search for the parameter “TransferMode=”, which is – by default – set to “0” (WindowsHandle (Native) mode).
- Change the setting to “TransferMode=1” to use the file-based mode.
- Save the changes and restart iQ-VIEW.

9.11.5.1 CONFIGURING A TWAIN SOURCE

Using the iQ-VIEW TWAIN interface you can import JPEG, BMP, TIFF and RAW images into the “Import” dialog, match them with patient and study data and convert them into DICOM.

Open the iQ-VIEW “Import” dialog.

“TWAIN source” = A click on the button gives the opportunity to choose a scanner, a CR reader system, a camera or another TWAIN compatible device as a source for images.

NOTE:

Make sure that the TWAIN driver for this device is installed properly on the system.

When importing images from a TWAIN source for the first time, left-click on the button and a dialog field will be opened and show the available drivers that are installed on the computer. Select a driver and capture the

image(s) you want. Press “Accept” and the image(s) will be loaded. After adding the patient / study data, click “Import to local imagebox”.

Afterwards when left-clicking on the button, the TWAIN source that was used last will be opened automatically.

If you wish to select another TWAIN source, click on the “TWAIN source” button with a right mouse-click. The dialog field with all available drivers will be opened again and you can select a new source.

9.11.5.2 CONFIGURING VIDAR SCANNERS (USING TWAIN DRIVER)

The iQ-VIEW TWAIN interface can also be used with Vidar scanners. To do that, make sure to install a Vidar TWAIN driver. Only then iQ-VIEW will recognize the Vidar scanner.

Open the “Import” dialog from the Study Browser. Afterwards select the button “TWAIN source”:

A dialog field opens and displays all available TWAIN sources connected to the computer. The Vidar scanner will be listed there, if installed / configured correctly. Select the Vidar scanner to start with the import of scanned images.

NOTE:

If no TWAIN driver is delivered with the Vidar scanner, you may contact your Vidar reseller or check their website for available TWAIN driver downloads.

9.11.5.3 CONNECTING SOURCES WITHOUT TWAIN DRIVER

If no TWAIN driver is available for your device, e.g. Vidar scanner, it will not be possible to directly connect to it from iQ-VIEW. Instead you may define a temporary folder (drop-box folder) on your hard disk that iQ-VIEW can scan regularly for new images. As soon as images are detected and the “Import” dialog is open, the available images will be read out and imported into the “Import” dialog.

To configure this, you may do the following:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [TWAINSettings].
- There, search for the parameter “ImageFolder2Scan”.
- You can select a temporary folder, which will then be scanned regularly by iQ-VIEW for images. The found images will be displayed in the ‘Import’ dialog. Make sure to put a backslash at the end of the given path, e.g. “ImageFolder2Scan=C:\TEMP\”.
- Save the changes and restart iQ-VIEW.
- Configure the device, e.g. scanner, in a way that it will send any scanned image to the specified folder and store them there.

NOTE:

As soon as iQ-VIEW recognizes the images, it will transfer them into the "Import" dialog. They will then automatically be deleted from the temporary folder. In case that you close the "Import" dialog without saving the images to the local database by creating DICOM studies out of them, the images will be lost. Also make sure to complete the images of one study and convert them into DICOM before images from a new study are captured by the device and stored in the drop-box folder.

9.12 CONFIGURATION OF EXPORT FUNCTIONS

9.12.1 CONFIGURATION OF THE INTERNAL iQ-VIEW DICOM EMAIL CLIENT

To set up an email account for the internal iQ-VIEW email client, you need to select the configuration button to enter the configuration of the incoming and outgoing mail server (POP3 settings and SMTP settings). Select the "Email" tab in the query panel of the study browser to access the email reception dialog. Alternatively, you may also set up the internal email client under "Export" → "Send by email" → "Set up" button.

ATTENTION:

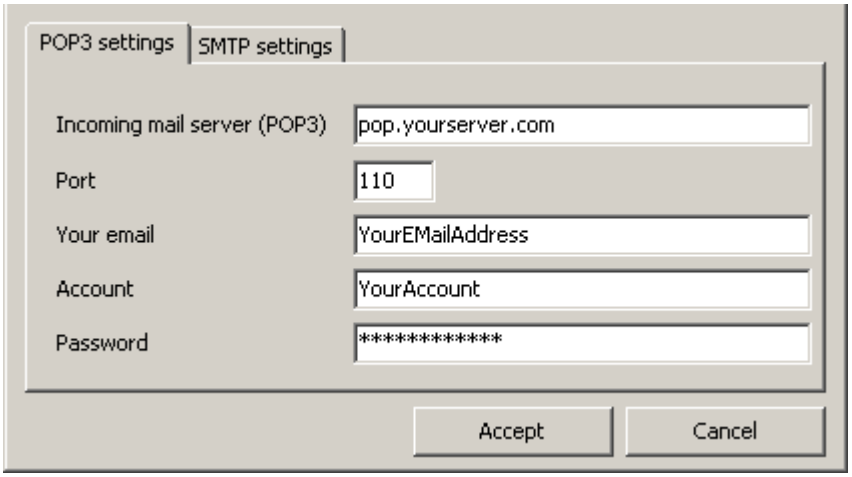
It is only possible to set up an account from an email provider that supports POP3 and SMTP. It would otherwise not be possible to fill in all necessary fields in the POP3 and SMTP settings of iQ-VIEW. For example, the free hotmail service does not provide the information for the POP3 and SMTP mail server.

9.12.1.1 POP3 SERVER SETTINGS

You first have to configure the incoming mail server settings (POP3). Check with your email provider to get the necessary server information.

- Incoming mail server (POP3): Enter the server address for the incoming mail server.
- Port: Enter the port of the incoming mail server (default is 110).
- Your email: Enter your full email address.
- Account: Enter your account name. In some cases this might be the email address.
- Password: Enter the password to access your account.

Press "Accept" to store the settings. They will be written into the iQ-VIEW.ini configuration file. The password will be encrypted. Press "Cancel" to discard your changes and close the dialog.



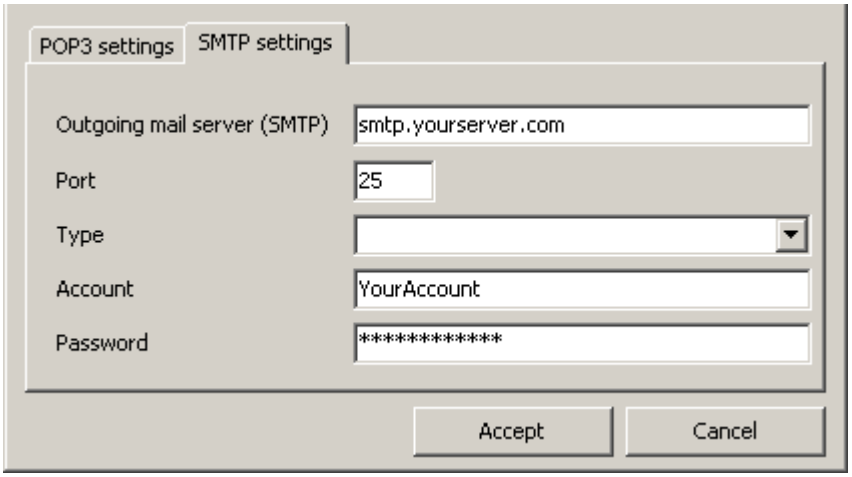
POP3 settings dialog

9.12.1.2 SMTP SERVER SETTINGS

Then you need to also configure the outgoing mail server settings (SMTP). Check with your email provider to get the necessary server information.

- Outgoing mail server (SMTP): Enter the server address for the outgoing mail server.
- Port: Enter the port of the outgoing mail server (default is 25).
- Type: Select the type of login. If issues occur to receive emails when no login type is chosen, please select either “None” or “Simple login”.
- Account: Enter your account name. In some cases this might be the email address.
- Password: Enter the password to access your account.

Press “Accept” to store the settings. They will be written into the iQ-VIEW.ini configuration file. The password will be encrypted. Press “Cancel” to discard your changes and close the dialog.



SMTP settings dialog

9.12.2 SETTINGS FOR IMAGE EXPORT BY DICOM EMAIL

With iQ-VIEW image data can be sent by email, e.g. to a referring physician or to another radiologist for second opinion.

To be able to send images by email, you must first select the intended study or studies or also individual series in the Study Browser. Afterwards left-click on the "Export" button in the Study Browser window and then select "Send by email".

However, before images can be sent by email, the adequate settings must be made. This is done by right-clicking on the "Export" button. A pop-up menu lets you select between:

- "Security": for encryption and anonymization settings
- "Compression": for setting the compression with which images shall be sent
- "Manage email addresses": for the creation of a simple email address book

You can also always change and extend the settings directly from the email send form.

9.12.2.1 SECURITY SETTINGS

WARNING:

In most countries data protection acts and regulations are in effect that require the encryption and/or anonymization of patient data before sending them by email.

Here you can select whether a DICOM email sent from your iQ-VIEW shall be encrypted with a password and / or if the images sent with that email shall be anonymized.

- "Encrypt DICOM objects": If selected, you also need to enter a password in the "Password" entry field. The DICOM objects you send will then be encrypted with the selected password. The recipient of the email will need to know and to enter the password when re-importing the emails. If the password is not provided or entered wrongly, the images are not accessible.
- "Anonymize DICOM header information": If selected, the DICOM data sent in a DICOM email will be anonymized so that the recipient will not know from which patient the images are.

WARNING:

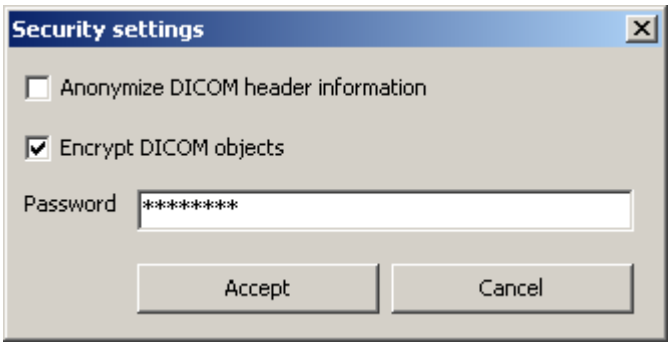
Please note that only the DICOM header of DICOM objects can be anonymized and that only DICOM objects can be encrypted. If for some (e.g. legal) reason, anonymization and/or encryption is required, make sure to activate these options before sending the data.

Be aware that DICOM objects such as SR, DICOM PDF and/or scanned-in reports may not be anonymized completely as there may be references to the patient in the text itself.

If JPEG and other non-DICOM files are created out of the DICOM objects, these files will not be encrypted for sending. An encryption of image files is not absolutely necessary due to the fact that these files, by default, do not contain any patient information (no text overlay). However, please note that report objects (e.g. SR, PDF, scanned-in documents) cannot be encrypted either and usually contain patient-sensitive data. As a result, be careful with sending DICOM objects such as Structured Reports or DICOM PDF files as these cannot be anonymized in the way DICOM images are. If you need to send such data, it is recommended to only send

them as DICOM objects (disable "JPEG / non-DICOM" option) including encryption. Only this combination will ensure a secure transmission.

Click on "Accept" to save settings. These settings can also be accessed directly from the email send form, if you need to change them.



"Encryption settings" dialog with example entries

9.12.2.2 COMPRESSION SETTINGS

To save space, to accommodate the limitations often set by email providers about the size of emails, and to speed up the transfer of an email, you can compress the image data sent in the emails.

You can select between different forms of DICOM image compression:

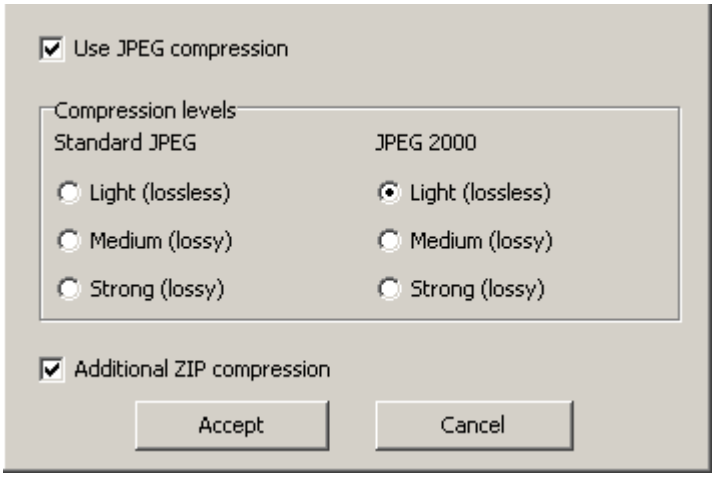
- uncompressed (by un-checking "Use JPEG compression" = no compression, which is not recommended for emailing),
- standard JPEG compression or
- JPEG 2000 compression.

NOTE:

Make sure that the recipient of the DICOM email does have a viewer, such as iQ-VIEW, that can handle JPEG 2000 before you use this form of compression.

A fourth form of compression can be combined with the three forms mentioned above:

- ZIP compression, where the complete image selection will be compressed additionally in a ZIP archive.



"Compression" dialog with example entries

9.12.2.3 LEVELS OF COMPRESSION

Different compression levels are available:

- light compression
  JPEG lossless: CR image compression ratio e.g. about 2.5:1
  JPEG 2000 lossless: compression ratio e.g. about 2.5-3.5:1

- medium compression (100% image quality)
  JPEG lossy: CR images will be compressed about 4:1
  JPEG 2000 lossy: near lossless, compression ratio of about 5:1

- strong (lossy, not recommended for making findings)
  JPEG lossy: CR images with compression ratio of about 6:1
  JPEG 2000 lossy: strong compression ratio of approx. 10:1

Make your selection and then click "Accept" to save the settings. These settings can also be accessed directly from the email send form, if you need to change them.

WARNING:

When using lossy compression, the images will no longer have diagnostic quality and shall therefore not be used for making medical findings. If lossy compression is used, the DICOM header information will be changed accordingly and give details on the compression method and rate of compression.

9.12.2.4 MANAGING EMAIL ADDRESSES

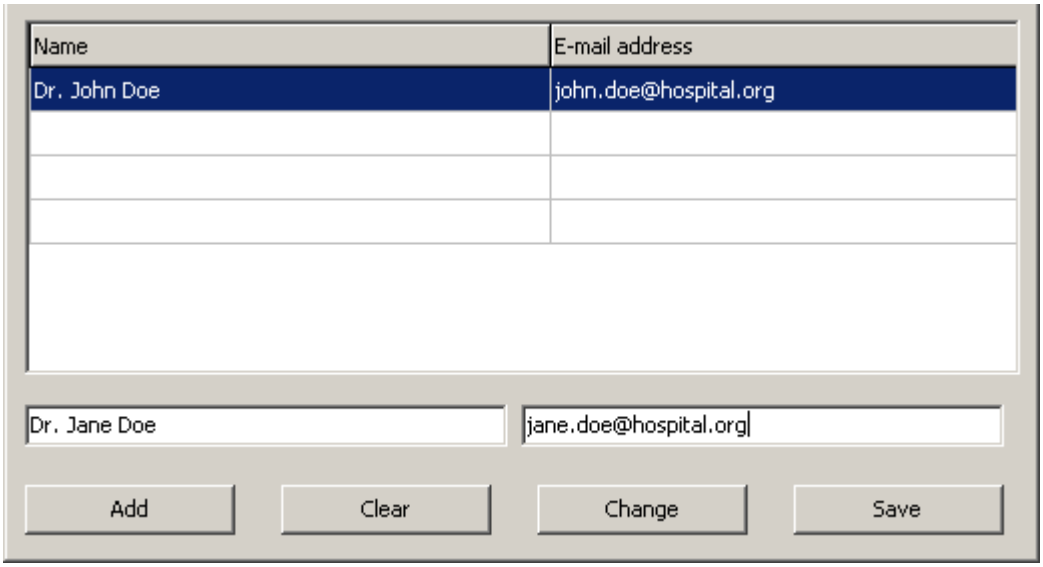
While you can, of course, manually add the recipient's email address in the email send form when you wish to send an email, you can also create a simple address book, maintaining names and email addresses of recipients that regularly receive DICOM emails from you.

- "Name" entry field: Enter the recipient's name.
- "Email address" entry field: Enter the recipient's email address.

- "Add": Click on the "Add" button to add the entered name and email address to the list.
- "Clear": Clears the name and email address of an entry selected from the list.
- "Change": Allows changing the name and the email address of an entry selected from the list.
- "Save": Stores all the additions, deletions and changes in a configuration file (emails.txt).

NOTE:

If the dialog is closed using "x" instead of clicking "Save" any changes made (added, cleared or modified entries) will not be stored.



"Manage email addresses" dialog with example entries

After all these settings are made, the iQ-VIEW DICOM email feature is ready to be used: When a study is selected for email export, iQ-VIEW will compress, encrypt and anonymize the images according to the settings. It is not necessary to select security, compression or the email manager every time a DICOM email shall be sent. After the initial configuration it must only be accessed if changes to the settings become necessary. The configuration dialogs can then either be accessed by right-clicking on the "Export" button or directly from the email send form.

iQ-VIEW will use its own internal email client or the standard email program (e.g. Outlook or Outlook Express) to send those emails. If the latter is chosen, iQ-VIEW as application must be authorized in the standard mail client to access it.

NOTE:

During the process of sending an email no other activities shall be performed. The email sending dialog will close automatically after the job is processed.

9.12.3 CHANGING THE JPEG 2000 COMPRESSION RATE FOR EMAILING

In many cases, DICOM email transfer is used to get a second opinion from another radiologist concerning a patient study. For this purpose it is also allowed to use an irreversible compression.

With CT exams it is usually possible to recognize more than 99% of the structures relevant for diagnostics up to a compression of 1:20, for CR exams it is even higher – up to 1:80.

If the standard medium and strong image compression used for emailing DICOM images with JPEG 2000 compression is not effective enough for you, you may change the default compression values in the iQ-VIEW.ini.

To do so please follow the instructions below:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [ExportSettings].
- For modifying the medium JPEG 2000 compression search for:
  J2KmediumCompressionValue=
  Change the value to increase or decrease the compression rate for medium JPEG compression (default is 5, meaning a compression rate from 5:1).
- For modifying the strong JPEG 2000 compression search for:
  J2KstrongCompressionValue=
  Change the value to increase or decrease the compression rate for strong JPEG compression (default is 10, meaning a compression rate from 10:1).
- Save the changes and restart iQ-VIEW.

9.12.4 CUSTOMIZING THE iQ-LITE LOGO (INSTITUTION.BMP)

The iQ-VIEW installation folder contains a bitmap file called "Institution.bmp". This file included in the iQ-VIEW installation package is used to provide the header illustration of both the iQ-LITE application and the web (HTM) content (if used) on a patient CD or DVD. It is, by default, burned onto a medium as "BANNER.JPG". It will be converted during the project creation process into a JPEG image file.

