



Kodak DirectView Web Software 4.5 and 5.0

DICOM V 3.0 Conformance Statement

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Contents

1 Introduction	6
1.1 The <i>Web Software</i> Server.....	6
1.2 About this Document	6
1.3 Important Remarks	7
2 Implementation Model	8
2.1 Application Data Flow Diagram.....	8
2.1.1 Disk-Server.....	8
2.1.2 Memory-Server.....	9
2.1.3 Memory-Manager.....	10
2.2 Functional Definitions of AE's	10
2.2.1 Disk-Server.....	10
2.2.2 Memory-Server.....	11
2.2.3 Web Software-Server	11
2.2.4 Memory-Manager.....	11
2.3 Sequencing of Real World Activities.....	11
3 AE Specifications	12
3.1 Disk-Server Specifications.....	12
3.1.1 Association Establishment Policies	14
3.1.1.1 General.....	14
3.1.1.2 Number of Associations.....	14
3.1.1.3 Asynchronous Nature	14
3.1.1.4 Implementation Identifying Information	14
3.1.2 Association Initiation by Real-World Activity	14
3.1.2.1 Remote system Requests Image Transfer	14
3.1.2.1.1 Associated Real World Activity.....	14
3.1.2.1.2 Proposed Presentation Contexts.....	14
3.1.2.1.2.1 SOP Specific Conformance Statement for Storage SOP Class	17
3.1.3 Association Acceptance Policy.....	18
3.1.3.1 Remote System Requests Verification.....	18
3.1.3.1.1 Associated Real World Activity.....	18
3.1.3.1.2 Presentation Context Table	18
3.1.3.1.2.1 SOP Specific Conformance to Verification SOP Class.....	18
3.1.3.1.3 Presentation Context Acceptance Criterion	18
3.1.3.1.4 Transfer Syntax Selection Policies.....	18
3.1.3.2 Remote System Requests Image Storage.....	19
3.1.3.2.1 Associated Real World Activity.....	19
3.1.3.2.2 Presentation Context Table	19
3.1.3.2.2.1 SOP Specific Conformance to Storage SOP Class.....	19
3.1.3.2.3 Presentation Context Acceptance Criterion	21
3.1.3.2.4 Transfer Syntax Selection Policies.....	23
3.1.3.3 Remote System Requests Image Transfer.....	23
3.1.3.3.1 Associated Real World Activity.....	23
3.1.3.3.2 Presentation Context Table	23
3.1.3.3.2.1 SOP Specific Conformance to Study Root MOVE	24
3.1.3.3.3 Presentation Context Acceptance Criterion	24
3.1.3.3.4 Transfer Syntax Selection Policies.....	24
3.1.3.4 Remote System Initiates Query Request.....	25
3.1.3.4.1 Associated Real World Activity.....	25
3.1.3.4.2 Presentation Context Table	25
3.1.3.4.2.1 SOP Specific Conformance to Study Root FIND.....	25
3.1.3.4.3 Presentation Context Acceptance Criterion	27
3.1.3.4.4 Transfer Syntax Selection Policies.....	27
3.2 Memory-Server Specifications	28
3.2.1 Association Establishment Policies	29
3.2.1.1 General.....	29

