iConnect® Cloud Gateway
V. 1.2

DICOM CONFORMANCE STATEMENT

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INTENDED USE:

iConnect Cloud Gateway is an edge device used to proxy medical content from an on premise medical institution and securely send it over the internet to Merge Healthcare's Cloud Offerings. The Gateway is able to use standard DICOM listeners to receive data pushed to its AE title which is then encrypted and sent over a secure HTTPS connection to Merge's iConnect Cloud Archive for long term storage. The Gateway is able to use standard HL7 listeners to receive Orders, Reports, and other standard HL7 content which is then encrypted and sent over a secure HTTPS connection to Merge's iConnect Network.


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The symbols glossary is provided electronically at **http://www.merge.com/Support/Resources.aspx**.

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Introduction

Purpose

This document specifies the conformance of Merge Healthcare's iConnect Cloud Gateway Release 1.2 to the DICOM 3.0 standard. This document covers conformance for the following:

- DICOM Store and Query Retrieve provide a DICOM to HTTPS transition server used for querying and transferring DICOM images between other DICOM devices and the iConnect Cloud Archive (ICCA)
- Prefetcher moves DICOM images on iCCA in a predictive manner to facilitate access by real world entities.
- Reconciliation service ensures that images on local archive are also stored on iConnect Cloud Archive.

Related Documents

NEMA, the DICOM Standard: Parts 1 - 20.

Implementation Model

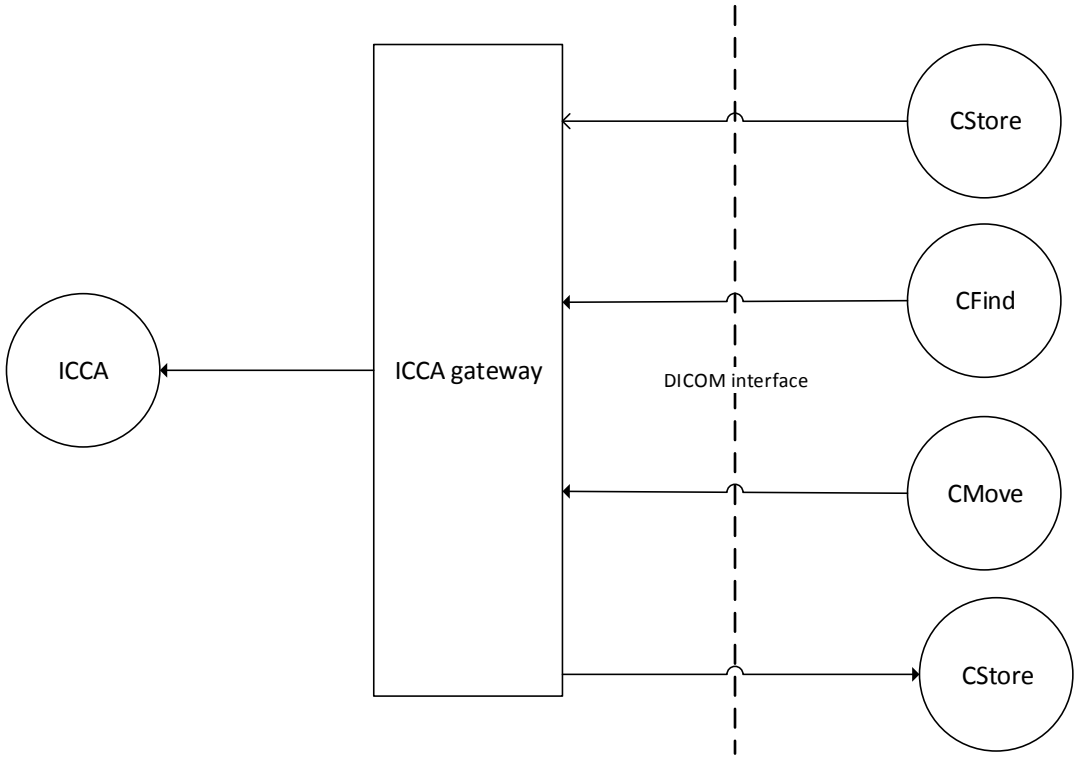
DICOM Store Query Retrieve

The ICCA Gateway allows for the storage and retrieval of DICOM objects from both ICCA and local image systems. Additionally, it allows for the querying of information about DICOM objects that have been stored to ICCA and the local image system.

The ICCA Gateway performs prefetching requests to move images on ICCA to other DICOM devices to facilitate access by real world entities.

The ICCA Gateway also moves missing images from the local archive to ICCA through the reconciliation service.

Application Flow Diagram



Dicom Store Query Retrieve DICOM AE Implementation Model

Functional Definition of AEs

DICOM AE

The iCCA Gateway waits for another application to connect at the presentation address configured for its Application Entity Title. When another application connects, the archive expects it to be a DICOM application. The archive accepts associations with Presentation Contexts for the following SOP Classes:

- C-STORE SCP – receives store request from DICOM devices
- C-FIND SCP – receives query request from DICOM devices
- C-MOVE SCP – receives retrieve request from DICOM devices
- C-STORE SCU – sends DICOM objects to DICOM devices as part of C-MOVE request execution.

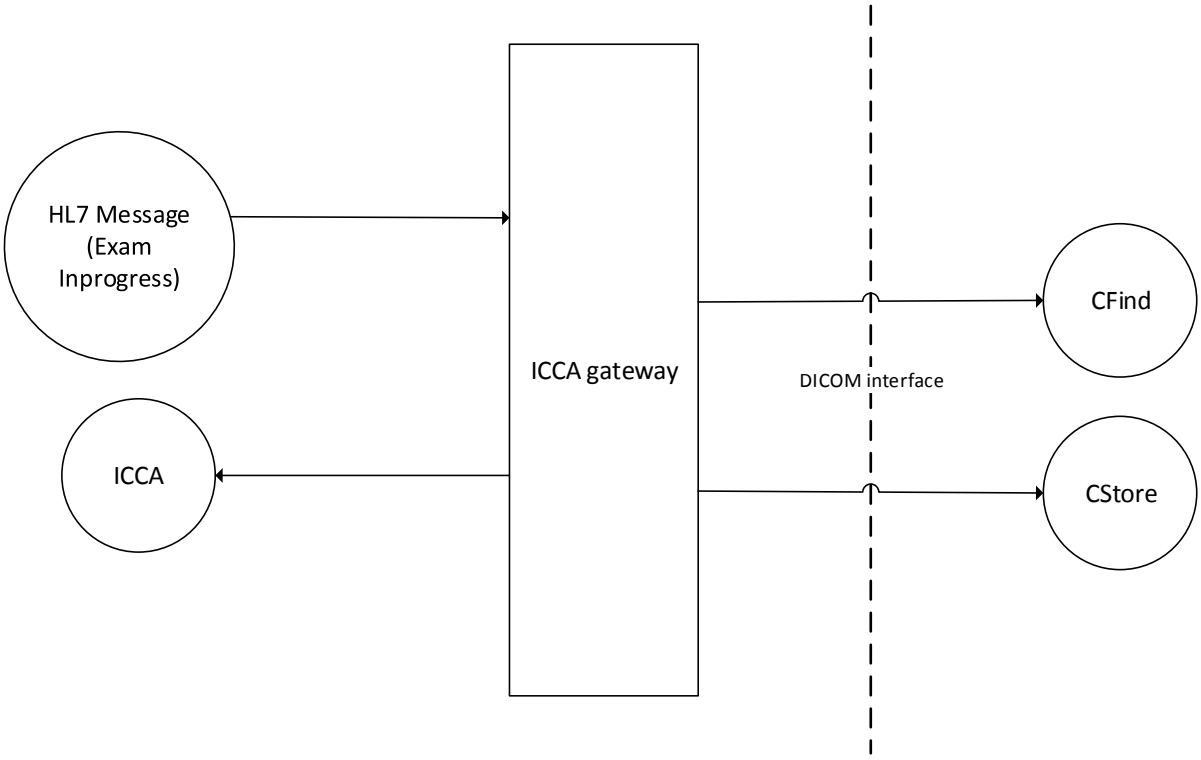
The archive receives objects/requests. When it receives an object, it stores that object in dicom Part 10 format as a file on a file system and registers that object in the database. When the DICOM file is stored on local file system, it is then sent to iCCA and later deletes the file.

When a request is received, it is processed accordingly. If the request is a retrieve request, the archive retrieves the object from the cloud archve in which it is stored. Once retrieved, it is sent to the desired destination via an association. If the request is a query, the archive performs the query to iCCA and returns the results.

Prefetcher

The Prefetcher moves DICOM images on iCCA to the DICOM device in a predictive manner to facilitate access by real world entities.

Application Flow Diagram



Prefetcher DICOM AE Implementation Model

The Prefetcher provides no services to clients in the typical client server sense. It is purely a 'listener' to the environment, and performs stores as a result of what it hears.

In general, the Prefetcher accepts the following associations with Presentation Contexts for the following SOP classes:

- C-FIND SCU – queries DICOM device to filter already stored studies
- C-STORE SCU – makes store request to DICOM device

Sequencing of Real World Activities

The Prefetcher 'listens' for events in the environment that triggers prefetching rules. These rules can query and retrieve DICOM objects from ICCA, initiate query requests to check the existence of DICOM objects in the DICOM device, and perform store requests to DICOM device.