Default Institution.bmp

This image file can easily be customized to include your institutional logo, contact information, etc.

If you copy a bitmap image called "Institution.bmp" into the iQ-VIEW installation folder (default: C:\Program Files\iQ-VIEW\) with the resolution (size) of 1024 x 75 pixels, you can burn private information of your institution onto the medium.

9.12.5 CREATION OF PATIENT CDS/DVDS ACCORDING TO THE DRG[2] CD CERTIFICATE

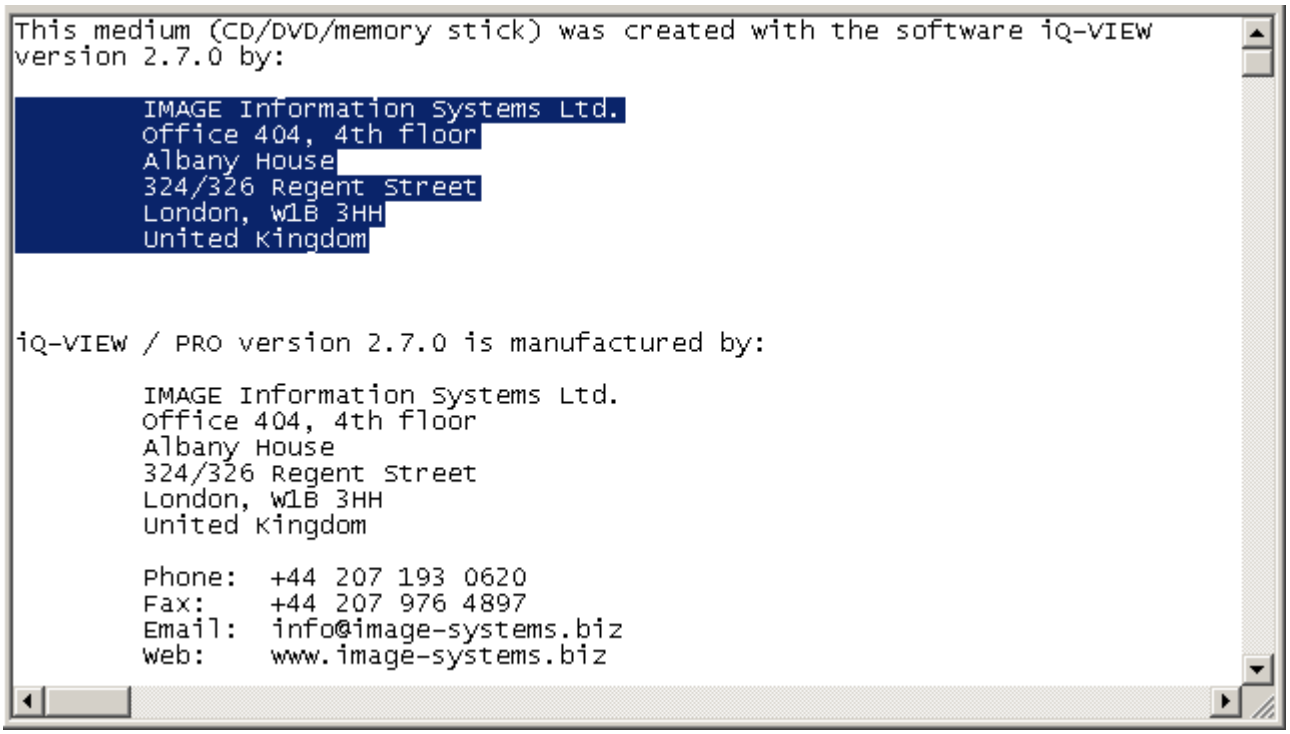
With iQ-VIEW it is possible to create patient CDs/DVDs that adhere to the regulations set by the CD certificate of the German Radiological Society in 2007.

[2] DRG = Deutsche Röntgengesellschaft (German Radiological Society)

To create iQ-LITE CDs in compliance with these requirements you need to follow the instructions below:

- The iQ-VIEW installation directory contains a file called “README.txt”, which gives specifications of the medium and its content, states necessary hardware requirements and contains the end user license agreement. This file is burned onto the CD/DVD during the creation process.

  At the top of the text, there is placed the information about the creating institution of this patient CD. You need to enter the name and address of your institution.



ReadMe.txt file in iQ-VIEW installation folder

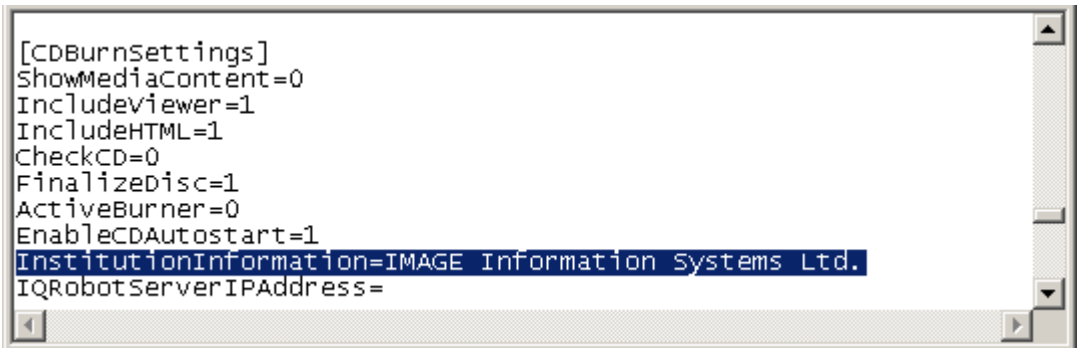
- Several entries have to be made in the configuration file iQ-VIEW.ini, which can be found in the iQ-VIEW installation folder.

  In the section [CDBurnSettings] the following entries must be made:

  1. ShowMediaContent=1 – This will display a file with the complete content of the created medium. You may print it out and include it as CD booklet information.
  2. IncludeViewer=1 – This puts the iQ-LITE CD viewer onto the medium. This function can also be enabled in iQ-VIEW (“Export” → “Export to medium” → “Medium creator” → “Options”).
  3. IncludeHTML=1 – This includes also the web content and JPEG images onto the CD/DVD. This function can also be activated in the iQ-VIEW medium creator under “Options”.
  4. FinalizeDisc=1 – When activated, the created CDs will be finalized. It will not be possible to add further content. This function can also be activated in the iQ-VIEW Medium creator under “Options”.

NOTE:
Please pay attention to the fact that the finalize function is only available for CDs (not DVDs).

5. EnableCDAutostart=0 – This function must be disabled to comply with the CD certificate. iQ-LITE will then not be started automatically after the medium is inserted into the drive.
6. InstitutionInformation=[name of institution] – Enter your institution name to include it in the web content INDEX.HTM.



iQ-VIEW.ini with entries in section [CDBurnSettings]

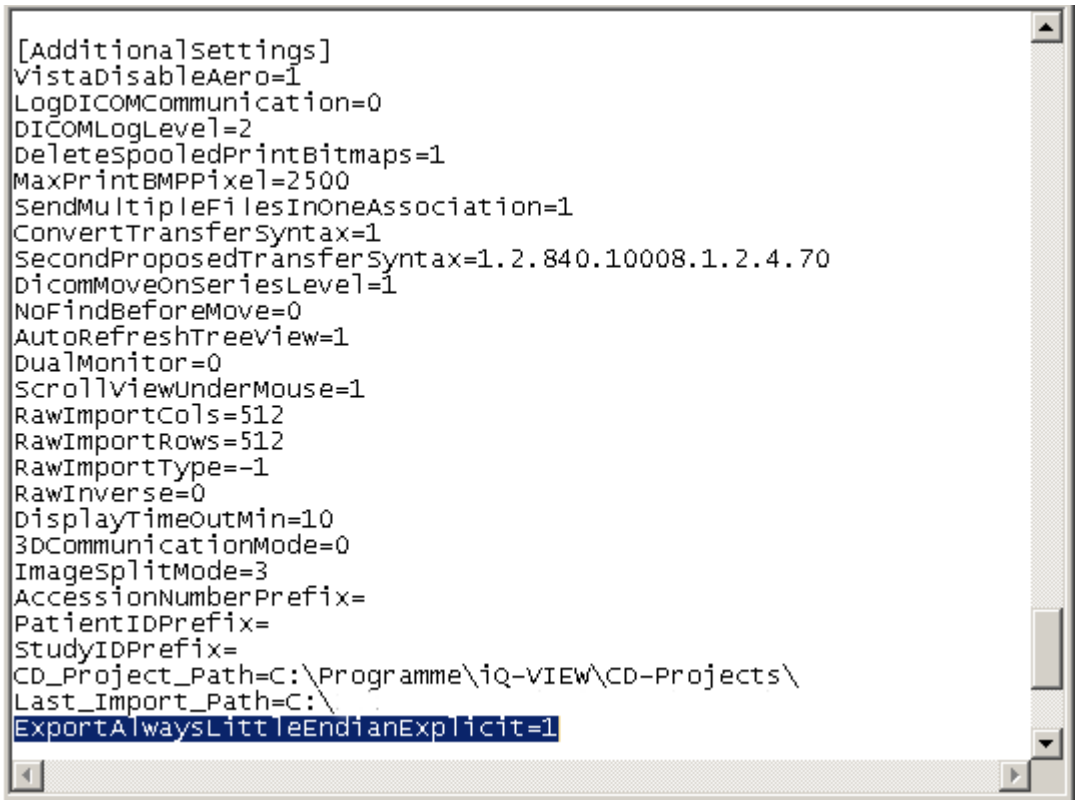
In the section [CustomSettings] the following entry must be made:

7. Institution Name=[name of institution] – Enter your institution name to include it in the media content file.

iQ-VIEW.ini with entries in section [CustomSettings]

In the section [AdditionalSettings] the following entry must be made:

8. ExportAlwaysLittleEndianExplicit=1 – Must be set to 1 (true) to export all DICOM images with the transfer syntax Little Endian Explicit (LEE).



iQ-VIEW.ini with entries in section [AdditionalSettings]

- After burning the medium (CD or DVD) it must be labeled either manually or by medium label print to give the information on what is on the CD/DVD. The necessary information is found on the media content that was displayed during the CD/DVD creation process and should have been printed out as booklet information.
- When the Lite.exe is started, the system is checked for the installed operating system, the used resolution of the display(s) as well as the configured color depth.

  According to the DRG's DICOM CD regulations, the iQ-LITE application will not start, if:
  - the operating system is any other than Windows® 2000, Windows® XP, Windows® Vista or Windows® 7,
  - the used resolution is lower than 1024 x 768 (XGA), or
  - the color depth is less than 24 bit color.

9.13 CONFIGURATION OF PRINT MANAGER FUNCTIONS

9.13.1 PRINTER SETTINGS

iQ-VIEW / PRO can be used to print out medical image data on either Windows printers or via DICOM Print.

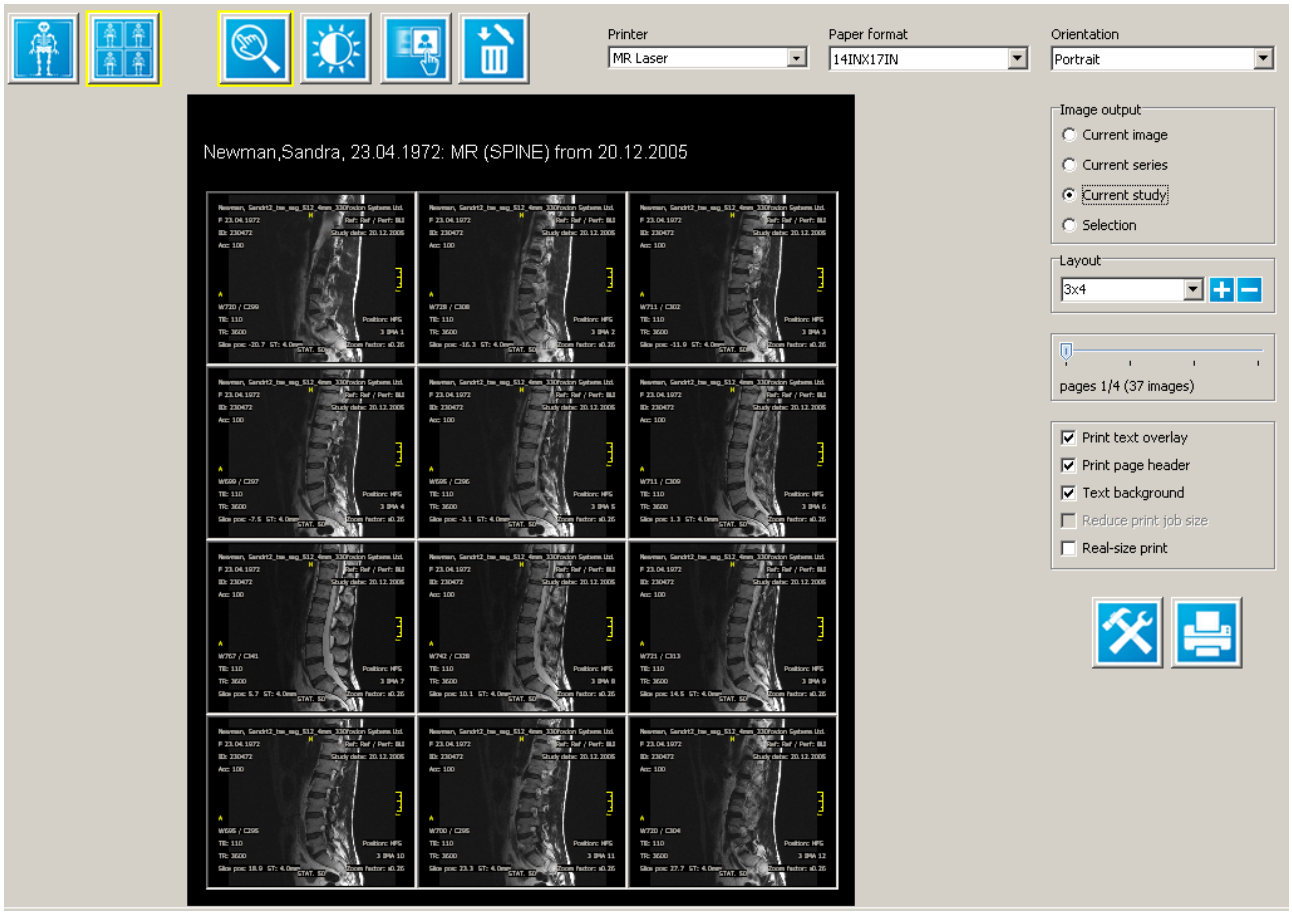
The settings of a Windows printer installed on a system can be changed by clicking the Windows “Start” button and selecting “Settings”. Choose “Printers and Fax Devices” to open the list of available printers. Select the printer where settings must be changed and open “Properties” to make the changes. Refer to the printer manual for further details.

There is a similar procedure for DICOM printers and film imagers. Consult the printer/imager manual for information on how to configure the device. In iQ-VIEW you only configure the DICOM connection to your DICOM printer or film imager. This is done in the “DICOM settings”. For more information, please read section 9.4.2 Configuration of DICOM print nodes.

First, a specific printer must be selected in the “Printer” field. This printer will then be used to print out the images. Select either a Windows printer or a DICOM printer/imager that is installed on the workstation or connected to it.

For necessary changes, the printer settings dialog can be accessed directly from the iQ-VIEW / PRO Print Manager. In case of Windows printers, a click on the “Printer settings” button opens the “Properties” of the selected printer. In case of a DICOM printer, a click on the “Printer settings” button opens the iQ-VIEW “DICOM settings” dialog.

The following figure shows the “Print Manager” window of iQ-VIEW / PRO.



iQ-VIEW "Print Manager" dialog with sample entries

9.13.2 WINDOWS AND DICOM PRINT CONFIGURATION

In the configuration file iQ-VIEW.ini, adaptations can be made to optimize the printing of images.

9.13.2.1 PRINT MARGIN SIZE

It is possible to set a value for the print margin size, e.g. to correct potential issues with cut-off images on printouts.

To change the size of the print margin in the iQ-VIEW.ini, please follow the instructions below:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [PrintSettings].
- There, search for the parameter "PaperPrintMarginSize=".
- Enter the width of the margin after the "=". The width must be given in percent (%) to the overall width. Thus, in case that the images are cut off when printed, simply increase the margin width (e.g. 5 for 5%).
- Save the changes and restart iQ-VIEW.

9.13.2.2 CONTRAST AND BRIGHTNESS ADJUSTMENTS

It is further possible to adjust contrast and brightness using a correction value, in case the monitor display deviates from the printout.

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [PrintSettings].
- For contrast adjustments search for:
  PaperPrintContrastAdjust=
  Enter the correction value to change the contrast of the printout. The display on the monitor is not affected by this adjustment.
- For brightness adjustments search for:
  PaperPrintBrightnessAdjust=
  Enter the correction value to change the brightness of the printout. The display on the monitor is not affected by this adjustment.
- Save the changes and restart iQ-VIEW.

9.13.2.3 INCLUDING A PAGE TITLE ON PRINT-OUTS

If you wish to include, for instance, your institution's (hospital or practice) name on the print-outs done in the "Print Manager", you can configure a page title by changing the appropriate parameter in the iQ-VIEW.ini:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [PrintSettings].
- There, search for the parameter "PageTitle=".
- Enter the name of the institution after the "=", e.g. PageTitle=Hospital.
- Save the changes and restart iQ-VIEW.

9.13.2.4 FONT SIZE ADJUSTMENTS FOR STUDY INFORMATION IN THE PAGE HEADER

Sometimes the study information stated in the page header of a print preview can be very long as it includes the most important information describing this study – the patient's name and date of birth, the kind of study plus the study description and the date when the study was taken.

As the space on the print-out will be limited, iQ-VIEW will automatically resize the study information in the page header so that it will fit onto the print-out. That means, the font size will be reduced until the information fits onto the page. However, iQ-VIEW also defines a minimum font size (by default 5 pixels) to avoid that the information could become too small to be comfortably read.

In case you wish to adjust the minimum font size that iQ-VIEW can use, you will have to modify the appropriate parameter in the iQ-VIEW.ini:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.

- Select the iQ-VIEW.ini configuration file and go to the section [PrintSettings].
- There, search for the parameter “StudyHeaderMinSize=”.
- Enter the minimum font size you wish to use in pixels after the “=”, e.g. StudyHeaderMinSize=7 (for a maximum font size of 7 pixels.
- Save the changes and restart iQ-VIEW.