3.2.1.2	Number of Associations.....	29
3.2.1.3	Asynchronous Nature	29
3.2.1.4	Implementation Identifying Information	29
3.2.2	Association Initiation by Real-World Activity	29
3.2.3	Association Acceptance Policy.....	29
3.2.3.1	Remote System Requests Verification.....	29
3.2.3.1.1	Associated Real World Activity.....	29
3.2.3.1.2	Presentation Context Table	30
3.2.3.1.2.1	SOP Specific Conformance to Verification SOP Class.....	30
3.2.3.1.3	Presentation Context Acceptance Criterion	30
3.2.3.1.4	Transfer Syntax Selection Policies.....	30
3.2.3.2	Remote System Requests Image Transfer.....	30
3.2.3.2.1	Associated Real World Activity.....	30
3.2.3.2.2	Presentation Context Table	31
3.2.3.2.2.1	SOP Specific Conformance to Storage SOP Class.....	31
3.2.3.2.3	Presentation Context Acceptance Criterion	32
3.2.3.2.4	Transfer Syntax Selection Policies.....	35
3.3	Web Software-Server Specifications	35
3.3.1	Association Establishment Policies	35
3.3.1.1	General.....	35
3.3.1.2	Number of Associations.....	36
3.3.1.3	Asynchronous Nature	36
3.3.1.4	Implementation Identifying Information	36
3.3.2	Association Initiation by Real-World Activity	36
3.3.2.1	User Clicks on a Device Icon.....	36
3.3.2.1.1	Associated Real World Activity.....	36
3.3.2.1.2	Proposed Presentation Contexts.....	36
3.3.2.1.2.1	SOP Specific Conformance Statement for Study Root FIND	36
3.3.3	Association Acceptance Policy.....	37
3.4	Memory-Manager Specifications.....	37
3.4.1	Association Establishment Policies	37
3.4.1.1	General.....	37
3.4.1.2	Number of Associations.....	37
3.4.1.3	Asynchronous Nature	37
3.4.1.4	Implementation Identifying Information	37
3.4.2	Association Initiation by Real-World Activity	38
3.4.2.1	Application Asks for Image Loading.....	38
3.4.2.1.1	Associated Real World Activity.....	38
3.4.2.1.2	Proposed Presentation Contexts.....	38
3.4.2.1.2.1	SOP Specific Conformance Statement for Study Root MOVE.....	38
3.4.3	Association Acceptance Policy.....	38
4	Communication Profiles.....	39
4.1	Supported Communications Stacks (Parts 8,9).....	39
4.2	TCP/IP Stack.....	39
4.2.1	Physical Media Support.....	39
4.2.2	Security Profiles	39
5	Extensions, Specialization, Privatization of SOP Classes and Transfer	
Syntaxes	40
5.1	Configuration	41
5.2	AE Title/Presentation Address Mapping	41
5.3	Configurable Parameters.....	41
6	Support of Extended Character Sets	42

1 Introduction

1.1 The *Web Software Server*

Web Software is an access engine for Medical Imaging related data. The application provides a flexible and reliable method for sharing medical information. Whether you are a radiologist on call, a practitioner in a clinic, or any other healthcare provider, it delivers to you all the information needed to make your work easier and more efficient.

The World Wide Web is a global information system for the distribution of files, viewing of documents and the execution of network applications (called applets) via the Internet.

Web Software uses the World Wide Web to provide a comprehensive, robust, platform-independent solution to the problem of Medical Image and data distribution over the Internet and other complex networks. This is achieved by using the Java™ network language which features portability, security and advanced networking, without compromising performance.

The Web Software *Server* communication is based on the DICOM v3.0 standard. This enables the *Server* to communicate with any DICOM v3.0 compliant products (e.g., scanners, workstations, hardcopy units). The *Server* can function both as a DICOM server and as a DICOM client. Thus it can send and retrieve images from other stations, and other stations can retrieve and send images to and from the *Server*. Images are transferred in the DICOM v3.0 protocol based on TCP/IP as a transport layer.

The *Server* can serve as a gateway between non-DICOM equipment to the DICOM world. The *Server* can be used as a gateway between modalities and workstations and DICOM networks.

1.2 About this Document

This document provides the DICOM Conformance Statement for the *Web Software* implementation of the DICOM-3.0 standard. Conformance Statement define the subset of options selected from those offered by the DICOM v3.0 standard. Copies of the DICOM v3.0 standard may be obtained by written request or phone by contacting:

NEMA Publication
2101 L Street, N.W., Suite 300
Washington, DC 20037 USA
Phone: (202) 457-8474

It is assumed that the reader of this document is familiar with the DICOM v3.0 standard and with the terminology and concepts which are used in the standard.