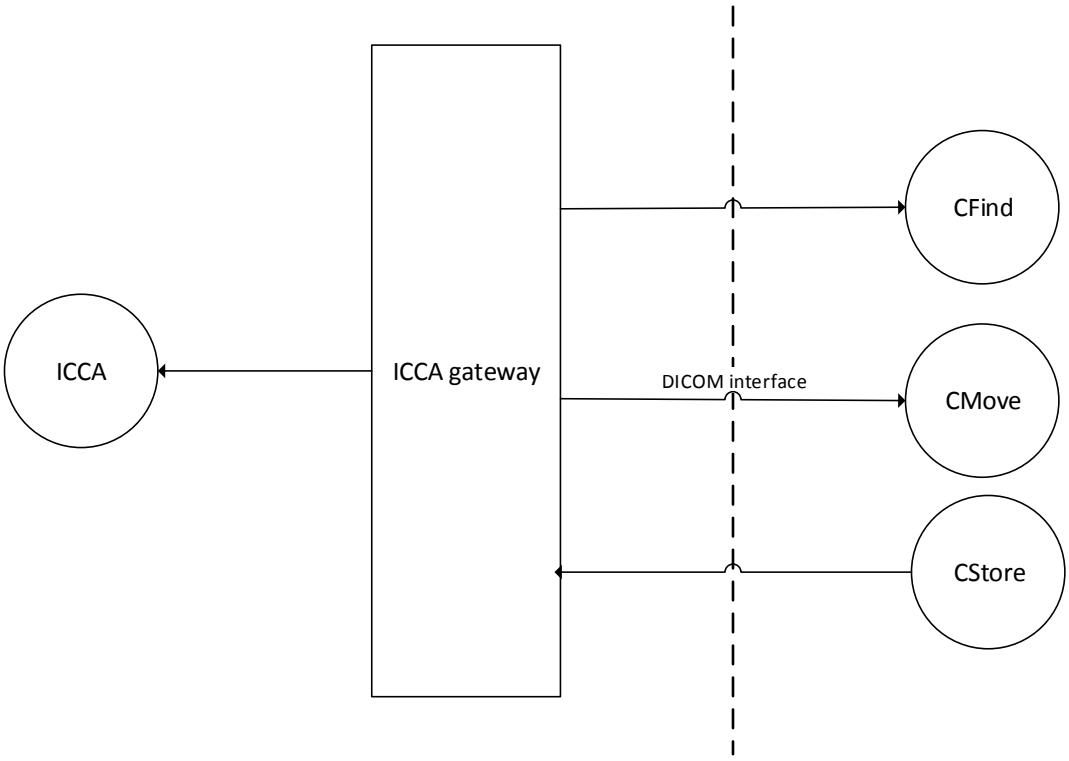
When the Prefetcher receives an HL7 event, it executes custom rules for this event. These rules can perform query operations against ICCA in an effort to find prior studies that the rule

deems important. A C-FIND request is also performed against DICOM device on prior studies to eliminate restoring studies that are already in the DICOM device. The prior studies are then scheduled to be retrieved from ICCA and then stored in DICOM device from a C-STORE request.

Reconciliation

The reconciliation service requests the local archive system to send studies that are missing in ICCA.

Application Flow Diagram



Reconcilation DICOM AE Implementation Model

Functional Definition of AEs

The reconciliation service provides no services to clients in the typical client server sense. It is purely a “background service” that periodically checks the local archive for missing studies in ICCA and sends a move request to the local archive to deliver the studies in ICCA.

In general, Reconciliation accepts the following associations with Presentation Contexts for the following SOP classes:

- C-FIND SCU – queries local archive to find missing studies in ICCA
- C-MOVE SCU – makes move request to local archive to deliver studies to ICCA gateway
- C-STORE SCP – receives stores request from local archive to deliver studies to ICCA

Sequencing of Real World Activities

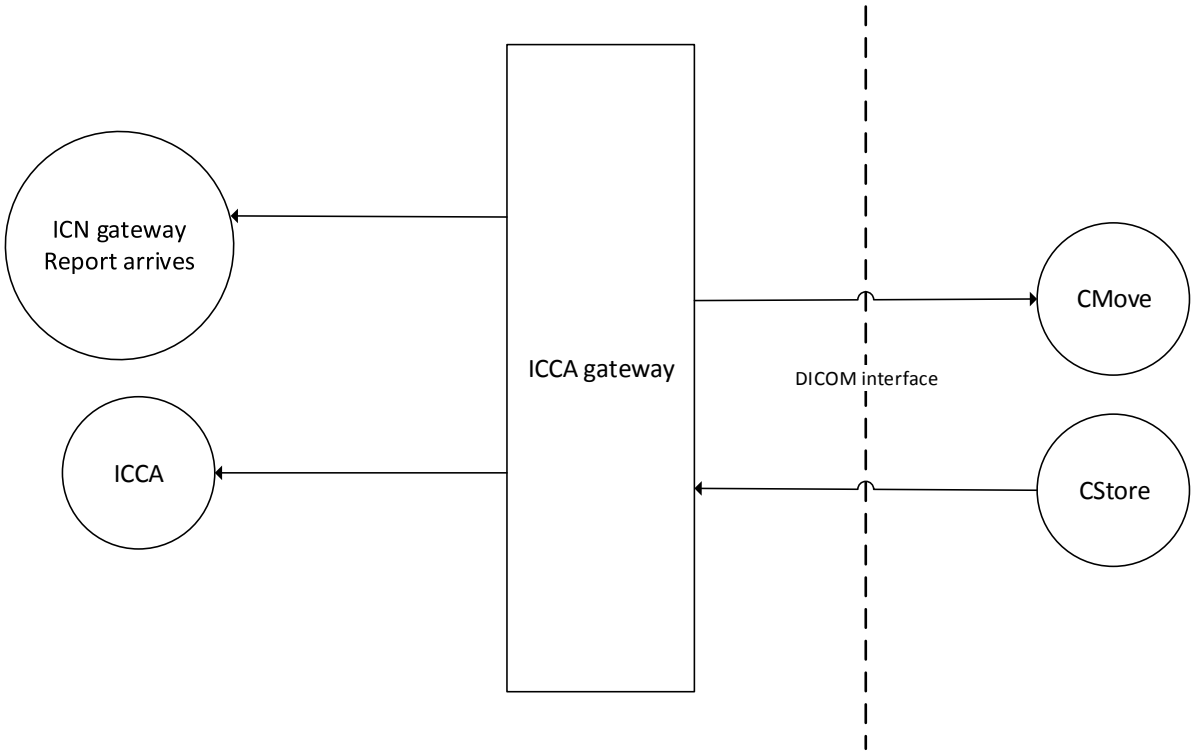
The Reconciliation service periodically queries the local archive for studies that are stored each day and issues retrieve requests for studies that are in the local archive but not in ICCA.

The Reconciliation service sends C-FIND requests to the local archive and then issues C-MOVE requests to deliver the studies from local archive to the gateway. After retrieval, the study is then sent to ICCA.

Study Fetcher for Observation Report

Study Fetcher fetches DICOM images on the local archive to ICCA when an observation report is available in iConnect Network to facilitate access.

Application Flow Diagram



Study Fetcher for Observation Report DICOM AE Implementation Model

Functional Definition of AEs

The Study Fetcher provides no services to clients in the typical client server sense. It is purely a 'listener' to the environment, and performs moves as a result of what it hears.

In general, the Study Fetcher accepts the following associations with Presentation Contexts for the following SOP classes:

- C-MOVE SCU – makes move request to DICOM device to retrieve the study
- C-STORE SCP – receives store request to store the study.

Sequencing of Real World Activities

The Study Fetcher 'listens' for events in the environment that triggers fetching rules. These rules initiate study move request from DICOM device to ICCA.

The Study Fetcher receives notifications when reports arrival in iConnect Network, and executes C-MOVE requests against DICOM devices to move studies to ICCA.

AE Specifications

DICOM Store Query Retrieve Specifications

This Application Entity provides Standard Conformance to the following DICOM V3.0 SOP Classes as an SCU and/or SCP (as indicated in the table):

NOTE: New SOP classes may be supported through simple configuration changes of the product.

Table 1. SOP Classes

SOP Class Name	SOP Class UID	SCU/SCP
Storage		
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	Y / Y
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	Y / Y
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	Y / Y
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	Y / Y
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Y / Y
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	Y / Y
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	Y / Y
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Y / Y
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	Y / Y
Digital X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.1	Y / Y
Digital X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.1.1	Y / Y
Digital Mammography Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.2	Y / Y
Digital Mammography Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.2.1	Y / Y
Digital Intra-oral X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.3	Y / Y
Digital Intra-oral X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.3.1	Y / Y
Encapsulated PDF Storage SOP Class	1.2.840.10008.5.1.4.1.1.104.1	Y / Y

Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	Y / Y
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	Y / Y
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	Y / Y
Hardcopy Color Image Storage	1.2.840.10008.5.1.1.30	Y / Y
Hardcopy Grayscale Image Storage	1.2.840.10008.5.1.1.29	Y / Y
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	Y / Y
Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	Y / Y
Mammography CAD SR	1.2.840.10008.5.1.4.1.1.88.50	Y / Y
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	Y / Y
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	Y / Y
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	Y / Y
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Y / Y
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Y / Y
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	Y / Y
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	Y / Y
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	Y / Y
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	Y / Y
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	Y / Y
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	Y / Y
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	Y / Y
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	Y / Y
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	Y / Y
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	Y / Y
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	Y / Y
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	Y / Y
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	Y / Y
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	Y / Y

Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Y / Y
Stand-alone Curve Storage	1.2.840.10008.5.1.4.1.1.9	Y / Y
Stand-alone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10	Y / Y
Stand-alone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	Y / Y
Stand-alone VOI LUT Storage	1.2.840.10008.5.1.4.1.1.11	Y / Y
Standalone PET Curve Storage	1.2.840.10008.5.1.4.1.1.129	Y / Y
Stored Print Storage	1.2.840.10008.5.1.1.27	Y / Y
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Y / Y
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Y / Y
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Y / Y
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	Y / Y
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	Y / Y
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	Y / Y
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Y / Y
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Y / Y
X-Ray Angiographic Bi-Plane Image Storage (retired)	1.2.840.10008.5.1.4.1.1.12.3	Y / Y
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Y / Y
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Y / Y
Query/Retrieve		
Patient Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.1.1	N / Y
Patient Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.1.2	N / Y
Study Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.2.1	Y/ Y
Study Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2	Y / Y
Patient/Study Only Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.3.1	N / Y
Patient/Study Only Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.3.2	N / Y

Association Establishment Policies

General

The DICOM interface of the iConnect Cloud Gateway attempts to establish a store association any time a C-MOVE request is received from a remote application entity in order to store the requested data in the move. The archive only attempts to establish associations in response to valid C-MOVE requests for images that are known to the iConnect Cloud Archive database.

