



ROUTER / PRO / PREMIUM

IMAGE COMPRESSION, TELERADIOLOGY
AND WORKFLOW MANAGEMENT

TELERADIOLOGY REDEFINED

VERSION 4.0



IMAGE
Information Systems

High-speed encrypted DICOM data transmission through any network

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 loss-less compressed format maintaining the diagnostic quality of the images. Extensive and fast data transmissions can be achieved, accelerating the imaging workflow. In areas where only narrow bandwidth lines are available, the use of iQ-ROUTER saves time, resources and money.

In standard DICOM networks, native (uncompressed) DICOM transmissions via wide area networks generate bottlenecks and cause slow data transmissions when data leaves the LAN. iQ-ROUTER's multi-channel technology guarantees constant high performance during imaging study exchange between multiple centers, even managing up to 100 channels simultaneously.

iQ-ROUTER offers bidirectional communication which means that modalities can not only send data over the teleradiology line, but DICOM stations, such as reading stations, can query and retrieve needed data. The access to different DICOM stations is regulated by means of access control.



Three editions - tailored to your needs

Choose the edition that best fits the size and conditions of your medical network, depending on the number of stations you need to connect and the number of data adjustments you plan to implement.

iQ-ROUTER is ideally suited for small imaging centers with a low number of imaging devices.

iQ-ROUTER PRO perfectly meets the requirements of mid-sized imaging centers and small hospitals.

iQ-ROUTER PREMIUM is intended as central image distribution node for imaging center groups, VNA and large hospitals.

iQ-ROUTER	iQ-ROUTER PRO	iQ-ROUTER PREMIUM
Connect up to 3 DICOM nodes	Connect up to 11 or 21 DICOM nodes	Connect up to 100, 200 or 300 DICOM nodes
Apply up to 5 attribute rules	Apply up to 25 or 53 attribute rules	Apply up to 250, 503, 753 attribute rules

HIGHLIGHTS



High-speed encrypted DICOM data transmission without the need for VPN



FIPS, HIPAA, GDPR and Cybersecurity compliant



Fully customizable rule-based attribute manipulation to ensure consistent DICOM data and successful DICOM transfers



Flexible compression or decompression of DICOM imaging data supporting virtually any object

Secure transmissions

The iQ-ROUTER editions support 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 most worldwide characters, including those of Asian and all European languages.

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

Flexible Forwarding

All editions also allow data forwarding based on specific rules or even a combination of them, for example, to forward all incoming CT scans of the skull to a specific workstation. In addition, forwarding tasks may be scheduled at a predefined time or day of the week. This facilitates the setup of comprehensive, fully automatic workflow procedures as they are frequently used in teleradiology.

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.

Regular Expressions

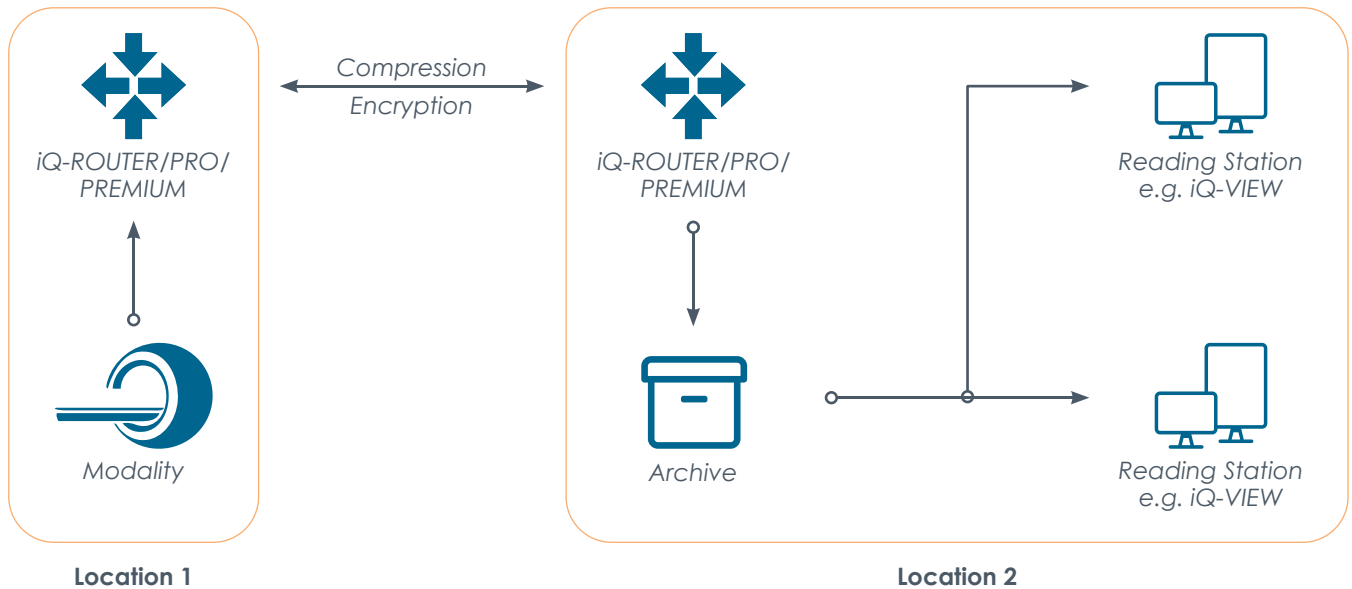
iQ-ROUTER is the world's first DICOM product that incorporates Regular Expressions. Based on user-defined rules, the software can automatically correct virtually any image or data error as well as DICOM inconsistencies. It can, for example, adjust incorrectly coded image acquisition parameters or number formats (e.g. remove leading zeros).

