
DICOM Conformance Statement
dcm4che Archive 5
Release 5.22.0

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Contents

1	Conformance Statement Overview	3
2	Table of Content	9
3	Introduction	11
3.1	Revision History	11
3.2	Audience	11
3.3	Remarks	11
3.4	Terms and Definitions	12
4	Networking	15
4.1	Implementation Model	15
4.2	AE Specifications	19
4.3	Network Interfaces	70
4.4	Configuration	70
5	Media Interchange	167
6	Support of Character Sets	169
7	Security	171
7.1	Security Profiles	171
7.2	Association Level Security	245
7.3	Application Level Security	245
	Index	247

Company Name dcm4che.org

Product Name *dcm4che DICOM Archive 5*

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Conformance Statement Overview

dcm4che DICOM Archive 5 is a networked computer system used for archiving DICOM objects. It allows external systems to send DICOM objects to it for permanent storage, retrieve information about such objects, and retrieve the DICOM objects themselves.

Table 1.1: Network Services

SOP Classes	User	Provider
Transfer		
Stored Print Storage SOP Class	Yes	Yes
Hardcopy Grayscale Image Storage SOP Class	Yes	Yes
Hardcopy Color Image Storage SOP Class	Yes	Yes
Computed Radiography Image Storage	Yes	Yes
Digital X-Ray Image Storage - For Presentation	Yes	Yes
Digital X-Ray Image Storage - For Processing	Yes	Yes
Digital Mammography X-Ray Image Storage - For Presentation	Yes	Yes
Digital Mammography X-Ray Image Storage - For Processing	Yes	Yes
Digital Intra-Oral X-Ray Image Storage - For Presentation	Yes	Yes
Digital Intra-Oral X-Ray Image Storage - For Processing	Yes	Yes
CT Image Storage	Yes	Yes
Enhanced CT Image Storage	Yes	Yes
Legacy Converted Enhanced CT Image Storage	Yes	Yes
Ultrasound Multi-frame Image Storage (Retired)	Yes	Yes
Ultrasound Multi-frame Image Storage	Yes	Yes
MR Image Storage	Yes	Yes
Enhanced MR Image Storage	Yes	Yes
MR Spectroscopy Storage	Yes	Yes
Enhanced MR Color Image Storage	Yes	Yes
Legacy Converted Enhanced MR Image Storage	Yes	Yes
Nuclear Medicine Image Storage (Retired)	Yes	Yes
Ultrasound Image Storage (Retired)	Yes	Yes
Ultrasound Image Storage	Yes	Yes

Continued on next page

Table 1.1 – continued from previous page

SOP Classes	User	Provider
Enhanced US Volume Storage	Yes	Yes
Secondary Capture Image Storage	Yes	Yes
Multi-frame Single Bit Secondary Capture Image Storage	Yes	Yes
Multi-frame Grayscale Byte Secondary Capture Image Storage	Yes	Yes
Multi-frame Grayscale Word Secondary Capture Image Storage	Yes	Yes
Multi-frame True Color Secondary Capture Image Storage	Yes	Yes
12-lead ECG Waveform Storage	Yes	Yes
General ECG Waveform Storage	Yes	Yes
Ambulatory ECG Waveform Storage	Yes	Yes
Hemodynamic Waveform Storage	Yes	Yes
Cardiac Electrophysiology Waveform Storage	Yes	Yes
Basic Voice Audio Waveform Storage	Yes	Yes
General Audio Waveform Storage	Yes	Yes
Arterial Pulse Waveform Storage	Yes	Yes
Respiratory Waveform Storage	Yes	Yes
Grayscale Softcopy Presentation State Storage SOP Class	Yes	Yes
Color Softcopy Presentation State Storage SOP Class	Yes	Yes
Pseudo-Color Softcopy Presentation State Storage SOP Class	Yes	Yes
Blending Softcopy Presentation State Storage SOP Class	Yes	Yes
XA/XRF Grayscale Softcopy Presentation State Storage	Yes	Yes
X-Ray Angiographic Image Storage	Yes	Yes
Enhanced XA Image Storage	Yes	Yes
X-Ray Radiofluoroscopic Image Storage	Yes	Yes
Enhanced XRF Image Storage	Yes	Yes
X-Ray Angiographic Bi-Plane Image Storage (Retired)	Yes	Yes
X-Ray 3D Angiographic Image Storage	Yes	Yes
X-Ray 3D Craniofacial Image Storage	Yes	Yes
Breast Tomosynthesis Image Storage	Yes	Yes
Breast Projection X-Ray Image Storage - For Presentation	Yes	Yes
Breast Projection X-Ray Image Storage - For Processing	Yes	Yes
Intravascular Optical Coherence Tomography Image Storage - For Presentation	Yes	Yes
Intravascular Optical Coherence Tomography Image Storage - For Processing	Yes	Yes
Nuclear Medicine Image Storage	Yes	Yes
Parametric Map Storage	Yes	Yes
Raw Data Storage	Yes	Yes
Spatial Registration Storage	Yes	Yes
Spatial Fiducials Storage	Yes	Yes
Deformable Spatial Registration Storage	Yes	Yes
Segmentation Storage	Yes	Yes
Surface Segmentation Storage	Yes	Yes
Real World Value Mapping Storage	Yes	Yes
Surface Scan Mesh Storage	Yes	Yes
Surface Scan Point Cloud Storage	Yes	Yes
VL Endoscopic Image Storage	Yes	Yes
Video Endoscopic Image Storage	Yes	Yes
VL Microscopic Image Storage	Yes	Yes
Video Microscopic Image Storage	Yes	Yes
VL Slide-Coordinates Microscopic Image Storage	Yes	Yes
VL Photographic Image Storage	Yes	Yes

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Table 1.1 – continued from previous page

SOP Classes	User	Provider
Video Photographic Image Storage	Yes	Yes
Ophthalmic Photography 8 Bit Image Storage	Yes	Yes
Ophthalmic Photography 16 Bit Image Storage	Yes	Yes
Stereometric Relationship Storage	Yes	Yes
Ophthalmic Tomography Image Storage	Yes	Yes
Wide Field Ophthalmic Photography Stereographic Projection Image Storage	Yes	Yes
Wide Field Ophthalmic Photography 3D Coordinates Image Storage	Yes	Yes
VL Whole Slide Microscopy Image Storage	Yes	Yes
Lensometry Measurements Storage	Yes	Yes
Autorefracton Measurements Storage	Yes	Yes
Keratometry Measurements Storage	Yes	Yes
Subjective Refraction Measurements Storage	Yes	Yes
Visual Acuity Measurements Storage	Yes	Yes
Spectacle Prescription Report Storage	Yes	Yes
Ophthalmic Axial Measurements Storage	Yes	Yes
Intraocular Lens Calculations Storage	Yes	Yes
Macular Grid Thickness and Volume Report Storage	Yes	Yes
Ophthalmic Visual Field Static Perimetry Measurements Storage	Yes	Yes
Ophthalmic Thickness Map Storage	Yes	Yes
Corneal Topography Map Storage	Yes	Yes
Basic Text SR Storage	Yes	Yes
Enhanced SR Storage	Yes	Yes
Comprehensive SR Storage	Yes	Yes
Comprehensive 3D SR Storage	Yes	Yes
Extensible SR Storage	Yes	Yes
Procedure Log Storage	Yes	Yes
Mammography CAD SR Storage	Yes	Yes
Key Object Selection Document Storage	Yes	Yes
Chest CAD SR Storage	Yes	Yes
X-Ray Radiation Dose SR Storage	Yes	Yes
Radiopharmaceutical Radiation Dose SR Storage	Yes	Yes
Colon CAD SR Storage	Yes	Yes
Implantation Plan SR Storage	Yes	Yes
Acquisition Context SR Storage	Yes	Yes
Simplified Adult Echo SR Storage	Yes	Yes
Patient Radiation Dose SR Storage	Yes	Yes
Planned Imaging Agent Administration SR Storage	Yes	Yes
Performed Imaging Agent Administration SR Storage	Yes	Yes
Encapsulated PDF Storage	Yes	Yes
Encapsulated CDA Storage	Yes	Yes
Encapsulated STL Storage	Yes	Yes
Positron Emission Tomography Image Storage	Yes	Yes
Legacy Converted Enhanced PET Image Storage	Yes	Yes
Enhanced PET Image Storage	Yes	Yes
RT Image Storage	Yes	Yes
RT Dose Storage	Yes	Yes
RT Structure Set Storage	Yes	Yes
RT Beams Treatment Record Storage	Yes	Yes
RT Plan Storage	Yes	Yes

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Table 1.1 – continued from previous page

SOP Classes	User	Provider
RT Brachy Treatment Record Storage	Yes	Yes
RT Treatment Summary Record Storage	Yes	Yes
RT Ion Plan Storage	Yes	Yes
RT Ion Beams Treatment Record Storage	Yes	Yes
RT Physician Intent Storage	Yes	Yes
RT Segment Annotation Storage	Yes	Yes
RT Radiation Set Storage	Yes	Yes
RT C-Arm Photon-Electron Radiation Storage	Yes	Yes
RT Beams Delivery Instruction Storage	Yes	Yes
RT Brachy Application Setup Delivery Instruction Storage	Yes	Yes
Private Agfa Basic Attribute Presentation State	Yes	Yes
Private Agfa Arrival Transaction	Yes	Yes
Private Agfa Dictation Transaction	Yes	Yes
Private Agfa Report Transcription Transaction	Yes	Yes
Private Agfa Report Approval Transaction	Yes	Yes
Private TomTec Annotation Storage	Yes	Yes
Private Toshiba US Image Storage	Yes	Yes
Private Fuji CR Image Storage	Yes	Yes
Private GE Collage Storage	Yes	Yes
Private ERAD Practice Builder Report Text Storage	Yes	Yes
Private ERAD Practice Builder Report Dictation Storage	Yes	Yes
Private Philips HP Live 3D 01 Storage	Yes	Yes
Private Philips HP Live 3D 02 Storage	Yes	Yes
Private GE 3D Model Storage	Yes	Yes
Private GE Dicom CT Image Info Object	Yes	Yes
Private GE Dicom Display Image Info Object	Yes	Yes
Private GE Dicom MR Image Info Object	Yes	Yes
Private GE eNTEGRA Protocol or NM Genie Storage	Yes	Yes
Private GE PET Raw Data Storage	Yes	Yes
Private GE RT Plan Storage	Yes	Yes
Private PixelMed Legacy Converted Enhanced CT Image Storage	Yes	Yes
Private PixelMed Legacy Converted Enhanced MR Image Storage	Yes	Yes
Private PixelMed Legacy Converted Enhanced PET Image Storage	Yes	Yes
Private PixelMed Floating Point Image Storage	Yes	Yes
Private Siemens CSA Non Image Storage	Yes	Yes
Private Siemens CT MR Volume Storage	Yes	Yes
Private Siemens AX Frame Sets Storage	Yes	Yes
Private Philips Specialised XA Storage	Yes	Yes
Private Philips CX Image Storage	Yes	Yes
Private Philips 3D Presentation State Storage	Yes	Yes
Private Philips VRML Storage	Yes	Yes
Private Philips Volume Set Storage	Yes	Yes
Private Philips Volume Storage (Retired)	Yes	Yes
Private Philips Volume Storage	Yes	Yes
Private Philips 3D Object Storage (Retired)	Yes	Yes
Private Philips 3D Object Storage	Yes	Yes
Private Philips Surface Storage (Retired)	Yes	Yes
Private Philips Surface Storage	Yes	Yes
Private Philips Composite Object Storage	Yes	Yes

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Table 1.1 – continued from previous page

SOP Classes	User	Provider
Private Philips MR Cardio Profile Storage	Yes	Yes
Private Philips MR Cardio Storage (Retired)	Yes	Yes
Private Philips MR Cardio Storage	Yes	Yes
Private Philips CT Synthetic Image Storage	Yes	Yes
Private Philips MR Synthetic Image Storage	Yes	Yes
Private Philips MR Cardio Analysis Storage (Retired)	Yes	Yes
Private Philips MR Cardio Analysis Storage	Yes	Yes
Private Philips CX Synthetic Image Storage	Yes	Yes
Private Philips Perfusion Storage	Yes	Yes
Private Philips Perfusion Image Storage	Yes	Yes
Private Philips X-Ray MF Storage	Yes	Yes
Private Philips Live Run Storage	Yes	Yes
Private Philips Run Storage	Yes	Yes
Private Philips Reconstruction Storage	Yes	Yes
Private Philips MR Spectrum Storage	Yes	Yes
Private Philips MR Series Data Storage	Yes	Yes
Private Philips MR Color Image Storage	Yes	Yes
Private Philips MR Examcard Storage	Yes	Yes
Private PMOD Multi-frame Image Storage	Yes	Yes
Query/Retrieve		
Patient Root Query/Retrieve Information Model - FIND	Yes	Yes
Patient Root Query/Retrieve Information Model - MOVE	Yes	Yes
Patient Root Query/Retrieve Information Model - GET	No	Yes
Study Root Query/Retrieve Information Model - FIND	Yes	Yes
Study Root Query/Retrieve Information Model - MOVE	Yes	Yes
Study Root Query/Retrieve Information Model - GET	No	Yes
Workflow Management		
Storage Commitment Push Model SOP Class	Yes	Yes
Modality Worklist Information Model - FIND	No	Yes
Modality Performed Procedure Step	Yes	Yes
Unified Procedure Step - Push SOP Class SCP	No	Yes
Unified Procedure Step - Pull SOP Class SCP	No	Yes
Unified Procedure Step - Watch SOP Class SCP	No	Yes
Unified Procedure Step - Event SOP Class SCP	No	Yes
Instance Availability Notification SOP Class	Yes	No
QIDO		
QIDO-RS - Search for Patients	Yes	Yes
QIDO-RS - Search for Studies	Yes	Yes
QIDO-RS - Search for Series	Yes	Yes
QIDO-RS - Search for Instances	Yes	Yes
STOW		
STOW-RS - Store Instances	Yes	Yes
WADO		
WADO-URI - Retrieve DICOM Persistent Object	Yes	Yes
WADO-URI - Retrieve Rendered DICOM Persistent Object	Yes	Yes
WADO-RS - Retrieve Study	No	Yes
WADO-RS - Retrieve Series	No	Yes
WADO-RS - Retrieve Instance	No	Yes
WADO-RS - Retrieve Frames	No	Yes

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Table 1.1 – continued from previous page

SOP Classes	User	Provider
WADO-RS - Retrieve Bulkdata	No	Yes
WADO-RS - Retrieve Metadata	Yes	Yes
WADO-WS - Retrieve Imaging Document Set	No	Yes
WADO-WS - Retrieve Rendered Imaging Document Set	No	Yes
UPS		
UPS-RS - Create Workitem	No	Yes
UPS-RS - Retrieve Workitem	No	Yes
UPS-RS - Update Workitem	No	Yes
UPS-RS - Change State of Workitem	No	Yes
UPS-RS - Request Cancellation of Workitem	No	Yes
UPS-RS - Subscribe Workitem	No	Yes
UPS-RS - Subscribe Worklist	No	Yes
UPS-RS - Subscribe Filtered Worklist	No	Yes
UPS-RS - Unsubscribe Workitem	No	Yes
UPS-RS - Unsubscribe Worklist	No	Yes
UPS-RS - Unsubscribe Filtered Worklist	No	Yes
UPS-RS - Suspend Subscription of Worklist	No	Yes
UPS-RS - Suspend Subscription of Filtered Worklist	No	Yes

1. *Conformance Statement Overview*
2. *Table of Content*
3. *Introduction*
 - 3.1 *Revision History*
 - 3.2 *Audience*
 - 3.3 *Remarks*
 - 3.4 *Terms and Definitions*
4. *Networking*
 - 4.1. *Implementation Model*
 - 4.1.1. *Application Data Flow*
 - 4.1.2. *Functional Definitions of AEs*
 - 4.1.2.1. *Storage Application Entity*
 - 4.1.2.2. *Query/Retrieve Application Entity*
 - 4.1.2.3. *Workflow Application Entity*
 - 4.1.2.4. *STOW-RS*
 - 4.1.2.5. *QIDO-RS*
 - 4.1.2.6. *WADO-URI*
 - 4.1.2.7. *WADO-RS*
 - 4.1.2.8. *WADO-WS*
 - 4.1.3. *Sequencing of Real-World Activities*
 - 4.2. *AE Specifications*
 - 4.2.1. *Storage Application Entity Specification*
 - 4.2.2. *Query/Retrieve Application Entity Specification*
 - 4.2.3. *Workflow Application Entity Specification*
 - 4.2.4. *STOW-RS Specifications*
 - 4.2.5. *QIDO-RS Specifications*
 - 4.2.6. *WADO-URI Specification*
 - 4.2.7. *WADO-RS Specifications*

- 4.2.8. *WADO-WS Specifications*
- 4.3. *Network Interfaces*
- 4.4. *Configuration*
 - 4.4.1. *AE Title/Presentation Address Mapping*
 - 4.4.2. *Parameters*
- 5. *Media Interchange*
- 6. *Support of Character Sets*
- 7. *Security*
 - 7.1 *Security Profiles*
 - 7.1.1. *Secure Transport Connection Profiles*
 - 7.1.2. *Network Address Management Profiles*
 - 7.1.3. *Time Synchronization Profiles*
 - 7.1.4. *Application Configuration Management Profiles*
 - 7.1.5. *Audit Trail Profiles*
 - 7.2 *Association Level Security*
 - 7.3 *Application Level Security*

3.1 Revision History

Table 3.1: Revision History

Document Version	Date of Issue	Author	Description
5.0.0	Dec 06, 2015	gz	Initial Draft
5.10.5	Aug 11, 2017	gz	Correct Asynchronous Nature
5.22.0	Sep 11, 2020	Current Draft	

3.2 Audience

This document is written for the people that need to understand how *dcm4che DICOM Archive 5* will integrate into their healthcare facility. This includes both those responsible for overall imaging network policy and architecture, as well as integrators who need to have a detailed understanding of the DICOM features of the product. This document contains some basic DICOM definitions so that any reader may understand how this product implements DICOM features. However, integrators are expected to fully understand all the DICOM terminology, how the tables in this document relate to the product's functionality, and how that functionality integrates with other devices that support compatible DICOM features.

3.3 Remarks

The scope of this DICOM Conformance Statement is to facilitate integration between *dcm4che DICOM Archive 5* and other DICOM products. The Conformance Statement should be read and understood in conjunction with the DICOM Standard. DICOM by itself does not guarantee interoperability. The Conformance Statement does, however, facilitate a first-level comparison for interoperability between different applications supporting compatible DICOM functionality.

This Conformance Statement is not supposed to replace validation with other DICOM equipment to ensure proper exchange of intended information. In fact, the user should be aware of the following important issues:

- The comparison of different Conformance Statements is just the first step towards assessing interoperability and interoperability between the product and other DICOM conformant equipment.
- Test procedures should be defined and executed to validate the required level of interoperability with specific compatible DICOM equipment, as established by the healthcare facility.
- *dcm4che DICOM Archive 5* has participated in an industry-wide testing program sponsored by Integrating the Healthcare Enterprise (IHE). The IHE Integration Statement for *dcm4che DICOM Archive 5*, together with the IHE Technical Framework, may facilitate the process of validation testing.

3.4 Terms and Definitions

Informal definitions are provided for the following terms used in this Conformance Statement. The DICOM Standard is the authoritative source for formal definitions of these terms.

Abstract Syntax The information agreed to be exchanged between applications, generally equivalent to a Service/Object Pair (SOP) Class. Examples: Verification SOP Class, Modality Worklist Information Model Find SOP Class, Computed Radiography Image Storage SOP Class.

Application Entity (AE) An end point of a DICOM information exchange, including the DICOM network or media interface software; i.e., the software that sends or receives DICOM information objects or messages. A single device may have multiple Application Entities.

Application Entity Title (AET) The externally known name of an Application Entity, used to identify a DICOM application to other DICOM applications on the network.

Application Context The specification of the type of communication used between Application Entities. Example: DICOM network protocol.

Association A network communication channel set up between Application Entities.

Attribute A unit of information in an object definition; a data element identified by a tag. The information may be a complex data structure (Sequence), itself composed of lower level data elements. Examples: Patient ID (0010,0020), Accession Number (0008,0050), Photometric Interpretation (0028,0004), Procedure Code Sequence (0008,1032).

Information Object Definition (IOD) The specified set of Attributes that comprise a type of data object; does not represent a specific instance of the data object, but rather a class of similar data objects that have the same properties. The Attributes may be specified as Mandatory (Type 1), Required but possibly unknown (Type 2), or Optional (Type 3), and there may be conditions associated with the use of an Attribute (Types 1C and 2C). Examples: MR Image IOD, CT Image IOD, Print Job IOD.

Joint Photographic Experts Group (JPEG) A set of standardized image compression techniques, available for use by DICOM applications.

Media Application Profile The specification of DICOM information objects and encoding exchanged on removable media (e.g., CDs)

Module A set of Attributes within an Information Object Definition that are logically related to each other. Example: Patient Module includes Patient Name, Patient ID, Patient Birth Date, and Patient Sex.

Negotiation First phase of Association establishment that allows Application Entities to agree on the types of data to be exchanged and how that data will be encoded.

Presentation Context The set of DICOM network services used over an Association, as negotiated between Application Entities; includes Abstract Syntaxes and Transfer Syntaxes.

Protocol Data Unit (PDU) A packet (piece) of a DICOM message sent across the network. Devices must specify the maximum size packet they can receive for DICOM messages.

Security Profile A set of mechanisms, such as encryption, user authentication, or digital signatures, used by an Application Entity to ensure confidentiality, integrity, and/or availability of exchanged DICOM data

Service Class Provider (SCP) Role of an Application Entity that provides a DICOM network service; typically, a server that performs operations requested by another Application Entity (Service Class User). Examples: Picture Archiving and Communication System (image storage SCP, and image query/retrieve SCP), Radiology Information System (modality worklist SCP).

Service Class User (SCU) Role of an Application Entity that uses a DICOM network service; typically, a client. Examples: imaging modality (image storage SCU, and modality worklist SCU), imaging workstation (image query/retrieve SCU)

Service/Object Pair Class (SOP Class) The specification of the network or media transfer (service) of a particular type of data (object); the fundamental unit of DICOM interoperability specification. Examples: Ultrasound Image Storage Service, Basic Grayscale Print Management.

Service/Object Pair Instance (SOP Instance) An information object; a specific occurrence of information exchanged in a SOP Class. Examples: a specific x-ray image.

Tag A 32-bit identifier for a data element, represented as a pair of four digit hexadecimal numbers, the “group” and the “element”. If the “group” number is odd, the tag is for a private (manufacturer-specific) data element. Examples: (0010,0020) [Patient ID], (07FE,0010) [Pixel Data], (0019,0210) [private data element]

Transfer Syntax The encoding used for exchange of DICOM information objects and messages. Examples: JPEG compressed (images), little endian explicit value representation.

Unique Identifier (UID) A globally unique “dotted decimal” string that identifies a specific object or a class of objects; an ISO-8824 Object Identifier. Examples: Study Instance UID, SOP Class UID, SOP Instance UID.

Value Representation (VR) The format type of an individual DICOM data element, such as text, an integer, a person’s name, or a code. DICOM information objects can be transmitted with either explicit identification of the type of each data element (Explicit VR), or without explicit identification (Implicit VR); with Implicit VR, the receiving application must use a DICOM data dictionary to look up the format of each data element.

4.1 Implementation Model

4.1.1 Application Data Flow

The core component of *dcm4che DICOM Archive 5* is a Java Enterprise Application deployed in [WildFly AS](#), which provides DICOM services over the DICOM Upper Layer protocol (DUL) and HTTP, HL7 v2 services over the Minimal Lower Layer Protocol (MLLP), various proprietary RESTful services and a Web UI accessible by HTML 5 compliant web browsers.

It uses any LDAP v3 compatible LDAP server as configuration backend and a relational database for supporting query and data management services.

The received DICOM objects are not stored in the database, but in a separated storage backend - typically any type of file system, but also cloud storage supported by [Apache jclouds](#) may be used as storage backend.

System-log and audit messages may be stored into the [Elastic Stack](#).

RESTful services and the Web UI may be secured with [OpenID Connect](#) using [Keycloak](#) as Authentication Server.

Fig. 4.1: System components

System components may be distributed over multiple hosts, as multiple instances of the Archive Application may share one LDAP server and one database.

Fig. 4.2: Multi-host deployment

System components of *dcm4che DICOM Archive 5* are also available as Docker images to run within Docker containers.

Fig. 4.3: Docker deployment

Conceptually the network services may be modeled as the following separate AEs, though they may share one AE Title, or one AE may have multiple instances identified by different AE Titles, with different configuration.

- *Storage Application Entity*, which receives incoming images and other Composite Object Instances and accepts requests for commitment for the safekeeping of the received objects.
- *Query/Retrieve Application Entity*, which processes queries for Patient, Study, Series, and Instance information and also processes retrieval requests, sending the requested objects to the retrieve destination AE.
- *Workflow Application Entity*, which processes queries for Scheduled Procedure Steps, receives Performed Procedure Step messages and optionally forwards them to any remote AE, and also notifies remote AEs about the availability of received instances.
- *STOW-RS*, which receives DICOM Objects or metadata with bulkdata via HTTP POST requests.
- *QIDO-RS*, which provides access to Patient, Study, Series, and Instance data of received objects via HTTP GET requests.
- *WADO-URI*, which provides access to individual DICOM Objects - as DICOM file or rendered to non-DICOM media types for display - via HTTP GET requests.
- *WADO-RS*, which provides access to the metadata, the bulk data or the whole DICOM Objects, of a whole Study or Series or an individual object via HTTP GET requests.
- *WADO-WS*, which provides access to DICOM Objects - as DICOM file or rendered to non-DICOM media types for display - via SOAP HTTP Requests.

Fig. 4.4: Application Data Flow Diagram

Fig. 4.5: Workflow Application Data Flow Diagram

Fig. 4.6: Web Storage Application Data Flow Diagram

4.1.2 Functional Definitions of AEs

Storage Application Entity

The Storage Application Entity receives images and other Composite Object Instances from remote AEs.

Compressed images and non-image objects are stored as received on the storage backend configured for the Storage AE. Uncompressed images may be compressed according configurable compression rules before they are stored with all attributes on the storage backend.

A configurable sub-set of attributes are extracted from the received objects and stored in the data base. These attributes may be coerced according configurable coercion rules on receive time or by data management functions at any time after.

If configured, the Storage AE queries an external RESTful service for permission to store a study on receive of the first object of a study. If the service does not grant the permission to store the study, the object and all following received objects of that study will be refused.

The behavior on receive of an object which *SOP Instance UID* matches with the *SOP Instance UID* of a previous received object is configurable: The new received object may overwrite the previous one, be stored additionally or just be ignored, dependent if it was sent by the same source and/or dependent if it belongs to the same series as the previous received object. That allows to operate with object sources which does not support use of *Imaging Object*

Fig. 4.7: Web Access Application Data Flow Diagram

Change Management (IOCM) services to correct failures in the originally sent objects, but which just send the objects with corrected attributes but unchanged *SOP Instance UID* again.

The behavior how to treat differences in Patient, Study or Series attributes in received instances belonging to the same Patient, Study or Series is also configurable: the attributes of the already existing Patient, Study or Series record in the data base may

- not be updated at all,
- be supplemented with attributes from the new received object, not included in the existing record,
- be additionally overwritten by different values of the attributes in the new received object,
- be completely replaced by the extracted attributes from the new received object.

The Storage AE may also associate a configured *Access Control ID* to a received study. Query/Retrieve AEs can be configured to only provide access to data and objects of studies, which associated *Access Control ID* matches one of the *Access Control IDs* configured for that Query/Retrieve AE.

If configured, the Storage AE will set the *Retention Period* of received studies according a configured *Study Retention Policy*. Individual series of a study may get a different *Retention Period* than the whole study. If activated, studies - or individual series - will be deleted automatically after its *Retention Period* expires. On the other hand, *dcm4che DICOM Archive 5* can be configured to prevent manual deletion of objects of studies which *Retention Period* is not yet expired.

The Storage AE can also be configured to act as a cache archive, which deletes least recent accessed studies according configured thresholds of the storage backend.

Received objects may be exported according configurable export rules, which are triggered by matching sending/receiving AE Titles and/or matching object attribute values. Received objects of one series or study may be accumulated, before all objects of the series or study are exported in one task. Export by DICOM storage is invoked by the *Query/Retrieve Application Entity*.

Objects may be also received from the Storage AE as result of a forwarded retrieve request to a configured fallback archive by the *Query/Retrieve Application Entity*. In that case, the received objects will be forwarded immediately to the final retrieve destination by the *Query/Retrieve Application Entity*.

The receive of objects may trigger the notification of configured remote AEs by the DICOM Instance Available Notification service invoked by the *Workflow Application Entity*.

If the Storage AE receives a Key Object Selection (KOS) Document with a Document Title which matches one of the configured Rejection Note Code Values, the object will be treated as Rejection Note and the instances referenced by the object will be marked as rejected. The Key Selection Object Document itself is stored on the storage backend as other objects received from the Storage AE. Further treatment of the rejected instances and the KOS Document is specific to the particular type of rejection.

By default, the KOS Document Titles specified by *Imaging Object Change Management (IOCM)* are configured:

- (113001, DCM, “Rejected for Quality Reasons”)
 - Hide/Show rejected instances dependend on Query/Retrieve AE
 - Show KOS Document
 - Ignore subsequent occurrence of rejected instances
- (113037, DCM, “Rejected for Patient Safety Reasons”)
 - Hide rejected instances

- Show KOS Document
- Reject subsequent occurrence of rejected instances
- (113038, DCM, “Incorrect Modality Worklist Entry”)
 - Hide rejected instances
 - Show KOS Document
 - Reject subsequent occurrence of rejected instances
- (113039, DCM, “Data Retention Rejected for Quality Reasons”)
 - Hide rejected instances and KOS Document
 - Subsequent occurrence of rejected instances reverts the rejection
 - Delete rejected instances and KOS Document after delay

The Storage AE accepts requests for commitment for the storage of previous received instances - including KOS Documents acting as Rejection Notes. For each object, for which storage commitment is requested, the Storage AE does not only check the existence of a record for that object in the data base, but actually read the object from the storage backend, recalculating the checksum and compare it with the checksum stored in the data base. Only for objects which recalculated checksum matches with that in the data base the commitment to store is accepted.

The amount of time to take responsibility for the safekeeping of an objects is independent of the successful commitment to store the object, but depends on other configuration options, particularly on the configured *Study Retention Policy*. It is even possible to accept storage commitment requests when acting as a cache archive, which deletes least recent accessed studies according configured thresholds of the storage backend.

Query/Retrieve Application Entity

The Query/Retrieve Application Entity processes queries for Patient, Study, Series, and Instance information of received DICOM objects invoked by remote AEs. Attributes of requested entities are fetched from the database. The objects on the storage backend are not accessed. Therefore, only the configurable sub-set of attributes which were extracted from the received objects and stored in the data base is provided.

In addition, the Query/Retrieve Application Entity provides the ability to retrieve/transfer received DICOM objects to remote AEs. The transfer may be originated by a retrieve request from the same or from another remote AE, it may be caused by a configured Export Rule for received objects, or it may be triggered by the Archive Web UI, which itself uses a RESTful service to schedule the transfer, which may be also used by other web clients.

The Query/Retrieve Application Entity may forward retrieve requests for which no matching objects were found in the data base to a configured other DICOM Archive. Two configuration options are available:

1. Preserve the original Move Destination AE Title in the forwarded retrieve request, so the other DICOM Archive will directly send the requested objects to the destination AE.
2. Replace the original Move Destination AE Title in the forwarded retrieve request with the AE Title of the/a *Storage Application Entity*, so the other DICOM Archive will send the requested objects to the Storage AE and the Query/Retrieve AE will forward the received objects to the original Move Destination AE. If the other DICOM Archive signals that not all requested objects could be transferred to the Storage AE successfully, the Study and Series of the received objects are marked as incomplete in the data base and following retrieve request for that Study or Series will trigger to retry to retrieve the Study or Series from the other DICOM Archive.

Workflow Application Entity

Processes queries for Scheduled Procedure Steps, receives Performed Procedure Step messages and optionally forwards them to any remote AE, and also notifies remote AEs about the availability of received instances.

STOW-RS

Receives DICOM Objects or metadata with bulkdata via HTTP POST requests.

QIDO-RS

Provides access to Patient, Study, Series, and Instance data of received objects via HTTP GET requests.

WADO-URI

Provides access to individual DICOM Objects - as DICOM file or rendered to non-DICOM media types for display - via HTTP GET requests.

WADO-RS

Provides access to the metadata, the bulk data or the whole DICOM Objects, of a whole Study or Series or an individual object via HTTP GET requests.

WADO-WS

Provides access to DICOM Objects - as DICOM file or rendered to non-DICOM media types for display - via SOAP HTTP Requests.

4.1.3 Sequencing of Real-World Activities

<TODO>

4.2 AE Specifications

4.2.1 Storage Application Entity Specification

SOP Classes

The Storage Application Entity provides Standard Conformance to the following SOP Class(es) :

Table 4.1: SOP Classes for Storage Application Entity (SCP)

SOP Class Name	SOP Class UID	SCU	SCP
Verification SOP Class	1.2.840.10008.1.1	Yes	Yes
Storage Commitment Push Model SOP Class	1.2.840.10008.1.20.1	No	Yes
Image Storage SOP Classes:			
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	No	Yes
Digital X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.1	No	Yes
Digital X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	No	Yes
Digital Mammography X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.2	No	Yes

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Table 4.1 – continued from previous page

SOP Class Name	SOP Class UID	SCU	SCP
Digital Mammography X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	No	Yes
Digital Intra-Oral X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.3	No	Yes
Digital Intra-Oral X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	No	Yes
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	No	Yes
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	No	Yes
Legacy Converted Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.2	No	Yes
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	No	Yes
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	No	Yes
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	No	Yes
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	No	Yes
Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	No	Yes
Legacy Converted Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.4	No	Yes
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	No	Yes
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	No	Yes
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	No	Yes
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	No	Yes
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	No	Yes
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	No	Yes
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	No	Yes
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	No	Yes
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	No	Yes
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1.1	No	Yes
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	No	Yes
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	No	Yes
X-Ray Angiographic Bi-Plane Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.12.3	No	Yes
X-Ray 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	No	Yes
X-Ray 3D Craniofacial Image Storage	1.2.840.10008.5.1.4.1.1.13.1.2	No	Yes
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	No	Yes
Breast Projection X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.13.1.4	No	Yes
Breast Projection X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.13.1.5	No	Yes
Intravascular Optical Coherence Tomography Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.14.1	No	Yes
Intravascular Optical Coherence Tomography Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.14.2	No	Yes
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	No	Yes
VL Image Storage - Trial (Retired)	1.2.840.10008.5.1.4.1.1.77.1	No	Yes
VL Multi-frame Image Storage - Trial (Retired)	1.2.840.10008.5.1.4.1.1.77.2	No	Yes
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	No	Yes
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	No	Yes
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	No	Yes
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	No	Yes
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	No	Yes
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	No	Yes
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	No	Yes
Wide Field Ophthalmic Photography Stereographic Projection Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.5	No	Yes

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Table 4.1 – continued from previous page

SOP Class Name	SOP Class UID	SCU	SCP
Wide Field Ophthalmic Photography 3D Coordinates Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.6	No	Yes
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1.1.77.1.6	No	Yes
Ophthalmic Thickness Map Storage	1.2.840.10008.5.1.4.1.1.81.1	No	Yes
Corneal Topography Map Storage	1.2.840.10008.5.1.4.1.1.82.1	No	Yes
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	No	Yes
Legacy Converted Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.128.1	No	Yes
Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.130	No	Yes
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	No	Yes
Private Fuji CR Image Storage	1.2.392.200036.9125.1.1.2	No	Yes
Private GE Dicom CT Image Info Object	1.2.840.113619.4.3	No	Yes
Private GE Dicom Display Image Info Object	1.2.840.113619.4.4	No	Yes
Private GE Dicom MR Image Info Object	1.2.840.113619.4.2	No	Yes
Private Philips CT Synthetic Image Storage	1.3.46.670589.5.0.9	No	Yes
Private Philips CX Image Storage	1.3.46.670589.2.4.1.1	No	Yes
Private Philips CX Synthetic Image Storage	1.3.46.670589.5.0.12	No	Yes
Private Philips MR Color Image Storage	1.3.46.670589.11.0.0.12.3	No	Yes
Private Philips MR Synthetic Image Storage	1.3.46.670589.5.0.10	No	Yes
Private Philips Perfusion Image Storage	1.3.46.670589.5.0.14	No	Yes
Private PixelMed Floating Point Image Storage	1.3.6.1.4.1.5962.301.9	No	Yes
Private PixelMed Legacy Converted Enhanced CT Image Storage	1.3.6.1.4.1.5962.301.1	No	Yes
Private PixelMed Legacy Converted Enhanced MR Image Storage	1.3.6.1.4.1.5962.301.2	No	Yes
Private PixelMed Legacy Converted Enhanced PET Image Storage	1.3.6.1.4.1.5962.301.3	No	Yes
Private PMOD Multi-frame Image Storage	2.16.840.1.114033.5.1.4.1.1.130	No	Yes
Private Toshiba US Image Storage	1.2.392.200036.9116.7.8.1.1.1	No	Yes
Video Storage SOP Classes:			
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	No	Yes
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	No	Yes
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	No	Yes
Structured Report Storage SOP Classes:			
Spectacle Prescription Report Storage	1.2.840.10008.5.1.4.1.1.78.6	No	Yes
Macular Grid Thickness and Volume Report Storage	1.2.840.10008.5.1.4.1.1.79.1	No	Yes
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	No	Yes
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	No	Yes
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	No	Yes
Comprehensive 3D SR Storage	1.2.840.10008.5.1.4.1.1.88.34	No	Yes
Extensible SR Storage	1.2.840.10008.5.1.4.1.1.88.35	No	Yes
Procedure Log Storage	1.2.840.10008.5.1.4.1.1.88.40	No	Yes
Mammography CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.50	No	Yes
Key Object Selection Document Storage	1.2.840.10008.5.1.4.1.1.88.59	No	Yes
Chest CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.65	No	Yes
X-Ray Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.67	No	Yes
Radiopharmaceutical Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.68	No	Yes
Colon CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.69	No	Yes
Implantation Plan SR Storage	1.2.840.10008.5.1.4.1.1.88.70	No	Yes
Acquisition Context SR Storage	1.2.840.10008.5.1.4.1.1.88.71	No	Yes

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Table 4.1 – continued from previous page

SOP Class Name	SOP Class UID	SCU	SCP
Simplified Adult Echo SR Storage	1.2.840.10008.5.1.4.1.1.88.72	No	Yes
Patient Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.73	No	Yes
Planned Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.1.1.88.74	No	Yes
Performed Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.1.1.88.75	No	Yes
Other Storage SOP Classes:			
Stored Print Storage SOP Class (Retired)	1.2.840.10008.5.1.1.27	No	Yes
Hardcopy Grayscale Image Storage SOP Class (Retired)	1.2.840.10008.5.1.1.29	No	Yes
Hardcopy Color Image Storage SOP Class (Retired)	1.2.840.10008.5.1.1.30	No	Yes
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	No	Yes
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	No	Yes
Standalone Overlay Storage Retired	1.2.840.10008.5.1.4.1.1.8	No	Yes
Standalone Curve Storage Retired	1.2.840.10008.5.1.4.1.1.9	No	Yes
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	No	Yes
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	No	Yes
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	No	Yes
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	No	Yes
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	No	Yes
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	No	Yes
General Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.2	No	Yes
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1.1.9.5.1	No	Yes
Respiratory Waveform Storage	1.2.840.10008.5.1.4.1.1.9.6.1	No	Yes
Standalone Modality LUT Storage Retired	1.2.840.10008.5.1.4.1.1.10	No	Yes
Standalone VOI LUT Storage Retired	1.2.840.10008.5.1.4.1.1.11	No	Yes
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	No	Yes
Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.2	No	Yes
Pseudo-Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.3	No	Yes
Blending Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.4	No	Yes
XA/XRF Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.5	No	Yes
Grayscale Planar MPR Volumetric Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.6	No	Yes
Compositing Planar MPR Volumetric Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.7	No	Yes
Parametric Map Storage	1.2.840.10008.5.1.4.1.1.30	No	Yes
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	No	Yes
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	No	Yes
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	No	Yes
Deformable Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.3	No	Yes
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	No	Yes
Surface Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.5	No	Yes
Tractography Results Storage	1.2.840.10008.5.1.4.1.1.66.6	No	Yes
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	No	Yes
Surface Scan Mesh Storage	1.2.840.10008.5.1.4.1.1.68.1	No	Yes
Surface Scan Point Cloud Storage	1.2.840.10008.5.1.4.1.1.68.2	No	Yes
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	No	Yes
Lensometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.1	No	Yes
Autorefractometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.2	No	Yes
Keratometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.3	No	Yes
Subjective Refraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.4	No	Yes

Continued on next page

Table 4.1 – continued from previous page

SOP Class Name	SOP Class UID	SCU	SCP
Visual Acuity Measurements Storage	1.2.840.10008.5.1.4.1.1.78.5	No	Yes
Ophthalmic Axial Measurements Storage	1.2.840.10008.5.1.4.1.1.78.7	No	Yes
Intraocular Lens Calculations Storage	1.2.840.10008.5.1.4.1.1.78.8	No	Yes
Ophthalmic Visual Field Static Perimetry Measurements Storage	1.2.840.10008.5.1.4.1.1.80.1	No	Yes
BasicStructuredDisplayStorage	1.2.840.10008.5.1.4.1.1.131	No	Yes
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	No	Yes
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2	No	Yes
Encapsulated STL Storage	1.2.840.10008.5.1.4.1.1.104.3	No	Yes
Standalone PET Curve Storage (Retired)	1.2.840.10008.5.1.4.1.1.129	No	Yes
Text SR Storage Trial (Retired)	1.2.840.10008.5.1.4.1.1.88.1	No	Yes
Audio SR Storage Trial (Retired)	1.2.840.10008.5.1.4.1.1.88.2	No	Yes
Detail SR Storage Trial (Retired)	1.2.840.10008.5.1.4.1.1.88.3	No	Yes
Comprehensive SR Storage Trial (Retired)	1.2.840.10008.5.1.4.1.1.88.4	No	Yes
Content Assessment Results Storage	1.2.840.10008.5.1.4.1.1.90.1	No	Yes
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	No	Yes
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	No	Yes
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	No	Yes
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	No	Yes
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	No	Yes
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	No	Yes
RT Ion Plan Storage	1.2.840.10008.5.1.4.1.1.481.8	No	Yes
RT Ion Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.9	No	Yes
RT Physician Intent Storage	1.2.840.10008.5.1.4.1.1.481.10	No	Yes
RT Segment Annotation Storage	1.2.840.10008.5.1.4.1.1.481.11	No	Yes
RT Radiation Set Storage	1.2.840.10008.5.1.4.1.1.481.12	No	Yes
RT C-Arm Photon-Electron Radiation Storage	1.2.840.10008.5.1.4.1.1.481.13	No	Yes
RT Beams Delivery Instruction Storage	1.2.840.10008.5.1.4.34.7	No	Yes
RT Brachy Application Setup Delivery Instruction Storage	1.2.840.10008.5.1.4.34.10	No	Yes
Private Agfa Arrival Transaction	1.2.124.113532.3500.8.1	No	Yes
Private Agfa Basic Attribute Presentation State	1.2.124.113532.3500.7	No	Yes
Private Agfa Dictation Transaction	1.2.124.113532.3500.8.2	No	Yes
Private Agfa Report Approval Transaction	1.2.124.113532.3500.8.4	No	Yes
Private Agfa Report Transcription Transaction	1.2.124.113532.3500.8.3	No	Yes
Private ERAD Practice Builder Report Dictation Storage	1.2.826.0.1.3680043.293.1.0.2	No	Yes
Private ERAD Practice Builder Report Text Storage	1.2.826.0.1.3680043.293.1.0.1	No	Yes
Private GE 3D Model Storage	1.2.840.113619.4.26	No	Yes
Private GE Collage Storage	1.2.528.1.1001.5.1.1.1	No	Yes
Private GE eNTEGRA Protocol or NM Genie Storage	1.2.840.113619.4.27	No	Yes
Private GE PET Raw Data Storage	1.2.840.113619.4.30	No	Yes
Private GE RT Plan Storage	1.2.840.113619.4.5.249	No	Yes
Private Philips 3D Object Storage	1.3.46.670589.5.0.2.1	No	Yes
Private Philips 3D Object Storage (Retired)	1.3.46.670589.5.0.2	No	Yes
Private Philips 3D Presentation State Storage	1.3.46.670589.2.5.1.1	No	Yes
Private Philips Composite Object Storage	1.3.46.670589.5.0.4	No	Yes
Private Philips HP Live 3D 01 Storage	1.2.840.113543.6.6.1.3.10001	No	Yes
Private Philips HP Live 3D 02 Storage	1.2.840.113543.6.6.1.3.10002	No	Yes
Private Philips Live Run Storage	1.3.46.670589.7.8.1618510092	No	Yes
Private Philips MR Cardio Analysis Storage	1.3.46.670589.5.0.11.1	No	Yes

Continued on next page

Table 4.1 – continued from previous page

SOP Class Name	SOP Class UID	SCU	SCP
Private Philips MR Cardio Analysis Storage (Retired)	1.3.46.670589.5.0.11	No	Yes
Private Philips MR Cardio Profile Storage	1.3.46.670589.5.0.7	No	Yes
Private Philips MR Cardio Storage	1.3.46.670589.5.0.8.1	No	Yes
Private Philips MR Cardio Storage (Retired)	1.3.46.670589.5.0.8	No	Yes
Private Philips MR Examcard Storage	1.3.46.670589.11.0.0.12.4	No	Yes
Private Philips MR Series Data Storage	1.3.46.670589.11.0.0.12.2	No	Yes
Private Philips MR Spectrum Storage	1.3.46.670589.11.0.0.12.1	No	Yes
Private Philips Perfusion Storage	1.3.46.670589.5.0.13	No	Yes
Private Philips Reconstruction Storage	1.3.46.670589.7.8.16185100130	No	Yes
Private Philips Run Storage	1.3.46.670589.7.8.16185100129	No	Yes
Private Philips Specialised XA Storage	1.3.46.670589.2.3.1.1	No	Yes
Private Philips Surface Storage	1.3.46.670589.5.0.3.1	No	Yes
Private Philips Surface Storage (Retired)	1.3.46.670589.5.0.3	No	Yes
Private Philips Volume Set Storage	1.3.46.670589.2.11.1.1	No	Yes
Private Philips Volume Storage	1.3.46.670589.5.0.1.1	No	Yes
Private Philips Volume Storage (Retired)	1.3.46.670589.5.0.1	No	Yes
Private Philips VRML Storage	1.3.46.670589.2.8.1.1	No	Yes
Private Philips X-Ray MF Storage	1.3.46.670589.7.8.1618510091	No	Yes
Private Siemens AX Frame Sets Storage	1.3.12.2.1107.5.99.3.11	No	Yes
Private Siemens CSA Non Image Storage	1.3.12.2.1107.5.9.1	No	Yes
Private Siemens CT MR Volume Storage	1.3.12.2.1107.5.99.3.10	No	Yes
Private TomTec Annotation Storage	1.2.276.0.48.5.1.4.1.1.7	No	Yes

These are the default SOP Classes supported. By altering the configuration it is possible to support additional or fewer SOP Classes.

Association Policies

General

The Storage Application Entity can both accept and propose Association Requests. The Storage Application Entity will accept Association Requests for the Verification, Storage, and Storage Commitment Push Model Services. It will propose Associations only for the Storage Commitment Push Model Service.

The DICOM standard Application Context Name for DICOM 3.0 is always accepted and proposed:

Table 4.2: DICOM Application Context for Storage Application Entity

Application Context Name	1.2.840.10008.3.1.1.1
--------------------------	-----------------------

Number of Associations

The Storage Application Entity can support multiple simultaneous Associations requested by peer AEs. The maximum total number of simultaneous Associations accepted from peer AEs is configurable. It is unlimited by default.

The Storage Application Entity initiates up to 5 Associations at a time for sending Storage Commitment Push Model N-EVENT-REPORTs to peer AEs.

Table 4.3: Number of Simultaneous Associations as an SCP for the Storage Application Entity

Maximum number of simultaneous Associations requested by peer AEs	No Maximum Limit (Configurable)
Maximum number of simultaneous Associations initiated by the Storage Application Entity	5

Asynchronous Nature

The Storage Application Entity supports asynchronous communication (multiple outstanding transactions over a single Association). The maximum number of outstanding asynchronous transactions is configurable. It is unlimited by default.

Table 4.4: Asynchronous Nature as a SCP for the Storage Application Entity

Maximum number of outstanding asynchronous transactions	No Maximum Limit (Configurable)
---	---------------------------------

There is no limit on the number of outstanding Storage Commitment Push Model Requests that can be received and acknowledged before the Storage Application Entity has responded with the corresponding N-EVENT-REPORT Notifications.

Implementation Identifying Information

The implementation information for the Storage Application Entity is:

Table 4.5: DICOM Implementation Class and Version for the Storage Application Entity

Implementation Class UID	1.2.40.0.13.1.3
Implementation Version Name	dcm4che-5.xx.yy

All Application Entities of *dcm4che DICOM Archive 5* use the same Implementation Version Name. This Version Name is updated with each new release of the product software.

Association Initiation Policies

Activity - Send Storage Commitment Notification Over New Association

Description and Sequencing of Activity

The Storage Application Entity does not support to send the Storage Commitment Notification over the same Association over which it received the Storage Commitment Push Model (N-ACTION) request from the remote AE. It always initiates a new Association to the remote AE that sent the Storage Commitment Push Model request for sending the corresponding Storage Commitment Notification (N-EVENT-REPORT).

If any type of error occurs during transmission (either a communication failure or indicated by a Status Code returned by the remote AE), the Storage Application Entity will attempt to resend an N-EVENT-REPORT. The maximum number of attempts to resend an N-EVENT-REPORT is configurable, along with the amount of time to wait between attempts to resend.

Fig. 4.8: Remote AE Requests Storage Commitment

Proposed Presentation Contexts

The Storage Application Entity will propose Presentation Contexts for the Storage Commitment Push Model SOP Class. The list of proposed Transfer Syntaxes for the Storage Commitment Push Model SOP Class is configurable. By default, only the Transfer Syntax Implicit VR Little Endian will be proposed.

Table 4.6: Proposed Presentation Contexts of Storage Application Entity by default configuration

Presentation Context Table							
Abstract Syntax			Transfer Syntax			Role	Ext. Neg.
Name	UID		Name	UID			
Storage Commitment Push Model	1.2.840.10008.1.20.1		Implicit VR Little Endian	1.2.840.10008.1.2.1		SCP	None

SOP Specific Conformance for Storage Commitment Push Model SOP Class

The Storage Application Entity only accepts Storage Commitment Push Model N-ACTION Requests from Remote AEs which AE Title is configured.

The Storage Application Entity takes the list of Composite SOP Instance UIDs specified in a Storage Commitment Push Model N-ACTION Request and checks if they are present in the database. Each present Composite SOP Instance will be fetched from the storage recalculating its checksum. The Storage Application Entity will only commit to responsibility for SOP Instances which recalculated checksum matches the value from the database, which was calculated on receive of the SOP Instance.

Once the Storage Application Entity has checked for the existence and matching of the checksum of the specified Composite SOP Instances, it will then attempt to send the Notification request (N-EVENT-REPORT-RQ) over a new Association. The Storage Application Entity will request a new Association with the peer AE that made the original N-ACTION Request.

The Storage Application Entity will not cache Storage Commitment Push Model N-ACTION Requests that specify Composite SOP Instances that have not yet been transferred to *dcm4che DICOM Archive 5*. If a remote AE sends a Storage Commitment Push Model N-ACTION Request before the specified Composite SOP Instances, the Storage Application Entity will not commit to responsibility for such SOP Instances.

The amount of time to take responsibility for the safekeeping of an objects is independent of the successful commitment to store the object, but depends on other configuration options, particularly on the configured *Study Retention Policy*. It is even possible to accept storage commitment requests when acting as a cache archive, which deletes least recent accessed studies according configured thresholds of the storage backend.

The Storage Application Entity does not support the optional Storage Media File-Set ID & UID attributes in the N-ACTION and in the N-EVENT-REPORT.

The Storage Application Entity supports the optional Retrieve AE Title (0008,0054) Attribute in the N-EVENT-REPORT.

The Storage Application Entity supports Storage Commitment Push Model requests for SOP Instances of any Storage SOP Class.

Association Acceptance Policy

Activity - Receive Images and Storage Commitment Requests

Description and Sequencing of Activities

The Storage Application Entity can be configured to only accept Associations with certain hosts (using TCP/IP address) and/or Application Entity Titles.

Accepted Presentation Contexts

The Storage Application Entity will accept Presentation Contexts for all SOP Classes listed in Table 4.2.1.1-1 by default. The list of accepted Transfer Syntaxes for each accepted Abstract Syntax - as the list of accepted Abstract Syntaxes itself - is configurable.

Table 4.7: Accepted Presentation Contexts of Storage Application Entity by default configuration

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Storage Commitment Push Model	1.2.840.10008.1.20.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Image Storage SOP Classes in <i>SOP Classes for Storage Application Entity (SCP)</i>		see <i>Transfer Syntaxes for Image Storage SOP Classes</i>		SCP	None
Video Storage SOP Classes in <i>SOP Classes for Storage Application Entity (SCP)</i>		see <i>Transfer Syntax for Video Storage SOP Classes</i>		SCP	None
SR Storage SOP Classes in <i>SOP Classes for Storage Application Entity (SCP)</i>		see <i>Transfer Syntaxes for SR Storage SOP Classes</i>		SCP	None
Other Storage SOP Classes in <i>SOP Classes for Storage Application Entity (SCP)</i>		see <i>Transfer Syntaxes for Other Storage SOP Classes</i>		SCP	None

Table 4.8: Transfer Syntaxes for Image Storage SOP Classes

Transfer Syntax Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50
JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51
JPEG Lossless, Non-Hierarchical (Process 14)	1.2.840.10008.1.2.4.54
JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 14 [Selection Value 1])	1.2.840.10008.1.2.4.70
JPEG-LS Lossless	1.2.840.10008.1.2.4.80
JPEG-LS Lossy (Near-Lossless)	1.2.840.10008.1.2.4.81
JPEG 2000 (Lossless Only)	1.2.840.10008.1.2.4.90
JPEG 2000	1.2.840.10008.1.2.4.91
RLE Lossless	1.2.840.10008.1.2.5

Table 4.9: Transfer Syntax for Video Storage SOP Classes

Transfer Syntax Name	UID
JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50
MPEG2 Main Profile @ Main Level	1.2.840.10008.1.2.4.100
MPEG2 Main Profile @ High Level	1.2.840.10008.1.2.4.101
MPEG-4 AVC/H.264 High Profile / Level 4.1	1.2.840.10008.1.2.4.102
MPEG-4 AVC/H.264 BD-compatible High Profile / Level 4.1	1.2.840.10008.1.2.4.103
MPEG-4 AVC/H.264 High Profile / Level 4.2 For 2D Video	1.2.840.10008.1.2.4.104
MPEG-4 AVC/H.264 High Profile / Level 4.2 For 3D Video	1.2.840.10008.1.2.4.105
MPEG-4 AVC/H.264 Stereo High Profile / Level 4.2	1.2.840.10008.1.2.4.106

Table 4.10: Transfer Syntaxes for SR Storage SOP Classes

Transfer Syntax Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
Deflated Explicit VR Little Endian	1.2.840.10008.1.2.1.99

Table 4.11: Transfer Syntaxes for Other Storage SOP Classes

Transfer Syntax Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1

If multiple Transfer Syntaxes are proposed per Presentation Context the order of Transfer Syntax preference is defined by the order in the proposed Presentation Context.

SOP Specific Conformance for Verification SOP Class

The Storage Application Entity provides standard conformance to the Verification SOP Class as an SCP.

SOP Specific Conformance for Storage SOP Class

The associated Activity with the Storage service is the storage of medical image data received over the network on a designated hard disk. The Storage Application Entity will return a failure status if it is unable to store the images on to the hard disk.

The Storage Application Entity does not have any dependencies on the number of Associations used to send images to it. Images belonging to more than one Study or Series can be sent over a single or multiple Associations. Images belonging to a single Study or Series can also be sent over different Associations. There is no limit on either the number of SOP Instances or the maximum amount of total SOP Instance data that can be transferred over a single Association.

The Storage Application Entity retains the original DICOM data in DICOM Part 10 compliant file format. The Storage Application Entity is Level 2 (Full) conformant as a Storage SCP. In addition, all Private and SOP Class Extended Elements are maintained in the DICOM format files.

In addition to saving all Elements in files, a subset of the Elements are stored in the archive database to support query and retrieval requests and also allow updating of Patient, Study, and Series information by user input, or demographic and Study related messages.

The behavior for handling duplicate SOP Instances is configurable by selecting one of 5 available Overwrite Policies:

NEVER: Never overwrite stored Instances on receive of a different Instance with equal SOP Instance UID. Ignore the received instance silently - returning a success status.

ALWAYS: Always overwrite stored Instances by subsequently received Instances with equal SOP Instance UID.

SAME_SOURCE (default): Only overwrite stored Instances by subsequently received Instances with equal SOP Instance UID, if the new Instance was sent from the same Source Application Entity or HTTP client as the previous received Instance. Otherwise ignore the received instance silently - returning a success status.

SAME_SERIES: Only overwrite stored Instances by subsequently received Instances with equal SOP Instance UID, if the new Instance belongs to the same Series as the previous received Instance (= if beside the SOP Instance UID, also Study and Series Instance UID are equal). Otherwise store the received instance additionally to the previous received Instance.

SAME_SOURCE_AND_SERIES: Only overwrite stored Instances by subsequently received Instances with equal SOP Instance UID, if the new Instance was sent from the same Source Application Entity or HTTP client as the previous received Instance, and if the new Instance belongs to the same Series as the previous received Instance (= if beside the SOP Instance UID, also Study and Series Instance UID are equal). Otherwise ignore the received instance silently or store the received instance additionally to the previous received Instance, dependent if it belongs to the same Series or not.

The behavior for updating Patient, Study and Series Attributes in the archive database, if there values differs between received Instances of the same Patient, Study and Series is configurable for each Entity Level by selecting one of 4 Attribute Update Policies:

NONE: Do not update the Attributes of the Entity in the database from its initial values extracted from the first received Instance of the Entity.

SUPPLEMENT (default for Patient Attributes): Supplement the Attributes of the Entity in the database with Attributes of subsequently received Instances which were not present or had no value in previous received Instances of the same Entity.

MERGE (default for Study and Series Attributes): Overwrite the Attributes of the Entity in the database with non-empty Attributes from subsequently received Instances of the same Entity.

OVERWRITE: Overwrite the Attributes of the Entity in the database with all Attributes from subsequently received Instances of the same Entity.