The gateway only attempts to perform C-MOVEs to known destinations that must be configured before attempting a move.

The DICOM Component supports SCU/SCP Role Negotiation.

Number of Associations

The iConnect Cloud Gateway accepts any number of simultaneous associations, the number of which can be configured. The maximum limit on the number of simultaneous associations depends on the number of open file descriptors allowed by the underlying operating system, though the practical count is limited by system resources and network bandwidth.

Association Initiation by Real-World Activity

The iConnect Cloud Gateway attempts to initiate one storage association for each C-MOVE request that is received.

Storage Association

- Completing a Move Request to a Remote System and
- Unsolicited Storage of DICOM Objects to the iConnect Cloud Archive

Associated Real-World Activity

The associated real-world activity is the receipt of a C-MOVE request from a remote application entity.

Proposed Presentation Contexts

The iConnect Cloud Gateway proposes a collection of presentation contexts, which is obtained by applying the algorithm presented in the next section to the following Presentation Context Table:

Table 2. Presentation Context Table

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
Name	UID			
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	See Table 3	SCU	None
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	See Table 3	SCU	None
Basic Study Content Notification	1.2.840.10008.1.9	See Table 3	SCU	None
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	See Table 3	SCU	None
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	See Table 3	SCU	None
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	See Table 3	SCU	None
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	See Table 3	SCU	None
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	See Table 3	SCU	None
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	See Table 3	SCU	None
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	See Table 3	SCU	None
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	See Table 3	SCU	None
Digital X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.1	See Table 3	SCU	None
Digital X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.1.1	See Table 3	SCU	None
Digital Mammography Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.2	See Table 3	SCU	None
Digital Mammography Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.2.1	See Table 3	SCU	None
Digital Intra-oral X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.3	See Table 3	SCU	None
Digital Intra-oral X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.3.1	See Table 3	SCU	None
Encapsulated PDF Storage SOP	1.2.840.10008.5.1.4.1.1.104.1	See Table 3	SCU	None
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	See Table 3	SCU	None
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	See Table 3	SCU	None
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	See Table 3	SCU	None
Hardcopy Color Image Storage	1.2.840.10008.5.1.1.30	See Table 3	SCU	None
Hardcopy Grayscale Image Storage	1.2.840.10008.5.1.1.29	See Table 3	SCU	None
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	See Table 3	SCU	None

Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	See Table 3	SCU	None
Mammography CAD SR	1.2.840.10008.5.1.4.1.1.88.50	See Table 3	SCU	None
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	See Table 3	SCU	None
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	See Table 3	SCU	None
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	See Table 3	SCU	None
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	See Table 3	SCU	None
MR Image Storage	1.2.840.100008.5.1.4.1.1.4	See Table 3	SCU	None
Enhanced MR Image Storage	1.2.840.100008.5.1.4.1.1.4.1	See Table 3	SCU	None
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	See Table 3	SCU	None
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	See Table 3	SCU	None
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	See Table 3	SCU	None
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	See Table 3	SCU	None
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	See Table 3	SCU	None
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	See Table 3	SCU	None
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	See Table 3	SCU	None
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	See Table 3	SCU	None
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	See Table 3	SCU	None
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	See Table 3	SCU	None
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	See Table 3	SCU	None
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	See Table 3	SCU	None
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	See Table 3	SCU	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	See Table 3	SCU	None
Stand-alone Curve Storage	1.2.840.10008.5.1.4.1.1.9	See Table 3	SCU	None
Stand-alone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10	See Table 3	SCU	None
Stand-alone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	See Table 3	SCU	None
Stand-alone VOI LUT Storage	1.2.840.10008.5.1.4.1.1.11	See Table 3	SCU	None
Stand-alone PET Curve Storage	1.2.840.10008.5.1.4.1.1.129	See Table 3	SCU	None

Stored Print Storage	1.2.840.10008.5.1.1.27	See Table 3	SCU	None
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	See Table 3	SCU	None
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	See Table 3	SCU	None
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	See Table 3	SCU	None
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	See Table 3	SCU	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	See Table 3	SCU	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	See Table 3	SCU	None
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	See Table 3	SCU	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	See Table 3	SCU	None
X-Ray Angiographic Bi-Plane Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.12.3	See Table 3	SCU	None
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	See Table 3	SCU	None
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	See Table 3	SCU	None

Table 3. Transfer Syntax for Send to a Remote System

Name	UID
Little Endian Explicit VR	1.2.840.10008.1.2.1
Little Endian Implicit VR	1.2.840.10008.1.2
Big Endian Explicit VR	1.2.840.10008.1.2.2
Deflated Little Endian Explicit VR	1.2.840.10008.1.2.1.99
Lossless JPEG Image Compression (baseline)	1.2.840.10008.1.2.4.70
Lossy JPEG Image Compression (8-bit, coding Process 1)	1.2.840.10008.1.2.4.50
Lossy JPEG Image Compression (12-bit, coding Process 4)	1.2.840.10008.1.2.4.51
JPEG Lossless, Nonhierarchical (Processes 14)	1.2.840.10008.1.2.4.57
JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90
JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91
Lossless RLE Image Compression	1.2.840.10008.1.2.5

Algorithm for Computing the Proposed Presentation Contexts for Outgoing Storage Associations

When the association is established, the set of DICOM objects to be sent out has been determined. Since both the transfer syntax in which each DICOM object has been stored and the SOP Class UID of each DICOM object are stored in the archives database, both of these tags are known. The intention of the algorithm is to send out each object in the transfer syntax it has been initially stored in or a similar one. If the object has been initially received in a supported encapsulated transfer syntax, the algorithm would make sure that for the specific abstract syntax, a presentation context with that particular transfer syntax has been proposed. The encapsulated transfer syntax is preserved for efficiency to save the processing time of the compression conversion. In the case of objects stored in a native transfer syntax, preserving the transfer syntax is not important, and any native transfer syntax should be acceptable.

Association Acceptance Policy

When the iConnect Cloud Gateway accepts an association, it allows the storage of objects, the retrieval of objects previously stored, the query for information about stored objects.

The iConnect Cloud Gateway is configurable to allow security restrictions on specified SOP classes, SCU/SCP roles and proposed presentation contexts. However, it accepts associations from any remote application entities.

Receive Objects from a Remote System

Associated Real-World Activity

When the iConnect Cloud Gateway receives a storage request (C-STORE) for an object in the iCCA, the object is temporarily stored on disk on the underlying platform in DICOM Part 10 format and then upload into iCCA. If it is unable to store the object, a failure response is returned and the object is marked as an error and the DICOM object remains on disk.

The data set of the C-STORE command is stored with no loss of information.

Presentation Context Table

The iConnect Cloud Gateway accepts the following Transfer Syntaxes for each presentation context in an association it receives:

Table 4. Presentation Context Table

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
Name	UID			
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	See Table 5	SCP	None
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	See Table 5	SCP	None
Basic Study Content Notification	1.2.840.10008.1.9	See Table 5	SCP	None
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	See Table 5	SCP	None
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	See Table 5	SCP	None
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	See Table 5	SCP	None
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	See Table 5	SCP	None
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	See Table 5	SCP	None
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	See Table 5	SCP	None
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	See Table 5	SCP	None
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	See Table 5	SCP	None
Digital X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.1	See Table 5	SCP	None
Digital X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.1.1	See Table 5	SCP	None
Digital Mammography Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.2	See Table 5	SCP	None
Digital Mammography Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.2.1	See Table 5	SCP	None
Digital Intra-oral X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.3	See Table 5	SCP	None
Digital Intra-oral X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.3.1	See Table 5	SCP	None
Encapsulated PDF Storage SOP Class	1.2.840.10008.5.1.4.1.1.104.1	See Table 5	SCP	None
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	See Table 5	SCP	None
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	See Table 5	SCP	None

Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	See **Table 5**	SCP	None
Hardcopy Color Image Storage	1.2.840.10008.5.1.1.30	See **Table 5**	SCP	None
Hardcopy Grayscale Image Storage	1.2.840.10008.5.1.1.29	See **Table 5**	SCP	None
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	See **Table 5**	SCP	None
Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	See **Table 5**	SCP	None
Mammography CAD SR	1.2.840.10008.5.1.4.1.1.88.50	See **Table 5**	SCP	None
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	See **Table 5**	SCP	None
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	See **Table 5**	SCP	None
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	See **Table 5**	SCP	None
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	See **Table 5**	SCP	None
MR Image Storage	1.2.840.100008.5.1.4.1.1.4	See **Table 5**	SCP	None
Enhanced MR Image Storage	1.2.840.100008.5.1.4.1.1.4.1	See **Table 5**	SCP	None
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	See **Table 5**	SCP	None
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	See **Table 5**	SCP	None
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	See **Table 5**	SCP	None
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	See **Table 5**	SCP	None
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	See **Table 5**	SCP	None
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	See **Table 5**	SCP	None
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	See **Table 5**	SCP	None
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	See **Table 5**	SCP	None
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	See **Table 5**	SCP	None

RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	See **Table 5**	SCP	None
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	See **Table 5**	SCP	None
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	See **Table 5**	SCP	None
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	See **Table 5**	SCP	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	See **Table 5**	SCP	None
Stand-alone Curve Storage	1.2.840.10008.5.1.4.1.1.9	See **Table 5**	SCP	None
Stand-alone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10	See **Table 5**	SCP	None
Stand-alone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	See **Table 5**	SCP	None
Stand-alone VOI LUT Storage	1.2.840.10008.5.1.4.1.1.11	See **Table 5**	SCP	None
Standalone PET Curve Storage	1.2.840.10008.5.1.4.1.1.129	See **Table 5**	SCP	None
Stored Print Storage	1.2.840.10008.5.1.1.27	See **Table 5**	SCP	None
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	See **Table 5**	SCP	None
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	See **Table 5**	SCP	None
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	See **Table 5**	SCP	None
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	See **Table 5**	SCP	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	See **Table 5**	SCP	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	See **Table 5**	SCP	None
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	See **Table 5**	SCP	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	See **Table 5**	SCP	None
X-Ray Angiographic Bi-Plane Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.12.3	See **Table 5**	SCP	None
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	See **Table 5**	SCP	None

X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	See Table 5	SCP	None

Table 5. Transfer Syntax for Receive from a Remote System

Name	UID
Little Endian Explicit VR	1.2.840.10008.1.2.1
Little Endian Implicit VR	1.2.840.10008.1.2
Big Endian Explicit VR	1.2.840.10008.1.2.2
Deflated Little Endian Explicit VR	1.2.840.10008.1.2.1.99
Lossless JPEG Image Compression (baseline)	1.2.840.10008.1.2.4.70
Lossy JPEG Image Compression (8-bit, coding Process 1)	1.2.840.10008.1.2.4.50
Lossy JPEG Image Compression (12-bit, coding Process 4)	1.2.840.10008.1.2.4.51
JPEG Lossless, Nonhierarchical (Processes 14)	1.2.840.10008.1.2.4.57
JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90
JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91
Lossless RLE Image Compression	1.2.840.10008.1.2.5

SOP Specific Conformance for all Storage SOP Classes

The iConnect Cloud Gateway DICOM Interface conforms to the SOPs of the Storage Service Class at Level 2 (full). No elements are discarded or coerced, unless explicitly configured to do so. Discarding offending DICOM elements (invalid tags) or coercing some data elements to address customer needs is possible; however, it can be done only with Merge Healthcare's direct involvement, and it implies custom implementations of coercion strategies.

The iConnect Cloud Gateway performs minimal object validation to ensure database integrity. Additional validation may be configured to prevent the object from being stored in the archive.

Extended negotiation is not supported for Storage Service Classes.

iConnect Cloud Gateway returns Success status code (0x0000) when it successfully receives and saves object to disk for uploading to the iConnect Cloud Archive. Otherwise, failed response is returned with status code (0xC0110).

Presentation Context Acceptance Criterion

There is no prioritization used for the acceptance of presentation contexts. Any combination of supported transfer syntax and abstract syntax is accepted, in case the product is configured for them.

Transfer Syntax Selection Policies

The iConnect Cloud Gateway DICOM Interface selects transfer syntaxes in Acceptor first mode: the first transfer syntax in the archive's list of allowable transfer syntaxes that also exists in the proposed transfer syntax list is selected.

Response to a Query Request from a Remote System

Associated Real-World Activity

When the iConnect Cloud Gateway receives a storage request (C-STORE) for an object in iCCA, that object is temporarily stored on disk on the underlying platform in DICOM Part 10 format and is then upload into iCCA. If the object is successfully saved to disk in the gateway, a C-STORE successful response is returned. Otherwise, a C-STORE failure response is returned. If the object is unable to upload into the iConnect Cloud Archive, it is marked as an error in the gateway database and the DICOM object remains on disk.

The data set of the C-STORE command is stored with no loss of information.

Presentation Context Table

The iConnect Cloud Gateway accepts the following Transfer Syntaxes for each presentation context in an association it receives:

Table 6. Presentation Context Table

Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	**UID**	**Name**	**UID**		
Patient Root Query/ Retrieve Information Model – FIND	1.2.840.10008.5.1.4.1.2.1.1	Little Endian Explicit VR	1.2.840.10008.1.2.1	SCP	Relational
		Little Endian Implicit VR	1.2.840.10008.1.2		
		Big Endian Explicit VR	1.2.840.10008.1.2.2		
		Deflated Little Endian Explicit VR	1.2.840.10008.1.2.1.99		
Study Root Query/ Retrieve	1.2.840.10008.5.1.4.1.2.2.1	Little Endian Explicit VR	1.2.840.10008.1.2.1	SCP	Relational
		Little Endian Implicit VR	1.2.840.10008.1.2		

Information Model - FIND		Big Endian Explicit VR	1.2.840.10008.1.2.2		
		Deflated Little Endian Explicit VR	1.2.840.10008.1.2.1.99		
Patient/ Study Only Query/ Retrieve Information Model – FIND	1.2.840.10008.5.1.4.1.2.3.1	Little Endian Explicit VR	1.2.840.10008.1.2.1	SCP	Relational
		Little Endian Implicit VR	1.2.840.10008.1.2		
		Big Endian Explicit VR	1.2.840.10008.1.2.2		
		Deflated Little Endian	1.2.840.10008.1.2.1.99		

SOP Specific Conformance for all Find SOP Classes

The iConnect Cloud Gateway conforms to the SOPs of the Query/Retrieve Service Class at both the hierarchical and relational level.

Table 7. SOP Extended Negotiation

Item bytes	Field Name	Description of Field
1	Relational-queries/retrieval	This byte field defines relational-query/retrieval support for the Association-acceptor. It shall be encoded as an unsigned binary integer and shall use one of the following values 0 - relational-queries/retrieval not supported 1 - relational-queries/retrieval supported

Query Modes

The iConnect Cloud Gateway supports both Hierarchical and Relational search modes.

Information Models

The iConnect Cloud Gateway supports the Patient Root, Study Root, and Patient-Study Only information models.

Table 8. Patient Root Image C-FIND Supported Attributes

Attribute Name	Tag	Query Keys Matching SCP	Query Keys Return SCP
Patient Level			
Patient Name	(0010, 0010)	Supported	Supported
Patient ID	(0010, 0020)	Supported (U)	Supported
Referenced Patient Sequence	(0008, 1120)	Supported	Supported
Referenced SOP Class UID	(0008, 1150)	Supported	Supported
Referenced SOP Instance UID	(0008, 1155)	Supported	Supported
Patient's Birth Date	(0010, 0030)	Supported	Supported
Patient's Birth Time	(0010, 0032)	Supported	Supported
Patient's Sex	(0010, 0040)	Supported	Supported
Other Patient IDs	(0010, 1000)	Supported	Supported
Other Patient Names	(0010, 1001)	Supported	Supported
Ethnic Group	(0010, 2160)	Supported	Supported
Patient Comments	(0010, 4000)	Supported	Supported
Number of Patient Related Studies	(0020, 1200)	Supported	Supported
Number of Patient Related Series	(0020, 1202)	Supported	Supported
Number of Patient Related Instances	(0020, 1204)	Supported	Supported
Study Level			
Study Date	(0008, 0020)	Supported	Supported
Study Time	(0008, 0030)	Supported	Supported
Accession Number	(0008, 0050)	Supported	Supported
Study ID	(0020, 0010)	Supported	Supported
Study Instance UID	(0020, 000D)	Supported (U)	Supported
Modalities in Study	(0008, 0061)	Supported	Supported
Referring Physician's Name	(0008, 0090)	Supported	Supported
Study Description	(0008, 1030)	Supported	Supported
Procedure Code Sequence	(0008, 1032)	Supported	Supported
Code Value	(0008, 0100)	Supported	Supported

Coding Scheme Designator	(0008, 0102)	Supported	Supported
Coding Scheme Version	(0008, 0103)	Supported	Supported
Code Meaning	(0008, 0104)	Supported	Supported
Name of Physician(s) Reading Study	(0008, 1060)	Supported	Supported
Admitting Diagnoses Description	(0008, 1080)	Supported	Supported
Referred Study Sequence	(0008, 1110)	Supported	Supported
Referenced SOP Class UID	(0008, 1150)	Supported	Supported
Referenced SOP Instance UID	(0008, 1155)	Supported	Supported
Patient's Age	(0010, 1010)	Supported	Supported
Patient's Size	(0010, 1020)	Supported	Supported
Patient's Weight	(0010, 1030)	Supported	Supported
Occupation	(0010, 2180)	Supported	Supported
Additional Patient History	(0010, 21B0)	Supported	Supported
Other Study Numbers	(0020, 1070)	Supported	Supported
Number of Study Related Series	(0020, 1206)	Supported	Supported
Number of Study Related Instances	(0020, 1208)	Supported	Supported
Interpretation Author	(4008, 010C)	Supported	Supported
Series Level			
Modality	(0008, 0060)	Supported	Supported
Series Number	(0020, 0011)	Supported	Supported
Series Instance UID	(0020, 000E)	Supported (U)	Supported
Number of Series Related Instances	(0020, 1209)	Supported	Supported
Performed Procedure Step ID	(0040, 0253)	Supported	Supported
Reference Study Component Sequence	(0008, 1111)	Supported	Supported
Referenced SOP Class UID	(0008, 1150)	Supported	Supported
Referenced SOP Instance UID	(0008, 1155)	Supported	Supported
Request Attribute Sequence	(0040, 0275)	Supported	Supported
Requested Procedure ID	(0040, 1001)	Supported	Supported

