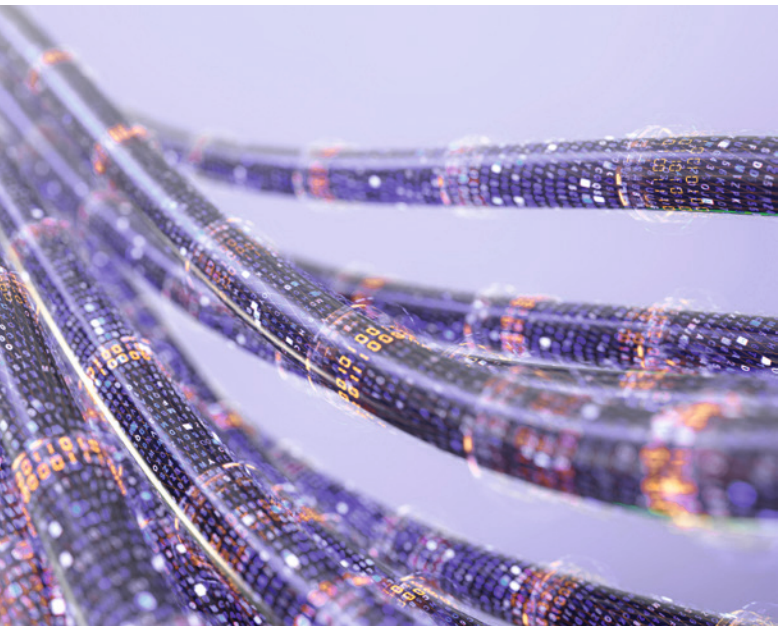


High-Performance DICOM Routing across Healthcare Networks

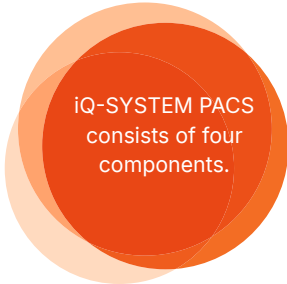
iQ-ROUTER **1** is designed for demanding imaging workflows between healthcare institutions, imaging centers and remote reading environments. Using state-of-the-art lossless compression technology, iQ-ROUTER accelerates secure DICOM transmission while maintaining diagnostic image quality. Optimized routing, intelligent retry mechanisms and configurable fallback destinations support reliable study delivery across local, remote and cloud-connected environments.



MULTI-CHANNEL TECHNOLOGY FOR FAST, SECURE AND RELIABLE DICOM ROUTING

In standard DICOM networks, uncompressed image transmission across wide area networks may create bottlenecks and slow down imaging workflows. iQ-ROUTER's multi-channel technology enables high-performance study exchange between multiple sites and supports multiple simultaneous transmission channels. Advanced routing, staged retry mechanisms and configurable fallback destinations help maintain reliable study delivery during temporary network interruptions or system outages.

iQ-ROUTER supports secure bidirectional DICOM communication across distributed imaging environments with configurable access control and encrypted data transmission.



1 iQ-ROUTER is a component of iQ-SYSTEM PACS, a comprehensive picture archiving and communication system (PACS) for the storage, management, distribution and viewing of medical images and related DICOM data.

Other components of iQ-SYSTEM PACS include iQ-WEB, iQ-VIEW and iQ-4VIEW. The components can be deployed individually or in various combinations. The full functionality of iQ-SYSTEM PACS is achieved when all components are integrated into the imaging network.



Choose the edition that
fits your medical network
and workflow requirements.



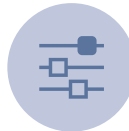
Scalable for Any Network Flexible for Any Workflow

Whether for small imaging centers, multi-site healthcare networks or large hospital environments, iQ-ROUTER adapts to your infrastructure and workflow requirements. Flexible licensing based on connected DICOM nodes allows the system to scale with your organization.

