iQ

ROUTER

IMAGE COMPRESSION, TELERADIOLOGY AND WORKFLOW MANAGEMENT

TAKING TELERADIOLOGY TO THE NEXT LEVEL

iQ-ROUTER ACCELERATES THE TRANSMISSION OF ANY MEDICAL IMAGE THROUGH ANY NETWORK

DICOM compatible image data is forwarded up to eight times faster as it is sent in a lossless compressed format.

iQ-ROUTER is the ideal tool for any frequently used and/or critical connection between imaging centers. It works with state-of-the-art algorithms that compress medical images up to 1:8 times in a lossless compressed format. Extensive and speedy data transmissions can be achieved using existing, low-cost narrow bandwidth lines, thus saving time, resources and money.

In standard DICOM networks, native (uncompressed) DICOM transmissions via wide area networks generate bottle necks and cause slow data transmissions when data leaves the LAN. iQ-ROUTER's Multichannel Technology guarantees constant high performance during imaging study exchange between multiple centers, even managing up to 20 channels simultaneously.

iQ-ROUTER offers bidirectional communication which means that modalities can not only receive data over the teleradiology line, but they are also able to start individual DICOM queries. The access to different DICOM modalities is regulated by means of permission control.

iQ-ROUTER supports virtually all DICOM formats and transfer syntaxes, thus making the software exceptionally versatile.

Thanks to the use of the DICOM TLS/SSL protocol, privacy between two communicating partners is maintained without the need for VPNs.

By supporting UNICODE, iQ-ROUTER allows the correct transmission of many worldwide characters, including those of Asian and all European languages.

Using iQ-ROUTER PRO, any DICOM tag (attribute) can be added, completed (e.g. using prefixes or suffixes), or deleted.

The PRO version includes data forwarding based on a specific rule or even a combination of them - for example, to forward all incoming CT scans of the skull to a certain destination. This facilitates setting up comprehensive, fully automatic workflow procedures that are frequently used in teleradiology. In addition, forwarding tasks may be scheduled at a predefined time or day of the week.