The Storage Application Entity can be configured to compress uncompressed received Image SOP Instances, dependent on the Source Application Entity or HTTP client and dependent of DICOM Attribute values of received SOP Instances, using one of following Transfer Syntaxes:

Table 4.12: Supported Transfer Syntaxes for Image Compression by Storage Application Entity

Transfer Syntax Name	UID
JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50
JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51
JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 14 [Selection Value 1])	1.2.840.10008.1.2.4.70
JPEG-LS Lossless	1.2.840.10008.1.2.4.80
JPEG 2000 (Lossless Only)	1.2.840.10008.1.2.4.90
JPEG 2000	1.2.840.10008.1.2.4.91

By default, no image compression is configured.

Table 4.13: Storage Application C-STORE Response Status Return Reasons

Service Status	Further Meaning	Error Code	Error Comment	Behaviour
Success	Success	0000		The Composite SOP Instance was successfully received, verified, and stored in the system database.
Refused	Out of Resources	A700		Indicates that there was not enough disk space to store the image. Error message is output to the Service Log. The SOP Instance will not be saved.
	Duplicate Rejection Note	A770	Rejection Note [uid={SOP Instance UID}] already received.	Indicates that rejection note was already received.
	Subsequent Occurrence of Rejected Object	A771	Subsequent occurrence of rejected Object [uid={SOP Instance UID}], rejection={Rejection Note Code}	Indicates that there was a subsequent occurrence of a rejected object during store operation.
	Rejection Failed - No Such Instance	A772	Failed to reject Instance[uid={SOP Instance UID}] - no such Instance.	Indicates that one or more objects were not previously stored in archive to be rejected.
	Rejection Failed - Class Instance Conflict	A773	Failed to reject Instance[uid={SOP Instance UID}] - class-instance conflict.	Indicates that there was a conflict in SOP Class UIDs of object (between that of the previously received object and the one referenced in the current rejection note) to be rejected.
	Rejection Failed - Already Rejected	A774	Failed to reject Instance[uid={SOP Instance UID}] - already rejected.	Indicates that the rejected object was already rejected.
	Rejection for Retention Policy Expired not Authorized	A775	Rejection for Retention Policy Expired not authorized.	Indicates that rejection of objects with type as Retention Expired are not allowed by LDAP configuration.
	Retention Period of Study not yet Expired	A776	Retention Period of Study not yet expired.	Indicates that rejection of objects is not allowed as Study Retention Period has not expired yet.
	Patient ID Missing in Object	A777	Storage denied as Patient ID missing in object.	Indicates that the Patient ID is missing in the object.
	Conflicting Patient ID in Object	A778	Patient ID in incoming object does not match with that of patient associated with study.	Indicates that the Patient ID in incoming object does not match with that of patient associated with study.
	Conflicting Patient Attributes in Object	A779	Patient differs from previous received object in attribute {Keyword <Tag>}.	Indicates that the Patient in incoming object has differing attributes with that of same patient associated with previous received object.
	Different Study Instance UID	C409	Study Instance UID differs from Accepted Study Instance UID.	Indicates that Accepted Study Instance UID varies from the Study Instance UID received in the request body.
30	Not Authorized	0124	Storage denied.	Indicates that the storage is denied.

Note : If a failure condition does occur when handling an Association then all images previously received successfully over the Association are maintained in the DCM4CHEE archive database. No previously successfully received images are discarded. Even if an image is successfully received but an error occurs transmitting the C-STORE Response then this final image is maintained rather than discarded. If the loss of an Association is detected then the Association is closed. In the above table, some references to rejection error codes in Refused Service Status is due to the fact that, when objects are rejected the rejection notes are stored in the database for further processing.

The Behavior of Storage Application Entity during communication failure is summarized in the following table:

Table 4.14: Storage Application Entity Storage Service Communication Failure Reasons

Exception	Reason
Timeout expiry for an expected DICOM Message Request (DIMSE level timeout). I.e. The STORAGE-SCP AE is waiting for the next C-STORE Request on an open Association but the timer expires.	The Association is aborted by issuing a DICOM A-ABORT. Error message is output to the Service Log. If some Composite SOP Instances have already been successfully received then they are maintained in the database. They are not automatically discarded because of a later failure.
Timeout expiry for an expected DICOM PDU or TCP/IP packet (Low-level timeout). I.e. The STORAGE-SCP AE is waiting for the next C-STORE Data Set PDU but the timer expires.	The Association is aborted by issuing a DICOM A-ABORT. Error message is output to the Service Log. If a C-STORE Data Set has not been fully received then the data already received is discarded. If some Composite SOP Instances have already been successfully received over the Association then they are maintained in the database.
Association aborted by the SCU or the network layers indicate communication loss (i.e., low-level TCP/IP socket closure)	Error message is output to the Service Log. If some Composite SOP Instances have already been successfully received then they are maintained in the database. They are not automatically discarded because of a later failure.

SOP Specific Conformance for Storage Commitment SOP Class

The associated Activity with the Storage Commitment Push Model service is the communication by the Storage Application Entity to peer AEs that it has committed to permanently store Composite SOP Instances that have been sent to it. It thus allows peer AEs to determine whether the DCM4CHEE archive has taken responsibility for the archiving of specific SOP Instances so that they can be flushed from the peer AE system. The Storage Application Entity takes the list of Composite SOP Instance UIDs specified in a Storage Commitment Push Model N-ACTION Request and checks if they are present in the DCM4CHEE archive database. As long as the Composite SOP Instance UIDs are present in the database, the Storage Application Entity will consider those Composite SOP Instance UIDs to be successfully archived. The Storage Application Entity does not require the Composite SOP Instances to actually be successfully written to archive media in order to commit to responsibility for maintaining these SOP Instances. Once the Storage Application Entity has checked for the existence of the specified Composite SOP Instances, it will then attempt to send the Notification request (N-EVENT-REPORT-RQ). The default behavior is to attempt to send this Notification over the same Association that was used by the peer AE to send the original N-ACTION Request. If the Association has already been released or Message transfer fails for some reason then the Storage Application Entity will attempt to send the N-EVENT-REPORT-RQ over a new Association. The Storage Application Entity will request a new Association with the peer AE that made the original N-ACTION Request. The Storage Application Entity can be configured to always open a new Association in order to send the Notification request. The Storage Application Entity will not cache Storage Commitment Push Model N-ACTION Requests that specify Composite SOP Instances that have not yet been transferred to the DCM4CHEE archive. If a peer AE sends a Storage Commitment Push Model N-ACTION Request before the specified Composite SOP Instances are later sent over the same Association, the Storage Application Entity will not commit to responsibility for such SOP Instances. The Storage Application Entity does not

support the optional Storage Media File-Set ID & UID attributes in the N-ACTION. The DCM4CHEE archive never automatically deletes Composite SOP Instances from the archive. The absolute persistence of SOP Instances and the maximum archiving capacity for such SOP Instances is dependent on the archiving media and capacity used by the DCM4CHEE archive and is dependent on the actual specifications of the purchased system. It is necessary to check the actual system specifications to determine these characteristics. The Storage Application Entity will support Storage Commitment Push Model requests for SOP Instances of any of the Storage SOP Classes that are also supported by the Storage Application Entity as given in 4.2.1.1-1.: SOP Classes for Storage Application Entity (SCP)

The Storage Application Entity will return the following Status Code values in N-ACTION Responses:

Table 4.15: Storage Application Entity Storage Commitment Push Model N-ACTION Response Status Return Behavior

Service Status	Further Meaning	Error Code	Behaviour
Success	Success	0000	The SCP has successfully received the Storage Commitment Push Model N-ACTION Request and can process the commitment request for the indicated SOP Instances.
Error	Processing Failure	0110	Indicates that the Storage Commitment Push Model N-ACTION Request cannot be parsed or fully processed due to a database or system failure.

The Storage Application Entity will exhibit the following Behavior according to the Status Code value returned in an N-EVENT-REPORT Response from a destination Storage Commitment Push Model SCU:

Table 4.16: Storage Application Entity N-EVENT-REPORT Response Status Handling Behavior

Service Status	Further Meaning	Error Code	Behaviour
Success	Success	0000	The SCU has successfully received the Storage Commitment Push Model N-EVENT-REPORT Request. Success indication message is output to the Service Logs. No message is posted to the User Interface.
Warning	Attribute List Error	0107	Transmission of Storage Commitment Push Model N-EVENT-REPORT Request is considered successful. Warning indication message is output to the Service Logs. No message is posted to the User Interface.
.	.	Any other status code.	This is treated as a permanent Failure. Error indication message is output to the Service Logs. No message is posted to the User Interface.

All Status Codes indicating an error or refusal are treated as a permanent failure. The Storage Application Entity can be configured to automatically reattempt the sending of Storage Commitment Push Model N-EVENT-REPORT Requests if an error Status Code is returned or a communication failure occurs. The maximum number of times to attempt sending as well as the time to wait between attempts is configurable.

4.2.2 Query/Retrieve Application Entity Specification

SOP Classes

The Query/Retrieve Application Entity provides Standard Conformance to the following SOP Classes:

Table 4.17: SOP Classes for Query/Retrieve Application Entity

SOP Class Name	SOP Class UID	SCU	SCP
Verification SOP Class	1.2.840.10008.1.1	Yes	Yes
Patient Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.1.1	No	Yes
Patient Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.1.2	No	Yes
Patient Root Query/Retrieve Information Model - GET	1.2.840.10008.5.1.4.1.2.1.3	No	Yes
Study Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.2.1	Yes	Yes
Study Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2	Yes	Yes
Study Root Query/Retrieve Information Model - GET	1.2.840.10008.5.1.4.1.2.2.3	No	Yes
Image Storage SOP Classes:			
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	Yes	No
Digital X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.1	Yes	No
Digital X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	Yes	No
Digital Mammography X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.2	Yes	No
Digital Mammography X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	Yes	No
Digital Intra-Oral X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.3	Yes	No
Digital Intra-Oral X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	Yes	No
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Yes	No
Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.1	Yes	No
Legacy Converted Enhanced CT Image Storage	1.2.840.10008.5.1.4.1.1.2.2	Yes	No
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	Yes	No
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Yes	No
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Yes	No
Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.1	Yes	No
Enhanced MR Color Image Storage	1.2.840.10008.5.1.4.1.1.4.3	Yes	No
Legacy Converted Enhanced MR Image Storage	1.2.840.10008.5.1.4.1.1.4.4	Yes	No
Nuclear Medicine Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	Yes	No
Ultrasound Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.6	Yes	No
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Yes	No
Enhanced US Volume Storage	1.2.840.10008.5.1.4.1.1.6.2	Yes	No
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Yes	No
Multi-frame Grayscale Byte Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.2	Yes	No
Multi-frame Grayscale Word Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.3	Yes	No
Multi-frame True Color Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.4	Yes	No
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Yes	No
Enhanced XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1.1	Yes	No
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Yes	No
Enhanced XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2.1	Yes	No
X-Ray Angiographic Bi-Plane Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.12.3	Yes	No
X-Ray 3D Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.13.1.1	Yes	No
X-Ray 3D Craniofacial Image Storage	1.2.840.10008.5.1.4.1.1.13.1.2	Yes	No
Breast Tomosynthesis Image Storage	1.2.840.10008.5.1.4.1.1.13.1.3	Yes	No
Breast Projection X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.13.1.4	Yes	No
Breast Projection X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.13.1.5	Yes	No
Intravascular Optical Coherence Tomography Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.14.1	Yes	No

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Table 4.17 – continued from previous page

SOP Class Name	SOP Class UID	SCU	SCP
Intravascular Optical Coherence Tomography Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.14.2	Yes	No
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	Yes	No
VL Image Storage - Trial (Retired)	1.2.840.10008.5.1.4.1.1.77.1	Yes	No
VL Multi-frame Image Storage - Trial (Retired)	1.2.840.10008.5.1.4.1.1.77.2	Yes	No
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	Yes	No
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	Yes	No
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Yes	No
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	No
Ophthalmic Photography 8 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.1	Yes	No
Ophthalmic Photography 16 Bit Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.2	Yes	No
Ophthalmic Tomography Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.4	Yes	No
Wide Field Ophthalmic Photography Stereographic Projection Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.5	Yes	No
Wide Field Ophthalmic Photography 3D Coordinates Image Storage	1.2.840.10008.5.1.4.1.1.77.1.5.6	Yes	No
VL Whole Slide Microscopy Image Storage	1.2.840.10008.5.1.4.1.1.77.1.6	Yes	No
Ophthalmic Thickness Map Storage	1.2.840.10008.5.1.4.1.1.81.1	Yes	No
Corneal Topography Map Storage	1.2.840.10008.5.1.4.1.1.82.1	Yes	No
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	Yes	No
Legacy Converted Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.128.1	Yes	No
Enhanced PET Image Storage	1.2.840.10008.5.1.4.1.1.130	Yes	No
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	Yes	No
Private Fuji CR Image Storage	1.2.392.200036.9125.1.1.2	Yes	No
Private GE Dicom CT Image Info Object	1.2.840.113619.4.3	Yes	No
Private GE Dicom Display Image Info Object	1.2.840.113619.4.4	Yes	No
Private GE Dicom MR Image Info Object	1.2.840.113619.4.2	Yes	No
Private Philips CT Synthetic Image Storage	1.3.46.670589.5.0.9	Yes	No
Private Philips CX Image Storage	1.3.46.670589.2.4.1.1	Yes	No
Private Philips CX Synthetic Image Storage	1.3.46.670589.5.0.12	Yes	No
Private Philips MR Color Image Storage	1.3.46.670589.11.0.0.12.3	Yes	No
Private Philips MR Synthetic Image Storage	1.3.46.670589.5.0.10	Yes	No
Private Philips Perfusion Image Storage	1.3.46.670589.5.0.14	Yes	No
Private PixelMed Floating Point Image Storage	1.3.6.1.4.1.5962.301.9	Yes	No
Private PixelMed Legacy Converted Enhanced CT Image Storage	1.3.6.1.4.1.5962.301.1	Yes	No
Private PixelMed Legacy Converted Enhanced MR Image Storage	1.3.6.1.4.1.5962.301.2	Yes	No
Private PixelMed Legacy Converted Enhanced PET Image Storage	1.3.6.1.4.1.5962.301.3	Yes	No
Private PMOD Multi-frame Image Storage	2.16.840.1.114033.5.1.4.1.1.130	Yes	No
Private Toshiba US Image Storage	1.2.392.200036.9116.7.8.1.1.1	Yes	No
Video Storage SOP Classes:			
Video Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1.1	Yes	No
Video Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2.1	Yes	No
Video Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4.1	Yes	No
Structured Report Storage SOP Classes:			
Spectacle Prescription Report Storage	1.2.840.10008.5.1.4.1.1.78.6	Yes	No
Macular Grid Thickness and Volume Report Storage	1.2.840.10008.5.1.4.1.1.79.1	Yes	No

Continued on next page

Table 4.17 – continued from previous page

SOP Class Name	SOP Class UID	SCU	SCP
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	Yes	No
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	Yes	No
Comprehensive SR Storage	1.2.840.10008.5.1.4.1.1.88.33	Yes	No
Comprehensive 3D SR Storage	1.2.840.10008.5.1.4.1.1.88.34	Yes	No
Extensible SR Storage	1.2.840.10008.5.1.4.1.1.88.35	Yes	No
Procedure Log Storage	1.2.840.10008.5.1.4.1.1.88.40	Yes	No
Mammography CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.50	Yes	No
Key Object Selection Document Storage	1.2.840.10008.5.1.4.1.1.88.59	Yes	No
Chest CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.65	Yes	No
X-Ray Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.67	Yes	No
Radiopharmaceutical Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.68	Yes	No
Colon CAD SR Storage	1.2.840.10008.5.1.4.1.1.88.69	Yes	No
Implantation Plan SR Storage	1.2.840.10008.5.1.4.1.1.88.70	Yes	No
Acquisition Context SR Storage	1.2.840.10008.5.1.4.1.1.88.71	Yes	No
Simplified Adult Echo SR Storage	1.2.840.10008.5.1.4.1.1.88.72	Yes	No
Patient Radiation Dose SR Storage	1.2.840.10008.5.1.4.1.1.88.73	Yes	No
Planned Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.1.1.88.74	Yes	No
Performed Imaging Agent Administration SR Storage	1.2.840.10008.5.1.4.1.1.88.75	Yes	No
Other Storage SOP Classes:			
Stored Print Storage SOP Class (Retired)	1.2.840.10008.5.1.1.27	Yes	No
Hardcopy Grayscale Image Storage SOP Class (Retired)	1.2.840.10008.5.1.1.29	Yes	No
Hardcopy Color Image Storage SOP Class (Retired)	1.2.840.10008.5.1.1.30	Yes	No
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	Yes	No
Multi-frame Single Bit Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7.1	Yes	No
Standalone Overlay Storage Retired	1.2.840.10008.5.1.4.1.1.8	Yes	No
Standalone Curve Storage Retired	1.2.840.10008.5.1.4.1.1.9	Yes	No
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	Yes	No
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	Yes	No
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	Yes	No
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.1	Yes	No
Cardiac Electrophysiology Waveform Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Yes	No
Basic Voice Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.1	Yes	No
General Audio Waveform Storage	1.2.840.10008.5.1.4.1.1.9.4.2	Yes	No
Arterial Pulse Waveform Storage	1.2.840.10008.5.1.4.1.1.9.5.1	Yes	No
Respiratory Waveform Storage	1.2.840.10008.5.1.4.1.1.9.6.1	Yes	No
Standalone Modality LUT Storage Retired	1.2.840.10008.5.1.4.1.1.10	Yes	No
Standalone VOI LUT Storage Retired	1.2.840.10008.5.1.4.1.1.11	Yes	No
Grayscale Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.1	Yes	No
Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.2	Yes	No
Pseudo-Color Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.3	Yes	No
Blending Softcopy Presentation State Storage SOP Class	1.2.840.10008.5.1.4.1.1.11.4	Yes	No
XA/XRF Grayscale Softcopy Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.5	Yes	No
Grayscale Planar MPR Volumetric Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.6	Yes	No
Compositing Planar MPR Volumetric Presentation State Storage	1.2.840.10008.5.1.4.1.1.11.7	Yes	No
Parametric Map Storage	1.2.840.10008.5.1.4.1.1.30	Yes	No
Raw Data Storage	1.2.840.10008.5.1.4.1.1.66	Yes	No

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Table 4.17 – continued from previous page

SOP Class Name	SOP Class UID	SCU	SCP
Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.1	Yes	No
Spatial Fiducials Storage	1.2.840.10008.5.1.4.1.1.66.2	Yes	No
Deformable Spatial Registration Storage	1.2.840.10008.5.1.4.1.1.66.3	Yes	No
Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.4	Yes	No
Surface Segmentation Storage	1.2.840.10008.5.1.4.1.1.66.5	Yes	No
Tractography Results Storage	1.2.840.10008.5.1.4.1.1.66.6	Yes	No
Real World Value Mapping Storage	1.2.840.10008.5.1.4.1.1.67	Yes	No
Surface Scan Mesh Storage	1.2.840.10008.5.1.4.1.1.68.1	Yes	No
Surface Scan Point Cloud Storage	1.2.840.10008.5.1.4.1.1.68.2	Yes	No
Stereometric Relationship Storage	1.2.840.10008.5.1.4.1.1.77.1.5.3	Yes	No
Lensometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.1	Yes	No
Autorefractometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.2	Yes	No
Keratometry Measurements Storage	1.2.840.10008.5.1.4.1.1.78.3	Yes	No
Subjective Refraction Measurements Storage	1.2.840.10008.5.1.4.1.1.78.4	Yes	No
Visual Acuity Measurements Storage	1.2.840.10008.5.1.4.1.1.78.5	Yes	No
Ophthalmic Axial Measurements Storage	1.2.840.10008.5.1.4.1.1.78.7	Yes	No
Intraocular Lens Calculations Storage	1.2.840.10008.5.1.4.1.1.78.8	Yes	No
Ophthalmic Visual Field Static Perimetry Measurements Storage	1.2.840.10008.5.1.4.1.1.80.1	Yes	No
BasicStructuredDisplayStorage	1.2.840.10008.5.1.4.1.1.131	Yes	No
Encapsulated PDF Storage	1.2.840.10008.5.1.4.1.1.104.1	Yes	No
Encapsulated CDA Storage	1.2.840.10008.5.1.4.1.1.104.2	Yes	No
Encapsulated STL Storage	1.2.840.10008.5.1.4.1.1.104.3	Yes	No
Standalone PET Curve Storage (Retired)	1.2.840.10008.5.1.4.1.1.129	Yes	No
Text SR Storage Trial (Retired)	1.2.840.10008.5.1.4.1.1.88.1	Yes	No
Audio SR Storage Trial (Retired)	1.2.840.10008.5.1.4.1.1.88.2	Yes	No
Detail SR Storage Trial (Retired)	1.2.840.10008.5.1.4.1.1.88.3	Yes	No
Comprehensive SR Storage Trial (Retired)	1.2.840.10008.5.1.4.1.1.88.4	Yes	No
Content Assessment Results Storage	1.2.840.10008.5.1.4.1.1.90.1	Yes	No
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	Yes	No
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	Yes	No
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	Yes	No
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	Yes	No
RT Brachy Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.6	Yes	No
RT Treatment Summary Record Storage	1.2.840.10008.5.1.4.1.1.481.7	Yes	No
RT Ion Plan Storage	1.2.840.10008.5.1.4.1.1.481.8	Yes	No
RT Ion Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.9	Yes	No
RT Physician Intent Storage	1.2.840.10008.5.1.4.1.1.481.10	Yes	No
RT Segment Annotation Storage	1.2.840.10008.5.1.4.1.1.481.11	Yes	No
RT Radiation Set Storage	1.2.840.10008.5.1.4.1.1.481.12	Yes	No
RT C-Arm Photon-Electron Radiation Storage	1.2.840.10008.5.1.4.1.1.481.13	Yes	No
RT Beams Delivery Instruction Storage	1.2.840.10008.5.1.4.34.7	Yes	No
RT Brachy Application Setup Delivery Instruction Storage	1.2.840.10008.5.1.4.34.10	Yes	No
Private Agfa Arrival Transaction	1.2.124.113532.3500.8.1	Yes	No
Private Agfa Basic Attribute Presentation State	1.2.124.113532.3500.7	Yes	No
Private Agfa Dictation Transaction	1.2.124.113532.3500.8.2	Yes	No
Private Agfa Report Approval Transaction	1.2.124.113532.3500.8.4	Yes	No
Private Agfa Report Transcription Transaction	1.2.124.113532.3500.8.3	Yes	No
Private ERAD Practice Builder Report Dictation Storage	1.2.826.0.1.3680043.293.1.0.2	Yes	No

Continued on next page

Table 4.17 – continued from previous page

SOP Class Name	SOP Class UID	SCU	SCP
Private ERAD Practice Builder Report Text Storage	1.2.826.0.1.3680043.293.1.0.1	Yes	No
Private GE 3D Model Storage	1.2.840.113619.4.26	Yes	No
Private GE Collage Storage	1.2.528.1.1001.5.1.1.1	Yes	No
Private GE eNTEGRA Protocol or NM Genie Storage	1.2.840.113619.4.27	Yes	No
Private GE PET Raw Data Storage	1.2.840.113619.4.30	Yes	No
Private GE RT Plan Storage	1.2.840.113619.4.5.249	Yes	No
Private Philips 3D Object Storage	1.3.46.670589.5.0.2.1	Yes	No
Private Philips 3D Object Storage (Retired)	1.3.46.670589.5.0.2	Yes	No
Private Philips 3D Presentation State Storage	1.3.46.670589.2.5.1.1	Yes	No
Private Philips Composite Object Storage	1.3.46.670589.5.0.4	Yes	No
Private Philips HP Live 3D 01 Storage	1.2.840.113543.6.6.1.3.10001	Yes	No
Private Philips HP Live 3D 02 Storage	1.2.840.113543.6.6.1.3.10002	Yes	No
Private Philips Live Run Storage	1.3.46.670589.7.8.1618510092	Yes	No
Private Philips MR Cardio Analysis Storage	1.3.46.670589.5.0.11.1	Yes	No
Private Philips MR Cardio Analysis Storage (Retired)	1.3.46.670589.5.0.11	Yes	No
Private Philips MR Cardio Profile Storage	1.3.46.670589.5.0.7	Yes	No
Private Philips MR Cardio Storage	1.3.46.670589.5.0.8.1	Yes	No
Private Philips MR Cardio Storage (Retired)	1.3.46.670589.5.0.8	Yes	No
Private Philips MR Examcard Storage	1.3.46.670589.11.0.0.12.4	Yes	No
Private Philips MR Series Data Storage	1.3.46.670589.11.0.0.12.2	Yes	No
Private Philips MR Spectrum Storage	1.3.46.670589.11.0.0.12.1	Yes	No
Private Philips Perfusion Storage	1.3.46.670589.5.0.13	Yes	No
Private Philips Reconstruction Storage	1.3.46.670589.7.8.16185100130	Yes	No
Private Philips Run Storage	1.3.46.670589.7.8.16185100129	Yes	No
Private Philips Specialised XA Storage	1.3.46.670589.2.3.1.1	Yes	No
Private Philips Surface Storage	1.3.46.670589.5.0.3.1	Yes	No
Private Philips Surface Storage (Retired)	1.3.46.670589.5.0.3	Yes	No
Private Philips Volume Set Storage	1.3.46.670589.2.11.1.1	Yes	No
Private Philips Volume Storage	1.3.46.670589.5.0.1.1	Yes	No
Private Philips Volume Storage (Retired)	1.3.46.670589.5.0.1	Yes	No
Private Philips VRML Storage	1.3.46.670589.2.8.1.1	Yes	No
Private Philips X-Ray MF Storage	1.3.46.670589.7.8.1618510091	Yes	No
Private Siemens AX Frame Sets Storage	1.3.12.2.1107.5.99.3.11	Yes	No
Private Siemens CSA Non Image Storage	1.3.12.2.1107.5.9.1	Yes	No
Private Siemens CT MR Volume Storage	1.3.12.2.1107.5.99.3.10	Yes	No
Private TomTec Annotation Storage	1.2.276.0.48.5.1.4.1.1.7	Yes	No

These are the default SOP Classes supported. By altering the configuration it is possible to support additional or fewer SOP Classes.

Association Policies

General

The DICOM standard Application Context Name for DICOM 3.0 is always accepted and proposed:

Table 4.18: DICOM Application Context for Storage Application Entity

Application Context Name	1.2.840.10008.3.1.1.1
--------------------------	-----------------------

Number Of Associations

The Query/Retrieve Application Entity can support multiple simultaneous Associations requested by peer AEs. The maximum total number of simultaneous Associations accepted from peer AEs is configurable. It is unlimited by default.

The Query/Retrieve Application Entity initiates multiple simultaneous Associations to peer AEs. Particularly for each simultaneous processed MOVE Retrieve request, a new Association to the specified Move Destination is initiated.

Table 4.19: Number of Simultaneous Associations as an SCP for the Storage Application Entity

Maximum number of simultaneous Associations requested by peer AEs	No Maximum Limit (Configurable)
Maximum number of simultaneous Associations initiated by the Query/Retrieve Application Application Entity	No Maximum Limit

Asynchronous Nature

The Query/Retrieve Application Entity supports asynchronous communication (multiple outstanding transactions over a single Association). The maximum number of outstanding asynchronous transactions is configurable. It is unlimited by default.

Table 4.20: Asynchronous Nature for the Query/Retrieve Application Entity

Maximum number of outstanding asynchronous transactions	No Maximum Limit (Configurable)
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Implementation Identifying Information

The implementation information for the Query/Retrieve Application Entity is:

Table 4.21: DICOM Implementation Class and Version for the Query/Retrieve Application Entity

Implementation Class UID	1.2.40.0.13.1.3
Implementation Version Name	dcm4che-5.xx.yy

All Application Entities of *dcm4che DICOM Archive 5* use the same Implementation Version Name. This Version Name is updated with each new release of the product software.

Association Initiation Policy

Activity - Send Images Requested By an External Peer AE

Description and Sequencing of Activity

<TODO>

Proposed Presentation Contexts

The Query/Retrieve Application Entity will propose Presentation Contexts for Verification, Study Root Query/Retrieve Information Model - FIND, Study Root Query/Retrieve Information Model - MOVE and of supported Storage SOP Classes.

Table 4.22: Proposed Presentation Contexts by the Query/Retrieve Application Entity

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
Study Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
Study Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
Image Storage SOP Class in <i>SOP Classes for Query/Retrieve Application Entity</i>		s. <i>Transfer Syntaxes for Image Storage SOP Classes</i>		SCU	None
Video Storage SOP Class in <i>SOP Classes for Query/Retrieve Application Entity</i>		s. <i>Transfer Syntax for Video Storage SOP Classes</i>		SCU	None
SR Storage SOP Class in <i>SOP Classes for Query/Retrieve Application Entity</i>		s. <i>Transfer Syntaxes for SR Storage SOP Classes</i>		SCU	None
Other Storage SOP Class in <i>SOP Classes for Query/Retrieve Application Entity</i>		s. <i>Transfer Syntaxes for Other Storage SOP Classes</i>		SCU	None

Table 4.23: Transfer Syntaxes for Image Storage SOP Classes

Transfer Syntax Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50
JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51
JPEG Lossless, Non-Hierarchical (Process 14)	1.2.840.10008.1.2.4.54
JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 14 [Selection Value 1])	1.2.840.10008.1.2.4.70
JPEG-LS Lossless	1.2.840.10008.1.2.4.80
JPEG-LS Lossy (Near-Lossless)	1.2.840.10008.1.2.4.81
JPEG 2000 (Lossless Only)	1.2.840.10008.1.2.4.90
JPEG 2000	1.2.840.10008.1.2.4.91
RLE Lossless	1.2.840.10008.1.2.5

Table 4.24: Transfer Syntax for Video Storage SOP Classes

Transfer Syntax Name	UID
JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50
MPEG2 Main Profile @ Main Level	1.2.840.10008.1.2.4.100
MPEG2 Main Profile @ High Level	1.2.840.10008.1.2.4.101
MPEG-4 AVC/H.264 High Profile / Level 4.1	1.2.840.10008.1.2.4.102
MPEG-4 AVC/H.264 BD-compatible High Profile / Level 4.1	1.2.840.10008.1.2.4.103
MPEG-4 AVC/H.264 High Profile / Level 4.2 For 2D Video	1.2.840.10008.1.2.4.104
MPEG-4 AVC/H.264 High Profile / Level 4.2 For 3D Video	1.2.840.10008.1.2.4.105
MPEG-4 AVC/H.264 Stereo High Profile / Level 4.2	1.2.840.10008.1.2.4.106

Table 4.25: Transfer Syntaxes for SR Storage SOP Classes

Transfer Syntax Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1
Deflated Explicit VR Little Endian	1.2.840.10008.1.2.1.99

Table 4.26: Transfer Syntaxes for Other Storage SOP Classes

Transfer Syntax Name	UID
Implicit VR Little Endian	1.2.840.10008.1.2
Explicit VR Little Endian	1.2.840.10008.1.2.1

SOP Specific Conformance for Verification SOP Class

Standard conformance is provided to the DICOM Verification Service Class as an SCU. The Verification Service as an SCU is actually only supported as a diagnostic service tool for network communication issues.

SOP Specific Conformance for Image SOP Classes

<TODO>

Table 4.27: STORAGE-SCU AE C-STORE Response Status Handling Behavior

Service Status	Further Meaning	Error Code	Behaviour
Success	Success	0000	The SCP has successfully stored the exported SOP Instance. A message is sent to the QUERY-RETRIEVE-SCP AE indicating successful export. The QUERY-RETRIEVE-SCP AE will send the appropriate PENDING or SUCCESS Status in the C-MOVE Response. Success indication message is output to the Service Logs. No message is posted to the User Interface.
Refused	Out of Resources	A700 - A7FF	This is treated as a permanent Failure. A message is sent to the QUERY-RETRIEVE-SCP AE indicating an export failure and the Association is released. The QUERY-RETRIEVE-SCP AE will send an appropriate Status in the C-MOVE Response. Error indication message is output to the Service Logs. No message is posted to the User Interface.
Error	Data Set does not match SOP Class	A900 - A9FF	This is treated as a permanent Failure. A message is sent to the QUERY-RETRIEVE-SCP AE indicating an export failure and the Association is released. The QUERY-RETRIEVE-SCP AE will send an appropriate Status in the C-MOVE Response. Error indication message is output to the Service Logs. No message is posted to the User Interface.
Error	Cannot Understand	C000 - CFFF	This is treated as a permanent Failure. A message is sent to the QUERY-RETRIEVE-SCP AE indicating an export failure and the Association is released. The QUERY-RETRIEVE-SCP AE will send an appropriate Status in the C-MOVE Response. Error indication message is output to the Service Logs. No message is posted to the User Interface.
Warning	Coercion of Data Elements	B000	Image transmission is considered successful. A message is sent to the QUERY-RETRIEVE-SCP AE indicating successful export. The QUERY-RETRIEVE-SCP AE will send the appropriate PENDING or SUCCESS Status in the C-MOVE Response. Warning indication message is output to the Service Logs. No message is posted to the User Interface.
Warning	Data Set does not match SOP Class	B007	Image transmission is considered successful. A message is sent to the QUERY-RETRIEVE-SCP AE indicating successful export. The QUERY-RETRIEVE-SCP AE will send the appropriate PENDING or SUCCESS Status in the C-MOVE Response. Warning indication message is output to the Service Logs. No message is posted to the User Interface.
Warning	Elements Discarded	B006	Image transmission is considered successful. A message is sent to the QUERY-RETRIEVE-SCP AE indicating successful export. The QUERY-RETRIEVE-SCP AE will send the appropriate PENDING or SUCCESS Status in the C-MOVE Response. Warning indication message is output to the Service Logs. No message is posted to the User Interface.
Warning	Attribute List Error	0107	Image transmission is considered successful. A message is sent to the QUERY-RETRIEVE-SCP AE indicating successful export. The QUERY-RETRIEVE-SCP AE will send the appropriate PENDING or SUCCESS Status in the C-MOVE Response. Warning indication message is output to the Service Logs. No message is posted to the User Interface.
Warning	Attribute Value Out of Range	0116	Image transmission is considered successful. A message is sent to the QUERY-RETRIEVE-SCP AE indicating successful export. The QUERY-RETRIEVE-SCP AE will send the appropriate PENDING or SUCCESS Status in the C-MOVE Response. Warning indication message is output to the Service Logs. No message is posted to the User Interface.
4.2. AE Specifications			
			Warning indication message is output to the Service Logs. No message is posted to the User Interface. ⁴¹
		Any	This is treated as a permanent Failure. A message is sent to the

All Status Codes indicating an error or refusal are treated as a permanent failure. The STORAGE-SCU AE never automatically resends images when an error Status Code is returned in a C-STORE Response. For specific behavior regarding Status Code values returned in C-MOVE Responses, refer to the Services Supported as an SCP by the DCM4CHEE SCP AE.

Table 4.28: STORAGE-SCU AE Communication Failure Behavior

Exception	Behaviour
Timeout expiry for an expected DICOM Message Response (DIMSE level timeout).	The Association is aborted using a DICOM A-ABORT and a message is sent to the QUERY-RETRIEVE-SCP AE indicating an export failure. The QUERY-RETRIEVE-SCP AE will send an appropriate Status in the C-MOVE Response. Error indication message is output to the Service Logs. No message is posted to the User Interface.
Timeout expiry for an expected DICOM PDU or TCP/IP packet (Low-level timeout).	The Association is aborted using a DICOM A-ABORT and a message is sent to the QUERY-RETRIEVE-SCP AE indicating an export failure. The QUERY-RETRIEVE-SCP AE will send an appropriate Status in the C-MOVE Response. Error indication message is output to the Service Logs. No message is posted to the User Interface.
Association A-ABORTed by the SCP or the network layers indicate communication loss (i.e., low-level TCP/IP socket closure)	A message is sent to the QUERY-RETRIEVE-SCP AE indicating an export failure. The QUERY-RETRIEVE-SCP AE will send an appropriate Status in the C-MOVE Response. Error indication message is output to the Service Logs. No message is posted to the User Interface.

Association Acceptance Policy

Activity - Handling Query and Retrieval Requests

Description and Sequencing of Activity

<TODO>

Accepted Presentation Contexts

The Query/Retrieve Application Entity will accept Presentation Contexts for all SOP Classes listed in Table 4.2.1.1-1 by default. The list of accepted Transfer Syntaxes for each accepted Abstract Syntax - as the list of accepted Abstract Syntaxes itself - is configurable.

Table 4.29: Accepted Presentation Contexts of Query/Retrieve Application Entity by default configuration

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Patient Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	<ul style="list-style-type: none"> • Relational • Date Range • Fuzzy • Timezone
Patient Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	<ul style="list-style-type: none"> • Relational
Patient Root Query/Retrieve Information Model - GET	1.2.840.10008.5.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	<ul style="list-style-type: none"> • Relational
Study Root Query/Retrieve Information Model - FIND	1.2.840.10008.5.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	<ul style="list-style-type: none"> • Relational • Date Range • Fuzzy • Timezone
Study Root Query/Retrieve Information Model - MOVE	1.2.840.10008.5.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	<ul style="list-style-type: none"> • Relational
Study Root Query/Retrieve Information Model - GET	1.2.840.10008.5.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	<ul style="list-style-type: none"> • Relational
Image Storage SOP Class listed in 4.2 AE Specifications		s. Transfer Syntaxes for Image Storage SOP Classes		SCU	None
Any Video Storage SOP Class		s. Transfer Syntax for Video		SCU	None

SOP Specific Conformance for Query SOP Classes

The Query/Retrieve SCP AE supports hierarchical queries and relational queries. There are no attributes always returned by default. Only those attributes requested in the query identifier are returned. Query responses always return values from the DCM4CHEE archive database. Exported SOP Instances are always updated with the latest values in the database prior to export. Thus, a change in Patient demographic information will be contained in both the C-FIND Responses and any Composite SOP Instances exported to a C-MOVE Destination AE. Patient Root Information Model All required search keys on each of the four levels (Patient, Study, Series, and Image) are supported. However, the Patient ID (0010,0020) key must have at least a partial value if the Patient's Name (0010,0010) is not present in a Patient Level query. Study Root Information Model All the required search keys on each of the three levels (Study, Series, and Image) are supported. If no partial values are specified for Study attributes then either the Patient ID (0010,0020) key or the Patient's Name (0010,0010) must have at least a partial value specified.

Table 4.30: Patient Root C-FIND SCP Supported Elements

Level Name/Attribute Name	Tag	VR	Types of Matching
SOP Common			
Specific Character Set	0008,0005	CS	NONE
Patient Level			
Patient's Name	0010,0010	PN	S,*,U
Patient ID	0010,0020	LO	S,*,U
Patient's Birth Date	0010,0030	DA	S,U
Patient's Sex	0010,0040	CS	S,U
Other Patient IDs	0010,1000	LO	NONE
Other Patient Names	0010,1001	PN	NONE
Study Level			
Study Date	0008,0020	DA	S,*,U,R
Study Time	0008,0030	TM	U,R
Accession Number	0008,0050	SH	S,*,U
Study ID	0020,0010	SH	S,*,U
Study Instance UID	0020,000D	SH	S,U,L
Referring Physician's Name	0008,0090	PN	S,*,U
Study Description	0008,1030	LO	S,*,U
Series Level			
Modality	0008,0060	CS	S,*,U
SeriesNumber	0020,0011	IS	S,*,U
SeriesInstanceUID	0020,000E	UI	S,U,L
Operator's Name	0008,1070	PN	NONE
Image Level			
Instance Number	0020,0013	IS	S,*,U
SOP Instance UID	0008,0018	UI	S,U,L

Table 4.31: Study Root C-FIND SCP Supported Elements

Level Name/Attribute Name	Tag	VR	Types of Matching
SOP Common			
Specific Character Set	0008,0005	CS	NONE
Study Level			
Patient's Name	0010,0010	PN	S,*,U
Patient ID	0010,0020	LO	S,*,U
Patient's Birth Date	0010,0030	DA	S,U
Patient's Sex	0010,0040	CS	S,U
Other Patient IDs	0010,1000	LO	NONE
Other Patient Names	0010,1001	PN	NONE
Study Date	0008,0020	DA	S,*,U,R
Study Time	0008,0030	TM	U,R
Accession Number	0008,0050	SH	S,*,U
Study ID	0020,0010	SH	S,*,U
Study Instance UID	0020,000D	SH	S,U,L
Referring Physician's Name	0008,0090	PN	S,*,U
Study Description	0008,1030	LO	S,*,U
Series Level			
Modality	0008,0060	CS	S,*,U
SeriesNumber	0020,0011	IS	S,*,U
SeriesInstanceUID	0020,000E	UI	S,U,L
Operator's Name	0008,1070	PN	NONE
Image Level			
Instance Number	0020,0013	IS	S,*,U
SOP Instance UID	0008,0018	UI	S,U,L

The tables should be read as follows:

- Attribute Name: Attributes supported for returned C-FIND Responses.
- Tag: Appropriate DICOM tag for this attribute.
- VR: Appropriate DICOM VR for this attribute.
- Types of Matching: The types of Matching supported by the C-FIND SCP.

The values in 'Types of Matching' column mean as follows :

- "S" indicates the identifier attribute can specify Single Value Matching.
- "R" will indicate Range Matching.
- "*" will denote wild card matching.
- "U" will indicate universal matching.
- "L" will indicate that UID lists are supported for matching.
- "NONE" indicates that no matching is supported, but that values for this Element in the database can be returned.

Table 4.32: Query/Retrieve SCP AE C-FIND Response Status Return Behavior

Service Status	Further Meaning	Error Code	Behaviour
Success	Success	0000	Matching is complete. No final identifier is supplied.
Refused	Out of Resources	A700	System reached the limit in disk space or memory usage. Error message is output to as an alert to the User Interface, and to the Service Log.
Failed	Identifier does not match SOP Class	A900	The C-FIND query identifier contains invalid Elements or values, or is missing mandatory Elements or values for the specified SOP Class. Error message is output to the Service Log.
	Unable to process	C001	The C-FIND query identifier is valid for the specified SOP Class but cannot be used to query the database. For example, this can occur if a Patient Level query is issued but the identifier has only empty values for both the Patient ID and the Patient Name. Error message is output to the Service Log.
Cancel	Matching terminated due to Cancel Request	FE00	The C-FIND SCU sent a Cancel Request. This has been acknowledged and the search for matches has been halted.
Pending	Matches are continuing and current match is supplied.	FF00	Indicates that the search for further matches is continuing. This is returned when each successful match is returned and when further matches are forthcoming. This status code is returned if all Optional keys in the query identifier are actually supported.
	Matches are continuing but one or more Optional Keys were not supported.	FF01	Indicates that the search for further matches is continuing. This is returned when each successful match is returned and when further matches are forthcoming. This status code is returned if there are Optional keys in the query identifier that are not supported.

SOP Specific Conformance for Retrieval SOP Classes

The Query/Retrieve SCP AE will convey to the Storage SCU AE that an Association with a DICOM Application Entity named by the external C-MOVE SCU (through a MOVE Destination AE Title) should be established. It will also convey to the Storage SCU AE to perform C-STORE operations on specific images requested by the external C-MOVE SCU. One or more of the Image Storage Presentation Contexts listed in Table 4.2.2.3-1. will be negotiated. The Query/Retrieve SCP AE can support lists of UIDs in the C-MOVE Request at the Study, Series, and Image Levels. The list of UIDs must be at the Level of the C-MOVE Request however. For example, if the C-MOVE Request is for Series Level retrieval but the identifier contains a list of Study UIDs then the C-MOVE Request will be rejected, and the A900 Failed Status Code will be returned in the C-MOVE Response. An initial C-MOVE Response is always sent after confirming that the C-MOVE Request itself can be processed. After this, the Query/Retrieve SCP AE will return a response to the C-MOVE SCU after the Storage SCU AE has attempted to send each image. This response reports the number of remaining SOP Instances to transfer, and the number transferred having a successful, failed, or warning status. If the Composite SOP Instances must be retrieved from long-term archive prior to export there may be quite a long delay between the first C-MOVE Response and the next one after the attempt to export the first image. The maximum length of time for this delay will depend on the particular type of archive used but typically varies between 3 and 10 minutes.

Table 4.33: Query/Retrieve SCP AE C-MOVE Response Status Return Behavior

Service Status	Further Meaning	Error Code	Behaviour
Success	Sub-operations complete - No Failures	0000	All the Composite SOP Instances have been successfully sent to the C-MOVE Destination AE.
Refused	Out of Resources - Unable to calculate number of matches	A701	Number of matches cannot be determined due to system failure. Returned if the server's database is not functioning so the search for matches to the C-MOVE Request cannot be found. Error message is output as an alert on the User Interface, and to the Service Log.
	Out of Resources - Unable to perform sub-operations	A702	C-STORE sub-operations cannot be performed due to failure to access Composite SOP Instances in archive, or failure of a C-STORE Request. For example, this Status will be returned if the required SOP Instances are determined to be off-line (i.e., the MO media has been removed from the archive jukebox). Error message is output as an alert on the User Interface, and to the Service Log.
	Move destination unknown	A801	The Destination Application Entity named in the C-MOVE Request is unknown to Query-Retrieve SCP AE. Error message is output to the Service Log.
Failed	Identifier does not match SOP Class	A900	The C-MOVE identifier contains invalid Elements or values, or is missing mandatory Elements or values for the specified SOP Class or retrieval level. Error message is output to the Service Log.
Cancel	Matching terminated due to Cancel Request	FE00	The C-MOVE SCU sent a Cancel Request. This has been acknowledged and the export of Composite SOP Instances to the C-MOVE Destination AE has been halted.
Pending	Sub-operations are continuing	FF00	A Response with this Status Code is sent every time a Composite SOP Instance has been successfully sent to the C-MOVE Destination AE.

Note that the Warning Status, B000 (Sub-operations complete - One or more Failures) is never returned. If a failure occurs during export to the C-MOVE Destination AE by the STORAGE-SCU AE then the entire task is aborted. Thus any remaining matches are not exported.

Table 4.34: Query/Retrieve SCP AE Communication Failure Behavior

Exception	Behaviour
Timeout expiry for an expected DICOM Message Request (DIMSE level timeout). I.e. The QUERY-RETRIEVE-SCP AE is waiting for the next C-FIND or C-MOVE Request on an open Association but the timer expires.	The Association is aborted by issuing a DICOM A-ABORT. Error message is output to the Service Log. If the STORAGE-SCU AE is still exporting Composite SOP Instances as a result of an earlier C-MOVE Request received on this Association, it will continue attempting to complete the entire C-MOVE Request.
Timeout expiry for an expected DICOM PDU or TCP/IP packet (Low-level timeout). I.e. The QUERY-RETRIEVE-SCP AE is waiting for the next message PDU but the timer expires.	The Association is aborted by issuing a DICOM A-ABORT. Error message is output to the Service Log. If the STORAGE-SCU AE is still exporting Composite SOP Instances as a result of an earlier C-MOVE Request received on this Association, it will continue attempting to complete the entire C-MOVE Request.
Association aborted by the SCU or the network layers indicate communication loss (i.e., low-level TCP/IP socket closure)	Error message is output to the Service Log. If the STORAGE-SCU AE is still exporting Composite SOP Instances as a result of an earlier C-MOVE Request received on this Association, it will continue attempting to complete the entire C-MOVE Request.

4.2.3 Workflow Application Entity Specification

SOP Classes

The Workflow Application Entity provides Standard Conformance to the following SOP Class(es) :

Table 4.35: SOP Classes for Workflow Application Entity (SCP)

SOP Class Name	SOP Class UID	SCU	SCP
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3	Yes	Yes
Instance Availability Notification	1.2.840.10008.5.1.4.33	Yes	No
Modality Worklist	1.2.840.10008.5.1.4.31	No	Yes
Unified Procedure Step - Push SOP Class SCP	1.2.840.10008.5.1.4.34.6.1	No	Yes
Unified Procedure Step - Watch SOP Class SCP	1.2.840.10008.5.1.4.34.6.2	No	Yes
Unified Procedure Step - Pull SOP Class SCP	1.2.840.10008.5.1.4.34.6.3	No	Yes
Unified Procedure Step - Event SOP Class SCP	1.2.840.10008.5.1.4.34.6.4	No	Yes

Association Policies

General

The DICOM standard Application Context Name for DICOM 3.0 is always accepted and proposed:

Table 4.36: DICOM Application Context for Storage Application Entity

Application Context Name	1.2.840.10008.3.1.1.1
--------------------------	-----------------------

Number of Associations

The Workflow Application Entity can support multiple simultaneous Associations requested by peer AEs. The maximum total number of simultaneous Associations accepted from peer AEs is configurable. It is unlimited by default.

The Workflow Application Entity initiates one Association at a time to send Modality Performed Procedure Step N-CREATE and N-SET request and one Association at a time to send Instance Availability Notifications to peer AEs.

Table 4.37: Number of Simultaneous Associations for the Workflow Application Entity

Maximum number of simultaneous Associations requested by peer AEs	No Maximum Limit (Configurable)
Maximum number of simultaneous Associations initiated by the Workflow Application Entity to peer Modality Performed Procedure Step SCPs	1
Maximum number of simultaneous Associations initiated by the Workflow Application Entity to peer Instance Availability Notification SCPs	1

Asynchronous Nature

The Workflow Application Entity supports asynchronous communication (multiple outstanding transactions over a single Association). The maximum number of outstanding asynchronous transactions is configurable. It is unlimited by default.

Table 4.38: Asynchronous Nature for the Workflow Application Entity

Maximum number of outstanding asynchronous transactions	No Maximum Limit (Configurable)
---	---------------------------------

Implementation Identifying Information

The implementation information for the Workflow Application Entity is:

Table 4.39: DICOM Implementation Class and Version for the Workflow Application Entity

Implementation Class UID	1.2.40.0.13.1.3
Implementation Version Name	dcm4che-5.xx.yy

All Application Entities of *dcm4che DICOM Archive 5* use the same Implementation Version Name. This Version Name is updated with each new release of the product software.

Association Initiation Policies

Activity - Forward Modality Performed Procedure

Description and Sequencing of Activities

<TODO>

Proposed Presentation Contexts

The Workflow AE will propose Presentation Contexts as shown in the following table:

Table 4.40: Proposed Presentation Contexts for Real-World Activity Forward Modality Performed Procedure

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Modality Performed Procedure Step	1.2.840.10008.3.1.2.4	DICOM Implicit VR Little Endian	1.2.840.10008.1.3.1	SCU SCP	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1		

SOP Specific Conformance

<TODO>

Activity - Send Instance Available Notification

Description and Sequencing of Activities

<TODO>

Proposed Presentation Contexts

The Workflow AE will propose Presentation Contexts as shown in the following table:

Table 4.41: Proposed Presentation Contexts for Real-World Activity Send Instance Available Notification

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Instance Availability Notification	1.2.840.10008.5.1.4	DICOM Implicit VR Little Endian	1.2.840.10008.1.3.1	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1		

SOP Specific Conformance

<TODO>

Association Acceptance Policies

<TODO>

4.2.4 STOW-RS Specifications

STOW-RS Store Instance

Table 4.42: STOW-RS Store Instances Specification

Category	Restrictions
Media Types Supported (Accept header)	Restricted to application/dicom or application/dicom+xml
Transfer Syntaxes Supported (Media Type parameter)	See - <i>Transfer Syntaxes for Image Storage SOP Classes, Transfer Syntax for Video Storage SOP Classes, Transfer Syntaxes for SR Storage SOP Classes and Transfer Syntaxes for Other Storage SOP Classes</i>
SOP Class Restrictions	See - <i>SOP Classes for Storage Application Entity (SCP)</i>

Connection Policies

General

All standard RS connection policies apply. There are no extensions for RS options.

Number Of Connections

The maximal number of simultaneous HTTP Requests is configurable. It is unlimited by default.

Table 4.43: Number of HTTP Requests Supported

Maximum number of simultaneous HTTP requests	No Maximum Limit (Configurable)
--	---------------------------------

SOP Specific Conformance for SOP Class(es)

The DCM4CHEE-STOW-SERVICE response message header contains status codes indicating success, warning, or failure as shown in the “HTTP Standard Response Codes” below. No additional status codes are used.

Table 4.44: HTTP Standard Response Codes

Service Status	HTTP Status Code	STOW-RS Description
Failure	400 - Bad Request	This indicates that the STOW-RS Service was unable to store any instances due to bad syntax.
	401 - Unauthorized	This indicates that the STOW-RS Service refused to create or append any instances because the client is not authenticated.
	403 - Forbidden	This indicates that the STOW-RS Service understood the request, but is refusing to fulfill it (e.g., an authenticated user with insufficient privileges).
	409 - Conflict	This indicates that the STOW-RS Service request was formed correctly but the service was unable to store any instances due to a conflict in the request (e.g., unsupported SOP Class or Study Instance UID mismatch). This may also be used to indicate that a STOW-RS Service was unable to store any instances for a mixture of reasons. Additional information regarding the instance errors can be found in the XML response message body.
	503 - Busy	This indicates that the STOW-RS Service was unable to store any instances because it was out of resources.
Warning	202 - Accepted	This indicates that the STOW-RS Service stored some of the instances but warnings or failures exist for others. Additional information regarding this error can be found in the XML response message body.
Success	200 - OK	This indicates that the STOW-RS Service successfully stored all the instances.

Web Service Endpoint URL

`http[s]://<host>:<port>/dcm4chee-arc/aets/{AETitle}/rs`

Replace *{AETitle}* in the URL with the configured AE title.

4.2.5 QIDO-RS Specifications

QIDO-RS Search For Studies

Table 4.45: QIDO-RS Search for Studies Specification

Parameter	Restrictions
Media Types	Restricted to 'multipart/related; type=application/dicom+xml' or 'application/json'
Matching Attributes	Refer <i>QIDO-RS Study Attribute Matching</i>
Return Attributes	Refer <i>QIDO-RS Study Attribute Matching</i>
Limit and Offset supported	Yes
Person Name Matching	Refer Person Name Matching Note

Table 4.46: QIDO-RS Study Attribute Matching

Attributes Names	Tag	Query Keys Matching (SCP)	Return Attributes (SCP)
Study Instance UID	0020000D	UNIQUE	UNIQUE
Study ID	00200010	S,*,U	S,*,U

Continued on next page

Table 4.46 – continued from previous page

Attributes Names	Tag	Query Keys Matching (SCP)	Return Attributes (SCP)
Study Date	00080020	S,*,U,R	S,*,U,R
Study Time	00080030	S,*,U,R	S,*,U,R
Study Description	00081030	S,*,U	S,*,U
Accession Number	00080050	S,*,U	S,*,U
Issuer of Accession Number	00080051		
Referring Physician's Name	00080090	S,*,U	S,*,U
Institution Name	00080080	S,*,U	
Station Name	00081010	S,*,U	
Body Part Examined	00180015	S,*,U	
SOP Classes in Study	00080062	S,*,U	
Institutional Department Name	00081040	S,*,U	
Series Description	0008103E	S,*,U	
Sending Application Entity Title of Series		S,*,U	
Patient Name	00100010	S,*,U	
Patient ID	00100020	S,*,U	
Issuer of Patient ID	00100021	UNIQUE	
Modality	00080061	S,*,U	
Failed SOP Instance UID List	00080058	L	
Procedure Code Sequence	00081032		NONE
Patient Age	00101010		NONE
Patient Size	00101020		NONE
Patient Size Code Sequence	00101021		NONE
Patient Weight	00101030		NONE
Occupation	00102180		NONE
Additional Patient History	001021B0		NONE
Patient Sex Neutered	00102203		NONE
Physicians of Record	00081048		NONE
Specific Character Set	00080005		NONE
Retrieve URL	00081190		NONE
Retrieve AE Title	00080054		NONE
Instance Availability	00080056		NONE
Number of Study Related Series	00201206		NONE
Number of Study Related Instances	00201208		NONE

Types of Matching :

1. "S" indicates the identifier attribute uses Single Value Matching.
2. "L" indicates UID List Matching.
3. "U" indicates Universal Matching. (Note : If only Universal Matching is supported for an attribute then that attribute can only be passed as an "includefield" query key.)
4. "*" indicates wild card matching.
5. "R" indicates Range Matching.
6. "SEQUENCE" indicates Sequence Matching.
7. "NONE" indicates that no matching is supported, but that values for this Element requested will be returned with all requests.
8. "UNIQUE" indicates that this is the Unique Key for that query level, in which case Universal Matching or Single Value Matching is used depending on the query level.