Scheduled Procedure Step ID	(0040, 0009)	Supported	Supported
Performed Procedure Step Start Date	(0040, 0244)	Supported	Supported
Performed Procedure Step Start Time	(0040, 0245)	Supported	Supported
Body Part Examined	(0018, 0015)	Supported	Supported
Station Name	(0008, 1010)	Supported	Supported
Institution Name	(0008, 0080)	Supported	Supported
Performing Physician's Name	(0008, 1050)	Supported	Supported
Manufacturer	(0008, 0070)	Supported	Supported
Manufacturer's Model Name	(0008, 1090)	Supported	Supported
Series Description	(0008, 103E)	Supported	Supported
Series Date	(0008, 0021)	Supported	Supported
Series Time	(0008, 0031)	Supported	Supported
Protocol Name	(0018, 1030)	Supported	Supported
Composite Object Instance Level			
Instance Number	(0020, 0013)	Supported	Supported
Overlay Number	(0020, 0022)	Supported	Supported
Curve Number	(0020, 0024)	Supported	Supported
LUT Number	(0020, 0026)	Supported	Supported
SOP Instance UID	(0008, 0018)	Supported (U)	Supported
SOP Class UID	(0008, 0016)	Supported	Supported
Image Specific Level			
Rows	(0020, 0010)	Supported	Supported
Columns	(0020, 0011)	Supported	Supported
Bits Allocated	(0028, 0100)	Supported	Supported
Number of Frames	(0028, 0008)	Supported	Supported

Table 9. Study Root Image C-FIND Supported Attributes

Attribute Name	Tag	Query Keys Matching SCP	Query Keys Return SCP
Study Level			
Study Date	(0008, 0020)	Supported	Supported
Study Time	(0008, 0030)	Supported	Supported
Accession Number	(0008, 0050)	Supported	Supported
Patient Name	(0010, 0010)	Supported	Supported
Patient ID	(0010, 0020)	Supported (U)	Supported
Study ID	(0020, 0010)	Supported	Supported
Study Instance UID	(0020, 000D)	Supported (U)	Supported
Modalities in Study	(0008, 0061)	Supported	Supported
Referring Physician's Name	(0008, 0090)	Supported	Supported
Study Description	(0008, 1030)	Supported	Supported
Procedure Code Sequence	(0008, 1032)	Supported	Supported
Code Value	(0008, 0100)	Supported	Supported
Coding Scheme Designator	(0008, 0102)	Supported	Supported
Coding Scheme Version	(0008, 0103)	Supported	Supported
Code Meaning	(0008, 0104)	Supported	Supported
Name of Physician(s) Reading Study	(0008, 1060)	Supported	Supported
Admitting Diagnoses Description	(0008, 1080)	Supported	Supported
Referred Study Sequence	(0008, 1110)	Supported	Supported
Referenced SOP Class UID	(0008, 1150)	Supported	Supported
Referenced SOP Instance UID	(0008, 1155)	Supported	Supported
Referenced Patient Sequence	(0008, 1120)	Supported	Supported
Referenced SOP Class UID	(0008, 1150)	Supported	Supported
Referenced SOP Instance UID	(0008, 1155)	Supported	Supported
Referenced SOP Instance UID	(0008, 1155)	Supported	Supported
Patient's Birth Date	(0010, 0030)	Supported	Supported
Patient's Birth Time	(0010, 0032)	Supported	Supported
Patient's Sex	(0010, 0040)	Supported	Supported

Other Patient IDs	(0010, 1000)	Supported	Supported
Other Patient Names	(0010, 1001)	Supported	Supported
Patient's Age	(0010, 1010)	Supported	Supported
Patient's Size	(0010, 1020)	Supported	Supported
Patient's Weight	(0010, 1030)	Supported	Supported
Ethnic Group	(0010, 2160)	Supported	Supported
Occupation	(0010, 2180)	Supported	Supported
Additional Patient History	(0010, 21B0)	Supported	Supported
Patient Comments	(0010, 4000)	Supported	Supported
Other Study Numbers	(0020, 1070)	Supported	Supported
Number of Patient Related Studies	(0020, 1200)	Supported	Supported
Number of Patient Related Series	(0020, 1202)	Supported	Supported
Number of Patient Related Instances	(0020, 1204)	Supported	Supported
Number of Study Related Series	(0020, 1206)	Supported	Supported
Number of Study Related Instances	(0020, 1208)	Supported	Supported
Interpretation Author	(4008, 010C)	Supported	Supported
Series Level			
Modality	(0008, 0060)	Supported	Supported
Series Number	(0020, 0011)	Supported	Supported
Series Instance UID	(0020, 000E)	Supported (U)	Supported
Number of Series Related Instances	(0020, 1209)	Supported	Supported
Performed Procedure Step ID	(0040, 0253)	Supported	Supported
Reference Study Component Sequence	(0008, 1111)	Supported	Supported
Referenced SOP Class UID	(0008, 1150)	Supported	Supported
Referenced SOP Instance UID	(0008, 1155)	Supported	Supported
Request Attribute Sequence	(0040, 0275)	Supported	Supported
Requested Procedure ID	(0040, 1001)	Supported	Supported
Scheduled Procedure Step ID	(0040, 0009)	Supported	Supported

Performed Procedure Step Start Date	(0040, 0244)	Supported	Supported
Performed Procedure Step Start Time	(0040, 0245)	Supported	Supported
Body Part Examined	(0018, 0015)	Supported	Supported
Station Name	(0008, 1010)	Supported	Supported
Institution Name	(0008, 0080)	Supported	Supported
Performing Physician's Name	(0008, 1050)	Supported	Supported
Manufacturer	(0008, 0070)	Supported	Supported
Manufacturer's Model Name	(0008, 1090)	Supported	Supported
Series Description	(0008, 103E)	Supported	Supported
Series Date	(0008, 0021)	Supported	Supported
Series Time	(0008, 0031)	Supported	Supported
Protocol Name	(0018, 1030)	Supported	Supported
Composite Object Instance Level			
Instance Number	(0020, 0013)	Supported	Supported
Overlay Number	(0020, 0022)	Supported	Supported
Curve Number	(0020, 0024)	Supported	Supported
LUT Number	(0020, 0026)	Supported	Supported
SOP Instance UID	(0008, 0018)	Supported (U)	Supported
SOP Class UID	(0008, 0016)	Supported	Supported
Image Specific Level			
Rows	(0020, 0010)	Supported	Supported
Columns	(0020, 0011)	Supported	Supported
Bits Allocated	(0028, 0100)	Supported	Supported
Number of Frames	(0028, 0008)	Supported	Supported

Patient/Study Only Image C-FIND Supported Attributes

Attributes for the Patient and Study Levels of the Patient/Study Only Query/Retrieve Information Model are the same as the corresponding attributes for the Patient and Study Levels of the Patient Root Query/ Retrieve Information Model. For information about these attributes, see Table 8.

Table 10. Grayscale Soft Copy Presentation State C-FIND Supported Attributes

Attribute Name	Tag	Query Keys Matching SCP	Query Keys Return SCP
GSPS Instance Specific Level			
Presentation Label	(0070, 0080)	Supported	Supported
Presentation Description	(0070, 0081)	Supported	Supported
Presentation Creation Date	(0070, 0082)	Supported	Supported
Presentation Creation Time	(0070, 0083)	Supported	Supported
Presentation Creator's Name	(0070, 0084)	Supported	Supported
Referenced Series Sequence	(0008, 1115)	Supported	Supported
>Series Instance UID	(0020, 000E)	Supported	Supported
>Referenced Image Sequence	(0008, 1140)	Supported	Supported
>>Referenced SOP Class UID	(0008, 1150)	Supported	Supported
>>Referenced SOP Instance UID	(0008, 1155)	Supported	Supported

Table 11. Basic Text SR and Enhanced SR C-FIND Supported Attributes

Attribute Name	Tag	Query Keys Matching SCP	Query Keys Return SCP
SR Instance Specific Level			
Completion Flag	(0040, A491)	Supported	Supported
Verification Flag	(0040, A493)	Supported	Supported
Content Date	(0008, 0023)	Supported	Supported

Content Time	(0008, 0033)	Supported	Supported
Observation Date Time	(0040, A032)	Supported	Supported
Verifying Observer Sequence	(0040, A073)	Supported	Supported
>Verifying Organization	(0040, A027)	Supported	Supported
>Verification DateTime	(0040, A030)	Supported	Supported
>Verifying Observer Name	(0040, A075)	Supported	Supported
>Verifying Observer Identification Code Sequence	(0040, A088)	Supported	Supported
Referenced Request Sequence	(0040, A370)	Supported	Supported
>Study Instance UID	(0020, 000D)	Supported	Supported
>Accession Number	(0008, 0050)	Supported	Supported
>Requested Procedure ID	(0040, 1000)	Supported	Supported
>Requested Procedure Code Sequence	(0032, 1064)	Supported	Supported
>>Code Value	(0008, 0100)	Supported	Supported
>>Code Scheme Designator	(0008, 0102)	Supported	Supported
>>Code Scheme Version	(0008, 0103)	Supported	Supported
>>Code Meaning	(0008, 0104)	Supported	Supported
Concept Name Code Sequence	(0040, A043)	Supported	Supported
>Code Value	(0008, 0100)	Supported	Supported
>Coding Scheme Designator	(0008, 0102)	Supported	Supported
>Coding Scheme Version	(0008, 0103)	Supported	Supported
>Code Meaning	(0008, 0104)	Supported	Supported

C-FIND Status Codes

If the Enterprise DICOM Archive Manager returns the following status code for C-FIND, then the operation was unsuccessful. All status codes are in hexadecimal.

C001 (Unable To Process) - Indicates that the archive was unable to fully process the query. The Error Comment field of the status is populated with a description of the error encountered.

Query Implementation Specifics

The SCUs are recommended to append wildcard "*" at the end of each component of any structured name to facilitate matching.

Presentation Context Acceptance Criterion

No prioritization is used for the acceptance of presentation contexts. Any combination of supported transfer syntax and abstract syntax is accepted, if the product is configured for them.

Transfer Syntax Selection Policies

The iConnect Cloud Gateway selects transfer syntaxes in Acceptor first modes: the first transfer syntax in the archive's list of allowable transfer syntaxes that also exists in the proposed transfer syntax list is selected.