Accurate data exchange between various modalities and workstations is at last possible, regardless of the vendor.

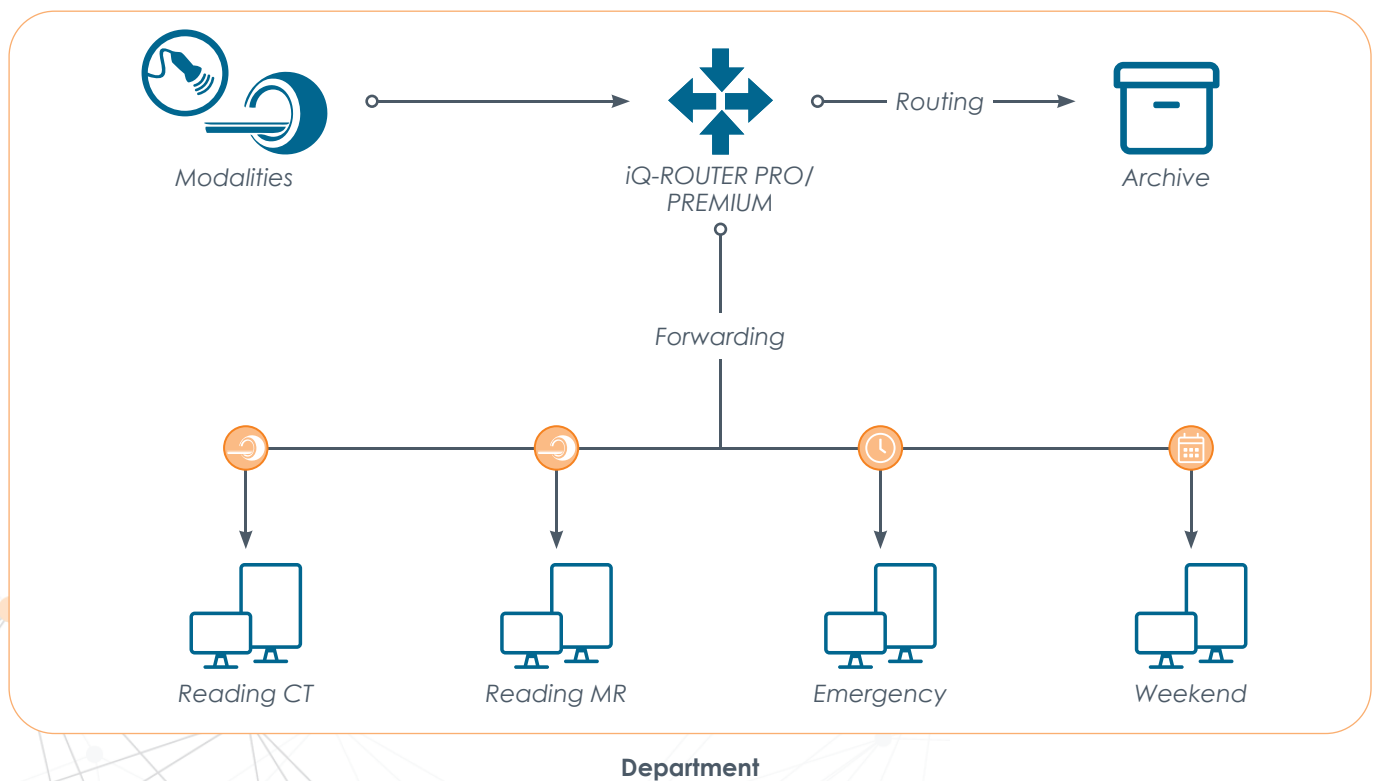


***THE SOLUTION
CAN BE
SO SIMPLE***

1 - SECURE DATA ROUTING



2 - FORWARDING BASED ON RULES



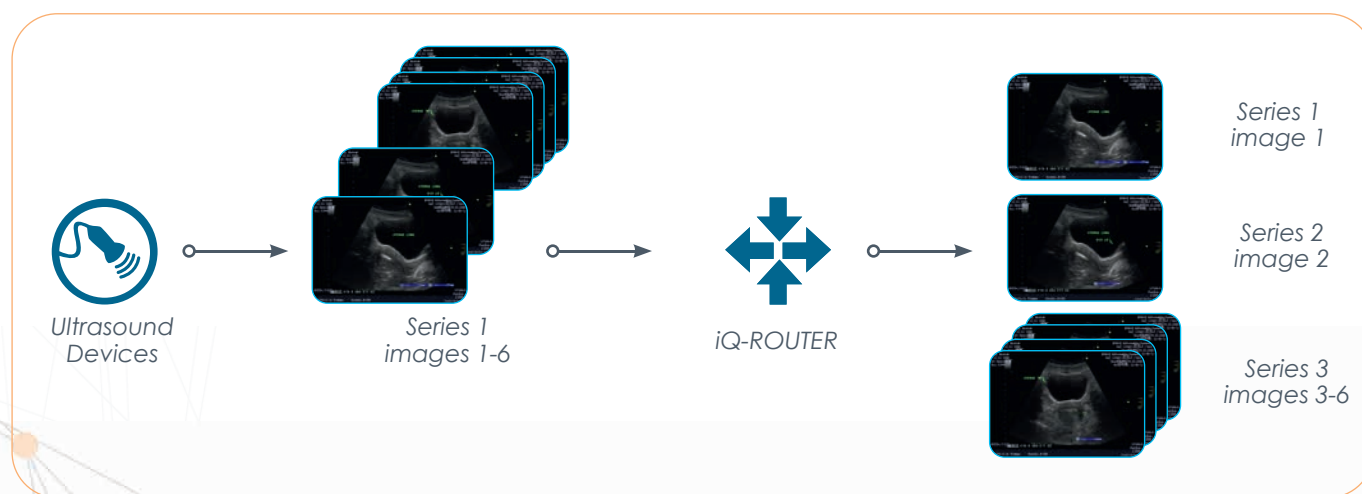
3 - REGULAR EXPRESSIONS

Where can Regular expressions help?

Use case 1:

Most ultrasound devices deliver all images of a study in one single series, mixing both single and cine images. Consequently, it can be difficult to manage common ultrasound studies in a PACS.

iQ-ROUTER separates the image objects into sorted series allowing to review them in a structured way.



Use case 2:

iQ-ROUTER can adjust incorrectly coded image acquisition parameters or number formats (e.g. remove leading zeros in UIDs).