1.3 Important Remarks

The use of this Conformance Statement, in conjunction with the DICOM v3.0 standard, is intended to facilitate communication with the *Web Software* server. However, by itself, it is not sufficient to ensure that inter-operation will be successful. The user needs to proceed with caution and be aware of at least the following issues:

- It is the user's responsibility to analyze the applications requirements and to design a solution that integrates the server properly with the network. The integration of any DICOM compliant device into an existing network goes beyond the scope of the standard.
- Testing the complete range of possible interactions between the server and other devices should not be overlooked by the user. This includes the accuracy of the image data once it has crossed the interface between the server and the other device, and the suitability of the image data for the intended applications. Such a validation is required before any clinical use is performed.
- Evolution of the DICOM v3.0 standard may require changes to devices which have implemented it, such as the *Web Software* server. The user should ensure that other DICOM products in the network are also updated as the standard evolves.

If the user encounters unspecified private data elements while parsing a data set coming from the server, the user is well advised to ignore those data elements (per the DICOM v3.0 standard). Unspecified private data element information is subject to change without notice.

2 Implementation Model

Web Software uses the DICOM protocol to enable the following functions:

- Access to its data base
- Access to a modality
- Loading of image to its memory

Web Software also uses the DICOM protocol to implement the following services:

- Query remote data bases
- Retrieve images from remote data bases

2.1 Application Data Flow Diagram

The *Web Software* system implements and provides DICOM services using the following Application Entities:

1. Disk-Server
2. Memory-Server
3. Web Software-Server
4. Memory-Manager

2.1.1 Disk-Server

This Application Entity (AE) serves as the interface to the data base of the stored images on the local hard disk. This Service Class Provider (SCP) provides DICOM Storage and Query-Retrieve services. Figure 1 provides an illustration of Disk Server activities.

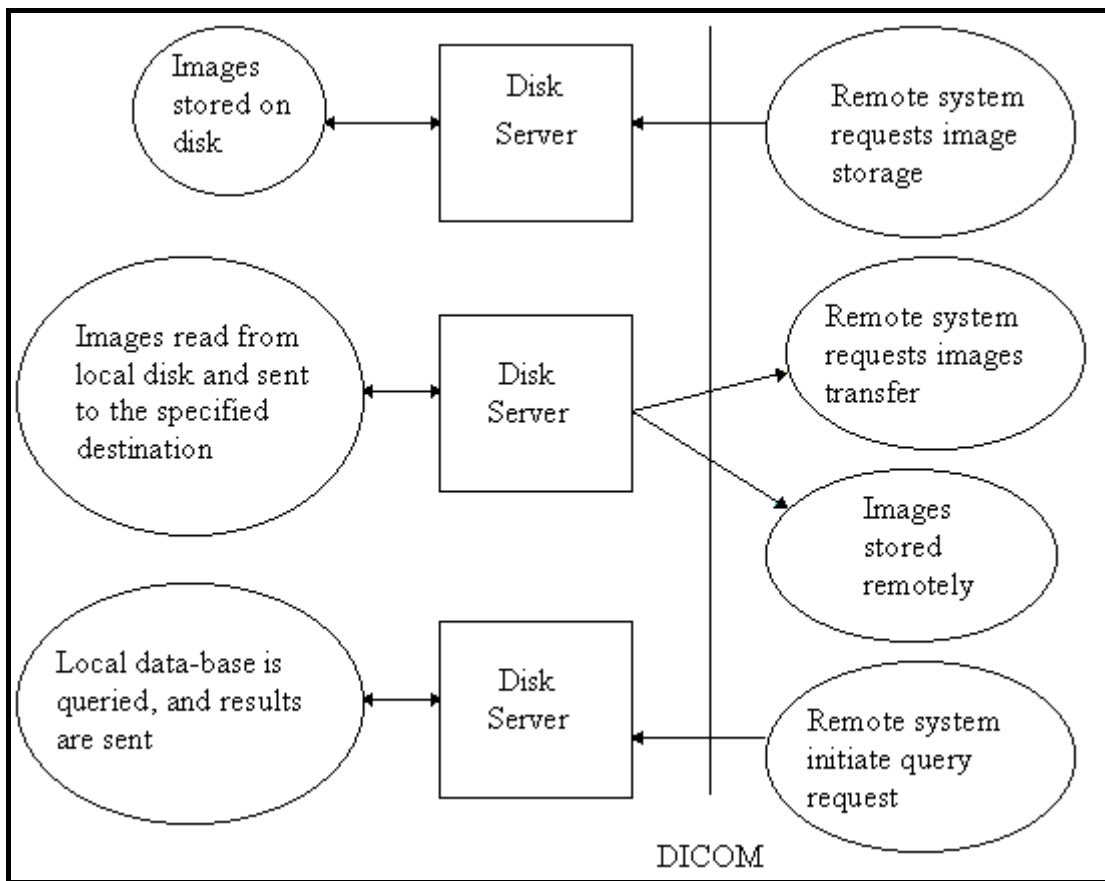


Figure 1: Illustration of Disk-Server Activities.