QIDO-RS Search For Series

Table 4.47: QIDO-RS Search for Series Specification

Parameter	Restrictions
Media Types	Restricted to ‘multipart/related; type=application/dicom+xml’ or ‘application/json’
Matching Attributes	Refer <i>QIDO-RS Study Attribute Matching</i> and <i>QIDO-RS Series Attribute Matching</i>
Return Attributes	Refer <i>QIDO-RS Series Attribute Matching</i>
Limit and Offset supported	Yes
Relational Queries Supported	Yes
Person Name Matching	Refer Person Name Matching Note

Types of Matching: As explained above in QIDO-RS Search For Studies

Table 4.48: QIDO-RS Series Attribute Matching

Attributes Names	Tag	Query Keys Matching (SCP)	Return Attributes (SCP)
Series Instance UID	0020000E	UNIQUE	UNIQUE
Series Number	00200011	S,*,U	S,*,U
Modality	00080060	S,*,U	S,*,U
Body Part Examined	00180015	S,*,U	S,*,U
Performed Procedure Step Start Date	00400244	S,*,U,R	S,*,U,R
Performed Procedure Step Start Time	00400245	S,*,U,R	S,*,U,R
Performing Physician Name	00081050	S,*,U	S,*,U
Station Name	00081010	S,*,U	S,*,U
Series Description	0008103E	S,*,U	S,*,U
Institutional Department Name	00081040	S,*,U	S,*,U
Institution Name	00080080	S,*,U	S,*,U
Request Attributes Sequence	00400275	SEQUENCE	SEQUENCE
>Accession Number	00080050	S,*,U	S,*,U
>Issuer of Accession Number	00080051		
>Requesting Service	00321033	S,*,U	S,*,U
>Requesting Physician	00321032	S,*,U	S,*,U
>Requested Procedure ID	00401001	S,*,U	S,*,U
>Study Instance UID	0002000D	UNIQUE	UNIQUE
>Scheduled Procedure ID	00400009	S,*,U	S,*,U
Institution Code Sequence	00080082	SEQUENCE	SEQUENCE
>Code Value	00080100	S,*,U	S,*,U
>Coding Scheme Designator	00080102	S,*,U	S,*,U
>Coding Scheme Version	00080103	S,*,U	S,*,U
Sending Application Entity Title of Series		S,*,U	
Failed SOP Instance UID List	00080058	L	
Laterality	00200060		NONE
Manufacturer	00080070		NONE
Manufacturer Model Name	00081090		NONE
Referenced Performed Procedure Step Sequence	00081111		NONE
Specific Character Set	00080005		NONE
Retrieve URL	00081190		NONE
Retrieve AE Title	00080054		NONE
Instance Availability	00080056		NONE

Continued on next page

Table 4.48 – continued from previous page

Attributes Names	Tag	Query Keys Matching (SCP)	Return Attributes (SCP)
Number of Series Related Instances	00201209		NONE

QIDO-RS Search For Instances

Table 4.49: QIDO-RS Search for Instances Specification

Parameter	Restrictions
Media Types	Restricted to ‘multipart/related; type=application/dicom+xml’ or ‘application/json’
Matching Attributes	Refer <i>QIDO-RS Study Attribute Matching</i> , <i>QIDO-RS Series Attribute Matching</i> and <i>QIDO-RS Instance Attribute Matching</i>
Return Attributes	Refer <i>QIDO-RS Instance Attribute Matching</i>
Limit and Offset supported	Yes
Relational Queries Supported	Yes
Person Name Matching	Refer Person Name Matching Note

Types of Matching: As explained above in QIDO-RS Search For Studies

Table 4.50: QIDO-RS Instance Attribute Matching

Attributes Names	Tag	Query Keys Matching (SCP)	Return Attributes (SCP)
SOP Class UID	00080016	L	L
SOP Instance UID	00080018	UNIQUE	UNIQUE
Content Date	00080023	S,*,U,R	S,*,U,R
Content Time	00080033	S,*,U,R	S,*,U,R
Instance Number	00200013	S,*,U	S,*,U
Concept Name Code Sequence	0040A043	SEQUENCE	SEQUENCE
>Code Value	00080100	S,*,U	S,*,U
>Coding Scheme Designator	00080102	S,*,U	S,*,U
>Coding Scheme Version	00080103	S,*,U	S,*,U
Verifying Observer Sequence	0040A073	SEQUENCE	SEQUENCE
>Verifying Observer Name	0040A075	S,*,U	S,*,U
>Verification Date Time	0040A030	S,*,U, R	S,*,U, R
Completion Flag	0040A491	S,*,U	S,*,U
Verification Flag	0040A493	S,*,U	S,*,U
Content Sequence	0040A730	SEQUENCE	SEQUENCE
>Value Type	0040A040	S	S
>Concept Name Code Sequence	0040A043	SEQUENCE	SEQUENCE
>>Code Value	00080100	S,*,U	S,*,U
>>Coding Scheme Designator	00080102	S,*,U	S,*,U
>>Coding Scheme Version	00080103	S,*,U	S,*,U
>Relationship Type	0040A010	S,*,U	S,*,U
>Concept Code Sequence	0040A168	SEQUENCE	SEQUENCE
>>Code Value	00080100	S,*,U	S,*,U
>>Coding Scheme Designator	00080102	S,*,U	S,*,U
>>Coding Scheme Version	00080103	S,*,U	S,*,U
>Text Value	0040A160	S,*,U	S,*,U

Continued on next page

Table 4.50 – continued from previous page

Attributes Names	Tag	Query Keys Matching (SCP)	Return Attributes (SCP)
Image Type	00080008		NONE
Observation Date Time	0040A032		NONE
Referenced Series Sequence	00081115		NONE
Number of Frames	00280008		NONE
Rows	00280010		NONE
Columns	00280011		NONE
Bits Allocated	00280100		NONE
Referenced Request Sequence	0040A370		NONE
Current Requested Procedure Evidence Sequence	0040A375		NONE
Content Template Sequence	0040A504		NONE
Identical Documents Sequence	0040A525		NONE
Document Title	00420010		NONE
MIME Type of Encapsulated Document	00420012		NONE
Content Label	00700080		NONE
Content Description	00700081		NONE
Presentation Creation Date	00700082		NONE
Presentation Creation Time	00700083		NONE
Content Creator's Name	00700084		NONE
Specific Character Set	00080005		NONE
Retrieve URL	00081190		NONE
Retrieve AE Title	00080054		NONE
Instance Availability	00080056		NONE

QIDO-RS Search For Patients

Table 4.51: QIDO-RS Search for Patients Specification

Parameter	Restrictions
Media Types	Restricted to 'multipart/related; type=application/dicom+xml' or 'application/json'
Matching Attributes	Refer <i>QIDO-RS Patient Attribute Matching</i>
Return Attributes	Refer <i>QIDO-RS Patient Attribute Matching</i>
Limit and Offset supported	Yes
Relational Queries Supported	No
Person Name Matching	Refer Person Name Matching Note

Types of Matching: As explained above in QIDO-RS Search For Studies

Table 4.52: QIDO-RS Patient Attribute Matching

Attributes Names	Tag	Query Keys Matching (SCP)	Return Attributes (SCP)
Patient Name	00100010	S,*,U	S,*,U
Patient ID	00100020	S,*,U	S,*,U
Patient Birth Date	00100030	S,*,U,R	S,*,U,R
Patient Sex	00100040	S,*,U	S,*,U
Issuer of Patient ID	00100021	S,*,U	S,*,U
Issuer of Patient ID Qualifier Sequence	00100024		NONE
Patient Birth Time	00100032		NONE

Continued on next page

Table 4.52 – continued from previous page

Attributes Names	Tag	Query Keys Matching (SCP)	Return Attributes (SC)
Patient Insurance Plan Code Sequence	00100050		NONE
Patient Primary Language Code Sequence	00100101		NONE
Other Patient Names	00101001		NONE
Other Patient IDs Sequence	00101002		NONE
Patient Birth Name	00101005		NONE
Patient Address	00101040		NONE
Patient Mother Birth Name	00101060		NONE
Military Rank	00101080		NONE
Branch of Service	00101081		NONE
Medical Record Locator	00101090		NONE
Medical Alerts	00102000		NONE
Allergies	00102110		NONE
Country of Residence	00102150		NONE
Region of Residence	00102152		NONE
Patient Telephone Numbers	00102154		NONE
Ethnic Group	00102160		NONE
Smoking Status	001021A0		NONE
Pregnancy Status	001021C0		NONE
Last Menstrual Date	001021D0		NONE
Patient Religious Preference	001021F0		NONE
Patient Species Description	00102201		NONE
Patient Species Code Sequence	00102202		NONE
Patient Breed Description	00102292		NONE
Patient Breed Code Sequence	00102293		NONE
Breed Registration Sequence	00102294		NONE
Responsible Person	00102297		NONE
Responsible Person Role	00102298		NONE
Responsible Organization	00102299		NONE
Patient Comments	00104000		NONE
Clinical Trial Sponsor Name	00120010		NONE
Clinical Trial Protocol ID	00120020		NONE
Clinical Trial Protocol Name	00120021		NONE
Clinical Trial Site ID	00120030		NONE
Clinical Trial Site Name	00120031		NONE
Clinical Trial Subject ID	00120040		NONE
Clinical Trial Subject Reading ID	00120042		NONE
Patient Identity Removed	00120062		NONE
Deidentification Method	00120063		NONE
Deidentification Method Code Sequence	00120064		NONE
Clinical Trial Protocol Ethics Committee Name	00120081		NONE
Clinical Trial Protocol Ethics Committee Approval Number	00120082		NONE
Special Needs	00380050		NONE
Pertinent Documents Sequence	00380100		NONE
Patient State	00380500		NONE
Patient Clinical Trial Participation Sequence	00380502		NONE
Confidentiality Constraint On Patient Data Description	00403001		NONE
Specific Character Set	00080005		NONE
Retrieve URL	00081190		NONE
Retrieve AE Title	00080054		NONE

Continued on next page

Table 4.52 – continued from previous page

Attributes Names	Tag	Query Keys Matching (SCP)	Return Attributes (SC
Instance Availability	00080056		NONE

Person Name Matching Note :

- DCM4CHEE-QIDO-SERVICE supports “fuzzymatching” only for attributes having value representation as PN. If all characters of Person Name are in upper case, then the service performs case insensitive matching, else it shall perform case sensitive matching. The service also supports literal and wild card matching. It will not perform other forms of fuzzy matching. This applies to the following attributes:

In <i>QIDO-RS Study Attribute Matching</i>	Referring Physician’s Name (0008,0090).
	Patient’s Name (0010,0010).
	Physicians of Record (0008,1048).
In <i>QIDO-RS Series Attribute Matching</i>	Performing Physician’s Name (0008,1050).
In <i>QIDO-RS Instance Attribute Matching</i>	Verifying Observer Name (0040,A075).
In <i>QIDO-RS Patient Attribute Matching</i>	Patient’s Name (0010,0010).

QIDO-RS Connection Policies

General

All standard RS connection policies apply. There are no extensions for RS options.

Number Of Connections

The maximal number of simultaneous HTTP Requests is configurable. It is unlimited by default.

Table 4.53: Number of HTTP Requests Supported

Maximum number of simultaneous HTTP requests	No Maximum Limit (Configurable)
--	---------------------------------

Response Status

DCM4CHEE-QIDO-SERVICE shall provide a response message header containing the appropriate status code indicating success, warning, or failure as shown below

Table 4.54: HTTP Standard Response Codes

Code	Name	Description
Suc- cess		
200	OK	The query completed and any matching results are returned in the message body.
Fail- ure		
400	Bad Re- quest	This indicates that the QIDO-RS Provider was unable to fulfill it because it cannot understand the query component.
401	Unautho- rized	This indicates that the QIDO-RS Provider refused to fulfill it because the client is not authorized.
403	Forbidden	This indicates that the QIDO-RS Provider understood the request, but is refusing to fulfill it (e.g., no single patient specified, an authorized user with insufficient privileges, etc.).
413	Request entity too large	This indicates that the query was too broad and a narrower query or paging should be requested. This code will be returned for queries that do not specify PatientID.
503	Busy	Service is unavailable.

Web Service Endpoint URL

http://localhost:8080/dcm4chee-arc/aets/{AETitle}/rs

Replace *{AETitle}* in the URL with the configured AE title.

4.2.6 WADO-URI Specification

WADO-URI Retrieve Imaging Document Set

Table 4.55: WADO-URI Retrieve Imaging Documents Specification

Parameter	Restrictions
Transfer Syntaxes Supported	See - <i>Transfer Syntaxes for Image Storage SOP Classes, Transfer Syntax for Video Storage SOP Classes, Transfer Syntaxes for SR Storage SOP Classes and Transfer Syntaxes for Other Storage SOP Classes</i>
SOP Class Restrictions	Same as - <i>SOP Classes for Query/Retrieve Application Entity</i>

If the URI Retrieve specifies no transfer syntax that is supported by the archive, the SOP Instance will be returned using the Implicit VR Little Endian Transfer Syntax.

WADO-URI Retrieve Rendered Imaging Document Set

Table 4.56: WADO-URI Retrieve Rendered Imaging Documents Specification

Parameter	Restrictions
Transfer Syntaxes Supported	See - <i>Transfer Syntaxes for Image Storage SOP Classes, Transfer Syntax for Video Storage SOP Classes, Transfer Syntaxes for SR Storage SOP Classes and Transfer Syntaxes for Other Storage SOP Classes</i>
SOP Class restrictions	Same as - <i>SOP Classes for Query/Retrieve Application Entity</i>
Rendered formats available	Supports JPEG, GIF and PDF for IMAGE IODS, and PDF for non-IMAGE IODS.
Rows restrictions	Must be greater than 0
Columns restrictions	Must be greater than 0
Region restrictions	None
Window Center restrictions	Whole window must be in the range of image pixel values.
Window Width restrictions	Must be greater than 4 and whole window must be in the range of image pixel values.
Image Quality restrictions	None
Annotation Restrictions	None
Compression available	JPEG
Other restrictions	None

WADO-URI Retrieve Imaging Document Set Metadata

Not Supported

WADO-URI Connection Policies

General

All URI connections are limited to HTTP GET requests. The DCM4CHEE-WADO-SERVICE ignores all unknown HTTP header parameters.

Number Of Connections

The maximal number of simultaneous HTTP Requests is configurable. It is unlimited by default.

Table 4.57: Number of HTTP Requests Supported

Maximum number of simultaneous HTTP requests	No Maximum Limit (Configurable)
--	---------------------------------

Web Service Endpoint URL

`http[s]://<host>:<port>/dcm4chee-arc/aets/{AETitle}/wado`

Replace *{AETitle}* in the URL with the configured AE title.

4.2.7 WADO-RS Specifications

WADO-RS Retrieve Study

Table 4.58: WADO-RS Retrieve Study

Options	Restrictions
Data Types Supported (Accept Type)	multipart/related;type=application/dicom
	multipart/related;type=application/octet-stream
	multipart/related;type=application/pdf
	multipart/related;type=image/jpeg
	multipart/related;type=image/jp2
	multipart/related;type=image/jpx
	multipart/related;type=image/x-dicom+rle
	multipart/related;type=image/x-jls
	multipart/related;type=text/xml
	multipart/related;type=video/mpeg
	multipart/related;type=video/mp4
	application/zip
Transfer Syntaxes Supported (transfer-syntax Accept parameter)	See - <i>Transfer Syntaxes for Image Storage SOP Classes, Transfer Syntax for Video Storage SOP Classes, Transfer Syntaxes for SR Storage SOP Classes and Transfer Syntaxes for Other Storage SOP Classes</i>
SOP Class restrictions	See - <i>SOP Classes for Storage Application Entity (SCP)</i>

WADO-RS Retrieve Series

Table 4.59: WADO-RS Retrieve Series

Options	Restrictions
Data Types Supported (Accept Type)	multipart/related;type=application/dicom
	multipart/related;type=application/octet-stream
	multipart/related;type=application/pdf
	multipart/related;type=image/jpeg
	multipart/related;type=image/jp2
	multipart/related;type=image/jpx
	multipart/related;type=image/x-dicom+rle
	multipart/related;type=image/x-jls
	multipart/related;type=text/xml
	multipart/related;type=video/mpeg
	multipart/related;type=video/mp4
	application/zip
Transfer Syntaxes Supported (transfer-syntax Accept parameter)	See - <i>Transfer Syntaxes for Image Storage SOP Classes, Transfer Syntax for Video Storage SOP Classes, Transfer Syntaxes for SR Storage SOP Classes and Transfer Syntaxes for Other Storage SOP Classes</i>
SOP Class restrictions	See - <i>SOP Classes for Storage Application Entity (SCP)</i>

WADO-RS Retrieve Instance

Table 4.60: WADO-RS Retrieve Instance

Options	Restrictions
Data Types Supported (Accept Type)	multipart/related;type=application/dicom
	multipart/related;type=application/octet-stream
	multipart/related;type=application/pdf
	multipart/related;type=image/jpeg
	multipart/related;type=image/jp2
	multipart/related;type=image/jpx
	multipart/related;type=image/x-dicom+rle
	multipart/related;type=image/x-jls
	multipart/related;type=text/xml
	multipart/related;type=video/mpeg
	multipart/related;type=video/mp4
	application/zip
	Transfer Syntaxes Supported (transfer-syntax Accept parameter)
SOP Class restrictions	See - <i>SOP Classes for Storage Application Entity (SCP)</i>

WADO-RS Retrieve Frames

Table 4.61: WADO-RS Retrieve Frames

Options	Restrictions	
Data Types Supported (Accept Type)	multipart/related;type=application/octet-stream	
	multipart/related;type=application/pdf	
	multipart/related;type=image/jpeg	
	multipart/related;type=image/jp2	
	multipart/related;type=image/jpx	
	multipart/related;type=image/x-dicom+rle	
	multipart/related;type=image/x-jls	
	multipart/related;type=text/xml	
	multipart/related;type=video/mpeg	
	multipart/related;type=video/mp4	
	application/zip	
	Transfer Syntaxes Supported (transfer-syntax Accept parameter)	See - <i>Transfer Syntaxes for Image Storage SOP Classes, Transfer Syntax for Video Storage SOP Classes, Transfer Syntaxes for SR Storage SOP Classes and Transfer Syntaxes for Other Storage SOP Classes</i>
	SOP Class restrictions	Restricted to Multi-Frame Image Objects

WADO-RS Retrieve Bulk Data

Table 4.62: WADO-RS Retrieve Bulk Data

Options	Restrictions
Data Types Supported (Accept Type)	multipart/related;type=application/octet-stream
	multipart/related;type=application/pdf
	multipart/related;type=image/jpeg
	multipart/related;type=image/jp2
	multipart/related;type=image/jpx
	multipart/related;type=image/x-dicom+rle
	multipart/related;type=image/x-jls
	multipart/related;type=text/xml
	multipart/related;type=video/mpeg
	multipart/related;type=video/mp4
	application/zip
Transfer Syntaxes Supported (transfer-syntax Accept parameter)	See - <i>Transfer Syntaxes for Image Storage SOP Classes, Transfer Syntax for Video Storage SOP Classes, Transfer Syntaxes for SR Storage SOP Classes and Transfer Syntaxes for Other Storage SOP Classes</i>
SOP Class restrictions	See - <i>SOP Classes for Storage Application Entity (SCP)</i>

WADO-RS Retrieve Metadata

Table 4.63: WADO-RS Retrieve Metadata for Study or Series or Instance

Options	Restrictions
Data Types Supported (Accept Type)	multipart/related;type=application/dicom+xml
	application/dicom+json
	application/json
Accept-Encoding	Restricted to gzip, deflate, or identity (the use of no transformation whatsoever). See W3C RFC 2616 Protocol Parameters Section 3.5 for more information.
SOP Class restrictions	See - <i>SOP Classes for Storage Application Entity (SCP)</i>

WADO-RS Connection Policies

General

All standard RS connection policies apply. There are no extensions for RS options.

Number Of Connections

The maximal number of simultaneous HTTP Requests is configurable. It is unlimited by default.

Table 4.64: Number of HTTP Requests Supported

Maximum number of simultaneous HTTP requests	No Maximum Limit (Configurable)
--	---------------------------------

Web Service Endpoint URL

`http[s]://<host>:<port>/dcm4chee-arc/aets/{AETitle}/rs`

Replace *{AETitle}* in the URL with the configured AE title.

4.2.8 WADO-WS Specifications

Supported request parameters

Table 4.65: Supported request parameters

Parameter	Restrictions
Transfer Syntax	See - <i>Transfer Syntaxes for Image Storage SOP Classes, Transfer Syntax for Video Storage SOP Classes, Transfer Syntaxes for SR Storage SOP Classes and Transfer Syntaxes for Other Storage SOP Classes</i>
SOP Class	See - <i>SOP Classes for Storage Application Entity (SCP)</i>

Web Service Endpoint URL

`http[s]://<host>:<port>/dcm4chee-arc/xdsi/ImagingDocumentSource`

Retrieve Imaging Document Set Example

Sample Request

```
POST http://localhost:8080/dcm4chee-arc/xdsi/ImagingDocumentSource \
-H 'Content-Type: multipart/related; boundary="MIMEBoundary_
↳4693e5ce87c3f1a8a06ebc9bbc9911b2e46e1863a7ac87ca"; type="application/xop+xml";
↳start="<0.5693e5ce87c3f1a8a06ebc9bbc9911b2e46e1863a7ac87ca@apache.org>"; start-info=
↳"application/soap+xml"; action="urn:ihe:rad:2009:RetrieveImagingDocumentSet" ' \
--data-binary '--MIMEBoundary_4693e5ce87c3f1a8a06ebc9bbc9911b2e46e1863a7ac87ca
Content-Type: application/xop+xml; charset=UTF-8; type="application/soap+xml"
Content-Transfer-Encoding: binary
Content-ID: <0.5693e5ce87c3f1a8a06ebc9bbc9911b2e46e1863a7ac87ca@apache.org>

<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope xmlns:soapenv="http://www.w3.org/2003/05/soap-envelope">
<soapenv:Header xmlns:wsa="http://www.w3.org/2005/08/addressing">
<wsa:To soapenv:mustUnderstand="true">http://localhost:8080/dcm4chee-arc/xdsi/
↳ImagingDocumentSource</wsa:To>
<wsa:MessageID soapenv:mustUnderstand="true">urn:uuid:3FC3AA9541DB19A2CA1509719154150
↳</wsa:MessageID>
<wsa:Action soapenv:mustUnderstand="true">urn:ihe:rad:2009:RetrieveImagingDocumentSet
↳</wsa:Action></soapenv:Header>
<soapenv:Body><xdsiB:RetrieveImagingDocumentSetRequest xmlns:xdsiB="urn:ihe:rad:xdsi-
↳b:2009">
  <xdsiB:StudyRequest studyInstanceUID="1.3.12.2.1107.5.8.1.12345678.
↳199508041416590859569">
    <xdsiB:SeriesRequest seriesInstanceUID="1.3.12.2.1107.5.8.1.12345678.
↳199508041416590860429">
      <xdsb:DocumentRequest xmlns:xdsb="urn:ihe:iti:xds-b:2007">
```

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```

        <xdsb:RepositoryUniqueId>1.3.6.1.4.1.21367.13.80.110</
↪xdsb:RepositoryUniqueId>
        <xdsb:DocumentUniqueId>1.3.12.2.1107.5.8.1.12345678.199508041416590861483
↪</xdsb:DocumentUniqueId>
        </xdsb:DocumentRequest>
    </xdsiB:SeriesRequest>
</xdsiB:StudyRequest>
<xdsiB:TransferSyntaxUIDList>
    <xdsiB:TransferSyntaxUID>1.2.840.10008.1.2</xdsiB:TransferSyntaxUID>
</xdsiB:TransferSyntaxUIDList>
</xdsiB:RetrieveImagingDocumentSetRequest></soapenv:Body></soapenv:Envelope>
--MIMEBoundary_4693e5ce87c3f1a8a06ebc9bbc9911b2e46e1863a7ac87ca--'

```

Sample Response

```

HTTP/1.1 200 OK
Connection: keep-alive
X-Powered-By: Undertow/1
Server: WildFly/11
Transfer-Encoding: chunked
Content-Type: multipart/related; type="application/xop+xml"; boundary="uuid:f693220a-
↪ef9b-4e62-8d02-f8ea7918b7d9";
    start="<root.message@cxf.apache.org>"; start-info="application/soap+xml"
Date: Fri, 15 Jun 2018 10:16:08 GMT

--uuid:f693220a-ef9b-4e62-8d02-f8ea7918b7d9
Content-Type: application/xop+xml; charset=UTF-8; type="application/soap+xml"
Content-Transfer-Encoding: binary
Content-ID: <root.message@cxf.apache.org>

<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
  <soap:Header>
    <Action xmlns="http://www.w3.org/2005/08/addressing">
      urn:ihe:iti:2007:RetrieveDocumentSetResponse
    </Action>
    <MessageID xmlns="http://www.w3.org/2005/08/addressing">
      urn:uuid:5d716edf-91d0-46a3-8b70-46dd54d8c7c3
    </MessageID>
    <To xmlns="http://www.w3.org/2005/08/addressing">
      http://www.w3.org/2005/08/addressing/anonymous
    </To>
    <RelatesTo xmlns="http://www.w3.org/2005/08/addressing">
      urn:uuid:3FC3AA9541DB19A2CA1509719154150
    </RelatesTo>
  </soap:Header>
  <soap:Body>
    <RetrieveDocumentSetResponse
      xmlns="urn:ihe:iti:xds-b:2007"
      xmlns:ns2="urn:ihe:rad:xdsi-b:2009"
      xmlns:ns3="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
      xmlns:ns4="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0"
      xmlns:ns5="urn:oasis:names:tc:ebxml-regrep:xsd:query:3.0"
      xmlns:ns6="urn:oasis:names:tc:ebxml-regrep:xsd:lcm:3.0"
      xmlns:ns7="urn:dicom:wado:ws:2011">

```

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```

    <ns4:RegistryResponse status="urn:oasis:names:tc:ebxml-
↳regrep:ResponseStatus:Success"/>
    <DocumentResponse>
      <RepositoryUniqueId>1.3.6.1.4.1.21367.13.80.110</RepositoryUniqueId>
      <DocumentUniqueId>1.3.12.2.1107.5.8.1.12345678.199508041416590861483
↳<DocumentUniqueId>
      <mimeType>application/dicom</mimeType>
      <Document>
        <xop:Include xmlns:xop="http://www.w3.org/2004/08/xop/include"
        href="cid:0d4519bd-32df-4294-aaea-02decb2fb40b-4@urn%3Aihe%3Aiti%3Axd
↳%3A2007"/>
        </Document>
      </DocumentResponse>
    </RetrieveDocumentSetResponse>
  </soap:Body>
</soap:Envelope>

--uuid:f693220a-ef9b-4e62-8d02-f8ea7918b7d9
Content-Type: application/dicom
Content-Transfer-Encoding: binary
Content-ID: <0d4519bd-32df-4294-aaea-02decb2fb40b-4@urn:ihe:iti:xds-b:2007>

This is the binary data of the DICOM object.

```

Error Codes

The following errorCodes are used to report any of the associated error and warning situations.

Table 4.66: Error Codes

Error Code	Error Situation
urn:dicom:wado:0002	Web Server does not support anonymization.
urn:dicom:wado:0006	Web Server does not support the requested format or transfer syntax.
urn:dicom:wado:0007	The requested instance(s) cannot be provided in the requested format or transfer syntax.
urn:dicom:wado:0008	Single image format is not available for multi-frame images.
urn:dicom:wado:0012	Invalid parameter value in request.
urn:dicom:wado:0013	Unsupported parameter in request.
urn:dicom:wado:0014	Processing Failure.
urn:dicom:wado:0018	Out of range Frame number

WADO-WS Retrieve Rendered Imaging Document Set Specification

Supported request parameters

Table 4.67: Supported request parameters

Parameter	Support	Restrictions
SOP Class	✓	See <i>Image Storage SOP Classes</i> in <i>SOP Classes for Storage Application Entity (SCP)</i>
Rows	✓	None
Columns	✓	None
Region		
Window Center	✓	None
Window Width	✓	None
Image Quality	✓	None
Content Type	✓	<i>image/jpeg</i>
Annotation		
Presentation UID		
Presentation Series UID		
Anonymize		

Web Service Endpoint URL

http[s]://<host>:<port>/dcm4chee-arc/xdsi/ImagingDocumentSource

Retrieve Rendered Imaging Document Set Example

Sample Request

```
POST http://localhost:8080/dcm4chee-arc/xdsi/ImagingDocumentSource \
-H 'Content-Type: multipart/related; boundary="MIMEBoundary_
↳4693e5ce87c3f1a8a06ebc9bbc9911b2e46e1863a7ac87ca"; type="application/xop+xml";
↳start="<0.5693e5ce87c3f1a8a06ebc9bbc9911b2e46e1863a7ac87ca@apache.org>"; start-info=
↳"application/soap+xml"; action=
↳"urn:dicom:wado:ws:2011:RetrieveRenderedImagingDocumentSet "' \
--data-binary '--MIMEBoundary_4693e5ce87c3f1a8a06ebc9bbc9911b2e46e1863a7ac87ca
Content-Type: application/xop+xml; charset=UTF-8; type="application/soap+xml"
Content-Transfer-Encoding: binary
Content-ID: <0.5693e5ce87c3f1a8a06ebc9bbc9911b2e46e1863a7ac87ca@apache.org>

<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope xmlns:soapenv="http://www.w3.org/2003/05/soap-envelope">
  <soapenv:Header xmlns:wsa="http://www.w3.org/2005/08/addressing">
    <wsa:To soapenv:mustUnderstand="true">http://localhost:8080/dcm4chee-arc/xdsi/
↳ImagingDocumentSource</wsa:To>
    <wsa:MessageID soapenv:mustUnderstand="true">
↳urn:uuid:3FC3AA9541DB19A2CA1509719154150</wsa:MessageID>
    <wsa:Action soapenv:mustUnderstand="true">
↳urn:dicom:wado:ws:2011:RetrieveRenderedImagingDocumentSet</wsa:Action>
  </soapenv:Header>
  <soapenv:Body>
    <wado:RetrieveRenderedImagingDocumentSetRequest xmlns:wado="urn:dicom:wado:ws:2011
↳" xmlns:xdsb="urn:ihe:iti:xds-b:2007">
      <wado:StudyRequest studyInstanceUID="1.3.12.2.1107.5.8.1.12345678.
↳199508041416590859569">
```

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```

    <wado:SeriesRequest seriesInstanceUID="1.3.12.2.1107.5.8.1.12345678.
↳199508041416590859569.0">
      <wado:RenderedDocumentRequest>
        <xdsb:RepositoryUniqueId>1.3.6.1.4.1.21367.13.80.110</
↳xdsb:RepositoryUniqueId>
        <xdsb:DocumentUniqueId>1.3.12.2.1107.5.8.1.12345678.199508041416590859569.
↳0.1</xdsb:DocumentUniqueId>
        <wado:Rows>64</wado:Rows>
        <wado:Columns>64</wado:Columns>
        <wado:WindowWidth>2000</wado:WindowWidth>
        <wado:WindowCenter>1000</wado:WindowCenter>
        <wado:ImageQuality>50</wado:ImageQuality>
        <wado:FrameNumber>1</wado:FrameNumber>
        <wado:ContentTypeList>
          <wado:ContentType>image/jpeg</wado:ContentType>
        </wado:ContentTypeList>
      </wado:RenderedDocumentRequest>
    </wado:SeriesRequest>
  </wado:StudyRequest>
</wado:RetrieveRenderedImagingDocumentSetRequest>
</soapenv:Body>
</soapenv:Envelope>
--MIMEBoundary_4693e5ce87c3f1a8a06ebc9bbc9911b2e46e1863a7ac87ca--'

```

Sample Response

```

HTTP/1.1 200 OK
Connection: keep-alive
X-Powered-By: Undertow/1
Server: WildFly/11
Content-Type: multipart/related; type="application/xop+xml"; boundary="uuid:87b1feb2-
↳f5b3-4ecf-a2bc-0c709dcd7900";
  start="<root.message@cxf.apache.org>"; start-info="application/soap+xml"
Content-Length: 3479
Date: Fri, 15 Jun 2018 10:00:46 GMT

--uuid:87b1feb2-f5b3-4ecf-a2bc-0c709dcd7900
Content-Type: application/xop+xml; charset=UTF-8; type="application/soap+xml"
Content-Transfer-Encoding: binary
Content-ID: <root.message@cxf.apache.org>

<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
  <soap:Header>
    <Action xmlns="http://www.w3.org/2005/08/addressing">
      urn:dicom:wado:ws:2011:RetrieveRenderedImagingDocumentSetResponse
    </Action>
    <MessageID xmlns="http://www.w3.org/2005/08/addressing">
      urn:uuid:99e92a47-7d59-407f-a5e2-408cb76559c3
    </MessageID>
    <To xmlns="http://www.w3.org/2005/08/addressing">
      http://www.w3.org/2005/08/addressing/anonymous
    </To>
    <RelatesTo xmlns="http://www.w3.org/2005/08/addressing">
      urn:uuid:3FC3AA9541DB19A2CA1509719154150

```

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```

    </RelatesTo>
  </soap:Header>
  <soap:Body>
    <ns7:RetrieveRenderedImagingDocumentSetResponse
      xmlns="urn:ihe:iti:xds-b:2007"
      xmlns:ns2="urn:ihe:rad:xdsi-b:2009"
      xmlns:ns3="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0"
      xmlns:ns4="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0"
      xmlns:ns5="urn:oasis:names:tc:ebxml-regrep:xsd:query:3.0"
      xmlns:ns6="urn:oasis:names:tc:ebxml-regrep:xsd:lcm:3.0"
      xmlns:ns7="urn:dicom:wado:ws:2011">
      <ns7:RegistryResponse status="urn:oasis:names:tc:ebxml-
↪regrep:ResponseStatusType:Success"/>
      <ns7:RenderedDocumentResponse>
        <RepositoryUniqueId>1.3.6.1.4.1.21367.13.80.110</RepositoryUniqueId>
        <ns7:SourceDocumentUniqueId>1.3.12.2.1107.5.8.1.12345678.
↪199508041416590859569.0.1</ns7:SourceDocumentUniqueId>
        <ns7:Rows>64</ns7:Rows>
        <ns7:Columns>64</ns7:Columns>
        <ns7:WindowWidth>2000</ns7:WindowWidth>
        <ns7:WindowCenter>1000</ns7:WindowCenter>
        <ns7:ImageQuality>50</ns7:ImageQuality>
        <ns7:FrameNumber>1</ns7:FrameNumber>
        <mimeType>image/jpeg</mimeType>
        <Document>
          <xop:Include xmlns:xop="http://www.w3.org/2004/08/xop/include"
↪href="cid:0d4519bd-32df-4294-aaaa-02decb2fb40b-2@urn%3Aihe%3Aiti
↪%3Axds-b%3A2007"/>
        </Document>
      </ns7:RenderedDocumentResponse>
    </ns7:RetrieveRenderedImagingDocumentSetResponse>
  </soap:Body>
</soap:Envelope>

--uuid:87b1feb2-f5b3-4ecf-a2bc-0c709dcd7900
Content-Type: image/jpeg
Content-Transfer-Encoding: binary
Content-ID: <0d4519bd-32df-4294-aaaa-02decb2fb40b-2@urn:ihe:iti:xds-b:2007>

This is the binary JPEG payload of the image.

--uuid:87b1feb2-f5b3-4ecf-a2bc-0c709dcd7900--

```

Error Codes

The following errorCodes are used to report any of the associated error and warning situations.

Table 4.68: Error Codes

Error Code	Error Situation
urn:dicom:wado:0002	Web Server does not support anonymization.
urn:dicom:wado:0006	Web Server does not support the requested format or transfer syntax.
urn:dicom:wado:0007	The requested instance(s) cannot be provided in the requested format or transfer syntax.
urn:dicom:wado:0008	Single image format is not available for multi-frame images.
urn:dicom:wado:0012	Invalid parameter value in request.
urn:dicom:wado:0013	Unsupported parameter in request.
urn:dicom:wado:0014	Processing Failure.
urn:dicom:wado:0018	Out of range Frame number

4.3 Network Interfaces

4.3.1 Physical Network Interface

The application is indifferent to the physical medium over which TCP/IP executes, which is dependent on the underlying operating system and hardware

4.3.2 Additional Protocols

When host names rather than IP addresses are used in the configuration properties to specify presentation addresses for remote AEs, the application is dependent on the name resolution mechanism of the underlying operating system.

4.3.3 IPv4 and IPv6 Support

This product supports both IPv4 and IPv6. It does not utilize any of the optional configuration identification or security features of IPv6.

4.4 Configuration

4.4.1 AE Title/Presentation Address Mapping

Local AE Titles

The mapping from AE Title to TCP/IP addresses and ports is configurable and set at the time of installation by Installation Personnel.

Table 4.69: Default Application Entity Characteristics

Application Entity	Role	Default AE Title	Default TCP/IP Port
STORAGE-SCU	SCU	EX_STORE_SCU	None
STORAGE-SCP	SCP	EX_STORE_SCP	4000
QUERY-RETRIEVE-SCP	SCP	EX_QUERY_SCP	5000

The STORAGE-SCU and DCM4CHEE SCP Application Entities can be configured to have the same AE Title. The STORAGE-SCP Application Entity must not have the same AE Title as the other two.

Remote AE Title/Presentation Address Mapping

The mapping of external AE Titles to TCP/IP addresses and ports is configurable and set at the time of installation by Installation Personnel. This mapping is necessary for resolving the IP address and port of C-MOVE Destination Application Entities and must be correctly configured for the DCM4CHEE SCP AE to correctly function as a C-MOVE SCP.

4.4.2 Parameters

Device

DICOM Device related information

Table 4.70: Device Attributes (LDAP Object: dicomDevice)

Name	Type	Description (LDAP Attribute)
<i>Device Name</i>	string	A unique name for this device (dicomDeviceName)
<i>Device Description</i>	string	Unconstrained text description of the device (dicomDescription)
<i>Vendor Device Data</i>	boolean	Device specific vendor configuration information (dicomVendorData)
<i>Device UID</i>	string	Unique identifier of the device (dicomDeviceUID)
<i>Manufacturer</i>	string	Should be the same as the value of Manufacturer (0008,0070) in SOP instances created by this device (dicomManufacturer)
<i>Manufacturer Model Name</i>	string	Should be the same as the value of Manufacturer Model Name (0008,1090) in SOP instances created by this device (dicomManufacturerModelName)
<i>Software Version(s)</i>	string	Should be the same as the values of Software Versions (0018,1020) in SOP instances created by this device (dicomSoftwareVersion)
<i>Station Name</i>	string	Should be the same as the value of Station Name (0008,1010) in SOP instances created by this device (dicomStationName)
<i>Device Serial Number</i>	string	Should be the same as the value of Device Serial Number (0018,1000) in SOP instances created by this device (dicomDeviceSerialNumber)
<i>Primary Device Type(s)</i>	string	Represents the kind of device and is most applicable for acquisition modalities Enumerated values: ARCHIVE, COMP, CAD, DSS, FILMD, M3D, MCD, PRINT, CAPTURE, LOG, RT, WSD, AR, BMD, BDUS, EPS, CR, CT, DX, ECG, ES, XC, GM, HD, IO, IVOCT, IVUS, KER, LEN, MR, MG, NM, OAM, OCT, OPM, OP, OPR, OPT, OPTBSV, OPTENF, OPV, OSS, PX, PT, RF, RG, SM, SRF, US, VA or XA. (dicomPrimaryDeviceType)
<i>Institution Name(s)</i>	string	Should be the same as the value of Institution Name (0008,0080) in SOP Instances created by this device (dicomInstitutionName)
<i>Institution Code(s)</i>	string	Institution Code(s) in format (CV, CSD, "CM") (dicomInstitutionCode)
<i>Institution Address(s)</i>	string	Should be the same as the value of Institution Address (0008,0081) attribute in SOP Instances created by this device (dicomInstitutionAddress)
<i>Institution Department Name(s)</i>	string	Should be the same as the value of Institutional Department Name (0008,1040) in SOP Instances created by this device (dicomInstitutionDepartmentName)
<i>Issuer of Patient ID</i>	string	Default value for the Issuer of Patient ID (0010,0021), and optionally also default values for the Universal Entity ID (0040,0032) and the Universal Entity ID Type (0040,0033) of the Item of the Issuer of Patient ID Qualifiers Sequence (0010,0024) for SOP Instances created or queried by this device. Format: <Issuer of Patient ID>['&<Universal Entity ID>'&<Universal Entity ID Type>]
<i>Issuer of Accession Number</i>	string	Default values for the Local Namespace Entity ID (0040.0031), the Universal Entity ID (0040.0032) and the

Network Connection

Describes one TCP/UDP port on one network device.

Table 4.71: Network Connection Attributes (LDAP Object: dicomNetworkConnection)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name for the Network Connection object (cn)
<i>Hostname</i>	string	DNS name for this particular connection (dicomHostname)
<i>Port</i>	integer	TCP/UDP port that a service is listening on. May be missing if this network connection is only used for out-bound connections (dicomPort)
<i>TLS CipherSuites(s)</i>	string	The TLS CipherSuites that are supported on this particular connection. If not present TLS is disabled Enumerated values: SSL_RSA_WITH_NULL_SHA, TLS_RSA_WITH_AES_128_CBC_SHA, SSL_RSA_WITH_3DES_EDE_CBC_SHA, TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256, TLS_DHE_RSA_WITH_AES_128_GCM_SHA256, TLS_DHE_RSA_WITH_AES_256_GCM_SHA384 or TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384. (dicomTLSCipherSuite)
<i>installed</i>	boolean	True if the Network Connection is installed on the network. If not present, information about the installed status of the Network Connection is inherited from the device (dicomInstalled)
<i>Network Connection Extension</i>	object	dcm4che proprietary Network Connection Attributes

Network Connection Extension

dcm4che proprietary Network Connection Attributes

Table 4.72: Network Connection Extension Attributes (LDAP Object: dcmNetworkConnection)

Name	Type	Description (LDAP Attribute)
<i>Protocol</i>	string	Protocol of Network Connection. Enumerated values: DICOM, HL7, HL7_MLLP2, SYSLOG_TLS, SYSLOG_UDP or HTTP. (dcmProtocol)
<i>HTTP Proxy</i>	string	HTTP Proxy: [user:password@]host:port (dcmHTTPProxy)
<i>TLS Need Client Auth</i>	boolean	Indicates if TLS client authentication is required. (dcmTLSNeedClientAuth)
<i>TLS Protocol(s)</i>	string	The Supported TLS Protocols. Enumerated values: TLSv1.3, TLSv1.2, TLSv1.1, TLSv1 or SSLv3. (dcmTLSProtocol)
<i>TCP Backlog</i>	integer	Maximum queue length for incoming TCP connections. (dcmTCPBacklog)
<i>TCP Connect Timeout</i>	integer	TCP connect timeout in ms; no timeout if absent. (dcmTCPConnectTimeout)
<i>TCP Close Delay</i>	integer	TCP socket close delay in ms after send of A-ASSOCIATE-RJ, A-RELEASE-RP or A-ABORT PDU. (dcmTCPCloseDelay)
<i>TCP Send Buffer Size</i>	integer	TCP send buffer size; use system defaults if absent (dcmTCPSendBufferSize)
<i>TCP Receive Buffer Size</i>	integer	TCP receive buffer size; use system defaults if absent (dcmTCPReceiveBufferSize)
<i>TCP No Delay</i>	boolean	Enable/disable TCP_NODELAY (disable/enable Nagle algorithm). (dcmTCPNoDelay)
<i>Bind Address</i>	string	Bind address of listening socket; use hostname of the connection if absent (dcmBindAddress)
<i>Client Bind Address</i>	string	Bind address of outgoing connections; use hostname of the connection if absent (dcmClientBindAddress)
<i>Blacklisted Hostname(s)</i>	string	blacklisted DNS hostnames (dcmBlacklistedHostname)
<i>Send PDU Length</i>	integer	Maximal length of emitted PDUs. (dcmSendPDULength)
<i>Receive PDU Length</i>	integer	Maximal length of received PDUs. (dcmReceivePDULength)
<i>Max Ops Performed</i>	integer	Maximal number of operations to perform asynchronously; 0 = infinite. (dcmMaxOpsPerformed)
<i>Max Ops Invoked</i>	integer	Maximal number of operations to invoke asynchronously; 0 = infinite. (dcmMaxOpsInvoked)
<i>Pack PDV</i>	boolean	Enable/disable packing of command and data PDVs into one P-DATA-TF PDU. (dcmPackPDV)
<i>AA-RQ Timeout</i>	integer	Timeout in ms for receive of A-ASSOCIATE-RQ PDU after TCP connect; no timeout if absent (dcmAARQTimeout)
<i>AA-AC Timeout</i>	integer	Timeout in ms for receive of A-ASSOCIATE-AC PDU after send of A-ASSOCIATE-RQ PDU; no timeout if absent (dcmAAACTimeout)
<i>AR-RP Timeout</i>	integer	Timeout in ms for receive of A-RELEASE-RP PDU after send of A-RELEASE-RQ PDU; no timeout if absent (dcmARRPTimeout)

Network AE

Application entity that provides services on a network

Table 4.73: Network AE Attributes (LDAP Object: dicomNetworkAE)

Name	Type	Description (LDAP Attribute)
<i>AE Title</i>	string	Unique AE title for this Network AE (dicomAETitle)
<i>Network Connection Reference(s)</i>	string	JSON Pointers to the Network Connection objects for this AE (dicomNetworkConnectionReference)
<i>Association Initiator</i>	boolean	True if the Network AE can initiate associations. (dicomAssociationInitiator)
<i>Association Acceptor</i>	boolean	True if the Network AE can accept associations. (dicomAssociationAcceptor)
<i>AE Description</i>	string	Unconstrained text description of the application entity (dicomDescription)
<i>Application Cluster(s)</i>	string	Locally defined names for a subset of related applications (dicomApplicationCluster)
<i>Preferred Called AE Title(s)</i>	string	AE Title(s) that are preferred for initiating associations (dicomPreferredCalledAETitle)
<i>Preferred Calling AE Title(s)</i>	string	AE Title(s) that are preferred for accepting associations (dicomPreferredCallingAETitle)
<i>Supported Character Set(s)</i>	string	Character Set(s) supported by the Network AE for data sets it receives (dicomSupportedCharacterSet)
<i>installed</i>	boolean	True if the AE is installed on network. If not present, information about the installed status of the AE is inherited from the device (dicomInstalled)
<i>Transfer Capability (s)</i>	object	Transfer capabilities provided by the application entity
<i>Network AE Extension</i>	object	dcm4che proprietary Attributes of Network AE

Transfer Capability

Each transfer capability specifies the SOP class that the Network AE can support, the mode that it can utilize (SCP or SCU), and the Transfer Syntax(es) that it can utilize

Table 4.74: Transfer Capability Attributes (LDAP Object: dicomTransferCapability)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name for the Transfer Capability object (cn)
<i>SOP Class</i>	string	SOP Class UID (dicomSOPClass)
<i>DICOM Transfer Role</i>	string	DICOM Transfer Role. Enumerated values: SCP or SCU. (dicomTransferRole)
<i>Transfer Syntax(s)</i>	string	Transfer syntax(es) that may be requested as an SCU or that are offered as an SCP. (dicomTransferSyntax)
<i>Transfer Capability Extension</i>	object	dcm4che proprietary Transfer Capability Attributes

Transfer Capability Extension

dcm4che proprietary Transfer Capability Attributes

Table 4.75: Transfer Capability Extension Attributes (LDAP Object: dcmTransferCapability)

Name	Type	Description (LDAP Attribute)
<i>PreferredTransferSyntax(s)</i>	string	Preferred Transfer Syntax for selection of Transfer Syntax within a Presentation Context, ordered by priority. Overwrites values specified on AE level. (dcmPreferredTransferSyntax)
<i>Relational Queries</i>	boolean	Enable/disable relational queries. (dcmRelationalQueries)
<i>Combined Date Time Matching</i>	boolean	Enable/disable combined date time matching. (dcmCombinedDateTimeMatching)
<i>Fuzzy Semantic Matching</i>	boolean	Enable/disable fuzzy semantic matching of person names. (dcmFuzzySemanticMatching)
<i>Timezone Query Adjustment</i>	boolean	Enable/disable timezone query adjustment (dcmTimezoneQueryAdjustment)
<i>Storage Conformance</i>	integer	Indicates level of Conformance of a Storage SCP Enumerated values: 0, 1, 2 or 3. (dcmStorageConformance)
<i>Digital Signature Support</i>	integer	Indicates level of Digital Signature Support of a Storage SCP Enumerated values: 0, 1, 2 or 3. (dcmDigitalSignatureSupport)
<i>Data Element Coercion</i>	integer	Indicates coercion of Data Elements of a Storage SCP Enumerated values: 0, 1 or 2. (dcmDataElementCoercion)

Network AE Extension

dcm4che proprietary Attributes of Network AE

Table 4.76: Network AE Extension Attributes (LDAP Object: dcmNetworkAE)

Name	Type	Description (LDAP Attribute)
<i>Role Selection Negotiation Lenient</i>	boolean	Indicates to disable check for required SCP/SCU role selection negotiation on sending of DIMSE-RQs. Overwrites value specified on Device level. (dcmRoleSelectionNegotiationLenient)
<i>Accepted Calling AE Title(s)</i>	string	Prohibit accepting associations from unlisted AE. If not present, any AE will be accepted (dcmAcceptedCallingAETitle)
<i>Other AE Title(s)</i>	string	Additional AE Title of Network AE - will also accept Association RQs with such Called AE Title (dcmOtherAETitle)
<i>Masquerade Calling AE Title(s)</i>	string	AE Title used for initiating network associations, masquerading the actual AE Title for this Network AE - optional prefix [<Called AE Title>] limits the masquerading to association to a particular AE Title (dcmMasqueradeCallingAETitle)
<i>Preferred Transfer Syntax(s)</i>	string	Preferred Transfer Syntax for selection of Transfer Syntax within a Presentation Context, ordered by priority. If absent, the first acceptable Transfer Syntax in the offered Presentation Context will be selected. May be overwritten by configured values for particular Transfer Capabilities of this AE. (dcmPreferredTransferSyntax)
<i>HL7 Application name</i>	string	HL7 Application and Facility name (Application Facility) associated with this AE (hl7ApplicationName)
<i>Archive Network AE</i>	object	DICOM Archive Network AE related information

Archive Network AE

DICOM Archive Network AE related information

Table 4.77: Archive Network AE Attributes (LDAP Object: dcmArchiveNetworkAE)

Name	Type	Description (LDAP Attribute)
<i>Object Storage ID(s)</i>	string	ID of Storage System on which received DICOM composite objects are stored. Multiple Storage Systems may be configured. (dcmObjectStorageID)
<i>Object Storage Count</i>	integer	Number of Storage Systems which are filled in parallel. (dcmObjectStorageCount)

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Table 4.77 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Metadata Storage ID(s)</i>	string	ID of Storage on which Metadata is stored in JSON format - additionally to the complete DICOM composite object. Multiple Storage Systems may be configured. If absent, metadata is not stored additionally. (dcmMetadataStorageID)
<i>Bulk Data Descriptor ID</i>	string	ID of Bulk Data Descriptor applied by all services of this Archive Network AE providing Metadata of archived instances. Overwrites value specified on Device level. (dcmBulkDataDescriptorID)
<i>Aggregate Series Metadata Delay</i>	string	Delay in ISO-8601 duration format PnDTnHnMn.nS for storing aggregated Series Metadata on storage of objects received by this AE. Overwrites value specified on Device level. (dcmSeriesMetadataDelay)
<i>Purge Instance Records Delay</i>	string	Delay in ISO-8601 duration format PnDTnHnMn.nS for purging Instance Records from the DB received by this AE. Overwrites value specified on Device level. Only effective, if Purge Instance Records on Device Level = true. (dcmPurgeInstanceRecordsDelay)
<i>Store Access Control ID</i>	string	Access Control ID assigned to Studies received by this AE (dcmStoreAccessControlID)
<i>Access Control ID(s)</i>	string	Access Control IDs assigned to Query/Retrieve requests received by this AE. (dcmAccessControlID)
<i>Accepted Move Destination(s)</i>	string	Accepted Move Destination in C-MOVE requests; any if absent. (dcmAcceptedMoveDestination)
<i>Overwrite Policy</i>	string	Overwrite Policy for Objects received by this AE. Overwrites value specified on Device level. Enumerated values: NEVER, ALWAYS, SAME_SOURCE, SAME_SERIES or SAME_SOURCE_AND_SERIES. (dcmOverwritePolicy)
<i>Record Attribute Modification</i>	boolean	Indicates if modifications of attributes of stored objects by this AE are recorded in Items of the Original Attributes Sequence. Overwrites value specified on Device level. (dcmRecordAttributeModification)
<i>Accept Missing Patient ID</i>	string	Indicates if objects without Patient IDs shall be accepted and if a Patient ID shall be created. Overwrites value specified on Device level. Enumerated values: YES, NO or CREATE. (dcmAcceptMissingPatientID)
<i>Accept Conflicting Patient ID</i>	string	Indicates if objects with a Patient IDs which differs from the Patient ID in previous received objects of the Study shall be accepted. Overwrites value specified on Device level. Enumerated values: YES, NO or MERGED. (dcmAcceptConflictingPatientID)
<i>Query/Retrieve View ID</i>	string	Query/Retrieve View Identifier. (dcmQueryRetrieveViewID)

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Table 4.77 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Bulk Data Spool Directory</i>	string	Path to Bulk Data Spool Directory. Overwrites value specified on Device level. (dcmBulkDataSpoolDirectory)
<i>Hide SPS with Status(s)</i>	string	Scheduled Procedure Step Status codes of MWL items which shall not be returned by the MWL SCP. Overwrites value specified on Device level. Enumerated values: SCHEDULED, ARRIVED, READY, STARTED, DEPARTED, CANCELED, DISCONTINUED or COMPLETED. (dcmHideSPSWithStatusFromMWL)
<i>Validate Calling AE Hostname</i>	boolean	Validate Calling AE Hostname or IP Address of Association requestors for this AE. Overwrites value specified on Device level. (dcmValidateCallingAEHostname)
<i>User Identity Negotiation</i>	string	Specifies to ignore User Identity Negotiation Sub-Item in Association requests (=NOT_SUPPORTED), to verify passed Username and password or JSON Web Token are against a Keycloak server (=SUPPORTS), or to reject Association requests without a valid Username and password or JSON Web Token in its Identity Negotiation Sub-Item (=REQUIRED). Overwrites value specified on Device level. Enumerated values: NOT_SUPPORTED, SUPPORTS or REQUIRED. (dcmUserIdentityNegotiation)
<i>User Identity Negotiation Role</i>	string	Constrain accepted User Identity Negotiation requests to users with specified role. Overwrites value specified on Device level. (dcmUserIdentityNegotiationRole)
<i>User Identity Negotiation Keycloak Client ID</i>	string	Keycloak Client ID referring Keycloak connection configuration for verifying passed username and password or JSON Web Token. Overwrites value specified on Device level. (dcmUserIdentityNegotiationKeycloakClientID)
<i>Person Name Component Order Insensitive Matching</i>	boolean	Indicates if name component order insensitive matching is performed on fuzzy semantic matching of person names by this AE. Overwrites value specified on Device level. (dcmPersonNameComponentOrderInsensitiveMatching)
<i>Send Pending C-Get</i>	boolean	Enables pending C-GET responses. Overwrites value specified on Device level. (dcmSendPendingCGet)
<i>Send Pending C-Move Interval</i>	string	Interval of pending C-MOVE responses in ISO-8601 duration format PnDTnHnMn.nS. Overwrites value specified on Device level. (dcmSendPendingCMoveInterval)
<i>Wado SR2Html Template URI</i>	string	Specifies URI for the style sheet used to render structured reports to html. Overwrites value specified on Device level. (dcmWadoSR2HtmlTemplateURI)

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Table 4.77 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Wado SR2Text Template URI</i>	string	Specifies URI for the style sheet used to render structured reports to plain text. Overwrites value specified on Device level. (dcmWadoSR2TextTemplateURI)
<i>Wado CDA to HTML Template URI</i>	string	URL to XSL style sheet inserted as <?xml-stylesheet type="text/xsl" href="<url>" > in CDA documents returned by WADO-URI service. If absent, the embedded CDI document is returned verbatim. Overwrites value specified on Device level. (dcmWadoCDA2HtmlTemplateURI)
<i>Wado Thumbnail Viewport</i>	string	Dimension of Thumbnails returned by WADO retrieve of Instance Thumbnails, if no Viewport is specified in the request. Format: <width>,<height>. Overwrites value specified on Device level. (dcmWadoThumbnailViewport)
<i>Wado ZIP Entry Name Format</i>	string	Format of entry names in ZIP archive returned by WADO-RS. Overwrites value specified on Device level. (dcmWadoZIPEntryNameFormat)
<i>Query Max Number Of Results</i>	integer	Maximal number of return results by C-FIND SCP. If the number of matches extends the limit, the C-FIND request will be refused. 0 = no limitation. Overwrites value specified on Device level. (dcmQueryMaxNumberOfResults)
<i>Qido Max Number Of Results</i>	integer	Maximal number of return results by QIDO-RS Service. 0 = unlimited. Overwrites value specified on Device level. (dcmQidoMaxNumberOfResults)
<i>Mpps Forward Destination(s)</i>	string	Destination to forward MPPS N-CREATE RQ and N-SET RQ. Overwrites value specified on Device level. (dcmFwdMppsDestination)
<i>Ian Destination(s)</i>	string	Destination to send IAN N-CREATE RQ. Overwrites value specified on Device level. (dcmIanDestination)
<i>IAN Delay</i>	string	Delay in ISO-8601 duration format PnDTnHnMn.nS after which an IAN for a received study is sent to configured IAN destinations. Overwrites value specified on Device level. (dcmIanDelay)
<i>IAN Timeout</i>	string	Timeout in ISO-8601 duration format PnDTnHnMn.nS for waiting on receive of instances referenced in MPPS. Overwrites value specified on Device level. (dcmIanTimeout)
<i>IAN On Timeout</i>	boolean	Specifies if the IAN is sent if the timeout for waiting on receive of instances referenced is exceeded. Overwrites value specified on Device level. (dcmIanOnTimeout)
<i>Spanning C-Find SCP</i>	string	AE Title of external C-FIND SCP to forward C-FIND RQs and backward responses according configured Spanning C-Find SCP Policy. Overwrites value specified on Device level. (dcmSpanningCFindSCP)

Continued on next page

Table 4.77 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Spanning C-Find SCP Policy</i>	string	Specifies policy for combining matches returned from configured Spanning C-Find SCP with matching entries from the archive DB. SUPPLEMENT (= returns local matches before additional matches from Spanning C-Find SCP), MERGE (= returns matches from Spanning C-Find SCP before additional local matches), REPLACE (= returns only matches from Spanning C-Find SCP). Overwrites value specified on Device level. Enumerated values: SUPPLEMENT, MERGE or REPLACE. (dcmSpanningCFindSCPPolicy)
<i>Spanning C-Find SCP Retrieve AE Title(s)</i>	string	Specifies Retrieve AE Title(s) in returned matches from Spanning C-Find SCP. Overwrites value specified on Device level. (dcmSpanningCFindSCPRetrieveAET)
<i>Fallback C-Move SCP</i>	string	AE Title of external C-MOVE SCP to forward C-MOVE RQs if the requested Entities are not managed by this archive. Overwrites value specified on Device level. (dcmFallbackCMoveSCP)
<i>Fallback C-Move SCP Study Older Than</i>	string	Specifies threshold for Study Date in format YYYYMMDD for marking received Studies as (potential) incomplete to enforce the retrieve from configured dcmFallbackCMoveSCP. Overwrites value specified on Device level. (dcmFallbackCMoveSCPStudyOlderThan)
<i>Fallback C-Move SCP Destination</i>	string	AE Title of local C-STORE-SCP to be set as Move Destination in C-MOVE RQs forwarded to the external C-MOVE SCP specified by dcmFallbackCMoveSCP. Overwrites value specified on Device level. (dcmFallbackCMoveSCPDestination)
<i>Fallback C-Move SCP Leading C-Find SCP</i>	string	AE Title of external C-FIND SCP for Verification of Number of Instances retrieved from external C-MOVE SCP specified by dcmFallbackCMoveSCP. Overwrites value specified on Device level. (dcmFallbackCMoveSCPLeadingCFindSCP)
<i>Fallback C-Move SCP Retries</i>	integer	Maximal number of retries to retrieve not available objects from C-MOVE SCP configured by dcmFallbackCMoveSCP. -1 = forever. Overwrites value specified on Device level. (dcmFallbackCMoveSCPRetries)
<i>Fallback WADO-URI Web Application Name</i>	string	Name of external Web Application to redirect WADO URI requests if the requested Object is not available by this archive. Overwrites value specified on Device level. (dcmFallbackWadoURIWebAppName)
<i>Fallback WADO-URI HTTP Status Code</i>	integer	HTTP Status code of Redirect Response configured by Fallback WADO-URI Web Application Name. Overwrites value specified on Device level. Enumerated values: 301, 302, 303 or 307. (dcmFallbackWadoURIHttpStatusCode)