Use case 3:

By using Regular Expressions, iQ-ROUTER can delete or replace blank spaces in Patient IDs or correct date formats. (05.09.2019 → 20190905)

iQ-ROUTER/PRO/PREMIUM FEATURES*

GENERAL

- 64-bit application with enhanced transfer and (de)compression of large datasets
- Flexible configuration, monitoring and logging tool
- Optional Reconciliation Plugin available for an enhanced workflow

DICOM SUPPORT

- Bidirectional DICOM interface with DICOM store, query/retrieve, verification
- Patient root and study root model support for DICOM queries
- Support of all DICOM-defined "specific character sets" including Asian languages and Unicode UTF-8
- Multi-threaded processing (with parallel connections within the network)
- Support of all DICOM store classes including non-image classes like Structured Reports

ROUTING/TELERADIOLOGY

- Transparent routing of all requests
- Support of all common transfer syntaxes (JPEG-LS, JPEG/JPEG 2000 lossy or lossless compression) with adjustable compression ratio for all lossy compressions
- Sending DICOM images without further compression or decompression
- Support for long latency time and low bandwidth connections, e.g. satellite lines; support for VPN, dynamic IPs and firewalls
- Automatic correction of transferred DICOM standard compliant objects
- Automatic changes of AE titles (AE mapping)

FORWARD MANAGEMENT

- Asynchronous forward management (multi-threaded)
- Automatic rule-based forwarding of DICOM data to multiple destinations
- Support of multiple conditions for each rule
- Support of wildcards for all text fields in rules and conditions
- Support of data forwarding based on called or calling AE title, time or day of the week and any DICOM header information for rules and conditions
- Storage of forward jobs in SQL database to automatically retry them after restart or manually resend them after failures (NEW!)
- Processing of forwarding jobs within a customizable time frame e.g. for night shifts (NEW!)
- Possibility to limit simultaneous forwarding to the same destination to prevent jobs from blocking each other (NEW!)
- Sending or removing of multiple forwarding jobs at once for easy go-live after a long communication failure (NEW!)

ATTRIBUTE MANIPULATION

- Rule-based modification of DICOM attributes
- Definable conditions to set the rules, e.g. attributes, calling AE, called AE
- Possible modifications of attributes, e.g. add, replace, copy, delete, add prefix or suffix
- Regular Expressions for fully automatic correction of any image and data errors or DICOM inconsistencies

SECURITY/PRIVACY

- Transport Layer Security (\leq TLS/SSL 1.2) support with latest updates to meet cyber security requirements
- Flexible service access control for all DICOM stations within the network
- Restriction for query requests
- Automatic pseudonymization of patient data

LICENSING

- Single (PC-based) or concurrent (floating user) licenses

CERTIFICATION

- CE and FDA 510(k)**

*Detailed information on iQ-ROUTER/PRO/PREMIUM's system requirements is available in the iQ-ROUTER Administration Guide or the iQ-SYSTEM PACS Hardware Purchasing Guide.

** iQ-ROUTER/PRO/PREMIUM is a component of iQ-SYSTEM PACS 1.7 (FDA UDI B403IQS170).

OUR COMPANY AT A GLANCE

IMAGE Information Systems is an international company group with offices in Germany, USA and India, which offers complete, user friendly and cost-effective medical imaging solutions.

More than 10,000 satisfied clients all over the world benefit from our state-of-the-art products for PACS, RIS, X-ray solutions, 3D processing and tele-radiology.

We have pioneered several innovations in the market:

- We have introduced MED-TAB, the first DICOM-calibrated portable display for medical image analysis
- Our iQ-ROUTER supports virtually all DICOM image formats and transfer syntaxes in data transmission
- DICOMReader has the highest available read-in rate of patient media, ensuring compatibility with almost all available imaging modalities and vendors

IMAGE Information Systems provides the second largest digital imaging user forum on earth, enabling users to share knowledge and best practice.

To learn more about us and our products, please visit our website.

www.image-systems.biz

OUR PRODUCTS FOR YOUR IMAGING NEEDS

iQ-SYSTEM PACS

iQ-RIS

MED-TAB

iQ-4CLOUD

Full featured, reliable and affordable PACS
Smooth radiology information system
Superior portable image analysis
Your PACS on demand



Stamp of sales partner



IMAGE INFORMATION SYSTEMS EUROPE GMBH

LANGE STR. 16 | 18055 ROSTOCK | GERMANY

TEL. GER: +49 381 496 5820 | TEL. INDIA: +91 33 4600 0657

TEL. US: +1 470 300 44 80

WWW.IMAGE-SYSTEMS.BIZ | INFO@IMAGE-SYSTEMS.BIZ