9.13.2.5 WINDOWS PRINT MODES

By default iQ-VIEW uses a standard mode for Windows print. In the configuration file iQ-VIEW.ini, section [PrintSettings], the entry “WindowsPrintUseExtendedModi” is set to “0” (default).

There are, however, three different modes that can be used to print images with a Windows printer. If the Windows printer you selected does not print the images as wished (e.g. black or white pages are printed), there might be an incompatibility. We recommend changing the print method to ensure compatibility.

To change the Windows print method you need to make the appropriate change in the iQ-VIEW.ini file. You can find the file in the iQ-VIEW root directory:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [PrintSettings].
- First set the entry “WindowsPrintUseExtendedModi” to “1” to enable the use of extended print modes.
- Afterwards select the entry “WindowsPrintMode” and adjust the print mode (valid entries are 1, 2 and 3). By default the first Windows Print method (mode 1) is selected (WindowsPrintMode=1).
- Change the settings to:
  WindowsPrintMode=2 to select mode 2, or
  WindowsPrintMode=3 to use mode 3
- Save the changes and restart iQ-VIEW.

9.13.2.6 CHANGING BACKGROUND OF WINDOWS PRINTOUTS

It is further possible to change the background of printouts on a Windows printer from white (default) to black. To do that you need to make the appropriate change in the iQ-VIEW.ini file:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [PrintSettings].
- There, search for the parameter “WindowsPrintBlackPaper=”. By default the entry is set to ‘0’ (white).
- To print your images with a black background select “WindowsPrintBlackPaper=1”.
- Save the changes and restart iQ-VIEW.

9.13.3 REMOVING RULER DISPLAY

In case the ruler display in the print preview and on the printouts disturbs your viewing / processing of the images, you may disable it:

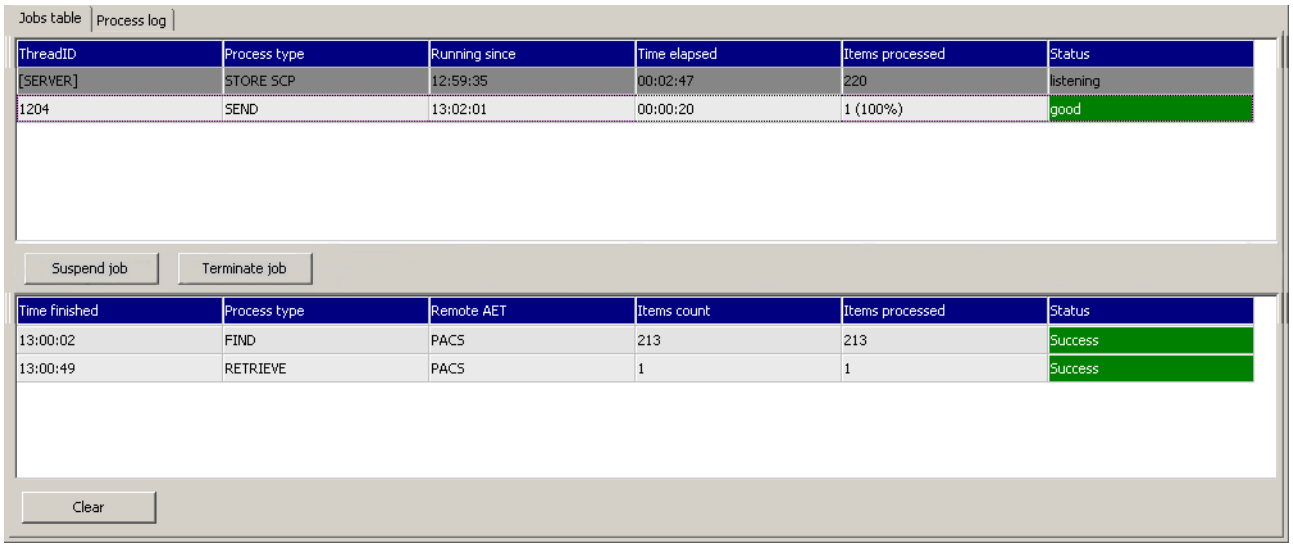
- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [PrintSettings].
- There, search for the parameter “ShowRuler=” and set it to “0” (ShowRuler=0).
- Save the changes and restart iQ-VIEW.

9.14 PROCESS AND LOG INFORMATION

A click on the “Jobs” button in the Study Browser opens the Process manager, in which two tables are offered that give information about the DICOM processes in the iQ-VIEW network and that log all important activities done in the application as well as the DICOM network communication.

9.14.1 JOBS TABLE

The “Jobs table” states the different jobs send over the DICOM network (Echo, Find, Move, Send, Retrieve, Print) as well as the burning processes:



Jobs table with example entries

In the upper table, all currently running jobs are listed, such as the iQ-VIEW server listening on the defined port. Any of these jobs can, if selected by mouse-click, be suspended temporarily (button “Suspend job”) or be completely terminated (button “Terminate job”).

The lower table lists all already finished jobs, like sending, querying or retrieving jobs as well as DICOM print jobs. The status indicates whether a job was processed successfully or with errors. Detailed log information for each of these jobs is given in the process log.

9.14.2 PROCESS LOG

The “Process log” logs the DICOM network processes as well as burning processes and gives (detailed) information on their execution and errors.

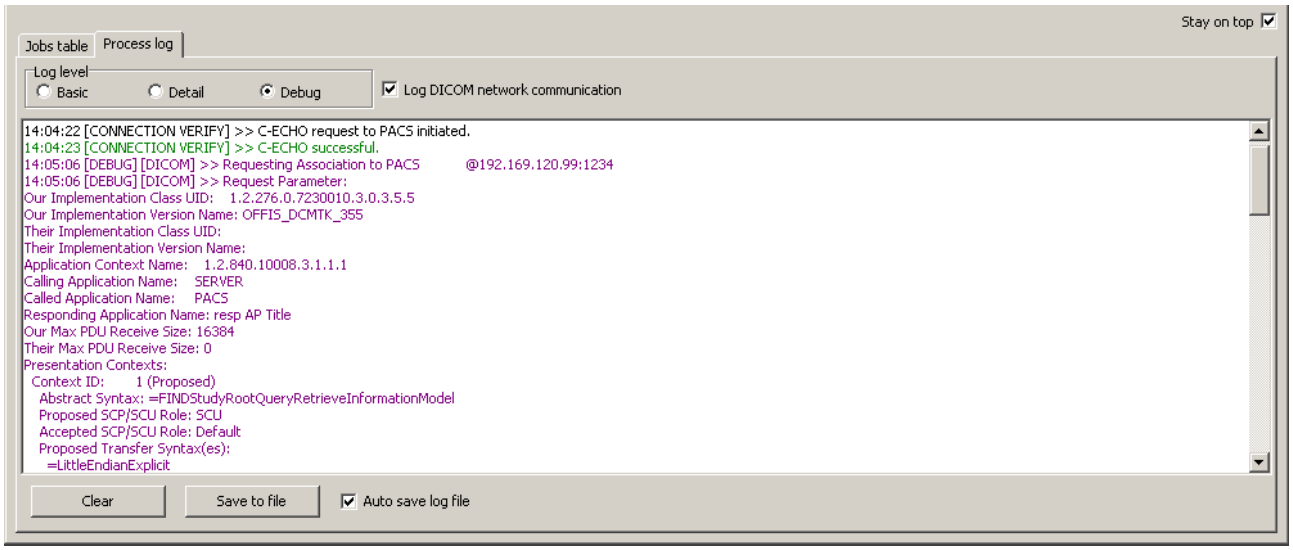
NOTE:

The process log within the “Jobs” window only shows the log entries of the current iQ-VIEW session. When the application is shut down, the content of the process log is written into a log file (see below for more information). Therefore log information from earlier iQ-VIEW sessions can only be viewed in the log file itself.

Three log levels are possible:

- “Basic” = gives out error messages and warnings concerning the actions performed with the application
- “Detail” = additionally to the information of level “Basic”, this level gives information about the starting and finishing (e.g. DICOM network and burning processes); this level is selected by default.
- “Debug” = this log level comprises the information from the lower log levels and additionally logs more detailed information concerning running processes (e.g. DICOM network process details, hanging protocol information, etc.), including explicit UID and directory information. This log level is meant to ensure better technical support in case of difficulties. The log level “Debug” should generally be activated if technical problems or errors occur.

“Log DICOM network communication” can be activated in addition to the general log level and independently from the selected log level. This function logs the DICOM network connections on socket level and should be activated if there are problems with the network connections beyond the information “Association rejected”. It is recommended, however, to use it in combination with higher general log levels (e.g. “Detail” or “Debug”).



Process log with example entries

9.14.3 PROCESS LOG FILES

The process logs, including the DICOM network communication loggings (if activated), are automatically saved in the folder "Logs" in the iQ-VIEW directory, each time the iQ-VIEW application is closed. The logs are saved as a text file (.log) called "iQ-VIEW_yyyy-mm-dd.log", e.g. the log saved on July 20, 2009 would be named "iQ-VIEW_2011-02-18.log".

If iQ-VIEW is shut down more than once per day, then iQ-VIEW will add the additional log information to the log file that was created when the application was closed for the first time that day.

"Auto save log file" = when activated in the "Process log" the log file will be written and saved at the moment the processes occur. This ensures that a log file will also be generated in the case of an abnormal termination of the program. This option is activated by default.

NOTE:

If you change the settings for "Auto save log file" (to either activate or deactivate the option) during an iQ-VIEW session, it is recommended to restart the application. Otherwise not all information may be logged.

"Stay on top" = if this checkbox is activated, the process log dialog will always stay on top.

NOTE:

To save hard disk space it may be necessary once in a while to check the "Logs" folder in the iQ-VIEW directory and to delete old log files that are no longer needed.

9.15 CONNECTING OTHER MODULES TO iQ-VIEW

iQ-VIEW provides a number of interfaces to other modules from the product portfolio. Some of these modules are directly integrated into the iQ-VIEW package and are automatically installed during the iQ-VIEW installation process; others are offered as stand-alone products and therefore must be installed separately and connected to iQ-VIEW.

9.15.1 INSTALLING AND CONNECTING iQ-3D

iQ-3D is integrated into the installation package of iQ-VIEW and is therefore automatically installed together with the main application. iQ-3D does only work in combination with iQ-VIEW or iQ-VIEW PRO and cannot be used separately.

There is no configuration necessary to interface iQ-3D with iQ-VIEW. After loading a multi-slice study into the viewer (e.g. CT or MRI) and selecting one series, this series will automatically be transferred to iQ-3D when clicking the post-processing button or selecting this module in the post-processing menu.

NOTE:

iQ-3D has its own licensing. An iQ-VIEW or iQ-VIEW PRO license does not activate the 3D post-processing module. To run iQ-3D after the expiration of the trial period, you need to obtain a full license. For more information, please refer to the iQ-3D user documentation.

9.15.2 INSTALLING AND CONNECTING iQ-CAPTURE

The iQ-CAPTURE DirectShow® interface is integrated into the installation package of iQ-VIEW / PRO and is therefore automatically installed together with the main application. iQ-CAPTURE does only work in combination with iQ-VIEW PRO and cannot be used separately. A full license of iQ-VIEW PRO is necessary to use the iQ-CAPTURE DirectShow® interface. In iQ-VIEW the button for the activation of the interface is grayed-out as this feature is not available in the basic version.

There is no configuration necessary to interface iQ-CAPTURE with iQ-VIEW PRO. After opening the iQ-VIEW PRO "Import" dialog a click onto the "iQ-CAPTURE" button opens the user interface of the iQ-CAPTURE module.

NOTE:

For information on how to configure iQ-CAPTURE and how to connect DirectShow® capable devices (e.g. non-DICOM Ultrasounds, cameras, etc.) to iQ-CAPTURE, please refer to the iQ-CAPTURE user documentation. It is recommended to use iQ-CAPTURE in combination with an iQ-CAPTURE or iQ-CAPTURE PRO hardware package, consisting of a frame grabber and a foot switch. Which hardware is needed depends on the signals you wish to capture.

9.15.3 INSTALLING AND CONNECTING iQ-STITCH

While iQ-STITCH can also be used as a stand-alone application, it is also directly integrated into the installation package of iQ-VIEW and is therefore automatically installed together with the main application. It can be used with both iQ-VIEW and iQ-VIEW PRO.

There is no configuration necessary to interface iQ-STITCH with iQ-VIEW. After loading a CR study into the viewer and selecting the images that you wish to stitch together, the selected images will automatically be transferred to iQ-STITCH when clicking the post-processing button or selecting this module in the post-processing menu. After processing in iQ-STITCH, the stitched images will then be sent back to the iQ-VIEW imagebox and attached to the original study.

NOTE:

iQ-STITCH has its own licensing. An iQ-VIEW or iQ-VIEW PRO license does not activate the iQ-STITCH post-processing module. To run iQ-STITCH after the expiration of the trial period, you need to obtain a full license. For more information, please refer to the iQ-STITCH user documentation.

9.15.4 INSTALLING AND CONNECTING iQ-MAMMO

Both iQ-VIEW and iQ-VIEW PRO can be set up to transfer mammography studies (MG, CR) to the iQ-MAMMO viewer, but it is recommended to use iQ-VIEW PRO in combination with the mammography viewer. The iQ-MAMMO software is not included in the iQ-VIEW installation package and must be installed and licensed separately from iQ-VIEW.

After iQ-MAMMO is installed on the computer where iQ-VIEW runs, the connection to iQ-VIEW must be configured manually in the iQ-VIEW.ini so that mammography studies selected in the iQ-VIEW study list can directly be transferred to the iQ-MAMMO viewer. To connect iQ-MAMMO, please follow the steps below:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [CustomSettings].
- There, you will find the parameter "iQ-MAMMO Path=". Enter the path to the iQ-MAMMO executable, e.g. C:\iQ-MAMMO\MGView.exe.
- Additionally, you can decide whether iQ-VIEW or iQ-MAMMO shall function as your primary viewer. To do that, select the parameter "UseInternalViewerAsDefault=" in the same section. You have the following options:
  - "UseInternalViewerAsDefault=1" = The iQ-VIEW viewer remains the primary viewer; the iQ-MAMMO viewer can be accessed via right-click menu in the study browser. This option would be useful for users who read mammography studies irregularly and will therefore need the iQ-MAMMO viewer only occasionally.
  - "UseInternalViewerAsDefault=0" = The iQ-MAMMO viewer will become the primary viewer; the iQ-VIEW viewer can be accessed via right-click menu in the study browser. This option is useful for those who primarily read mammography studies and only rarely need to view studies in the iQ-VIEW viewer.

  Of course, in any case both viewers can be accessed if necessary.
- After having made the decision, save the changes and restart iQ-VIEW.

NOTE:

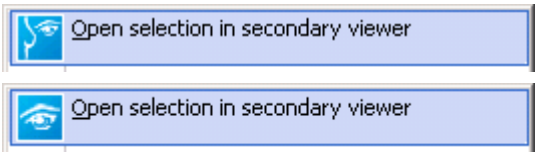
For complete information on the installation, setup and use of the iQ-MAMMO software, please consult the software's user documentation.

9.15.4.1 ACCESSING THE DIFFERENT VIEWERS FROM iQ-VIEW

Depending on the settings made in the iQ-VIEW.ini, the two viewers will become accessible in the iQ-VIEW study browser in the following ways.

If iQ-VIEW was selected to be the primary viewer, then the "View" button will show the regular iQ-VIEW icon.

If the iQ-MAMMO mammography viewer was configured to be the default (primary) viewer, then the "View" button will show the iQ-MAMMO icon.



The viewer that was not configured to be the primary viewer will be the "secondary viewer". It can be accessed via right click into the study list and selecting the entry "Open selection in secondary viewer". The button icon indicates which viewer is the secondary one.

9.15.4.2 LIMITATIONS OF THE iQ-MAMMO VIEWER INTERFACE

Loading of DICOM data from remote archives or from directories/media:

- Only studies and series already available in the local iQ-VIEW imagebox can directly be opened in iQ-MAMMO. Studies stored on remote DICOM archives or on media and in directories first have to be imported into the local imagebox before they can be transferred to the mammography viewer.
- Therefore, the iQ-MAMMO button and menu entry will only show on the "Database" tab. They will be disabled when switching to the "Network" or "Filesystem" tab.
- In case iQ-MAMMO is generally set as primary viewer, the option "Just retrieve images (don't show)" might be activated in the "Local settings" (see section 9.3.6 "Additional settings" group). This will retrieve studies from remote archives ("Network") and "Filesystem" without loading them into the iQ-VIEW viewer. You can then easily switch back directly to the "Database" tab, select the study you wish and open it in the mammography viewer.

Availability of series preview thumbnails:

- iQ-MAMMO depends on the thumbnails created by iQ-VIEW/IQSERVER to be able to display series previews in its own viewer.
- To ensure that the thumbnails are available, keep the default option that the IQSERVER creates bitmap thumbnails for all incoming DICOM images activated (see section 9.2.2.6 Advanced server settings).
- For DICOM studies imported via "Filesystem" you may have to create the thumbnails manually by using the preview icons panel in the study browser and opening the respective studies down to image level. This will create the thumbnails and make them available also for iQ-MAMMO. If not done, iQ-MAMMO will only show "no image" thumbnails instead.

9.15.5 CONNECTING iQ-CR ACE

9.15.5.1 CONFIGURING THE iQ-CR ACE INTERFACE

The general interface to iQ-CR ACE is available both for iQ-VIEW and iQ-VIEW PRO and connects the iQ-CR ACE to the radiological workstation. However, it is recommended to use iQ-VIEW PRO in combination with the iQ-CR ACE scanner. A separate licensing is necessary to be able to use this particular interface.

NOTE:

The iQ-CR ACE interface and the post-processing software have their own licensing. An iQ-VIEW or iQ-VIEW PRO license does not automatically activate the access to the iQ-CR ACE interface. For more information, please refer to the iQ-CR ACE user documentation.

When the iQ-CR ACE is set up and configured, also the iQ-CR ACE acquisition and post-processing software must be installed on the system where iQ-VIEW / PRO runs. This software is provided as an installation package together with the iQ-CR ACE hardware delivery.

The iQ-VIEW "Import" dialog includes an "iQ-CR ACE interface" button that connects to the iQ-CR ACE acquisition software, if the IQ-CR ACE is selected as connected device. During the installation of the iQ-CR ACE software, the interface between iQ-VIEW / PRO and the iQ-CR ACE is already configured. A click onto the "iQ-CR ACE interface" button in the "Import" dialog therefore immediately connects to the CR scanner.

NOTE:

In the rare case that the interface is not configured automatically, please consult the iQ-CR ACE user documentation for details on how to configure the connection between iQ-VIEW / PRO and the iQ-CR ACE scanner manually.