Continued on next page

Table 4.77 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Alternative C-Move SCP</i>	string	AE Title of alternative C-MOVE SCP to forward C-MOVE RQs if the requested Entities are not located on a local attached Storage. Overwrites value specified on Device level. (dcmAltCMoveSCP)
<i>Store Permission Service URL</i>	string	URL of Store Permission Service which will be invoked on receive of the first object of a study. {<dicom-Tag>} will be replaced by the value of the attribute in the object. E.g. http(s)://<store-permission-service-provider-host>:<store-permission-service-provider-port>/storage-permission/study/{0020000D}?patientId={00100020}&patientIdIssuer={00100021}. Overwrites value specified on Device level. (dcmStorePermissionServiceURL)
<i>Store Permission Service Response</i>	string	Emulate Store Permission Service Response on receive of the first object of a study. {<dicomTag>} will be replaced by the value of the attribute in the object. Only effective if no Store Permission Service Response is configured. Overwrites value specified on Device level. (dcmStorePermissionServiceResponse)
<i>Store Permission Service Response Pattern</i>	string	Regular Expression applied to responses from Store Permission Service to determine agreement for storage. E.g. “validation”s*:s*“true”. Overwrites value specified on Device level. (dcmStorePermissionServiceResponsePattern)
<i>Store Permission Service Error Comment Pattern</i>	string	Regular Expression applied to responses from Store Permission Service to extract Error Comment. E.g. “error-comment”s*:s*“(.*?)”. Overwrites value specified on Device level. (dcmStorePermissionServiceErrorCommentPattern)
<i>Store Permission Service Error Code Pattern</i>	string	Regular Expression applied to responses from Store Permission Service to extract Error Code in hexadecimal. E.g. “errorcode”s*:s*“(p{XDigit}{4})”. Overwrites value specified on Device level. (dcmStorePermissionServiceErrorCodePattern)
<i>Store Permission Service Expiration Date Pattern</i>	string	Regular Expression applied to responses from Store Permission Service to extract the initial Study Expiration Date. E.g. “expirationdate”s*:s*“([0-9]{8})”. Overwrites value specified on Device level. (dcmStorePermissionServiceExpirationDatePattern)
<i>Allow Rejection For Data Retention Policy Expired</i>	string	Allow Rejection For Data Retention Policy Expired. Overwrites value specified on Device level. Enumerated values: NEVER, ALWAYS, EXPIRED_UNSET or ONLY_EXPIRED. (dcmAllowRejectionForDataRetentionPolicyExpired)
<i>Allow Delete Study permanently</i>	string	Allow to delete Study permanently. REJECTED = only already rejected Studies. Overwrites value specified on Device level. Enumerated values: ALWAYS or REJECTED. (dcmAllowDeleteStudyPermanently)

Continued on next page

Table 4.77 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Allow Delete Patient</i>	string	Allow permanent deletion of Patients. Enumerated values: NEVER, ALWAYS, WITHOUT_STUDIES. Overwrites value specified on Device level. Enumerated values: NEVER, ALWAYS or WITHOUT_STUDIES. (dcmAllowDeletePatient)
<i>Default Character Set</i>	string	Value of Specific Character Set (0008,0005) added to Data Sets of C-STORE RQs and pending C-FIND RSPs without Specific Character Set (0008,0005) attribute received by this Network AE. Overwrites value specified on Device level. (dcmDefaultCharacterSet)
<i>UPS Worklist Label</i>	string	Value of Worklist Label (0074,1202) of created UPS by this Network AE, if the UPS Push SCU or UPS-RS User Agent does not provide a value for this attribute. If absent, the AE Title of the receiving AE will be used. Overwrites value specified on Device level. (dcmUPSWorklistLabel)
<i>UPS Event SCU(s)</i>	string	AE Title of UPS Event SOP Class SCU, to which UPS Event Reports are sent for subscriptions created on this Network AE - independently if the subscription was created by the N-ACTION DIMSE service, or by a corresponding UPS RESTful service. Overwrites value specified on Device level. (dcmUPSEventSCU)
<i>UPS Event SCU Keep Alive</i>	integer	Timeout in ms to keep associations to UPS Event SCUs alive. If absent, associations will not be reused for sending multiple UPS Event Reports to one UPS Event SCU. Overwrites value specified on Device level. (dcmUPSEventSCUKeepAlive)
<i>Retrieve AE Title(s)</i>	string	Specifies Retrieve AE Titles associated with DICOM objects received by this Network AE. Overwrites value specified on Device level. (dcmRetrieveAET)
<i>Return Retrieve AE Title(s)</i>	string	Retrieve AE Title returned in C-FIND and QIDO responses. If absent, the Retrieve AET associated with the archived entity will be returned. Overwrites value specified on Device level. (dcmReturnRetrieveAET)
<i>Multiple Store Associations(s)</i>	string	Number of Storage Associations used for retrieve of Composite Objects. C-STORE SCP specific numbers can be specified by prefix '<AETitle>:'. Supplements Multiple Store Associations specified on Device level. (dcmMultipleStoreAssociations)
<i>External Retrieve AE Destination</i>	string	AE Title of local C-STORE-SCP to be set as Move Destination in C-MOVE RQs forwarded to external retrieve AE. Overwrites value specified on Device level. (dcmExternalRetrieveAEDestination)

Continued on next page

Table 4.77 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Copy Move Update Policy</i>	string	Specifies update policy for attributes of the destination Study on Copy/Move of Instances from another Study. If absent, the attributes will not be updated. Overwrites value specified on Device level. Enumerated values: PRESERVE, SUPPLEMENT, MERGE, OVERWRITE or REPLACE. (dcmCopyMoveUpdatePolicy)
<i>Link MWL Entry Update Policy</i>	string	Specifies update policy for Study attributes on Link of Instances of another Study with a MWL Entry referring an existing Study. Overwrites value specified on Device level. Enumerated values: PRESERVE, SUPPLEMENT, MERGE, OVERWRITE or REPLACE. (dcmLinkMWLEntryUpdatePolicy)
<i>Storage Verification Policy</i>	string	DB_RECORD_EXISTS: only check for existence of DB records, OBJECT_EXISTS: check if object exists on Storage System, OBJECT_SIZE: check size of object on Storage System, OBJECT_FETCH: fetch object from Storage System), OBJECT_CHECKSUM: recalculate checksum of object on Storage System, S3_MD5SUM: check MD5 checksum of object on S3 Storage System. Overwrites value specified on Device level. Enumerated values: DB_RECORD_EXISTS, OBJECT_EXISTS, OBJECT_SIZE, OBJECT_FETCH, OBJECT_CHECKSUM or S3_MD5SUM. (dcmStorageVerificationPolicy)
<i>Storage Verification Update Location Status</i>	boolean	Indicates if the Status of the Location DB record shall be updated on Storage Verification accordingly. Not effective with Storage Verification Policy: DB_RECORD_EXISTS. Overwrites value specified on Device level. (dcmStorageVerificationUpdateLocationStatus)
<i>Storage Verification Storage IDs(s)</i>	string	Only accept Storage Verification if the validation of the storage of the object on one of the specified Storage Systems is successful. Not effective with Storage Verification Policy: DB_RECORD_EXISTS. Overwrites values specified on Device level. (dcmStorageVerificationStorageID)
<i>Storage Verification Initial Delay</i>	string	Delay in ISO-8601 duration format PnYnMnD or PnW of first Storage Verification of a Series after it was received. Overwrites values specified on Device level. (dcmStorageVerificationInitialDelay)
<i>Update Location Status on Retrieve</i>	boolean	Indicates if the Status of the Location DB record shall be updated for objects failed to get fetched from storage on retrieve to MISSING_OBJECT or FAILED_TO_FETCH_OBJECT. Overwrites value specified on Device level. (dcmUpdateLocationStatusOnRetrieve)
<i>Storage Verification on Retrieve</i>	boolean	Indicates if failures to fetch an object from Storage on retrieve shall trigger a Storage Verification of the whole Series. Overwrites value specified on Device level. (dcmStorageVerificationOnRetrieve)

Continued on next page

Table 4.77 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>HL7 Procedure Status Update Sending Application</i>	string	Application\Facility name of Sending Application for HL7 Procedure Status Update. Overwrites value specified on Device level. (hl7PSUSendingApplication)
<i>HL7 Procedure Status Update Receiving Application(s)</i>	string	Application\Facility name of Receiving Application for HL7 Procedure Status Update. Overwrites value specified on Device level. (hl7PSUReceivingApplication)
<i>HL7 Procedure Status Update Delay</i>	string	Delay in ISO-8601 duration format PnDTnHnMn.nS after which an HL7 Procedure Status Update for a received study is sent to configured HL7 receivers. If absent, HL7 Procedure Status Update is triggered by received MPPS. Overwrites value specified on Device level. (hl7PSUDelay)
<i>HL7 Procedure Status Update Attribute Conditions(s)</i>	string	Restrict notification of configured HL7 Procedure Status Update Receiving Applications about Procedure Status Update by conditions on attributes of received composite object in format (SendingHost- name SendingApplicationEntityTitle ReceivingHostname ReceivingApplicationEntityTitle). Overwrites value specified on Device level. (hl7PSUConditions)
<i>HL7 Procedure Status Update for Requested Procedure</i>	boolean	Restrict notification of configured HL7 Procedure Status Update Receiving Applications about Procedure Status Update to existence of Scheduled Procedure Steps of a Requested Procedure (MWL Items in the DB) with matching Study Instance UID. Overwrites value specified on Device level. (hl7PSUForRequestedProcedure)
<i>HL7 Procedure Status Update Requested Procedure ID</i>	string	Value for Requested Procedure ID in notification message, if there are no Scheduled Procedure Steps of a Requested Procedure (MWL Items in the DB) with matching Study Instance UID. {<attributeID>} will be replaced by the value of attribute in the received study. Overwrites value specified on Device level. (hl7PSURequestedProcedureID)
<i>HL7 Procedure Status Accession Number</i>	string	Value for Accession Number in notification message, if there are no Scheduled Procedure Steps of a Requested Procedure (MWL Items in the DB) with matching Study Instance UID. {<attributeID>} will be replaced by the value of attribute in the received study. Overwrites value specified on Device level. (hl7PSUAccessionNumber)
<i>HL7 Procedure Status Filler Order Number</i>	string	Value for Filler Order Number in notification message, if there are no Scheduled Procedure Steps of a Requested Procedure (MWL Items in the DB) with matching Study Instance UID. {<attributeID>} will be replaced by the value of attribute in the received study. Overwrites value specified on Device level. (hl7PSUFillerOrderNumber)

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Table 4.77 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>HL7 Procedure Status Placer Order Number</i>	string	Value for Placer Order Number in notification message, if there are no Scheduled Procedure Steps of a Requested Procedure (MWL Items in the DB) with matching Study Instance UID. {<attributeID>} will be replaced by the value of attribute in the received study. Overwrites value specified on Device level. (hl7PSUPlacerOrderNumber)
<i>HL7 Procedure Status Message Type</i>	string	Message Type of HL7 Procedure Status Update message. Overwrites value specified on Device level. Enumerated values: OMG_O19 or ORU_R01. (hl7PSUMessageType)
<i>HL7 Procedure Status Update PID PV1</i>	boolean	Indicates to include a Patient Identification (PID) and a Patient Visit (PV1) segment in the HL7 Procedure Status Update message. Implicitly set, if HL7 Procedure Status Message Type = ORU_R01. Overwrites value specified on Device level. (hl7PSUPIDPV1)
<i>HL7 Procedure Status Update MWL</i>	boolean	Specifies if the Status of MWL Items in the DB is updated to COMPLETED for a received study after the configured HL7 Procedure Status Update Delay or for received MPPS after configured HL7 Procedure Status Update Timeout. Implicitly set to true, if notification of HL7 receivers is configured. Overwrites value specified on Device level. (hl7PSUMWL)
<i>HL7 Procedure Status Update Timeout</i>	string	Timeout in ISO-8601 duration format PnDTnHnMn.nS for waiting on receive of instances referenced in MPPS. Overwrites value specified on Device level. (hl7PSUTimeout)
<i>HL7 Procedure Status Update On Timeout</i>	boolean	Specifies if the HL7 Procedure Status Update is sent if the timeout for waiting on receive of instances referenced is exceeded. Overwrites value specified on Device level. (hl7PSUOnTimeout)
<i>Relational Query Negotiation Lenient</i>	boolean	Indicates to accept C-FIND RQs without unique keys for levels above the query level also if support for relational-queries was not negotiated. Overwrites value specified on Device level. (dcmRelationalQueryNegotiationLenient)
<i>Relational Retrieve Negotiation Lenient</i>	boolean	Indicates to accept C-MOVE and C-GET RQs without unique keys for levels above the query level also if support for relational-queries was not negotiated. Overwrites value specified on Device level. Overwrites value specified on Device level. (dcmRelationalRetrieveNegotiationLenient)

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Table 4.77 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Restrict Retrieve Silently</i>	boolean	Indicates if the set of requested objects to retrieve shall be silently (=without counting not transferred object as failures) restricted according the Transfer Capabilities of the Retrieve Destination. Otherwise the number of requested objects for which no Transfer Capability is configured for the Retrieve Destination and therefore are not retrieved is counted as failures. Only effective, if the Retrieve Destination has configured at least one Transfer Capability with SCP role. Overwrites value specified on Device level. (dcmRestrictRetrieveSilently)
<i>Reject Conflicting Patient Attribute(s)</i>	string	DICOM Tag of Patient Attribute which have to match in received objects with the value in previous received objects with equal Patient ID to be accepted. Overwrites value specified on Device level. (dcmRejectConflictingPatientAttribute)
<i>STOW Retired Transfer Syntax</i>	boolean	Store received JPEG Full Progression, Non-Hierarchical JPEG images in DICOM images with corresponding (retired) Transfer Syntax UID 1.2.840.10008.1.2.4.55. Otherwise set 1.2.840.10008.1.2.4.50 (= JPEG Baseline) or 1.2.840.10008.1.2.4.51 (= JPEG Extended) as Transfer Syntax UID of the stored DICOM image, without transcoding to JPEG Baseline or JPEG Extended, but including the JPEG image as received. Overwrites value specified on Device level. (dcmStowRetiredTransferSyntax)
<i>STOW Exclude Application Markers</i>	boolean	Indicates if APP markers in JPEG images received in STOW-RS Metadata and Bulkdata requests shall be excluded from the JPEG bit streams encapsulated in created DICOM instances. Overwrites value specified on Device level. (dcmStowExcludeAPPMarkers)
<i>STOW Quicktime to MP4</i>	boolean	Indicates if QuickTime containers received in STOW-RS Metadata and Bulkdata requests shall be converted to MP4 containers encapsulated in created DICOM instances. The conversion requires that ffmpeg is installed and the ffmpeg CLI utility is available in the PATH. Otherwise Quicktime containers will get encapsulated in the stored DICOM object verbatim, with a declared DICOM MPEG-4 Transfer Syntax which reflects the encoding of the video stream in the container, but contradicts the actual container format. Overwrites value specified on Device level. (dcmStowQuicktime2MP4)
<i>Retrieve Task Warning on no Match</i>	boolean	Indicates if the result status of Retrieve Tasks shall be set to WARNING if none of the requested objects was found on the C-MOVE SCP. Overwrites value specified on Device level. (dcmRetrieveTaskWarningOnNoMatch)

Continued on next page

Table 4.77 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Retrieve Task Warning on Warnings</i>	boolean	Indicates if the result status of Retrieve Tasks shall be set to WARNING if there are Warning Sub-Operations, even if the retrieve of all objects was successful. Overwrites value specified on Device level (dcmRetrieveTaskWarningOnWarnings)
<i>Fallback C-Move SCP Calling AE title</i>	string	Calling AE Title used in A-ASSOCIATE-RQ to configured Fallback C-MOVE SCP. If absent, the AE Title of the external C-MOVE SCU is used. Overwrites value specified on Device level. (dcmFallbackCMoveSCPCallingAET)
<i>Export Rule (s)</i>	object	Export Rules applied to DICOM objects received by this AE. Supplements Export Rules specified on Device level.
<i>Export Priors Rule (s)</i>	object	Export Priors Rules applied to DICOM objects received by this AE. Supplements Export Priors Rules specified on Device level.
<i>RESTful Forward Rule (s)</i>	object	RESTful Forward Rules. Supplements RESTful Forward rules specified on Device level.
<i>Archive Compression rule (s)</i>	object	Compression rules. Supplements Compression rules specified on Device level.
<i>Archive Attribute Coercion (s)</i>	object	Attribute Coercion of received/sent DIMSE. Supplements Attribute Coercions specified on Device level.
<i>Study Retention Policy (s)</i>	object	Study Retention Policies. Supplements Study Retention Policies specified on Device level.
<i>Store Access Control ID Rule (s)</i>	object	Store Access Control Rules applied to Studies received by this AE. Supplements Store Access Control Rules specified on Device level.
<i>UPS on Store (s)</i>	object	UPS on Store Rules applied to DICOM objects received by this AE. Supplements UPS on Store Rules specified on Device level.
<i>UPS on UPS Completed (s)</i>	object	UPS on UPS Completed Rules applied to UPS managed by this AE. Supplements UPS on UPS Completed Rules specified on Device level.

Device Extension

dcm4che proprietary Device Attributes

Table 4.78: Device Extension Attributes (LDAP Object: dcmDevice)

Name	Type	Description (LDAP Attribute)
<i>Role Selection Negotiation Lenient</i>	boolean	Indicates to disable check for required SCP/SCU role selection negotiation on sending of DIMSE-RQs. May be overwritten by configured value for particular Network AEs. (dcmRoleSelectionNegotiationLenient)
<i>Association Limit</i>	integer	Maximal number of open DICOM connections; rejects Association requests if the limit is exceeded; 0 = unlimited. (dcmLimitOpenAssociations)
<i>Association Limit for AE(s)</i>	string	Maximal number of open DICOM connections initiated by a particular Application Entity (AE) in format <ae-title>=<number>; rejects Association requests from that AE if the limit is exceeded. (dcmLimitAssociationsInitiatedBy)
<i>Trust Store URL</i>	string	URL of Trust Store with Certificates for DICOM nodes that are authorized to connect to this node; overrides dcmAuthorizedNodeCertificateReference (dcmTrustStoreURL)
<i>Trust Store Type</i>	string	Key Store Type of Trust Store specified by dcmTrustStoreURL. Enumerated values: JKS, PKCS12. (dcmTrustStoreType)
<i>Trust Store Pin</i>	string	Key Store Password of Trust Store specified by Trust Store URL (dcmTrustStorePin)
<i>Trust Store Pin Property</i>	string	System property of Key Store Password of Trust Store specified by Trust Store URL (dcmTrustStorePinProperty)
<i>Key Store URL</i>	string	URL of Key Store with private Key and certificate used to identify this DICOM node in TLS connections (dcmKeyStoreURL)
<i>Key Store Type</i>	string	Key Store Type of Key Store specified by Key Store URL. Enumerated values: JKS, PKCS12. (dcmKeyStoreType)
<i>Key Store Pin</i>	string	Key Store Password of Key Store specified by Key Store URL (dcmKeyStorePin)
<i>Key Store Pin Property</i>	string	System property of Key Store Password of Key Store specified by Key Store URL (dcmKeyStorePinProperty)
<i>Key Store Key Pin</i>	string	Key Password of Key Store specified by Key Store URL (dcmKeyStoreKeyPin)
<i>Key Store Key Pin Property</i>	string	System property of Key Password of Key Store specified by Key Store URL (dcmKeyStoreKeyPinProperty)
<i>Time Zone of Device</i>	string	Time Zone ID of the Device; matches Java TimeZone ID (dcmTimeZoneOfDevice)
<i>Web Application (s)</i>	object	Web Applications provided by the Device
<i>Keycloak Client (s)</i>	object	Keycloak Clients provided by the Device
<i>HL7 Application (s)</i>	object	HL7 Applications provided by the Device
<i>Image Writer (s)</i>	object	Specifies Java Image IO Image Writers with Write Parameters used for compressing DICOM images
<i>Image Reader (s)</i>	object	Specifies Java Image IO Image Readers used for decompressing compressed DICOM images
4.4. Configuration		
<i>Audit Logger (s)</i>	object	Audit Logger related information
<i>Audit Record Repository</i>	object	Audit Record Repository related information
<i>Archive Device</i>	object	DICOM Archive Device related information
<i>UI Configuration (s)</i>	object	UI Configuration

Web Application

Web Application information

Table 4.79: Web Application Attributes (LDAP Object: dcmWebApplication)

Name	Type	Description (LDAP Attribute)
<i>Web Application name</i>	string	Name of the Web Application (dcmWebAppName)
<i>Web Application Network Connection(s)(s)</i>	string	Network Connection(s) on which the services of the Web application are available (dicomNetworkConnectionReference)
<i>Web Application Description</i>	string	Unconstrained text description of the Web Application (dicomDescription)
<i>Web Service Path</i>	string	HTTP Path of the services of the Web application (dcmWebServicePath)
<i>Web Service Class(s)</i>	string	Web Service Classes provided by the Web application Enumerated values: QIDO_RS, STOW_RS, WADO_RS, WADO_URI, UPS_RS, MWL_RS, QIDO_COUNT, DCM4CHEE_ARC, DCM4CHEE_ARC_AET, DCM4CHEE_ARC_AET_DIFF, PAM, REJECT, MOVE, MOVE_MATCHING, UPS_MATCHING, ELASTICSEARCH or XDS_RS. (dcmWebServiceClass)
<i>Keycloak Client ID</i>	string	Keycloak Client ID for the Web application (dcmKeycloakClientID)
<i>AE Title</i>	string	AE title of Network AE associated with this Web Application (dicomAETitle)
<i>Application Cluster(s)</i>	string	Locally defined names for a subset of related applications (dicomApplicationCluster)
<i>Property(s)</i>	string	Property in format <name>=<value>. E.g.: roles=<accepted-user-role>[...], IID_PATIENT_URL=http(s)://<viewer-host>:<viewer-port>/IHEInvokeImageDisplay?requestType=PATIENT&patientID={{ patientID }} or IID_STUDY_URL=http(s)://<viewer-host>:<viewer-port>/IHEInvokeImageDisplay?requestType=STUDY&studyUID={{ studyUID }}, (Other valid parameters are: 'patientBirthDate' and 'accessionNumber'), you could define the target of the Url by setting it to the parameter 'IID_URL_TARGET=_blank _self' (dcmProperty)
<i>installed</i>	boolean	True if the Web Application is installed on network. If not present, information about the installed status of the Web Application is inherited from the device (dicomInstalled)

Keycloak Client

Keycloak Client

Table 4.80: Keycloak Client Attributes (LDAP Object: dcmKeycloak-Client)

Name	Type	Description (LDAP Attribute)
<i>Keycloak Client ID</i>	string	Client ID used in token requests. (dcmKeycloakClientID)
<i>Server URL</i>	string	The base URL of the Keycloak server. (dcmURI)
<i>Keycloak Realm</i>	string	Name of the realm in token requests. (dcmKeycloakRealm)
<i>Keycloak grant type</i>	string	Keycloak grant type used in token requests. Enumerated values: client_credentials or password. (dcmKeycloakGrantType)
<i>Keycloak Client secret</i>	string	Keycloak client secret. Required if grant type = client_credentials. (dcmKeycloakClientSecret)
<i>TLS Allow Any Hostname</i>	boolean	If the other server requires HTTPS and this config option is set to true the other server's certificate is validated via the truststore, but host name validation is not done. (dcmTLSAllowAnyHostname)
<i>TLS Disable Trust Manager</i>	boolean	If the other server requires HTTPS and this config option is set to true you do not have to specify a truststore (dcmTLSDisableTrustManager)
<i>User ID</i>	string	User ID. Required if grant type = password. (uid)
<i>User Password</i>	string	User Password. Required if grant type = password. (userPassword)

HL7 Application

HL7 Application information

Table 4.81: HL7 Application Attributes (LDAP Object: hl7Application)

Name	Type	Description (LDAP Attribute)
<i>HL7 Application name</i>	string	HL7 Application and Facility name (Application Facility) (hl7ApplicationName)
<i>Network Connection Reference(s)</i>	string	The JSON Pointers to the Network Connection objects for this HL7 Application (dicomNetworkConnectionReference)
<i>Accepted Sending Application(s)</i>	string	Application Facility name of accepted Sending Application(s); any if absent (hl7AcceptedSendingApplication)
<i>Other HL7 Application Name(s)</i>	string	Additional HL7 Application and Facility name (Application Facility) - will also accept HL7 messages with such Receiving Application and Facility name (hl7OtherApplicationName)
<i>Accepted Message Type(s)</i>	string	Message Type(s) (MessageType^TriggerEvent) of accepted messages (hl7AcceptedMessageType)
<i>Default Character Set</i>	string	Character Set used to decode received messages if not specified by MSH-18. (hl7DefaultCharacterSet)
<i>Sending Character Set</i>	string	Character Set used to encode HL7 messages sent from archive. (hl7SendingCharacterSet)
<i>HL7 Description</i>	string	Unconstrained text description of the HL7 Application (dicomDescription)
<i>Application Cluster(s)</i>	string	Locally defined names for a subset of related applications (dicomApplicationCluster)
<i>installed</i>	boolean	True if the HL7 Application is installed on network. If not present, information about the installed status of the HL7 Application is inherited from the device (dicomInstalled)
<i>Archive HL7 Application</i>	object	DICOM Archive HL7 Application related information

Archive HL7 Application

DICOM Archive HL7 Application related information

Table 4.82: Archive HL7 Application Attributes (LDAP Object: dc-mArchiveHL7Application)

Name	Type	Description (LDAP Attribute)
<i>AE Title</i>	string	Archive AE Title associated with this HL7 Application. (dicomAETitle)
<i>Record Attribute Modification</i>	boolean	Indicates if modifications of attributes of stored objects by this HL7 Application are recorded in Items of the Original Attributes Sequence. Overwrites value specified on Device level. (dcmRecordAttributeModification)
<i>HL7 ORU Action(s)</i>	string	Specifies action on receive of HL7 ORU^R01 message: IMPORT_REPORT (= transcode received HL7 ORU^R01 to DICOM SR), MWL_COMPLETED (= set Status of matching MWL items to COMPLETED). Overwrites value specified on Device level. Enumerated values: IMPORT_REPORT or MWL_COMPLETED. (hl7ORUAction)
<i>HL7 Patient Update Template URI</i>	string	Specifies URI for the style sheet used by HL7v2 Patient Update Service. Overwrites value specified on Device level. (hl7PatientUpdateTemplateURI)
<i>HL7 Import Report Template URI</i>	string	Specifies URI for the style sheet to transcode received HL7 ORU^R01 to DICOM SR. Overwrites value specified on Device level. (hl7ImportReportTemplateURI)
<i>HL7 Import Report Template Parameter(s)</i>	string	XSLT parameters passed to style sheet specified by HL7 Import Report Template URI. Format: {name}={value}. E.g.: 'langCodeValue=et', 'langCodingSchemeDesignator=RFC5646', 'langCodeMeaning=Estonian'. Overwrites value specified on Device level. (hl7ImportReportTemplateParam)
<i>HL7 Schedule Procedure Template URI</i>	string	Specifies URI for the style sheet to transcode received HL7 ORM^O01, OMI^O23, OMG^O19 to DICOM MWL items. Overwrites value specified on Device level. (hl7ScheduleProcedureTemplateURI)
<i>HL7 Schedule Protocol Code in Order</i>	string	Specifies location of Scheduled Protocol Code in received HL7 Order message. Overwrites value specified on Device level. Enumerated values: OBR_4_1 or OBR_4_4. (hl7ScheduledProtocolCodeInOrder)
<i>HL7 Schedule Station AET in Order</i>	string	Specifies location of Scheduled Station AE Title in received HL7 Order message. Should not be configured for HL7 v2.5.1 OMI^O23 with IPC segment. Overwrites value specified on Device level. Enumerated values: ORC_18. (hl7ScheduledStationAETInOrder)
<i>HL7 Log File Pattern</i>	string	Path to HL7 messages which will be captured exactly as received. If absent, there is no logging. Overwrites value specified on Device level. eg. \${jboss.server.data.dir}/hl7/\${date,yyyy/MM/dd}/\${SerialNo}-\${MSH-9}.hl7 (hl7LogFilePattern)
<i>HL7 Error Log File Pattern</i>	string	Path to HL7 messages which will be captured exactly as received, when processing of HL7 messages fails. If absent, there is no logging. Overwrites value specified on Device level. eg. \${jboss.server.data.dir}/hl7-error/\${date,yyyy/MM/dd}/\${SerialNo}-\${MSH-9}.hl7 (hl7ErrorLogFilePattern)
4.4. Configuration	string	Message Type(s) (MessageType^TriggerEvent) of HL7

Image Writer

Specifies Java Image IO Image Writer and Write Parameter used for compressing DICOM images

Table 4.83: Image Writer Attributes (LDAP Object: dcmImageWriter)

Name	Type	Description (LDAP Attribute)
<i>Transfer Syntax</i>	string	Transfer Syntax to which to compress the DICOM image (dicomTransferSyntax)
<i>Image IO Writer Format Name</i>	string	Image IO Writer Format Name (dcmIIOFormatName)
<i>Java Class Name</i>	string	Fully qualified Java class of Image IO Writer. If absent, use any Image Writer found for specified Format Name (dcmJavaClassName)
<i>Patch JPEG-LS</i>	string	Patch JPEG-LS after compressing Enumerated values: JAI2ISO, ISO2JAI or ISO2JAI_IF_APP_OR_COM. (dcmPatchJPEGLS)
<i>Image Write Param(s)</i>	string	Image Write Parameter(s) (name=value) set at on Image Writer before compression (dcmImageWriteParam)

Image Reader

Specifies Java Image IO Image Readers used for decompressing compressed DICOM images

Table 4.84: Image Reader Attributes (LDAP Object: dcmImageReader)

Name	Type	Description (LDAP Attribute)
<i>Transfer Syntax</i>	string	Transfer Syntax of compressed DICOM image (dicomTransferSyntax)
<i>Image IO Reader Format Name</i>	string	Image IO Reader Format Name (dcmIIOFormatName)
<i>Java Class Name</i>	string	Fully qualified Java class of Image IO Reader. If absent, use any Image Reader found for specified Format Name (dcmJavaClassName)
<i>Patch JPEG-LS</i>	string	Patch JPEG-LS before decompressing Enumerated values: JAI2ISO, ISO2JAI or ISO2JAI_IF_APP_OR_COM. (dcmPatchJPEGLS)
<i>Image Read Param(s)</i>	string	Image Read Parameter(s) (name=value) (dcmImageReadParam)

Audit Logger

Audit Logger related information

Table 4.85: Audit Logger Attributes (LDAP Object: dcmAuditLogger)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name for the Audit Logger object (cn)
<i>Network Connection Reference(s)</i>	string	The JSON Pointers to the Network Connection objects used by this Audit Logger (dicomNetworkConnectionReference)
<i>Audit Record Repository Device Name</i>	string	Device Name of Audit Record Repository to which Audit Messages are sent (dcmAuditRecordRepositoryDeviceName)
<i>Source ID</i>	string	RFC 3881 Audit Source ID; device name if absent (dcmAuditSourceID)
<i>Enterprise Site ID</i>	string	RFC 3881 Audit Enterprise Site ID; value 'dicomInstitutionName' is replaced by the institution name of the DICOM device (dcmAuditEnterpriseSiteID)
<i>Source Type Code(s)</i>	string	RFC 3881 Audit Source Type Code; value 'dicomPrimaryDeviceType' is replaced by the primary type of the DICOM device (dcmAuditSourceTypeCode)
<i>Syslog Facility</i>	string	RFC 5424 Syslog Facility string value of audit message. Enumerated values: kern, user, mail, daemon, auth, syslog, lpr, news, uucp, cron, authpriv, ftp, ntp, audit, console, cron2, local0, local1, local2, local3, local4, local5, local6 or local7. (dcmAuditFacility)
<i>Syslog Severity - Success</i>	string	RFC 5424 Syslog Severity string value of audit message with Event Outcome Indicator 0 (Success). Enumerated values: emerg, alert, crit, err, warning, notice, info or debug. (dcmAuditSuccessSeverity)
<i>Syslog Severity - Failure</i>	string	RFC 5424 Syslog Severity string value of audit message with Event Outcome Indicator 4 (Minor failure). Enumerated values: emerg, alert, crit, err, warning, notice, info or debug. (dcmAuditMinorFailureSeverity)
<i>Syslog Severity - Failure</i>	string	RFC 5424 Syslog Severity string value of audit message with Event Outcome Indicator 8 (Serious failure). Enumerated values: emerg, alert, crit, err, warning, notice, info or debug. (dcmAuditSeriousFailureSeverity)
<i>Syslog Severity - Major</i>	string	RFC 5424 Syslog Severity string value of audit message with Event Outcome Indicator 12 (Major failure). Enumerated values: emerg, alert, crit, err, warning, notice, info or debug. (dcmAuditMajorFailureSeverity)
<i>Syslog Application Name</i>	string	RFC 5424 Syslog APP-NAME of audit message; Audit Source ID if absent (dcmAuditApplicationName)
<i>Syslog Message ID</i>	string	RFC 5424 Syslog MSGID of audit message. (dcmAuditMessageID)
<i>Message Encoding</i>	string	Character encoding of RFC 5424 Syslog MSG part of audit message. (dcmAuditMessageEncoding)
4.4. Configuration <i>Message BOM</i>	boolean	Enable/disable Unicode BOM prefix of RFC 5424 Syslog MSG part of audit message; include BOM if absent (dcmAuditMessageBOM)
<i>Timestamp in UTC</i>	boolean	Specify if RFC 5424 Syslog TIMESTAMP and the Event Date/Time of the audit message are specified in Coordi-

Audit Suppress Criteria

Audit Suppress Criteria

Table 4.86: Audit Suppress Criteria Attributes (LDAP Object: dcmAuditSuppressCriteria)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name of the Audit Suppress Criteria (cn)
<i>Audit Event ID(s)</i>	string	RFC 3881 Audit Event ID code and codeSystemName in format (CV, CSD, "CM") Enumerated values: (110100, DCM, Application Activity), (110101, DCM, Audit Log Used), (110102, DCM, Begin Transferring DICOM Instances), (110103, DCM, DICOM Instances Accessed), (110104, DCM, DICOM Instances Transferred), (110105, DCM, DICOM Study Deleted), (110106, DCM, Export), (110107, DCM, Import), (110108, DCM, Network Entry), (110109, DCM, Order Record), (110110, DCM, Patient Record), (110111, DCM, Procedure Record), (110112, DCM, Query), (110113, DCM, Security Alert), (110114, DCM, User Authentication), (IHE0001, IHE, Health Services Provision Event), (IHE0002, IHE, Medication Event), (IHE0003, IHE, Patient Care Resource Assignment), (IHE0004, IHE, Patient Care Episode) or (IHE0005, IHE, Patient Care Protocol). (dcmAuditEventID)
<i>Audit Event Type Code(s)</i>	string	RFC 3881 Audit Event Type code in format (CV, CSD, "CM") Enumerated values: (110120, DCM, Application Start), (110121, DCM, Application Stop), (110122, DCM, Login), (110123, DCM, Logout), (110124, DCM, Attach), (110125, DCM, Detach), (110126, DCM, Node Authentication), (110127, DCM, Emergency Override Started), (110128, DCM, Network Configuration), (110129, DCM, Security Configuration), (110130, DCM, Hardware Configuration), (110131, DCM, Software Configuration), (110132, DCM, Use of Restricted Function), (110133, DCM, Audit Recording Stopped), (110134, DCM, Audit Recording Started), (110135, DCM, Object Security Attributes Changed), (110136, DCM, Security Roles Changed), (110137, DCM, User security Attributes Changed), (110138, DCM, Emergency Override Stopped), (110139, DCM, Remote Service Operation Started), (110140, DCM, Remote Service Operation Stopped), (110141, DCM, Local Service Operation Started), (110142, DCM, Local Service Operation Stopped), (ITI-8, IHE Transactions, Patient Identity Feed), (ITI-9, IHE Transactions, PIX Query), (ITI-10, IHE Transactions, PIX Update Notification), (ITI-18, IHE Transactions, Registry Stored Query), (ITI-21, IHE Transactions, Patient Demographics Query), (ITI-22, IHE Transactions, Patient Demographics and Visit Query), (ITI-38, IHE Transactions, Cross Gateway Query), (ITI-39, IHE Transactions, Cross Gateway Retrieve), (ITI-41, IHE Transactions, Provide and Register Document Set-b), (ITI-42, IHE Transactions, Register Document Set-b), (ITI-43, IHE Transactions, Retrieve Document Set), (ITI-44, IHE Transactions, Patient Identity Feed), (ITI-45, IHE Transactions, PIX Query), (ITI-46, IHE Transactions, PIX Update Notification), (ITI-47, IHE Transactions, Patient Demographics Query), (ITI-51, IHE Transactions, Multi-Patient Query) or (ITI-63,
4.4. Configuration		

Audit Record Repository

Audit Record Repository related information

Table 4.87: Audit Record Repository Attributes (LDAP Object: dcmAuditRecordRepository)

Name	Type	Description (LDAP Attribute)
<i>Network Connection Reference(s)</i>	string	The JSON Pointers to the Network Connection objects of this Audit Record Repository (dicomNetworkConnectionReference)
<i>installed</i>	boolean	True if the ARR is installed on network. If not present, information about the installed status of the ARR is inherited from the device (dicomInstalled)

Archive Device

DICOM Archive Device related information

Table 4.88: Archive Device Attributes (LDAP Object: dcmArchiveDevice)