Of course, individual patient information within the forwarded data can be pseudonymized and/or sent as encrypted data in accordance with existing data protection laws. Upon receipt, the data is then decrypted.
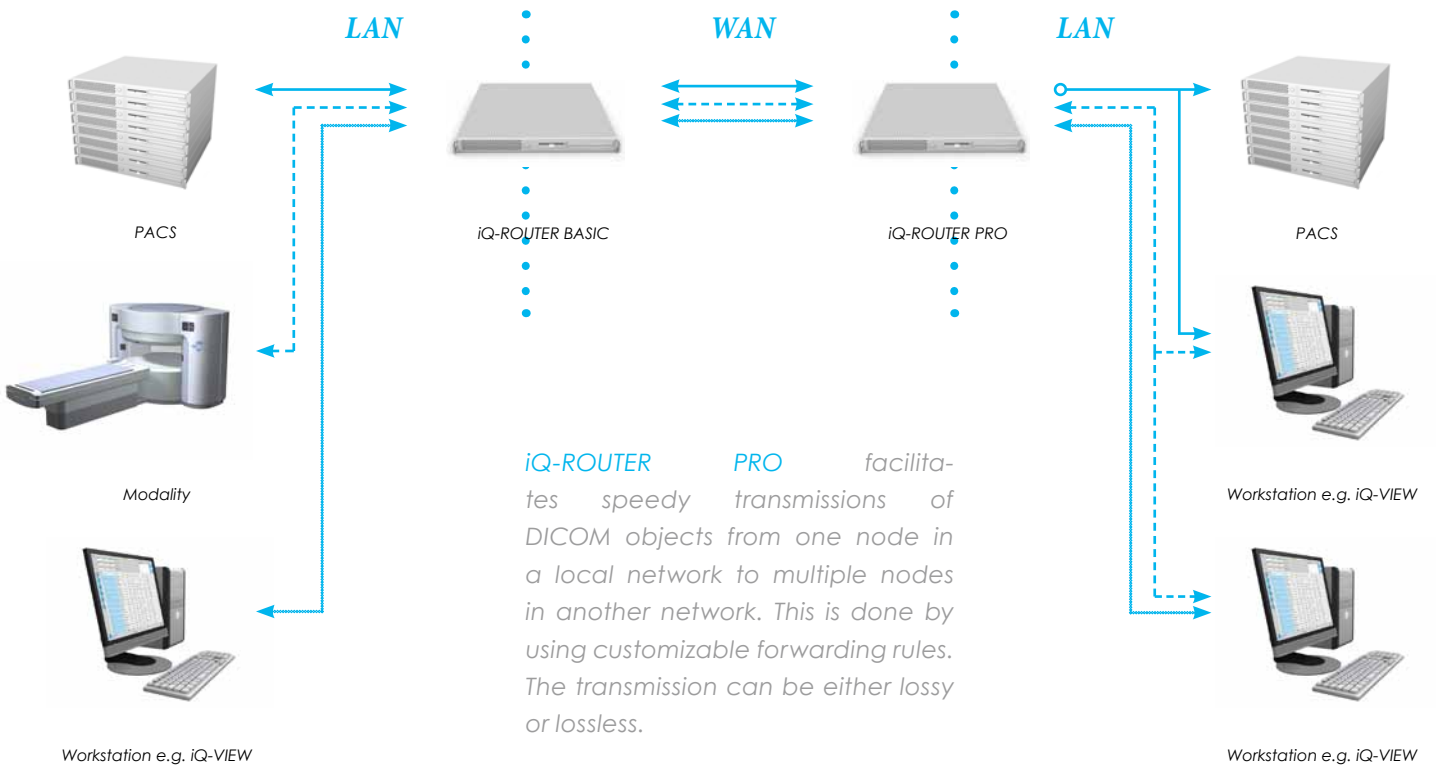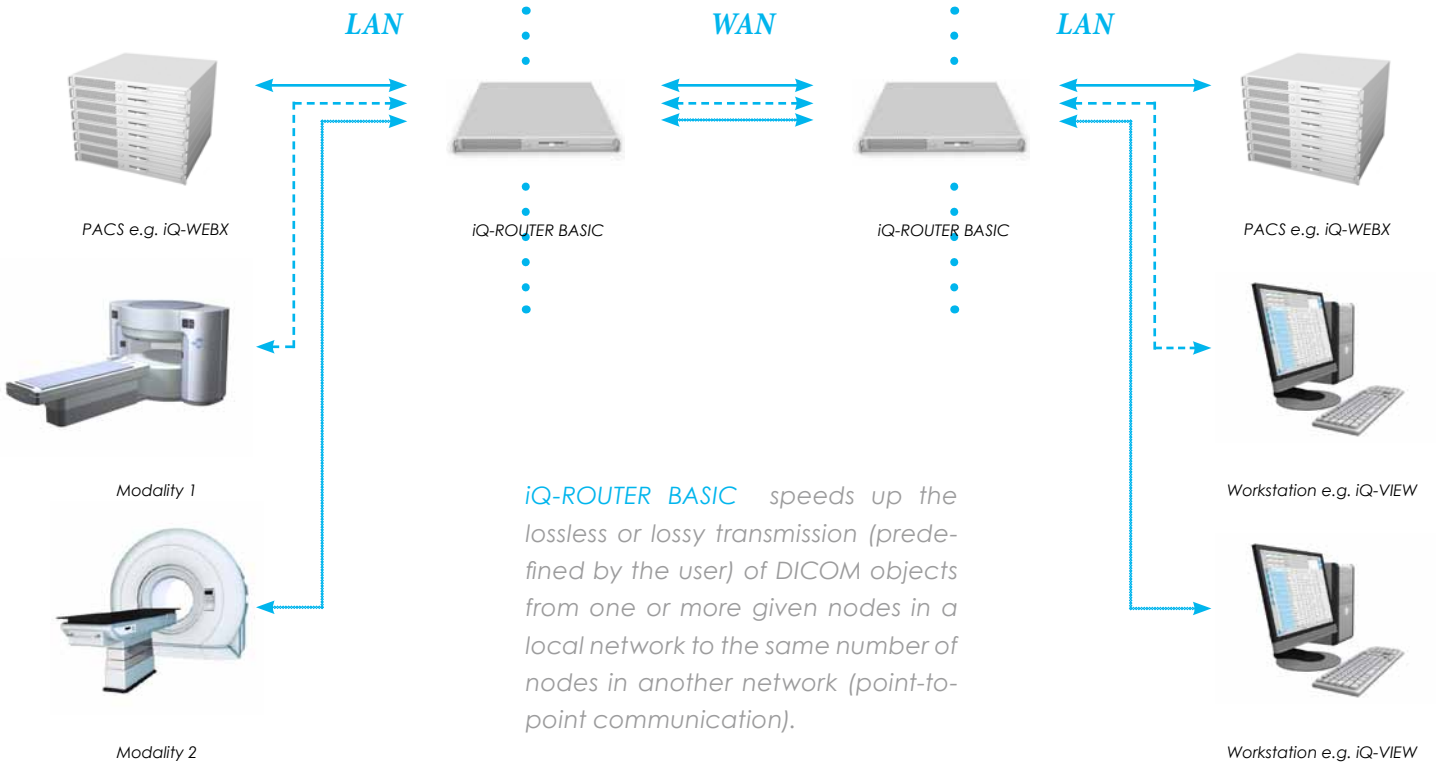
iQ-ROUTER PRO is the world's first and only DICOM product that incorporates Regular Expressions. Based on user-defined rules, the software automatically corrects virtually any image or data error as well as DICOM inconsistencies. It can, for example, adjust incorrectly coded image acquisition parameters or number formats (e.g. remove leading zeros). Accurate data exchange between various modalities and workstations is at last possible, regardless of the vendor.