9.15.6 CONNECTING IMAGE DISPLAYS (TRUE 12 BIT MODE)

While IMAGE DISPLAYS can, of course, be connected to both iQ-VIEW and iQ-VIEW PRO, only the PRO version in combination with IMAGE DISPLAYS PRO offers the possibility to make use of the true 12 bit grayscale mode.

Some of the files necessary for interfacing iQ-VIEW / PRO with IMAGE DISPLAYS are provided in the iQ-VIEW installation package and are automatically installed during the iQ-VIEW installation process. To successfully connect iQ-VIEW / PRO to the IMAGE DISPLAYS, the IMAGE DISPLAYS software and drivers provided together with the hardware delivery must additionally be installed. Only then will iQ-VIEW find the interface automatically.

NOTE:

For detailed information on how to install the IMAGE DISPLAYS software and to set up and configure IMAGE DISPLAYS, please refer to the IMAGE DISPLAYS user documentation.
The IMAGE DISPLAYS software may also be subject to separate licensing. You will find the necessary information in the user documentation.

Using the "IMAGE DISPLAYS setup" menu item in the "Additional settings" menu of the viewer, you can access the IMAGE DISPLAYS configuration dialog to make the appropriate settings for the displays connected to the system. This menu item is available both in iQ-VIEW and iQ-VIEW PRO whenever IMAGE DISPLAYS (PRO or others) are connected to the system and were detected when the application was started for the first time.

During the first start of the iQ-VIEW software the system checks whether IMAGE DISPLAYS are connected and automatically adjusts the functionality:

- If no IMAGE DISPLAYS are connected, the "IMAGE DISPLAYS setup" menu item will be grayed out in both iQ-VIEW and iQ-VIEW PRO. There is no 12 bit mode activated.
- If IMAGE DISPLAYS are connected, but are not of the PRO series, the "IMAGE DISPLAYS setup" menu item will be accessible and open the configuration dialog for the IMAGE DISPLAYS. There is no 12 bit mode activated.
- If IMAGE DISPLAYS PRO are connected, both iQ-VIEW and iQ-VIEW PRO will be able to access the displays' configuration dialog ("IMAGE DISPLAYS setup" menu item), but only in iQ-VIEW PRO the true 12 bit gray-scale mode will be activated.

The displays configuration is stored in a file called “displays.dat” that can be found in the subfolder “DISPLAYS” of the iQ-VIEW installation directory. Due to the configuration stored in this file it is not necessary to check the displays configuration each time iQ-VIEW / PRO is started.

NOTE:

In case the display configuration changes (e.g. IMAGE DISPLAYS are connected at a later time), the “displays.dat” file must be manually deleted from the folder so that the new displays are found at the next iQ-VIEW application start. For more information, please also consult the IMAGE DISPLAYS user documentation.

Potential errors occurring in the interface to the IMAGE DISPLAYS are logged in a file called “displays.log”. Also this file is written into the subfolder “DISPLAYS” of the iQ-VIEW installation directory.

Automatic IMAGE DISPLAY deactivation:

For quality reasons and to prolong the economic life-time of the IMAGE DISPLAYS, iQ-VIEW / PRO will deactivate the IMAGE DISPLAYS if they are idle for a specified period of time. Idle in this case means that there is no mouse or keyboard activity in the viewer window. The default idle period is set to ten minutes.

As soon as there is new activity in the viewer window or new studies are loaded from the study browser into the viewer, the displays will be activated again.

The time period after which the IMAGE DISPLAYS will be deactivated can be set individually in the iQ-VIEW main configuration file. To change the default idle period:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [AdditionalSettings].
- Search for the parameter “DisplayTimeOutMin=”, which is – by default – set to “10” (minutes).
- Set the new idle period in minutes after the “=”, e.g. “DisplayTimeOutMin=20” (for 20 minutes).
- Save the changes and restart iQ-VIEW.

9.15.7 CONNECTING iQ-ROBOT

iQ-ROBOT is a module for burning and labeling CDs and DVDs on a robot device.

iQ-VIEW offers an interface to directly connect to the iQ-ROBOT server when creating a patient CD/DVD. The iQ-ROBOT software comes in a separate installation file, but then receives projects from either iQ-VIEW or iQ-VIEW PRO to be burned. The iQ-VIEW installation package, however, contains the “RobotClient.dll”, which interfaces, when configured correctly, the iQ-VIEW station with the iQ-ROBOT server.

In iQ-VIEW only the IP address of the iQ-ROBOT server system and the path of the shared project folder must be configured. This can be done directly from the application. When clicking onto the iQ-ROBOT button in the “Medium creator” dialog of iQ-VIEW for the first time, a configuration dialog opens. Here the following settings must be made:

- the IP address of the system where the iQ-ROBOT server is installed, and

- the directory path of the shared project folder where the project data created by iQ-VIEW will be stored to be sent to the robot system. The folder in that path has to be created and full access must be given to all stations that are supposed to store project data in that folder.

After the first configuration, the project creation process will start immediately when clicking onto the "iQ-ROBOT" button. To change the configuration, right-click onto the button to access the configuration dialog again.

These settings will be stored in the iQ-VIEW.ini configuration file. You can therefore also make the changes there:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [CDBurnSettings].
- Search for the parameter "IQRobotServerIPAddress=" and enter the IP address of the iQ-ROBOT server machine after the "=", e.g. "IQRobotServerIPAddress=192.168.120.11".
- Then search for the parameter "IQRobotProjectPath=" and enter the entire path to the correct directory, where the projects shall be stored.
- Save the changes and restart iQ-VIEW.

When exporting DICOM images from iQ-VIEW to iQ-ROBOT, a temporary folder with a time stamp will be created in the directory path given for the placement of projects. After the project creation is finished, the entire content and labeling information is automatically handed over to the iQ-ROBOT server that will take the project and transfer it to the robot device to be burned and labeled.

NOTE:

Make sure that both iQ-VIEW and iQ-ROBOT are given access to the directory where the projects are stored. Otherwise the communication will fail.

9.15.7.1 TROUBLE-SHOOTING THE iQ-ROBOT COMMUNICATION

The iQ-VIEW log file will only generally state errors in the communication between iQ-VIEW and iQ-ROBOT. For more detailed information and description of the reasons for failure, a separate log file is written by the "RobotClient.dll". Like this file, you will find the log information in the subfolder "ROBOT" of the iQ-VIEW installation directory.

The log files are marked with a time stamp for each day. Thus, it is easy to find the log information of the respective day where the issues occurred.

9.15.7.2 SENDING BURN JOBS TO iQ-ROBOT USING DICOM STORE

Starting from iQ-ROBOT software version 2.0.0 it will also be possible to connect iQ-VIEW and the robot system by using DICOM communication. Burn jobs can then be sent from iQ-VIEW using DICOM STORE and are burned onto medium. This functionality will only be available with iQ-ROBOT PRO.

NOTE:

For details on how to connect iQ-ROBOT PRO via DICOM communication to other stations, such as iQ-VIEW, please consult the respective iQ-ROBOT user documentation.

9.15.8 CONNECTING iQ-NUC

Both iQ-VIEW and iQ-VIEW PRO can be set up to transfer nuclear medical image studies (NM) to the iQ-NUC software. It can, however, also be used as a stand-alone software application.

NOTE:

We recommend using iQ-VIEW PRO (including NM color schemes) in combination with iQ-NUC to provide a full-fledged nuclear medical workstation.

iQ-NUC comes in a separate installation package that includes a number of different modules for cardiac, thyroid, renal, esophageal, pulmonary, brain and bone analysis and must be licensed separately from iQ-VIEW.

After iQ-NUC is installed, the connection to iQ-VIEW must be configured in the iQ-VIEW.ini so that NM studies can be selected in the study list and directly be transferred to the appropriate iQ-NUC module:

- Close iQ-VIEW.
- Open the Windows Explorer and select the iQ-VIEW installation folder.
- Select the iQ-VIEW.ini configuration file and go to the section [CustomSettings].
- Insert the following parameters in this section to configure the connection:
  - IQNucPath=C:\iQ-NUC\database\import\
    → This parameter contains the import path for the images that shall be transferred from iQ-VIEW to iQ-NUC. They are then copied into the import folder of the iQ-NUC database to make them available in this post-processing module. Make sure to end the directory path with a backslash "\".
  - IQNucExe=C:\iQ-NUC\prog\iq-monitor.exe
    → This parameter contains the path to the iQ-NUC file "iq-monitor.exe". The iQ-NUC Monitor module can be found in the folder "Prog" of the installation directory. This folder also includes all iQ-NUC processing modules, such as "iq-myo.exe" for the cardiac module.
  - ShowPostProcBtnInBrowser=1
    → This parameter set to "1" activates the post-processing button for the Study Browser. Thus, nuclear medical studies can directly be selected and transferred from the study list and don't have to be loaded first into the viewer.
- Save the changes and restart iQ-VIEW.

NOTE:

For complete information on the installation, setup and use of the iQ-NUC software package including all its modules, please consult the iQ-NUC user documentation.

9.15.9 INSTALLING THE ORTHOVIEW™ PLUG-IN

OrthoView™ is the orthopedic templating software that can be connected to iQ-VIEW / PRO using an interface already integrated into the software. Using either the post-processing button or menu entry a selected series of CR images can be transferred from the viewer to OrthoView™ for orthopedic templating procedures. The results and reports can afterwards be returned to iQ-VIEW and attached to the original study. OrthoView™ can either be installed from a CD-ROM or after online download.

Make the installation by following the instructions given here:

- Use the Windows Explorer to select the OrthoView™ installation file either on the CD drive or in the folder to which you downloaded the installation package.
- Execute the installation file and follow the instructions of the installation program to install OrthoView™ on your hard disk. It is recommended to install the software in the default directory.
- OrthoView™ does not run without a license. Collect the necessary information using the OrthoView™ License Manager and contact your reseller for a demo license or for purchasing a full license.

9.15.9.1 LAUNCHING ORTHOVIEW™

Loading patient studies into OrthoView™ for orthopedic templating is done directly from the iQ-VIEW / PRO viewer window. Right-click on the post-processing button or move your mouse over the black corner of the button to open the sub-menu. Alternatively select the post-processing menu entry.

If OrthoView™ is installed correctly, the sub-menu will display the OrthoView™ option. Select it to launch OrthoView™ and load the current study.

9.15.9.2 CHANGING THE PORT NUMBER OF iQ-VIEW / PRO AND ORTHOVIEW™

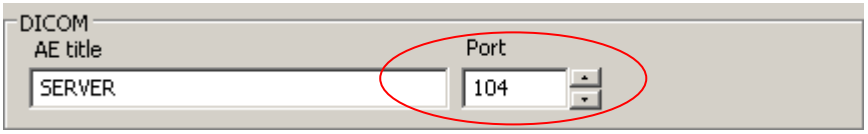
iQ-VIEW / PRO and OrthoView™ are by default running on the same port 104. This may lead to problems regarding the DICOM communication between iQ-VIEW / PRO and OrthoView™ or between them and another DICOM node (remote archive, PACS, modality), since it is not possible to have two applications running on the same port at the same time.

It might therefore be necessary to change the port of either iQ-VIEW / PRO or OrthoView™.

To change the port of iQ-VIEW / PRO, please follow the steps below:

- Open the Server Administration and go to the “Server” section.

- There select the sub-section “General”.



Server Admin Tool

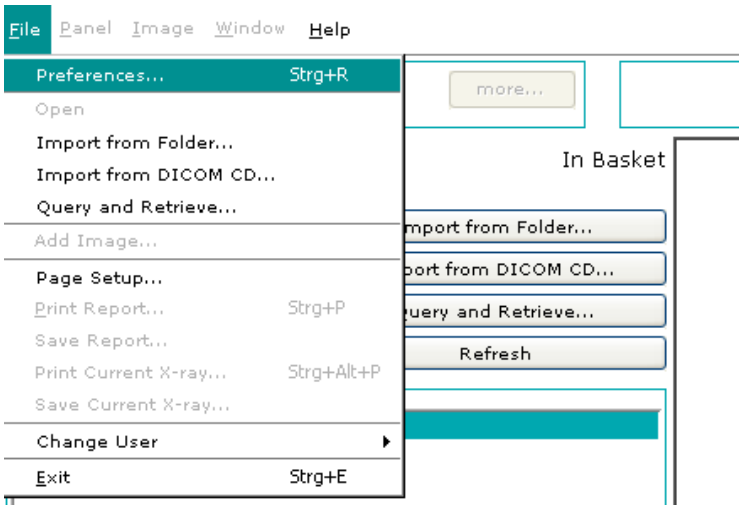
- Then select the entry “Port” in the section “DICOM” and change it to a number different than 104.
- Afterwards click “OK” to save the settings and to automatically restart the server.

NOTE:

Make sure that the newly selected port is not blocked and not used by any other application. Also remember to adjust the iQ-VIEW / PRO port number in the DICOM settings of those DICOM nodes that iQ-VIEW / PRO is supposed to communicate with (modalities, remote archives).

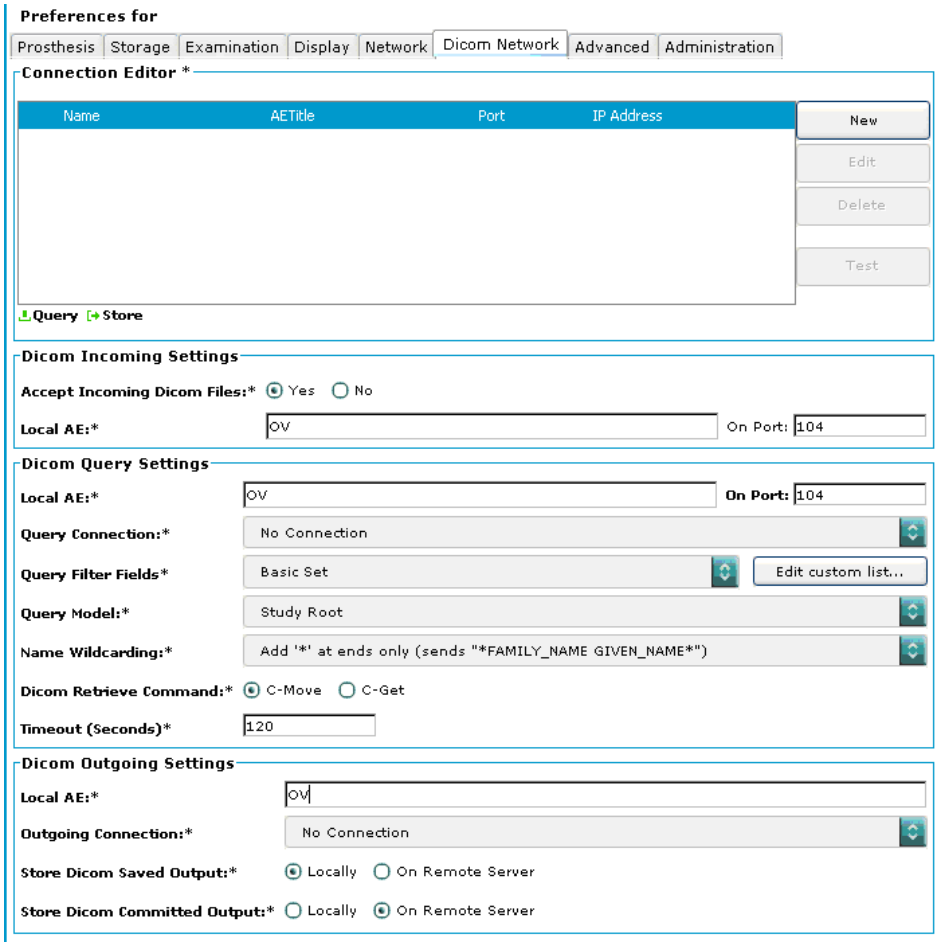
To change the port of OrthoVIEW™, please follow the steps below:

- Open OrthoVIEW™ and select “Preferences” in the “File” menu:



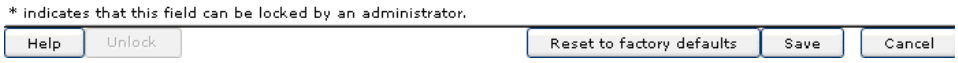
OrthoView™ main window

- A new window opens and displays the preferences that can be set. Open the tab “Dicom Network” and change the two “On Port” entries:
  - in section “Dicom Incoming Settings”
  - in section “Dicom Query Settings”



OrthoView™ "Preferences" dialog

- Apply these changes with "Save"



NOTE:

Make sure that the newly selected port is not blocked and not used by any other application. If necessary, also remember to adjust the OrthoView™ port number in the DICOM settings of those DICOM nodes that OrthoView™ is supposed to communicate with (modalities, remote archives).

9.15.10 CONNECTING TO NCH EXPRESS DICTATE SOFTWARE

NCH Express Dictate (http://www.nch.com.au/express/index.html) is a third-party software for which iQ-VIEW only offers an interface so that medial findings can be dictated directly into that software to be transcribed into a medical report. The necessary patient and study data is stored in the file properties for later matching.

NOTE:

Please note that iQ-VIEW only offers two different interfaces needed for different versions of the NCH Express Dictate software. One interface will work until version 5.02, the other for NCH version 5.14 and higher. The

software itself as well as the license for this software has to be obtained from the manufacturer. Please also adhere to the system requirements set for the NCH software.

The iQ-VIEW installation package already includes the necessary components to interface automatically with the NCH Express Dictate software (lower and higher versions). After the NCH software has been installed successfully on the same system where iQ-VIEW is running, a click onto the "NCH Express Dictate" button in the viewer will connect to the software and open the dictation window.

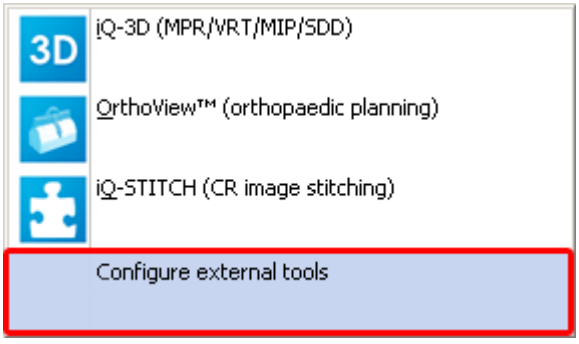
- For versions 5.14 and higher, no additional settings have to be made. iQ-VIEW connects automatically to the NCH Express Dictate software when it is correctly installed on the system.
- For version 5.02, there exists a file called "NCH.ini" in the iQ-VIEW installation folder (by default: C:\Program Files\iQ-VIEW). Open this file in the text editor and adapt the path to the NCH application executable file, if necessary, e.g. "C:\Program Files\NCH Swift Sound\Express\express.exe". Do ONLY adapt the path, do NOT alter the parameters.