Name	Type	Description (LDAP Attribute)
<i>Fuzzy Algorithm Class</i>	string	Specifies Fuzzy Algorithm Implementation Class. Enumerated values: org.dcm4che3.soundex.Soundex, org.dcm4che3.soundex.ESoundex, org.dcm4che3.soundex.ESoundex9, org.dcm4che3.soundex.Metaphone, org.dcm4che3.soundex.KPhonetik or org.dcm4che3.soundex.Phonem. (dcmFuzzyAlgorithmClass)
<i>Bulk Data Descriptor ID</i>	string	ID of Bulk Data Descriptor applied by all services providing Metadata of archived instances. If absent, only Attributes specified by the Composite Instance Retrieve Without Bulk Data Service Class are treated as Bulk Data. May be overwritten by configured values for particular Archive Network AEs. (dcmBulkDataDescriptorID)
<i>Series Metadata Storage ID(s)</i>	string	ID of Storage on which ZIP archives with aggregated Metadata of all instances of a Series is stored. Multiple Storage Systems may be configured. If absent, no aggregated Series Metadata will be stored. (dcmSeriesMetadataStorageID)
<i>Aggregate Series Metadata Delay</i>	string	Delay in ISO-8601 duration format PnDTnHnMnS for storing aggregated Series Metadata on storage. If absent, no aggregated Series Metadata will be stored. May be overwritten by configured values for particular Archive Network AEs. (dcmSeriesMetadataDelay)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Update Series Metadata Polling Interval</i>	string	Polling Interval for Series scheduled for Metadata update in ISO-8601 duration format PnDTnHnMnS. If absent, no aggregated Series Metadata will be stored. (dcmSeriesMetadataPollingInterval)
<i>Update Series Metadata Fetch Size</i>	integer	Maximal number of Series scheduled for Metadata update fetched by one query. (dcmSeriesMetadataFetchSize)
<i>Update Series Metadata Threads</i>	integer	Number of Threads used for creation and update of Series Metadata. (dcmSeriesMetadataThreads)
<i>Update Series Metadata Maximum Number of Retries</i>	integer	Maximum number of retries to create/update aggregated Series Metadata. Only effective if Update Series Metadata Retry Interval is specified. -1 = forever. (dcmSeriesMetadataMaxRetries)
<i>Update Series Metadata Retry Interval</i>	string	Interval in ISO-8601 duration format PnDTnHnMnS in which failed attempts to create/update aggregated Series Metadata will be retried. Only effective if Update Series Metadata Maximum Number of Retries != 0. If absent, failed attempts will not be retried. (dcmSeriesMetadataRetryInterval)
<i>Purge Instance Records</i>	boolean	Indicates that Instance Records may be purged from the DB. (dcmPurgeInstanceRecords)
<i>Purge Instance Records Delay</i>	string	Delay in ISO-8601 duration format PnDTnHnMnS for purging Instance Records from the DB. May be overwritten by configured values for particular Archive Network AEs. Only effective, if Purge Instance Records = true. (dcmPurgeInstanceRecordsDelay)
<i>Purge Instance Records Polling Interval</i>	string	Polling Interval for Series scheduled for purging Instance Records from the DB in ISO-8601 duration format PnDTnHnMnS. Only effective, if Purge Instance Records = true. (dcmPurgeInstanceRecordsPollingInterval)
<i>Purge Instance Records Fetch Size</i>	integer	Maximal number of Series scheduled for purging Instance Records from the DB fetched by one query. Only effective, if Purge Instance Records = true. (dcmPurgeInstanceRecordsFetchSize)
<i>MWL Polling Interval</i>	string	Polling Interval for updating the status of idle MWL items and deleting MWL items in ISO-8601 duration format PnDTnHnMnS. If absent, MWL Items will not get update or deleted. (dcmMWLPollingInterval)
<i>MWL Fetch Size</i>	integer	Maximal number of MWL items to update or delete in one transaction. (dcmMWLFetchSize)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Delete MWL Delay(s)</i>	string	Delay in ISO-8601 duration format PnDTnHnMn.nS for deleting MWL items. Status specific delays can be specified by prefix 'SCHEDULED:', 'ARRIVED:', 'READY:', 'STARTED:', 'DEPARTED:', 'CANCELED:', 'DISCONTINUED:', 'COMPLETED:'. If absent, MWL Items will not get deleted. (dcmDeleteMWLDelay)
<i>Delete UPS Polling Interval</i>	string	Polling Interval for deleting Unified Procedure Steps (UPS) in ISO-8601 duration format PnDTnHnMn.nS. If absent, Unified Procedure Steps will not get deleted. (dcmDeleteUPSPollingInterval)
<i>Delete UPS Fetch Size</i>	integer	Maximal number of Unified Procedure Steps (UPS) to delete in one transaction. (dcmDeleteUPSFetchSize)
<i>Delete UPS Completed Delay</i>	string	Delay in ISO-8601 duration format PnDTnHnMn.nS for deleting completed Unified Procedure Steps without Deletion Lock. If absent, completed Unified Procedure Steps without Deletion Lock are deleted immediately. (dcmDeleteUPSCompletedDelay)
<i>Delete UPS Canceled Delay</i>	string	Delay in ISO-8601 duration format PnDTnHnMn.nS for deleting canceled Unified Procedure Steps without Deletion Lock. If absent, canceled Unified Procedure Steps without Deletion Lock are deleted immediately. (dcmDeleteUPSCanceledDelay)
<i>Overwrite Policy</i>	string	Overwrite Policy. May be overwritten by configured values for particular Archive Network AEs. Enumerated values: NEVER, ALWAYS, SAME_SOURCE, SAME_SERIES or SAME_SOURCE_AND_SERIES. (dcmOverwritePolicy)
<i>Record Attribute Modification</i>	boolean	Indicates if modifications of attributes of stored objects are recorded in Items of the Original Attributes Sequence. May be overwritten by configured values for particular Archive Network AE or Archive HL7 Application. (dcmRecordAttributeModification)
<i>Accept Missing Patient ID</i>	string	Indicates if objects without Patient IDs shall be accepted and if a Patient ID shall be created. May be overwritten by configured values for particular Archive Network AEs. Enumerated values: YES, NO or CREATE. (dcmAcceptMissingPatientID)
<i>Accept Conflicting Patient ID</i>	string	Indicates if objects with a Patient IDs which differs from the Patient ID in previous received objects of the Study shall be accepted. May be overwritten by configured values for particular Archive Network AEs. Enumerated values: YES, NO or MERGED. (dcmAcceptConflictingPatientID)
<i>Bulk Data Spool Directory</i>	string	Path to Bulk Data Spool Directory. May be overwritten by configured values for particular Archive Network AEs. (dcmBulkDataSpoolDirectory)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Hide SPS with Status(s)</i>	string	Scheduled Procedure Step Status codes of MWL items which shall not be returned by the MWL SCP. May be overwritten by configured values for particular Archive Network AEs. Enumerated values: SCHEDULED, ARRIVED, READY, STARTED, DEPARTED, CANCELED, DISCONTINUED or COMPLETED. (dcmHideSPSWithStatusFromMWL)
<i>Validate Calling AE Hostname</i>	boolean	Validate Calling AE Hostname or IP Address of Association requestors. May be overwritten by configured values for particular Archive Network AEs. (dcmValidateCallingAEHostname)
<i>User Identity Negotiation</i>	string	Specifies to ignore User Identity Negotiation Sub-Item in Association requests (=NOT_SUPPORTED), to verify passed Username and password or JSON Web Token are against a Keycloak server (=SUPPORTS), or to reject Association requests without a valid Username and password or JSON Web Token in its Identity Negotiation Sub-Item (=REQUIRED). May be overwritten by configured values for particular Archive Network AEs. Enumerated values: NOT_SUPPORTED, SUPPORTS or REQUIRED. (dcmUserIdentityNegotiation)
<i>User Identity Negotiation Role</i>	string	Constrain accepted User Identity Negotiation requests to users with specified role. If absent, only verify passed username and password or JSON Web Token. May be overwritten by configured values for particular Archive Network AEs. (dcmUserIdentityNegotiationRole)
<i>User Identity Negotiation Keycloak Client ID</i>	string	Keycloak Client ID referring Keycloak connection configuration for verifying passed username and password or JSON Web Token. If absent, System Properties \${auth-server-url}, \${realm-name:dcm4che}, \${ui-client-id:dcm4chee-arc-ui}, \${disable-trust-manager:false}, \${allow-any-hostname:true} will be applied. May be overwritten by configured values for particular Archive Network AEs. (dcmUserIdentityNegotiationKeycloakClientID)
<i>Person Name Component Order Insensitive Matching</i>	boolean	Indicates if name component order insensitive matching is performed on fuzzy semantic matching of person names. May be overwritten by configured values for particular Archive Network AEs. (dcmPersonNameComponentOrderInsensitiveMatching)
<i>Send Pending C-Get</i>	boolean	Enables pending C-GET responses. May be overwritten by configured values for particular Archive Network AEs. (dcmSendPendingCGet)
<i>Send Pending C-Move Interval</i>	string	Interval of pending C-MOVE responses in ISO-8601 duration format PnDTnHnMnS; disabled if absent. May be overwritten by configured values for particular Archive Network AEs. (dcmSendPendingCMoveInterval)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Wado Supported SR Classes(s)</i>	string	Supported SR SOP classes for WADO retrieval (dcmWadoSupportedSRClasses)
<i>Wado Supported PR Classes(s)</i>	string	Supported PR SOP classes for WADO retrieval (dcmWadoSupportedPRClasses)
<i>Wado SR2 Html Template URI</i>	string	Specifies URI for the style sheet used to render structured reports to html. May be overwritten by configured values for particular Archive Network AEs. (dcmWadoSR2HtmlTemplateURI)
<i>Wado SR2 Text Template URI</i>	string	Specifies URI for the style sheet used to render structured reports to plain text. May be overwritten by configured values for particular Archive Network AEs. (dcmWadoSR2TextTemplateURI)
<i>Wado CDA to HTML Template URI</i>	string	URL to XSL style sheet inserted as <?xml-stylesheet type="text/xsl" href="<url>" > in CDA documents returned by WADO-URI service. If absent, the embedded CDI document is returned verbatim. May be overwritten by configured values for particular Archive Network AEs. (dcmWadoCDA2HtmlTemplateURI)
<i>Wado Thumbnail Viewport</i>	string	Dimension of Thumbnails returned by WADO retrieve of Instance Thumbnails, if no Viewport is specified in the request. Format: <width>,<height>. May be overwritten by configured values for particular Archive Network AEs. (dcmWadoThumbnailViewport)
<i>Wado ZIP Entry Name Format</i>	string	Format of entry names in ZIP archive returned by WADO-RS. May be overwritten by configured value for particular Archive Network AEs. (dcmWadoZIPEntryNameFormat)
<i>Query Fetch Size</i>	integer	Number of rows fetched from the database at once by the Query Service. (dcmQueryFetchSize)
<i>Query Max Number Of Results</i>	integer	Maximal number of return results by C-FIND SCP. If the number of matches extends the limit, the C-FIND request will be refused. 0 = no limitation. May be overwritten by configured values for particular Archive Network AEs. (dcmQueryMaxNumberOfResults)
<i>Qido Max Number Of Results</i>	integer	Maximal number of return results by QIDO-RS Service. 0 = no limitation. May be overwritten by configured values for particular Archive Network AEs. (dcmQidoMaxNumberOfResults)
<i>Mpps Forward Destination(s)</i>	string	Destination to forward MPPS N-CREATE RQ and N-SET RQ. May be overwritten by configured values for particular Archive Network AEs. (dcmFwdMppsDestination)
<i>Ian Destination(s)</i>	string	Destination to send IAN N-CREATE RQ. May be overwritten by configured values for particular Archive Network AEs. (dcmIanDestination)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>IAN Delay</i>	string	Delay in ISO-8601 duration format PnDTnHnMnS after which an IAN for a received study is sent to configured IAN destinations. If absent, IANs are triggered by received MPPS. May be overwritten by configured values for particular Archive Network AEs. (dcmIanDelay)
<i>IAN Timeout</i>	string	Timeout in ISO-8601 duration format PnDTnHnMnS for waiting on receive of instances referenced in MPPS; check for completeness forever if absent. May be overwritten by configured values for particular Archive Network AEs. (dcmIanTimeout)
<i>IAN On Timeout</i>	boolean	Specifies if the IAN is sent if the timeout for waiting on receive of instances referenced is exceeded. May be overwritten by configured values for particular Archive Network AEs. (dcmIanOnTimeout)
<i>IAN Task Polling Interval</i>	string	Polling Interval for IAN Tasks in ISO-8601 duration format PnDTnHnMnS. IAN disabled, if absent (dcmIanTaskPollingInterval)
<i>IAN Task Fetch Size</i>	integer	Maximal number of IAN Tasks scheduled in one transaction. (dcmIanTaskFetchSize)
<i>Spanning C-Find SCP</i>	string	AE Title of external C-FIND SCP to forward C-FIND RQs and backward responses according configured Spanning C-Find SCP Policy. May be overwritten by configured values for particular Archive Network AEs. (dcmSpanningCFindSCP)
<i>Spanning C-Find SCP Policy</i>	string	Specifies policy for combining matches returned from configured Spanning C-Find SCP with matching entries from the archive DB. SUPPLEMENT (= returns local matches before additional matches from Spanning C-Find SCP), MERGE (= returns matches from Spanning C-Find SCP before additional local matches), REPLACE (= returns only matches from Spanning C-Find SCP). May be overwritten by configured values for particular Archive Network AEs. Enumerated values: SUPPLEMENT, MERGE or REPLACE. (dcmSpanningCFindSCPPolicy)
<i>Spanning C-Find SCP Retrieve AE Title(s)</i>	string	Specifies Retrieve AE Title(s) in returned matches from Spanning C-Find SCP. Keep original Retrieve AE Title(s) returned by Spanning C-Find SCP if absent. May be overwritten by configured values for particular Archive Network AEs. (dcmSpanningCFindSCPRetrieveAET)
<i>Fallback C-Move SCP</i>	string	AE Title of external C-MOVE SCP to forward C-MOVE RQs if the requested Entities are not managed by this archive. May be overwritten by configured values for particular Archive Network AEs. (dcmFallbackCMoveSCP)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Fallback C-Move SCP Destination</i>	string	AE Title of local C-STORE-SCP to be set as Move Destination in C-MOVE RQs forwarded to the external C-MOVE SCP specified by dcmFallbackCMoveSCP (dcmFallbackCMoveSCPDestination)
<i>Fallback C-Move SCP Study Older Than</i>	string	Specifies threshold for Study Date in format YYYYMMDD for marking received Studies as (potential) incomplete to enforce the retrieve from configured dcmFallbackCMoveSCP (dcmFallbackCMoveSCPStudyOlderThan)
<i>Fallback C-Move SCP Leading C-Find SCP</i>	string	AE Title of external C-FIND SCP for Verification of Number of Instances retrieved from external C-MOVE SCP specified by dcmFallbackCMoveSCP. (dcmFallbackCMoveSCPLeadingCFindSCP)
<i>Fallback C-Move SCP Retries</i>	integer	Maximal number of retries to retrieve not available objects from C-MOVE SCP configured by dcmFallbackCMoveSCP. -1 = forever. (dcmFallbackCMoveSCPRetries)
<i>Fallback WADO-URI Web Application Name</i>	string	Name of external Web Application to redirect WADO URI requests if the requested Object is not available by this archive. May be overwritten by configured values for particular Archive Network AEs. (dcmFallbackWadoURIWebAppName)
<i>Fallback Wado URI Http Status Code</i>	integer	HTTP Status code of Redirect Response configured by Fallback WADO-URI Web Application Name. May be overwritten by configured values for particular Archive Network AEs. Enumerated values: 301, 302, 303 or 307. (dcmFallbackWadoURIHttpStatusCode)
<i>Alternative C-Move SCP</i>	string	AE Title of alternative C-MOVE SCP to forward C-MOVE RQs if the requested Entities are not located on a local attached Storage (dcmAltCMoveSCP)
<i>C-STORE SCU of C-MOVE SCP(s)</i>	string	Indicates to identify received C-STORE RQs as caused by a forwarded C-MOVE RQs by the Calling AET in the A-Associate-RQ in format <Calling AET>=<C-MOVE-SCP>. Typically <Calling AET> and <C-MOVE-SCP> are equal. If no value is configured for a particular C-MOVE SCP, attribute (0000,1030) Move Originator Application Entity Title in the C-STORE RQ is used to find the corresponding forwarded C-MOVE RQ to forward the received C-STORE RQ to the original Move Destination. (dcmCStoreSCUOfCMoveSCP)
<i>UPS Processing Polling Interval</i>	string	Polling Interval for Workitems ready for processing in ISO-8601 duration format PnDTnHnMnS. (dcmUPSProcessingPollingInterval)
<i>UPS Processing Fetch Size</i>	integer	Limit result set of DB query for Workitems ready for processing. (dcmUPSProcessingFetchSize)
<i>Export Task Polling Interval</i>	string	Export Task Polling Interval in ISO-8601 duration format PnDTnHnMnS. (dcmExportTaskPollingInterval)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Export Task Fetch Size</i>	integer	Limit result set of DB query for Export Tasks ready for processing. (dcmExportTaskFetchSize)
<i>Retrieve Task Polling Interval</i>	string	Retrieve Task Polling Interval in ISO-8601 duration format PnDTnHnMnS. (dcmRetrieveTaskPollingInterval)
<i>Retrieve Task Fetch Size</i>	integer	Limit result set of DB query for Retrieve Tasks ready for processing. (dcmRetrieveTaskFetchSize)
<i>Retrieve Task Warning on no Match</i>	boolean	Indicates if the result status of Retrieve Tasks shall be set to WARNING if none of the requested objects was found on the C-MOVE SCP. May be overwritten by configured values for particular Archive Network AEs. (dcmRetrieveTaskWarningOnNoMatch)
<i>Retrieve Task Warning on Warnings</i>	boolean	Indicates if the result status of Retrieve Tasks shall be set to WARNING if there are Warning Sub-Operations, even if the retrieve of all objects was successful. May be overwritten by configured values for particular Archive Network AEs. (dcmRetrieveTaskWarningOnWarnings)
<i>Purge Storage Polling Interval</i>	string	Polling Interval for deleting objects in ISO-8601 duration format PnDTnHnMnS. (dcmPurgeStoragePollingInterval)
<i>Purge Storage Fetch Size</i>	integer	Maximal number of objects to delete in one task. (dcmPurgeStorageFetchSize)
<i>Failed to delete Polling Interval</i>	string	Polling Interval for resolving deletion failures in ISO-8601 duration format PnDTnHnMnS. (dcmFailedToDeletePollingInterval)
<i>Failed to delete Fetch Size</i>	integer	Maximal number of Location records fetched for resolving deletion failures in one query. (dcmFailedToDeleteFetchSize)
<i>Delete Study Batch Size</i>	integer	Number of Studies to delete from the Storage System, if the usable space fall below configured Usable Space, before checking the usable space again. (dcmDeleteStudyBatchSize)
<i>Delete Study Chunk Size</i>	integer	Number of Instances deleted in one DB transaction on permanent deletion of Studies. (dcmDeleteStudyChunkSize)
<i>Delete Patient On Delete Last Study</i>	boolean	Specifies if a Patient shall be deleted on deletion of its last study. (dcmDeletePatientOnDeleteLastStudy)
<i>Delete Rejected Polling Interval</i>	string	Polling Interval for deleting rejected instances from the DB in ISO-8601 duration format PnDTnHnMnS. (dcmDeleteRejectedPollingInterval)
<i>Delete Rejected Fetch Size</i>	integer	Maximal number of rejected instances to delete from the DB in one task. (dcmDeleteRejectedFetchSize)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Maximum Access Time Staleness</i>	string	Maximal staleness of recorded study accession time in ISO-8601 duration format PnDTnHnMnS. Update of the access time disabled, if absent. (dcmMaxAccessTimeStaleness)
<i>AE Cache Stale Timeout</i>	string	Maximal staleness of cached AE in ISO-8601 duration format PnDTnHnMnS. If absent, cached AE entries will not be refetched from LDAP. (dcmAECacheStaleTimeout)
<i>Leading C-Find SCP Query Cache Stale Timeout</i>	string	Maximal staleness of cached Patient and Study attributes fetched from leading C-Find SCP in ISO-8601 duration format PnDTnHnMnS. If absent, cache Study attributes are only removed on reaching the maximal cache size. (dcmLeadingCFindSCPQueryCacheStaleTimeout)
<i>Leading C-Find SCP Query Cache Size</i>	integer	Maximum number of cached Patient and Study attributes fetched from leading C-Find SCP. (dcmLeadingCFindSCPQueryCacheSize)
<i>Audit Spool Directory</i>	string	Path to Audit Service Spool Directory. (dcmAuditSpoolDirectory)
<i>Audit Polling Interval</i>	string	Polling Interval for aggregating Audit Messages in ISO-8601 duration format PnDTnHnMnS. Audit Message aggregation disabled, if absent. (dcmAuditPollingInterval)
<i>Audit Aggregate Duration</i>	string	Audit Message Aggregation Duration in ISO-8601 duration format PnDTnHnMnS. Audit Message aggregation disabled, if absent. (dcmAuditAggregateDuration)
<i>Audit Unknown Study Instance UID</i>	string	Indicates study instance uid value to be sent in audit message when not known. (dcmAuditUnknownStudyInstanceUID)
<i>Audit Unknown Patient ID</i>	string	Indicates patient id value to be sent in audit message when not known. (dcmAuditUnknownPatientID)
<i>Show Patient Info In System Log</i>	string	Specifies if Patient Information is shown as plain text or hashed in system logs. Enumerated values: PLAIN_TEXT, HASH_NAME or HASH_NAME_AND_ID. (dcmShowPatientInfoInSystemLog)
<i>Show Patient Info In Audit Log</i>	string	Specifies if Patient Information is shown as plain text or hashed in emitted audit messages. Enumerated values: PLAIN_TEXT, HASH_NAME or HASH_NAME_AND_ID. (dcmShowPatientInfoInAuditLog)
<i>STOW-RS Spool Directory</i>	string	Path to Directory used by STOW-RS Service to spool Bulkdata of XML/JSON Metadata and Bulk Data Request Messages. (dcmStowSpoolDirectory)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>HL7 ORU Action(s)</i>	string	Specifies action on receive of HL7 ORU^R01 message: IMPORT_REPORT (= transcode received HL7 ORU^R01 to DICOM SR), MWL_COMPLETED (= set Status of matching MWL items to COMPLETED). May be overwritten by configured values for particular Archive HL7 Application. Enumerated values: IMPORT_REPORT or MWL_COMPLETED. (hl7ORUAction)
<i>HL7 Patient Update Template URI</i>	string	Specifies URI for the style sheet used by HL7v2 Patient Update Service. May be overwritten by configured values for particular Archive HL7 Application. (hl7PatientUpdateTemplateURI)
<i>HL7 Import Report Template URI</i>	string	Specifies URI for the style sheet to transcode received HL7 ORU^R01 to DICOM SR. May be overwritten by configured values for particular Archive HL7 Application. (hl7ImportReportTemplateURI)
<i>HL7 Import Report Template Parameter(s)</i>	string	XSLT parameters passed to style sheet specified by HL7 Import Report Template URI. Format: {name}={value}. E.g.: 'langCodeValue=et', 'langCodingSchemeDesignator=RFC5646', 'langCodeMeaning=Estonian'. May be overwritten by configured values for particular Archive HL7 Application. (hl7ImportReportTemplateParam)
<i>HL7 Schedule Procedure Template URI</i>	string	Specifies URI for the style sheet to transcode received HL7 ORM^O01, OMI^O23, OMG^O19 to DICOM MWL items. May be overwritten by configured values for particular Archive HL7 Application. (hl7ScheduleProcedureTemplateURI)
<i>HL7 Outgoing Patient Update Template URI</i>	string	Specifies URI for the style sheet to transcode DICOM object patient attributes to HL7 ADT messages. (hl7OutgoingPatientUpdateTemplateURI)
<i>HL7 Schedule Protocol Code in Order</i>	string	Specifies location of Scheduled Protocol Code in received HL7 Order message. May be overwritten by configured values for particular Archive HL7 Application. Enumerated values: OBR_4_1 or OBR_4_4. (hl7ScheduledProtocolCodeInOrder)
<i>HL7 Schedule Station AET in Order</i>	string	Specifies location of Scheduled Station AE Title in received HL7 Order message. Should not be configured for HL7 v2.5.1 OMI^O23 with IPC segment. If absent or no value is provided in the configured field, the Scheduled Station AE Title is selected according configured rules. May be overwritten by configured values for particular Archive HL7 Application. Enumerated values: ORC_18. (hl7ScheduledStationAETInOrder)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>HL7 Log File Pattern</i>	string	Path to HL7 messages which will be captured exactly as received. If absent, there is no logging. May be overwritten by configured values for particular Archive HL7 Application. eg. <code>\${jboss.server.data.dir}/hl7/\${date,yyyy/MM/dd}/\${SerialNo}-\${MSH-9}.hl7</code> (hl7LogFilePattern)
<i>HL7 Error Log File Pattern</i>	string	Path to HL7 messages which will be captured exactly as received, when processing of HL7 messages fails. If absent, there is no logging. May be overwritten by configured values for particular Archive HL7 Application. eg. <code>\${jboss.server.data.dir}/hl7-error/\${date,yyyy/MM/dd}/\${SerialNo}-\${MSH-9}.hl7</code> (hl7ErrorLogFilePattern)
<i>HL7 No Patient Create Message Type(s)</i>	string	Message Type(s) (MessageType^TriggerEvent) of HL7 messages which are only processed, if there is already a Patient record in the database, which Patient ID matches the Patient ID in the PID or MRG segment of the message. Thus no new Patient record will be created by messages of the specified types. May be overwritten by configured values for particular Archive HL7 Application. (hl7NoPatientCreateMessageType)
<i>HL7 Patient Arrival Message Type</i>	string	Message Type of HL7 messages which triggers the change the status of Scheduled Procedure Steps associated with the Patient from SCHEDULED to ARRIVED. If absent, the status of Scheduled Procedure Steps will not be affected by HL7 ADT messages. May be overwritten by configured values for particular Archive HL7 Application. Enumerated values: ADT^A10. (hl7PatientArrivalMessageType)
<i>Unzip Vendor Data To URI</i>	string	Specifies URI of directory into which ZIP stream in Device Vendor Data attribute will be extracted (dcmUnzipVendorDataToURI)
<i>Purge Queue Messages Polling Interval</i>	string	Polling Interval for purging queue messages in ISO-8601 duration format PnDTnHnMnS. If absent, there is no deletion (dcmPurgeQueueMessagePollingInterval)
<i>Wado-RS Spool Directory</i>	string	Path to Wado-RS spool directory used to aggregate uncompressed frames. (dcmWadoSpoolDirectory)
<i>Reject Expired Studies Polling Interval</i>	string	Polling Interval for rejecting expired Studies and Series in ISO-8601 duration format PnDTnHnMnS. If absent, neither expired Studies nor Series will be rejected automatically (dcmRejectExpiredStudiesPollingInterval)
<i>Reject Expired Studies Schedule(s)</i>	string	Limits Rejection of Expired Studies to specified times in format 'hour=[0-23] dayOfWeek=[0-6]' (0=Sunday). (dcmRejectExpiredStudiesSchedule)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Reject Expired Studies Fetch Size</i>	integer	Maximal number of expired Studies fetched in one query; If absent, expired Studies will not be rejected automatically (dcmRejectExpiredStudiesFetchSize)
<i>Reject Expired Series Fetch Size</i>	integer	Maximal number of expired Series fetched in one query; If absent, expired Series will not be rejected automatically (dcmRejectExpiredSeriesFetchSize)
<i>Reject Expired Studies AE Title</i>	string	AE Title of Local Application Entity performing the automatic rejection of expired Studies and Series. If absent, neither expired Studies nor Series will be rejected automatically. (dcmRejectExpiredStudiesAETitle)
<i>Store Permission Service URL</i>	string	URL of Store Permission Service which will be invoked on receive of the first object of a study by any AE. {<dicomTag>} will be replaced by the value of the attribute in the object. E.g. http(s)://<store-permission-service-provider-host>:<store-permission-service-provider-port>/storage-permission/study/{0020000D}?patientId={00100020}&patientIdIssuer={00100021} May be overwritten by configured value for particular Archive Network AEs. (dcmStorePermissionServiceURL)
<i>Store Permission Service Response</i>	string	Emulate Store Permission Service Response on receive of the first object of a study by any AE. {<dicomTag>} will be replaced by the value of the attribute in the object. Only effective if no Store Permission Service URL is configured. May be overwritten by configured value for particular Archive Network AEs. (dcmStorePermissionServiceResponse)
<i>Store Permission Service Response Pattern</i>	string	Regular Expression applied to responses from Store Permission Service to determine agreement for storage. E.g. “validation”s*:s*”true” . If absent, every success response will be treated as agreement for storage. May be overwritten by configured value for particular Archive Network AEs. (dcmStorePermissionServiceResponsePattern)
<i>Store Permission Service Error Comment Pattern</i>	string	Regular Expression applied to responses from Store Permission Service to extract Error Comment. E.g. “error-comment”s*:s*”(.*). If absent, “Storage denied.” will be used as Error Comment. May be overwritten by configured values for particular Archive Network AEs. (dcmStorePermissionServiceErrorCommentPattern)
<i>Store Permission Service Error Code Pattern</i>	string	Regular Expression applied to responses from Store Permission Service to extract Error Code in hexadecimal. E.g. “errorcode”s*:s*”(p{XDigit}{4})). If absent, the Error Code will be 0124H (Not Authorized). May be overwritten by configured values for particular Archive Network AEs. (dcmStorePermissionServiceErrorCodePattern)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Store Permission Service Expiration Date Pattern</i>	string	Regular Expression applied to responses from Store Permission Service to extract the initial Study Expiration Date. E.g. “expirationdate”s*:s*”([0-9]{8})”. If absent, locally configured Study Retention Policy Rules will be applied. May be overwritten by configured values for particular Archive Network AEs. (dcmStorePermissionServiceExpirationDatePattern)
<i>Store Permission Cache Stale Timeout</i>	string	Maximal staleness of cached responses from Storage Permission Service in ISO-8601 duration format PnDTnHnMnS. If absent, cached responses are only removed on reaching the maximal cache size. (dcmStorePermissionCacheStaleTimeout)
<i>Store Permission Cache Size</i>	integer	Maximum number of cached responses from Storage Permission Service. (dcmStorePermissionCacheSize)
<i>Merge MWL Cache Stale Timeout</i>	string	Maximal staleness of Request Attributes extracted from matching DICOM MWL items in ISO-8601 duration format PnDTnHnMnS. If absent, cached Request Attributes are only removed on reaching the maximal cache size. (dcmMergeMWLCacheStaleTimeout)
<i>Merge MWL Cache Size</i>	integer	Maximum number of cached Request Attributes extracted from matching DICOM MWL items. (dcmMergeMWLCacheSize)
<i>Store Update DB Maximum Number of Retries</i>	integer	Maximum number of retries to update the database on storage. (dcmStoreUpdateDBMaxRetries)
<i>Minimal Store Update DB Delay of Retry</i>	integer	Minimal Delay in ms between retries to update the database on storage. (dcmStoreUpdateDBMinRetryDelay)
<i>Maximal Store Update DB Delay of Retry</i>	integer	Maximal Delay in ms between retries to update the database on storage. (dcmStoreUpdateDBMaxRetryDelay)
<i>Allow Rejection For Data Retention Policy Expired</i>	string	Allow Rejection For Data Retention Policy Expired. May be overwritten by configured values for particular Archive Network AEs. Enumerated values: NEVER, ALWAYS, EXPIRED_UNSET or ONLY_EXPIRED. (dcmAllowRejectionForDataRetentionPolicyExpired)
<i>Allow Delete Study permanently</i>	string	Allow to delete Study permanently. REJECTED = only already rejected Studies. May be overwritten by configured values for particular Archive Network AEs. Enumerated values: ALWAYS or REJECTED. (dcmAllowDeleteStudyPermanently)
<i>Allow Delete Patient</i>	string	Allow permanent deletion of Patients. Enumerated values: NEVER, ALWAYS, WITHOUT_STUDIES. If absent, WITHOUT_STUDIES will be applied. Enumerated values: NEVER, ALWAYS or WITHOUT_STUDIES. (dcmAllowDeletePatient)
<i>Purge Storage Commitment Completed Delay</i>	string	Delay in ISO-8601 duration format PnDTnHnMnS after which results of completed Storage Commitment requests are purged. If absent, there is no deletion. (dcmPurgeStgCmtCompletedDelay)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Purge Storage Commitment Polling Interval</i>	string	Polling Interval for purging Storage Commitment Results in ISO-8601 duration format PnDTnHnMnS. If absent, there is no deletion (dcmPurgeStgCmtPollingInterval)
<i>Default Character Set</i>	string	Value of Specific Character Set (0008,0005) added to Data Sets of C-STORE RQs and pending C-FIND RSPs without Specific Character Set (0008,0005) attribute received by any AE. May be overwritten by configured values for particular Archive Network AEs. (dcmDefaultCharacterSet)
<i>DICOM Character Set Name Mapping(s)</i>	string	Customize mapping of value of DICOM Specific Character Set (0008,0005) to named charset in format <value>=<charset name>. E.g.: “ISO_IR 100=windows-1252”. (dcmCharsetNameMapping)
<i>HL7 Character Set Name Mapping(s)</i>	string	Add mapping of value of HL7 MSH-18 to named charset in format <value>=<charset name>. E.g.: “Windows-1252=windows-1252”. Typically you will also have to specify the HL7 DICOM Character Set of the Archive HL7 Application to use for received HL7 messages with such Character Set. (hl7CharsetNameMapping)
<i>UPS Worklist Label</i>	string	Value of Worklist Label (0074,1202) of created UPS by any Network AE, if the UPS Push SCU or UPS-RS User Agent does not provide a value for this attribute. If absent, the AE Title of the receiving AE will be used. May be overwritten by configured values for particular Archive Network AEs. (dcmUPSWorklistLabel)
<i>UPS Event SCU(s)</i>	string	AE Title of UPS Event SOP Class SCU, to which UPS Event Reports are sent - independently if the subscription was created by the N-ACTION DIMSE service, or by a corresponding UPS RESTful service. May be overwritten by configured values for particular Archive Network AEs. (dcmUPSEventSCU)
<i>UPS Event SCU Keep Alive</i>	integer	Timeout in ms to keep associations to UPS Event SCUs alive. If absent, associations will not be reused for sending multiple UPS Event Reports to one UPS Event SCU. May be overwritten by configured values for particular Archive Network AEs. (dcmUPSEventSCUKeepAlive)
<i>Retrieve AE Title(s)</i>	string	Specifies Retrieve AE Titles associated with received DICOM objects. If absent, the Called AE Title of the receiving AE will be used. May be overwritten by configured values for particular Archive Network AEs. (dcmRetrieveAET)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Return Retrieve AE Title(s)</i>	string	Retrieve AE Title returned in C-FIND and QIDO responses. If absent, the Retrieve AET associated with the archived entity will be returned. May be overwritten by configured values for particular Archive Network AEs. (dcmReturnRetrieveAET)
<i>Multiple Store Associations(s)</i>	string	Number of Storage Associations used for retrieve of Composite Objects. C-STORE SCP specific numbers can be specified by prefix '<AETitle>:'. If absent, only one Association will be used. May be supplemented by configured Multiple Store Associations for particular Archive Network AEs. (dcmMultipleStoreAssociations)
<i>External Retrieve AE Destination</i>	string	AE Title of local C-STORE-SCP to be set as Move Destination in C-MOVE RQs forwarded to external retrieve AE. May be overwritten by configured values for particular Archive Network AEs. (dcmExternalRetrieveAEDestination)
<i>XDS-I Imaging Document Source AE Title</i>	string	AE Title of local Application Entity associated with XDS-I Imaging Document Source. (dcmXDSiImagingDocumentSourceAETitle)
<i>Queue Tasks Fetch Size</i>	integer	Maximal number of Tasks rescheduled or deleted or canceled in one transaction. (dcmQueueTasksFetchSize)
<i>Remap Retrieve URL</i>	string	Remap Retrieve URL used in QIDO-RS and WADO-RS Metadata responses. Optionally prefixed with "[<http-client-host>]". E.g.: "[cache-proxy]http://cache-proxy:8080". If absent or if the specified <http-client-host> does not match, scheme and server authority of the QIDO-RS or WADO-RS request URL are used. (dcmRemapRetrieveURL)
<i>Proxy Upstream URL</i>	string	URL for the upstream endpoint that shall be proxied. (dcmProxyUpstreamURL)
<i>Audit to json+fhir Template URI</i>	string	Specifies URI for the style sheet to transcode Audit Message to a FHIR JSON Resource Audit Event (dcmAudit2JsonFhirTemplateURI)
<i>Audit to xml+fhir Template URI</i>	string	Specifies URI for the style sheet to transcode Audit Message to a FHIR XML Resource Audit Event (dcmAudit2XmlFhirTemplateURI)
<i>Copy Move Update Policy</i>	string	Specifies update policy for attributes of the destination Study on Copy/Move of Instances from another Study. May be overwritten by configured values for particular Archive Network AEs. Enumerated values: PRESERVE, SUPPLEMENT, MERGE, OVERWRITE or REPLACE. (dcmCopyMoveUpdatePolicy)
<i>Link MWL Entry Update Policy</i>	string	Specifies update policy for Study attributes on Link of Instances of another Study with a MWL Entry referring an existing Study. May be overwritten by configured values for particular Archive Network AEs. Enumerated values: PRESERVE, SUPPLEMENT, MERGE, OVERWRITE or REPLACE. (dcmLinkMWLEntryUpdatePolicy)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Storage Verification Policy</i>	string	DB_RECORD_EXISTS: only check for existence of DB records, OBJECT_EXISTS: check if object exists on Storage System, OBJECT_SIZE: check size of object on Storage System, OBJECT_FETCH: fetch object from Storage System), OBJECT_CHECKSUM: recalculate checksum of object on Storage System, S3_MD5SUM: check MD5 checksum of object on S3 Storage System. May be overwritten by configured values for particular Archive Network AEs. Enumerated values: DB_RECORD_EXISTS, OBJECT_EXISTS, OBJECT_SIZE, OBJECT_FETCH, OBJECT_CHECKSUM or S3_MD5SUM. (dcmStorageVerificationPolicy)
<i>Storage Verification Update Location Status</i>	boolean	Indicates if the Status of the Location DB record shall be updated on Storage Verification accordingly. Not effective with Storage Verification Policy: DB_RECORD_EXISTS. False if absent. May be overwritten by configured values for particular Archive Network AEs. (dcmStorageVerificationUpdateLocationStatus)
<i>Storage Verification Storage IDs(s)</i>	string	Indicates that for successful Storage Verification the object must be stored on (one of) the specified Storage System. If absent, successful verification of the storage on any Storage System is sufficient. Not effective with Storage Validation Policy: DB_RECORD_EXISTS. May be overwritten by configured values for particular Archive Network AEs. (dcmStorageVerificationStorageID)
<i>Storage Verification AE Title</i>	string	Archive AE Title used for scheduled Storage Verifications. (dcmStorageVerificationAETitle)
<i>Storage Verification Batch ID</i>	string	Batch ID of Storage Verification Tasks triggered by scheduler. (dcmStorageVerificationBatchID)
<i>Storage Verification Initial Delay</i>	string	Delay of first Storage Verification of a Series after it was received. May be overwritten by configured values for particular Archive Network AEs. (dcmStorageVerificationInitialDelay)
<i>Storage Verification Period</i>	string	Period in which the storage of individual Series is verified. If absent, storage of individual Series are only verified once after configured Storage Verification Initial Delay. (dcmStorageVerificationPeriod)
<i>Maximal scheduled Storage Verifications</i>	integer	Maximal number of scheduled Storage Verification tasks on this device. Shall be set > 0 to distribute tasks over nodes of a clustered archive. (dcmStorageVerificationMaxScheduled)
<i>Storage Verification Polling Interval</i>	string	Polling Interval for Series scheduled for Storage Verification in ISO-8601 duration format PnDTnHnMnS. (dcmStorageVerificationPollingInterval)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Storage Verification Schedule(s)</i>	string	Limits Storage Verification to specified times in format 'hour=[0-23] dayOfWeek=[0-6]' (0=Sunday). (dcmStorageVerificationSchedule)
<i>Storage Verification Fetch Size</i>	integer	Maximal number of Series scheduled for Storage Verification fetched by one query. (dcmStorageVerificationFetchSize)
<i>Update Location Status on Retrieve</i>	boolean	Indicates if the Status of the Location DB record shall be updated for objects failed to get fetched from storage on retrieve to MISSING_OBJECT or FAILED_TO_FETCH_OBJECT. May be overwritten by configured values for particular Archive Network AEs. (dcmUpdateLocationStatusOnRetrieve)
<i>Storage Verification on Retrieve</i>	boolean	Indicates if failures to fetch an object from Storage on retrieve shall trigger a Storage Verification of the whole Series. May be overwritten by configured values for particular Archive Network AEs. (dcmStorageVerificationOnRetrieve)
<i>Compression AE Title</i>	string	Archive AE Title used for delayed Compression. (dcmCompressionAETitle)
<i>Compression Polling Interval</i>	string	Polling Interval for Series to be compressed in ISO-8601 duration format PnDTnHnMnS. (dcmCompressionPollingInterval)
<i>Compression Threads</i>	integer	Number of Threads used for Compression. (dcmCompressionThreads)
<i>Compression Schedule(s)</i>	string	Limits compression to specified times in format 'hour=[0-23] dayOfWeek=[0-6]' (0=Sunday) (dcmCompressionSchedule)
<i>Compression Fetch Size</i>	integer	Maximal number of Series fetched for compression by one query. (dcmCompressionFetchSize)
<i>Diff Task Progress Update Interval</i>	string	Interval of updating Diff Tasks in process for progress monitoring; disabled if absent. (dcmDiffTaskProgressUpdateInterval)
<i>Patient Verification PDQ Service ID</i>	string	ID of PDQ Service used for Verification of Patient Demographic. If absent, no Patient Verification will be performed. (dcmPatientVerificationPDQServiceID)
<i>Patient Verification Polling Interval</i>	string	Patient Verification Polling Interval. If absent, no Patient Verification will be performed. (dcmPatientVerificationPollingInterval)
<i>Patient Verification Fetch Size</i>	integer	Maximal number of Patients fetched for Patient Verification in one query. (dcmPatientVerificationFetchSize)
<i>Patient Verification Adjust Issuer of Patient ID</i>	boolean	Indicates if the Issuer Of Patient ID shall be adjusted to the value returned by the PDQ Service. (dcmPatientVerificationAdjustIssuerOfPatientID)
<i>Patient Verification Period</i>	string	Period in which Patient Demographic will be verified. If absent, Patient Verification will not be renewed for Patients verified in the past. (dcmPatientVerificationPeriod)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Patient Verification Period Not Found</i>	string	Period in which Patient Demographic will be retried for Patients which were not found by the configured PDQ Service on last attempt. If absent, Patient Verification will not be retried for Patients not found in the past. (dcmPatientVerificationPeriodOnNotFound)
<i>Patient Verification Retry Interval</i>	string	Patient Verification Retry Interval in which failed attempts to verify Patient Demographics against the PDQ Service configured by Patient Verification PDQ Service ID will be retried until the maximal number of retries specified by Patient Verification Max Retries is reached. If absent, failed Patient Verification attempts will not be retried. (dcmPatientVerificationRetryInterval)
<i>Patient Verification Maximum Number of Retries</i>	integer	Maximum number of retries to verify Patient Demographics against the PDQ Service configured by dcmPatientVerificationPDQServiceID. Only effective if Patient Verification Retry Interval is specified. -1 = forever. (dcmPatientVerificationMaxRetries)
<i>Patient Verification Maximum Staleness</i>	string	Indicates to renew the verification of Patient Demographics on receive of objects for a patient, if previous verification is longer ago as the specified Interval. If absent, Patient Verification on receive of objects is disabled. (dcmPatientVerificationMaxStaleness)
<i>HL7 ADT Sending Application</i>	string	Application Facility name of Sending Application for HL7 ADT messages to synchronize external systems about performed Patient Information updates. If absent, synchronization of external systems by HL7 ADT messages is disabled. (hl7ADTSendingApplication)
<i>HL7 ADT Receiving Application(s)</i>	string	Application Facility name of Receiving Application for HL7 ADT messages to synchronize external systems about performed Patient Information updates. If absent, synchronization of external systems by HL7 ADT messages is disabled. (hl7ADTReceivingApplication)
<i>HL7 Procedure Status Update Sending Application</i>	string	Application Facility name of Sending Application for HL7 Procedure Status Update. HL7 Procedure Status Update disabled, if absent. May be overwritten by configured values for particular Archive Network AEs. (hl7PSUSendingApplication)
<i>HL7 Procedure Status Update Receiving Application(s)</i>	string	Application Facility name of Receiving Application for HL7 Procedure Status Update. May be overwritten by configured values for particular Archive Network AEs. (hl7PSUReceivingApplication)
<i>HL7 Procedure Status Update Delay</i>	string	Delay in ISO-8601 duration format PnDTnHnMnS after which an HL7 Procedure Status Update for a received study is sent to configured HL7 receivers. If absent, HL7 Procedure Status Update is triggered by received MPPS. May be overwritten by configured values for particular Archive Network AEs. (hl7PSUDelay)

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Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>HL7 Procedure Status Update Attribute Conditions(s)</i>	string	Restrict notification of configured HL7 Procedure Status Update Receiving Applications about Procedure Status Update by conditions on attributes of received composite object in format (SendingHost-name SendingApplicationEntityTitle ReceivingHostname ReceivingApplicationEntityTitle). May be overwritten by configured values for particular Archive Network AEs. (hl7PSUConditions)
<i>HL7 Procedure Status Update for Requested Procedure</i>	boolean	Restrict notification of configured HL7 Procedure Status Update Receiving Applications about Procedure Status Update to existence of Scheduled Procedure Steps of a Requested Procedure (MWL Items in the DB) with matching Study Instance UID. May be overwritten by configured value for particular Archive Network AEs. (hl7PSUForRequestedProcedure)
<i>HL7 Procedure Status Update Requested Procedure ID</i>	string	Value for Requested Procedure ID in notification message, if there are no Scheduled Procedure Steps of a Requested Procedure (MWL Items in the DB) with matching Study Instance UID. {<attributeID>} will be replaced by the value of attribute in the received study. May be overwritten by configured value for particular Archive Network AEs. (hl7PSURequestedProcedureID)
<i>HL7 Procedure Status Accession Number</i>	string	Value for Accession Number in notification message, if there are no Scheduled Procedure Steps of a Requested Procedure (MWL Items in the DB) with matching Study Instance UID. {<attributeID>} will be replaced by the value of attribute in the received study. May be overwritten by configured value for particular Archive Network AEs. (hl7PSUAccessionNumber)
<i>HL7 Procedure Status Filler Order Number</i>	string	Value for Filler Order Number in notification message, if there are no Scheduled Procedure Steps of a Requested Procedure (MWL Items in the DB) with matching Study Instance UID. {<attributeID>} will be replaced by the value of attribute in the received study. May be overwritten by configured value for particular Archive Network AEs. (hl7PSUFillerOrderNumber)
<i>HL7 Procedure Status Placer Order Number</i>	string	Value for Placer Order Number in notification message, if there are no Scheduled Procedure Steps of a Requested Procedure (MWL Items in the DB) with matching Study Instance UID. {<attributeID>} will be replaced by the value of attribute in the received study. May be overwritten by configured value for particular Archive Network AEs. (hl7PSUPlacerOrderNumber)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>HL7 Procedure Status Message Type</i>	string	Message Type of HL7 Procedure Status Update message. May be overwritten by configured values for particular Archive Network AEs. Enumerated values: OMG_O19 or ORU_R01. (hl7PSUMessageType)
<i>HL7 Procedure Status Update PID PV1</i>	boolean	Indicates to include a Patient Identification (PID) and a Patient Visit (PV1) segment in the HL7 Procedure Status Update message. Implicitly set, if HL7 Procedure Status Message Type = ORU_R01. May be overwritten by configured values for particular Archive Network AEs. (hl7PSUPIDPV1)
<i>HL7 Procedure Status Update MWL</i>	boolean	Specifies if the Status of MWL Items in the DB is updated to COMPLETED for a received study after the configured HL7 Procedure Status Update Delay or for received MPPS after configured HL7 Procedure Status Update Timeout. Implicitly set to true, if notification of HL7 receivers is configured. May be overwritten by configured values for particular Archive Network AEs. (hl7PSUMWL)
<i>HL7 Procedure Status Update Timeout</i>	string	Timeout in ISO-8601 duration format PnDTnHnMnS for waiting on receive of instances referenced in MPPS; check for completeness forever if absent. May be overwritten by configured values for particular Archive Network AEs. (hl7PSUTimeout)
<i>HL7 Procedure Status Update On Timeout</i>	boolean	Specifies if the HL7 Procedure Status Update is sent if the timeout for waiting on receive of instances referenced is exceeded. May be overwritten by configured values for particular Archive Network AEs. (hl7PSUOnTimeout)
<i>HL7 Procedure Status Update Task Polling Interval</i>	string	Polling Interval for HL7 Procedure Status Update Tasks in ISO-8601 duration format PnDTnHnMnS. Disabled, if absent. (hl7PSUTaskPollingInterval)
<i>HL7 Procedure Status Update Tasks Fetch Size</i>	integer	Maximal number of HL7 Procedure Status Update Tasks fetched in one query. (hl7PSUTaskFetchSize)
<i>HL7 Track Changed Patient ID</i>	boolean	Enable to keep track of the prior Patient ID on a change of the Patient ID by HL7 ADT^A47 or by the RESTful Patient Update Service. (hl7TrackChangedPatientID)
<i>Audit Software Configuration Verbose</i>	boolean	Specifies if Child Objects and Attributes of created Objects should be included in Software Configuration Audit Message. (dcmAuditSoftwareConfigurationVerbose)

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Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Use HL7 Null Value</i>	boolean	Specifies if HL7 v2 null values (specified in segment field as "") are used in sent HL7 messages for not present or empty entity attributes. Required to unset entity attributes at the remote HL7 Application. May be overwritten by configured values for particular Archive HL7 Application. (hl7UseNullValue)
<i>HL7 Veterinary use Patient Name</i>	boolean	Indicates to force veterinary use of Patient Names on mapping HL7 PID fields to DICOM attributes: only use the first two components of PID.5 as DICOM Patient Name; if PID.5 only contains one component, use that value as given name, and the first component of PID.9 as family name of the DICOM Patient Name. May be overwritten by configured values for particular Archive HL7 Application. (hl7VeterinaryUsePatientName)
<i>HL7 Order Missing Study Instance UID Policy</i>	string	Specifies policy for missing Study Instance UID in incoming HL7 Order messages. May be overwritten by configured values for particular Archive HL7 Application. Enumerated values: REJECT, GENERATE or ACCESSION_BASED. (hl7OrderMissingStudyIUIDPolicy)
<i>HL7 Import Report Missing Study Instance UID Policy</i>	string	Specifies policy for missing Study Instance UID in incoming HL7 Import Report (ORU) messages. May be overwritten by configured values for particular Archive HL7 Application. Enumerated values: REJECT, GENERATE or ACCESSION_BASED. (hl7ImportReportMissingStudyIUIDPolicy)
<i>HL7 Referred Merged Patient Policy</i>	string	Specifies policy on incoming HL7 messages referring an already merged Patient. REJECT: reject any such HL7 message, IGNORE: ignore any such HL7 message, IGNORE_DUPLICATE_MERGE: Ignore only duplicate HL7 Merge messages, Reject any other such Message. May be overwritten by configured values for particular Archive HL7 Application. Enumerated values: REJECT, IGNORE or IGNORE_DUPLICATE_MERGE. (hl7ReferredMergedPatientPolicy)
<i>HL7 Dicom Character Set</i>	string	Indicates to use specified Value of Specific Character Set (0008,0005) in Data Sets transcoded from received HL7 messages. Use Value corresponding to Character Set of the HL7 message specified by MSH-18 if absent. (hl7DicomCharacterSet)
<i>Rejection Note Storage AE title</i>	string	Title of Archive Application Entity, of which first configured Object Storage will be used for storing Rejection Notes generated either by IOCM-RS services or by Delete Expired Studies Scheduler. If absent, for IOCM services the Object Storage configured for Archive AE referred in the IOCM-RS request will be used, or for Delete Expired Studies Scheduler the Object Storage configured for Reject Expired Studies AE will be used. (dcmRejectionNoteStorageAET)

Continued on next page

Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>UI Configuration Device Name</i>	string	Specifies the device name containing the Archive UI Configuration. (dcmUIConfigurationDeviceName)
<i>CSV Upload Chunk Size</i>	integer	Number of CSV file upload tasks to be processed in one chunk. (dcmCSVUploadChunkSize)
<i>Validate UID</i>	boolean	Indicates if UIDs shall be validated or not. (dcmValidateUID)
<i>Relational Query Negotiation Lenient</i>	boolean	Indicates to accept C-FIND RQs without unique keys for levels above the query level also if support for relational-queries was not negotiated. May be overwritten by configured value for particular Archive Network AEs. (dcmRelationalQueryNegotiationLenient)
<i>Relational Retrieve Negotiation Lenient</i>	boolean	Indicates to accept C-MOVE and C-GET RQs without unique keys for levels above the query level also if support for relational-queries was not negotiated. May be overwritten by configured value for particular Archive Network AEs. (dcmRelationalRetrieveNegotiationLenient)
<i>Restrict Retrieve Silently</i>	boolean	Indicates if the set of requested objects to retrieve shall be silently (=without counting not transferred object as failures) restricted according the Transfer Capabilities of the Retrieve Destination. Otherwise the number of requested objects for which no Transfer Capability is configured for the Retrieve Destination and therefore are not retrieved is counted as failures. Only effective, if the Retrieve Destination has configured at least one Transfer Capability with SCP role. May be overwritten by configured value for particular Archive Network AEs. (dcmRestrictRetrieveSilently)
<i>Scheduler Minimum Start Delay</i>	integer	Minimal delay in s to start schedulers on system start up. (dcmSchedulerMinStartDelay)
<i>Reject Conflicting Patient Attribute(s)</i>	string	DICOM Tag of Patient Attribute which have to match in received objects with the value in previous received objects with equal Patient ID to be accepted. May be overwritten by configured value for particular Archive Network AEs. (dcmRejectConflictingPatientAttribute)
<i>STOW Retired Transfer Syntax</i>	boolean	Store received JPEG Full Progression, Non-Hierarchical JPEG images in DICOM images with corresponding (retired) Transfer Syntax UID 1.2.840.10008.1.2.4.55. Otherwise set 1.2.840.10008.1.2.4.50 (= JPEG Baseline) or 1.2.840.10008.1.2.4.51 (= JPEG Extended) as Transfer Syntax UID of the stored DICOM image, without transcoding to JPEG Baseline or JPEG Extended, but including the JPEG image as received. May be overwritten by configured value for particular Archive Network AEs. (dcmStowRetiredTransferSyntax)

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Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>STOW Exclude Application Markers</i>	boolean	Indicates if APP markers in JPEG images received in STOW-RS Metadata and Bulkdata requests shall be excluded from the JPEG bit streams encapsulated in created DICOM instances. May be overwritten by configured value for particular Archive Network AEs. (dcmStowExcludeAPPMarkers)
<i>STOW Quicktime to MP4</i>	boolean	Indicates if QuickTime containers received in STOW-RS Metadata and Bulkdata requests shall be converted to MP4 containers encapsulated in created DICOM instances. The conversion requires that ffmpeg is installed and the ffmpeg CLI utility is available in the PATH. Otherwise Quicktime containers will get encapsulated in the stored DICOM object verbatim, with a declared DICOM MPEG-4 Transfer Syntax which reflects the encoding of the video stream in the container, but contradicts the actual container format. May be overwritten by configured value for particular Archive Network AEs. (dcmStowQuicktime2MP4)
<i>Fallback C-Move SCP Calling AE title</i>	string	Calling AE Title used in A-ASSOCIATE-RQ to configured Fallback C-MOVE SCP. If absent, the AE Title of the external C-MOVE SCU is used. May be overwritten by configured value for particular Archive Network AEs. (dcmFallbackCMoveSCPCallingAET)
<i>Attribute Filter (s)</i>	object	Specifies Attributes stored in the database
<i>Attribute Set (s)</i>	object	Named Attribute Set for Query Parameter ‘includefields’ of QIDO-RS and WADO-RS Metadata or by Query Parameter ‘comparefield’ of DIFF-RS requests.
<i>Bulk Data Descriptor (s)</i>	object	Specifies Bulk Data Descriptors applied by services providing Metadata of archived instances.
<i>Storage (s)</i>	object	Specifies Storage System
<i>Query Retrieve View (s)</i>	object	Specifies behavior on Rejection Note Stored
<i>Queue (s)</i>	object	Managed JMS Queue
<i>Metrics Descriptor (s)</i>	object	Activated Metrics
<i>PDQ Service (s)</i>	object	PDQ Service Descriptor
<i>Exporter Descriptor (s)</i>	object	Exporter Descriptor
<i>Export Rule (s)</i>	object	Export Rules applied to DICOM objects received by any AE. May be supplemented by configured Export Rules for particular Archive Network AEs.
<i>Export Priors Rule (s)</i>	object	Export Priors Rules applied to DICOM objects received by any AE. May be supplemented by configured Export Priors Rules for particular Archive Network AEs.
<i>RESTful Forward Rule (s)</i>	object	RESTful Forward Rules. May be supplemented by configured RESTful Forward Rules for particular Archive Network AEs.
<i>Keycloak Server (s)</i>	object	Keycloak Server
<i>Archive Compression rule (s)</i>	object	Compression rules applied to DICOM objects received by any AE. May be supplemented by configured Compression Rules for particular Archive Network AEs.

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Table 4.88 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Archive Attribute Coercion</i> (s)	object	Attribute Coercion applied to DIMSE received/sent by any AE. May be supplemented by configured Attribute Coercions for particular Archive Network AEs.
<i>Rejection Note</i> (s)	object	Specifies behavior on Rejection Note Stored
<i>Study Retention Policy</i> (s)	object	Study Retention Policies applied to Studies received by any AE. May be supplemented by configured Study Retention Policies for particular Archive Network AEs.
<i>Store Access Control ID Rule</i> (s)	object	Store Access Control Rules applied to Studies received by any AE. May be supplemented by configured Store Access Control Rules for particular Archive Network AEs.
<i>UPS on Store</i> (s)	object	UPS on Store Rules applied to DICOM objects received by any AE. May be supplemented by configured UPS on Store Rules for particular Archive Network AEs.
<i>UPS on HL7</i> (s)	object	UPS on HL7 Rules applied to HL7 messages received by any HL7 Application. May be supplemented by configured UPS on HL7 Rules for particular HL7 Applications.
<i>UPS on UPS Completed</i> (s)	object	UPS on UPS Completed Rules applied to UPS managed by any AE. May be supplemented by configured UPS on Store Rules for particular Archive Network AEs.
<i>UPS Template</i> (s)	object	UPS Templates.
<i>UPS Processing Rule</i> (s)	object	UPS Processing Rules.
<i>ID Generator</i> (s)	object	ID Generator
<i>MWL Idle Timeout</i> (s)	object	MWL Idle Timeout
<i>HL7 Forward Rule</i> (s)	object	HL7 Forward Rules for HL7 messages received by any HL7 Application. May be supplemented by configured HL7 Forward Rules for particular HL7 Applications.
<i>HL7 Export Rule</i> (s)	object	Export Rules applied to HL7 messages received by any HL7 Application. May be supplemented by configured HL7 Export Rules for particular HL7 Application.
<i>HL7 Prefetch Rule</i> (s)	object	HL7 Prefetch Rules applied to HL7 messages received by any HL7 Application. May be supplemented by configured HL7 Prefetch Rules for particular HL7 Application.
<i>HL7 Study Retention Policy</i> (s)	object	HL7 Study Retention Policies triggered by HL7 messages received by any HL7 Application. May be supplemented by configured Study Retention Policies for particular HL7 Applications.
<i>Scheduled Station for HL7 Order</i> (s)	object	Scheduled Station selected on MWL HL7 Order Feed received by any HL7 Application. May be supplemented by configured values for particular HL7 Applications.
<i>SPS Status for HL7 Order</i> (s)	object	Specifies SPS Status of DICOM MWL items created/updated on received HL7 ORM^O01, OMI^O23, OMG^O19 messages. May be overwritten by configured values for particular Archive HL7 Application.
<i>X-Road Property(s)</i>	string	Properties for accessing Estonian National Patient Registry in format <name>=<value> (dcmXRoadProperty)
<i>Impax Report Property(s)</i>	string	Properties for accessing Agfa Impax Report Service in format <name>=<value> (dcmImpaxReportProperty)

Attribute Filter

Attributes stored in the database

Table 4.89: Attribute Filter Attributes (LDAP Object: dcmAttribute-Filter)

Name	Type	Description (LDAP Attribute)
<i>Attribute Entity</i>	string	Entity of the Attribute Filter or Export Rule ('Patient', 'Study', 'Series', 'Instance', 'MPPS', 'MWL'). Enumerated values: Patient, Study, Series, Instance, MPPS or MWL. (dcmEntity)
<i>Attribute Tag(s)</i>	string	DICOM Tag as hex string (dcmTag)
<i>Custom Attribute 1</i>	string	Configure any attribute from the DICOM object which shall be inserted in database as Custom Attribute 1. Eg. DicomAttribute[@tag="00200070"]/Value[@number="1"] or for a Private attribute DicomAttribute[@tag="00E10024" and @privateCreator="ELSCINT1"]/Value[@number="1"] (dcmCustomAttribute1)
<i>Custom Attribute 2</i>	string	Configure any attribute from the DICOM object which shall be inserted in database as Custom Attribute 2. Eg. DicomAttribute[@tag="00200070"]/Value[@number="1"] or for a Private attribute DicomAttribute[@tag="00E10024" and @privateCreator="ELSCINT1"]/Value[@number="1"] (dcmCustomAttribute2)
<i>Custom Attribute 3</i>	string	Configure any attribute from the DICOM object which shall be inserted in database as Custom Attribute 3. Eg. DicomAttribute[@tag="00200070"]/Value[@number="1"] or for a Private attribute DicomAttribute[@tag="00E10024" and @privateCreator="ELSCINT1"]/Value[@number="1"] (dcmCustomAttribute3)
<i>Attribute Update Policy</i>	string	Specifies update policy for extracted attributes into the DB on Series, Study & Patient level on receive of further instance of the entity. PRESERVE (= nullify attributes in the new dataset which are not present in the original dataset), SUPPLEMENT (= attributes not present in original dataset will be supplemented), REPLACE (= original dataset is completely replaced), MERGE (= attribute values will be written from new dataset), OVERWRITE (= attribute values if null in new dataset, will be nullified in original dataset). If absent, PRESERVE will be applied Enumerated values: PRESERVE, SUPPLEMENT, MERGE, OVERWRITE or REPLACE. (dcmAttributeUpdatePolicy)

Attribute Set

Named Attribute Set for Query Parameter ‘includefields’ of QIDO-RS and WADO-RS Metadata or by Query Parameter ‘comparefield’ of DIFF-RS requests.

Table 4.90: Attribute Set Attributes (LDAP Object: dcmAttributeSet)

Name	Type	Description (LDAP Attribute)
<i>Attribute Set Description</i>	string	Unconstrained text description of this Attribute Set (dicomDescription)
<i>Attribute Set Type</i>	string	Specifies if this Attribute Set is used by Query Parameter ‘includefields’ of QIDO-RS and WADO-RS Metadata or by Query Parameter ‘comparefield’ of DIFF-RS requests. Enumerated values: QIDO_RS, WADO_RS, DIFF_RS or LEADING_CFIND_SCP. (dcmAttributeSetType)
<i>Attribute Set ID</i>	string	ID used by Query Parameter ‘includefields’ of QIDO-RS and WADO-RS Metadata requests and by Query Parameter ‘comparefield’ of DIFF-RS requests to refer this Attribute Set. (dcmAttributeSetID)
<i>Attribute Set Title</i>	string	Title of this Attribute Set. (dcmAttributeSetTitle)
<i>Attribute Set Number</i>	integer	Number used to order Attribute Sets. (dcmAttributeSetNumber)
<i>installed</i>	boolean	Boolean to indicate whether this Attribute Set is presently installed on the archive device (dicomInstalled)
<i>Attribute Tag(s)</i>	string	DICOM Tag as hex string (dcmTag)
<i>Property(s)</i>	string	Property in format <name>=<value> (dcmProperty)

Bulk Data Descriptor

Bulk Data Descriptor

Table 4.91: Bulk Data Descriptor Attributes (LDAP Object: dcmBulk-Data)

Name	Type	Description (LDAP Attribute)
<i>Bulk Data Descriptor ID</i>	string	Bulk Data Descriptor ID (dcmBulkDataDescriptorID)
<i>Exclude Defaults</i>	boolean	Indicates if Attributes specified by the 'Composite Instance Retrieve Without Bulk Data Service Class' shall be implicitly treated as Bulk Data (=false) or not (=true). (dcmBulkDataExcludeDefaults)
<i>Attribute Selector(s)</i>	string	Specifies individual Attributes treated as Bulk Data by XPath (e.g. 'DicomAttribute[@tag="54000100"]/Item/DicomAttribute[@tag="54001010"]'). (dcmAttributeSelector)
<i>VR Length Threshold(s)</i>	string	Specifies to treat all Attributes with a particular Value Representation (VR) which value length exceeds the specified threshold as Bulk Date. Format: <VR>=<length-threshold>. (dcmBulkDataVRLengthThreshold)

Storage

Storage Descriptor

Table 4.92: Storage Attributes (LDAP Object: dcmStorage)

Name	Type	Description (LDAP Attribute)
<i>Storage ID</i>	string	Storage ID (dcmStorageID)
<i>Storage URI</i>	string	RFC2079: Uniform Resource Identifier (dcmURI)
<i>Digest Algorithm</i>	string	Algorithm for generation of check sums. Enumerated values: MD5 or SHA-1. (dcmDigestAlgorithm)
<i>Maximum Number of Retries</i>	integer	Maximum number of retries to store an object on the storage system. (dcmMaxRetries)
<i>Retry Delay</i>	string	Delay to retry to store an object on the storage system in ISO-8601 duration format PnDTnHnMn.nS. Retry immediately if absent. (dcmRetryDelay)
<i>Instance Availability</i>	string	Instance Availability. Enumerated values: ONLINE, NEARLINE or OFFLINE. (dcmInstanceAvailability)
<i>Storage Duration</i>	string	Indicates if the Storage is used as permanent (=PERMANENT), cache (=CACHE) or temporary (=TEMPORARY) storage. Objects get purged from cache and temporary storage according configured deleter thresholds or - if no deleter threshold is specified and no Retention Periods are configured - all objects on the Storage will get purged. In the case of temporary storage, the studies which objects were purged are also deleted from the database. Enumerated values: PERMANENT, CACHE or TEMPORARY. (dcmStorageDuration)
<i>Read Only</i>	boolean	Indicates if a Storage System is read only. (dcmReadOnly)
<i>Storage Cluster ID</i>	string	Identifies a Storage to belong to a Storage Cluster. Objects of one Study may be distributed over Storage Systems of one Storage Cluster. Used by threshold triggered deletion. (dcmStorageClusterID)
<i>Storage Threshold</i>	string	Minimal Usable Space on Storage System. If the usable space falls below that value the Storage System will be marked as full by setting Storage Threshold Exceeds to the current time and - if Storage Threshold Exceeds Permanently is true - the Storage System will be removed from the list of configured Storage Systems of the Network AE requesting that Storage System. Format nnn(MBiGB MiBiGiB) (dcmStorageThreshold)
<i>Storage Threshold Exceeded</i>	string	Date and time in format YYYYMMDDHH-MMSS.FFFFFFFF when the Storage Threshold exceeded. (dcmStorageThresholdExceeded)
<i>Storage Threshold Exceeds Permanently</i>	boolean	Indicates to removed the Storage System from the list of configured Storage Systems of the Network AE requesting that Storage System when the Storage Threshold exceeds. (dcmStorageThresholdExceedsPermanently)

4.4. Configuration

<i>No Deletion Constraint</i>	boolean	Delete Studies from cache/temporary Storage System, if no Deleter Threshold and no other deletion constraint is configured. (dcmNoDeletionConstraint)
	string	Minimal Usable Space on Storage System to trigger dele-

Query Retrieve View

Specifies behavior on Rejection Note Stored

Table 4.93: Query Retrieve View Attributes (LDAP Object: dcm-QueryRetrieveView)

Name	Type	Description (LDAP Attribute)
<i>Query/Retrieve View ID</i>	string	Query/Retrieve View Identifier (dcmQueryRetrieveViewID)
<i>Show Instances Rejected By Code(s)</i>	string	Indicates if the Q/R Services shall show instances rejected by the specified code in format (CV, CSD, 'CM') (dcmShowInstancesRejectedByCode)
<i>Hide Rejection Note With Code(s)</i>	string	Indicates if the Q/R Services shall hide Rejection Notes with the specified code in format (CV, CSD, 'CM') (dcmHideRejectionNoteWithCode)
<i>Hide Not Rejected Instances</i>	boolean	Indicates if the Q/R Services shall hide instances not rejected by any reason. (dcmHideNotRejectedInstances)

Queue

Managed JMS Queue

Table 4.94: Queue Attributes (LDAP Object: dcmQueue)

Name	Type	Description (LDAP Attribute)
<i>Queue Name</i>	string	JMS Queue Name (dcmQueueName)
<i>JNDI Name</i>	string	JNDI Name (dcmJndiName)
<i>DICOM Description</i>	string	Textual description of the DICOM entity (dicomDescription)
<i>Maximum Number of Retries</i>	integer	Maximal number of retries to process tasks scheduled in a specific queue. (dcmMaxRetries)
<i>Retry Delay</i>	string	Delay to retry to process tasks scheduled in a specific queue in ISO-8601 duration format PnDTnHnMn.nS. (dcmRetryDelay)
<i>Maximum Retry Delay</i>	string	Maximal Delay to retry to process tasks scheduled in a specific queue in ISO-8601 duration format PnDTnHnMn.nS. Infinite if absent. (dcmMaxRetryDelay)
<i>Retry Delay Multiplier</i>	integer	Multiplier in % that will take effect on top of dcmRetryDelay with dcmMaxRetryDelay to be taken into account. (dcmRetryDelayMultiplier)
<i>Retry on Warning</i>	boolean	Enables retries to process tasks not only on failure but also on a warning outcome status in a specific queue. (dcmRetryOnWarning)
<i>Retry IN PROCESS on Startup</i>	boolean	Indicates to retry tasks left in status IN PROCESS on system start-up. (dcmRetryInProgressOnStartup)
<i>Delay for purging completed queue messages</i>	string	Delay in ISO-8601 duration format PnDTnHnMn.nS after which completed queue messages are purged. If absent, there is no deletion for that particular queue (dcmPurgeQueueMessageCompletedDelay)
<i>Delay for purging failed queue messages</i>	string	Delay in ISO-8601 duration format PnDTnHnMn.nS after which failed queue messages are purged. If absent, there is no deletion for that particular queue (dcmPurgeQueueMessageFailedDelay)
<i>Delay for purging warning queue messages</i>	string	Delay in ISO-8601 duration format PnDTnHnMn.nS after which warning queue messages are purged. If absent, there is no deletion for that particular queue (dcmPurgeQueueMessageWarningDelay)
<i>Delay for purging canceled queue messages</i>	string	Delay in ISO-8601 duration format PnDTnHnMn.nS after which canceled queue messages are purged. If absent, there is no deletion for that particular queue (dcmPurgeQueueMessageCanceledDelay)
<i>Maximum Queue Size</i>	integer	Maximal number of scheduled tasks in the queue. If the number of scheduled tasks reaches the limit, an attempt to schedule another tasks will fail. 0 = no limitation. (dcmMaxQueueSize)
<i>Restrict Scheduling(s)</i>	string	Restrict Scheduling to specified time ranges. Use Maximum Queue Size to control maximal number of Tasks processed between specified time ranges. Only effective for scheduling Retrieve Tasks. (dcmSchedule)

Metrics Descriptor

Metrics Descriptor

Table 4.95: Metrics Descriptor Attributes (LDAP Object: dcmMetrics)

Name	Type	Description (LDAP Attribute)
<i>Metrics Name</i>	string	Metrics Name (dcmMetricsName)
<i>Metrics Description</i>	string	Unconstrained text description of the metrics (dicomDescription)
<i>Metrics Retention Period</i>	integer	Metrics Retention Period in minutes (dcmMetricsRetentionPeriod)
<i>Metrics Unit</i>	string	Unit of metrics data (dcmUnit)

PDQ Service

PDQ Service Descriptor

Table 4.96: PDQ Service Attributes (LDAP Object: dcmPdqService)

Name	Type	Description (LDAP Attribute)
<i>PDQ Service ID</i>	string	PDQ Service ID (dcmPDQServiceID)
<i>PDQ Service URI</i>	string	PDQ Service URI, e.g. 'pdq-dicom:FINDSCP'. (dcmURI)
<i>PDQ Service Description</i>	string	Unconstrained text description of the PDQ Service (dicomDescription)
<i>Patient Attributes(s)</i>	string	Queried Patient Attributes - if not specified all available Patient attributes will be queried (dcmTag)
<i>Query Entity</i>	string	Indicates if the C-FIND SCP is queried for a particular Patient or for Studies of a particular Patient. Only effective for DICOM PDQ Services (URI: pdq-dicom:{AETitle}). Enumerated values: Patient or Study. (dcmEntity)
<i>PDQ Service Property(s)</i>	string	Property in format <name>=<value>, e.g. 'LocalAET=DCM4CHEE' (dcmProperty)

Exporter Descriptor

Exporter Descriptor

Table 4.97: Exporter Descriptor Attributes (LDAP Object: dcmExporter)

Name	Type	Description (LDAP Attribute)
<i>Exporter ID</i>	string	Exporter ID (dcmExporterID)
<i>URI</i>	string	RFC2079: Uniform Resource Identifier (dcmURI)
<i>Queue Name</i>	string	JMS Queue Name Enumerated values: Export1, Export2, Export3, Export4, Export5, Export6, Export7, Export8, Export9 or Export10. (dcmQueueName)
<i>Export Priority</i>	integer	JMS Priority Level for processing the Export Task from 0 (lowest) to 9 (highest). (dcmExportPriority)
<i>Exporter Description</i>	string	Unconstrained text description of the exporter (dicomDescription)
<i>Archive Application Entity (AE) title</i>	string	Archive Application Entity (AE) title (dicomAETitle)
<i>Export as Source Application Entity (AE)</i>	boolean	Mask the Archive Application Entity (AE) title by the title of the Application Entity (AE) from which a Series was received on establishing the Association to the Destination Application Entity (AE). (dcmExportAsSourceAE)
<i>Delete Study From Storage ID</i>	string	ID of Storage System from which the objects of the exported Study shall be deleted. Only effective for Export Tasks on Study level. (dcmDeleteStudyFromStorageID)
<i>Reject Entity for Data Retention Expiry</i>	boolean	Reject entity for Data Retention Expiry after export on completion of Export Task. (dcmRejectForDataRetentionExpiry)
<i>Storage Commitment SCP AE Title</i>	string	AE Title of external Storage Commitment SCP used to verify export to another archive. (dcmStgCmtSCP)
<i>Ian Destination(s)</i>	string	Destination to send IAN N-CREATE RQ (dcmIanDestination)
<i>Retrieve AE Title(s)</i>	string	AE Title associated with Network AE (dcmRetrieveAET)
<i>Retrieve Location UID</i>	string	Retrieve Location UID. (dcmRetrieveLocationUID)
<i>Instance Availability</i>	string	Instance Availability. Enumerated values: ONLINE, NEARLINE or OFFLINE. (dcmInstanceAvailability)
<i>Export Schedule(s)</i>	string	Delay export to specified time periods. If no Export Schedule is specified, queue the export task for processing immediately. Format: 'hour=[0-23] dayOfWeek=[0-6]' (0=Sunday) (dcmSchedule)
<i>Property(s)</i>	string	Property in format <name>=<value> (dcmProperty)

Export Rule

Export Rule

Table 4.98: Export Rule Attributes (LDAP Object: dcmExportRule)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name of the Export Rule (cn)
<i>Export Entity</i>	string	Entity of Export Enumerated values: Study, Series or Instance. (dcmEntity)
<i>Exporter ID(s)</i>	string	Exporter ID (dcmExporterID)
<i>Exporter Device Name</i>	string	Specifies Device on which the Export Task(s) shall be scheduled. If not specified, the Export Task(s) is/are scheduled on the Device which received the objects. Attention: the specified Device must (also) have Exporters with the specified IDs configured! (dicomDeviceName)
<i>Export Previous Entity</i>	boolean	Specifies if the previous Entity of a replaced Instance shall be also exported. (dcmExportPreviousEntity)
<i>Attribute Conditions(s)</i>	string	Attribute Conditions in format (SendingHost- name SendingApplicationEntityTitle ReceivingHost- name ReceivingApplicationEntityTitle) (dcmProperty)
<i>Time Conditions(s)</i>	string	Apply this rule only within specified time ranges. (dcmSchedule)
<i>Export Delay</i>	string	Delay export of entities to accumulate multiple trigger events to one export task. (dcmDuration)
<i>Export Reoccurred Instances</i>	string	Indicates if the entity shall be exported on subsequent occurrence of instances Enumerated values: NEVER, ALWAYS or REPLACE. (dcmExportReoccurredInstances)

Export Priors Rule

Export Priors Rule

Table 4.99: Export Priors Rule Attributes (LDAP Object: dcmExportPriorsRule)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name of the Export Priors Rule (cn)
<i>Exporter ID(s)</i>	string	Exporter ID (dcmExporterID)
<i>Attribute Conditions(s)</i>	string	Attribute Conditions in format (SendingHostname SendingApplicationEntityTitle ReceivingHostname ReceivingApplicationEntityTitle) (dcmProperty)
<i>Time Conditions(s)</i>	string	Apply this rule only within specified time ranges. (dcmSchedule)
<i>Entity Selector(s)</i>	string	Specifies matching keys used to select prior Studies to export. Format: {key}={value}[&{key}={value}]...., with {key} = 'priors' 'StudyAge' {attributeID}. {value} in the format '\$' {attributeID} are replaced by the value of the specified attribute from the received object which triggered the export. If no Entity Selector is specified, all prior Studies for the Patient will be exported. Example: 'priors=2&StudyAge=-5Y&ModalitiesInStudy=CT' => select at most 2 prior Studies not older than 5 years containing at least one CT Series. (dcmEntitySelector)
<i>Suppress Duplicate Export Interval</i>	string	Suppress Export of Studies already exported not earlier than the specified interval to avoid duplicate exports. (dcmDuration)
<i>Export Reoccurred Instances</i>	string	Indicates if the entity shall be exported on subsequent occurrence of instances Enumerated values: NEVER, ALWAYS or REPLACE. (dcmExportReoccurredInstances)

RESTful Forward Rule

RESTful Forward Rule

Table 4.100: RESTful Forward Rule Attributes (LDAP Object: dcmRs-ForwardRule)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name of the RESTful Forward Rule (cn)
<i>Web Application name</i>	string	Name of the Web Application (dcmWebAppName)
<i>TLS Allow Any Hostname</i>	boolean	If the other server requires HTTPS and this config option is set to true the other server's certificate is validated via the truststore, but host name validation is not done. (dcmTLSAllowAnyHostname)
<i>TLS Disable Trust Manager</i>	boolean	If the other server requires HTTPS and this config option is set to true you do not have to specify a truststore (dcmTLSDisableTrustManager)
<i>Request URL Pattern</i>	string	Only forward requests which match the given Regular Expression. If prefixed with !, only forward requests which does not match the given Regular Expression. (dcmURIPattern)
<i>RESTful Operation(s)</i>	string	Name of RESTful Operation which shall be forwarded to another archive instance. Enumerated values: CreatePatient, UpdatePatient, DeletePatient, ChangePatientID, MergePatient, MergePatients, UpdateStudy, DeleteStudy, RejectStudy, RejectSeries, RejectInstance, UpdateStudyExpirationDate, UpdateSeriesExpirationDate, ApplyRetentionPolicy, CreateMWL, UpdateMWL, DeleteMWL or UpdateStudyAccessControlID. (dcmRSOperation)

Keycloak Server

Keycloak Server

Table 4.101: Keycloak Server Attributes (LDAP Object: dcmKeycloak-Server)

Name	Type	Description (LDAP Attribute)
<i>Keycloak Server ID</i>	string	Identifier for this Keycloak Server. (dcmKeycloakServerID)
<i>Server URL</i>	string	The base URL of the Keycloak server. (dcmURI)
<i>Keycloak Realm</i>	string	Name of the realm in token requests. (dcmKeycloakRealm)
<i>OAuth 2.0 Client ID</i>	string	Client ID used in token requests. (dcmKeycloakClientID)
<i>OAuth 2.0 grant type</i>	string	OAuth 2.0 grant type used in token requests. Enumerated values: client_credentials or password. (dcmKeycloakGrantType)
<i>OAuth Client secret</i>	string	OAuth client secret. Required if grant type = client_credentials. (dcmKeycloakClientSecret)
<i>TLS Allow Any Hostname</i>	boolean	If the other server requires HTTPS and this config option is set to true the other server's certificate is validated via the truststore, but host name validation is not done. (dcmTLSAllowAnyHostname)
<i>TLS Disable Trust Manager</i>	boolean	If the other server requires HTTPS and this config option is set to true you do not have to specify a truststore (dcmTLSDisableTrustManager)
<i>User ID</i>	string	User ID. Required if grant type = password. (uid)
<i>User Password</i>	string	User Password. Required if grant type = password. (userPassword)