The PREMIUM version features "Import Workflow Patient Reconciliation" which ensures consistency in the transmitted patient data and IDs. This is done by using regulations of Integrating the Healthcare Enterprise (IHE) and a master patient index (MPI). While sharing data between several imaging centers with different coding systems, iQ-ROUTER PREMIUM automatically identifies patients and studies and adjusts patient and study identifiers to obtain consistent patient and study data between multiple centers.
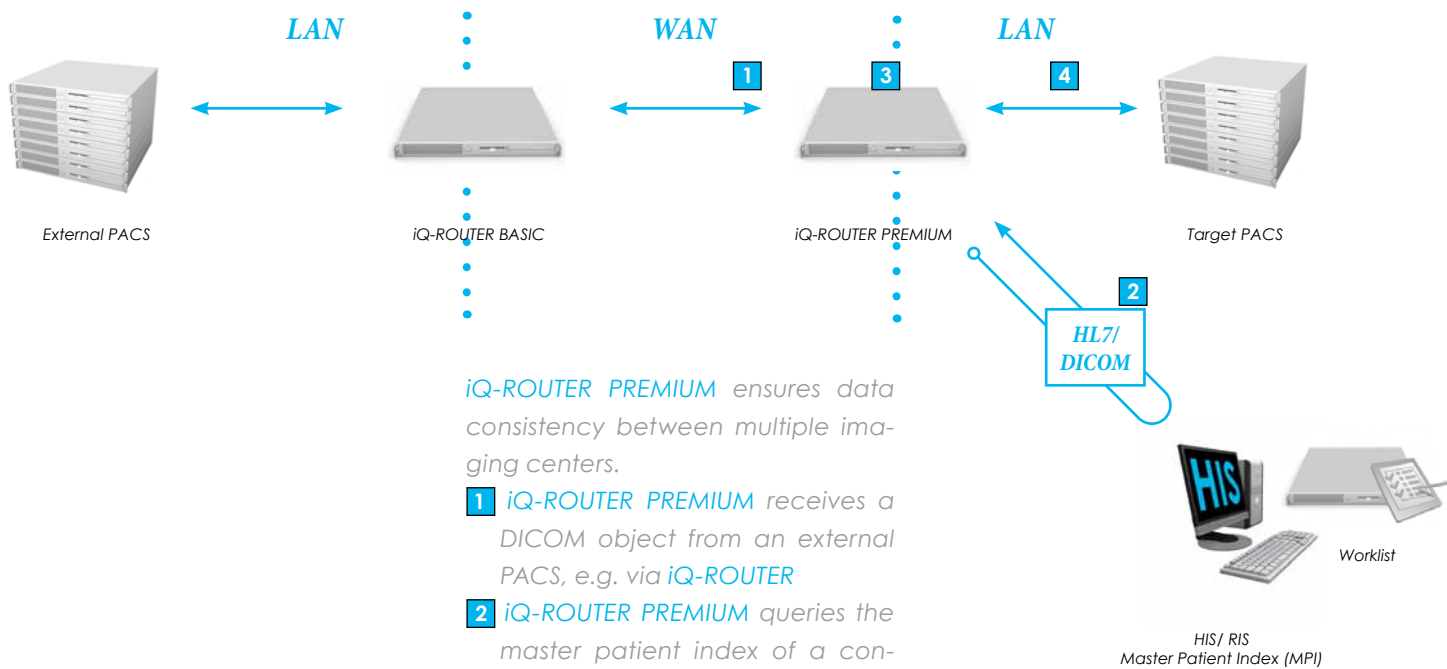
THE SOLUTION CAN BE SO SIMPLE