9.15.11 CONNECTING EXTERNAL APPLICATIONS

iQ-VIEW provides a possibility to export image data that can then be transferred to an external application for further processing. To do that, an external tools configuration dialog can be used. The configuration dialog can be accessed:

- by right-clicking onto the "Post-processing" button in the bottom toolbar, or
- by selecting the menu entry "Post-processing" in the "File" menu

Select "Configure external tools" to open the configuration dialog:

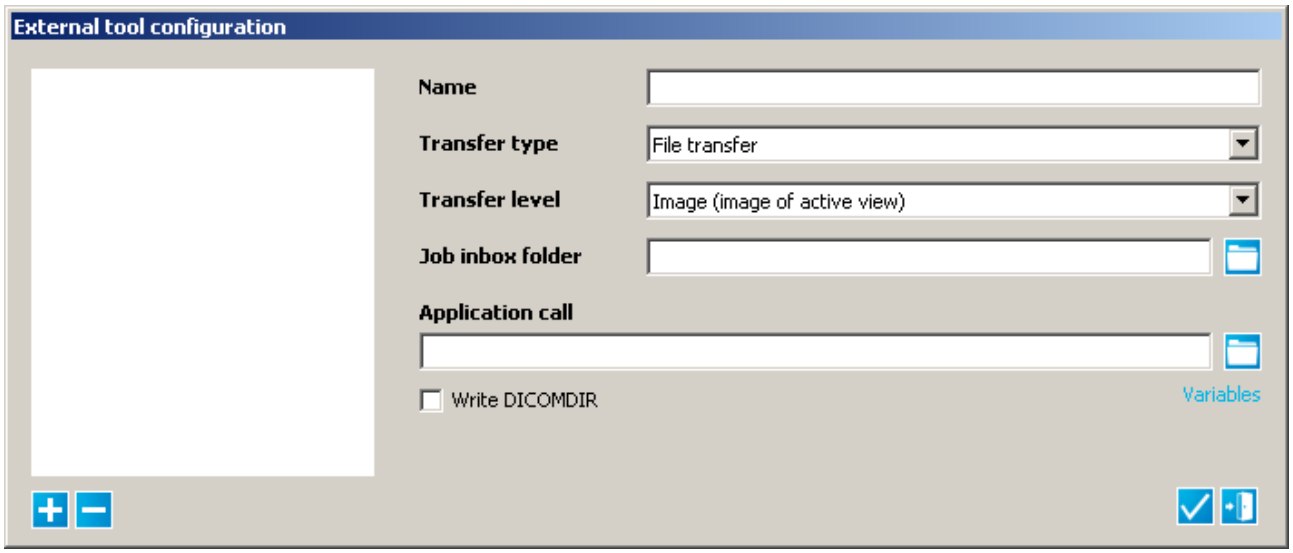


The configuration dialog is used to define which images shall be exported from iQ-VIEW to be made available for an external application, where and how they shall be stored and how the external application shall be called up.

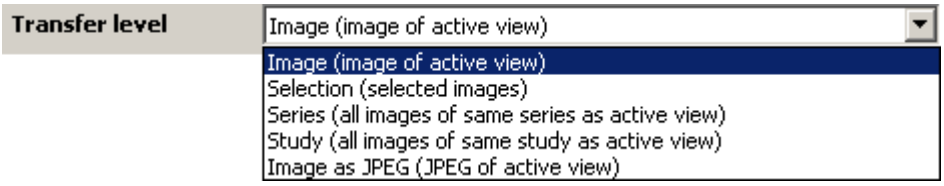
NOTE:

This configuration only constitutes the first part of an interface between iQ-VIEW and an external application. The calling of the application and the handing over of the necessary image data are done on the basis of the configuration made in iQ-VIEW by a separate interface application, called iQ-LAUNCHER. This application is not part of the regular iQ-VIEW setup and needs to be installed and configured separately. Contact your local distributor to receive iQ-LAUNCHER and all information on how to use it.

The external tool configuration allows making all necessary settings:



- "Name": Here you can enter the name for the configuration you wish to create. This name can be freely chosen. However, make sure to use a unique name for every new configuration.
- "Transfer type": The transfer type states how the selected images are handed over. Currently only the file transfer is available. The images are therefore taken from their original place in the iQ-VIEW imagebox and are copied to the specified output folder (see below).
- "Transfer level": The transfer level defines which images are handed over for the external application to be processed. Available options are:
  - "Image (image of active view)": the image currently active in the viewer (blue frame) is exported
  - "Selection (selected images)": all images currently selected in the viewer ("Image selection") are exported
  - "Series (all images of same series as active view)": all images of the series to which the image belongs that is currently active in the viewer (blue frame) are exported
  - "Study (all images of same study as active view)": all images of the study to which the image belongs that is currently active in the viewer (blue frame) are exported
  - "Image as JPEG (JPEG of active view)": of the image currently active in the viewer (blue frame) a JPEG is created and stored in the output folder



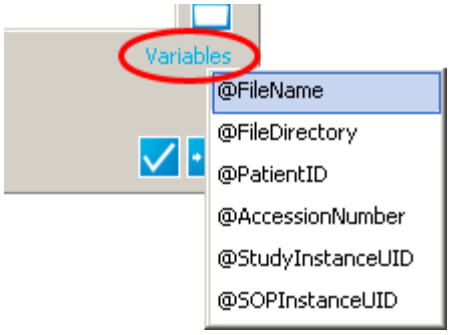
- "Job inbox folder": Here a folder must be defined where iQ-VIEW shall store the exported image(s). This is also the folder where the job files are placed. While the job files will be stored in the folder directly, named with the AE title of the exporting iQ-VIEW and a time string, the images are stored in subfolders that bear the same name as the respective job file.

"Select an output folder": opens a Windows Explorer window in which you can browse to the folder that you wish to use. You may also create a new folder.

- "Application call": This entry field is used to define how the external application shall be called and how the images shall be handed over. Select the path to the executable (*.exe) of the external application and add the necessary parameter(s) from the "Variables" list to hand over the exported image data.

  "Select the external application": opens a Windows Explorer window in which you can browse to the application executable that you wish to connect with iQ-VIEW.

  - "Variables": there are different parameters available that can be used to "inform" the external application about the data it shall process. These parameters can be added by clicking onto the "Variables" link. A submenu is opened where you can select the appropriate parameters. Possible options are:
    @FileName = using this variable will hand over the name of the image file.
    @FileDirectory = using this variable will hand over the path to the directory (= folder) where the image files are stored.
    @PatientID = using this variable will hand over the Patient ID stated in the DICOM header of the exported image file(s).
    @AccessionNumber = using this variable will hand over the accession (= case) number stated in the DICOM header of the exported image file(s).
    @StudyInstanceUID = using this variable will hand over the study instance UID stated in the DICOM header of the exported image file(s).
    @SOPInstanceUID = using this variable will hand over the SOP instance UID stated in the DICOM header of the exported image file(s).



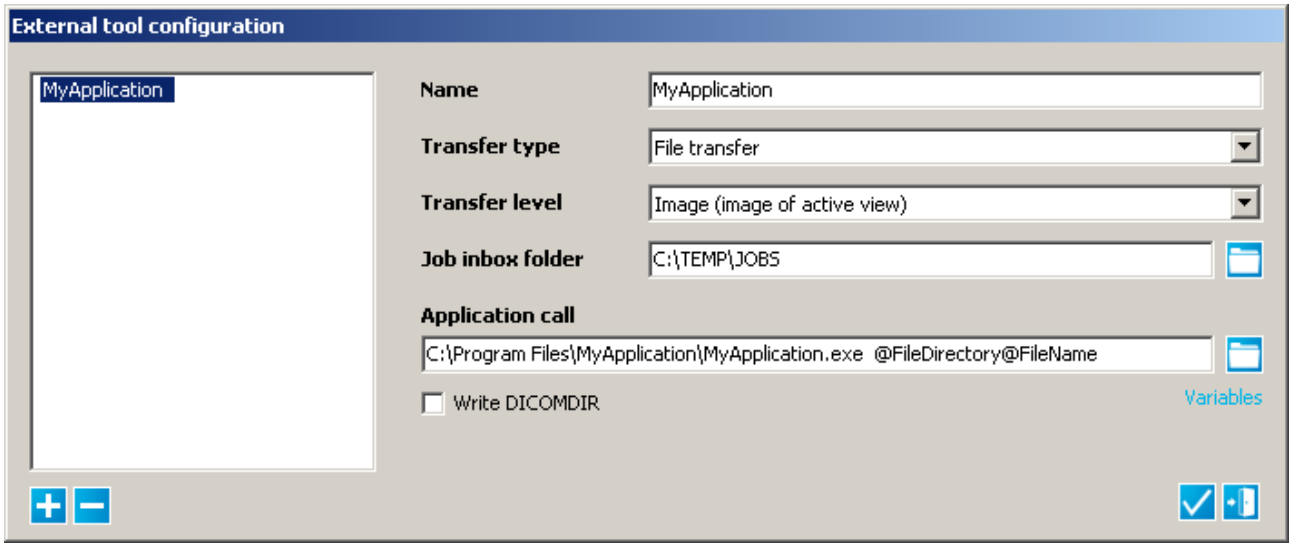
- "Write DICOMDIR": If selected, a DICOMDIR file will be written during the export of the selected images, listing all images. This may be helpful when an external application can read in DICOMDIR files to speed up the importing process.

"Add a new configuration": creates a new configuration into which you can add the necessary settings.

"Delete the selected configuration": deletes the configuration that is currently selected in the left pane of the dialog window.

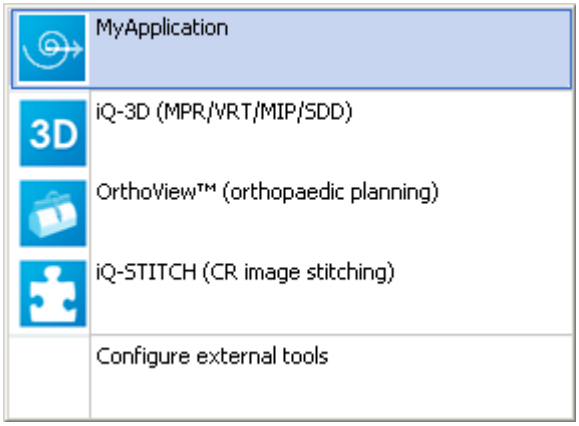
"Save and close": saves all changes made in the configuration(s) and then closes the dialog.

"Close without saving": closes the configuration dialog without saving the made changes.



Example for a created configuration of an external application

When a configuration is saved, it is written into an XML file called "ExternalTools.xml". This file can be found in the iQ-VIEW installation directory in the subfolder "ExternalViewerTools". The configuration then also shows up in the "Post-processing" menu of the iQ-VIEW viewer:



Selecting this tool from the "Post-processing" button/menu will then export the image(s) as defined in the configuration and store them in the selected output folder. A job file and, if enabled, a DICOMDIR is written.

The interface application iQ-LAUNCHER that needs to be installed and configured separately from iQ-VIEW will then regularly check the output folder for new job files, read them and call up the requested applications.

iQ-LAUNCHER comes with a DICOM SCU. With the help of the DICOM SCU it is possible to transfer the post-processing results – stored as DICOM in a specified folder – automatically to another DICOM station, e.g. a PACS or back to the iQ-VIEW station.

NOTE:

For a detailed description on how to install, configure and use iQ-LAUNCHER, please refer to its respective user documentation.

9.16 POSSIBLE iQ-VIEW CONFIGURATION PARAMETERS

Due to the large number of possible parameters that can be set in the main configuration file of iQ-VIEW (either through changes in the application itself or by modifying the iQ-VIEW.ini) not all parameters can be described in individual chapters of this Administration Guide.

The iQ-VIEW configuration file iQ-VIEW.ini can be found in the iQ-VIEW root directory. It is written automatically each time iQ-VIEW is shut down. Thus, it is assured that iQ-VIEW will be started the next time with the same settings you made before.

NOTE:
Full rights are necessary in the iQ-VIEW folder and its subfolders to assure that configuration files can be written and read properly.

Most parameters are updated according to the settings made directly in the iQ-VIEW application, such as local DICOM and database settings, window size and position changes, table changes, monitor settings, export settings, etc. However, some parameters must be changed manually and a few others, that are optional, must be added, if necessary.

Available parameters can be found in the following list, including a short description and possible values.

NOTE:
Please note that additional parameters may show up in the configuration file of your iQ-VIEW installation. This may, for instance, happen in case of upgrading the software from a previous version. Parameters not mentioned in the list above are already retired.

TABLE-ID / [CONTEXT]	TABLE DESCRIPTION
[LocalVariables]	Local variables
GeneralFontSize=	General size of the fonts used in the application (rescalable to accommodate high-resolution monitors)
ToolButtonSize=	Size of the buttons used in the application (rescalable to accommodate high-resolution monitors)
ListHeaderTextSize=	Text size of the fonts used in the study list headers (rescalable to accommodate high-resolution monitors)
ListItemTextSize=	Text size of the fonts used in the study list items (rescalable to accommodate high-resolution monitors)
ResolutionPresets=	Selection of the resolution presets: 0 = 1 MP Display 1 = 2 MP Display 2 = 3 MP Display 3 = 5 MP Display
BrowserFormState=	State of the "Study Browser" window: 0 = normal, 1 = minimized, 2 = full screen mode. Minimized windows will also start minimized again.
BrowserFormLeft=	Position of left border of the Study Browser window

BrowserFormTop=	Position of upper border of the Study Browser window
BrowserFormWidth=	Width of Study Browser window
BrowserFormHeight=	Height of Study Browser window,
PatientPanelWidth=	Width of patient level table
PatientPanelExpanded=	Patient level table open, default is 0 (false)
PreviewPanelHeight=	Height of preview panel
PreviewPanelExpanded=	Preview panel open, default is 0 (false)
BrowserMaxStudies=	Gives the maximum numbers of studies that can be shown in the study browser; maximum is 10.000
ImportFormState=	State of the "Import" window: 0 = normal, 1 = minimized, 2 = full screen mode. Minimized windows will also start minimized again.
ImportFormLeft=	Position of left border of the Import window
ImportFormTop=	Position of upper border of the Import window
ImportFormWidth=	Width of Import window
ImportFormHeight=	Height of Import window
ProcessLogFormLeft=	Position of left border of the Process log window
ProcessLogFormTop=	Position of upper border of the Process log window
ProcessLogFormWidth=	Width of Process log window
ProcessLogFormHeight=	Height of Process log window
ProcessLogFormState=	State of the "Process log" window: 0 = normal, 1 = minimized, 2 = full screen mode. Minimized windows will also start minimized again.
ViewerFormState=	State of the "Viewer" window: 0 = normal, 1 = minimized, 2 = full screen mode. Minimized windows will also start minimized again.
ViewerFormLeft=	Position of left border of the Viewer window
ViewerFormTop=	Position of upper border of the Viewer window
ViewerFormWidth=	Width of Viewer window
ViewerFormHeight=	Height of Viewer window
LightBoxFormState=	State of the Lightbox window: 0 = normal, 1 = minimized, 2 = full screen mode. Minimized windows will also start minimized again.
LightBoxFormLeft=	Position of left border of the Lightbox window
LightBoxFormTop=	Position of upper border of the Lightbox window
LightBoxFormWidth=	Width of Lightbox window
LightBoxFormHeight=	Height of Lightbox window
MagnifierFormLeft=	Position of left border of the Magnifier window
MagnifierFormTop=	Position of upper border of the Magnifier window

MagnifierFormWidth=	Width of Magnifier window
MagnifierFormHeight=	Height of Magnifier window
MagnifierZoomValue=	Zoom factor used in Magnifier window
ToolButtonsFormLeft=	Position of left border of the Tool selection window
ToolButtonsFormTop=	Position of upper border of the Tool selection window
ToolButtonsFormWidth=	Width of Tool selection window
ToolButtonsFormHeight=	Height of Tool selection window
ReportWriterFormLeft=	Position of left border of the Structured reporting window
ReportWriterFormTop=	Position of upper border of the Structured reporting window
ReportWriterFormWidth=	Width of Structured reporting window
ReportWriterFormHeight=	Height of Structured reporting window
ReportWriterFormState=	State of the "Structured Reporting" window: 0 = normal, 1 = minimized, 2 = full screen mode. Minimized windows will also start minimized again.
ReportWriterObsHeight=	Height of "Observation" section in Structured reporting window
ReportWriterTecHeight=	Height of "Technique" section in Structured reporting window
ReportWriterHorSplit=	Width of macro table in Structured reporting window
ScoutPilotLeft=	Position of left border of the scout pilot window
ScoutPilotTop=	Postion of top border of the scout pilot window
Monitor1SplitX=	X for X/Y tiling of display 1, default is 1
Monitor1SplitY=	Y for X/Y tiling of display 1, default is 1
Monitor2SplitX=	X for X/Y tiling of display 2, default is 1
Monitor2SplitY=	Y for X/Y tiling of display 2, default is 1
DicomDumpFormPageIndex=	Last active tab in DICOM Header Dump: 0 = List view 1 = Tree view 2 = Summary
WorklistServerAET=	AET of the DICOM Modality Worklist server
WorklistServerIP=	IP of the DICOM Modality Worklist server
WorklistServerPort=	Port of the DICOM Modality Worklist server
WorklistStationName=	Station name entered in DICOM Modality Worklist server settings to display only patient information concerning a specific modality
[ExportSettings]	Export settings
ExportType=	Selection of the file format to be sent in DICOM email: 0 = Sending of DICOM files only

	1 = Sending of JPEG / non-DICOM files only
UseJpegCompression=	Selection of JPEG compression for DICOM images (DICOM email sending): 0 = no use of JPEG compression 1 = use of JPEG compression
CompressionType=	Selection of compression level for DICOM images (DICOM email sending): 1 = Standard JPEG Light (lossless) 2 = Standard JPEG Medium (lossy) 3 = Standard JPEG Strong (lossy) 4 = JPEG 2000 Light (lossless) 5 = JPEG 2000 Medium (lossy) 6 = JPEG 2000 Strong (lossy)
J2KmediumCompressionValue=	Compression rate for medium JPEG2000 compression in DICOM email, default 5 means 5:1
J2KstrongCompressionValue=	Compression rate for strong JPEG2000 compression in DICOM email, default 10 means 10:1
ZIPCompression=	Selection of ZIP compression for DICOM email sending: 0 = no use of ZIP compression 1 = use of ZIP compression (default) When deactivating ZIP compression, it is no longer possible to define the size of the attachments
UseEncryption=	Selection of encryption of data before export in DICOM email: 0 = no use of encryption 1 = use of encryption
EncryptionPassword=	Password for encryption of data before export, displayed only encoded
UseAnonymization=	Selection of anonymization of data before export in DICOM email: 0 = no anonymization 1 = use of anonymization
[CustomSettings]	Custom settings
Language=	States the currently used language for the user interface
LastQueryTab=	Last active tabulator: 0 = Network 1 = Database 2 = Filesystem 3 = Email
ArchiveIndexes=	Selected archive nodes in network table of study browser; should not be edited
ImageRetrieveType=	Mode of image reception: 1 = Retrieve then show 2 = Show while retrieving 3 = Retrieve only