Respond to a Retrieve Request from a Remote System

Associated Real-World Activity

When the iConnect Cloud Gateway receives a request for retrieval (C-MOVE), the request is resolved against iCCA's underlying database. If any objects are found, it attempts to establish an association over which to store the found objects (C-MOVE only). If the association is established, it retrieves the found objects from the underlying platform and stores them over the association, returning pending responses to the retrieval request initiator.

Presentation Context Table

The iConnect Cloud Gateway accepts the following Transfer Syntaxes for each presentation context in an association it receives:

Table 12. Presentation Context Table

Abstract Syntax				Role	Extended Negotiation
Name	UID	Name	UID		
Patient Root Query/Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.1.2	Little Endian Explicit VR	1.2.840.10008.1.2.1	SCP	Relational
		Little Endian Implicit VR	1.2.840.10008.1.2		
		Big Endian Explicit VR	1.2.840.10008.1.2.2		
		Deflated Little Endian Explicit VR	1.2.840.10008.1.2.1.99		
Patient Root Query/Retrieve	1.2.840.10008.5.1.4.1.2.1.3	Little Endian Explicit VR	1.2.840.10008.1.2.1	SCP	Relational
		Little Endian Implicit VR	1.2.840.10008.1.2		

Information Model – GET		Big Endian Explicit VR	1.2.840.10008.1.2.2		
		Deflated Little Endian Explicit VR	1.2.840.10008.1.2.1.99		
Study Root Query/Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.2.2	Little Endian Explicit VR	1.2.840.10008.1.2.1	SCP	Relational
		Little Endian Implicit VR	1.2.840.10008.1.2		
		Big Endian Explicit VR	1.2.840.10008.1.2.2		
		Deflated Little Endian Explicit VR	1.2.840.10008.1.2.1.99		
Study Root Query/Retrieve Information Model – GET	1.2.840.10008.5.1.4.1.2.2.3	Little Endian Explicit VR	1.2.840.10008.1.2.1	SCP	Relational
		Little Endian Implicit VR	1.2.840.10008.1.2		
		Big Endian Explicit VR	1.2.840.10008.1.2.2		
		Deflated Little Endian Explicit VR	1.2.840.10008.1.2.1.99		
Patient/Study Only Query/ Retrieve Information Model – MOVE	1.2.840.10008.5.1.4.1.2.3.2	Little Endian Explicit VR	1.2.840.10008.1.2.1	SCP	Relational
		Little Endian Implicit VR	1.2.840.10008.1.2		
		Big Endian Explicit VR	1.2.840.10008.1.2.2		
		Deflated Little Endian Explicit VR	1.2.840.10008.1.2.1.99		
Patient/Study Only Query/ Retrieve Information Model - GET	1.2.840.10008.5.1.4.1.2.3.3	Little Endian Explicit VR	1.2.840.10008.1.2.1	SCP	Relational
		Little Endian Implicit VR	1.2.840.10008.1.2		
		Big Endian Explicit VR	1.2.840.10008.1.2.2		
		Deflated Little Endian Explicit VR	1.2.840.10008.1.2.1.99		

SOP Specific Conformance for All Query/Retrieve SOP Classes

C-MOVE Status Codes

If the iConnect Cloud Gateway returns one of the following status codes for C-MOVE, then the operation was unsuccessful. All status codes are in hexadecimal.

C001 (Unable To Process) - Indicates that the archive was unable to fully process the move/get. The Error Comment field of the status is populated with a description of the error encountered.

A801 (Move Destination Unknown) - Indicates that the archive was unable to connect to the move destination (C-MOVE only).

Presentation Context Acceptance Criterion

There is no prioritization used for the acceptance of presentation contexts. Any combination of supported transfer syntax and abstract syntax is accepted, if the product is configured for them.

Transfer Syntax Selection Policies

The iConnect Cloud Gateway selects transfer syntaxes in Acceptor first mode: the first transfer syntax in the archive's list of allowable transfer syntaxes that also exists in the proposed transfer syntax list is selected.

Prefetcher Specifications

This Application Entity provides Standard Conformance to the following DICOM V3.0 SOP Classes as an SCU.

Table 13. SOP Classes

SOP Class Name	SOP Class UID	SCU/SCP
Storage		
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	Y / N
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	Y / N
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	Y / N
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	Y / N
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Y / N
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	Y / N
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	Y / N
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Y / N
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	Y / N
Digital X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.1	Y / N
Digital X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.1.1	Y / N
Digital Mammography Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.2	Y / N
Digital Mammography Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.2.1	Y / N

Digital Intra-oral X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.3	Y / N
Digital Intra-oral X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.3.1	Y / N
Encapsulated PDF Storage SOP Class	1.2.840.10008.5.1.4.1.1.104.1	Y / N
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	Y / N
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	Y / N
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	Y / N
Hardcopy Color Image Storage	1.2.840.10008.5.1.1.30	Y / N
Hardcopy Grayscale Image Storage	1.2.840.10008.5.1.1.29	Y / N
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	Y / N
Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	Y / N
Mammography CAD SR	1.2.840.10008.5.1.4.1.1.88.50	Y / N
Multi-frame Single Bit Secondary Capture Image	1.2.840.10008.5.1.4.1.1.7.1	Y / N
Multi-frame Grayscale Byte Secondary Capture	1.2.840.10008.5.1.4.1.1.7.2	Y / N
Multi-frame Grayscale Word Secondary Capture	1.2.840.10008.5.1.4.1.1.7.3	Y / N
Multi-frame True Color Secondary Capture Image	1.2.840.10008.5.1.4.1.1.7.4	Y / N
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Y / N
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	Y / N
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	Y / N
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	Y / N
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	Y / N
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	Y / N
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	Y / N
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	Y / N
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	Y / N
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	Y / N
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	Y / N
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	Y / N
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	Y / N

RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	Y / N
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	Y / N
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Y / N
Stand-alone Curve Storage	1.2.840.10008.5.1.4.1.1.9	Y / N
Stand-alone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10	Y / N
Stand-alone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	Y / N
Stand-alone VOI LUT Storage	1.2.840.10008.5.1.4.1.1.11	Y / N
Standalone PET Curve Storage	1.2.840.10008.5.1.4.1.1.129	Y / N
Stored Print Storage	1.2.840.10008.5.1.1.27	Y / N
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Y / N
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Y / N
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Y / N
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	Y / N
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	Y / N
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	Y / N
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Y / N
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Y / N
X-Ray Angiographic Bi-Plane Image Storage (retired)	1.2.840.10008.5.1.4.1.1.12.3	Y / N
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Y / N
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Y / N
Query		
Study Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.2.1	Y / N

Association Establishment Policies

General

The Prefetcher can make storage requests to DICOM device according to configurable prefetcher rules. This feature is known as "prefetching." When performing prefetching functions, the Prefetcher attempts to establish associations with DICOM device to store DICOM objects that are retrieved from ICCA. Before storing objects to DICOM device, it also attempts to query the DICOM device to filter out objects that already exist and not to store them.

The DICOM Component supports SCU Role Negotiation.

Number of Associations

The Prefecher establishes one query association for each study and one storage association for each DICOM object. Query associations and storage associations could be established simultaneously.

Association Initiation by Real-World Activity

When a trigger event occurs, the Prefetcher evaluates the prefetcher rules and queries ICCA for a list of studies that needs to be prefetched. It then initiates a C-FIND association to a DICOM device to validate whether the studies already exist before initiating a C-STORE association to deliver the studies to DICOM device.

Query Association

A C-FIND Request to a DICOM device to validate existence of each study before attempt to store it.

Table 14. Study Level Query

Attribute Tag	Element Name
(0020, 000D)	Study Instance UID

Storage Association

Store Request to a DICOM device for each DICOM object.

Proposed Presentation Contexts

The Prefetcher proposes the following Transfer Syntaxes for each presentation context in an association it initiates

Table 15. Transfer Syntax for Send to a Remote System

Name	UID
Little Endian Explicit VR	1.2.840.10008.1.2.1
Little Endian Implicit VR	1.2.840.10008.1.2
Big Endian Explicit VR	1.2.840.10008.1.2.2
Deflated Little Endian Explicit VR	1.2.840.10008.1.2.1.99
Lossless JPEG Image Compression (baseline)	1.2.840.10008.1.2.4.70
Lossy JPEG Image Compression (8-bit, coding Process 1)	1.2.840.10008.1.2.4.50
Lossy JPEG Image Compression (12-bit, coding Process 4)	1.2.840.10008.1.2.4.51
JPEG Lossless, Nonhierarchical (Processes 14)	1.2.840.10008.1.2.4.57
JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90
JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91
Lossless RLE Image Compression	1.2.840.10008.1.2.5

Algorithm for Computing the Proposed Presentation Contexts for Outgoing Storage Associations

When the association is established, the set of DICOM objects to be sent out has been collected. The proposed presentation contexts are determined based on the transfer syntax and the SOP Class UID of each DICOM objects that are sent out.

Reconciliation Specifications

This Application Entity provides Standard Conformance to the following DICOM V3.0 SOP Classes as an SCU and SCP.