2.1.2 Memory-Server

This AE serves as the interface to the system’s memory by providing the DICOM Storage service. It is used by the system to load images to its own memory. The *Web Software* system assigns this AE as the target AE of C-MOVE requests it issues when loading images from remote systems. provides an illustration of Memory-Server activities.

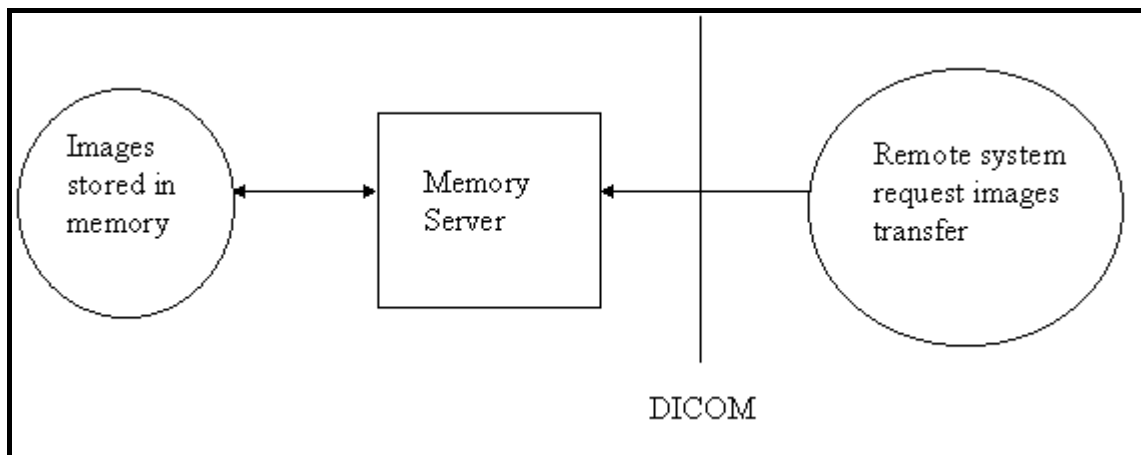


Figure 2: Illustration of Memory-Server Activities.

2.1.3 Memory-Manager

This AE is an SCU used to load images to the system's memory from remote data bases. Figure 33 provides an illustration of Memory-Manager activities.

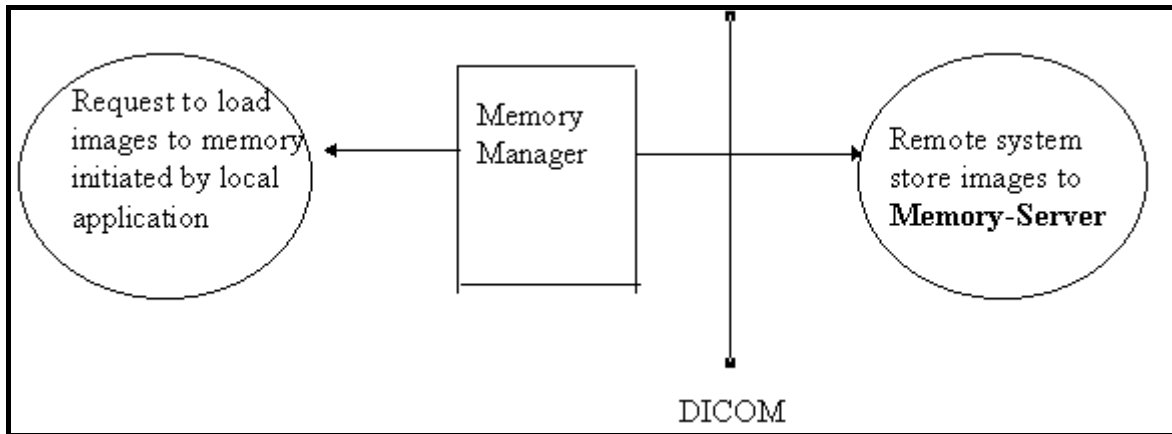


Figure 3: Illustration of Memory-Manager Activities.