Archive Compression rule

Archive Compression rule

Table 4.102: Archive Compression rule Attributes (LDAP Object: dc-mArchiveCompressionRule)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name of the Archive Compression Rule (cn)
<i>DICOM Transfer Syntax UID</i>	string	A Transfer Syntax UID (dicomTransferSyntax)
<i>Rule Priority</i>	integer	Rule Priority (dcmRulePriority)
<i>Conditions(s)</i>	string	Conditions in format (SendingHost-name SendingApplicationEntityTitle ReceivingHostname ReceivingApplicationEntityTitle) (dcmProperty)
<i>Image Write Param(s)</i>	string	Image Write Parameter(s) (name=value) set at on Image Writer before compression (dcmImageWriteParam)
<i>Compression Delay</i>	string	Compression delay in ISO-8601 duration format PnDTnHnMn.nS. Compress on receive if absent. (dcmCompressionDelay)

Archive Attribute Coercion

Archive Attribute Coercion of received/sent DIMSE

Table 4.103: Archive Attribute Coercion Attributes (LDAP Object: dc-mArchiveAttributeCoercion)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name of the Archive Attribute Coercion (cn)
<i>Rule Priority</i>	integer	Rule Priority. (dcmRulePriority)
<i>DIMSE</i>	string	DICOM Message Element on which this Attribute Coercion shall be applied Enumerated values: N_CREATE_RQ, C_STORE_RQ, C_FIND_RQ or C_FIND_RSP. (dcmDIMSE)
<i>DICOM Transfer Role</i>	string	DICOM Transfer Role of peer DICOM AE. Enumerated values: SCU or SCP. (dicomTransferRole)
<i>SOP Class UID(s)</i>	string	UID of SOP Class for which this Attribute Coercion shall be applied. Apply on any if absent. (dcmSOPClass)
<i>Conditions(s)</i>	string	Conditions in format (SendingHost- name SendingApplicationEntityTitle ReceivingHost- name ReceivingApplicationEntityTitle) (dcmProperty)
<i>Retrieve as Received</i>	boolean	Disables merge of DB information into the retrieved Composite Object, returning the objects as received. Only effective with DIMSE = C_STORE_RQ and DICOM Transfer Role = SCP. (dcmRetrieveAsReceived)
<i>De-identification(s)</i>	string	De-identify objects according the Basic Application Level Confidentiality Profile specified in DICOM PS3.15. Selecting any Option implicitly includes the Basic Application Level Confidentiality Profile. Enumerated values: BasicApplicationConfidentialityProfile, RetainLongitudinalTemporalInformationFull-DatesOption, RetainDeviceIdentityOption, RetainInstitutionIdentityOption or RetainUIDsOption. (dcmDeIdentification)
<i>XSL Stylesheet URI</i>	string	Specifies URI of the XSL style sheet for Attribute Coercion (dcmURI)
<i>No Attribute Keyword</i>	boolean	Indicates if attribute keywords shall be omitted in DICOM XML passed to XSLT (dcmNoKeywords)
<i>Merge MWL Matching Key</i>	string	Specifies attribute of received object to lookup MWL Item used to coerce request attributes. If absent, request attributes of received objects will not be coerced. Enumerated values: AccessionNumber, StudyInstanceUID or ScheduledProcedureStepID. (dcmMergeMWLMatchingKey)
<i>Merge MWL Template URI</i>	string	Specifies URI for the style sheet to coerce request attributes of received objects from matching DICOM MWL items. Only effective, if dcmMergeMWLMatchingKey is specified. (dcmMergeMWLTemplateURI)
<i>Leading C-FIND SCP</i>	string	AE Title of external C-FIND SCP for Attribute Coercion with Patient and Study attributes fetched from this AE. If no particular Attribute Set is specified for the C-FIND SCP, all Attributes of the configured Patient and Study Attribute Filter will be fetched. (dcmLeadingCFindSCP)

Rejection Note

Specifies behavior on Rejection Note Stored

Table 4.104: Rejection Note Attributes (LDAP Object: dcmRejection-Note)

Name	Type	Description (LDAP Attribute)
<i>Rejection Note Label</i>	string	Rejection Note Label (dcmRejectionNoteLabel)
<i>Rejection Note Type</i>	string	Type of Rejection Note. Enumerated values: REJECTED_FOR_QUALITY_REASONS, REJECTED_FOR_PATIENT_SAFETY_REASONS, INCORRECT_MODALITY_WORKLIST_ENTRY, DATA_RETENTION_POLICY_EXPIRED or REVOKE_REJECTION. (dcmRejectionNoteType)
<i>Rejection Note Code</i>	string	Specifies Document Title of Rejection Note in format (CV, CSD, 'CM') (dcmRejectionNoteCode)
<i>Accept Previous Rejected Instance</i>	string	Specifies behavior on subsequent occurrence of instances rejected by a particular Rejection Note. Enumerated values: REJECT, RESTORE or IGNORE. (dcmAcceptPreviousRejectedInstance)
<i>Overwrite Previous Rejection(s)</i>	string	Specifies Document Title of previous Rejection Note in format (CV, CSD, 'CM') which may be overwritten by that Rejection Note (dcmOverwritePreviousRejection)
<i>Accept Rejection before Storage</i>	string	Time interval in ISO-8601 duration format PnDTnHnMn.nS after receive of a Rejection Note, in which received object referenced by this Rejection Note are treated as rejected. Referenced objects received afterwards are treated as subsequent occurrence of an already rejected instance. If not present, Rejection Notes which refers not yet received objects will not be accepted. (dcmAcceptRejectionBeforeStorage)
<i>Delete Rejected Instance Delay</i>	string	Delay in ISO-8601 duration format PnDTnHnMn.nS after which instances rejected by a particular Rejection Note are deleted. Infinite if absent. (dcmDeleteRejectedInstanceDelay)
<i>Delete Rejection Note Delay</i>	string	Delay in ISO-8601 duration format PnDTnHnMn.nS after which particular Rejection Notes are deleted. Infinite if absent. (dcmDeleteRejectionNoteDelay)

Study Retention Policy

Study Retention Policy

Table 4.105: Study Retention Policy Attributes (LDAP Object: dcm-
StudyRetentionPolicy)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name of the Study Retention Policy (cn)
<i>Study Retention Period</i>	string	Study Retention Period in ISO-8601 period format PnYn-MnD or PnW (dcmRetentionPeriod)
<i>Rule Priority</i>	integer	Rule Priority. (dcmRulePriority)
<i>Conditions(s)</i>	string	Conditions in format (SendingHost- name SendingApplicationEntityTitle ReceivingHostname ReceivingApplicationEntityTitle) (dcmProperty)
<i>Expire Series Individually</i>	boolean	Indicates if series should be expired individually or not. (dcmExpireSeriesIndividually)
<i>Start Retention Period on Study Date</i>	boolean	Indicates if retention period should be started on Study Date instead on receive of an object of the Study (dcmStartRetentionPeriodOnStudyDate)
<i>Export expired Study</i>	string	Export expired Study/Series using the specified Exporter (dcmExporterID)
<i>Freeze Expiration Date</i>	boolean	Indicate to disable changes of the Expiration Date by following events. (dcmFreezeExpirationDate)
<i>Revoke Expiration Date</i>	boolean	Indicate to revoke a previous set Expiration Date. (dcmRevokeExpiration)

Store Access Control ID Rule

Store Access Control ID Rule

Table 4.106: Store Access Control ID Rule Attributes (LDAP Object: dcmStoreAccessControlIDRule)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name of the Store Access Control ID Rule (cn)
<i>Store Access Control ID</i>	string	Access Control ID assigned to Studies which attributes match all conditions (dcmStoreAccessControlID)
<i>Rule Priority</i>	integer	Rule Priority. (dcmRulePriority)
<i>Conditions(s)</i>	string	Conditions in format (SendingHost- name SendingApplicationEntityTitle ReceivingHostname ReceivingApplicationEntityTitle) (dcmProperty)

UPS on Store

Create/Update Workitem in unified Worklist on receive of Composite Object

Table 4.107: UPS on Store Attributes (LDAP Object: dcmUpsOnStore)

Name	Type	Description (LDAP Attribute)
<i>UPS on Store ID</i>	string	ID of UPS on Store Rule (dcmUPSONStoreID)
<i>Conditions(s)</i>	string	Conditions in format (SendingHost- name SendingApplicationEntityTitle ReceivingHostname ReceivingApplicationEnti (dcmProperty)
<i>Time Conditions(s)</i>	string	Apply this rule only within specified time ranges. (dcmSchedule)
<i>Procedure Step Label</i>	string	Value of Procedure Step Label (0074,1204) in created UPS. {attributeID} will be replaced by the value of that attribute in the received dataset. (dcmUPSLabel)
<i>Worklist Label</i>	string	Value of Worklist Label (0074,1202) in created UPS. {attributeID} will be replaced by the value of that attribute in the received dataset. (dcmUPSWorklistLabel)
<i>Priority</i>	string	Value of Scheduled Procedure Step Priority (0074,1200) in created UPS. Enumerated Values: HIGH, MEDIUM, LOW. If absent, MEDIUM will be applied. Enumerated values: HIGH, MEDIUM or LOW. (dcmUPSPriority)
<i>Input Readiness State</i>	string	Value of Input Readiness State (0040,4041) in created UPS Enumerated values: INCOMPLETE, UNAVAILABLE or READY. (dcmUPSInputReadinessState)
<i>Scheduled Procedure Step Start DateTime Delay</i>	string	Delay of Scheduled Procedure Step Start DateTime (0040,4005) in created UPS from receive time in format PnDTnHnMn.nS. No delay if absent. (dcmUPSStartDateTimeDelay)
<i>Expected Completion Date-Time Delay</i>	string	Delay of Expected Completion DateTime (0040,4011) in created UPS from receive time in format PnDTnHnMn.nS. If absent, no Expected Completion Date and Time will be set. (dcmUPSCompletionDateTimeDelay)
<i>UPS Instance UID based on name</i>	string	Value used to generate name based SOP Instance UID (0008,0018) in created UPS. Typically, the value will include {StudyInstanceUID}, {SeriesInstanceUID} or {SOPInstanceUID} to create a different UPS for each received Study, Series or Object. If absent, a random generated SOP Instance UID (0008,0018) will be used. (dcmUPSInstanceUIDBasedOnName)

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Table 4.107 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Include Input Information</i>	string	Indicates if received objects shall be referenced in the Input Information Sequence (0040,4021) in created UPS. SINGLE (= do not updating existing UPS), APPEND (= update existing UPS in state SCHEDULED), SINGLE_OR_CREATE (= if UPS already exists, create new UPS with derived UID), APPEND_OR_CREATE (= if existing UPS is no longer in state SCHEDULED, create new UPS with derived UID). Enumerated values: NO, SINGLE, APPEND, SINGLE_OR_CREATE or APPEND_OR_CREATE. (dcmUPSIncludeInputInformation)
<i>UPS Include Patient</i>	boolean	Indicates if patient (associated with created UPS) is created using patient attributes in received object; true if absent. (dcmUPSIncludePatient)
<i>Destination AE</i>	string	Title of a DICOM Application Entity to which Instances will be stored. (dcmDestinationAE)
<i>Scope of Accumulation</i>	string	Scope of Accumulation Enumerated values: Study, Series or MPPS. (dcmEntity)
<i>Scheduled Workitem Code</i>	string	Item of Scheduled Workitem Code Sequence (0040,4018) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledWorkitemCode)
<i>Scheduled Station Name Code</i>	string	Item of Scheduled Station Name Code Sequence (0040,4025) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledStationNameCode)
<i>Scheduled Station Class Code</i>	string	Item of Scheduled Station Class Code Sequence (0040,4026) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledStationClassCode)
<i>Scheduled Station Geographic Location Code</i>	string	Item of Scheduled Station Geographic Location Code Sequence (0040,4027) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledStationLocationCode)
<i>Scheduled Human Performer Code</i>	string	Item of Human Performer Code Sequence (0040,4009) in Item of Scheduled Human Performers Sequence (0040,4034) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledHumanPerformerCode)
<i>Scheduled Human Performer Name</i>	string	Value of Human Performer's Name (0040,4037) in Item of Scheduled Human Performers Sequence (0040,4034) in created UPS. {attributeID} will be replaced by the value of that attribute in the received dataset. (dcmUPSScheduledHumanPerformerName)
<i>Scheduled Human Performer Organization</i>	string	Value of Human Performer's Organization (0040,4036) in Item of Scheduled Human Performers Sequence (0040,4034) in created UPS. {attributeID} will be replaced by the value of that attribute in the received dataset. (dcmUPSScheduledHumanPerformerOrganization)

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Table 4.107 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Admission Number</i>	string	Value of Admission ID (0038,0010) in created UPS. {attributeID} will be replaced by the value of that attribute in the received dataset. (dcmAdmissionID)
<i>Issuer of Admission ID</i>	string	Value of Local Namespace Entity ID (0040,0031), Universal Entity ID (0040,0032) and Universal Entity ID Type (0040,0033) of the Item of the Issuer of Admission ID Sequence (0038,0014) in created UPS. Format: <Local Namespace Entity ID>['&'<Universal Entity ID>'&'<Universal Entity ID Type>] (dicomIssuerOfAdmissionID)
<i>Include Study Instance UID</i>	boolean	Indicates if Study Instance UID (0020,000D) of the received object shall be included in the created UPS (dcmUPSIncludeStudyInstanceUID)
<i>Include Referenced Request</i>	boolean	Indicates if the Study Instance UID (0020,000D) of the received object and the specified Accession Number (0008,0050), Requested Procedure ID (0040,1001) and Requesting Service (0032,1033) shall be included in the item of the Referenced Request Sequence (0040,A370) in the created UPS. Otherwise an empty Referenced Request Sequence (0040,A370) is included. (dcmUPSIncludeReferencedRequest)
<i>Accession Number</i>	string	Value of Accession Number (0008,0050) in Item of Referenced Request Sequence (0040,A370) in created UPS. {attributeID} will be replaced by the value of that attribute in the received dataset. (dcmAccessionNumber)
<i>Issuer of Accession Number</i>	string	Value of Local Namespace Entity ID (0040,0031), Universal Entity ID (0040,0032) and Universal Entity ID Type (0040,0033) in Item of Issuer of Accession Number Sequence (0008,0051) in Item of Referenced Request Sequence (0040,A370) in created UPS. Format: <Local Namespace Entity ID>['&'<Universal Entity ID>'&'<Universal Entity ID Type>] (dicomIssuerOfAccessionNumber)
<i>Requested Procedure ID</i>	string	Value of Requested Procedure ID (0040,1001) in Item of Referenced Request Sequence (0040,A370) in created UPS. {attributeID} will be replaced by the value of that attribute in the received dataset. (dcmRequestedProcedureID)
<i>Requested Procedure Description</i>	string	Value of Requested Procedure Description (0032,1060) in Item of Referenced Request Sequence (0040,A370) in created UPS. {attributeID} will be replaced by the value of that attribute in the received dataset. (dcmRequestedProcedureDescription)
<i>Requesting Physician</i>	string	Value of Requesting Physician (0032,1032) in Item of Referenced Request Sequence (0040,A370) in created UPS. {attributeID} will be replaced by the value of that attribute in the received dataset. (dcmRequestingPhysician)

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Table 4.107 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Requesting Service</i>	string	Value of Requesting Service (0032,1033) in Item of Referenced Request Sequence (0040,A370) in created UPS. {attributeID} will be replaced by the value of that attribute in the received dataset. (dcmRequestingService)
<i>XSL Stylesheet URI</i>	string	Specifies URI of the XSL style sheet to include additional attributes in created UPS. (dcmURI)
<i>No Attribute Keyword</i>	boolean	Indicates if attribute keywords shall be omitted in DICOM XML passed to XSLT. (dcmNoKeywords)

UPS on HL7

Create/Update Workitem in unified Worklist on receive of HL7v2 message

Table 4.108: UPS on HL7 Attributes (LDAP Object: dcmUpsOnHL7)

Name	Type	Description (LDAP Attribute)
<i>UPS on HL7 ID</i>	string	ID of UPS on HL7 Rule (hl7UPSONHL7ID)
<i>Conditions(s)</i>	string	Conditions in format <SEG>-<Seq#>[.<Comp#>[.<SubComp#>]]![!]=<regEx>. Example: MSH-9=ORM^O01 (dcmProperty)
<i>Time Conditions(s)</i>	string	Apply this rule only within specified time ranges. (dcmSchedule)
<i>Procedure Step Label</i>	string	Value of Procedure Step Label (0074,1204) in created UPS. {<SEG>-<Seq#>[.<Comp#>[.<SubComp#>]]} will be replaced by the value of that field in the received HL7 message. (dcmUPSLabel)
<i>Worklist Label</i>	string	Value of Worklist Label (0074,1202) in created UPS. {<SEG>-<Seq#>[.<Comp#>[.<SubComp#>]]} will be replaced by the value of that field in the received HL7 message. If absent or if value could not be found in HL7 Message, HL7 Application Name of the receiving HL7 Application will be used. (dcmUPSWorklistLabel)
<i>Priority</i>	string	Value of Scheduled Procedure Step Priority (0074,1200) in created UPS. Enumerated Values: HIGH, MEDIUM, LOW. If absent, MEDIUM will be applied. Enumerated values: HIGH, MEDIUM or LOW. (dcmUPSPriority)
<i>Input Readiness State</i>	string	Value of Input Readiness State (0040,4041) in created UPS Enumerated values: INCOMPLETE, UNAVAILABLE or READY. (dcmUPSInputReadinessState)

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Table 4.108 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Scheduled Procedure Step Start DateTime Delay</i>	string	Delay of Scheduled Procedure Step Start DateTime (0040,4005) in created UPS from receive time in format PnDTnHnMn.nS. Only effective, if no Scheduled Procedure Step Start DateTime is found in HL7 Message. (dcmUPSStartDateTimeDelay)
<i>Expected Completion DateTime Delay</i>	string	Delay of Expected Completion DateTime (0040,4011) in created UPS from receive time in format PnDTnHnMn.nS. If absent, no Expected Completion Date and Time will be set. (dcmUPSCompletionDateTimeDelay)
<i>UPS Instance UID based on name</i>	string	Value used to generate name based SOP Instance UID (0008,0018) in created UPS. {<SEG>-<Seq#>[.<Comp#>[.<SubComp#>]]} will be replaced by the value of that field in the received HL7 message. If absent, a random generated SOP Instance UID (0008,0018) will be used. (dcmUPSInstanceUIDBasedOnName)
<i>Destination AE</i>	string	Title of a DICOM Application Entity to which Instances will be stored. (dcmDestinationAE)
<i>Scheduled Workitem Code</i>	string	Item of Scheduled Workitem Code Sequence (0040,4018) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledWorkitemCode)
<i>Scheduled Station Name Code</i>	string	Item of Scheduled Station Name Code Sequence (0040,4025) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledStationNameCode)
<i>Scheduled Station Class Code</i>	string	Item of Scheduled Station Class Code Sequence (0040,4026) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledStationClassCode)
<i>Scheduled Station Geographic Location Code</i>	string	Item of Scheduled Station Geographic Location Code Sequence (0040,4027) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledStationLocationCode)
<i>Scheduled Human Performer Code</i>	string	Item of Human Performer Code Sequence (0040,4009) in Item of Scheduled Human Performers Sequence (0040,4034) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledHumanPerformerCode)
<i>Scheduled Human Performer Name</i>	string	Value of Human Performer's Name (0040,4037) in Item of Scheduled Human Performers Sequence (0040,4034) in created UPS. {<SEG>-<Seq#>[.<Comp#>[.<SubComp#>]]} will be replaced by the value of that field in the received HL7 message. (dcmUPSScheduledHumanPerformerName)
<i>Scheduled Human Performer Organization</i>	string	Value of Human Performer's Organization (0040,4036) in Item of Scheduled Human Performers Sequence (0040,4034) in created UPS. {<SEG>-<Seq#>[.<Comp#>[.<SubComp#>]]} will be replaced by the value of that field in the received HL7 message. (dcmUPSScheduledHumanPerformerOrganization)

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Table 4.108 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Include Study Instance UID</i>	boolean	Indicates if Study Instance UID (0020,000D) in the received HL7 message shall be included in the created UPS (dcmUPSIncludeStudyInstanceUID)
<i>Include Referenced Request</i>	boolean	Indicates if the Study Instance UID (0020,000D) in the received HL7 message and the specified Accession Number (0008,0050), Requested Procedure ID (0040,1001) and Requesting Service (0032,1033) shall be included in the item of the Referenced Request Sequence (0040,A370) in the created UPS. Otherwise an empty Referenced Request Sequence (0040,A370) is included. (dcmUPSIncludeReferencedRequest)
<i>Study Instance UID</i>	string	Value of Study Instance UID (0020,000D) in Item of Referenced Request Sequence (0040,A370) in created UPS. {<SEG>-<Seq#>[.<Comp#>[.<SubComp#>]]} will be replaced by the value of that field in the received HL7 message. (dcmStudyInstanceUID)
<i>Admission Number</i>	string	Value of Admission ID (0038,0010) in created UPS. {<SEG>-<Seq#>[.<Comp#>[.<SubComp#>]]} will be replaced by the value of that field in the received HL7 message. (dcmAdmissionID)
<i>Issuer of Admission ID</i>	string	Value of Local Namespace Entity ID (0040,0031), Universal Entity ID (0040,0032) and Universal Entity ID Type (0040,0033) of the Item of the Issuer of Admission ID Sequence (0038,0014) in created UPS. Format: <Local Namespace Entity ID>['&'<Universal Entity ID>'&'<Universal Entity ID Type>] (dicomIssuerOfAdmissionID)
<i>Accession Number</i>	string	Value of Accession Number (0008,0050) in Item of Referenced Request Sequence (0040,A370) in created UPS. {<SEG>-<Seq#>[.<Comp#>[.<SubComp#>]]} will be replaced by the value of that field in the received HL7 message. (dcmAccessionNumber)
<i>Issuer of Accession Number</i>	string	Value of Local Namespace Entity ID (0040,0031), Universal Entity ID (0040,0032) and Universal Entity ID Type (0040,0033) in Item of Issuer of Accession Number Sequence (0008,0051) in Item of Referenced Request Sequence (0040,A370) in created UPS. Format: <Local Namespace Entity ID>['&'<Universal Entity ID>'&'<Universal Entity ID Type>] (dicomIssuerOfAccessionNumber)
<i>Requested Procedure ID</i>	string	Value of Requested Procedure ID (0040,1001) in Item of Referenced Request Sequence (0040,A370) in created UPS. {<SEG>-<Seq#>[.<Comp#>[.<SubComp#>]]} will be replaced by the value of that field in the received HL7 message. (dcmRequestedProcedureID)

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Table 4.108 – continued from previous page

Name	Type	Description (LDAP Attribute)
<i>Requested Procedure Description</i>	string	Value of Requested Procedure Description (0032,1060) in Item of Referenced Request Sequence (0040,A370) in created UPS. {<SEG>-<Seq#>[.<Comp#>[.<SubComp#>]]} will be replaced by the value of that field in the received HL7 message. (dcmRequestedProcedureDescription)
<i>Requesting Physician</i>	string	Value of Requesting Physician (0032,1032) in Item of Referenced Request Sequence (0040,A370) in created UPS. {<SEG>-<Seq#>[.<Comp#>[.<SubComp#>]]} will be replaced by the value of that field in the received HL7 message. (dcmRequestingPhysician)
<i>Requesting Service</i>	string	Value of Requesting Service (0032,1033) in Item of Referenced Request Sequence (0040,A370) in created UPS. {<SEG>-<Seq#>[.<Comp#>[.<SubComp#>]]} will be replaced by the value of that field in the received HL7 message. (dcmRequestingService)
<i>XSL Stylesheet URI</i>	string	Specifies URI of the XSL style sheet to to transcode received HL7 message to include attributes in created UPS. (dcmURI)

UPS on UPS Completed

Create Workitem in unified Worklist on previous UPS Completed

Table 4.109: UPS on UPS Completed Attributes (LDAP Object: dcmUp-sOnUPSCompleted)

Name	Type	Description (LDAP Attribute)
<i>UPS on UPS Completed Rule ID</i>	string	ID of UPS on UPS Completed Rule (dcmUPSONUPSCompletedID)
<i>Previous Performed Workitem Code</i>	string	Performed Workitem Code of completed UPS triggering this rule in format (CV, CSD, "CM"). (dcmUPSPerformedWorkitemCode)
<i>Procedure Step Label</i>	string	Value of Procedure Step Label (0074,1204) in created UPS. {attributeID} will be replaced by the value of that attribute in the previous UPS dataset. (dcmUPSLabel)
<i>Worklist Label</i>	string	Value of Worklist Label (0074,1202) in created UPS. {attributeID} will be replaced by the value of that attribute in the previous UPS dataset. (dcmUPSWorklistLabel)
<i>Priority</i>	string	Value of Scheduled Procedure Step Priority (0074,1200) in created UPS. Enumerated Values: HIGH, MEDIUM, LOW. If absent, MEDIUM will be applied. Enumerated values: HIGH, MEDIUM or LOW. (dcmUPSPriority)
<i>Input Readiness State</i>	string	Value of Input Readiness State (0040,4041) in created UPS Enumerated values: INCOMPLETE, UNAVAILABLE or READY. (dcmUPSInputReadinessState)
<i>Scheduled Procedure Step Start DateTime Delay</i>	string	Delay of Scheduled Procedure Step Start DateTime (0040,4005) in created UPS from receive time in format PnDTnHnMn.nS. No delay if absent. (dcmUPSStartDateTimeDelay)
<i>Expected Completion DateTime Delay</i>	string	Delay of Expected Completion DateTime (0040,4011) in created UPS from receive time in format PnDTnHnMn.nS. If absent, no Expected Completion Date and Time will be set. (dcmUPSCompletionDateTimeDelay)
<i>Destination AE</i>	string	Title of a DICOM Application Entity to which Instances will be stored. (dcmDestinationAE)
<i>Scope of Accumulation</i>	string	Scope of Accumulation Enumerated values: Study, Series or MPPS. (dcmEntity)
<i>Scheduled Workitem Code</i>	string	Item of Scheduled Workitem Code Sequence (0040,4018) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledWorkitemCode)
<i>Scheduled Station Name Code</i>	string	Item of Scheduled Station Name Code Sequence (0040,4025) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledStationNameCode)
<i>Scheduled Station Class Code</i>	string	Item of Scheduled Station Class Code Sequence (0040,4026) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledStationClassCode)
<i>Scheduled Station Geographic Location Code</i>	string	Item of Scheduled Station Geographic Location Code Sequence (0040,4027) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledStationLocationCode)

4.4. Configuration

<i>Scheduled Human Performer Code</i>	string	Item of Human Performer Code Sequence (0040,4009) in Item of Scheduled Human Performers Sequence (0040,4034) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledHumanPerformerCode)
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UPS Template

UPS Template

Table 4.110: UPS Template Attributes (LDAP Object: dcmUpsTemplate)

Name	Type	Description (LDAP Attribute)
<i>UPS Template ID</i>	string	ID of UPS Template (dcmUPSTemplateID)
<i>UPS Template Description</i>	string	Unconstrained text description of the UPS Template (dicomDescription)
<i>Procedure Step Label</i>	string	Value of Procedure Step Label (0074,1204) in created UPS. (dcmUPSLabel)
<i>Worklist Label</i>	string	Value of Worklist Label (0074,1202) in created UPS. (dcmUPSWorklistLabel)
<i>Priority</i>	string	Value of Scheduled Procedure Step Priority (0074,1200) in created UPS. Enumerated Values: HIGH, MEDIUM, LOW. If absent, MEDIUM will be applied. Enumerated values: HIGH, MEDIUM or LOW. (dcmUPSPriority)
<i>Input Readiness State</i>	string	Value of Input Readiness State (0040,4041) in created UPS Enumerated values: INCOMPLETE, UNAVAILABLE or READY. (dcmUPSInputReadinessState)
<i>Scheduled Procedure Step Start DateTime Delay</i>	string	Delay of Scheduled Procedure Step Start DateTime (0040,4005) in created UPS from receive time in format PnDTnHnMn.nS. No delay if absent. (dcmUPSStartDateTimeDelay)
<i>Expected Completion DateTime Delay</i>	string	Delay of Expected Completion DateTime (0040,4011) in created UPS from receive time in format PnDTnHnMn.nS. If absent, no Expected Completion Date and Time will be set. (dcmUPSCompletionDateTimeDelay)
<i>Destination AE</i>	string	Value of Destination AE (2100,0140) in created UPS. (dcmDestinationAE)
<i>Scope of Accumulation</i>	string	Scope of Accumulation Enumerated values: Study, Series or MPPS. (dcmEntity)
<i>Scheduled Workitem Code</i>	string	Item of Scheduled Workitem Code Sequence (0040,4018) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledWorkitemCode)
<i>Scheduled Station Name Code</i>	string	Item of Scheduled Station Name Code Sequence (0040,4025) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledStationNameCode)
<i>Scheduled Station Class Code</i>	string	Item of Scheduled Station Class Code Sequence (0040,4026) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledStationClassCode)
<i>Scheduled Station Geographic Location Code</i>	string	Item of Scheduled Station Geographic Location Code Sequence (0040,4027) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledStationLocationCode)
<i>Scheduled Human Performer Code</i>	string	Item of Human Performer Code Sequence (0040,4009) in Item of Scheduled Human Performers Sequence (0040,4034) in created UPS in format (CV, CSD, "CM"). (dcmUPSScheduledHumanPerformerCode)
<i>Scheduled Human Performer Name</i>	string	Value of Human Performer's Name (0040,4037) in Item of Scheduled Human Performers Sequence (0040,4034) in created UPS. (dcmUPSScheduledHumanPerformerName)
<i>Scheduled Human Performer Organization</i>	string	Value of Human Performer's Organization (0040,4036) in Item of Scheduled Human Performers Sequence

UPS Processing Rule

Process matching Workitems in unified Worklist

Table 4.111: UPS Processing Rule Attributes (LDAP Object: dcmUpsProcessingRule)

Name	Type	Description (LDAP Attribute)
<i>UPS Processing Rule ID</i>	string	ID of UPS Processing Rule (dcmUPSProcessingRuleID)
<i>Application Entity (AE) title</i>	string	Application Entity (AE) title (dicomAETitle)
<i>UPS Processor URI</i>	string	Identifies UPS Processor for processing matching Workitems (dcmURI)
<i>Processing Property(s)</i>	string	UPS Processor dependent property in format <name>=<value> (dcmProperty)
<i>Processing Schedule(s)</i>	string	Delay processing to specified time periods. If no Processing Schedule is specified, process Workitems at their Scheduled Procedure Step Start Date Time (0040,4005). Format: 'hour=[0-23] dayOfWeek=[0-6]' (0=Sunday) (dcmSchedule)
<i>Maximum Number of Threads</i>	integer	Maximal number of threads used for processing of matching Workitems. (dcmMaxThreads)
<i>Input Readiness State</i>	string	Process Workitems with matching Input Readiness State (0040,4041). Enumerated values: INCOMPLETE, UNAVAILABLE or READY. (dcmUPSInputReadinessState)
<i>Priority</i>	string	Process Workitems with matching Scheduled Procedure Step Priority (0074,1200). If absent, process Workitems of any priority, but order the processing according their priority. Enumerated values: HIGH, MEDIUM or LOW. (dcmUPSPriority)
<i>Procedure Step Label</i>	string	Process Workitems with matching Procedure Step Label (0074,1204). If absent, process Workitems with any Procedure Step Label. (dcmUPSLabel)
<i>Worklist Label</i>	string	Process Workitems with matching Worklist Label (0074,1202). If absent, process Workitems with any Worklist Label. (dcmUPSWorklistLabel)
<i>Scheduled Workitem Code</i>	string	Process Workitems with matching Code in Scheduled Workitem Code Sequence (0040,4018) in format (CV, CSD, "CM"). If absent, process Workitems with any Scheduled Workitem Code. (dcmUPSScheduledWorkitemCode)
<i>Scheduled Station Name Code</i>	string	Process Workitems with matching Code in Scheduled Station Name Code Sequence (0040,4025) in format (CV, CSD, "CM"). If absent, process Workitems with any Scheduled Station Name Code. (dcmUPSScheduledStationNameCode)
<i>Scheduled Station Class Code</i>	string	Process Workitems with matching Code in Scheduled Station Name Class Sequence (0040,4026) in format (CV, CSD, "CM"). If absent, process Workitems with any Scheduled Station Class Code. (dcmUPSScheduledStationClassCode)
<i>Scheduled Station Geographic Location Code</i>	string	Process Workitems with matching Code in Scheduled Station Geographic Location Class Sequence (0040,4027) in format (CV, CSD, "CM"). If absent, process Workitems with any Scheduled Station Geographic Location Code. (dcmUPSScheduledStationLocationCode)

ID Generator

ID Generator

Table 4.112: ID Generator Attributes (LDAP Object: dcmIDGenerator)

Name	Type	Description (LDAP Attribute)
<i>ID Generator Name</i>	string	ID Generator Name. Enumerated values: PatientID, AccessionNumber, RequestedProcedureID or ScheduledProcedureStepID. (dcmIDGeneratorName)
<i>ID Generator Format</i>	string	Format string used by this ID Generator. %0<width>d will be replaced by a sequential number with leading zeros according to the given width (dcmIDGeneratorFormat)
<i>ID Generator Initial Value</i>	integer	Initial value for sequence used by this ID Generator. (dcmIDGeneratorInitialValue)

MWL Idle Timeout

MWL Idle Timeout

Table 4.113: MWL Idle Timeout Attributes (LDAP Object: dcmMwIIdleTimeout)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name of the MWL Idle Timeout. (cn)
<i>MWL SCP AE Title</i>	string	Archive AE Title of MWL SCP on which the MWL Idle Timeout shall be applied. (dicomAETitle)
<i>Scheduled Station AE Title(s)</i>	string	Scheduled Station AE Title(s) of Scheduled Procedure Steps for which the MWL Idle Timeout shall be applied. If none is specified, the MWL Idle Timeout is applied to all Scheduled Procedure Steps provided by the MWL SCP. (dcmAETitle)
<i>MWL Status on Idle</i>	string	Change Status of idle Scheduled Procedure Steps to specified value. Enumerated values: CANCELED, DISCONTINUED or COMPLETED. (dcmMWLStatusOnIdle)
<i>Idle Timeout</i>	string	Timeout after which the Status of matching Scheduled Procedure Steps is changed to the specified final status. (dcmDuration)

HL7 Forward Rule

HL7 Forward Rule

Table 4.114: HL7 Forward Rule Attributes (LDAP Object: hl7ForwardRule)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name of the HL7 Forward Rule (cn)
<i>HL7 Forward Application Name(s)</i>	string	HL7 Forward Destination Application and Facility name (Application Facility) (hl7FwdApplicationName)
<i>Conditions(s)</i>	string	Conditions in format {SEG}-{Seq#}[, {Comp#}[, {SubComp#}]][!]={regEx}. Examples: MSH-4=FORWARD or MSH-9=ADT^A28^ADT_A05 (dcmProperty)

HL7 Export Rule

HL7 Export Rule

Table 4.115: HL7 Export Rule Attributes (LDAP Object: hl7ExportRule)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name of the HL7 Export Rule (cn)
<i>Exporter ID(s)</i>	string	Exporter ID (dcmExporterID)
<i>Conditions(s)</i>	string	Conditions in format {SEG}-{Seq#}[,.{Comp#}[,.{SubComp#}]][!]={regEx}. Example: MSH-9=ORM^O01 (dcmProperty)
<i>Entity Selector(s)</i>	string	Specifies matching keys used to select Studies to export. Format: {key}={value}[&{key}={value}]... , with {key} = 'StudyAge' {attributeID}. {value} in the format '\$'{SEG}-{Seq#}[,.{Comp#}[,.{SubComp#}]] are replaced by the value of the specified HL7 field from the received HL7 message which triggered the export. If no Entity Selector is specified, all Studies for the Patient will be exported. Example: 'priors=2&StudyAge=-5Y&ModalitiesInStudy=CT' => select at most 2 prior Studies not older than 5 years containing at least one CT Series. (dcmEntitySelector)
<i>Ignore Assigning Authority of Patient ID</i>	string	Conditionally ignore Assigning Authority of Patient ID (PID-3.4) in received HL7 message which triggered the export for selecting Studies of the Patient. Enumerated values: ALWAYS, MATCHING or NOT_MATCHING. (dcmNullifyIssuerOfPatientID)
<i>Assigning Authority of Patient ID(s)</i>	string	Assigning Authority of Patient ID against values in received HL7 message are matched, if Assigning Authority of Patient ID is set to MATCHING or NOT_MATCHING. Format: <Issuer of Patient ID> [& <Universal Entity ID> & <Universal Entity ID Type>]. (dcmIssuerOfPatientID)
<i>Suppress Duplicate Export Interval</i>	string	Suppress Export of Studies already exported not earlier than the specified interval to avoid duplicate exports. (dcmDuration)

HL7 Prefetch Rule

HL7 Prefetch Rule

Table 4.116: HL7 Prefetch Rule Attributes (LDAP Object: hl7PrefetchRule)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name of the Prefetch Rule (cn)
<i>Queue Name</i>	string	Name of JMS Queue used for scheduling retrieve tasks triggered by this Prefetch Rule Enumerated values: Retrieve1, Retrieve2, Retrieve3, Retrieve4, Retrieve5, Retrieve6, Retrieve7, Retrieve8, Retrieve9, Retrieve10, Retrieve11, Retrieve12 or Retrieve13. (dcmQueueName)
<i>Archive AE title</i>	string	AE Title of Archive Application Entity used for retrieving selected Studies from Prefetch C-Move SCP. (dicomAETitle)
<i>Prefetch C-Find SCP</i>	string	AE Title of C-FIND SCP which is queried for Studies matching the specified Entity Selector. (dcmPrefetchCFindSCP)
<i>Prefetch C-Move SCP</i>	string	AE Title of C-MOVE SCP from which selected Studies are retrieved. (dcmPrefetchCMoveSCP)
<i>Prefetch C-Store SCP(s)</i>	string	AE Title of C-STORE SCP to which selected Studies are retrieved. (dcmPrefetchCStoreSCP)
<i>Conditions(s)</i>	string	Conditions in format {SEG}-{Seq#}[,.{Comp#}[,.{SubComp#}]]![!]={regEx}. Example: MSH-9=ORM^O01 (dcmProperty)
<i>Entity Selector(s)</i>	string	Specifies matching keys used to select Studies to prefetch. Format: {key}={value} [& {key}={value}]. . . , with {key} = 'priors' 'StudyAge' {attributeID}. {value} in the format '\$'{SEG}-{Seq#}[,.{Comp#}[,.{SubComp#}]] are replaced by the value of the specified HL7 field from the received HL7 message which triggered the prefetch. If no Entity Selector is specified, all Studies for the Patient will be pre-fetched. Example: 'priors=2&StudyAge=-5Y&ModalitiesInStudy=\$OBR-24' => select at most 2 prior Studies not older than 5 years containing at least one Series with Modality from OBR-24. (dcmEntitySelector)
<i>Ignore Assigning Authority of Patient ID</i>	string	Conditionally ignore Assigning Authority of Patient ID (PID-3.4) in received HL7 message which triggered the prefetch for selecting Studies of the Patient. Enumerated values: ALWAYS, MATCHING or NOT_MATCHING. (dcmNullifyIssuerOfPatientID)
<i>Assigning Authority of Patient ID(s)</i>	string	Assigning Authority of Patient ID against values in received HL7 message are matched, if Assigning Authority of Patient ID is set to MATCHING or NOT_MATCHING. Format: <Issuer of Patient ID> [& <Universal Entity ID> & <Universal Entity ID Type>]. (dcmIssuerOfPatientID)
<i>Suppress Duplicate Retrieve Interval</i>	string	Suppress Retrieve of Studies already retrieved not earlier than the specified interval to avoid duplicate retrieves. (dcmDuration)
4.4. Configuration <i>Prefetch Schedule(s)</i>	string	Delay prefetch to specified time periods. If no Prefetch Schedule is specified, queue a Prefetch Task for the selected Studies of the Patient immediately. Format: 'hour=[0-23] dayOfWeek=[0-6]' (0=Sunday) (dcmSchedule)

HL7 Study Retention Policy

HL7 Study Retention Policy

Table 4.117: HL7 Study Retention Policy Attributes (LDAP Object: hl7StudyRetentionPolicy)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name of the HL7 Study Retention Policy (cn)
<i>Application Entity (AE) title</i>	string	Application Entity (AE) title (dicomAETitle)
<i>Minimal Study Retention Period</i>	string	Minimal Study Retention Period in ISO-8601 period format PnYnMnD or PnW (dcmRetentionPeriod)
<i>Maximal Study Retention Period</i>	string	Maximal Study Retention Period in ISO-8601 period format PnYnMnD or PnW (dcmMaxRetentionPeriod)
<i>Rule Priority</i>	integer	Rule Priority. (dcmRulePriority)
<i>Conditions(s)</i>	string	Conditions in format {SEG}-{Seq#}[, {Comp#}[, {SubComp#}]]![!]={regEx}. Examples: MSH-4=FORWARD or MSH-9=ADT^A28^ADT_A05 (dcmProperty)
<i>Start Retention Period on Study Date</i>	boolean	Indicates if retention period should be started on individual Study Dates instead on receive of the HL7 message triggering this rule. (dcmStartRetentionPeriodOnStudyDate)
<i>Export expired Study</i>	string	Export expired Study/Series using the specified Exporter (dcmExporterID)
<i>Freeze Expiration Date</i>	boolean	Indicate to disable changes of the Expiration Date by following events. (dcmFreezeExpirationDate)
<i>Revoke Expiration Date</i>	boolean	Indicate to revoke a previous set Expiration Date. (dcmRevokeExpiration)

Scheduled Station for HL7 Order

Scheduled Station selected on MWL HL7 Order Feed

Table 4.118: Scheduled Station for HL7 Order Attributes (LDAP Object: hl7OrderScheduledStation)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Arbitrary/Meaningful name for the Scheduled Station Order Mapping (cn)
<i>Scheduled Station Device Name</i>	string	Device name of Scheduled Station used for HL7 Order Messages. (hl7OrderScheduledStationDeviceName)
<i>Mapping Priority</i>	integer	Mapping Priority. (dcmRulePriority)
<i>Conditions(s)</i>	string	Conditions in format {SEG}-{Seq#}[,.{Comp#}[,.{SubComp#}]]!= {regEx}. Examples: MSH-4=FORWARD or MSH-9=ADT^A28^ADT_A05 (dcmProperty)

SPS Status for HL7 Order

Specifies SPS Status of DICOM MWL items created/updated on received HL7 ORM^O01, OMI^O23, OMG^O19 messages

Table 4.119: SPS Status for HL7 Order Attributes (LDAP Object: hl7OrderSPSStatus)

Name	Type	Description (LDAP Attribute)
<i>Scheduled Procedure Step Status code</i>	string	Scheduled Procedure Step Status code Enumerated values: SCHEDULED, ARRIVED, READY, STARTED, DEPARTED, CANCELED, DISCONTINUED or COMPLETED. (dcmSPSStatus)
<i>HL7 Order Control Status(s)</i>	string	HL7 Order Control Status Code combinations. Enumerated values: NW_SC, NW_IP, CA_CA, DC_CA, XO_SC or XO_CM. (hl7OrderControlStatus)

UI Configuration

UI Configuration

Table 4.120: UI Configuration Attributes (LDAP Object: dcmUiConfig)

Name	Type	Description (LDAP Attribute)
<i>UI Configuration Name</i>	string	UI Configuration Name (dcmuiConfigName)
<i>Statistic Modalities(s)</i>	string	Preselected Modalities that should show in the Statistic page (dcmuiModalities)
<i>UI Language Config (s)</i>	object	Config the languages of the UI
<i>Widget AETs(s)</i>	string	Select the AETs that you wan't to see in the AET widget, where you can select in which of them the newly added AET should be as <i>Accepted Calling AE Title</i> (dcmuiWidgetAets)
<i>Background URL</i>	string	Background URL for changing the background of the UI, it can be relative or absolute URL, the image should have the width of at least of 1024px (dcmuiBackgroundURL)
<i>Logo URL</i>	string	Logo URL for changing the logo of the UI, it can be relative or absolute URL, the image should have the width of 140px and should be in format png with the transparent background (dcmuiLogoURL)
<i>Default Widget AETs(s)</i>	string	Select the AETs that should be preselected on Widget AETs (dcmuiDefaultWidgetAets)
<i>Aet drop-down list (s)</i>	object	Define which AETs should be visible in the drop-down lists in the UI
<i>Web App drop-down list (s)</i>	object	Define which WebApps should be visible on the top of the drop-down list in the UI
<i>UI Permission (s)</i>	object	Permission
<i>UI Filter Template (s)</i>	object	Defined filter template
<i>UI Diff Configuration (s)</i>	object	Study Diff Configuration
<i>UI Dashboard Configuration (s)</i>	object	UI Dashboard Configuration
<i>UI Study Table Configuration (s)</i>	object	Configuration of table
<i>UI Elasticsearch Configuration (s)</i>	object	Elasticsearch Configuration for the pro version
<i>UI Device URL (s)</i>	object	Other UI Device URLs
<i>UI Cluster Configuration (s)</i>	object	Group Devices in Clusters

UI Language Config

UI Language Config

Table 4.121: UI Language Config Attributes (LDAP Object: dcmUiLanguage)

Name	Type	Description (LDAP Attribute)
<i>Language Config Name</i>	string	Name of the Language Config (dcmuiLanguageConfigName)
<i>Available languages(s)</i>	string	Set languages that should be available in the UI (The JSON-files to those language must exist in the code, if they don't exist open an Issue in github (dcmLanguages)
<i>UI Elasticsearch URL Configuration (s)</i>	object	Language profile for username, role or everyone

UI Elasticsearch URL Configuration

Elasticsearch URL

Table 4.122: UI Elasticsearch URL Configuration Attributes (LDAP Object: dcmUiLanguageProfile)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Language profile name (dcmuiLanguageProfileName)
<i>Default language(s)</i>	string	Select default language for the UI (dcmDefaultLanguage)
<i>Role(s)</i>	string	Username role that this language profile should apply to (dcmuiLanguageProfileRole)
<i>Username</i>	string	Username for the language profile (dcmuiLanguageProfileUsername)

Aet drop-down list

Aet drop-down list

Table 4.123: Aet drop-down list Attributes (LDAP Object: dcmUiAet)

Name	Type	Description (LDAP Attribute)
<i>List Name</i>	string	Define a name for this config (dcmuiAetListName)
<i>Description</i>	string	Aet List description (dcmuiAetListDescription)
<i>AEt list mode</i>	string	Define in which mode should be this config available in 'internal' (archive own AETs, in some places called also 'Home AET' or 'Local AET') or 'external' (or in some places also called 'Remote AET') aet drop-down list, to be available for both don't select any of them Enumerated values: internal or external. (dcmuiMode)
<i>AETs(s)</i>	string	UI Action Parameter (dcmuiAets)
<i>Accepted User Role(s)</i>	string	Define the roles for which this config should be available, use 'user' to be available for all roles (dcmAcceptedUserRole)

Web App drop-down list

Web App drop-down list

Table 4.124: Web App drop-down list Attributes (LDAP Object: dcmUi-WebApp)

Name	Type	Description (LDAP Attribute)
<i>List Name</i>	string	Define a name for this config (dcmuiWebAppListName)
<i>Description</i>	string	Web Application List description (dcmuiWebAppListDescription)
<i>List mode</i>	string	You have two possibilities how to show the defined list: 1.) On top on the rest of list 'separated' with a line, 2.) Show only those hir defined ('exclusive'). Enumerated values: separated or exclusive. (dcmuiMode)
<i>WebApps(s)</i>	string	Web Application (dcmuiWebApps)
<i>Accepted User Role(s)</i>	string	Define the roles for which this config should be available, use 'user' to be available for all roles (You should either define a username (following attribute) or user role (this attribute)) (dcmAcceptedUserRole)
<i>Accepted User Name(s)</i>	string	Define the Username for which this config should be available (You should either define a username (this attribute) or user role (previous attribute)) (dcmAcceptedUserName)

UI Permission

UI Permission

Table 4.125: UI Permission Attributes (LDAP Object: dcmUiPermission)

Name	Type	Description (LDAP Attribute)
<i>UI Permission Name</i>	string	Name of Permission for UI Action (dcmuiPermissionName)
<i>UI Action</i>	string	UI Action Enumerated values: menu-studies, menu-dashboard, menu-correct_data, menu-lifecycle_management, menu-audit_record_repository, menu-configuration, menu-move_data, menu-statistics, menu-monitoring, menu-study, menu-xds, tab-study-study, tab-monitoring->queues, tab-monitoring->export, tab-monitoring->external_retrieve, tab-monitoring->control, tab-monitoring->associations, tab-monitoring->storage_commitments, tab-monitoring->storage_systems, tab-monitoring->diff, tab-statistics->statistics, tab-statistics->studies-stored, tab-configuration->devices, tab-configuration->ae_list, tab-configuration->hl7_applications, tab-configuration->permission, tab-correct_data->diff, tab-correct_data->patient_data, tab-move_data->retrieve, tab-move_data->export, tab-audit-record-repository->all, tab-audit-record-repository->audit_errors, tab-audit-record-repository->app_errors, tab-audit-record-repository->authentication, tab-study-study, tab-study-patient, tab-study-mwl, tab-study-diff, action-devicelist-device_configuration, action-studies-patient, action-studies-mwl, action-studies-study, action-studies-serie, action-studies-instance, action-studies-copy_merge_move, action-studies-more_function, action-studies-diff, action-studies-count, action-studies-size, action-studies-viewer, action-studies-verify_storage_commitment, action-studies-download, action-monitoring->queues-all_action, action-monitoring->export-all_action, action-monitoring->external_retrieve-all_action, action-monitoring->queues-single_action, action-monitoring->export-single_action, action-monitoring->diff_monitor-all_action or action-monitoring->external_retrieve-single_action. (dcmuiAction)
<i>UI Action Parameter(s)</i>	string	UI Action Parameter Enumerated values: edit, create, delete, export, accessible, visible, merge, upload, reject or restore. (dcmuiActionParam)
<i>Accepted User Role(s)</i>	string	Accepted User Role (dcmAcceptedUserRole)

UI Filter Template

Defined filter template

Table 4.126: UI Filter Template Attributes (LDAP Object: dcmUiFilterTemplate)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Name of the template (dcmuiFilterTemplateName)
<i>ID</i>	string	ID of the filter where this template can apply (dcmuiFilterTemplateID)
<i>Description</i>	string	Filter template description (dcmuiFilterTemplateDescription)
<i>Username</i>	string	Username that can use this template (dcmuiFilterTemplateUsername)
<i>Role</i>	string	Username role that can use this template (dcmuiFilterTemplateRole)
<i>Filters(s)</i>	string	Default filters in this template, filter pare key=value (example LocalAET=DCM4CHEE). For date filter you can use the predefined keywords (today, yesterday, this_week, this_month, last_week, last_month, this_quarter, last_quarter, this_year, last_year) so the dynamic values of the filters can be generated. (dcmuiFilterTemplateFilters)
<i>Default</i>	boolean	Use this template as default (dcmuiFilterTemplateDefault)

UI Diff Configuration

UI Diff Configuration

Table 4.127: UI Diff Configuration Attributes (LDAP Object: dcmUiDiffConfig)

Name	Type	Description (LDAP Attribute)
<i>UI Diff Configuration Name</i>	string	UI Diff Configuration Name (dcmuiDiffConfigName)
<i>Diff Calling AET</i>	string	Diff Calling AET (dcmuiDiffCallingAET)
<i>UI Diff Primary C-FIND SCP</i>	string	UI Diff Primary C-FIND SCP (dcmuiDiffPrimaryCFindSCP)
<i>UI Diff Primary C-MOVE SCP</i>	string	UI Diff Primary C-MOVE SCP (dcmuiDiffPrimaryCMoveSCP)
<i>UI Diff Primary C-STORE SCP</i>	string	UI Diff Primary C-STORE SCP (dcmuiDiffPrimaryCStoreSCP)
<i>UI Diff Secondary C-FIND SCP</i>	string	UI Diff Secondary C-FIND SCP (dcmuiDiffSecondaryCFindSCP)
<i>UI Diff Secondary C-MOVE SCP</i>	string	UI Diff Secondary C-MOVE SCP (dcmuiDiffSecondaryCMoveSCP)
<i>UI Diff Secondary C-STORE SCP</i>	string	UI Diff Secondary C-STORE SCP (dcmuiDiffSecondaryCStoreSCP)
<i>UI Diff Criteria (s)</i>	object	UI Diff Criteria

UI Diff Criteria

UI Diff Criteria

Table 4.128: UI Diff Criteria Attributes (LDAP Object: dcmUiDiffCriteria)

Name	Type	Description (LDAP Attribute)
<i>UI Diff Criteria Title</i>	string	Title of Diff Criteria (dcmuiDiffCriteriaTitle)
<i>UI Diff Criteria Description</i>	string	Unconstrained text description of this UI Diff Criteria (dicomDescription)
<i>UI Diff Criteria Number</i>	integer	Attribute Set Number used to order Attribute Sets. (dcmuiDiffCriteriaNumber)
<i>UI Including Missing</i>	boolean	Indicate if missing Studies shall be included (dcmuiDiffIncludeMissing)
<i>Attribute Set ID</i>	string	ID of Attribute Set specifying compared attributes (dcmAttributeSetID)
<i>UI Diff Group Button(s)</i>	string	UI Diff Group Button Enumerated values: synchronize, export or reject. (dcmuiDiffGroupButton)
<i>UI Diff Action(s)</i>	string	UI Diff Action Enumerated values: patient-update, study-reject-export, study-reject or study-export. (dcmuiDiffAction)

UI Dashboard Configuration

UI Dashboard Configuration

Table 4.129: UI Dashboard Configuration Attributes (LDAP Object: dcmUiDashboard)

Name	Type	Description (LDAP Attribute)
<i>UI Dashboard Configuration Name</i>	string	UI Dashboard Configuration Name (dcmuiDashboardConfigName)
<i>Show Star Block</i>	boolean	Show Star Block - tasks without defined deviceName (dcmuiShowStarBlock)
<i>Queues(s)</i>	string	Queue Names for UI Dashboard Configuration used in queue block (dcmuiQueueName)
<i>Exporter IDs(s)</i>	string	Exporter ID-s for UI Dashboard Configuration used in queue and compare block (dcmuiExportName)
<i>Device Names(s)</i>	string	Device Names for UI Dashboard Configuration used for generating the Retrieve and Export block (dicomuiDeviceName)
<i>Audit Events Ignore Parameters(s)</i>	string	Set Elasticsearch parameters that should be ignored in the Audit Events. E.g. Source.UserID=TESTVALUE (dicomuiIgnoreParams)
<i>Count Aet</i>	string	Selected Aet will be used to get the count of studies in the dashboard (dcmuiCountAET)
<i>Compare Side (s)</i>	object	Compare Sides
<i>Archive Docker Containers(s)</i>	string	Names of the archive docker containers used in the hardware page (dicomuiDockerContainer)

Compare Side

Compare Side

Table 4.130: Compare Side Attributes (LDAP Object: dcmUiCompareSide)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Compare Side Name (dcmuiCompareSideName)
<i>Description</i>	string	A short description about this Group (dcmuiCompareSideDescription)
<i>Cluster</i>	string	Select a Cluster (dcmuiCompareSideCluster)
<i>Elasticsearch</i>	string	Select an Elasticsearch URL (dcmuiCompareSideElasticsearch)
<i>Queue</i>	string	Select the QueueName that should be used for the compare side (dcmuiCompareSideQueueName)
<i>Installed</i>	boolean	If true this Compare side is active in the dashboard (dcmuiCompareSideInstalled)

UI Study Table Configuration

Study Table configuration for the pro version

Table 4.131: UI Study Table Configuration Attributes (LDAP Object: dcmUiTable)

Name	Type	Description (LDAP Attribute)
<i>Configuration Name</i>	string	UI Study Table Configuration Name (dcmuiStudyTableConfigName)
<i>Username</i>	string	Username to which this set should be available (dcmuiStudyTableConfigUsername)
<i>Role</i>	string	Username role that can use this Set (If you set the username, the role will be ignored) (dcmuiStudyTableConfigRoles)
<i>Is Default</i>	boolean	Set this Column-Set to the default one. (Make sure that only one of the Set - siblings child is set to default). (dcmuiStudyTableConfigIsDefault)
<i>UI Study Table Columns Configuration (s)</i>	object	Define Study Table Columns

UI Study Table Columns Configuration

Study Table Columns

Table 4.132: UI Study Table Columns Configuration Attributes (LDAP Object: dcmUiTableColumns)

Name	Type	Description (LDAP Attribute)
<i>Column Name</i>	string	The Name of the Column in the Study Table (dcmuiColumnName)
<i>Column Description</i>	string	Description of the Column, shown on hover (dcmuiColumnTitle)
<i>Value path</i>	string	Value (json-Object) Path of the column (for Example: '00100010.Value[0].Alphabetic' for Patient's Name or '00100020.Value[0]' for Patient ID (dcmuiValuePath)
<i>Type of the value</i>	string	Type of the column how to get the value, default should be 'value' Enumerated values: value or pipe. (dcmuiValueType)
<i>Column width in weight</i>	string	Width of the column in weight ($x > 0.1$ - $x < \text{infinite}$) default 1 (dcmuiColumnWidth)
<i>Order of the Column</i>	string	Order of the Column (dcmuiColumnOrder)

UI Elasticsearch Configuration

Elasticsearch Configuration for the pro version

Table 4.133: UI Elasticsearch Configuration Attributes (LDAP Object: dcmUiElasticsearch)

Name	Type	Description (LDAP Attribute)
<i>UI Elasticsearch Configuration Name</i>	string	UI Elasticsearch Configuration Name (dcmuiElasticsearchConfigName)
<i>UI Elasticsearch URL Configuration (s)</i>	object	UI Elasticsearch URL

UI Elasticsearch URL Configuration

Elasticsearch URL

Table 4.134: UI Elasticsearch URL Configuration Attributes (LDAP Object: dcmUiElasticsearchURL)

Name	Type	Description (LDAP Attribute)
<i>Elasticsearch URL Name</i>	string	UI Elasticsearch URL Name (dcmuiElasticsearchURLName)
<i>Elasticsearch URL</i>	string	Access URL of Elastic Search. E.g. <code>http(s)://<elasticsearch-host>:<elasticsearch-port></code> (dcmuiElasticsearchURL)
<i>Keycloak Server</i>	string	Select Keycloak Server from where to get the bearer token for accessing the Elasticsearch (dcmuiElasticsearchURLKeycloakServer)
<i>Audit Enterprise SiteID</i>	string	Set Audit Enterprise SiteID which should be used on Elasticsearch queries (dcmuiAuditEnterpriseSiteID)
<i>Is Default</i>	boolean	Set this URL to the default one. (Make sure that only one of the urls - siblings child is set to default). (dcmuiElasticsearchIsDefault)
<i>Installed</i>	boolean	Use this URL in the UI (dcmuiElasticsearchInstalled)

UI Device URL

Configuration of Device URL to use beside the main UI URL

Table 4.135: UI Device URL Attributes (LDAP Object: dcmUiDeviceURL)

Name	Type	Description (LDAP Attribute)
<i>Device URL Name</i>	string	Device Configured URL Name (dcmuiDeviceURLName)
<i>Device URL</i>	string	Access URL of Device. E.g. <code>http(s)://<myDevice-host>:<myDevice-port></code> (dcmuiDeviceURL)
<i>Description</i>	string	Device URL Description (dcmuiDeviceURLDescription)
<i>Installed</i>	boolean	Use this URL in the UI (dcmuiDeviceURLInstalled)

UI Cluster Configuration

Configuration of Device URL to use beside the main UI URL

Table 4.136: UI Cluster Configuration Attributes (LDAP Object: dc-mUiDeviceCluster)

Name	Type	Description (LDAP Attribute)
<i>Name</i>	string	Cluster Name (dcmuiDeviceClusterName)
<i>Description</i>	string	Cluster Description (dcmuiDeviceClusterDescription)
<i>Load Balancer</i>	string	Select the Load Balancer (dcmuiDeviceClusterLoadBalancer)
<i>Keycloak Server</i>	string	If this cluster doesn't use the same Keycloak select the configured Keycloak (dcmuiDeviceClusterKeycloakServer)
<i>Device(s)</i>	string	Add the name of the configured devices (dcmuiDeviceClusterDevices)
<i>Installed</i>	boolean	Use this URL in the UI (dcmuiDeviceClusterInstalled)

CHAPTER 5

Media Interchange

dcm4che DICOM Archive 5 does not support Media Storage

Support of Character Sets

dcm4che DICOM Archive 5 supports all extended character sets defined in the DICOM 2017 standard, including single-byte and multi-byte character sets as well as code extension techniques using ISO 2022 escapes in DICOM messages.