	CONNECTED DICOM NODES	ATTRIBUTE RULES
SMALL IMAGING CENTERS	Up to 3	Up to 5
IMAGING CENTERS AND HOSPITALS	Up to 11 or 21	Up to 25 or 53
ENTERPRISE AND MULTI-SITE NETWORK	Up to 100, 200 or 300	Up to 250, 503 or 753



Flexible DICOM compression and decompression for efficient and interoperable imaging workflows



Flexible rule-based DICOM data management for consistent workflows and reliable routing



High-speed secure and reliable DICOM routing without VPN connections



HIPAA and GDPR compliant for secure and compliant imaging environments

Reliable DICOM Workflows

Integration with iQ-ROUTER



FLEXIBLE ROUTING

iQ-ROUTER supports rule-based forwarding using customizable routing conditions and workflows. Studies can be automatically forwarded to specific destinations, scheduled for predefined times or routed across distributed imaging environments. Thanks to advanced routing capabilities, staged retry mechanisms and configurable fallback destinations, image data is reliably delivered even during temporary outages or network interruptions. Patient information within transmitted data can be pseudonymized and transmitted using encrypted communication channels to support data protection requirements.



SECURE DICOM COMMUNICATION

iQ-ROUTER supports a wide range of DICOM formats and transfer syntaxes for reliable interoperability across imaging environments. Secure DICOM communication is supported through TLS/SSL encryption without requiring VPN connections. Unicode support enables reliable transmission of international character sets, including Asian and European languages. iQ-ROUTER also allows flexible rule-based DICOM data management, including adding, modifying or removing DICOM attributes.

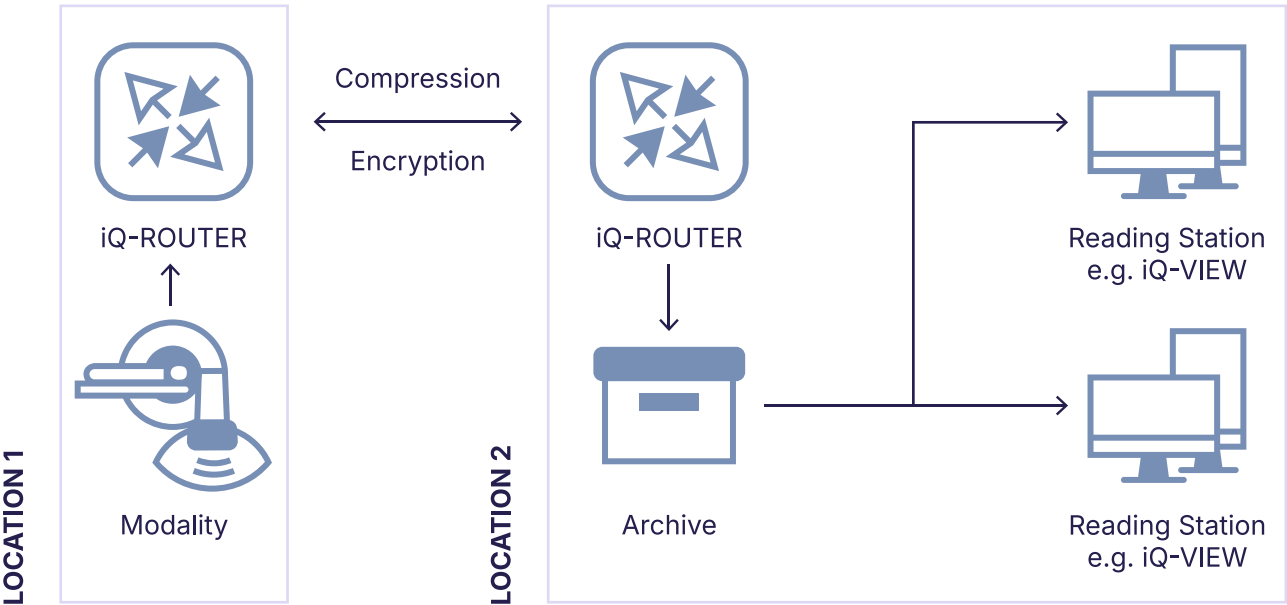


RULE-BASED DATA NORMALIZATION

iQ-ROUTER automatically corrects DICOM inconsistencies and normalizes imaging data across different systems and vendors. This improves interoperability between modalities, PACS archives and diagnostic workstations while supporting consistent imaging workflows.