LAN   **WAN**   **LAN**

PACS e.g. iQ-WEBX

iQ-ROUTER BASIC

iQ-ROUTER BASIC

PACS e.g. iQ-WEBX

Modality 1

Modality 2

Workstation e.g. iQ-VIEW

Workstation e.g. iQ-VIEW

iQ-ROUTER BASIC speeds up the lossless or lossy transmission (predefined by the user) of DICOM objects from one or more given nodes in a local network to the same number of nodes in another network (point-to-point communication).

LAN   **WAN**   **LAN**

PACS

iQ-ROUTER BASIC

iQ-ROUTER PRO

PACS

Modality

Workstation e.g. iQ-VIEW

Workstation e.g. iQ-VIEW

Workstation e.g. iQ-VIEW

iQ-ROUTER PRO facilitates speedy transmissions of DICOM objects from one node in a local network to multiple nodes in another network. This is done by using customizable forwarding rules. The transmission can be either lossy or lossless.

LAN   **WAN**   **LAN**

External PACS   iQ-ROUTER BASIC   iQ-ROUTER PREMIUM   Target PACS
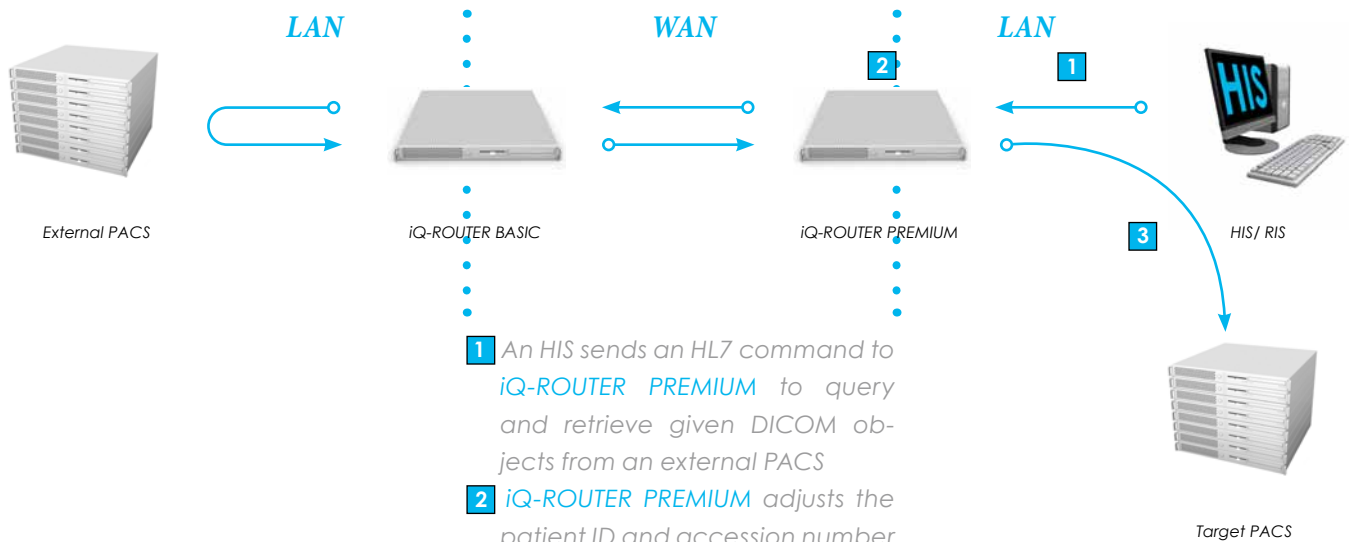
HL7/ DICOM

Worklist

HIS/ RIS
Master Patient Index (MPI)

iQ-ROUTER PREMIUM ensures data consistency between multiple imaging centers.