Support extends to correctly decoding and displaying the correct symbol for all names and strings found in storage instances received over the network, and in the local database.

In addition to the default character repertoire, the Defined Terms for Specific Character Set in [Table 6.1](#) are supported:

Table 6.1: Supported Specific Character Set Defined Terms

Character Set Description	DICOM attribute: Specific Character Set (0008,0005)	HL7 field: Character Set MSH 18
Latin alphabet No. 1	ISO_IR 100	8859/1
Latin alphabet No. 2	ISO_IR 101	8859/2
Latin alphabet No. 3	ISO_IR 109	8859/3
Latin alphabet No. 4	ISO_IR 110	8859/4
Cyrillic	ISO_IR 144	8859/5
Arabic	ISO_IR 127	8859/6
Greek	ISO_IR 126	8859/7
Hebrew	ISO_IR 138	8859/8
Latin alphabet No. 5	ISO_IR 148	8859/9
Japanese	ISO_IR 13	ISO IR14
Thai	ISO_IR 166	CNS 11643-1992
Default repertoire	ISO 2022 IR 6	not supported ¹
Latin alphabet No. 1	ISO 2022 IR 100	not supported ¹
Latin alphabet No. 2	ISO 2022 IR 101	not supported ¹
Latin alphabet No. 3	ISO 2022 IR 109	not supported ¹
Latin alphabet No. 4	ISO 2022 IR 110	not supported ¹
Cyrillic	ISO 2022 IR 144	not supported ¹
Arabic	ISO 2022 IR 127	not supported ¹

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Table 6.1 – continued from previous page

Character Set Description	DICOM attribute: Specific Character Set (0008,0005)	HL7 field: Character Set MSH 18
Greek	ISO 2022 IR 126	not supported ¹
Hebrew	ISO 2022 IR 138	not supported ¹
Latin alphabet No. 5	ISO 2022 IR 148	not supported ¹
Japanese	ISO 2022 IR 13	not supported ¹
Thai	ISO 2022 IR 166	not supported ¹
Japanese	ISO 2022 IR 87	not supported ¹
Japanese	ISO 2022 IR 159	not supported ¹
Korean	ISO 2022 IR 149	not supported ¹
Simplified Chinese	ISO 2022 IR 58	not supported ¹
Unicode in UTF-8	ISO_IR 192	UNICODE UTF-8
GB18030	GB18030	GB 18030-2000
GBK	GBK	GB 18030-2000

¹ Escape sequences supporting multiple character sets in HL7 v2 messages are not supported.

7.1 Security Profiles

7.1.1 Secure Transport Connection Profiles

dcm4che DICOM Archive 5 supports the *Basic TLS Secure Transport Connection Profile* and the *AES TLS Secure Transport Connection Profile* as specified in [DICOM Standard, Part 15, Annex B.1](#) and [Annex B.3](#).

By default configuration, TLS 1.0, TLS 1.1 and TLS 1.2 are enabled, use of TLS 1.2 is preferred.

Also other cyphersuite options than the two in compliance with *AES TLS Secure Transport Connection Profile*:

- TLS_RSA_WITH_AES_128_CBC_SHA
- TLS_RSA_WITH_3DES_EDE_CBC_SHA

may be configured.

Beside DICOM DIMSE service connections, also HL7 v2 and HTTP connections can be secured by use of TLS.

IP ports on which an implementation accepts TLS connections are configurable.

The private key and the Certificate used by an instance of *dcm4che DICOM Archive 5* to identify itself in the TLS negotiation with remote applications has to be provided in a local keystore file in PKCS12 or JKS (Java Key Store) format on the application host. Certificates of Certificate Authorities (CA) to validate Certificates received from remote applications during the TLS negotiation can also be provided in a local keystore file in JKS format or at the central LDAP server, used as configuration backend for all instances of *dcm4che DICOM Archive 5*.

7.1.2 Network Address Management Profiles

dcm4che DICOM Archive 5 supports the *Basic Network Address Management Profile* as *DHCP Client* and *DNS Client* actor utilizing network configuration options of the underlying operating system. S. [DICOM Standard, Part 15, Annex F.1](#).

7.1.3 Time Synchronization Profiles

dcm4che DICOM Archive 5 supports the *Basic Time Synchronization Profile* as *DHCP Client* and *NTP Client* actor utilizing time synchronization options of the underlying operating system. S. [DICOM Standard, Part 15, Annex G.1](#).

7.1.4 Application Configuration Management Profiles

dcm4che DICOM Archive 5 supports the *Application Configuration Management Profile* as *LDAP Client* actor. Any LDAP v3 compatible LDAP server can be used as configuration backend for multiple instances of *dcm4che DICOM Archive 5* - and may also be shared with external DICOM applications which also supports the *Application Configuration Management Profile* as *LDAP Client* actor. S. [DICOM Standard, Part 15, Annex H.1](#).

7.1.5 Audit Trail Profiles

Audit Trail Message Format Profile

dcm4che DICOM Archive 5 supports the *Audit Trail Message Format Profile* as specified in [DICOM Standard, Part 15, Annex A.5](#).

Audit Messages

General Message Format Conventions

Message Structure

- *Event*
- *Active Participant* (1..N)
- *Audit Source*
- *Participant Object* (0..N)

Table 7.1: Event

Field Name	Opt	Description	Additional Conditions on Field Format/Value
EventID	M	Identifier for a specific audited event.	The identifier for the family of event. E.g., 'User Authentication'
EventActionCode	M	Indicator for type of action performed during the event that generated the audit.	'C' Create a new database object, such as Placing an Order' 'R' Read/View/Print/Query Display or print data, such as a Doctor Census' 'U' Update data, such as Revise Patient Information' 'D' Delete items, such as a master file record' 'E' Perform a system or application function such as log-on, program execution, or use of an object's method'
EventDateTime	M	Universal coordinated time (UTC), i.e., a date/time specification that is unambiguous as to local time zones.	The time at which the audited event occurred
EventOutcomeIndicator	M	Indicates whether the event succeeded or failed.	'0' SUCCESS', '4' Minor failure'
EventOutcomeDescription	M	In failure cases, indicates the exception or error message.	
EventTypeCode	M	Identifier for the category of event.	The specific type(s) within the family applicable to the event, e.g., 'User Login'.

Table 7.2: Active Participant

Field Name	Opt	Description	Additional Conditions on Field Format/Value
UserID	M	Unique identifier for the user actively participating in the event.	
UserIDTypeCode	U	Describes the identifier that is contained in User ID.	
UserTypeCode	U	Code for the type of the user. This value is distinct from the user's role(s).	'1' Person' '2' Application'
AlternativeUserID	U	Alternative unique identifier for the user.	
UserName	U	The human-meaningful name for the user.	
UserIsRequestor	M	Indicator that the user is or is not the requestor, or initiator, for the event being audited.	
RoleIDCode	U	Specification of the role(s) the user plays when performing the event, as assigned in role-based access control security.	
NetworkAccessPointTypeCode	M	An identifier for the type of network access point.	
NetworkAccessPointID	M	An identifier for the network access point of the user device. This could be a device id, IP address, or some other identifier associated with a device.	

Table 7.3: Audit Source

Field Name	Opt	Description
AuditEnterpriseSiteID	U	Logical source location within the healthcare enterprise network, e.g., a hospital or other provider location within a multi-entity provider group.
AuditSourceID	M	Identifier of the source.
AuditSourceTypeCode	M	Code specifying the type of source.

Table 7.4: Participant Object

Field Name	Opt	Description	Additional Conditions on Field Format/Value
ParticipantObjectTypeCode		Code for the participant object type being audited. This value is distinct from the user's role or any user relationship to the participant object.	'1' Person
			'2' System Object
			'3' Organization
			'4' Other
ParticipantObjectTypeCode		Code representing the functional application role of Participant Object being audited.	
ParticipantObjectDataLifeCycle		Code for the data life-cycle stage for the participant object. This can be used to provide an audit trail for data, over time, as it passes through the system.	
ParticipantObjectIDTypeCode		Denotes the identifier that is contained in Participant Object ID.	
ParticipantObjectSensitivity		Denotes policy-defined sensitivity for the Participant Object ID such as VIP, HIV status, mental health status, or similar topics.	
ParticipantObjectID		Identifies a specific instance of the participant object.	
ParticipantObjectName		An instance-specific descriptor of the Participant Object ID audited, such as a person's name.	
ParticipantObjectQuery		The actual query for a query-type participant object.	
ParticipantObjectDetail		Implementation-defined data about specific details of the object accessed or used.	This element is a Type-value pair. The 'type' attribute is an implementation-defined text string. The 'value' attribute is base 64 encoded data. The value is suitable for conveying binary data.
SOPClass	MC		The UIDs of SOP classes referred to in this participant object. Required if ParticipantObjectIDTypeCode is (110180, DCM, 'Study Instance UID') and any of the optional fields (AccessionNumber, ContainsMPPS, NumberOfInstances, ContainsSOPInstances, Encrypted, Anonymized) are present in this Participant Object. May be present if ParticipantObjectIDTypeCode is (110180, DCM, 'Study Instance UID') even though none of the optional fields are present.
Accession	U		An Accession Number(s) associated with this participant object.
MPPS	U		An MPPS Instance UID(s) associated with this participant object.
NumberOfInstances			The number of SOP Instances referred to by this participant object.
Instance	U		SOP Instance UID value(s)
Encrypted	U		A single value of True or False indicating whether or not the data was encrypted.
Anonymized	U		A single value of True or False indicating whether or not all patient identifying information was removed from the data
7.1. Security Profiles			175
ParticipantObjectContainsStudy			A Study Instance UID, which may be used when the ParticipantObjectIDTypeCode is not (110180, DCM, 'Study Instance UID')

Application Activity

Trigger Events

This audit message is emitted when the archive is started or stopped using the archive user interface. It is also emitted during archive startup or shutdown.

Message Structure

Table 7.5: Entities in Application Activity Audit Message

<i>Event Identification</i>	
<i>Active Participant : Archive</i>	
<i>Active Participant : User</i>	Present only if triggered using Archive UI
<i>Audit Source</i>	

Table 7.6: Event Identification

Field Name	Opt	Description
EventID	M	EV (110100, DCM, 'Application Activity')
EventActionCode	M	Execute 'E'
EventDateTime	M	The time at which the event occurred
EventOutcomeIndicator	M	Success '0'
EventTypeCode	M	DT (110120, DCM, 'Application Start') DT (110121, DCM, 'Application Stop')

Table 7.7: Active Participant : Archive

Field Name	Opt	Description
UserID	M	Application entity titles of Archive Device as ; separated values
UserIDTypeCode	U	Application startup/shutdown or archive deploy/undeploy EV (113877, DCM, 'Device Name') Triggered from UI EV (12, RFC-3881, 'URI')
UserTypeCode	U	Application '2'
AlternativeUserID	MC	Process ID of Audit logger
UserIsRequestor	M	false
RoleIDCode	M	EV (110150, DCM, 'Application')
NetworkAccessPointID	U	Hostname/IP Address of the connection referenced by Audit logger
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Table 7.8: Active Participant : User

Field Name	Opt	Description
UserID	M	Secured version of archive 'Logged in User name' Unsecured version of archive 'Remote IP address'
UserIDTypeCode	U	Secured Archive EV (113871, DCM, 'Person ID') Unsecured Archive EV (110182, DCM, 'Node ID')
UserTypeCode	U	Person '1'
UserIsRequestor	M	true
RoleIDCode	M	EV (110151, DCM, 'ApplicationLauncher')
NetworkAccessPointID	U	Hostname/IP Address of calling host
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Sample Message

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↳xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="E" EventDateTime="2017-07-10T10:30:17.
↳651+02:00" EventOutcomeIndicator="0">
    <EventID csd-code="110100" codeSystemName="DCM" originalText="Application_
↳Activity"/>
    <EventTypeCode csd-code="110120" codeSystemName="DCM" originalText=
↳"Application Start"/>
  </EventIdentification>

  <ActiveParticipant UserID="dcm4chee-arc" UserTypeCode="2" AlternativeUserID="5289
↳" UserIsRequestor="false" NetworkAccessPointID="localhost"
↳NetworkAccessPointTypeCode="1">
    <RoleIDCode csd-code="110150" codeSystemName="DCM" originalText="Application"/
↳>
    <UserIDTypeCode csd-code="113877" codeSystemName="DCM" originalText="Device_
↳Name"/>

```

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```

</ActiveParticipant>

<AuditSourceIdentification AuditSourceID="dcm4chee-arc">
  <AuditSourceTypeCode csd-code="4"/>
</AuditSourceIdentification>

</AuditMessage>

```

Audit Log Used

Trigger Events

This message is emitted by the archive when the audit record repository is accessed over archive proxy.

Message Structure

Table 7.9: Entities in Audit Log Used Audit Message

<i>Event Identification</i>
<i>Active Participant: User</i>
<i>Audit Source</i>
<i>Participant Object Identification</i>

Table 7.10: Event Identification

Field Name	Opt	Description
EventID	M	EV (110101, DCM, 'Audit Log Used')
EventActionCode	M	Execute 'E'
EventDateTime	M	The time at which the event occurred
EventOutcomeIndicator	M	Success '0'

Table 7.11: Active Participant: User

Field Name	Opt	Description
UserID	M	Secured version of archive 'Logged in User name' Unsecured version of archive 'Remote IP address'
UserIDTypeCode	U	Secured Archive EV (113871, DCM, 'Person ID') Unsecured Archive EV (110182, DCM, 'Node ID')
UserTypeCode	U	Person '1'
AlternativeUserID	MC	Process ID of Audit logger
UserIsRequestor	M	true
NetworkAccessPointID	U	Hostname/IP Address of the connection referenced by Audit logger
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Table 7.12: Participant Object Identification

Field Name	Opt	Description
ParticipantObjectID	M	Audit Record Repository URL configured on archive device level
ParticipantObjectTypeCode	M	SystemObject '2'
ParticipantObjectTypeCodeRole	M	SecurityResource '13'
ParticipantObjectIDTypeCode	M	EV (12, RFC-3881, 'URI')
ParticipantObjectName	U	Security Audit Log

Sample Message

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↳xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">
    <EventIdentification EventActionCode="R" EventDateTime="2017-01-27T14:46:32.
↳670+01:00" EventOutcomeIndicator="0">
        <EventID csd-code="110101" codeSystemName="DCM" originalText="Audit Log Used"/
↳>
    </EventIdentification>
```

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```

<ActiveParticipant UserID="127.0.0.1" UserTypeCode="1" AlternativeUserID="5312"
↔UserIsRequestor="true" NetworkAccessPointID="127.0.0.1" NetworkAccessPointTypeCode=
↔"2">
  <UserIDTypeCode csd-code="110182" codeSystemName="DCM" originalText="Node ID"/
↔>
</ActiveParticipant>

<AuditSourceIdentification AuditSourceID="dcm4chee-arc">
  <AuditSourceTypeCode csd-code="4"/>
</AuditSourceIdentification>

<ParticipantObjectIdentification ParticipantObjectID="http://archive2:5601"
↔ParticipantObjectTypeCode="2" ParticipantObjectTypeCodeRole="13">
  <ParticipantObjectIDTypeCode csd-code="12" originalText="URI" codeSystemName=
↔"RFC-3881" />
  <ParticipantObjectName>Security Audit Log</ParticipantObjectName>
</ParticipantObjectIdentification>
</AuditMessage>

```

Begin Transferring DICOM Instances

This message describes the event of a system beginning to transfer a set of DICOM instances from one node to another node within control of the system's security domain. This message may only include information about a single patient.

Trigger Events

This message is emitted by the archive in following cases :

- **Query/Retrieve of objects using RAD-16**
 - C-Move : Objects of a study are retrieved using query/retrieve service and stored to external destination
 - C-Get : Objects of a study are retrieved using query/retrieve service and stored to the destination which is same as source
- Export : Objects of a study are exported to a destination
- Invoking WADO-RS or WADO URI services
- XDSI Retrieve Imaging Document Set RAD-69 transaction

Message Structure

Table 7.13: Entities in Begin Transferring DICOM Instances Audit Message

<i>Event Identification</i>	
<i>Active Participant : Archive application</i>	
<i>Active Participant : Destination</i>	
<i>Active Participant : Other</i>	Present only in Query/Retrieve C-Move case
<i>Active Participant : User</i>	Present only in Export case triggered from UI
<i>Audit Source</i>	
<i>Participant Object Identification : Study</i>	
<i>Participant Object Identification : Patient</i>	

Table 7.14: Event Identification

Field Name	Opt	Description
EventID	M	EV (110100, DCM, 'Begin Transferring DICOM Instances')
EventActionCode	M	Execute 'E'
EventDateTime	M	The time at which the event occurred
EventOutcomeIndicator	M	Success '0' Minor failure '4'
EventOutcomeDescription	M	Error/Exception message when EventOutcomeIndicator '4'

Table 7.15: Active Participant : Archive application

Field Name	Opt	Description
UserID	M	Q/R Move case 'Application entity title of Archive Device used in the association' Q/R Get case 'Application entity title of Archive Device used in the association' Export case triggered by scheduler 'Archive device name' Export case triggered from UI 'Invoked URL' WADO RS case 'Invoked URL' XDSI Retrieve Imaging Document Set RAD-69 case 'Invoked URL'
UserIDTypeCode	U	Q/R Move case EV (110119, DCM, 'Station AE Title') Q/R Get case EV (110119, DCM, 'Station AE Title') Export case triggered by scheduler EV (113877, DCM, 'Device Name') Export case triggered from UI EV (12, RFC-3881, 'URI') WADO RS case EV (12, RFC-3881, 'URI') XDSI Retrieve Imaging Document Set RAD-69 case EV (12, RFC-3881, 'URI')
UserTypeCode	U	Application '2'
AlternativeUserID	MC	Process ID of Audit logger
UserIsRequestor	M	Export case : Triggered by scheduler 'true' All other cases 'false'
RoleIDCode	M	EV (110153, DCM, 'Source')
NetworkAccessPointID	U	Hostname/IP Address of the connection referenced by Audit logger
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Table 7.16: Active Participant : Destination

Field Name	Opt	Description
UserID	M	Q/R Move case 'Application entity title of destination system' Q/R Get case 'Application entity title of initiating system' Export case 'dicomAETitle of destination' WADO-RS case : Secured archive 'User name of logged in user' WADO-RS case : Unsecured archive 'Remote IP address' XDSI Retrieve Imaging Document Set RAD-69 case : Secured archive 'User name of logged in user' XDSI Retrieve Imaging Document Set RAD-69 case : Unsecured archive 'Remote IP address'
UserIsRequestor	M	Q/R Move case 'false' Q/R Get case 'true' Export case 'false' WADO RS case 'true' XDSI Retrieve Imaging Document Set RAD-69 case 'false'
UserIDTypeCode	U	Q/R Move case EV (110119, DCM, 'Station AE Title') Q/R Get case EV (110119, DCM, 'Station AE Title') Export case EV (110119, DCM, 'Station AE Title') WADO RS case : Secured archive EV (113871, DCM, 'Person ID') WADO RS case : Unsecured archive EV (110182, DCM, 'Node ID') XDSI Retrieve Imaging Document Set RAD-69 case : Secured archive EV (113871, DCM, 'Person ID') XDSI Retrieve Imaging Document Set RAD-69 case : Unsecured archive EV (110182, DCM, 'Node ID')
UserTypeCode	U	WADO RS case : Person '1' XDSI Retrieve Imaging Document Set RAD-69 case : Person '1' For all other cases : Application '2'
RoleIDCode	M	EV (110152, DCM, 'Destination')
NetworkAccessPointID	U	Hostname/IP Address of calling host
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Table 7.17: Active Participant : Other

Field Name	Opt	Description
UserID	M	Application entity title of initiating system
UserIDTypeCode	U	EV (110119, DCM, 'Station AE Title')
UserTypeCode	U	Application '2'
UserIsRequestor	M	true
NetworkAccessPointID	U	Hostname/IP Address of initiating system
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Table 7.18: Active Participant : User

Field Name	Opt	Description
UserID	M	Export case triggered from UI : Secured archive 'User name of logged in user' Export case triggered from UI : Unsecured archive 'Remote IP address'
UserIDTypeCode	U	Secured archive EV (113871, DCM, 'Person ID') Unsecured archive EV (110182, DCM, 'Node ID')
UserTypeCode	U	Person '1'
UserIsRequestor	M	true
NetworkAccessPointID	U	Hostname/IP Address of initiating system
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Table 7.19: Participant Object Identification : Study

Field Name	Opt	Description
ParticipantObjectID	M	Study Instance UID or 1.2.40.0.13.1.15.110.3.165.1 if unknown
ParticipantObjectTypeCode	M	System '2'
ParticipantObjectTypeCodeRole	M	Report '3'
ParticipantObjectIDTypeCode	M	EV (110180, DCM, 'Study Instance UID')
ParticipantObjectDetail	U	Base-64 encoded study date if Study has StudyDate(0008,0020) attribute
ParticipantObjectDescription	U	
SOPClass	MC	Sop Class UID and Number of instances with this sop class. eg. <SOP-Class UID='1.2.840.10008.5.1.4.1.1.88.22' NumberOfInstances='4'/>
Accession	U	Accession Number

Table 7.20: Participant Object Identification : Patient

Field Name	Opt	Description
ParticipantObjectID	M	Patient ID or <none> if unknown
ParticipantObjectTypeCode	M	Person '1'
ParticipantObjectTypeCodeRole	M	Patient '1'
ParticipantObjectIDTypeCode	M	EV (2, RFC-3881, 'Patient Number')
ParticipantObjectName	U	Patient Name

Sample Message

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↳xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="E" EventDateTime="2016-06-21T10:22:00.
↳634+02:00" EventOutcomeIndicator="0">
    <EventID csd-code="110102" codeSystemName="DCM" originalText="Begin
↳Transferring DICOM Instances"/>
  </EventIdentification>

  <ActiveParticipant UserID="DCM4CHEE" UserTypeCode="2" AlternativeUserID="60928"
↳UserIsRequestor="false" NetworkAccessPointID="localhost" NetworkAccessPointTypeCode=
↳"1">
    <RoleIDCode csd-code="110153" codeSystemName="DCM" originalText="Source"/>
    <UserIDTypeCode csd-code="110119" codeSystemName="DCM" originalText="Station
↳AE Title"/>
  </ActiveParticipant>

  <ActiveParticipant UserID="GETSCU" UserTypeCode="2" UserIsRequestor="true"
↳NetworkAccessPointID="127.0.0.1" NetworkAccessPointTypeCode="2">
    <RoleIDCode csd-code="110152" codeSystemName="DCM" originalText="Destination"/
↳>
    <UserIDTypeCode csd-code="110119" codeSystemName="DCM" originalText="Station
↳AE Title"/>
  </ActiveParticipant>

  <AuditSourceIdentification AuditSourceID="dcm4chee-arc">
    <AuditSourceTypeCode csd-code="4"/>
  </AuditSourceIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="1.3.12.2.1107.5.2.33.37113.
↳30000008060311320917100000013" ParticipantObjectTypeCode="2"
↳ParticipantObjectTypeCodeRole="3">
    <ParticipantObjectIDTypeCode csd-code="110180" originalText="Study Instance
↳UID" codeSystemName="DCM"/>
    <ParticipantObjectDetail type="StudyDate" value="MjAwODA3MTY="/>
    <ParticipantObjectDescription>
      <SOPClass UID="1.2.840.10008.5.1.4.1.1.88.22" NumberOfInstances="4"/>
      <SOPClass UID="1.2.840.10008.5.1.4.1.1.4" NumberOfInstances="2"/>
    </ParticipantObjectDescription>
  </ParticipantObjectIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="P5^^^ISSUER"
↳ParticipantObjectTypeCode="1" ParticipantObjectTypeCodeRole="1">
    <ParticipantObjectIDTypeCode csd-code="2" originalText="Patient Number"
↳codeSystemName="RFC-3881"/>
    <ParticipantObjectName>TEST^Name</ParticipantObjectName>
  </ParticipantObjectIdentification>
</AuditMessage>

```

Data Export

Trigger Events

This message is emitted by archive for XDSI RAD-68 transactions.

Message Structure

Table 7.21: Entities in Data Export Audit Message

<i>Event Identification</i>
<i>Active Participant: User</i>
<i>Active Participant: Archive application</i>
<i>Active Participant: Destination</i>
<i>Audit Source</i>
<i>Participant Object Identification: Patient</i>
<i>Participant Object Identification: Submission Set</i>

Table 7.22: Event Identification

Field Name	Opt	Description
EventID	M	EV (110106, DCM, 'Export')
EventActionCode	M	Read : 'R'
EventDateTime	M	The time at which the event occurred
EventOutcomeIndicator	M	Success : '0' Minor failure : '4'
EventOutcomeDescription	M	Error/Exception message when EventOutcomeIndicator : '4'

Table 7.23: Active Participant: User

Field Name	Opt	Description
UserID	M	Secured archive : 'User name of logged in user' Unsecured archive : 'Remote IP address'
UserIDTypeCode	U	Secured archive : EV (113871, DCM, 'Person ID') Unsecured archive : (110182, DCM, 'Node ID')
UserTypeCode	U	Person : '1'
AlternativeUserID	MC	Process ID of Audit logger
UserIsRequestor	M	true
NetworkAccessPointID	U	Hostname/IP Address of calling host
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name : '1' NetworkAccessPointID is an IP address : '2'

Table 7.24: Active Participant: Archive application

Field Name	Opt	Description
UserID	M	Triggered by scheduler : 'Archive device name' Triggered from UI : 'Invoked URL'
UserIDTypeCode	U	Triggered by scheduler : EV (113877, DCM, 'Device Name') Triggered from UI : EV (12, RFC-3881, 'URI')
UserTypeCode	U	Application : '2'
AlternativeUserID	MC	Process ID of Audit logger
UserIsRequestor	M	Triggered by scheduler : 'true' Triggered by UI : 'false'
RoleIDCode	M	EV (110153, DCM, 'Source')
NetworkAccessPointID	U	Hostname/IP Address of the connection referenced by Audit logger
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name : '1' NetworkAccessPointID is an IP address : '2'

Table 7.25: Active Participant: Destination

Field Name	Opt	Description
UserID	M	The URI configured in XDSI Exporter in archive configuration
UserIDTypeCode	U	EV (12, RFC-3881, 'URI')
UserTypeCode	U	Application : '2'
UserIsRequestor	M	false
RoleIDCode	M	EV (110152, DCM, 'Destination')
NetworkAccessPointID	U	Hostname/IP Address present in the URI configured in XDSI Exporter in archive configuration
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name : '1' NetworkAccessPointID is an IP address : '2'

Table 7.26: Participant Object Identification: Patient

Field Name	Opt	Description
ParticipantObjectID	M	Patient ID or <none> if unknown
ParticipantObjectTypeCode	M	Person : '1'
ParticipantObjectTypeCodeRole	M	Patient : '1'
ParticipantObjectIDTypeCode	M	EV (2, RFC-3881, 'Patient Number')
ParticipantObjectName	U	Patient Name

Table 7.27: Participant Object Identification: Submission Set

Field Name	Opt	Description
ParticipantObjectID	M	System generated UID created for the submission set
ParticipantObjectTypeCode	M	SystemObject : '2'
ParticipantObjectTypeCodeRole	M	Job : '20'
ParticipantObjectIDTypeCode	M	EV (urn:uuid:a54d6aa5-d40d-43f9-88c5-b4633d873bdd, IHE XDS Metadata, 'submission set classificationNode')

Sample Message

Scheduler Triggered

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↳xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="R" EventDateTime="2017-03-20T14:17:40.
↳947+01:00" EventOutcomeIndicator="0">
    <EventID csd-code="110106" codeSystemName="DCM" originalText="Export"/>
    <EventTypeCode csd-code="ITI-41" codeSystemName="IHE Transactions"
↳originalText="Provide and Register Document Set-b"/>
  </EventIdentification>

  <ActiveParticipant UserID="dcm4chee-arc" UserTypeCode="2" AlternativeUserID="60928
↳" UserIsRequestor="true" NetworkAccessPointID="localhost"
↳NetworkAccessPointTypeCode="1">
    <RoleIDCode csd-code="110153" codeSystemName="DCM" originalText="Source"/>
    <UserIDTypeCode csd-code="113877" codeSystemName="DCM" originalText="Device
↳Name"/>
  </ActiveParticipant>

  <ActiveParticipant UserID="xds-i:http://localhost:8081/xdstools4/sim/pacs__rr/rep/
↳prb" UserTypeCode="2" UserIsRequestor="false" NetworkAccessPointID="localhost"
↳NetworkAccessPointTypeCode="1">
    <RoleIDCode csd-code="110152" codeSystemName="DCM" originalText="Destination"/
↳>
    <UserIDTypeCode csd-code="12" codeSystemName="RFC-3881" originalText="URI"/>
  </ActiveParticipant>

  <AuditSourceIdentification AuditSourceID="dcm4chee-arc">
    <AuditSourceTypeCode csd-code="4"/>
  </AuditSourceIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="IDS-AD001-a^^^&1.3.6.1.
↳4.1.21367.2005.13.20.1000&ISO" ParticipantObjectTypeCode="1"
↳ParticipantObjectTypeCodeRole="1">
    <ParticipantObjectIDTypeCode csd-code="2" originalText="Patient Number"
↳codeSystemName="RFC-3881"/>
  </ParticipantObjectIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="2.25.
↳177992962309009308855419466022084866557" ParticipantObjectTypeCode="2"
↳ParticipantObjectTypeCodeRole="20">
    <ParticipantObjectIDTypeCode csd-code="urn:uuid:a54d6aa5-d40d-43f9-88c5-
↳b4633d873bdd" originalText="submission set classificationNode" codeSystemName="IHE
↳XDS Metadata"/>
  </ParticipantObjectIdentification>
</AuditMessage>

```

User Triggered

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↳xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="R" EventDateTime="2018-10-23T17:16:34.
↳737+02:00" EventOutcomeIndicator="0">
    <EventID csd-code="110106" codeSystemName="DCM" originalText="Export"/>

```

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```

    <EventTypeCode csd-code="ITI-41" codeSystemName="IHE Transactions"
↳originalText="Provide and Register Document Set-b"/>
  </EventIdentification>

  <ActiveParticipant UserID="xds-i:https://localhost:9443/xdstools4/sim/default__rr/
↳rep/prb" UserIsRequestor="false" UserTypeCode="2" NetworkAccessPointID="localhost"
↳NetworkAccessPointTypeCode="1">
    <RoleIDCode csd-code="110152" codeSystemName="DCM" originalText="Destination
↳Role ID"/>
    <UserIDTypeCode csd-code="12" codeSystemName="RFC-3881" originalText="URI"/>
  </ActiveParticipant>

  <ActiveParticipant UserID="/dcm4chee-arc/aets/DCM4CHEE/rs/studies/1.113654.1.2001.
↳30/export/XDS-I" AlternativeUserID="11550" UserIsRequestor="false" UserTypeCode="2"
↳NetworkAccessPointID="localhost" NetworkAccessPointTypeCode="1">
    <RoleIDCode csd-code="110153" codeSystemName="DCM" originalText="Source Role
↳ID"/>
    <UserIDTypeCode csd-code="12" codeSystemName="RFC-3881" originalText="URI"/>
  </ActiveParticipant>

  <ActiveParticipant UserID="127.0.0.1" UserIsRequestor="true" UserTypeCode="1"
↳NetworkAccessPointID="127.0.0.1" NetworkAccessPointTypeCode="2">
    <UserIDTypeCode csd-code="110182" codeSystemName="DCM" originalText="Node ID"/
↳>
  </ActiveParticipant>

  <AuditSourceIdentification AuditSourceID="dcm4chee-arc">
    <AuditSourceTypeCode csd-code="4"/>
  </AuditSourceIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="CR3^^^Site A&amp;1.2.40.0.
↳13.1.1.999.111.1111&amp;ISO" ParticipantObjectTypeCode="1"
↳ParticipantObjectTypeCodeRole="1">
    <ParticipantObjectIDTypeCode csd-code="2" originalText="Patient Number"
↳codeSystemName="RFC-3881"/>
    <ParticipantObjectName>CRTHREE^PAUL</ParticipantObjectName>
  </ParticipantObjectIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="2.25.
↳68523793252155806926226351648896230984" ParticipantObjectTypeCode="2"
↳ParticipantObjectTypeCodeRole="20">
    <ParticipantObjectIDTypeCode csd-code="urn:uuid:a54d6aa5-d40d-43f9-88c5-
↳b4633d873bdd" originalText="submission set classificationNode" codeSystemName="IHE
↳XDS Metadata"/>
  </ParticipantObjectIdentification>
</AuditMessage>

```

DICOM Instances Accessed

Trigger Events

This message is emitted by the archive in following cases :

- Some objects / series of study are rejected using UI

- Some objects / series of study are rejected in an external archive using UI
- Rejection Notes for some objects of a study are stored to the archive using [RAD-66](#) transaction.
- Objects are retrieved from an external archive by HL7 Prefetch Scheduler
- Update study/series expiration date using UI / Study Retention Policy / HL7 Study Retention Policy.
- Update study attributes using UI.
- Previous series/instances of a study are deleted on subsequent receive of objects having same SOP IUID but different Series IUID

Message Structure

Table 7.28: Entities in DICOM Instances Accessed Audit Message

<i>Event Identification</i>
<i>Active Participant : Archive application</i>
<i>Active Participant : Initiator</i>
<i>Audit Source</i>
<i>Participant Object Identification : Study</i>
<i>Participant Object Identification : Patient</i>

Table 7.29: Event Identification

Field Name	Opt	Description
EventID	M	EV (110103, DCM, 'DICOM Instances Accessed')
EventActionCode	M	Rejection / Deletion case : Delete 'D' Update study attributes / expiration date case : Update 'U' Update expiration date for frozen study / series case : Read 'R'
EventDateTime	M	The time at which the event occurred
EventOutcomeIndicator	M	Success '0' Minor failure '4'
EventOutcomeDescription	M	Rejection / Deletion case : Success 'Rejection Code Meaning' Rejection / Deletion case : Minor failure 'Rejection Code Meaning + Error/Exception message' All other cases case : Minor failure 'Error/Exception message'

Table 7.30: Active Participant : Archive application

Field Name	Opt	Description
UserID	M	Action triggered using association 'Application entity title of Archive Device used in the association' Action triggered using archive UI 'Invoked URL' Action triggered using HL7 messages 'Receiving Application and Facility'
UserIDTypeCode	U	Action triggered using association EV (110119, DCM, 'Station AE Title') Action triggered from UI EV (12, RFC-3881, 'URI') Action triggered using HL7 messages EV (HL7APP, 99DCM4CHEE, 'Application and Facility')
UserTypeCode	U	Application '2'
AlternativeUserID	MC	Process ID of Audit logger
UserIsRequestor	M	false
NetworkAccessPointID	U	Hostname/IP Address of the connection referenced by Audit logger
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Table 7.31: Active Participant : Initiator

Field Name	Opt	Description
UserID	M	<p>Action triggered using association 'Application entity title of initiating system'</p> <p>Action triggered using UI : Secured Archive 'User name of logged in user'</p> <p>Action triggered using UI : Unsecured archive 'Remote IP address'</p> <p>Action triggered using HL7 messages 'Sending Application and Facility'</p>
UserIDTypeCode	U	<p>Action triggered using archive UI (Secured archive) EV (113871, DCM, 'Person ID')</p> <p>Action triggered using archive UI (Unsecured archive) EV (110182, DCM, 'Node ID')</p> <p>Action triggered using association EV (110119, DCM, 'Station AE Title')</p> <p>Action triggered using HL7 messages EV (HL7APP, 99DCM4CHEE, 'Application and Facility')</p>
UserTypeCode	U	<p>Action triggered using archive UI : Person '1'</p> <p>Action triggered using association : Application '2'</p>
UserIsRequestor	M	true
NetworkAccessPointID	U	Hostname/IP Address of calling host
NetworkAccessPointTypeCode	U	<p>NetworkAccessPointID is host name '1'</p> <p>NetworkAccessPointID is an IP address '2'</p>

Table 7.32: Participant Object Identification : Study

Field Name	Opt	Description
ParticipantObjectID	M	Study Instance UID or 1.2.40.0.13.1.15.110.3.165.1 if unknown
ParticipantObjectTypeCode	M	System '2'
ParticipantObjectTypeCodeRole	M	Report '3'
ParticipantObjectIDTypeCode	M	EV (110180, DCM, 'Study Instance UID')
ParticipantObjectDetail	U	All cases 'Base-64 encoded study date if Study has StudyDate(0008,0020) attribute' Update study / series expiration date 'Base-64 encoded expiration date (7777,1023)'
ParticipantObjectDescription	U	
SOPClass	MC	Rejection / Deletion case Sop Class UID and Number of instances with this sop class. eg. <SOPClass UID='1.2.840.10008.5.1.4.1.1.88.22' NumberOfInstances='4'/>
Accession	U	Accession Number

Table 7.33: Participant Object Identification : Patient

Field Name	Opt	Description
ParticipantObjectID	M	Patient ID or <none> if unknown
ParticipantObjectTypeCode	M	Person '1'
ParticipantObjectTypeCodeRole	M	Patient '1'
ParticipantObjectIDTypeCode	M	EV (2, RFC-3881, 'Patient Number')
ParticipantObjectName	U	Patient Name

Sample Message

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↳xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="D" EventDateTime="2017-07-17T11:24:42.
↳320+02:00" EventOutcomeIndicator="0">
    <EventID csd-code="110103" codeSystemName="DCM" originalText="DICOM Instances
↳Accessed"/>
    <EventOutcomeDescription>Data Retention Policy Expired</
↳EventOutcomeDescription>
  </EventIdentification>

  <ActiveParticipant UserID="127.0.0.1" UserIsRequestor="true" UserTypeCode="1"
↳NetworkAccessPointID="127.0.0.1" NetworkAccessPointTypeCode="2">
    <UserIDTypeCode csd-code="110182" codeSystemName="DCM" originalText="Node ID"/
↳>
  </ActiveParticipant>

  <ActiveParticipant UserID="/dcm4chee-arc/aets/DCM4CHEE/rs/studies/1.2.392.200036.
↳9125.0.199402091242.1/series/1.2.392.200036.9125.0.199402091242.1/reject/113039
↳%5EDCM"
    AlternativeUserID="2716" UserIsRequestor="false" NetworkAccessPointID=
↳"localhost" UserTypeCode="2" NetworkAccessPointTypeCode="1">
```

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```

    <UserIDTypeCode csd-code="12" codeSystemName="RFC-3881" originalText="URI"/>
  </ActiveParticipant>

  <AuditSourceIdentification AuditSourceID="dcm4chee-arc">
    <AuditSourceTypeCode csd-code="4"/>
  </AuditSourceIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="1.2.392.200036.9125.0.
↪199402091242.1"
    ParticipantObjectTypeCode="2" ParticipantObjectTypeCodeRole="3">
    <ParticipantObjectIDTypeCode csd-code="110180" originalText="Study Instance_
↪UID" codeSystemName="DCM"/>
    <ParticipantObjectDescription>
      <SOPClass UID="1.2.840.10008.5.1.4.1.1" NumberOfInstances="1"/>
    </ParticipantObjectDescription>
  </ParticipantObjectIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="P5^^^ISSUER"
↪ParticipantObjectTypeCode="1" ParticipantObjectTypeCodeRole="1">
    <ParticipantObjectIDTypeCode csd-code="2" originalText="Patient Number"
↪codeSystemName="RFC-3881"/>
    <ParticipantObjectName>TEST^Name</ParticipantObjectName>
  </ParticipantObjectIdentification>
</AuditMessage>

```

DICOM Instances Transferred

Trigger Events

This message is emitted by the archive in following cases :

- **Query/Retrieve of objects using RAD-16**
 - C-Move : Objects of a study are retrieved using query/retrieve service and stored to external destination
 - C-Get : Objects of a study are retrieved using query/retrieve service and stored to the destination which is same as source
- Export : Objects of a study are exported to a destination
- Invoking WADO-RS or WADO URI services
- Objects of a study are stored to the archive by DICOM association / UI
- Storage Commitment of objects of study by DICOM association / UI
- Storage Verification of objects of study using UI / scheduler
- XDSI Retrieve Imaging Document Set RAD-69 transaction.

Message Structure

Table 7.34: Entities in DICOM Instances Transferred Audit Message

<i>Event Identification</i>	
<i>Active Participant : Archive application</i>	
<i>Active Participant : Destination</i>	Not present in in Store objects and storage commitment cases
<i>Active Participant : Other</i>	Present only in Query/Retrieve C-Move case
<i>Active Participant : User</i>	Present only in Export case triggered from UI
<i>Active Participant : Source</i>	Present only in Store objects and Storage commitment cases
<i>Audit Source</i>	
<i>Participant Object Identification : Study</i>	
<i>Participant Object Identification : Patient</i>	

Table 7.35: Event Identification

Field Name	Opt	Description
EventID	M	EV (110104, DCM, 'DICOM Instances Transferred')
EventActionCode	M	Store objects case : Create 'C' or Update 'U' For all other cases : Read 'R'
EventDateTime	M	The time at which the event occurred
EventOutcomeIndicator	M	Success '0' Minor failure '4'
EventOutcomeDescription	M	Error/Exception message when EventOutcomeIndicator '4'

Table 7.36: Active Participant : Archive application

Field Name	Opt	Description
UserID	M	<p>Q/R Move case 'Application entity title of Archive Device used in the association'</p> <p>Q/R Get case 'Application entity title of Archive Device used in the association'</p> <p>Store objects case : Triggered by Association 'Application entity title of Archive Device used in the association'</p> <p>Store objects case : Triggered from UI 'Invoked URL'</p> <p>Storage Commitment case : Triggered by Association 'Application entity title of Archive Device used in the association'</p> <p>Storage Commitment case : Triggered from UI 'Invoked URL'</p> <p>Export case : Triggered by scheduler 'Archive device name'</p> <p>Export case : Triggered from UI 'Invoked URL'</p> <p>WADO RS case 'Invoked URL'</p> <p>XDSI Retrieve Imaging Document Set RAD-69 case 'Invoked URL'</p>
UserIDTypeCode	U	<p>Q/R Move case EV (110119, DCM, 'Station AE Title')</p> <p>Q/R Get case EV (110119, DCM, 'Station AE Title')</p> <p>Store objects case : Triggered by Association EV (110119, DCM, 'Station AE Title')</p> <p>Store objects case : Triggered from UI EV (12, RFC-3881, 'URI')</p> <p>Storage Commitment case : Triggered by Association EV (110119, DCM, 'Station AE Title')</p> <p>Storage Commitment case : Triggered from UI EV (12, RFC-3881, 'URI')</p> <p>Export case triggered by scheduler EV (113877, DCM, 'Device Name')</p> <p>Export case triggered from UI EV (12, RFC-3881, 'URI')</p> <p>WADO RS case EV (12, RFC-3881, 'URI')</p> <p>XDSI Retrieve Imaging Document Set RAD-69 case EV (12, RFC-3881, 'URI')</p>
UserTypeCode	U	<p>Application '2'</p>
AlternativeUserID	MC	<p>Process ID of Audit logger</p>
UserIsRequestor	M	<p>Export case : Triggered by scheduler 'true'</p> <p>All other cases 'false'</p>
RoleIDCode	M	<p>Store objects case EV (110152, DCM, 'Destination')</p> <p>Storage Commitment Case EV (110152, DCM, 'Destination')</p> <p>All other cases EV (110153, DCM, 'Source')</p>
200		Chapter 7. Security
NetworkAccessPointID	U	<p>Hostname/IP Address of the connection referenced by Audit logger</p>

Table 7.37: Active Participant : Destination

Field Name	Opt	Description
UserID	M	Q/R Move case 'Application entity title of destination system' Q/R Get case 'Application entity title of association initiating system' Export case 'dicomAETitle of destination' WADO-RS case : Secured archive 'User name of logged in user' WADO-RS case : Unsecured archive 'Remote IP address' XDSI Retrieve Imaging Document Set RAD-69 case : Secured archive 'User name of logged in user' XDSI Retrieve Imaging Document Set RAD-69 case : Unsecured archive 'Remote IP address'
UserIsRequestor	M	Q/R Move case 'false' Q/R Get case 'true' Export case 'false' WADO RS case 'true' XDSI Retrieve Imaging Document Set RAD-69 case 'false'
UserIDTypeCode	U	Q/R Move case EV (110119, DCM, 'Station AE Title') Q/R Get case EV (110119, DCM, 'Station AE Title') Export case EV (110119, DCM, 'Station AE Title') WADO RS case : Secured archive EV (113871, DCM, 'Person ID') WADO RS case : Unsecured archive EV (110182, DCM, 'Node ID') XDSI Retrieve Imaging Document Set RAD-69 case : Secured archive EV (113871, DCM, 'Person ID') XDSI Retrieve Imaging Document Set RAD-69 case : Unsecured archive EV (110182, DCM, 'Node ID')
UserTypeCode	U	WADO RS case : Person '1' XDSI Retrieve Imaging Document Set RAD-69 case : Person '1' For all other cases : Application '2'
RoleIDCode	M	EV (110152, DCM, 'Destination')
NetworkAccessPointID	U	Hostname/IP Address of calling host
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Table 7.38: Active Participant : Other

Field Name	Opt	Description
UserID	M	Application entity title of association initiating system
UserIDTypeCode	U	EV (110119, DCM, 'Station AE Title')
UserTypeCode	U	Application '2'
UserIsRequestor	M	true
NetworkAccessPointID	U	Hostname/IP Address of initiating system
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Table 7.39: Active Participant : User

Field Name	Opt	Description
UserID	M	Export case triggered from UI : Secured archive 'User name of logged in user' Export case triggered from UI : Unsecured archive 'Remote IP address'
UserIDTypeCode	U	Secured archive EV (113871, DCM, 'Person ID') Unsecured archive EV (110182, DCM, 'Node ID')
UserTypeCode	U	Person '1'
UserIsRequestor	M	true
NetworkAccessPointID	U	Hostname/IP Address of initiating system
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Table 7.40: Active Participant : Source

Field Name	Opt	Description
UserID	M	<p>Store object case : Triggered by association 'Application entity title of system storing study objects to archive'</p> <p>Store object case : Triggered from UI : Secured Archive 'User name of logged in user'</p> <p>Store object case : Triggered from UI : Unsecured Archive 'Remote IP address'</p> <p>Storage Commitment case : Triggered by association 'Application entity title of association initiating system'</p> <p>Store object case : Triggered from UI : Secured Archive 'User name of logged in user'</p> <p>Store object case : Triggered from UI : Unsecured Archive 'Remote IP address'</p>
UserIDTypeCode	U	<p>Triggered by association EV (110119, DCM, 'Station AE Title')</p> <p>Triggered from UI : Secured archive EV (113871, DCM, 'Person ID')</p> <p>Triggered from UI : Unsecured archive EV (110182, DCM, 'Node ID')</p>
UserTypeCode	U	<p>Triggered from UI : Person '1'</p> <p>Triggered by association : Application '2'</p>
UserIsRequestor	M	true
NetworkAccessPointID	U	Hostname/IP Address of initiating system
NetworkAccessPointTypeCode	U	<p>NetworkAccessPointID is host name '1'</p> <p>NetworkAccessPointID is an IP address '2'</p>

Table 7.41: Participant Object Identification : Study

Field Name	Opt	Description
ParticipantObjectID	M	Study Instance UID or 1.2.40.0.13.1.15.110.3.165.1 if unknown
ParticipantObjectTypeCode	M	System '2'
ParticipantObjectTypeCodeRole	M	Report '3'
ParticipantObjectIDTypeCode	M	EV (110180, DCM, 'Study Instance UID')
ParticipantObjectDetail	U	Base-64 encoded study date if Study has StudyDate(0008,0020) attribute
ParticipantObjectDataLifeCycle	U	Store object case : OriginationCreation '1' Storage Commitment case : Verification '4' For all other cases This field is not present
ParticipantObjectDescription	U	
SOPClass	MC	Sop Class UID and Number of instances with this sop class. eg. <SOP-Class UID='1.2.840.10008.5.1.4.1.1.88.22' NumberOfInstances='4'/>
Accession	U	Accession Number

Table 7.42: Participant Object Identification : Patient

Field Name	Opt	Description
ParticipantObjectID	M	Patient ID or <none> if unknown
ParticipantObjectTypeCode	M	Person '1'
ParticipantObjectTypeCodeRole	M	Patient '1'
ParticipantObjectIDTypeCode	M	EV (2, RFC-3881, 'Patient Number')
ParticipantObjectName	U	Patient Name

Sample Message

C-GET

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↳xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="E" EventDateTime="2017-07-10T12:22:29.
↳457+02:00" EventOutcomeIndicator="0">
    <EventID csd-code="110104" codeSystemName="DCM" originalText="DICOM Instances
↳Transferred"/>
  </EventIdentification>

  <ActiveParticipant UserID="DCM4CHEE" UserTypeCode="2" AlternativeUserID="60928"
↳UserIsRequestor="false" NetworkAccessPointID="localhost" NetworkAccessPointTypeCode=
↳"1">
    <RoleIDCode csd-code="110153" codeSystemName="DCM" originalText="Source"/>
    <UserIDTypeCode csd-code="110119" codeSystemName="DCM" originalText="Station
↳AE Title"/>
  </ActiveParticipant>

  <ActiveParticipant UserID="GETSCU" UserTypeCode="2" UserIsRequestor="true"
↳NetworkAccessPointID="127.0.0.1" NetworkAccessPointTypeCode="2">
    <RoleIDCode csd-code="110152" codeSystemName="DCM" originalText="Destination"/
↳>

```

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```

    <UserIDTypeCode csd-code="110119" codeSystemName="DCM" originalText="Station_
↪AE Title"/>
  </ActiveParticipant>

  <AuditSourceIdentification AuditSourceID="dcm4chee-arc">
    <AuditSourceTypeCode csd-code="4"/>
  </AuditSourceIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="1.3.12.2.1107.5.2.33.37113.
↪30000008060311320917100000013" ParticipantObjectTypeCode="2"
↪ParticipantObjectTypeCodeRole="3">
    <ParticipantObjectIDTypeCode csd-code="110180" originalText="Study Instance_
↪UID" codeSystemName="DCM"/>
    <ParticipantObjectDetail type="StudyDate" value="MjAwODA3MTY="/>
    <ParticipantObjectDescription>
      <SOPClass UID="1.2.840.10008.5.1.4.1.1.88.22" NumberOfInstances="4"/>
      <SOPClass UID="1.2.840.10008.5.1.4.1.1.4" NumberOfInstances="2"/>
    </ParticipantObjectDescription>
  </ParticipantObjectIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="P5^^^ISSUER"
↪ParticipantObjectTypeCode="1" ParticipantObjectTypeCodeRole="1">
    <ParticipantObjectIDTypeCode csd-code="2" originalText="Patient Number"
↪codeSystemName="RFC-3881"/>
    <ParticipantObjectName>TEST^Name</ParticipantObjectName>
  </ParticipantObjectIdentification>
</AuditMessage>

```

IMPAX Reports Import Service

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↪xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="C" EventDateTime="2018-10-22T12:51:49.
↪332+02:00" EventOutcomeIndicator="0">
    <EventID csd-code="110104" codeSystemName="DCM" originalText="DICOM Instances_
↪Transferred"/>
  </EventIdentification>

  <ActiveParticipant UserID="testuser" UserIsRequestor="true" UserTypeCode="1"
↪NetworkAccessPointID="127.0.0.1" NetworkAccessPointTypeCode="2">
    <UserIDTypeCode csd-code="113871" codeSystemName="DCM" originalText="Person"/>
  </ActiveParticipant>

  <ActiveParticipant UserID="https://aps1tln.pacs.ee/AgfaHC.Connectivity.Web.
↪Services/ReportServiceCM.aspx" UserTypeCode="1" UserIsRequestor="true"
↪NetworkAccessPointID="agfa-host" NetworkAccessPointTypeCode="1">
    <RoleIDCode csd-code="110153" codeSystemName="DCM" originalText="Source"/>
    <UserIDTypeCode csd-code="12" codeSystemName="RFC-3881" originalText="URI"/>
  </ActiveParticipant>

  <ActiveParticipant UserID="/dcm4chee-arc/aets/DCM4CHEE/rs/studies/1.113654.1.2001.
↪30/impax/reports" UserTypeCode="2" AlternativeUserID="5373" UserIsRequestor="false"
↪NetworkAccessPointID="localhost" NetworkAccessPointTypeCode="1">
    <RoleIDCode csd-code="110152" codeSystemName="DCM" originalText="Destination"/
↪>

```

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```

    <UserIDTypeCode csd-code="12" codeSystemName="RFC-3881" originalText="URI"/>
  </ActiveParticipant>

  <AuditSourceIdentification AuditSourceID="dcm4chee-arc">
    <AuditSourceTypeCode csd-code="4"/>
  </AuditSourceIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="1.113654.1.2001.30"
  ↳ParticipantObjectTypeCode="2" ParticipantObjectTypeCodeRole="3"
  ↳ParticipantObjectDataLifeCycle="1">
    <ParticipantObjectIDTypeCode csd-code="110180" originalText="Study Instance
  ↳UID" codeSystemName="DCM"/>
    <ParticipantObjectDetail type="StudyDate" value="MjAwMTA0MzA="/>
    <ParticipantObjectDescription>
      <Accession Number="2001C30"/>
      <SOPClass UID="1.2.840.10008.5.1.4.1.1.88.11" NumberOfInstances="1"/>
    </ParticipantObjectDescription>
  </ParticipantObjectIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="CR3^^^SiteA"
  ↳ParticipantObjectTypeCode="1" ParticipantObjectTypeCodeRole="1">
    <ParticipantObjectIDTypeCode csd-code="2" originalText="Patient Number"
  ↳codeSystemName="RFC-3881"/>
    <ParticipantObjectName>CRTHREE^PAUL</ParticipantObjectName>
  </ParticipantObjectIdentification>

</AuditMessage>

```

DICOM Study Deleted

Trigger Events

This message is emitted by the archive when :

- Study is rejected using UI
- Study in an external archive is rejected using UI
- Rejection Notes for all objects of a study are stored to the archive using RAD-66 transaction
- Study is deleted by the scheduler or permanently deleted using UI
- Previous study is deleted on subsequent receive of objects having same SOP IUID but different Study/Series IUID

Message Structure

Table 7.43: Entities in DICOM Study Deleted Audit Message

<i>Event Identification</i>	
<i>Active Participant : Archive application</i>	
<i>Active Participant : Initiator</i>	Not present in Study Deleted by Scheduler case
<i>Audit Source</i>	
<i>Participant Object Identification : Study</i>	
<i>Participant Object Identification : Patient</i>	

Table 7.44: Event Identification

Field Name	Opt	Description
EventID	M	EV (110105, DCM, 'DICOM Study Deleted')
EventActionCode	M	Delete 'D'
EventDateTime	M	The time at which the event occurred
EventOutcomeIndicator	M	Success '0' Minor failure '4'
EventOutcomeDescription	M	Success 'Rejection Code Meaning' Minor failure case 'Rejection Code Meaning + Error/Exception message'

Table 7.45: Active Participant : Archive application

Field Name	Opt	Description
UserID	M	Rejection triggered using association 'Application entity title of Archive Device used in the association' Rejection triggered using archive UI 'Invoked URL' Permanent Deletion of Study using RESTful service 'Invoked URL' Permanent Deletion of Study by scheduler 'Archive device name'
UserIDTypeCode	U	Rejection triggered using association EV (110119, DCM, 'Station AE Title') Rejection triggered from UI EV (12, RFC-3881, 'URI') Permanent Deletion of Study using RESTful service EV (12, RFC-3881, 'URI') Permanent Deletion of Study by scheduler EV (113877, DCM, 'Device Name')
UserTypeCode	U	Application '2'
AlternativeUserID	MC	Process ID of Audit logger
UserIsRequestor	M	Permanent Deletion of Study by scheduler 'true' All other cases 'false'
NetworkAccessPointID	U	Hostname/IP Address of the connection referenced by Audit logger
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Table 7.46: Active Participant : Initiator

Field Name	Opt	Description
UserID	M	<p>Rejection triggered using association 'Application entity title of initiating system'</p> <p>Rejection triggered using UI : Secured Archive 'User name of logged in user'</p> <p>Rejection triggered using UI : Unsecured archive 'Remote IP address'</p> <p>Permanent Deletion using RESTful service : Secured archive 'User name of logged in user'</p> <p>Permanent Deletion using RESTful service : Unsecured archive 'Remote IP address'</p>
UserIDTypeCode	U	<p>Rejection triggered using archive UI (Secured archive) EV (113871, DCM, 'Person ID')</p> <p>Rejection triggered using archive UI (Unsecured archive) EV (110182, DCM, 'Node ID')</p> <p>Rejection triggered using association EV (110119, DCM, 'Station AE Title')</p> <p>Permanent Deletion using RESTful service : Secured archive EV (113871, DCM, 'Person ID')</p> <p>Permanent Deletion using RESTful service : Unsecured archive EV (110182, DCM, 'Node ID')</p>
UserTypeCode	U	<p>Rejection triggered using association : Application '2'</p> <p>All other cases : Person '1'</p>
UserIsRequestor	M	true
NetworkAccessPointID	U	Hostname/IP Address of calling host
NetworkAccessPointTypeCode	U	<p>NetworkAccessPointID is host name '1'</p> <p>NetworkAccessPointID is an IP address '2'</p>