AlwaysReload=	If set to 1, iQ-VIEW will always reload images from the remote archive, without having to delete the locally existing images; default is 0 (false)
NoTSConvertionOnImport=	Replaces the "Don't decompress images" function in the "Filesystem". If activated (set to true = "1"), the imported images will not be decompressed but saved in the original transfer syntax; default = 0 (false); ATTENTION: If iQ-VIEW cannot display images in that transfer syntax, it will block
ModalityFilter=	Stores the currently marked modality filters in the search panel of the study browser, e.g. CR\MR
ModalityFilterIsActive=	Defines if modality filter in search panel of the study browser is active or not; default is "0" (false)
TableColumn1Width=	Width of the first column of the study table
TableColumn1Position=	Position of the first column of the study table
TableColumn2Width=	Width of the second column of the study table
TableColumn2Position=	Position of the second column of the study table
TableColumn3Width=	Width of the third column of the study table
TableColumn3Position=	Position of the third column of the study table
TableColumn4Width=	Width of the fourth column of the study table
TableColumn4Position=	Position of the fourth column of the study table
TableColumn5Width=	Width of the fifth column of the study table
TableColumn5Position=	Position of the fifth column of the study table
TableColumn6Width=	Width of the sixth column of the study table
TableColumn6Position=	Position of the sixth column of the study table
TableColumn7Width=	Width of the seventh column of the study table
TableColumn7Position=	Position of the seventh column of the study table
TableColumn8Width=	Width of the eighth column of the study table
TableColumn8Position=	Position of the eighth column of the study table
TableColumn9Width=	Width of the ninth column of the study table
TableColumn9Position=	Position of the ninth column of the study table
TableColumn10Width=	Width of the tenth column of the study table
TableColumn10Position=	Position of the tenth column of the study table
TableColumn11Width=	Width of the eleventh column of the study table
TableColumn11Position=	Position of the eleventh column of the study table
BrowserTableSortOrder=	Column in study list table according to the sorting that shall be done; possible values 0-10
BrowserTableSortDirection=	Sorting direction in study table, default is 0 (downwards)

PatTableColumn1Width=	Width of the first column of the patient table
PatTableColumn1Pos=	Position of the first column of the patient table
PatTableColumn2Width=	Width of the second column of the patient table
PatTableColumn2Pos=	Position of the second column of the patient table
PatTableColumn3Width=	Width of the third column of the patient table
PatTableColumn3Pos=	Position of the third column of the patient table
PatTableWidth=	Width of the complete patient table
PatientBrowserTableSortOrder=	Column in patient table according to the sorting that shall be done
PatientBrowserTableSortDirection=	Sorting direction in patient table, default is 0 (downwards)
StatusFilterIndex=	Index of status field in the search panel, default is 0 (all)
UseStoreInImportModule=	Sending created images (Import dialog) via DICOM to the iQ-VIEW database; default is 0 (false), meaning direct database registration
Institution Name=	Name of institution that is taken into the DICOM header when images are created (Import dialog)
ViewerCacheSizeIn%=	Percentage of the available system RAM that the iQ-VIEW viewer reserves for its own internal cache, given in %; by default 80%
ThumbnailsSizeInPxl=	Size of thumbnails in viewer (in pixel), default is 70
ShowNumberOfImagesInPreviewIcon=	Display of image number in a series in the thumbnail (right upper corner)
ShowSeriesDescriptionHint=	Display of series description as hint when moving the mouse over a preview thumbnail; default is 1 (true)
PostProcessButtonName=	Index of last used post-processing tools
FixedBottomToolBar=	Fixing hidden lower toolbar, default is 0 (false)
FixedSideBar=	Fixing left hidden toolbar, default is 0 (false)
HideSeriesThumbBar=	Hiding and showing of the series preview bar; default is 0 (false)
LeftToolBarIndex=	Active mode of hidden left toolbar; values 0 (sync), 1 (bind), 2 (scope), 3 (lines), 4 (off); default is 4
AutoTileViews=	Automatic tiling of the screen according to the number of series in a study; default is 0 (false)
AutoLoadSeries=	Automatic arrangement of the images into the available views; default is 1 (true)
ShowBitmapOverlays=	Display of Bitmap Overlays (6000x Tag Group); default is 1 (true)
ShowEmbeddedShutters=	Display of shutter sequences embedded in DICOM header; default is 1 (true)
ApplyEmbeddedVOILut=	Accepting of VOI LUT curves; default is 1 (true)
OverlayTextScaling=	Scaling factor of text overlay for display in viewer; default is 65
OverlayMaxTextSize=	Maximum size of text overlay in pixel; default is 35

OverlayMinTextSize=	Minimum size of text overlay in pixel; default is 4
ShowRuler=	Display of scaling ruler in viewer; default is 1 (true)
ImageSortOrder=	Sorting of the images of a series; default is stInstanceNo (instance number ascending), possible are further: ▪ stRevInstanceNo (instance number descending) ▪ stSlicePos (slice position ascending) ▪ stRevSlicePos (slice position descending) ▪ stInstanceTime (instance time ascending) ▪ stRevInstanceTime (instance time descending) ▪ stNone (no sorting)
SC_ShowSeriesDescrDialog=	If activated, opens a dialog after the creation of secondary capture images to enter a series description; default is 0 (false)
InverseMouseWindowing=	Inverting the direction of contrast and brightness modifications for mouse windowing
DelayedInterpolation=	If activated the images will first be scaled using a lower interpolation when scrolling through a series to improve the performance (especially on high-resolution monitors), after 300 ms the images are focused again; default is 0 (false)
NoUserCreatedObjectsAlert=	If activated, the user will not be asked whether or not to send user-created objects (PR, SR, SC) directly from the viewer to the remote archive; default is 0 (false)
ViewerControlsMonitorPower=	If activated, iQ-VIEW will control the power of the IMAGE DISPLAYS; default is 1 (true)
SortStudiesOldestFirst=	If activated, the studies loaded into the viewer will be displayed with the oldest study (regarding study date and time) being the first (ordering of study tabs); default is 0 (false)
PriorQueryIncludeImagebox=	If activated, it is possible to search from the viewer window for previous studies of the same patient with the same patient ID not only on remote archives, but also in the local imagebox; default is 0 (false)
StackSkipImages=	If activated, the stack mode with pressed left mouse button will skip images to get faster from the beginning of a series to the end; default is 1 (true)
AllowCrossDrag=	If activated, it is possible to drag series from the series preview bar on one display onto the other display; default is 1 (true)
HeaderSummaryGroup1=	First tag of ‘summary’ display in DICOM header dump
HeaderSummaryElement1=	First element of ‘summary’ display in DICOM header dump
HeaderSummaryGroup2=	Second tag of ‘summary’ display in DICOM header dump
HeaderSummaryElement2=	Second element of ‘summary’ display in DICOM header dump
HeaderSummaryGroup3=	Third tag of ‘summary’ display in DICOM header dump
HeaderSummaryElement3=	Third element of ‘summary’ display in DICOM header dump
HeaderSummaryGroup4=	Fourth tag of ‘summary’ display in DICOM header dump
HeaderSummaryElement4=	Fourth element of ‘summary’ display in DICOM header dump

HeaderSummaryGroup5=	Fifth tag of ‘summary’ display in DICOM header dump
HeaderSummaryElement5=	Fifth element of ‘summary’ display in DICOM header dump
HeaderSummaryGroup6=	Sixth tag of ‘summary’ display in DICOM header dump
HeaderSummaryElement6=	Sixth element of ‘summary’ display in DICOM header dump
WorklistTableColum1Width=	Width of the first column of the worklist table
WorklistTableColum1Position=	Position of the first column of the worklist table
WorklistTableColum2Width=	Width of the second column of the worklist table
WorklistTableColum2Position=	Position of the second column of the worklist table
WorklistTableColum3Width=	Width of the third column of the worklist table
WorklistTableColum3Position=	Position of the third column of the worklist table
WorklistTableColum4Width=	Width of the fourth column of the worklist table
WorklistTableColum4Position=	Position of the fourth column of the worklist table
WorklistTableColum5Width=	Width of the fifth column of the worklist table
WorklistTableColum5Position=	Position of the fifth column of the worklist table
WorklistTableColum6Width=	Width of the sixth column of the worklist table
WorklistTableColum6Position=	Position of the sixth column of the worklist table
WorklistTableColum7Width=	Width of the seventh column of the worklist table
WorklistTableColum7Position=	Position of the seventh column of the worklist table
WorklistTableColum8Width=	Width of the eighth column of the worklist table
WorklistTableColum8Position=	Position of the eighth column of the worklist table
WorklistTableColum9Width=	Width of the ninth column of the worklist table
WorklistTableColum9Position=	Position of the ninth column of the worklist table
WorklistTableColum10Width=	Width of the tenth column of the worklist table
WorklistTableColum10Position=	Position of the tenth column of the worklist table
WLQueryPatName=	Active filter attributes for Worklist queries; If 0 (false), the attribute will not be accepted in "Import" and "Modify"
WLQueryPatBD=	Active filter attributes for Worklist queries; If 0 (false), the attribute will not be accepted in "Import" and "Modify"
WLQueryPatSex=	Active filter attributes for Worklist queries; If 0 (false), the attribute will not be accepted in "Import" and "Modify"
WLQueryPatID=	Active filter attributes for Worklist queries; If 0 (false), the attribute will not be accepted in "Import" and "Modify"
WLQueryAccNo=	Active filter attributes for Worklist queries; If 0 (false), the attribute will not be accepted in "Import" and "Modify"
WLQueryModality=	Active filter attributes for Worklist queries; If 0 (false), the attribute will not be accepted in "Import" and "Modify"
WLQueryRefPhys=	Active filter attributes for Worklist queries; If 0 (false), the attribute

	will not be accepted in "Import" and "Modify"
WLQueryStudyDescr=	Active filter attributes for Worklist queries; If 0 (false), the attribute will not be accepted in "Import" and "Modify"
WLQueryStudyDate=	Active filter attributes for Worklist queries; If 0 (false), the attribute will not be accepted in "Import" and "Modify"
WLQueryStudyUID=	Active filter attributes for Worklist queries; If 0 (false), the attribute will not be accepted in "Import" and "Modify"
DicomInputConverterPath=	Not yet used
AdminPassword=	Optional entry (needs to be entered manually); if the "Local settings" and "DICOM settings" shall be password protected, this entry must be made and a password be chosen **Note:** this entry additionally made in the server.ini gives password protection to the "Server Admin Tool" as well
IQNucPath=	Parameter needs to be added manually in case iQ-NUC should be connected to state the path of the iQ-NUC installation (to be added manually)
IQNucExe=	Parameter needs to be added manually in case iQ-NUC should be connected to state the path of the iQ-NUC.exe (to be added manually)
ShowPostProcBtnInBrowser=	Needs to be added manually in case iQ-NUC should be connected and then set to value =1 to show the Post-processing button in the Study Browser
iQ-MAMMO Path=	Used in case iQ-MAMMO is installed on the system and shall be connected to iQ-VIEW; the path to and name of the iQ-MAMMO executable must be written as value
UseInternalViewerAsDefault=	Used in case iQ-MAMMO is connected to iQ-VIEW to define which viewer (iQ-VIEW or iQ-MAMMO) shall be considered the primary viewer; default is 1 (true = iQ-VIEW is primary viewer)
[Musica]	Musica settings
Path=	Path to the Musica post-processing software (for use of iQ-CR ACE interface)
AutoInvertImage=	Automatically inverts images acquired by iQ-CR ACE; default is 0 (false)
DisplayHistogram=	If activated, displays the histogram of the images imported from iQ-CR ACE; default is 0 (false)
PostProcessImage=	If activated, the images acquired from iQ-CR ACE will be post-processed with the Musica software; default is 1 (true)
[PrintSettings]	Print settings
SelectedPrinter=	Index of last selected printer in print manager
SelectedFilmFormat=	Index of last active film format
OrientationIndex=	Paper orientation; default is 0 (Portrait)

PrintLayoutIndex=	Index of last active layout
PageTitle=	Headline in printout in Windows Print and DICOM Print mode, e.g. for including the name of the institution
ShowPageHeader=	Display of page header in printout; default is 1 (true)
StudyHeaderMinSize=	Is used to define the minimum font size for the study information in the page header; default is 5 (pixels)
ShowRuler=	Display of the ruler on the right border of the printout, default is 1 (true)
ShowOverlay=	Display of text overlay in printout; default is 1 (true)
OverlayTextScaling=	Scaling factor for text overlay in print, used for the calculation of the overlay size, default is 85
OverlayMaxTextSize=	Maximum overlay text size in pixel in the printout, default is 14
OverlayMinTextSize=	Minimum overlay text size in pixel in the printout, default is 4
PaperPrintMarginSize=	Width of paper margin in Windows print mode; default is 5
PaperPrintContrastAdjust=	Contrast of the printout, default is 0 (no change), positive values will increase the contrast in an image, negative values decrease the contrast
PaperPrintBrightnessAdjust=	Brightness of the printout, default is 0 (no change), positive values will make the image brighter; negative values will make it darker
WindowsPrintUseExtendedModi=	Use alternative print modes, if paper print causes problems; default is 0 (false)
WindowsPrintMode=	Paper print mode; values 1-3, only usable if WindowsPrintUseExtendedModi=1
WindowsPrintBlackPaper=	Empty parts of the printout will be printed in black during paper print, default is 0 (false)
NumberOfCopies=	Optional entry (needs to be entered manually); refers to the film session attribute (2000,0010) of a DICOM print job and needs to be entered only if the default value is not accepted by the connected DICOM imager; possible values are: ▪ 1 (Default) ▪ n (n = specified integer number)
PrintPriority=	Optional entry (needs to be entered manually); refers to the film session attribute (2000,0020) of a DICOM print job and needs to be entered only if the default value is not accepted by the connected DICOM imager; possible values are: ▪ LOW ▪ MED (Default) ▪ HIGH
MediumType=	Optional entry (needs to be entered manually); refers to the film session attribute (2000,0030) of a DICOM print job and needs to be entered only if the default value is not accepted by the connected DICOM imager; possible values are: ▪ PAPER ▪ CLEAR FILM

	▪ BLUE FILM (Default) ▪ MAMMO CLEAR FILM ▪ MAMMO BLUE FILM
FilmDestination=	Optional entry (needs to be entered manually); refers to the film session attribute (2000,0040) of a DICOM print job and needs to be entered only if the default value is not accepted by the connected DICOM imager; possible values are: ▪ MAGAZINE ▪ PROCESSOR (Default) ▪ BIN_i (I = bin number)
EmptyImageDensity=	Optional entry (needs to be entered manually); refers to the film box attribute (2010,0110) of a DICOM print job and needs to be entered only if the default value is not accepted by the connected DICOM imager; possible values are: ▪ 0 (Default) ▪ n (n = specified integer number)
MinDensity=	Optional entry (needs to be entered manually); refers to the film box attribute (2010,0120) of a DICOM print job and needs to be entered only if the default value is not accepted by the connected DICOM imager; possible values are: ▪ default = attribute not sent ▪ n (n = specified integer number)
MaxDensity=	Optional entry (needs to be entered manually); refers to the film box attribute (2010,0130) of a DICOM print job and needs to be entered only if the default value is not accepted by the connected DICOM imager; possible values are: ▪ default = attribute not sent ▪ n (n = specified integer number)
Trim=	Optional entry (needs to be entered manually); refers to the film box attribute (2010,0140) of a DICOM print job and needs to be entered only if the default value is not accepted by the connected DICOM imager; possible values are: ▪ YES ▪ NO (Default)
RequestedDecimateCropBehavior=	Optional entry (needs to be entered manually); refers to the image box attribute (2020,0040) of a DICOM print job and needs to be entered only if the default value is not accepted by the connected DICOM imager; possible values are: ▪ CROP (Default) ▪ DECIMATE ▪ FAIL This attribute will only be sent in combination with the attribute “RequestedImageSize” (2020,0030), which exists only in case of a real-size print job. If the parameter is empty (no value), the entire attribute will not be sent.