2.2 Functional Definitions of AE's

2.2.1 Disk-Server

Disk-Server waits for another application to connect at the presentation address configured for its AE title. **Disk-Server** will accept associations with Presentation Contexts for Service Object Pair (SOP) classes of the Storage, Query-Retrieve (C-MOVE and C-FIND only) and Verification Service Classes.

When performing as a Storage Service Class Provider, **Disk-Server** will receive images and store them into the system's disk.

When performing as a Query-Retrieve Service Class Provider (C-FIND), **Disk-Server** will query its data base according to the request's parameters, and will send the results to the issuer.

When performing as a Query-Retrieve Service Class Provider (C-MOVE), **Disk-Server** will issue a C-STORE (to the target AE) for every image in the request.

2.2.2 Memory-Server

Memory-Server waits for another application to connect at the presentation address configured for its AE title. **Memory-Server** will accept associations with Presentation Contexts for SOP classes of the Storage and Verification Service Classes. It will receive images on these Presentation Contexts and load them into the system's memory.

2.2.3 Web Software-Server

The **Web Software-Server** enables the user to perform queries using the DICOM protocol. It lets the user select from a list of devices. It uses a configuration file to associate each device with a DICOM Application Entity. Through the **Web Software-Server**, the user can initiate the following activities:

- Establish an association with a remote AE.
- Release an association with a remote AE.
- Query for studies (using the Study Root model).
- Query for series (using the Study Root model).
- Query for images (using the Study Root model).

2.2.4 Memory-Manager

The **Memory-Manager** is responsible for loading images into memory. The **Memory-Manager** gets requests from local image processing and display applications to load images to the memory. It performs these requests using the Query-Retrieve Service Class (C-MOVE only). The **Memory-Manager** can perform the following activities:

- Establish an association with a remote AE.
- Release an association with a remote AE.
- Issue a C-MOVE request (using the Study Root model) where the target AE is **Memory-Server**.

2.3 Sequencing of Real World Activities

Not applicable.

3 AE Specifications

3.1 Disk-Server Specifications

Disk-Server provides Standard Conformance to the following DICOM V3.0 SOP Classes as an SCU:

Table 1: Disk-Server Specifications: SCU

SOP Class Name	SOP Class UID
Verification	1.2.840.10008.1.1
CT Image Storage	1.2.840.10008.5.1.4.1.1.2
MR Image Storage	1.2.840.10008.5.1.4.1.1.4
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.7.12.1
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.7.12.2
Ultra Sound Image Storage	1.2.840.10008.5.1.4.1.1.7.6.1
Ultra Sound Image Storage (retired)	1.2.840.10008.5.1.4.1.1.7.6
Ultra Sound Multi Frame Image Storage	1.2.840.10008.5.1.4.1.1.7.3.1
Ultra Sound Multi Frame Image Storage (retired)	1.2.840.10008.5.1.4.1.1.7.3
Digital X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1
Digital X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1
Digital Mammography X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.2
Digital Mammography X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.2.1
Digital Intra Oral X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3
Digital Intra Oral X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.3.1
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3

VL Photographic Image Storage	1.2.840.10008. 5.1.4.1.1.77.1.4
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Disk-Server provides Standard Conformance to the following DICOM V3.0 SOP Classes as an SCP:

Table 2: Disk-Server Specifications: SCP

SOP Class Name	SOP Class UID
Verification	1.2.840.10008.1.1
CT Image Storage	1.2.840.10008.5.1.4.1.1.2
MR Image Storage	1.2.840.10008.5.1.4.1.1.4
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.7.12.1
X-Ray Radiofluoroscapy Image Storage	1.2.840.10008.5.1.4.1.1.7.12.2
Ultra Sound Image Storage	1.2.840.10008.5.1.4.1.1.7.6.1
Ultra Sound Image Storage (retired)	1.2.840.10008.5.1.4.1.1.7.6
Ultra Sound Multi Frame Image Storage	1.2.840.10008.5.1.4.1.1.7.3.1
Ultra Sound Multi Frame Image Storage (retired)	1.2.840.10008.5.1.4.1.1.7.3
Digital X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1
Digital X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1
Digital Mammography X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.2
Digital Mammography X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.2.1
Digital Intra Oral X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3
Digital Intra Oral X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.3.1
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1
VL Endoscopic Image Storage	1.2.840.10008. 5.1.4.1.1.77.1.1
VL Microscopic Image Storage	1.2.840.10008. 5.1.4.1.1.77.1.2
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008. 5.1.4.1.1.77.1.3
VL Photographic Image Storage	1.2.840.10008. 5.1.4.1.1.77.1.4

3.1.1 Association Establishment Policies

3.1.1.1 General

The maximum Protocol Data Unit (PDU) size that the Disk-Server will use is 16K bytes.

3.1.1.2 Number of Associations

The number of simultaneous associations that will be accepted by Disk-Server is limited only by the kernel parameters of the underlying TCP/IP implementation. **Disk-Server** will spawn a new process for each connection request it receives. Therefore, **Disk-Server** can have multiple simultaneous connections, and there are no inherent limitations on the number of simultaneous associations that the Application Entity represented by **Disk-Server** can maintain.

3.1.1.3 Asynchronous Nature

Disk-Server will only allow a single outstanding operation on an association. Therefore **Disk-Server** will not perform asynchronous operations window negotiation.

3.1.1.4 Implementation Identifying Information

Disk-Server provides a single Implementation Class Unique Identifier (UID) which is 1.2.840.113704.7.0.2. The Application Context Name is 1.2.840.10008.3.1.1.1.

3.1.2 Association Initiation by Real-World Activity

Disk-Server initiates an association as part of an execution of a C-MOVE command.

3.1.2.1 Remote system Requests Image Transfer

A remote system requests image transfer from **Disk-Server** by sending C-MOVE Command.

3.1.2.1.1 Associated Real World Activity

The Real World activity associated with the C-MOVE command is retrieval of images from the disk and storage of the images to a remote system using a C-STORE command.

3.1.2.1.2 Proposed Presentation Contexts

All the Presentation Contexts shown in Table 3 are proposed by **Disk-Server**:

Table 3: Proposed Presentation Contexts for Disk-Server

Abstract Syntax		Transfer Syntax		Role	Ext. Neg
Name	UID	Name	UID		
CR Image	1.2.840.10008.5.1.4.1.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1		
		DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2		
NM Image	1.2.840.10008.5.1.4.1.1.20	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1		
		DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2		
SC Image	1.2.840.10008.5.1.4.1.1.7	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1		
		DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2		
XA Image	1.2.840.10008.5.1.4.1.1.12.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1		
		DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2		
RF Image	1.2.840.10008.5.1.4.1.1.12.2	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1		
		DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2		
US Image	1.2.840.10008.5.1.4.1.1.6.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1		
		DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2		
US Image (Retired)	1.2.840.10008.5.1.4.1.1.6	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1		
		DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2		
DX Image for Presentation	1.2.840.10008.5.1.4.1.1.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1		
		DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2		
DX Image for	1.2.840.10008.5.1.4.1.1.1.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

Processing		DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2.1 1.2.840.10008.1.2.2		
MG Image For Presentation	1.2.840.10008.5.1.4.1.1.1.2	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	None
MG Image For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	None
IO Image For Presentation	1.2.840.10008.5.1.4.1.1.1.3	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	None
IO Image For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	None
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	None
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	DICOM Implicit VR Little Endian DICOM Explicit VR Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.2	SCU	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	DICOM Implicit VR Little Endian DICOM Explicit VR	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCU	None

		Little Endian DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2		
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3.1.2.1.2.1 SOP Specific Conformance Statement for Storage SOP Class

Disk-Server provides standard conformance to the DICOM V3.0 Storage Service Class as an SCU for the following SOP Classes:

Table 4: Disk-Server SOP Specific Conformance Statement for Storage SOP Class: SCU

SOP Class Name	SOP Class UID
CT Image Storage	1.2.840.10008.5.1.4.1.1.2
MR Image Storage	1.2.840.10008.5.1.4.1.1.4
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.7.12.1
X-Ray Radiofluoroscopy Image Storage	1.2.840.10008.5.1.4.1.1.7.12.2
Ultra Sound Image Storage	1.2.840.10008.5.1.4.1.1.7.6.1
Ultra Sound Image Storage (retired)	1.2.840.10008.5.1.4.1.1.7.6
Ultra Sound Multi Frame Image Storage	1.2.840.10008.5.1.4.1.1.7.3.1
Ultra Sound Multi Frame Image Storage (retired)	1.2.840.10008.5.1.4.1.1.7.3
Digital X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1
Digital X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1
Digital Mammography X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.2
Digital Mammography X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.2.1
Digital Intra Oral X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3
Digital Intra Oral X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.3.1
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1
VL Endoscopic Image Storage	1.2.840.10008. 5.1.4.1.1.77.1.1
VL Microscopic Image Storage	1.2.840.10008. 5.1.4.1.1.77.1.2
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008. 5.1.4.1.1.77.1.3
VL Photographic Image Storage	1.2.840.10008. 5.1.4.1.1.77.1.4

Multiple C-STORE operations can be performed over a single association.

Upon receiving a C-STORE confirmation containing a successful status, this implementation will perform the next C-STORE operation. The association will be maintained if possible.

Any unsuccessful status, returned in the C-STORE confirmation, results in termination of the association over which the C-STORE has been sent, reporting of error to the system log file, and returning of a status code of **A702** (“Refused”) in the C-MOVE confirmation.

There are no timeouts implemented in this process.

3.1.3 Association Acceptance Policy

Disk-Server places no limitations on the number of simultaneous connections it will support. However, it is possible to control the number of simultaneous connections that may connect to **Disk-Server** during the system configuration process.

3.1.3.1 Remote System Requests Verification

A remote system requests verification from **Disk-Server** using the C-ECHO command.

3.1.3.1.1 Associated Real World Activity

Disk-Server performs the Verification Service Class by responding with C-ECHO-RSP.

3.1.3.1.2 Presentation Context Table

Any of the Presentation Contexts shown in Table 5 is acceptable to the **Disk-Server**.

Table 5: Acceptable Presentation Contexts for Disk-Server

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
Verification	1.2.840.10008.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Verification	1.2.840.10008.1.1	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Verification	1.2.840.10008.1.1	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None

3.1.3.1.2.1 SOP Specific Conformance to Verification SOP Class

Disk-Server provides standard conformance to the DICOM V3.0 Verification Service Class as an SCP for the Verification SOP Class, UID=1.2.840.10008.1.1.

3.1.3.1.3 Presentation Context Acceptance Criterion

Disk-Server will accept any Presentation Context from Table 5.

3.1.3.1.4 Transfer Syntax Selection Policies

Disk-Server prefers an explicit Transfer Syntax encoding. If offered a choice of Transfer Syntax's in a Presentation Context, it will apply the following priorities to the choice of Transfer Syntax:

1. DICOM Explicit VR Big Endian.
2. DICOM Explicit VR Little Endian.
3. DICOM Implicit VR Little Endian (Default).

3.1.3.2 Remote System Requests Image Storage

A remote system requests image storage from **Disk-Server** using the C-STORE command.

3.1.3.2.1 Associated Real World Activity

The Real World activity associated with the C-STORE operation is the storage of the image in the disk. **Disk-Server** will issue a failure status if it is unable to store the image in the disk.