Table 16. SOP Classes

SOP Class Name	SOP Class UID	SCU/SCP
Storage		
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	N / Y
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	N / Y
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	N / Y
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	N / Y
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	N / Y
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	N / Y
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	N / Y
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	N / Y
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	N / Y
Digital X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.1	N / Y
Digital X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.1.1	N / Y
Digital Mammography Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.2	N / Y
Digital Mammography Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.2.1	N / Y
Digital Intra-oral X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.3	N / Y
Digital Intra-oral X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.3.1	N / Y
Encapsulated PDF Storage SOP Class	1.2.840.10008.5.1.4.1.1.104.1	N / Y
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	N / Y
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	N / Y
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	N / Y
Hardcopy Color Image Storage	1.2.840.10008.5.1.1.30	N / Y
Hardcopy Grayscale Image Storage	1.2.840.10008.5.1.1.29	N / Y
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	N / Y
Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	N / Y
Mammography CAD SR	1.2.840.10008.5.1.4.1.1.88.50	N / Y
Multi-frame Single Bit Secondary Capture Image	1.2.840.10008.5.1.4.1.1.7.1	N / Y
Multi-frame Grayscale Byte Secondary Capture	1.2.840.10008.5.1.4.1.1.7.2	N / Y

Multi-frame Grayscale Word Secondary Capture	1.2.840.10008.5.1.4.1.1.7.3	N / Y
Multi-frame True Color Secondary Capture Image	1.2.840.10008.5.1.4.1.1.7.4	N / Y
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	N / Y
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	N / Y
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	N / Y
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	N / Y
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	N / Y
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	N / Y
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	N / Y
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	N / Y
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	N / Y
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	N / Y
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	N / Y
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	N / Y
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	N / Y
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	N / Y
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	N / Y
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	N / Y
Stand-alone Curve Storage	1.2.840.10008.5.1.4.1.1.9	N / Y
Stand-alone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10	N / Y
Stand-alone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	N / Y
Stand-alone VOI LUT Storage	1.2.840.10008.5.1.4.1.1.11	N / Y
Standalone PET Curve Storage	1.2.840.10008.5.1.4.1.1.129	N / Y
Stored Print Storage	1.2.840.10008.5.1.1.27	N / Y
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	N / Y
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	N / Y
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	N / Y
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	N / Y
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	N / Y

VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	N / Y
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	N / Y
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	N / Y
X-Ray Angiographic Bi-Plane Image Storage (retired)	1.2.840.10008.5.1.4.1.1.12.3	N / Y
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	N / Y
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	N / Y
Query/Retrieve		
Study Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.2.1	Y/ N
Study Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2	Y / N

Association Establishment Policies

General

The Reconciliation periodically makes query requests to local archive for a list of studies and then sends retrieve requests for studies that are in the local archive but not in ICCA. The retrieved study objects are later sent to ICCA.

Number of Associations

The Reconcilation establishes one query association request for each day and one move association request for each study.

Association Initiation by Real-World Activity

The Reconciliation service periodically sends C-FIND requests to the local archive for a list of studies stored each day and validates whether the studies exist in ICCA. If the studies are not in ICCA, the Reconciliation service issues C-MOVE requests to the local archive to deliver them to ICCA through the iConnect Cloud gateway.

Query Association

A C-FIND Request to a local archive to get a list of studies stored in each study date range.

Table 17. Study Level Query

Attribute Tag	Element Name
(0008, 0020)	Study Date

A CMOVE Request to a local archive to delivery each study to the gateway.

Table 18. Study Level Retrieve

Attribute Tag	Element Name
(0020, 000D)	Study Instance UID

Association Acceptance Policy

When the iConnect Cloud Gateway accepts an association, it allows the storage of objects, the retrieval of objects previously stored, and the query for information about stored objects.

The iConnect Cloud Gateway is configurable to allow security restrictions on specified SOP classes, SCU/SCP roles, and proposed presentation contexts. However, it accepts associations from any remote application entities.

Receive Objects from a Remote System

Associated Real-World Activity

When the iConnect Cloud Gateway receives a storage request (C-STORE) for an object in the iConnect Cloud Archive, that object is temporarily stored on disk on the underlying platform in DICOM Part 10 format and then upload into the iConnect Cloud Archive. If the object is successfully saved to disk in the gateway, a C-STORE successful response is returned. Otherwise, a C-STORE failure response is returned. If the object is unable to upload into the iConnect Cloud Archive, it is marked as error in gateway database and DICOM object remains on disk.

The data set of the C-STORE command is stored with no loss of information.

Presentation Context Table

The iConnect Cloud Gateway accepts the following Transfer Syntaxes for each presentation context in an association it receives:

Table 19. Presentation Context Table

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
Name	UID			
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	See Table 20	SCP	None
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	See Table 20	SCP	None
Basic Study Content Notification	1.2.840.10008.1.9	See Table 20	SCP	None
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	See Table 20	SCP	None
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	See Table 20	SCP	None
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	See Table 20	SCP	None
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	See Table 20	SCP	None
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	See Table 20	SCP	None
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	See Table 20	SCP	None
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	See Table 20	SCP	None
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	See Table 20	SCP	None
Digital X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.1	See Table 20	SCP	None
Digital X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.1.1	See Table 20	SCP	None
Digital Mammography Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.2	See Table 20	SCP	None
Digital Mammography Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.2.1	See Table 20	SCP	None
Digital Intra-oral X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.3	See Table 20	SCP	None
Digital Intra-oral X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.3.1	See Table 20	SCP	None
Encapsulated PDF Storage SOP Class	1.2.840.10008.5.1.4.1.1.104.1	See Table 20	SCP	None
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	See Table 20	SCP	None
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	See Table 20	SCP	None

Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	See **Table 20**	SCP	None
Hardcopy Color Image Storage	1.2.840.10008.5.1.1.30	See **Table 20**	SCP	None
Hardcopy Grayscale Image Storage	1.2.840.10008.5.1.1.29	See **Table 20**	SCP	None
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	See **Table 20**	SCP	None
Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	See **Table 20**	SCP	None
Mammography CAD SR	1.2.840.10008.5.1.4.1.1.88.50	See **Table 20**	SCP	None
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	See **Table 20**	SCP	None
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	See **Table 20**	SCP	None
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	See **Table 20**	SCP	None
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	See **Table 20**	SCP	None
MR Image Storage	1.2.840.100008.5.1.4.1.1.4	See **Table 20**	SCP	None
Enhanced MR Image Storage	1.2.840.100008.5.1.4.1.1.4.1	See **Table 20**	SCP	None
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	See **Table 20**	SCP	None
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	See **Table 20**	SCP	None
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	See **Table 20**	SCP	None
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	See **Table 20**	SCP	None
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	See **Table 20**	SCP	None
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	See **Table 20**	SCP	None
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	See **Table 20**	SCP	None
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	See **Table 20**	SCP	None
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	See **Table 20**	SCP	None

RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	See **Table 20**	SCP	None
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	See **Table 20**	SCP	None
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	See **Table 20**	SCP	None
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	See **Table 20**	SCP	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	See **Table 20**	SCP	None
Stand-alone Curve Storage	1.2.840.10008.5.1.4.1.1.9	See **Table 20**	SCP	None
Stand-alone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10	See **Table 20**	SCP	None
Stand-alone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	See **Table 20**	SCP	None
Stand-alone VOI LUT Storage	1.2.840.10008.5.1.4.1.1.11	See **Table 20**	SCP	None
Standalone PET Curve Storage	1.2.840.10008.5.1.4.1.1.129	See **Table 20**	SCP	None
Stored Print Storage	1.2.840.10008.5.1.1.27	See **Table 20**	SCP	None
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	See **Table 20**	SCP	None
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	See **Table 20**	SCP	None
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	See **Table 20**	SCP	None
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	See **Table 20**	SCP	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	See **Table 20**	SCP	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	See **Table 20**	SCP	None
VL Slide-Coordinates Microscopic	1.2.840.10008.5.1.4.1.1.77.1.3	See **Table 20**	SCP	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	See **Table 20**	SCP	None
X-Ray Angiographic Bi-Plane Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.12.3	See **Table 20**	SCP	None
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	See **Table 20**	SCP	None

X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	See Table 20	SCP	None

Table 20. Transfer Syntax for Receive from a Remote System

Name	UID
Little Endian Explicit VR	1.2.840.10008.1.2.1
Little Endian Implicit VR	1.2.840.10008.1.2
Big Endian Explicit VR	1.2.840.10008.1.2.2
Deflated Little Endian Explicit VR	1.2.840.10008.1.2.1.99
Lossless JPEG Image Compression (baseline)	1.2.840.10008.1.2.4.70
Lossy JPEG Image Compression (8-bit, coding Process 1)	1.2.840.10008.1.2.4.50
Lossy JPEG Image Compression (12-bit, coding Process 4)	1.2.840.10008.1.2.4.51
JPEG Lossless, Nonhierarchical (Processes 14)	1.2.840.10008.1.2.4.57
JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90
JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91
Lossless RLE Image Compression	1.2.840.10008.1.2.5

SOP Specific Conformance for all Storage SOP Classes

The iConnect Cloud Gateway DICOM Interface conforms to the SOPs of the Storage Service Class at Level 2 (full). No elements are discarded or coerced, unless explicitly configured to do so. Discarding offending DICOM elements (invalid tags) or coercing some data elements to address customer needs is possible; however, it can be done only with Merge Healthcare's direct involvement, and it implies custom implementations of coercion strategies.

The iConnect Cloud Gateway performs minimal object validation to ensure database integrity. Additional validation may be configured to prevent the object from being stored in the archive.

Extended negotiation is not supported for Storage Service Classes.

iConnect Cloud Gateway returns Success status code (0x0000) when it successfully receives and saves object to disk for uploading to iCCA. Otherwise, failed response is returned with status code (0xC0110).

Presentation Context Acceptance Criterion

No prioritization is used for the acceptance of presentation contexts. Any combination of supported transfer syntax and abstract syntax is accepted, provided the product is configured for them.

Transfer Syntax Selection Policies

The iConnect Cloud Gateway selects transfer syntaxes in Acceptor first mode: The system selects the first transfer syntax in the archive's list of allowable transfer syntaxes that also exists in the proposed transfer syntax list.

Study Prefetcher for Observation Report Specifications

This Application Entity provides Standard Conformance to the following DICOM V3.0 SOP Classes as an SCU and SCP.