1 *iQ-ROUTER PREMIUM* receives a DICOM object from an external PACS, e.g. via *iQ-ROUTER*

2 *iQ-ROUTER PREMIUM* queries the master patient index of a connected HIS by HL7 (MPI) or DICOM for the target patient ID and accession number

3 *iQ-ROUTER PREMIUM* adjusts the dataset with the target patient ID and accession number

4 *iQ-ROUTER PREMIUM* forwards the data to the target PACS

LAN   **WAN**   **LAN**

External PACS   iQ-ROUTER BASIC   iQ-ROUTER PREMIUM   HIS/ RIS

Target PACS

1 An HIS sends an HL7 command to *iQ-ROUTER PREMIUM* to query and retrieve given DICOM objects from an external PACS

2 *iQ-ROUTER PREMIUM* adjusts the patient ID and accession number with the data received from the querying HIS

3 Adjusted DICOM data is forwarded to the target PACS

iQ-ROUTER FEATURES

GENERAL
- Runs without user login (NT service controlled by the OS)
- Flexible logging, monitoring and configuration tool

DICOM SUPPORT
- DICOM store, query/retrieve, verification
- Support of all DICOM-defined "specific character sets" including Asian languages and unicode UTF-8
- Fully parallel processing (multi-threaded)
- Support of all DICOM store classes including non-image classes like Structured Reports
- Unlimited number of parallel connections and modalities within the network

ROUTING/ENHANCED DICOM
- Transparent routing of all requests
- Bidirectional DICOM-interface
- Patient root and study root model support for DICOM queries

SECURITY/PRIVACY
- Transport Layer Security (TLS/SSL) support
- Flexible service access control for all modalities within the network
- Restriction for query requests
- Automatic pseudonymization of patient data

TELERADIOLOGY
- Proprietary Wavelet compression
- JPEG-LS standard
- JPEG/JPEG 2000 lossy and lossless compression
- "Runtime Length Encoding" (RLE) lossless compression
- Adjustable compression ratio for all lossy compressions
- Support for long latency time and low bandwidth connections, e.g. satellite lines
- Supports VPN, dynamic IPs and firewalling

WORKFLOW
- New rule set for enhanced DICOM attribute manipulation (NEW!)
- Automatic correction of forwarded objects compliant to the DICOM standard
- Automatic changes of AE titles (AE mapping)

OPERATING SYSTEMS
- Windows 7, 2008 Server

LANGUAGES
- Unicode support

CERTIFICATION
- CE and FDA 510(k)

iQ-ROUTER PRO FEATURES
IN ADDITION TO iQ-ROUTER FEATURES

DICOM SUPPORT
- Rule-based modification of DICOM attributes
- Definable conditions to set the rules: attributes, AE title source (calling AE), AE title destination (called AE)
- Possible modifications of attributes: add, replace, copy, delete, add prefix or suffix

TELERADIOLOGY
- Regular Expressions for fully automatic correction of any image and data errors or DICOM inconsistencies (NEW!)

WORKFLOW
- Automatic rule-based forwarding of DICOM data to multiple destinations
- Definable conditions to set the rules: attributes, AE title source, AE title destination, day of the week, hour
- New rule set for enhanced DICOM attribute manipulation (NEW!)
- Asynchronous forward management (multi-threaded)

FORWARD MANAGEMENT
- Support of multiple conditions for each rule
- Support of wildcards for all text fields in rules and conditions
- Supports forwards based on called or calling AE title, time or day of the week and any DICOM header information for rules and conditions

iQ-ROUTER PREMIUM FEATURES
IN ADDITION TO iQ-ROUTER PRO FEATURES

COMMUNICATION/ INTERFACING
- Possible customization of the interaction with available medical information systems
- Patient data validation for consistency consulting local databases
- HL7 triggered routing of DICOM data sets

DATA CONSISTENCY
- Import Workflow Patient Reconciliation using HL7 and Master Patient Index (MPI) or DICOM (NEW!)
- Extraction of measurements from DICOM data in Structured Reports (NEW!)

LICENSING
- On request

HARDWARE & SOFTWARE REQUIREMENTS

	MINIMUM	RECOMMENDED
OS:	Windows 2008 Server	Windows 7 Professional, Windows Server 2008 R2
CPU:	Pentium, 500 MHz	Pentium, 2 GHz
RAM:	2 GB RAM	4 GB RAM
HDD:	10 GB of empty hard disk space	20 GB of empty hard disk space
Network:	64 kbit/s	100 Mbit/s
Hardware:		Dell

OUR PRODUCTS FOR YOUR IMAGING NEEDS

iQ-SYSTEM PACS   Full featured, reliable and affordable PACS
iQ-RIS   Smooth radiology information system
MED-TAB™   Superior portable image analysis

Stamp of sales partner