[CDBurnSettings]	CD/DVD Burn settings
IncludeViewer=	Burn iQ-LITE viewer onto CD/DVD; default is 1 (true)
IncludeHTML=	Burn web content (HTM pages) with JPEG images onto CD/DVD; default is 1 (true)
CheckCD=	Check CD after completion of burning process; default is 0 (false)
FinalizeDisc=	Finalize CD/DVD after completion of burning process; default is 1 (true) (works only for CDs)
ActiveBurner=	Index of last used burning drive; default is -1 (no burner selected)
ShowMediaContent=	Display of CD content when burning a CD/DVD; with possibility for printout; default is 0 (false)
EnableCDAutostart=	Burn autorun.inf (autostart function) onto CD/DVD; default is 1 (true)
InstitutionInformation=	Text information regarding the institution that creates the CD/DVD (e.g. name and address), that will be included on the Index.htm page of the web content
IQRobotServerIPAddress=	IP address of the iQ-ROBOT server (for use of iQ-ROBOT interface)
IQRobotProjectPath=	Directory path to the shared project folder (for use of iQ-ROBOT interface)
[TwainSettings]	Twain settings
TransferMode=	Mode of TWAIN library: 0 = WindowsHandle (Native) mode (the image acquired by the TWAIN source is handed over to iQ-VIEW via memory) 1 = file-based mode (the TWAIN source itself stores the acquired image, which will then be imported by iQ-VIEW)
ImageFolder2Scan=	Path of folder that is used as 'incoming' folder in the Import mode (drop box)
[MailSettings]	Mail settings
PopServerName=	POP3 server address for email dialog
PopServerPort=	POP3 server port for email dialog; default is 110
PopServerAccount=	Account name of POP3 server
PopServerPassword=	Password of POP3 server, encrypted, not editable
PopMailAddress=	Email address that is sent to the POP server
SMTPServerName=	SMTP server address
SMTPServerPort=	SMTP server port; default is 25
SMTPType=	SMTP server login type; 0 = no login, 1 = simple login
SMTPAccount=	Account Name des SMTP Servers

SMTPPassword=	Password of SMTP server, encrypted, not editable
UseInternalEmailClient=	Internal or external email client; default is 0 (Windows default)
MailSizeLimit=	Split limit of email attachments; default is 10 MB; not available with deactivated ZIP compression
[AdditionalSettings]	Additional settings
VistaDisableAero=	If activated, the Aero style will be disabled to assure the proper functioning of iQ-VIEW on a Windows Vista/7 computer (performance advantages and no flickering of menus)
AutoRefreshTreeView=	Automatic refresh of study browser table when new studies arrive; default is 1 (true)
LogDICOMCommunication=	Write DICOM network communication into the file communication.log; default is 0 (false); ATTENTION: if activated, the system may get slower
LogLevelIndex=	Log level of process and DICOM log function; default is 1 (Detail); possible values: 0 (Basic), 1 (Detail), 2 (Debug)
AutoSaveLogFiles=	Periodic saving of log files, default is 1 (true); if 0 (false), the log file is written only when the application is shut down
SendMultipleFilesInOneAssociation=	Transfer of several files with one association; default is 1 (true); speeds up the transfer considerably
ConvertTransferSyntax=	Convert transfer syntax of the file in negotiated network TS; default is 1 (true); ATTENTION: if 0 (false), it may come to not DICOM compliant behavior! Is sometimes used to send JPEG compressed images also via a LittleEndian connection without the need for decompression
SecondProposedTransferSyntax=	Second transfer syntax (despite LittleEndianExplicit) that is proposed during connection build-up for c-Store; default is '1.2.840.10008.1.2.4.70' (JPEG Lossless TS); ATTENTION: with ConvertTransferSyntax=0 and negotiated JPEG association uncompressed images might be sent via a lossless connection
StoreJ2KLossyCompressionRatio=	Used to define the compression ratio for sending DICOM objects, if parameter "SecondProposedTransferSyntax=" is set to "1.2.840.10008.1.2.4.91" (JPEG 2000 lossy and lossless); default is 4 (four times compression)
StoreJPEGLossyCompressionQuality=	Used to define the compression quality when sending DICOM objects, if parameter "SecondProposedTransferSyntax=" is set to "1.2.840.10008.1.2.4.50" (JPEG lossy baseline) or "1.2.840.10008.1.2.4.51" (JPEG lossy extended); default is 80 (80% image quality)
DicomMoveOnSeriesLevel=	For retrieve requests search for number and UIDs of series of a study first and request each individual series via c-move; default is 1 (true); may slow down the connection but makes sure that series arrive in the correct order
NoFindBeforeMove=	By default iQ-VIEW will first query for all available series of a study before retrieving one series after the other. Therefore the default setting is 0 (false). This entry works in combination with

	"DicomMoveOnSeriesLevel=0" only. Set "NoFindBeforeMove=" to 1 (true) to force iQ-VIEW to move a study on study level only. **Note:** If set to "1", it will no longer be possible to correctly load existing hanging protocols if studies are retrieved from a remote archive, as the necessary information for applying specific HPs will be missing.
DualMonitor=	Dual monitor mode; default is 0 (false)
DisplayTimeOutMin=	Time period after which the IMAGE Displays will be deactivated if idle (no mouse or keyboard activity in viewer); stated in minutes; by default 10
ScoutLineThickness=	Configuring the line weight of the displayed scoutlines 1 = line weight 1 (light) 2 = line weight 2 (medium); this is the default setting. 3 = line weight 3 (strong) 4 = line weight 4 (bold)
ScoutLineMode=	Configuring the projection mode of the displayed scoutlines 1 = mode: plane projection; this is the default setting 2 = mode: plane intersection 3 = mode: plane projection and intersection
ScrollViewUnderMouse=	Scrolling by mouse scroll wheel through a series is possible when mouse pointer is placed over a viewer object; default is 0 (false), means that if false, always the active view (blue frame) is used
Last_Import_Path=	Last directory path that was used for import via Filesystem
AccessionNumberPrefix=	String prefix automatically attached to the accession number when importing images via Filesystem
PatientIDPrefix=	String prefix automatically attached to the Patient ID when importing images via Filesystem
StudyIDPrefix=	String prefix automatically attached to the StudyID when importing images via Filesystem
RawImportCols=	Number of columns of the RAW images that shall be imported (width of images); default is 512
RawImportRows=	Number of rows of the RAW images that shall be imported (height of images); default is 512
RawImportType=	Pixel representation of the images that shall be imported: 0 = 8 bit gray-scale 1 = 12 bit gray-scale 2 = 16 bit gray-scale
RawInverse=	Inverting the RAW images during import; default is 0 (false)
ImageSplitMode=	DICOM image creation module: value 0 = images belong to different studies, 1 = images belong to one study but different series, 2 = images belong to one study and one series
CD_Project_Path=	Directory path for CD projects created in the CD/DVD burning dialog
ExportAlwaysLittleEndianExplicit=	Burn only LittleEndianExplicit TS objects onto DICOM CD; default is 1 (true); for DRG and IHE compatibility value 1 (true) is a

	prerequisite
LastFontSize=	Font size used in the structured reporting module, default is 12
DeleteSpooledPrintBitmaps=	Deletion of created temporary bitmaps that are 'spooled' to the Windows or DICOM printer; default is 1 (true)
MaxPrintBMPPixel=	Maximum pixel number of a printout page (to limit the size); default is 2500
3DCommunicationMode=	Is the communication mode for iQ-3D, which can be started using different readers; possible values are: 0 = Shared Memory (default) 1 = Raw Files (as previously until iQ-VIEW 2.5.0; is slower, should therefore only be used in case of problems) 2 = DICOM native (internal DICOM reader of 3D; currently GDCM, DCMTK will be added; meant to be used for a 64 bit 3D version)
[BDTGDT]	Parameters to be used in a BDT/GDT file to populate the DICOM information in the "Import" window **Note:** the syntax of a complete command line in a BDT/GDT file is as follows: [Line length incl. CR LF][Line contents field label][BDT field contents], e.g. 0143101Smith
PatientLastNameField=	Field label for patient's last name, default 3101
PatientFirstNameField=	Field label for patient's first name, default 3102
PatientIDField=	Field label for patient ID, default 3000
PatientBDField=	Field label for patient's date of birth, default 3103
PatientSexField=	Field label for patient's sex, default 3110; possible values are: 1 = male 2 = female
StudyDateField=	Field label for study date, default 6200
StudyDescriptionField=	Field label for study description, default 6220
ModalityField=	Field label for modality, default 8402
AccessionNumberField=	Field label for accession number, default 6302
StudyInstanceUIDField=	Field label for study instance UID, default 6227
ReferringPhysicianField=	Field label for referring physician's name, default 3701
[License]	License parameters
ConcurrentAutoLogoffIdlePeriod=	This parameter can be used to define the time period after which iQ-VIEW shall shut down automatically, if idle. This parameter is only functional when used with a concurrent license. Default is "0" (no automatic shutdown). Possible values are integer numbers representing the number of minutes, e.g. "120" if iQ-VIEW shall

	automatically shut down after an idle period of 120 minutes.
Server=	In the case that a concurrent license network consists of several subnets you have to tell the clients where to find the server in the network. Add the IP address of the concurrent license server after the "=", for example “Server=192.168.120.97” and restart iQ-VIEW.

10 LIST OF ABBREVIATIONS

J2k	– JPEG 2000
AET	– Application Entity Title
C-ECHO	– DICOM command for verifying the DICOM connection to another device
C-FIND	– DICOM command for search of studies
C-MOVE	– DICOM command for move of studies
CR	– Computed Radiography
CT	– Computed Tomography
DICOM	– Digital Imaging and Communication in Medicine
DNS	– Domain Name System
DX	– Direct X-Ray Systems, e.g. Angiography or Fluoroscopy
GUI	– Graphical User Interface
HU	– Hounsfield Units
IP	– Internet Protocol
LUT	– Look-up Table
MG	– Mammography
MOVE SCU	– C-Move as Service Class User
MR	– Magnetic Resonance Imaging
NM	– Nuclear Medicine
OT	– Other Title (other DICOM storage class)
Q/R SCU	– Query/Retrieve as Service Class User
RF	– Radiographic Fluoroscopy
ROI	– Region of Interest
STORE SCP	– DICOM store as Service Class Provider
STORE SCU	– DICOM store as Service Class User
US	– Ultrasound

11 LIST OF SHORTCUTS

Default shortcuts of iQ-VIEW include:

ADDITIONAL KEY + KEY	FUNCTION
[ESC]	Reset current view
Arrow key [UP]	Previous image
Arrow key [DOWN]	Next image
[HOME]	First image in a series
[END]	Last image in a series
[INSERT]	Select active image
[DELETE]	Clear last measurement
[S]	Shortcuts
Arrow key [LEFT]	Previous series
Arrow key [RIGHT]	Next series
[P]	Print manager
[CTRL] + [P]	Post-processing
[M]	Modify (of measurements)
[T]	Tool pop-up menu (measurements)
[H]	DICOM header dump
[L]	Lightbox window
[CTRL] + [H]	Hanging protocols
[CTRL] + [F1]	Auto Contrast
[CTRL] + [F2]	Brain – base (window setting)
[CTRL] + [F3]	Brain (window setting)
[CTRL] + [F4]	Lung (window setting)
[CTRL] + [F5]	Abdomen (window setting)
[CTRL] + [F6]	-
[F1]	1x1 (tiling)
[F2]	2x1 (tiling)
[F3]	1x2 (tiling)
[F4]	2x2 (tiling)
[F5]	3x1 (tiling)
[F6]	1x3 (tiling)
[F7]	3x2 (tiling)
[F8]	2x3 (tiling)

[F9]	3x3 (tiling)
[F10]	4x1 (tiling)
[F11]	4x4 (tiling)
[F12]	Series pop-up list
[ALT]	Activation of 3D Localizer (3D position display)
[CTRL]	In combination with mouse-clicks into another than the activated viewer tile, will mark the other tile(s). Can be used to synchronize different series.
[CTRL]+[SPACE]	To create a secondary capture image and append it to an already existing secondary capture sequence
[SHIFT]+[SPACE]	To create a secondary capture image and store it in a new secondary capture sequence
[CTRL]+[S]	Marking/Unmarking of a whole study
[CTRL]+[J]	To open the “Jobs” dialog and access the log information

The user can modify the default shortcuts, delete them or add others for specific viewer functions. For detailed information on how to create shortcuts, see section 9.10.9 Definition of shortcuts for viewer functions.

12 ANNEX

12.1 IQSERVER – SETUP.CFG CONFIGURATION

The setup.cfg used by the iQ-VIEW server defines which transfer syntaxes and presentation contexts are supported by iQ-VIEW when retrieving or receiving DICOM images from other DICOM AE titles. Its purpose is that of a sample configuration file for the iQ-VIEW STORE SCP.

This software and the supporting documentation were developed and are copyrighted by:

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R&D Division Health
Escherweg 2
D-26121 Oldenburg, Germany

Modifications were made by IMAGE Information Systems Ltd.

The first part lists the transfer syntaxes that are supported by the iQ-VIEW server IQSERVER:

```
[Uncompressed]
TransferSyntax1  = 1.2.840.10008.1.2.1 # LittleEndianExplicit
TransferSyntax2  = 1.2.840.10008.1.2.2 # BigEndianExplicit
TransferSyntax3  = 1.2.840.10008.1.2 # LittleEndianImplicit

[PreferLossless]
TransferSyntax1  = 1.2.840.10008.1.2.4.90 # JPEG2000LosslessOnly
TransferSyntax2  = 1.2.840.10008.1.2.4.70 # JPEGLossless:Non-hierarchical-1stOrderPrediction
TransferSyntax3  = 1.2.840.10008.1.2.5 # RLELossless
TransferSyntax4  = 1.2.840.10008.1.2.1 # LittleEndianExplicit
TransferSyntax5  = 1.2.840.10008.1.2.2 # BigEndianExplicit
TransferSyntax6  = 1.2.840.10008.1.2 # LittleEndianImplicit

[PreferLossy]
TransferSyntax1  = 1.2.840.10008.1.2.4.51 # JPEGExtended:Process2+4
TransferSyntax2  = 1.2.840.10008.1.2.4.50 # JPEGBaseline
TransferSyntax3  = 1.2.840.10008.1.2.5 # RLELossless
TransferSyntax4  = 1.2.840.10008.1.2.1 # LittleEndianExplicit
TransferSyntax5  = 1.2.840.10008.1.2.2 # BigEndianExplicit
TransferSyntax6  = 1.2.840.10008.1.2 # LittleEndianImplicit

[AnyTransferSyntax]
TransferSyntax1  = 1.2.840.10008.1.2.4.91 # JPEG2000
TransferSyntax2  = 1.2.840.10008.1.2.4.90 # JPEG2000LosslessOnly
TransferSyntax3  = 1.2.840.10008.1.2.4.51 # JPEGExtended:Process2+4
TransferSyntax4  = 1.2.840.10008.1.2.4.50 # JPEGBaseline
TransferSyntax5  = 1.2.840.10008.1.2.4.70 # JPEGLossless:Non-hierarchical-1stOrderPrediction
TransferSyntax6  = 1.2.840.10008.1.2.4.81 # JPEGLSLossy
```

TransferSyntax7 = 1.2.840.10008.1.2.4.80 # JPEGLSLossless
TransferSyntax8 = 1.2.840.10008.1.2.5 # RLELossless
TransferSyntax9 = 1.2.840.10008.1.2.1 # LittleEndianExplicit
TransferSyntax10 = 1.2.840.10008.1.2.2 # BigEndianExplicit
TransferSyntax11 = 1.2.840.10008.1.2 # LittleEndianImplicit

For any transfer syntax, iQ-VIEW will propose the above transfer syntaxes in the order in which the TS are given, starting with JPEG2000. If the communication partner does not support this TS, iQ-VIEW will propose the next.

The last proposed transfer syntax is Little Endian Implicit, the TS that must be supported by all DICOM 3.0 compliant modalities.

The number and the order of supported transfer syntaxes can be modified in the setup.cfg.

The next part of the setup.cfg lists all supported presentation contexts. Image SOP classes are accepted with virtually any known transfer syntax, whereas non-image SOP classes will be accepted only uncompressed:

The following presentation context refers to verification:

PresentationContext1 = 1.2.840.10008.1.1\Uncompressed # VerificationSOPClass
The following presentation contexts are for image SOP classes:

#PresentationContext2 = 1.2.840.10008.5.1.4.1.1.13.1.3\AnyTransferSyntax #
BreastTomosynthesisImageStorage
PresentationContext3 = 1.2.840.10008.5.1.4.1.1.1\AnyTransferSyntax #ComputedRadiographyImageStorage
PresentationContext4 = 1.2.840.10008.5.1.4.1.1.2\AnyTransferSyntax # CTImageStorage
PresentationContext5 = 1.2.840.10008.5.1.4.1.1.1.3\AnyTransferSyntax #
DigitalIntraOralXRayImageStorageForPresentation
PresentationContext6 = 1.2.840.10008.5.1.4.1.1.1.3.1\AnyTransferSyntax #
DigitalIntraOralXRayImageStorageForProcessing
PresentationContext7 = 1.2.840.10008.5.1.4.1.1.1.2\AnyTransferSyntax #
DigitalMammographyXRayImageStorageForPresentation
PresentationContext8 = 1.2.840.10008.5.1.4.1.1.1.2.1\AnyTransferSyntax #
DigitalMammographyXRayImageStorageForProcessing
PresentationContext9 = 1.2.840.10008.5.1.4.1.1.1.1\AnyTransferSyntax #
DigitalXRayImageStorageForPresentation
PresentationContext10 = 1.2.840.10008.5.1.4.1.1.1.1.1\AnyTransferSyntax #
DigitalXRayImageStorageForProcessing
PresentationContext11 = 1.2.840.10008.5.1.4.1.1.2.1\AnyTransferSyntax # EnhancedCTImageStorage
#PresentationContext12 = 1.2.840.10008.5.1.4.1.1.4.3\AnyTransferSyntax # EnhancedMRColorImageStorage
PresentationContext13 = 1.2.840.10008.5.1.4.1.1.4.1\AnyTransferSyntax # EnhancedMRImageStorage
#PresentationContext14 = 1.2.840.10008.5.1.4.1.1.130\AnyTransferSyntax # EnhancedPETImageStorage
#PresentationContext15 = 1.2.840.10008.5.1.4.1.1.6.2\AnyTransferSyntax # EnhancedUSVolumeStorage
PresentationContext16 = 1.2.840.10008.5.1.4.1.1.12.1.1\AnyTransferSyntax # EnhancedXAImageStorage
PresentationContext17 = 1.2.840.10008.5.1.4.1.1.12.2.1\AnyTransferSyntax # EnhancedXRFImageStorage
PresentationContext18 = 1.2.840.10008.5.1.4.1.1.4\AnyTransferSyntax # MRImageStorage
PresentationContext19 = 1.2.840.10008.5.1.4.1.1.7.2\AnyTransferSyntax #
MultiframeGrayscaleByteSecondaryCaptureImageStorage