Table 21. SOP Classes

SOP Class Name	SOP Class UID	SCU/SCP
Storage		
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	N / Y
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	N / Y
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	N / Y
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	N / Y
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	N / Y
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	N / Y
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	N / Y
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	N / Y
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	N / Y
Digital X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.1	N / Y
Digital X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.1.1	N / Y
Digital Mammography Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.2	N / Y
Digital Mammography Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.2.1	N / Y

Digital Intra-oral X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.3	N / Y
Digital Intra-oral X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.3.1	N / Y
Encapsulated PDF Storage SOP Class	1.2.840.10008.5.1.4.1.1.104.1	N / Y
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	N / Y
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	N / Y
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	N / Y
Hardcopy Color Image Storage	1.2.840.10008.5.1.1.30	N / Y
Hardcopy Grayscale Image Storage	1.2.840.10008.5.1.1.29	N / Y
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	N / Y
Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	N / Y
Mammography CAD SR	1.2.840.10008.5.1.4.1.1.88.50	N / Y
Multi-frame Single Bit Secondary Capture Image	1.2.840.10008.5.1.4.1.1.7.1	N / Y
Multi-frame Grayscale Byte Secondary Capture	1.2.840.10008.5.1.4.1.1.7.2	N / Y
Multi-frame Grayscale Word Secondary Capture	1.2.840.10008.5.1.4.1.1.7.3	N / Y
Multi-frame True Color Secondary Capture Image	1.2.840.10008.5.1.4.1.1.7.4	N / Y
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	N / Y
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	N / Y
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	N / Y
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	N / Y
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	N / Y
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	N / Y
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	N / Y
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	N / Y
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	N / Y
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	N / Y
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	N / Y
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	N / Y
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	N / Y

RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	N / Y
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	N / Y
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	N / Y
Stand-alone Curve Storage	1.2.840.10008.5.1.4.1.1.9	N / Y
Stand-alone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10	N / Y
Stand-alone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	N / Y
Stand-alone VOI LUT Storage	1.2.840.10008.5.1.4.1.1.11	N / Y
Standalone PET Curve Storage	1.2.840.10008.5.1.4.1.1.129	N / Y
Stored Print Storage	1.2.840.10008.5.1.1.27	N / Y
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	N / Y
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	N / Y
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	N / Y
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	N / Y
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	N / Y
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	N / Y
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	N / Y
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	N / Y
X-Ray Angiographic Bi-Plane Image Storage (retired)	1.2.840.10008.5.1.4.1.1.12.3	N / Y
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	N / Y
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	N / Y
Retrieve		
Study Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2	Y / N

Association Establishment Policies

General

The Reconciliation “listens” for an observation report availability notification event from iConnect Network gateway and sends a retrieve request to the local archive for the study that is associated with the observation report. The retrieved study objects are then routed to ICCA.

Number of Associations

The Study Prefetcher establishes one retrieve association request for the observation report.

Association Initiation by Real-World Activity

The Study Prefetcher sends a C-MOVE request to the local archive to retrieve the study that is associated with an observation report routed in ICN. When the study is delivered to iConnect Cloud Archive gateway, it is sent to ICCA.

Query Association

A C-MOVE Request to a local archive to retrieve the study.

Table 22. Study Level Retrieve

Attribute Tag	Element Name
(0008, 0050)	Accession Number

Association Acceptance Policy

When the iConnect Cloud Gateway accepts an association, it allows the storage of objects, the retrieval of objects previously stored, and the query for information about stored objects.

The iConnect Cloud Gateway is configurable to allow security restrictions on specified SOP classes, SCU/SCP roles, and proposed presentation contexts. However, it accepts associations from any remote application entities.

Receive Objects from a Remote System

Associated Real-World Activity

When the iConnect Cloud Gateway receives a storage request (C-STORE) for an object in iCCA, that object is temporarily stored on disk on the underlying platform in DICOM Part 10 format and is then uploaded into iCCA. If the object is successfully saved to disk in the gateway, a C-STORE successful response is returned. Otherwise, a C-STORE failure response is returned. If the object is unable to upload into the iCCA, it is marked as an error in the gateway database and the DICOM object remains on disk.

The data set of the C-STORE command is stored with no loss of information.

Presentation Context Table

The iConnect Cloud Gateway accepts the following Transfer Syntaxes for each presentation context in an association it receives:

Table 23. Presentation Context Table

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
Name	UID			
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	See Table	SCP	None
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	See Table 24	SCP	None
Basic Study Content Notification	1.2.840.10008.1.9	See Table	SCP	None
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	See Table	SCP	None
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	See Table 24	SCP	None
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	See Table 24	SCP	None
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	See Table 24	SCP	None
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	See Table	SCP	None
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	See Table 24	SCP	None
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	See Table	SCP	None
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	See Table	SCP	None
Digital X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.1	See Table 24	SCP	None

Digital X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.1.1	See Table 24	SCP	None
Digital Mammography Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.2	See Table 24	SCP	None
Digital Mammography Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.2.1	See Table 24	SCP	None
Digital Intra-oral X-Ray Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.3	See Table 24	SCP	None
Digital Intra-oral X-Ray Image Storage (Processing)	1.2.840.10008.5.1.4.1.1.1.3.1	See Table 24	SCP	None
Encapsulated PDF Storage SOP Class	1.2.840.10008.5.1.4.1.1.104.1	See Table 24	SCP	None
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	See Table	SCP	None
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	See Table	SCP	None
Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.1	See Table 24	SCP	None
Hardcopy Color Image Storage	1.2.840.10008.5.1.1.30	See Table 24	SCP	None
Hardcopy Grayscale Image Storage	1.2.840.10008.5.1.1.29	See Table 24	SCP	None
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	See Table 24	SCP	None
Key Object Selection Document	1.2.840.10008.5.1.4.1.1.88.59	See Table 24	SCP	None
Mammography CAD SR	1.2.840.10008.5.1.4.1.1.88.50	See Table 24	SCP	None
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	See Table 24	SCP	None
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	See Table 24	SCP	None
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	See Table 24	SCP	None
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	See Table 24	SCP	None
MR Image Storage	1.2.840.100008.5.1.4.1.1.4	See Table 24	SCP	None
Enhanced MR Image Storage	1.2.840.100008.5.1.4.1.1.4.1	See Table 24	SCP	None
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	See Table 24	SCP	None

Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	See **Table 24**	SCP	None
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	See **Table 24**	SCP	None
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	See **Table 24**	SCP	None
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	See **Table 24**	SCP	None
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	See **Table 24**	SCP	None
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	See **Table 24**	SCP	None
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	See **Table 24**	SCP	None
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	See **Table 24**	SCP	None
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	See **Table 24**	SCP	None
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	See **Table 24**	SCP	None
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	See **Table 24**	SCP	None
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	See **Table 24**	SCP	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	See **Table 24**	SCP	None
Stand-alone Curve Storage	1.2.840.10008.5.1.4.1.1.9	See **Table 24**	SCP	None
Stand-alone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10	See **Table 24**	SCP	None
Stand-alone Overlay Storage	1.2.840.10008.5.1.4.1.1.8	See **Table 24**	SCP	None
Stand-alone VOI LUT Storage	1.2.840.10008.5.1.4.1.1.11	See **Table 24**	SCP	None
Standalone PET Curve Storage	1.2.840.10008.5.1.4.1.1.129	See **Table 24**	SCP	None
Stored Print Storage	1.2.840.10008.5.1.1.27	See **Table 24**	SCP	None
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	See **Table 24**	SCP	None
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	See **Table 24**	SCP	None

Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	See Table 24	SCP	None
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	See Table 24	SCP	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	See Table 24	SCP	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	See Table 24	SCP	None
VL Slide-Coordinates Microscopic	1.2.840.10008.5.1.4.1.1.77.1.3	See Table 24	SCP	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	See Table 24	SCP	None
X-Ray Angiographic Bi-Plane Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.12.3	See Table 24	SCP	None
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	See Table 24	SCP	None
X-Ray Radiofluoroscopics	1.2.840.10008.5.1.4.1.1.12.2	See Table 24	SCP	None

Table 24. Transfer Syntax for Receive from a Remote System

Name	UID
Little Endian Explicit VR	1.2.840.10008.1.2.1
Little Endian Implicit VR	1.2.840.10008.1.2
Big Endian Explicit VR	1.2.840.10008.1.2.2
Deflated Little Endian Explicit VR	1.2.840.10008.1.2.1.99
Lossless JPEG Image Compression (baseline)	1.2.840.10008.1.2.4.70
Lossy JPEG Image Compression (8-bit, coding Process 1)	1.2.840.10008.1.2.4.50
Lossy JPEG Image Compression (12-bit, coding Process 4)	1.2.840.10008.1.2.4.51
JPEG Lossless, Nonhierarchical (Processes 14)	1.2.840.10008.1.2.4.57
JPEG 2000 Image Compression (Lossless Only)	1.2.840.10008.1.2.4.90
JPEG 2000 Image Compression	1.2.840.10008.1.2.4.91
Lossless RLE Image Compression	1.2.840.10008.1.2.5

Configuration

The iConnect Cloud Gateway tool (a graphical user interface (GUI)) is used for configuration and administration. This tool is remotely enabled through the use of Java Remote Method Invocation (RMI), allowing the system to be configured and administrated from any location on the network. Configurable parameters include, but are not limited to, system level debugging, known remote application entities, various security concerns, and service classes supported..

AE Title/Presentation Address Mapping

All AE Title/Presentation Address mapping may need to be present in multiple locations, depending on the Application Entity. In all cases, iConnect Cloud Gateway allows for the configuration of the AE Title.

Configurable Parameters

The amount of configuration the system allows is extensive.

In general, the following parameters are configurable for each component:

- Listening IP port number
- Application entity title
- DICOM Part 10 file storage location
- Remote AE list (AE Title, Hostname, Port)
- Response Timeout

A member of Merge Healthcare's support staff must perform configuration.