Table 7.47: Participant Object Identification : Study

Field Name	Opt	Description
ParticipantObjectID	M	Study Instance UID or 1.2.40.0.13.1.15.110.3.165.1 if unknown
ParticipantObjectTypeCode	M	System '2'
ParticipantObjectTypeCodeRole	M	Report '3'
ParticipantObjectIDTypeCode	M	EV (110180, DCM, 'Study Instance UID')
ParticipantObjectDetail	U	Base-64 encoded study date if Study has StudyDate(0008,0020) attribute
ParticipantObjectDescription	U	
SOPClass	MC	Sop Class UID and Number of instances with this sop class. eg. <SOP-Class UID='1.2.840.10008.5.1.4.1.1.88.22' NumberOfInstances='4'/>
Accession	U	Accession Number

Table 7.48: Participant Object Identification : Patient

Field Name	Opt	Description
ParticipantObjectID	M	Patient ID or <none> if unknown
ParticipantObjectTypeCode	M	Person '1'
ParticipantObjectTypeCodeRole	M	Patient '1'
ParticipantObjectIDTypeCode	M	EV (2, RFC-3881, 'Patient Number')
ParticipantObjectName	U	Patient Name

Sample Message

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↳xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="D" EventDateTime="2017-07-17T12:17:44.
↳888+02:00" EventOutcomeIndicator="0">
    <EventID csd-code="110105" codeSystemName="DCM" originalText="DICOM Study
↳Deleted"/>
    <EventOutcomeDescription>Data Retention Policy Expired</
↳EventOutcomeDescription>
  </EventIdentification>

  <ActiveParticipant UserID="127.0.0.1" UserTypeCode="1" UserIsRequestor="true"
↳NetworkAccessPointID="127.0.0.1" NetworkAccessPointTypeCode="2">
    <UserIDTypeCode csd-code="110182" codeSystemName="DCM" originalText="Node ID"/
↳>
  </ActiveParticipant>

  <ActiveParticipant UserID="/dcm4chee-arc/aets/DCM4CHEE/rs/studies/2.25.
↳118006535449293656175716160619600634776/reject/113039%5EDCM"
    AlternativeUserID="2716" UserIsRequestor="false"
↳NetworkAccessPointID="localhost" UserTypeCode="2" NetworkAccessPointTypeCode="1">
    <UserIDTypeCode csd-code="12" codeSystemName="RFC-3881" originalText="URI"/
↳>
  </ActiveParticipant>

  <AuditSourceIdentification AuditSourceID="dcm4chee-arc">
    <AuditSourceTypeCode csd-code="4"/>
  </AuditSourceIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="2.25.
↳118006535449293656175716160619600634776"

```

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```

    ParticipantObjectTypeCode="2" ParticipantObjectTypeCodeRole="3">
    <ParticipantObjectIDTypeCode csd-code="110180" originalText="Study Instance_
↪UID" codeSystemName="DCM"/>
    <ParticipantObjectDescription>
        <Accession Number="2008/004113"/>
        <SOPClass UID="1.2.840.10008.5.1.4.1.1" NumberOfInstances="1"/>
    </ParticipantObjectDescription>
</ParticipantObjectIdentification>

    <ParticipantObjectIdentification ParticipantObjectID="P5^^^ISSUER"
↪ParticipantObjectTypeCode="1" ParticipantObjectTypeCodeRole="1">
        <ParticipantObjectIDTypeCode csd-code="2" originalText="Patient Number"
↪codeSystemName="RFC-3881"/>
        <ParticipantObjectName>TEST^Name</ParticipantObjectName>
    </ParticipantObjectIdentification>
</AuditMessage>

```

Query

Trigger Events

This message is emitted by the archive for queries triggered by UI or by C-FIND on following levels :

- Patient
- Study
- Series
- Instance
- Modality Worklist Entry

Message Structure

Table 7.49: Entities in Query Audit Message

<i>Event Identification</i>
<i>Active Participant : Initiator</i>
<i>Active Participant : Archive application</i>
<i>Audit Source</i>
<i>Participant Object Identification : C-FIND Query OR Participant Object Identification : QIDO Query</i>

Table 7.50: Event Identification

Field Name	Opt	Description
EventID	M	EV (110112, DCM, 'Query')
EventActionCode	M	Execute 'E'
EventDateTime	M	The time at which the event occurred
EventOutcomeIndicator	M	Success '0' Minor failure '4'
EventOutcomeDescription	M	Error/Exception message when EventOutcomeIndicator '4'

Table 7.51: Active Participant : Initiator

Field Name	Opt	Description
UserID	M	Triggered by C-FIND 'Calling AE title in association' Triggered from UI : Secured Archive 'User name of logged in user' Triggered from UI : Unsecured Archive 'Remote IP address'
UserIDTypeCode	U	Triggered by C-FIND EV (110119, DCM, 'Station AE Title') Triggered from UI : Secured archive EV (113871, DCM, 'Person ID') Triggered from UI : Unsecured archive EV (110182, DCM, 'Node ID')
UserTypeCode	U	Triggered by C-FIND : Application '2' Triggered from UI : Person '1'
UserIsRequestor	M	true
RoleIDCode	M	EV (110153, DCM, 'Source')
NetworkAccessPointID	U	Hostname/IP Address of calling host
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Table 7.52: Active Participant : Archive application

Field Name	Opt	Description
UserID	M	Triggered by C-FIND 'Called AE title in association' Triggered from UI 'Request URI'
UserIDTypeCode	U	Triggered by C-FIND EV (110119, DCM, 'Station AE Title') Triggered from UI EV (12, RFC-3881, 'URI')
UserTypeCode	U	Application '2'
AlternativeUserID	MC	Process ID of Audit logger
UserIsRequestor	M	false
RoleIDCode	M	EV (110152, DCM, 'Destination')
NetworkAccessPointID	U	Hostname/IP Address of the connection referenced by Audit logger
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Table 7.53: Participant Object Identification : C-FIND Query

Field Name	Opt	Description
ParticipantObjectID	M	For patient query '1.2.840.10008.5.1.4.1.2.1.1' For study/series/instance query '1.2.840.10008.5.1.4.1.2.2.1' For MWL query '1.2.840.10008.5.1.4.31'
ParticipantObjectTypeCode	M	SystemObject '2'
ParticipantObjectTypeCodeRole	M	Report '3'
ParticipantObjectIDTypeCode	M	EV (110181, DCM, 'SOP Class UID')
ParticipantObjectQuery	M	Base64 encoded value of Query keys
ParticipantObjectDetail	MC	Base64 encoded value for ImplicitVRLittleEndian '1.2.840.10008.1.2' 'type=TransferSyntax value=MS4yLjg0MC4xMDAwOC4xLjI='"

Table 7.54: Participant Object Identification : QIDO Query

Field Name	Opt	Description
ParticipantObjectID	M	For patient query 'SearchForPatients' For study query 'SearchForStudies' For series query 'SearchForStudySeries' or 'SearchForSeries' For Instance query 'SearchForInstances' or 'SearchForStudyInstances' or 'SearchForStudySeriesInstances' For MWL query 'SearchForSPS'
ParticipantObjectTypeCode	M	SystemObject '2'
ParticipantObjectTypeCodeRole	M	Query '24'
ParticipantObjectIDTypeCode	M	EV (QIDO, 99DCM4CHEE, 'QIDO_Query')
ParticipantObjectQuery	M	Base64 encoded value of Request URI plus the Query String
ParticipantObjectDetail	MC	Base64 encoded value for 'UTF-8' 'type=QueryEncoding value=VVRGLTg='

Sample Message

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↳xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="E" EventDateTime="2017-07-27T09:12:21.
↳331+02:00" EventOutcomeIndicator="0">
    <EventID csd-code="110112" codeSystemName="DCM" originalText="Query"/>
  </EventIdentification>

  <ActiveParticipant UserID="127.0.0.1" UserTypeCode="1" UserIsRequestor="true"
↳NetworkAccessPointID="127.0.0.1" NetworkAccessPointTypeCode="2">
    <RoleIDCode csd-code="110153" codeSystemName="DCM" originalText="Source"/>
    <UserIDTypeCode csd-code="110182" codeSystemName="DCM" originalText="Node ID"/
↳>
  </ActiveParticipant>

  <ActiveParticipant UserID="/dcm4chee-arc/aets/DCM4CHEE/rs/patients"
↳AlternativeUserID="3390" UserTypeCode="2" UserIsRequestor="false"
↳NetworkAccessPointID="localhost" NetworkAccessPointTypeCode="1">
```

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```

<RoleIDCode csd-code="110152" codeSystemName="DCM" originalText="Destination"/
↔>
  <UserIDTypeCode csd-code="12" codeSystemName="RFC-3881" originalText="URI"/>
</ActiveParticipant>

<AuditSourceIdentification AuditSourceID="dcm4chee-arc">
  <AuditSourceTypeCode csd-code="4"/>
</AuditSourceIdentification>

<ParticipantObjectIdentification ParticipantObjectID="SearchForPatients"
↔ParticipantObjectTypeCode="2" ParticipantObjectTypeCodeRole="24">
  <ParticipantObjectIDTypeCode csd-code="QIDO" originalText="QIDO_Query"
↔codeSystemName="99DCM4CHEE"/>
  <ParticipantObjectQuery>
↔L2RjbTRjaGVlLWFyYy9hZXRzL0RDTRDSEVFL3JzL3BhdG11bnRzaW5jbHVkZWZpZWxkPWFsbCZvZmZzZXQ9MCMZsaW1pdD0yMS
↔</ParticipantObjectQuery>
  <ParticipantObjectDetail type="QueryEncoding" value="VVRGLTg="/>
</ParticipantObjectIdentification>
</AuditMessage>

```

Patient Record

Trigger Events

This message is emitted by the archive whenever :

- Patient is created by UI / HL7 messages / object storage
- Patient record is updated by UI / HL7 message / PDQ Service
- Patient records are deleted by UI / scheduler
- One or more patients are merged by UI / HL7 messages
- HL7 messages (ADT/Order/ORU) accepted (= also not processed) or processed by archive
- HL7 messages (ADT/Order/ORU) forwarded by archive to external HL7 receivers
- Patient created / updated / merged / changePatientID on external archive

Message Structure

Table 7.55: Entities in Patient Record Audit Message

<i>Event: Patient Record</i>	
<i>Active Participant : Initiator</i>	Not present when patient is deleted by the scheduler
<i>Active Participant : Archive application</i>	
<i>Audit Source</i>	
<i>Participant Object Identification : Patient</i>	

Table 7.56: Event: Patient Record

Field Name	Opt	Description
EventID	M	EV (110110, DCM, 'Patient Record')
EventActionCode	M	Create : 'C' Update : 'U' Delete : 'D'
EventDateTime	M	The time at which the event occurred
EventOutcomeIndicator	M	Success : '0' Minor failure : '4'
EventOutcomeDescription	M	Error/Exception message when EventOutcomeIndicator : '4'

Table 7.57: Active Participant : Initiator

Field Name	Opt	Description
UserID	M	HL7 messages : 'Sending Application and Facility' Triggered from UI : 'Remote IP address' or 'User name of logged in user' Triggered by object storage : 'Calling AE title in association'
UserIDTypeCode	U	HL7 messages : EV (HL7APP, 99DCM4CHEE, 'Application and Facility') Triggered from UI (secured archive) : EV (113871, DCM, 'Person ID') Triggered from UI (unsecured archive) : EV (110182, DCM, 'Node ID') Triggered by object storage : EV (110119, DCM, 'Station AE Title')
UserTypeCode	U	Triggered from UI : Person : '1' All other cases : Application : '2'
UserIsRequestor	M	true
RoleIDCode	M	EV (110153, DCM, 'Source')
NetworkAccessPointID	U	Hostname/IP Address of calling host
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name : '1' NetworkAccessPointID is an IP address : '2'

Table 7.58: Active Participant : Archive application

Field Name	Opt	Description
UserID	M	HL7 messages : 'Receiving Application and Facility' Triggered from UI : 'Request URI' Triggered by object storage : 'Called AE title in association' Triggered by scheduler : 'Archive device name'
UserIDTypeCode	U	HL7 messages : EV (HL7APP, 99DCM4CHEE, 'Application and Facility') Triggered from UI : EV (12, RFC-3881, 'URI') Triggered by object storage : EV (110119, DCM, 'Station AE Title') Triggered by scheduler : EV (113877, DCM, 'Device Name')
UserTypeCode	U	Application : '2'
AlternativeUserID	MC	Process ID of Audit logger
UserIsRequestor	M	Patient deletion triggered by scheduler : 'true' All other cases : 'false'
RoleIDCode	M	EV (110152, DCM, 'Destination')
NetworkAccessPointID	U	Hostname/IP Address of the connection referenced by Audit logger
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name : '1' NetworkAccessPointID is an IP address : '2'

Table 7.59: Participant Object Identification : Patient

Field Name	Opt	Description	Note
ParticipantObjectID	M	Patient ID or <none> if unknown	
ParticipantObjectTypeCode	M	Person : '1'	
ParticipantObjectTypeCodeRole	M	Patient : '1'	
ParticipantObjectIDTypeCode	M	EV (2, RFC-3881, 'Patient Number')	
ParticipantObjectName	U	Patient Name	
ParticipantObjectDataLifeCycle	U	Verification '4'	Present only for audits triggered by PDQ Service
ParticipantObjectDetail	U	If Patient record created/updated/deleted by HL7 messages : 'type=HL7v2 value=<Base-64 encoded HL7 message>'	
ParticipantObjectDetail	U	If Patient record created/updated/deleted by HL7 messages : 'type=HL7v2 value=<Base-64 encoded HL7 response>'	

Sample Message

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↳xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="C" EventDateTime="2018-09-11T11:43:05.
↳007+02:00" EventOutcomeIndicator="0">
    <EventID csd-code="110110" codeSystemName="DCM" originalText="Patient Record"/
↳>
  </EventIdentification>

  <ActiveParticipant UserID="DCM4CHEE|DCM4CHEE" AlternativeUserID="9132"
↳UserIsRequestor="false" UserTypeCode="2" NetworkAccessPointID="localhost"
↳NetworkAccessPointTypeCode="1">
    <RoleIDCode csd-code="110152" codeSystemName="DCM" originalText="Destination
↳Role ID"/>
    <UserIDTypeCode csd-code="HL7APP" codeSystemName="99DCM4CHEE" originalText=
↳"Application and Facility"/>
  </ActiveParticipant>

  <ActiveParticipant UserID="PAMSimulator|IHE" UserIsRequestor="true" UserTypeCode=
↳"2" NetworkAccessPointID="localhost" NetworkAccessPointTypeCode="1">
    <RoleIDCode csd-code="110153" codeSystemName="DCM" originalText="Source Role
↳ID"/>
    <UserIDTypeCode csd-code="HL7APP" codeSystemName="99DCM4CHEE" originalText=
↳"Application and Facility"/>
  </ActiveParticipant>

  <AuditSourceIdentification AuditSourceID="dcm4chee-arc">
    <AuditSourceTypeCode csd-code="4"/>
  </AuditSourceIdentification>
```

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```

<ParticipantObjectIdentification ParticipantObjectID="MEE4-54798^^^MEE4&1.3.6.1.4.
↪1.12559.11.1.4.1.2&ISO^PI" ParticipantObjectTypeCode="1"
↪ParticipantObjectTypeCodeRole="1">
  <ParticipantObjectIDTypeCode csd-code="2" originalText="Patient Number"
↪codeSystemName="RFC-3881"/>
  <ParticipantObjectName>Berger^Oliver^^^^L</ParticipantObjectName>
  <ParticipantObjectDetail type="HL7v2 Message" value=
↪"TVNIfF5+XCZ8UEFNu21tdWxhdG9yfe1IRXxEQ000Q0hFRXxEQ000Q0hFRXwyMDE2MDYwMjE0Mjg1Nnx8QURUXkEyOF5BRFRfQ
↪"/>
  <ParticipantObjectDetail type="HL7v2 Message" value=
↪"TVNIfF5+XCZ8RENNNENIRUV8RENNNENIRUV8UEFNu21tdWxhdG9yfe1IRXwyMDE4MDkxMTExNDMwNC4yNzR8fEFDS15BMjheQ
↪"/>
  </ParticipantObjectIdentification>
</AuditMessage>

```

Procedure Record

Trigger Events

This message is emitted by the archive whenever :

- Modality worklist entry is created by UI / HL7 Order messages
- Modality worklist entry is updated by UI / HL7 Order messages / incoming MPPS
- Modality worklist entry is deleted by UI
- MPPS received by archive
- MPPS forwarded by archive to external MPPS SCP
- HL7 messages forwarded by archive to external HL7 receivers
- HL7 Order messages accepted (= also not processed) by archive
- Link Instances with MWL Entry using UI
- SPS Status of MWL items of a patient changed from SCHEDULED to ARRIVED on receive of Patient Arrival (ADT^A10) HL7 message.

Message Structure

Table 7.60: Entities in Procedure Record Audit Message

<i>Event Identification</i>
<i>Active Participant : Source</i>
<i>Active Participant : Archive application</i>
<i>Audit Source</i>
<i>Participant Object Identification : Study</i>
<i>Participant Object Identification : Patient</i>

Table 7.61: Event Identification

Field Name	Opt	Description
EventID	M	EV (110111, DCM, 'Procedure Record')
EventActionCode	M	Create 'C' Update 'U' Delete 'D'
EventDateTime	M	The time at which the event occurred
EventOutcomeIndicator	M	Success '0' Minor failure '4'
EventOutcomeDescription	M	Error/Exception message when EventOutcomeIndicator '4'

Table 7.62: Active Participant : Source

Field Name	Opt	Description
UserID	M	HL7 messages 'Sending Application and Facility' Triggered from UI 'Remote IP address' or 'User name of logged in user' Triggered by MPPS 'Calling AE title in association'
UserIDTypeCode	U	HL7 messages EV (HL7APP, 99DCM4CHEE, 'Application and Facility') Triggered from UI (secured archive) EV (113871, DCM, 'Person ID') Triggered from UI (unsecured archive) EV (110182, DCM, 'Node ID') Triggered by MPPS EV (110119, DCM, 'Station AE Title')
UserTypeCode	U	Triggered from UI : Person '1' All other cases : Application '2'
UserIsRequestor	M	true
NetworkAccessPointID	U	Hostname/IP Address of calling host
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Table 7.63: Active Participant : Archive application

Field Name	Opt	Description
UserID	M	HL7 messages 'Receiving Application and Facility' Triggered from UI 'Request URI' Triggered by MPPS 'Called AE title in association'
UserIDTypeCode	U	HL7 messages EV (HL7APP, 99DCM4CHEE, 'Application and Facility') Triggered from UI EV (12, RFC-3881, 'URI') Triggered by MPPS EV (110119, DCM, 'Station AE Title')
UserTypeCode	U	Application '2'
AlternativeUserID	MC	Process ID of Audit logger
UserIsRequestor	M	false
NetworkAccessPointID	U	Hostname/IP Address of the connection referenced by Audit logger
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Table 7.64: Participant Object Identification : Study

Field Name	Opt	Description
ParticipantObjectID	M	Study Instance UID or 1.2.40.0.13.1.15.110.3.165.1 if unknown
ParticipantObjectTypeCode	M	System '2'
ParticipantObjectTypeCodeRole	M	Report '3'
ParticipantObjectIDTypeCode	M	EV (110180, DCM, 'Study Instance UID')
ParticipantObjectDetail	U	Base-64 encoded study date if Study has StudyDate(0008,0020) attribute
ParticipantObjectDetail	U	If Procedure record created/updated by HL7 messages : 'type=HL7v2 value=<Base-64 encoded HL7 message>'
ParticipantObjectDetail	U	If Procedure record created/updated by HL7 messages : 'type=HL7v2 value=<Base-64 encoded HL7 response>'
ParticipantObjectDescription	U	
SOPClass	MC	Sop Class UID and Number of instances with this sop class. eg. <SOP-Class UID='1.2.840.10008.5.1.4.1.1.88.22' NumberOfInstances='4'/>
Accession	U	Accession Number

Table 7.65: Participant Object Identification : Patient

Field Name	Opt	Description
ParticipantObjectID	M	Patient ID or <none> if unknown
ParticipantObjectTypeCode	M	Person '1'
ParticipantObjectTypeCodeRole	M	Patient '1'
ParticipantObjectIDTypeCode	M	EV (2, RFC-3881, 'Patient Number')
ParticipantObjectName	U	Patient Name

Sample Message

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↳xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="C" EventDateTime="2018-09-12T12:48:59+02:00
↳" EventOutcomeIndicator="0">
    <EventID csd-code="110111" codeSystemName="DCM" originalText="Procedure Record
↳"/>
  </EventIdentification>

  <ActiveParticipant UserID="MESA_OF|XYZ_RADIOLOGY" UserIsRequestor="true"
↳UserTypeCode="2" NetworkAccessPointID="localhost" NetworkAccessPointTypeCode="1">
    <UserIDTypeCode csd-code="HL7APP" codeSystemName="99DCM4CHEE" originalText=
↳"Application and Facility"/>
  </ActiveParticipant>

  <ActiveParticipant UserID="MESA_IM|XYZ_IMAGE_MANAGER" AlternativeUserID="18494"
↳UserIsRequestor="false" UserTypeCode="2" NetworkAccessPointID="localhost"
↳NetworkAccessPointTypeCode="1">
    <UserIDTypeCode csd-code="HL7APP" codeSystemName="99DCM4CHEE" originalText=
↳"Application and Facility"/>
  </ActiveParticipant>

  <AuditSourceIdentification AuditSourceID="dcm4chee-arc">
    <AuditSourceTypeCode csd-code="4"/>
  </AuditSourceIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="1.2.4.0.13.1.432252867.
↳1552647.1" ParticipantObjectTypeCode="2" ParticipantObjectTypeCodeRole="3">
    <ParticipantObjectIDTypeCode csd-code="110180" originalText="Study Instance
↳UID" codeSystemName="DCM"/>
    <ParticipantObjectDetail type="HL7v2 Message" value=
↳"TVNIfF5+XCZ8TUVTQV9PrnxYVWpfUkFESU9MT0dZfE1FU0FfSU18WFlax01NQudFX01BTkFHRVJ8MjAxNjA1MTEyNTEyYjFhXzU1
↳"/>
    <ParticipantObjectDetail type="HL7v2 Message" value=
↳"TVNIfF5+XCZ8TUVTQV9JTXxYVWpfSU1BR0VfTUFOQUdFUnxNRVNBX09GfFhZW19SQRJT0xPR118MjAxODA5MTIxMjQ0NTguMTI
↳"/>
    <ParticipantObjectDescription>
      <Accession Number="$ACCESSION_NUMBER$"/>
    </ParticipantObjectDescription>
  </ParticipantObjectIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="M4001^^^ADT1"
↳ParticipantObjectTypeCode="1" ParticipantObjectTypeCodeRole="1">
```

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```

        <ParticipantObjectTypeCode csd-code="2" originalText="Patient Number"
↳codeSystemName="RFC-3881" />
        <ParticipantObjectName>KING^MARTIN</ParticipantObjectName>
    </ParticipantObjectIdentification>
</AuditMessage>

```

Security Alert

Trigger Events

This message is emitted by the archive in following cases :

- Connection Events Failure : Node authentication failure when establishing a secure communications channel.
- Connection Events Failure : TCP Connection to remote hosts failure.
- Association Events Failure : Associations rejected by Archive.
- Association Events Failure : Association initiation to remote AEs failed.
- Software Configuration changes done over the UI.
- One or more task(s) or queue message(s) were canceled, rescheduled or deleted using Monitoring page of Archive UI.
- One or more queue message(s) were purged/deleted using scheduler.
- If a super user logs in or logs out of secured Archive UI.
- If any user updates his/her password using secured Archive UI.
- If any user with administration rights performs actions within Keycloak admin console

Message Structure

Table 7.66: Entities in Security Alert Audit Message

<i>Event Identification</i>	
<i>Active Participant: Source</i>	
<i>Active Participant: Archive application</i>	
<i>Audit Source</i>	
<i>Participant Object Identification</i>	Present only in Software Configuration changes case
<i>Participant Object Identification</i>	Present only in Cancel/Reschedule/Delete task case
<i>Participant Object Identification</i>	Present only in Cancel/Reschedule/Delete tasks case
<i>Participant Object Identification</i>	Present only if Keycloak admin user performs actions within admin console
<i>Participant Object Identification : Study</i>	Present only impax mismatch case
<i>Participant Object Identification : Patient</i>	Present only impax mismatch case

Table 7.67: Event Identification

Field Name	Opt	Description
EventID	M	EV (110113, DCM, 'Security Alert')
EventActionCode	M	Execute 'E'
EventDateTime	M	The time at which the event occurred
EventOutcomeIndicator	M	Success '0' Minor failure '4'
EventOutcomeDescription	M	Error/Exception message when EventOutcomeIndicator '4'
EventTypeCode	M	<p>Connection Events Failure case DT (110126, DCM, 'Node Authentication')</p> <p>Association Events Failure case DT (ASSOCIATION-FAILURE, 99DCM4CHEE, 'Association Failure')</p> <p>Software Configuration Changes case DT (110131, DCM, 'Software Configuration')</p> <p>Super User Login case DT (110127, DCM, 'Emergency Override Started')</p> <p>Super User Logout case DT (110138, DCM, 'Emergency Override Stopped')</p> <p>User Password update case DT (110137, DCM, 'User security Attributes Changed')</p> <p>Cancel Task(s) case DT (CANCEL, 99DCM4CHEE, 'Cancel Task')</p> <p>Reschedule Task(s) case DT (RESCHEDULE, 99DCM4CHEE, 'Reschedule Task')</p> <p>Delete Task(s) case DT (DELETE, 99DCM4CHEE, 'Delete Task')</p> <p>Keycloak admin event Operation Type as CREATE, UPDATE or DELETE DT (110129, DCM, 'Security Configuration')</p> <p>Keycloak admin event Operation Type as CREATE and Resource Type as REALM_ROLE_MAPPING or CLIENT_ROLE_MAPPING DT (110136, DCM, 'Security Roles Changed')</p> <p>Keycloak admin event Operation Type as UPDATE and Resource Type as USER DT (110137, DCM, 'Security Attributes Changed')</p>

Table 7.68: Active Participant: Source

Field Name	Opt	Description
UserID	M	<p>Connection Events Failure case Remote socket address of calling host</p> <p>Association Events Failure case 'AE title of remote side used in association'</p> <p>Super user login or logout using Secured archive 'User name of logged in user'</p> <p>Password Update of User using Secured archive 'User name of logged in user'</p> <p>Keycloak admin user performs any action in admin console 'User name of logged in user'</p> <p>Cancel, Reschedule or Delete Task(s) : Secured archive 'User name of logged in user'</p> <p>Cancel, Reschedule or Delete Task(s) : Unsecured archive 'Remote IP address'</p> <p>Software configuration changes done over UI : Secured archive 'User name of logged in user'</p> <p>Software configuration changes done over UI : Unsecured archive 'Remote IP address'</p>
UserIDTypeCode	U	<p>Connection Events Failure case EV (110182, DCM, 'Node ID')</p> <p>Association Events Failure EV (110119, DCM, 'Station AE Title')</p> <p>Super user login or logout using Secured archive EV (113871, DCM, 'Person ID')</p> <p>Password Update of User using Secured archive EV (113871, DCM, 'Person ID')</p> <p>Cancel, Reschedule or Delete Task(s) : Secured archive EV (113871, DCM, 'Person ID')</p> <p>Cancel, Reschedule or Delete Task(s) : Unsecured archive EV (110182, DCM, 'Node ID')</p> <p>Software configuration changes done over UI : Secured archive EV (113871, DCM, 'Person ID')</p> <p>Software configuration changes done over UI : Unsecured archive EV (110182, DCM, 'Node ID')</p>
UserTypeCode	U	<p>Person '1'</p>
UserIsRequestor	M	<p>true</p>
NetworkAccessPointID	U	<p>Hostname/IP Address of calling host</p>
NetworkAccessPointTypeCode	U	<p>NetworkAccessPointID is host name '1'</p> <p>NetworkAccessPointID is an IP address '2'</p>

Table 7.69: Active Participant: Archive application

Field Name	Opt	Description
UserID	M	Association Events Failure case AE title of Archive used in Association Cancel, Reschedule or Delete Task(s) and Software Configuration Changes case RESTful service invoked of Archive Keycloak admin user performs any action in admin console Keycloak device name For all other cases Archive device name
UserIDTypeCode	U	Association Events Failure case EV (110119, DCM, 'Station AE Title') Cancel, Reschedule or Delete Task(s) and Software Configuration Changes case EV (12, RFC-3881, 'URI') For all other cases EV (113877, DCM, 'Device Name')
UserTypeCode	U	Application '2'
AlternativeUserID	MC	Process ID of Audit logger
UserIsRequestor	M	false
NetworkAccessPointID	U	Hostname/IP Address of the connection referenced by Audit logger
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Table 7.70: Participant Object Identification

Field Name	Opt	Description
ParticipantObjectID	M	Name of device being created/updated/deleted
ParticipantObjectTypeCode	M	SystemObject '2'
ParticipantObjectIDTypeCode	M	EV (113877, DCM, 'Device Name')
ParticipantObjectDetail	M	'type=Alert Description value=<Base-64 encoded software configuration changes>'

Table 7.71: Participant Object Identification

Field Name	Opt	Description
ParticipantObjectID	M	JMS Message ID of the canceled/rescheduled/deleted task
ParticipantObjectTypeCode	M	SystemObject '2'
ParticipantObjectIDTypeCode	M	EV (TASK, 99DCM4CHEE, 'Archive Task')
ParticipantObjectDetail	M	'type=Task value=<Base-64 encoded complete queue message>'

Table 7.72: Participant Object Identification

Field Name	Opt	Description
ParticipantObjectID	M	CancelTasks or RescheduleTasks or DeleteTasks
ParticipantObjectTypeCode	M	SystemObject '2'
ParticipantObjectIDTypeCode	M	EV (TASKS, 99DCM4CHEE, 'Archive Tasks')
ParticipantObjectDetail	M	'type=Count value=<Base-64 encoded count of total Canceled/Rescheduled/Deleted tasks> If filter(s) set on service invoke 'type=Filters value=<Base-64 encoded query params used for Cancel/Reschedule/Delete tasks service>'

Table 7.73: Participant Object Identification

Field Name	Opt	Description
ParticipantObjectID	M	Name of Keycloak device
ParticipantObjectTypeCode	M	SystemObject '2'
ParticipantObjectIDTypeCode	M	EV (113877, DCM, 'Device Name')
ParticipantObjectDetail	M	'type=Alert Description value=<Base-64 encoded Representation and Resource Path changes returned by Keycloak>'

Table 7.74: Participant Object Identification : Study

Field Name	Opt	Description
ParticipantObjectID	M	Study Instance UID or 1.2.40.0.13.1.15.110.3.165.1 if unknown
ParticipantObjectTypeCode	M	System '2'
ParticipantObjectTypeCodeRole	M	Report '3'
ParticipantObjectIDTypeCode	M	EV (110180, DCM, 'Study Instance UID')
ParticipantObjectDetail	U	Base-64 encoded study date if Study has <i>StudyDate(0008,0020)</i> attribute
ParticipantObjectDataLifeCycle	U	OriginationCreation '1'
ParticipantObjectDescription	U	
SOPClass	MC	Sop Class UID and Number of instances with this sop class. eg. <SOP-Class UID='1.2.840.10008.5.1.4.1.1.88.22' NumberOfInstances='4'/>
Accession	U	Accession Number

Table 7.75: Participant Object Identification : Patient

Field Name	Opt	Description
ParticipantObjectID	M	Patient ID or <none> if unknown
ParticipantObjectTypeCode	M	Person '1'
ParticipantObjectTypeCodeRole	M	Patient '1'
ParticipantObjectIDTypeCode	M	EV (2, RFC-3881, 'Patient Number')
ParticipantObjectName	U	Patient Name

Sample Message

Connection Events Failure

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↳xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="E" EventDateTime="2016-06-17T10:35:49.
↳560+02:00" EventOutcomeIndicator="4">
    <EventID csd-code="110113" codeSystemName="DCM" originalText="Node
↳Authentication"/>
    <EventOutcomeDescription>null cert chain</EventOutcomeDescription>
  </EventIdentification>

  <ActiveParticipant UserID="/127.0.0.1:54404" UserTypeCode="1" UserIsRequestor=
↳"true" NetworkAccessPointID="/127.0.0.1:54404" NetworkAccessPointTypeCode="2">
    <UserIDTypeCode csd-code="110182" codeSystemName="DCM" originalText="Node ID"/
↳>
  </ActiveParticipant>

  <ActiveParticipant UserID="dcm4chee-arc" UserTypeCode="2" AlternativeUserID="3390
↳" UserIsRequestor="false" NetworkAccessPointID="localhost"
↳NetworkAccessPointTypeCode="1">
    <UserIDTypeCode csd-code="113877" codeSystemName="DCM" originalText="Device
↳Name"/>
  </ActiveParticipant>

  <AuditSourceIdentification AuditSourceID="dcm4chee-arc">
    <AuditSourceTypeCode csd-code="4"/>
  </AuditSourceIdentification>

</AuditMessage>
```

Associations Events Failure

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↳xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="E" EventDateTime="2018-10-23T15:33:19.
↳804+02:00" EventOutcomeIndicator="4">
    <EventID csd-code="110113" codeSystemName="DCM" originalText="Security Alert"/
↳>
    <EventTypeCode csd-code="ASSOCIATION-FAILURE" codeSystemName="99DCM4CHEE"
↳originalText="Association Failure"/>
    <EventOutcomeDescription>A-ASSOCIATE-RJ[result: 1 - rejected-permanent,
↳source: 1 - service-user, reason: 3 - calling-AE-title-not-recognized]</
↳EventOutcomeDescription>
  </EventIdentification>

  <ActiveParticipant UserID="STGCMTSCU1" UserIsRequestor="true" UserTypeCode="2"
↳NetworkAccessPointID="localhost" NetworkAccessPointTypeCode="1">
    <UserIDTypeCode csd-code="110119" codeSystemName="DCM" originalText="Station
↳AE Title"/>
  </ActiveParticipant>
```

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```

    <ActiveParticipant UserID="DCM4CHEE" UserIsRequestor="false" UserTypeCode="2"
    ↪NetworkAccessPointID="localhost" NetworkAccessPointTypeCode="1">
      <UserIDTypeCode csd-code="110119" codeSystemName="DCM" originalText="Station
    ↪AE Title"/>
    </ActiveParticipant>

    <AuditSourceIdentification AuditSourceID="dcm4chee-arc">
      <AuditSourceTypeCode csd-code="4"/>
    </AuditSourceIdentification>

</AuditMessage>

```

Software Configuration Changes

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    ↪xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

    <EventIdentification EventActionCode="E" EventDateTime="2017-09-22T10:35:49+02:00
    ↪EventOutcomeIndicator="0">
      <EventID csd-code="110113" codeSystemName="DCM" originalText="Security Alert"/
    ↪>
      <EventTypeCode csd-code="110131" codeSystemName="DCM" originalText="Software
    ↪Configuration"/>
    </EventIdentification>

    <ActiveParticipant UserID="/dcm4chee-arc/devices/dcm4chee-arc" UserIsRequestor=
    ↪"false" UserTypeCode="2" NetworkAccessPointID="localhost"
    ↪NetworkAccessPointTypeCode="1">
      <UserIDTypeCode csd-code="12" codeSystemName="RFC-3881" originalText="URI"/>
    </ActiveParticipant>

    <ActiveParticipant UserID="127.0.0.1" UserIsRequestor="true" UserTypeCode="1"
    ↪NetworkAccessPointID="127.0.0.1" NetworkAccessPointTypeCode="2">
      <UserIDTypeCode csd-code="110182" codeSystemName="DCM" originalText="Node ID"/
    ↪>
    </ActiveParticipant>

    <AuditSourceIdentification AuditSourceID="dcm4chee-arc">
      <AuditSourceTypeCode csd-code="4"/>
    </AuditSourceIdentification>

    <ParticipantObjectIdentification ParticipantObjectID="dcm4chee-arc"
    ↪ParticipantObjectTypeCode="2">
      <ParticipantObjectIDTypeCode csd-code="113877" originalText="Device Name"
    ↪codeSystemName="DCM"/>
      <ParticipantObjectDetail type="Alert Description" value=
    ↪"VSBkaWNvbURldmljZU5hbWU9ZGNtNGNoZWUuYXJjLGNuPURldmljZXMsY249RElDT00gQ29uZmlndXJhdGlvbiixkYz1kY200Y
    ↪"/>
    </ParticipantObjectIdentification>

</AuditMessage>

```

User Password Update

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    ↪xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

```

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```

<EventIdentification EventActionCode="E" EventDateTime="2018-09-18T17:42:55.
↪226+02:00" EventOutcomeIndicator="0">
  <EventID csd-code="110113" codeSystemName="DCM" originalText="Security Alert"/
↪>
  <EventTypeCode csd-code="110137" codeSystemName="DCM" originalText="User_
↪security Attributes Changed"/>
  </EventIdentification>

  <ActiveParticipant UserID="admin" UserIsRequestor="true" UserTypeCode="1"
↪NetworkAccessPointID="127.0.0.1" NetworkAccessPointTypeCode="2">
    <UserIDTypeCode csd-code="113871" codeSystemName="DCM" originalText="Person ID
↪"/>
  </ActiveParticipant>

  <ActiveParticipant UserID="dcm4chee-arc" AlternativeUserID="31064"
↪UserIsRequestor="false" UserTypeCode="2" NetworkAccessPointID="localhost"
↪NetworkAccessPointTypeCode="1">
    <UserIDTypeCode csd-code="113877" codeSystemName="DCM" originalText="Device_
↪Name"/>
  </ActiveParticipant>

  <AuditSourceIdentification AuditSourceID="dcm4chee-arc">
    <AuditSourceTypeCode csd-code="4"/>
  </AuditSourceIdentification>

</AuditMessage>

```

Super User Login

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↪xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="E" EventDateTime="2018-09-18T17:42:55.
↪226+02:00" EventOutcomeIndicator="0">
    <EventID csd-code="110113" codeSystemName="DCM" originalText="Security Alert"/
↪>
    <EventTypeCode csd-code="110127" codeSystemName="DCM" originalText="Emergency_
↪Override Started"/>
  </EventIdentification>

  <ActiveParticipant UserID="admin" UserIsRequestor="true" UserTypeCode="1"
↪NetworkAccessPointID="127.0.0.1" NetworkAccessPointTypeCode="2">
    <UserIDTypeCode csd-code="113871" codeSystemName="DCM" originalText="Person ID
↪"/>
  </ActiveParticipant>

  <ActiveParticipant UserID="dcm4chee-arc" AlternativeUserID="31064"
↪UserIsRequestor="false" UserTypeCode="2" NetworkAccessPointID="localhost"
↪NetworkAccessPointTypeCode="1">
    <UserIDTypeCode csd-code="113877" codeSystemName="DCM" originalText="Device_
↪Name"/>
  </ActiveParticipant>

  <AuditSourceIdentification AuditSourceID="dcm4chee-arc">
    <AuditSourceTypeCode csd-code="4"/>
  </AuditSourceIdentification>

```

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```

</AuditSourceIdentification>
</AuditMessage>

```

Cancel Export Task

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">
  <EventIdentification EventActionCode="E" EventDateTime="2018-01-29T13:54:56.
    838+01:00" EventOutcomeIndicator="0">
    <EventID csd-code="110113" codeSystemName="DCM" originalText="Security Alert"/>
    <EventTypeCode csd-code="CANCEL" codeSystemName="99DCM4CHEE" originalText="
    Cancel Message"/>
  </EventIdentification>
  <ActiveParticipant UserID="127.0.0.1" UserIsRequestor="true" UserTypeCode="1"
    NetworkAccessPointID="127.0.0.1" NetworkAccessPointTypeCode="2">
    <UserIDTypeCode csd-code="110182" codeSystemName="DCM" originalText="Node ID"/>
  </ActiveParticipant>
  <ActiveParticipant UserID="/dcm4chee-arc/monitor/export/51/cancel"
    UserIsRequestor="false" UserTypeCode="2" NetworkAccessPointID="localhost"
    NetworkAccessPointTypeCode="1">
    <UserIDTypeCode csd-code="12" codeSystemName="RFC-3881" originalText="URI"/>
  </ActiveParticipant>
  <AuditSourceIdentification AuditSourceID="dcm4chee-arc">
    <AuditSourceTypeCode csd-code="4"/>
  </AuditSourceIdentification>
  <ParticipantObjectIdentification ParticipantObjectID="ID:fb45eabd-04f2-11e8-8a74-
    7c5cf82aac4c" ParticipantObjectTypeCode="2">
    <ParticipantObjectIDTypeCode csd-code="TASK" originalText="Archive Task"
    codeSystemName="99DCM4CHEE"/>
    <ParticipantObjectDetail type="Task" value="
    eyJpZCI6Ik1EOMZiNDVlYWJkLTA0ZjItMTFfL0C04YTc0LTdjNWNmODJhYWMOYyIsInF1ZXVlIjoiriXhwb3JOMSI6InByaW9ya2"
    />
  </ParticipantObjectIdentification>
</AuditMessage>

```

Delete Export Tasks

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">
  <EventIdentification EventActionCode="E" EventDateTime="2018-10-24T17:06:24.
    727+02:00" EventOutcomeIndicator="0">
    <EventID csd-code="110113" codeSystemName="DCM" originalText="Security Alert"/>
    <EventTypeCode csd-code="DELETE" codeSystemName="99DCM4CHEE" originalText="
    Delete Task"/>
  </EventIdentification>
</AuditMessage>

```

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```

</EventIdentification>

<ActiveParticipant UserID="127.0.0.1" UserIsRequestor="true" UserTypeCode="1"
↳NetworkAccessPointID="127.0.0.1" NetworkAccessPointTypeCode="2">
  <UserIDTypeCode csd-code="110182" codeSystemName="DCM" originalText="Node ID"/
↳>
</ActiveParticipant>

<ActiveParticipant UserID="/dcm4chee-arc/monitor/export" UserIsRequestor="false"
↳UserTypeCode="2" NetworkAccessPointID="localhost" NetworkAccessPointTypeCode="1">
  <UserIDTypeCode csd-code="12" codeSystemName="RFC-3881" originalText="URI"/>
</ActiveParticipant>

<AuditSourceIdentification AuditSourceID="dcm4chee-arc">
  <AuditSourceTypeCode csd-code="4"/>
</AuditSourceIdentification>

<ParticipantObjectIdentification ParticipantObjectID="DeleteTasks"
↳ParticipantObjectTypeCode="2">
  <ParticipantObjectIDTypeCode csd-code="TASKS" originalText="Archive Tasks"
↳codeSystemName="99DCM4CHEE"/>
  <ParticipantObjectDetail type="Filters" value="c3RhdHVzPUNPTVBMRVRFRA==" />
  <ParticipantObjectDetail type="Count" value="Mg==" />
</ParticipantObjectIdentification>

</AuditMessage>

```

Keycloak Admin Event

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↳xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="E" EventDateTime="2018-10-29T14:39:19.
↳406+01:00" EventOutcomeIndicator="0">
    <EventID csd-code="110113" codeSystemName="DCM" originalText="Security Alert"/
↳>
    <EventTypeCode csd-code="110129" codeSystemName="DCM" originalText="Security
↳Configuration"/>
    <EventOutcomeDescription>CREATE CLIENT</EventOutcomeDescription>
  </EventIdentification>

  <ActiveParticipant UserID="admin" UserIsRequestor="true" UserTypeCode="1"
↳NetworkAccessPointID="127.0.0.1" NetworkAccessPointTypeCode="2">
    <UserIDTypeCode csd-code="113871" codeSystemName="DCM" originalText="Person ID
↳"/>
  </ActiveParticipant>

  <ActiveParticipant UserID="keycloak" AlternativeUserID="17431" UserIsRequestor=
↳"false" UserTypeCode="2" NetworkAccessPointID="localhost"
↳NetworkAccessPointTypeCode="1">
    <UserIDTypeCode csd-code="113877" codeSystemName="DCM" originalText="Device
↳Name"/>
  </ActiveParticipant>

  <AuditSourceIdentification AuditSourceID="keycloak">
    <AuditSourceTypeCode csd-code="4"/>

```

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```

</AuditSourceIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="keycloak"
↳ParticipantObjectTypeCode="2">
    <ParticipantObjectIDTypeCode csd-code="113877" originalText="Device Name"
↳codeSystemName="DCM"/>
    <ParticipantObjectDetail type="Alert Description" value=
↳"UmVwcmVzZW50YXRpb246IHsiY2xpZW50SWQ0IiwiZWN0IiwizW5hYmxlZCI6dHJ1ZSwicmVkaXJlY3RVcmllZjpbXSwicHJvd
↳"/>
  </ParticipantObjectIdentification>
</AuditMessage>

```

IMPAX Reports Import Service

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↳xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="E" EventDateTime="2018-10-23T10:14:46.
↳381+02:00" EventOutcomeIndicator="4">
    <EventID csd-code="110113" codeSystemName="DCM" originalText="Security Alert"/
↳>
    <EventTypeCode csd-code="IMPAXREP_PATDIFF" codeSystemName="99DCM4CHEE"
↳originalText="Patient in IMPAX Report does not match Patient of Study in VNA"/>
    <EventOutcomeDescription>Patient in IMPAX Report does not match Patient of
↳Study in VNA</EventOutcomeDescription>
  </EventIdentification>

  <ActiveParticipant UserID="testuser" UserIsRequestor="true" UserTypeCode="1"
↳NetworkAccessPointID="127.0.0.1" NetworkAccessPointTypeCode="2">
    <UserIDTypeCode csd-code="113871" codeSystemName="DCM" originalText="Person"/>
  </ActiveParticipant>

  <ActiveParticipant UserID="https://aps1tln.pacs.ee/AgfaHC.Connectivity.Web.
↳Services/ReportServiceCM.aspx" UserTypeCode="1" UserIsRequestor="true"
↳NetworkAccessPointID="agfa-host" NetworkAccessPointTypeCode="1">
    <UserIDTypeCode csd-code="12" codeSystemName="RFC-3881" originalText="URI"/>
  </ActiveParticipant>

  <ActiveParticipant UserID="/dcm4chee-arc/aets/DCM4CHEE/rs/studies/1.113654.1.2001.
↳30/impax/reports" UserTypeCode="2" AlternativeUserID="5373" UserIsRequestor="false"
↳NetworkAccessPointID="localhost" NetworkAccessPointTypeCode="1">
    <UserIDTypeCode csd-code="12" codeSystemName="RFC-3881" originalText="URI"/>
  </ActiveParticipant>

  <AuditSourceIdentification AuditSourceID="keycloak">
    <AuditSourceTypeCode csd-code="4"/>
  </AuditSourceIdentification>

  <ParticipantObjectIdentification ParticipantObjectID="1.113654.1.2001.30"
↳ParticipantObjectTypeCode="2" ParticipantObjectTypeCodeRole="3"
↳ParticipantObjectDataLifeCycle="1">
    <ParticipantObjectIDTypeCode csd-code="110180" originalText="Study Instance
↳UID" codeSystemName="DCM"/>
    <ParticipantObjectDetail type="StudyDate" value="MjAwMTA0MzA="/>
  <ParticipantObjectDescription>

```

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```

        <Accession Number="2001C30"/>
        <SOPClass UID="1.2.840.10008.5.1.4.1.1.88.11" NumberOfInstances="1"/>
    </ParticipantObjectDescription>
</ParticipantObjectIdentification>

    <ParticipantObjectIdentification ParticipantObjectID="CR3^^^SiteA"
↪ParticipantObjectTypeCode="1" ParticipantObjectTypeCodeRole="1">
        <ParticipantObjectIDTypeCode csd-code="2" originalText="Patient Number"
↪codeSystemName="RFC-3881"/>
        <ParticipantObjectName>CRTHREE^PAUL</ParticipantObjectName>
    </ParticipantObjectIdentification>
</AuditMessage>

```

User Authentication

Trigger Events

This message is sent if the archive is secured with Keycloak. The trigger events for this message are : - Login - Login Error - Logout - Logout Error

Message Structure

Table 7.76: Entities in User Authentication Audit Message

<i>Event Identification</i>
<i>Active Participant: Source</i>
<i>Active Participant: Archive application</i>
<i>Audit Source</i>

Table 7.77: Event Identification

Field Name	Opt	Description
EventID	M	EV (110114, DCM, 'User Authentication')
EventActionCode	M	Execute 'E'
EventDateTime	M	The time at which the event occurred
EventOutcomeIndicator	M	Success '0' Minor failure '4'
EventOutcomeDescription	M	Error/Exception message when EventOutcomeIndicator '4'
EventTypeCode	M	Login or Login error cases EV (110122, DCM, 'Login') Logout or Logout error cases EV (110123, DCM, 'Logout')

Table 7.78: Active Participant: Source

Field Name	Opt	Description
UserID	M	User name of logged in user
UserIDTypeCode	U	EV (113871, DCM, 'Person ID')
UserTypeCode	U	Person '1'
UserIsRequestor	M	true
NetworkAccessPointID	U	IP address of calling user
NetworkAccessPointTypeCode	U	2

Table 7.79: Active Participant: Archive application

Field Name	Opt	Description
UserID	M	Device name of the archive device
UserIDTypeCode	U	EV (113877, DCM, 'Device Name')
UserTypeCode	U	Application '2'
AlternativeUserID	MC	Process ID of Audit logger
UserIsRequestor	M	false
NetworkAccessPointID	U	Hostname/IP Address of the connection referenced by Audit logger
NetworkAccessPointTypeCode	U	NetworkAccessPointID is host name '1' NetworkAccessPointID is an IP address '2'

Sample Message

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AuditMessage xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
↳xsi:noNamespaceSchemaLocation="http://www.dcm4che.org/DICOM/audit-message.rnc">

  <EventIdentification EventActionCode="E" EventDateTime="2017-01-26T17:28:59.
↳553+01:00" EventOutcomeIndicator="0">
    <EventID csd-code="110122" codeSystemName="DCM" originalText="Login"/>
  </EventIdentification>

  <ActiveParticipant UserID="admin" UserTypeCode="1" UserIsRequestor="true"
↳NetworkAccessPointID="127.0.0.1" NetworkAccessPointTypeCode="2">
    <UserIDTypeCode csd-code="113871" codeSystemName="DCM" originalText="Person ID
↳"/>
  </ActiveParticipant>

  <ActiveParticipant UserID="dcm4chee-arc" UserTypeCode="2" AlternativeUserID="3390
↳" UserIsRequestor="false" NetworkAccessPointID="localhost"
↳NetworkAccessPointTypeCode="1">
    <UserIDTypeCode csd-code="113877" codeSystemName="DCM" originalText="Device
↳Name"/>
  </ActiveParticipant>
```

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```
<AuditSourceIdentification AuditSourceID="dcm4chee-arc">
  <AuditSourceTypeCode csd-code="4"/>
</AuditSourceIdentification>

</AuditMessage>
```

Audit Trail Message Transmission Profile - SYSLOG-TLS

dcm4che DICOM Archive 5 supports the Audit Trail Message Transmission Profile - SYSLOG-TLS as specified in DICOM Standard, Part 15, Annex A.6.

Audit Trail Message Transmission Profile - SYSLOG-UDP

dcm4che DICOM Archive 5 supports the Audit Trail Message Transmission Profile - SYSLOG-UDP as specified in DICOM Standard, Part 15, Annex A.7.

7.1.6 Attribute Confidentiality Profiles

Basic Application Level Confidentiality Profile

dcm4che DICOM Archive 5 supports the Basic Application Level Confidentiality Profile as specified in DICOM Standard, Part 15, Annex E.2 with the Basic Application Level Confidentiality Options:

- Retain Longitudinal Temporal Information Full Dates Option as specified in DICOM Standard, Part 15, Annex E.3.6
- Retain Device Identity Option as specified in DICOM Standard, Part 15, Annex E.3.8
- Retain UIDs Option as specified in DICOM Standard, Part 15, Annex E.3.9
- Retain Institution Identity Option as specified in DICOM Standard, Part 15, Annex E.3.11

Attributes removed or replaced

One can directly refer the table Application Level Confidentiality Profile Attributes with different action codes to see the list of attributes supported dependent on the applied Basic Application Level Confidentiality Option.

In addition to the above list of attributes, below table lists out the private attributes and some more DICOM attributes which are missing in Application Level Confidentiality Profile Attributes to be removed.

Table 7.80: Attributes removed during protection

Attributes
Private Attributes
Patient Create Date Time (7777,0010)
Patient Update Date Time (7777,0011)
Study Receive Date Time (7777,0020)
Study Update Date Time (7777,0021)
Study Access Date Time (7777,0022)
Study Expiration Date (7777,0023)

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Table 7.80 – continued from previous page

Attributes
Study Rejection State (7777,0024)
Study Completeness (7777,0025)
Failed Retrieves Of Study (7777,0026)
Study Access Control ID (7777,0027)
Storage IDs of Study (7777,0028)
Study Size in KB (7777,0029)
Study Size Bytes (7777,002A)
Series Receive Date Time (7777,0030)
Series Update Date Time (7777,0031)
Series Expiration Date (7777,0033)
Series Rejection State (7777,0034)
Series Completeness (7777,0035)
Failed Retrieves Of Series (7777,0036)
Sending Application Entity Title Of Series (7777,0037)
Scheduled Metadata Update Date Time Of Series (7777,0038)
Scheduled Instance Record Purge Date Time Of Series (7777,0039)
Instance Record Purge State Of Series (7777,003A)
Series Metadata Storage ID (7777,003B)
Series Metadata Storage Path (7777,003C)
Series Metadata Storage Object Size (7777,003D)
Series Metadata Storage Object Digest (7777,003E)
Instance Receive Date Time (7777,0040)
Instance Update Date Time (7777,0041)
Rejection Code Sequence (7777,0042)
Instance External Retrieve AE Title (7777,0043)
Storage ID (7777,0050)
Storage Path (7777,0051)
Storage Transfer Syntax UID (7777,0052)
Storage Object Size (7777,0053)
Storage Object Digest (7777,0054)
Other Storage Sequence (7777,0055)
X Road Person Status (7777,00E0)
X Road Data Status (7777,00E1)
X - Remove (missing in Part 15)
Human Performer Code Sequence (0040,4009)
Issuer of Accession Number Sequence (0008,0051)
Issuer of Admission ID Sequence (0038,0014)
Issuer of Patient ID Qualifiers Sequence (0010,0024)
Patient's Size Code Sequence (0010,1021)
Requesting Physician Identification Sequence (0032,1031)
Requesting Service Code Sequence (0032,1034)
Series Description Code Sequence (0008,103F)
X - Remove (missing in Part 15) if Retain Longitudinal Temporal Information Full Dates Option not configured
Instance Creation Date (0008,0012)
Instance Creation Time (0008,0013)

Inserted dummy values

Following table lists attributes and the dummy values which are used to replace the attributes' values

Table 7.81: Dummy values used to replace the attributes' values

Attributes	VR	Dummy Value	
Series Date (0008,0021)	DA	19991111	
Content Date (0008,0023)			
Patient's Birth Date (0010,0030)			
Acquisition Date (0008,0022)			
Admitting Date (0038,0020)			
Study Date (0008,0020)			
Acquisition Date Time (0008,002A)			DT
Start Acquisition Date Time (0018,9516)			
End Acquisition Date Time (0018,9517)			
Verification Date Time (0040,A030)			
Series Time (0008,0031)	TM	111111	
Content Time (0008,0033)			
Acquisition Time (0008,0032)			
Admitting Time (0038,0021)			
Study Time (0008,0030)			
Acquisition Device Processing Description (0018,1400)	LO	REMOVED	
Contrast Bolus Agent (0018,0010)			
Protocol Name (0018,1030)			
Verifying Organization (0040,A027)			
Device Serial Number (0018,1000)			
Institution Name (0008,0080)			
Filler Order Number / Imaging Service Request (0040,2017)			
Patient ID (0010,0020)			
Placer Order Number / Imaging Service Request (0040,2016)			
Requested Procedure Description (0032,1060)			
Patient's Sex Neutered (0010,2203)			CS
Patient's Sex (0010,0040)			SH
Detector ID (0018,700A)			
Station Name (0008,1010)			
Accession Number (0008,0050)			
Study ID (0020,0010)	UI		
Dose Reference UID (300A,0013)			
Operators Name (0008,1070)	PN		
Person Name (0040,A123)			
Verifying Observer Name (0040,A075)			
Consulting Physician's Name (0008,009C)			
Content Creator's Name (0070,0084)			
Patient's Name (0010,0010)			
Referring Physician's Name (0008,0090)			
Reviewer Name (300E,0008)			

Encrypted Attributes Data Sets

Encryption of attributes data sets for later re-identification is not supported.

Scope of Referential Integrity of Replacement Values for UIDs

Replacement UIDs are derived from the original UID by using the algorithm for Creating Name-Based UUIDs as specified in RFC 4122: A Universally Unique Identifier (UUID) URN Namespace, encoded as UID according to Object Identifier (OID) Repository. Therefore equal original UIDs in different DICOM objects also across Studies or Patients are replaced by equal new UIDs in resulting objects.

7.2 Association Level Security

dcm4che DICOM Archive 5 checks that the Association requestor specifies the correct Called AE Title. Each AE can be configured to accept Association Requests from only a limited list of Calling AE Titles. In addition the IP address of the requestor can be checked. Each AE can be configured to accept only a limited list of Move Destinations in C-MOVE requests.

Each AE can be configured to associate a particular *Access Control ID* to received Studies - optionally also dependent on the Sending AE Title or on any DICOM Attribute of the first received object of the Study. Each AE can also be configured to hide Studies from access by Query/Retrieve services which associated *Access Control ID* does not match with a list of *Access Control IDs* associated with that AE.

Each AE can be configured to hide objects rejected by *IHE IOCM Rejection Notes* from access by Query/Retrieve services dependent on the *Key Object Selection Document Title* of the *Rejection Note*.

dcm4che DICOM Archive 5 can be configured to check the Receiving Application and Facility in received HL7 v2 messages. Each HL7 Application provided by *dcm4che DICOM Archive 5* can be configured to accept HL7 v2 messages from only a limited list of Sending Application and Facility names.

7.3 Application Level Security

RESTful services and the Web UI may be secured with *OpenID Connect* using *Keycloak* as Authentication Server.

A

Abstract Syntax, **12**
Application Context, **12**
Application Entity (*AE*), **12**
Application Entity Title (*AET*), **12**
Association, **12**
Attribute, **12**

I

Information Object Definition (*IOD*), **12**

J

Joint Photographic Experts Group (*JPEG*),
12

M

Media Application Profile, **12**
Module, **12**

N

Negotiation, **12**

P

Presentation Context, **12**
Protocol Data Unit (*PDU*), **13**

S

Security Profile, **13**
Service Class Provider (*SCP*), **13**
Service Class User (*SCU*), **13**
Service/Object Pair Class (*SOP Class*), **13**
Service/Object Pair Instance (*SOP Instance*), **13**

T

Tag, **13**
Transfer Syntax, **13**

U

Unique Identifier (*UID*), **13**

V

Value Representation (*VR*), **13**