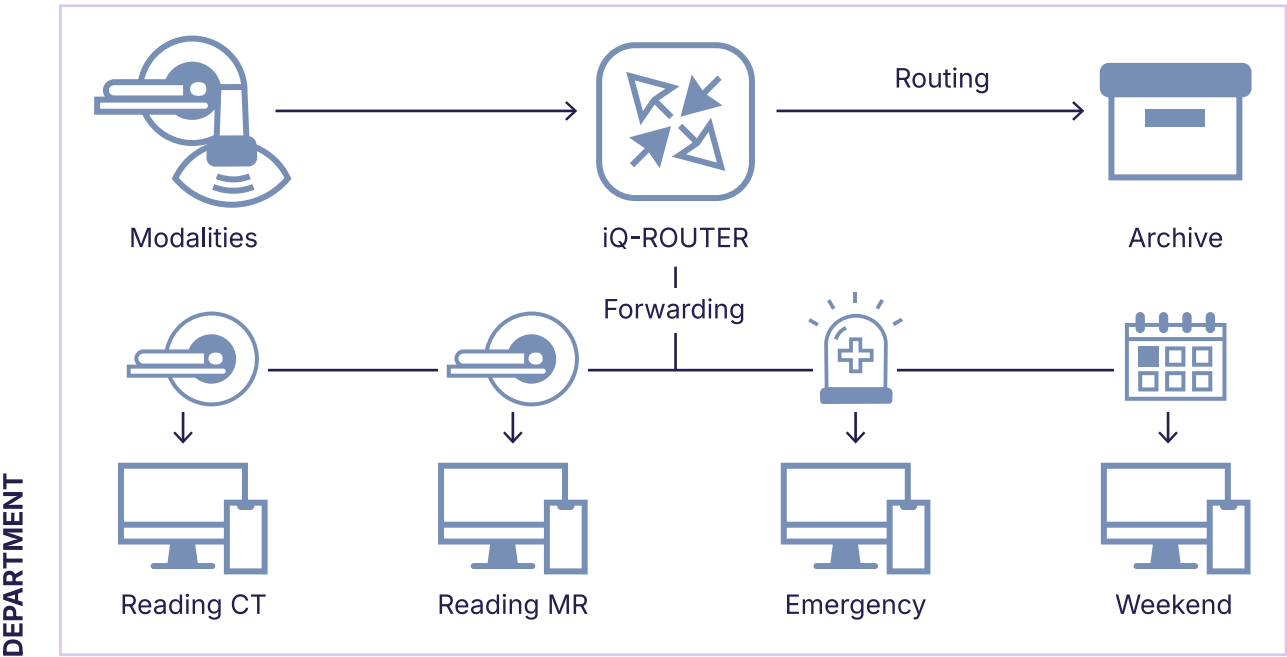
Scenario 1:

Secure DICOM Routing

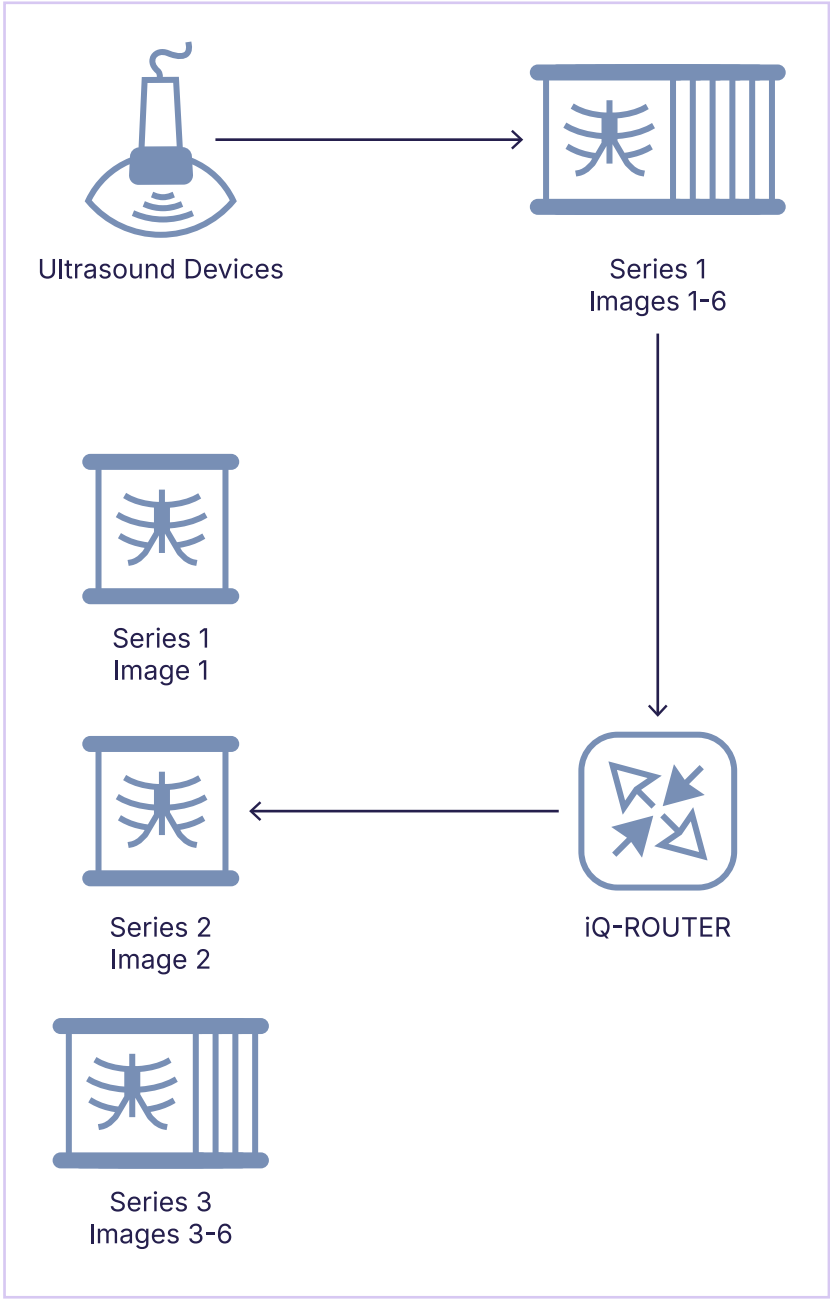


Scenario 2:

Forwarding based on Rules

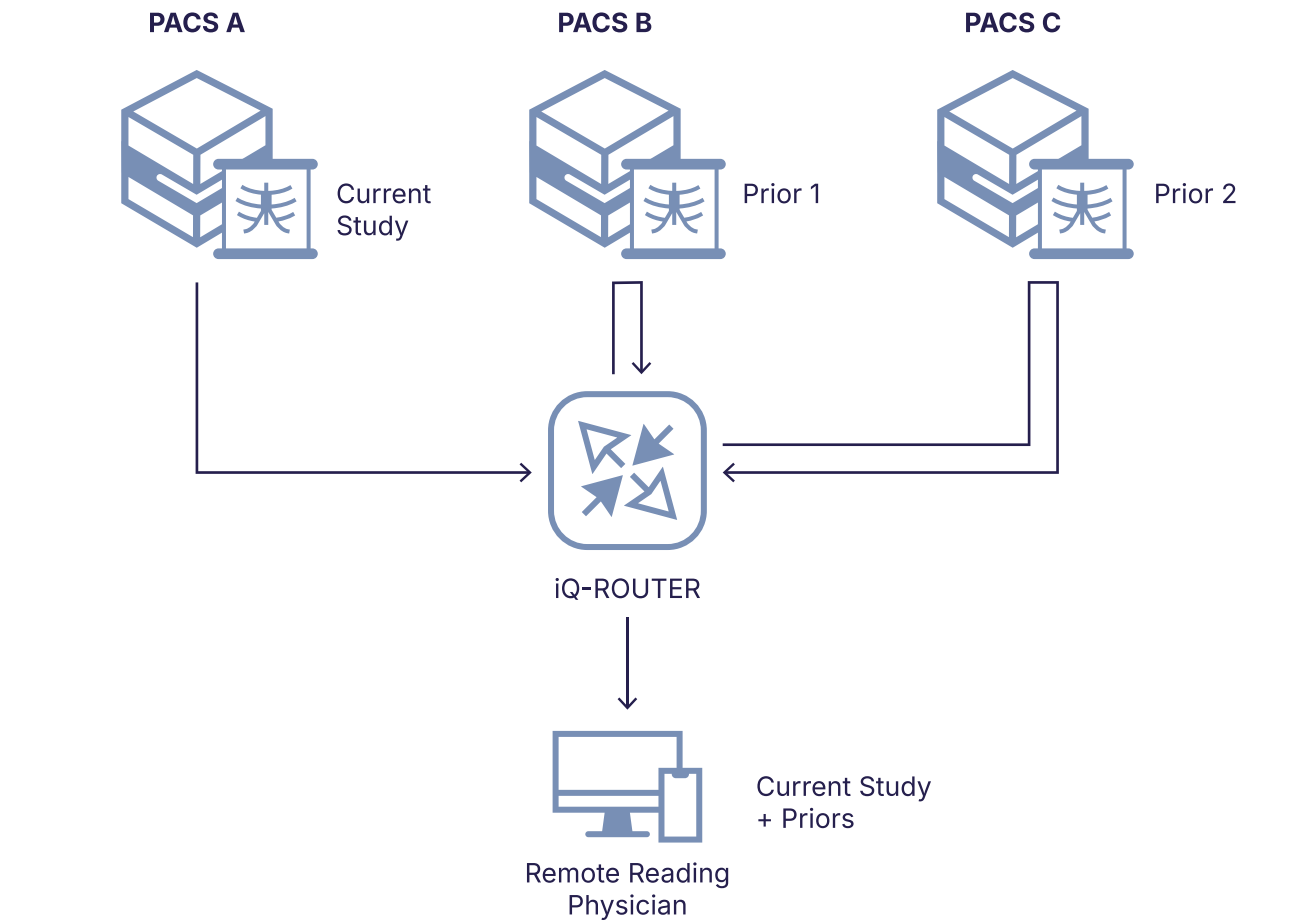


Scenario 3:
Typical DICOM
Workflow Challenges



- USE CASE 1:**
- Most ultrasound devices deliver all images of a study in a single series, mixing static and cine images. This may complicate structured review and storage in PACS environments. iQ-ROUTER can automatically separate image objects into organized series for improved workflow handling and structured review.
- USE CASE 2:**
- iQ-ROUTER can automatically correct incorrectly formatted DICOM attributes and normalize data values.
- USE CASE 3:**
- Using regular expressions and rule-based processing, iQ-ROUTER can automatically correct formatting inconsistencies such as blank spaces in Patient IDs or non-standard date formats (e.g. 05.09.2019 → 20190905).

Automated Prefetch
of relevant Prior Studies



- AUTOMATED PRIOR STUDY RETRIEVAL**
- Automatic search for relevant prior studies across connected archives based on anatomical region and study relevance
 - Automatic retrieval of relevant prior studies across connected archives using configurable matching and filtering criteria
 - Configurable age limits for prior study retrieval

Workflow and Technical Features* of iQ-ROUTER



GENERAL

- Flexible configuration, monitoring and enhanced logging capabilities
- Optional reconciliation plugin available for an enhanced workflow



DICOM SUPPORT

- Bidirectional DICOM interface with DICOM store, query/retrieve and verification
- Support of all DICOM-defined "specific character sets" including Asian languages and Unicode UTF-8
- Support of all DICOM storage classes including non-image classes like Structured Reports



SECURITY/PRIVACY

- Transport Layer Security (TLS/SSL up to 1.3) with updated security components to support modern cybersecurity requirements
- Flexible service access control for all DICOM stations within the network
- Automatic pseudonymization of patient data
- Support for AE-title-specific TLS certificates for enhanced DICOM node authentication **NEW**



CERTIFICATION

- iQ-SYSTEM PACS (incl. iQ-ROUTER) is registered according to:
 1. MDR (EU) 2017/745, class IIb (v1; iQ-ROUTER UDI-DI (EEA): +B403IQROUTER5102)
 2. FDA 510(k), class II (version 1.10; UDI-DI: +B403IQS11004)



FORWARD MANAGEMENT

- Asynchronous forward management (multi-threaded)
- Automatic rule-based forwarding of DICOM data to multiple destinations
- Support for flexible routing conditions and wildcard matching
- Forwarding rules based on calling/called AE title, time schedules and DICOM header information
- Configurable staged retry mechanisms for improved transfer recovery during temporary interruptions **NEW**
- Optional fallback destinations for reliable study delivery when primary destinations are unavailable **NEW**
- Processing of forwarding jobs within customizable time frames (e.g. night shifts)
- Optimized encrypted DICOM transmission for high-latency and long-distance network connections **NEW**



ROUTING/TELERADIOLOGY

- Transparent routing of all requests
- Support for common transfer syntaxes including JPEG-LS and JPEG/JPEG 2000 (lossy and lossless) with adjustable compression ratios
- Support for high-latency and low-bandwidth connections including satellite, VPN and firewall environments
- Automatic correction and normalization of transferred DICOM-compliant objects
- Automatic AE title mapping



ATTRIBUTE MANAGEMENT

- Rule-based modification of DICOM attributes
- Flexible rule conditions based on DICOM attributes and AE titles
- Attribute operations including add, replace, copy, delete, prefix and suffix handling
- Regular expressions for automated correction of image, data and DICOM formatting inconsistencies

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