PresentationContext20 = 1.2.840.10008.5.1.4.1.1.7.3\AnyTransferSyntax #
MultiframeGrayscaleWordSecondaryCaptureImageStorage
PresentationContext21 = 1.2.840.10008.5.1.4.1.1.7.1\AnyTransferSyntax #
MultiframeSingleBitSecondaryCaptureImageStorage
PresentationContext22 = 1.2.840.10008.5.1.4.1.1.7.4\AnyTransferSyntax #
MultiframeTrueColorSecondaryCaptureImageStorage
PresentationContext23 = 1.2.840.10008.5.1.4.1.1.20\AnyTransferSyntax # NuclearMedicineImageStorage
PresentationContext24 = 1.2.840.10008.5.1.4.1.1.77.1.5.2\AnyTransferSyntax #
OphthalmicPhotography16BitImageStorage
PresentationContext25 = 1.2.840.10008.5.1.4.1.1.77.1.5.1\AnyTransferSyntax #
OphthalmicPhotography8BitImageStorage
#PresentationContext26 = 1.2.840.10008.5.1.4.1.1.77.1.5.4\AnyTransferSyntax #
OphthalmicTomographyImageStorage
PresentationContext27 = 1.2.840.10008.5.1.4.1.1.128\AnyTransferSyntax #
PositronEmissionTomographyImageStorage
#PresentationContext28 = 1.2.840.10008.5.1.4.1.1.481.1\AnyTransferSyntax # RTImageStorage
PresentationContext29 = 1.2.840.10008.5.1.4.1.1.7\AnyTransferSyntax # SecondaryCaptureImageStorage
PresentationContext30 = 1.2.840.10008.5.1.4.1.1.6.1\AnyTransferSyntax # UltrasoundImageStorage
PresentationContext31 = 1.2.840.10008.5.1.4.1.1.3.1\AnyTransferSyntax # UltrasoundMultiframeImageStorage
PresentationContext32 = 1.2.840.10008.5.1.4.1.1.77.1.1.1\AnyTransferSyntax # VideoEndoscopicImageStorage
PresentationContext33 = 1.2.840.10008.5.1.4.1.1.77.1.2.1\AnyTransferSyntax # VideoMicroscopicImageStorage
PresentationContext34 = 1.2.840.10008.5.1.4.1.1.77.1.4.1\AnyTransferSyntax #
VideoPhotographicImageStorage
PresentationContext35 = 1.2.840.10008.5.1.4.1.1.77.1.1\AnyTransferSyntax # VLEndoscopicImageStorage
PresentationContext36 = 1.2.840.10008.5.1.4.1.1.77.1.2\AnyTransferSyntax # VLMicroscopicImageStorage
PresentationContext37 = 1.2.840.10008.5.1.4.1.1.77.1.4\AnyTransferSyntax # VLPhotographicImageStorage
PresentationContext38 = 1.2.840.10008.5.1.4.1.1.77.1.3\AnyTransferSyntax #
VLSlideCoordinatesMicroscopicImageStorage
#PresentationContext39 = 1.2.840.10008.5.1.4.1.1.77.1.6\AnyTransferSyntax #
VLWholeSlideMicroscopyImageStorage
#PresentationContext40 = 1.2.840.10008.5.1.4.1.1.13.1.1\AnyTransferSyntax #
XRay3DAngiographicImageStorage
#PresentationContext41 = 1.2.840.10008.5.1.4.1.1.13.1.2\AnyTransferSyntax #
XRay3DCraniofacialImageStorage
PresentationContext42 = 1.2.840.10008.5.1.4.1.1.12.1\AnyTransferSyntax # XRayAngiographicImageStorage
PresentationContext43 = 1.2.840.10008.5.1.4.1.1.12.2\AnyTransferSyntax #
XRayRadiofluoroscopicImageStorage
# retired
PresentationContext44 = 1.2.840.10008.5.1.1.30\AnyTransferSyntax # RETIRED_HardcopyColorImageStorage
PresentationContext45 = 1.2.840.10008.5.1.1.29\AnyTransferSyntax #
RETIRED_HardcopyGrayscaleImageStorage
PresentationContext46 = 1.2.840.10008.5.1.4.1.1.5\AnyTransferSyntax #
RETIRED_NuclearMedicineImageStorage
PresentationContext47 = 1.2.840.10008.5.1.4.1.1.6\AnyTransferSyntax # RETIRED_UltrasoundImageStorage
PresentationContext48 = 1.2.840.10008.5.1.4.1.1.3\AnyTransferSyntax #
RETIRED_UltrasoundMultiframeImageStorage
PresentationContext49 = 1.2.840.10008.5.1.4.1.1.77.1\AnyTransferSyntax # RETIRED_VLImageStorage
PresentationContext50 = 1.2.840.10008.5.1.4.1.1.77.2\AnyTransferSyntax # RETIRED_VLMultiFrameImageStorage

PresentationContext51 = 1.2.840.10008.5.1.4.1.1.12.3\AnyTransferSyntax # RETIRED_XRayAngiographicBiPlaneImageStorage

The following presentation contexts are for non-image SOP classes:

#PresentationContext52 = 1.2.840.10008.5.1.4.1.1.9.1.3\Uncompressed # AmbulatoryECGWaveformStorage
#PresentationContext53 = 1.2.840.10008.5.1.4.1.1.9.5.1\Uncompressed # ArterialPulseWaveformStorage
#PresentationContext54 = 1.2.840.10008.5.1.4.1.1.78.2\Uncompressed # AutorefractionMeasurementsStorage
#PresentationContext55 = 1.2.840.10008.5.1.4.1.1.131\Uncompressed # BasicStructuredDisplayStorage
PresentationContext56 = 1.2.840.10008.5.1.4.1.1.88.11\Uncompressed # BasicTextSRStorage
#PresentationContext57 = 1.2.840.10008.5.1.4.1.1.9.4.1\Uncompressed # BasicVoiceAudioWaveformStorage
#PresentationContext58 = 1.2.840.10008.5.1.4.1.1.11.4\Uncompressed # BlendingSoftcopyPresentationStateStorage
#PresentationContext59 = 1.2.840.10008.5.1.4.1.1.9.3.1\Uncompressed # CardiacElectrophysiologyWaveformStorage
#PresentationContext60 = 1.2.840.10008.5.1.4.1.1.88.65\Uncompressed # ChestCADSRStorage
#PresentationContext61 = 1.2.840.10008.5.1.4.1.1.88.69\Uncompressed # ColonCADSRStorage
#PresentationContext62 = 1.2.840.10008.5.1.4.1.1.11.2\Uncompressed # ColorSoftcopyPresentationStateStorage
PresentationContext63 = 1.2.840.10008.5.1.4.1.1.88.33\Uncompressed # ComprehensiveSRStorage
#PresentationContext64 = 1.2.840.10008.5.1.4.1.1.66.3\Uncompressed # DeformableSpatialRegistrationStorage
#PresentationContext65 = 1.2.840.10008.5.1.4.1.1.104.2\Uncompressed # EncapsulatedCDAStorage
PresentationContext66 = 1.2.840.10008.5.1.4.1.1.104.1\Uncompressed # EncapsulatedPDFStorage
PresentationContext67 = 1.2.840.10008.5.1.4.1.1.88.22\Uncompressed # EnhancedSRStorage
#PresentationContext68 = 1.2.840.10008.5.1.4.1.1.9.4.2\Uncompressed # GeneralAudioWaveformStorage
#PresentationContext69 = 1.2.840.10008.5.1.4.1.1.9.1.2\Uncompressed # GeneralECGWaveformStorage
#PresentationContext70 = 1.2.840.10008.5.1.4.43.1\Uncompressed # GenericImplantTemplateStorage
PresentationContext71 = 1.2.840.10008.5.1.4.1.1.11.1\Uncompressed # GrayscaleSoftcopyPresentationStateStorage
#PresentationContext72 = 1.2.840.10008.5.1.4.1.1.9.2.1\Uncompressed # HemodynamicWaveformStorage
#PresentationContext73 = 1.2.840.10008.5.1.4.44.1\Uncompressed # ImplantAssemblyTemplateStorage
#PresentationContext74 = 1.2.840.10008.5.1.4.1.1.88.70\Uncompressed # ImplantationPlanSRDocumentStorage
#PresentationContext75 = 1.2.840.10008.5.1.4.45.1\Uncompressed # ImplantTemplateGroupStorage
#PresentationContext76 = 1.2.840.10008.5.1.4.1.1.78.8\Uncompressed # IntraocularLensCalculationsStorage
#PresentationContext77 = 1.2.840.10008.5.1.4.1.1.78.3\Uncompressed # KeratometryMeasurementsStorage
#PresentationContext78 = 1.2.840.10008.5.1.4.1.1.88.59\Uncompressed # KeyObjectSelectionDocumentStorage
#PresentationContext79 = 1.2.840.10008.5.1.4.1.1.78.1\Uncompressed # LensometryMeasurementsStorage
#PresentationContext80 = 1.2.840.10008.5.1.4.1.1.79.1\Uncompressed # MacularGridThicknessAndVolumeReportStorage
#PresentationContext81 = 1.2.840.10008.5.1.4.1.1.88.50\Uncompressed # MammographyCADSRStorage
#PresentationContext82 = 1.2.840.10008.5.1.4.1.1.4.2\Uncompressed # MRSpectroscopyStorage
#PresentationContext83 = 1.2.840.10008.5.1.4.1.1.78.7\Uncompressed # OphthalmicAxialMeasurementsStorage

#PresentationContext84 = 1.2.840.10008.5.1.4.1.1.80.1\Uncompressed # OphthalmicVisualFieldStaticPerimetryMeasurementsStorage
#PresentationContext85 = 1.2.840.10008.5.1.4.1.1.88.40\Uncompressed # ProcedureLogStorage
#PresentationContext86 = 1.2.840.10008.5.1.4.1.1.11.3\Uncompressed # PseudoColorSoftcopyPresentationStateStorage
#PresentationContext87 = 1.2.840.10008.5.1.4.1.1.66\Uncompressed # RawDataStorage
#PresentationContext88 = 1.2.840.10008.5.1.4.1.1.67\Uncompressed # RealWorldValueMappingStorage
#PresentationContext89 = 1.2.840.10008.5.1.4.1.1.9.6.1\Uncompressed # RespiratoryWaveformStorage
#PresentationContext90 = 1.2.840.10008.5.1.4.1.1.481.4\Uncompressed # RTBeamsTreatmentRecordStorage
#PresentationContext91 = 1.2.840.10008.5.1.4.1.1.481.6\Uncompressed # RTBrachyTreatmentRecordStorage
#PresentationContext92 = 1.2.840.10008.5.1.4.1.1.481.2\Uncompressed # RTDoseStorage
#PresentationContext93 = 1.2.840.10008.5.1.4.1.1.481.9\Uncompressed # RTIonBeamsTreatmentRecordStorage
#PresentationContext94 = 1.2.840.10008.5.1.4.1.1.481.8\Uncompressed # RTIonPlanStorage
#PresentationContext95 = 1.2.840.10008.5.1.4.1.1.481.5\Uncompressed # RTPlanStorage
#PresentationContext96 = 1.2.840.10008.5.1.4.1.1.481.3\Uncompressed # RTStructureSetStorage
#PresentationContext97 = 1.2.840.10008.5.1.4.1.1.481.7\Uncompressed # RTTreatmentSummaryRecordStorage
#PresentationContext98 = 1.2.840.10008.5.1.4.1.1.66.4\Uncompressed # SegmentationStorage
#PresentationContext99 = 1.2.840.10008.5.1.4.1.1.66.2\Uncompressed # SpatialFiducialsStorage
#PresentationContext100 = 1.2.840.10008.5.1.4.1.1.66.1\Uncompressed # SpatialRegistrationStorage
#PresentationContext101 = 1.2.840.10008.5.1.4.1.1.78.6\Uncompressed # SpectaclePrescriptionReportStorage
#PresentationContext102 = 1.2.840.10008.5.1.4.1.1.77.1.5.3\Uncompressed # StereometricRelationshipStorage
#PresentationContext103 = 1.2.840.10008.5.1.4.1.1.78.4\Uncompressed # SubjectiveRefractionMeasurementsStorage
#PresentationContext104 = 1.2.840.10008.5.1.4.1.1.66.5\Uncompressed # SurfaceSegmentationStorage
#PresentationContext105 = 1.2.840.10008.5.1.4.1.1.9.1.1\Uncompressed # TwelveLeadECGWaveformStorage
#PresentationContext106 = 1.2.840.10008.5.1.4.1.1.78.5\Uncompressed # VisualAcuityMeasurementsStorage
#PresentationContext107 = 1.2.840.10008.5.1.4.1.1.11.5\Uncompressed # XAXRFGrayscaleSoftcopyPresentationStateStorage
#PresentationContext108 = 1.2.840.10008.5.1.4.1.1.88.67\Uncompressed # XRayRadiationDoseSRStorage
retired
#PresentationContext109 = 1.2.840.10008.5.1.4.1.1.9\Uncompressed # RETIRED_StandaloneCurveStorage
#PresentationContext110 = 1.2.840.10008.5.1.4.1.1.10\Uncompressed # RETIRED_StandaloneModalityLUTStorage
#PresentationContext111 = 1.2.840.10008.5.1.4.1.1.8\Uncompressed # RETIRED_StandaloneOverlayStorage
#PresentationContext112 = 1.2.840.10008.5.1.4.1.1.129\Uncompressed # RETIRED_StandalonePETCurveStorage
#PresentationContext113 = 1.2.840.10008.5.1.4.1.1.11\Uncompressed # RETIRED_StandaloneVOILUTStorage
#PresentationContext114 = 1.2.840.10008.5.1.1.27\Uncompressed # RETIRED_StoredPrintStorage
draft
#PresentationContext115 = 1.2.840.10008.5.1.4.34.1\Uncompressed # DRAFT_RTBeamsDeliveryInstructionStorage
#PresentationContext116 = 1.2.840.10008.5.1.4.1.1.88.2\Uncompressed # DRAFT_SRAudioStorage
#PresentationContext117 = 1.2.840.10008.5.1.4.1.1.88.4\Uncompressed # DRAFT_SRComprehensiveStorage
#PresentationContext118 = 1.2.840.10008.5.1.4.1.1.88.3\Uncompressed # DRAFT_SRDetailStorage
#PresentationContext119 = 1.2.840.10008.5.1.4.1.1.88.1\Uncompressed # DRAFT_SRTextStorage
#PresentationContext120 = 1.2.840.10008.5.1.4.1.1.9.1\Uncompressed # DRAFT_WaveformStorage

The presentation context marked with '#' in front of the line is commented out due to the fact that it is not supported by iQ-VIEW. As the objects cannot be correctly processed by iQ-VIEW, the server will now reject them as they are commented out. It is recommended to not change the settings to guarantee the faultless functioning of iQ-VIEW. However, it might be useful to change the settings in case the iQ-VIEW auto-routing is used and the target station does support these SOP classes.

The setup.cfg includes the following profiles as default:

[Default]
PresentationContexts = GenericStorageSCP

12.2 FEATURE DIFFERENCES iQ-VIEW VS. iQ-VIEW PRO

The following table gives a short overview of the differences in features and functionalities between the basic iQ-VIEW version and iQ-VIEW PRO:

FEATURE	iQ-VIEW	iQ-VIEW PRO
System Requirements		
Supported operating systems		
▪ Windows XP Professional 32 bit	✓	✓
▪ Windows 7 Professional 32 bit	✓	✓
▪ Windows 7 Professional 64 bit	✓	✓
High-resolution display support	✓	✓
IMAGE DISPLAYS / PRO support	✓	✓
Communication		
DICOM Query/Retrieve (only SCU)	✓	✓
DICOM Storage (SCU and SCP)	✓	✓
DICOM Verification (SCU and SCP)	✓	✓
DICOM Grayscale Print (only SCU)	✓	✓
DICOM Modality Worklist (only SCU)	–	✓
DICOM Email	✓	✓
HIS/RIS interface	✓	✓
Study Browser		
Study table	✓	✓
Thumbnail preview	✓	✓
Virtual patient root model	✓	✓
Search filters	✓	✓
Viewer		
Dual-display support	✓	✓
True 12 bit grayscale display	–	✓

Lightbox window	✓	✓
Shortcuts for viewer actions	✓	✓
Tool configuration		
▪ Configurable default toolbar	✓	✓
▪ Modality-specific toolbars	–	✓
General image processing		
▪ Screen tiling	✓	✓
▪ Stack mode & cine mode	✓	✓
▪ Dynamic & static windowing	✓	✓
▪ Scoutlines functions	✓	✓
▪ Comparison of studies	✓	✓
▪ Synchronization of studies	✓	✓
▪ Virtual bind mode	✓	✓
▪ Scope function	✓	✓
▪ Simple magnifier	✓	✓
▪ Special magnifier window	–	✓
▪ Zooming & panning	✓	✓
▪ Scroll zoom	✓	✓
▪ Flipping & rotating	✓	✓
▪ Image sorting functions	✓	✓
▪ Image filters	✓	✓
Color schemes		
▪ General color schemes	✓	✓
▪ Nuclear color schemes	–	✓
Measurements and annotations		
▪ Distance	✓	✓
▪ Perpendicular distance	–	✓
▪ Point-to-line distance	–	✓
▪ Ratio	✓	✓
▪ Angle	✓	✓
▪ Cobb angle	✓	✓
▪ Interior angle	–	✓
▪ Square & circular ROI	✓	✓
▪ Polygonal ROI	–	✓
▪ Annotations	✓	✓
▪ Shutters	✓	✓

▪ Modifying function	✓	✓
▪ Deleting function	✓	✓
▪ Copying function	–	✓
Storing of measurements and annotations		
▪ As secondary capture image (OT)	✓	✓
▪ As Presentation States (PR)	–	✓
Overlay support		
▪ Customizable text overlays	✓	✓
▪ Bitmap overlays	✓	✓
▪ Look-up tables	✓	✓
▪ DICOM-embedded shutters	✓	✓
Support of Presentation States (PR)		
▪ Display of foreign PR	–	–
▪ Creation & display of own PR	✓	✓
▪ Storing of own PR	–	✓
▪ Sending, exporting of own PR	–	✓
Automatic loading of studies	✓	✓
Automatic tiling of studies	✓	✓
Support of Hanging Protocols (HP)		
▪ Modality-specific HP	–	✓
▪ Series description-specific HP	–	✓
▪ Hanging protocol sequences	–	✓
Support of Structured Reports (SR)		
▪ Display of Structured Reports	✓	✓
▪ Creation of basic text SR	✓	✓
▪ Editing of own basic text SR	✓	✓
Post-processing modules (all optional)		
3D post-processing (iQ-3D)	✓	✓
Image stitching (iQ-STITCH)	✓	✓
Mammography reading (iQ-MAMMO)*	✓	✓
Nuclear medicine analysis (iQ-NUC)	✓	✓
Orthopedic templating (OrthoView®)	✓	✓
Voice recognition	✓	✓
Report dictation (NCH Express Dictate)	✓	✓
Multi-purpose interface	✓	✓
Import options		

TWAIN interface	✓	✓
iQ-CR ACE interface (optional)*	✓	✓
▪ Extended post-processing functions	–	✓
DirectShow® interface (iQ-CAPTURE)	–	✓
Foot switch support	–	✓
Drop-box interface	✓	✓
Import of DICOM from directory	✓	✓
Import of JPEG, BMP, TIFF, RAW	✓	✓
Import of PDF	–	✓
Export options		
Patient CDs / DVDs	✓	✓
Memory sticks	✓	✓
iQ-ROBOT interface	✓	✓
LITE viewer for patient CDs/DVDs	✓	✓
Windows print	✓	✓
Export to BMP, JPEG, TIFF, AVI	✓	✓
Languages		
Multi-language support	✓	✓
Support of Unicode languages in GUI	✓	✓
DICOM Specific Character Sets support	✓	✓
Licensing		
Single licenses	✓	✓
Concurrent licenses**	✓	✓
Certification		
CE certification (CE)	✓	✓
FDA 510(k) certification	✓	✓

* These interfaces are also available in the iQ-VIEW (basic) version. However, it is recommended to use iQ-VIEW PRO due to the extended image post-processing features that are only available in the PRO version.

** Please note that a special iQ-VIEW.exe is required to use the application in a concurrent license environment. For detailed information see section 5.2.2.3 Getting the concurrent iQ-VIEW application of this Administration Guide.

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