3.1.3.2.2 Presentation Context Table

Any of the Presentation Contexts shown in Table 2.3 is acceptable to the **Disk-Server**:

3.1.3.2.2.1 SOP Specific Conformance to Storage SOP Class

Disk-Server provides standard conformance to the DICOM V3.0 Storage Service Class as an SCP for the following SOP Classes:

Table 6: Disk-Server SOP Specific Conformance to Storage SOP Class: SCP

SOP Class Name	SOP Class UID
CT Image Storage	1.2.840.10008.5.1.4.1.1.2
MR Image Storage	1.2.840.10008.5.1.4.1.1.4
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.7.12.1
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.7.12.2
Ultra Sound Image Storage	1.2.840.10008.5.1.4.1.1.7.6.1
Ultra Sound Image Storage (retired)	1.2.840.10008.5.1.4.1.1.7.6
Ultra Sound Multi Frame Image Storage	1.2.840.10008.5.1.4.1.1.7.3.1
Ultra Sound Multi Frame Image Storage (retired)	1.2.840.10008.5.1.4.1.1.7.3

Digital X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1
Digital X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1
Digital Mammography X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.2
Digital Mammography X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.2.1
Digital Intra Oral X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3
Digital Intra Oral X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.3.1
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1
VL Endoscopic Image Storage	1.2.840.10008. 5.1.4.1.1.77.1.1
VL Microscopic Image Storage	1.2.840.10008. 5.1.4.1.1.77.1.2
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008. 5.1.4.1.1.77.1.3
VL Photographic Image Storage	1.2.840.10008. 5.1.4.1.1.77.1.4

Disk-Server conforms to the SOPs of the Storage Service Class at Level 2 (Full).

In case of a successful C-STORE, the stored image may be accessed by the **Disk-Server**.

The user of the server, who can delete any image using the Archive Manager application, determines the duration of the storage. An auto-delete mechanism can be utilized to remove the least recently accessed images in order to make room for new ones. This mechanism is optional and is controlled by user configurable parameters.

Disk-Server will not coerce any attribute except for the following: pixel data (0x7FE0, 0x0010) of type OW is converted to OB when bits allocated (0x0028, 0x0100) equal 8.

If **Disk-Server** returns one of the following status codes, it means that the C-STORE has been unsuccessful:

A700 - General refusal status, and out of disk space.

B000 - General warning status.

C000 - General failure status.

Recovery from this condition is the responsibility of the **Disk-Server**.

3.1.3.2.3 Presentation Context Acceptance Criterion

Disk-Server will accept any Presentation Context from Table 7.

Table 7: Acceptable Presentation Contexts for Disk-Server

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
CT Image	1.2.840.10008.5.1.4.1.1.2	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
CT Image	1.2.840.10008.5.1.4.1.1.2	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
CT Image	1.2.840.10008.5.1.4.1.1.2	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
MR Image	1.2.840.10008.5.1.4.1.1.4	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
MR Image	1.2.840.10008.5.1.4.1.1.4	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
MR Image	1.2.840.10008.5.1.4.1.1.4	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
CR Image	1.2.840.10008.5.1.4.1.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
CR Image	1.2.840.10008.5.1.4.1.1.1	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
CR Image	1.2.840.10008.5.1.4.1.1.1	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
NM Image	1.2.840.10008.5.1.4.1.1.20	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
NM Image	1.2.840.10008.5.1.4.1.1.20	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
NM Image	1.2.840.10008.5.1.4.1.1.20	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
SC Image	1.2.840.10008.5.1.4.1.1.7	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
SC Image	1.2.840.10008.5.1.4.1.1.7	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
SC Image	1.2.840.10008.5.1.4.1.1.7	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None

US Multi-Frame Image	1.2.840.10008.5.1.4.1.1.3 (retired) 1.2.840.10008.5.1.4.1.1.3.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
US Multi-Frame Image	1.2.840.10008.5.1.4.1.1.3 (retired) 1.2.840.10008.5.1.4.1.1.3.1	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
US Multi-Frame Image	1.2.840.10008.5.1.4.1.1.3 (retired) 1.2.840.10008.5.1.4.1.1.3.1	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
US Image	1.2.840.10008.5.1.4.1.1.6 (retired) 1.2.840.10008.5.1.4.1.1.6.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
US Image	1.2.840.10008.5.1.4.1.1.6 (retired) 1.2.840.10008.5.1.4.1.1.6.1	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
US Image	1.2.840.10008.5.1.4.1.1.6 (retired) 1.2.840.10008.5.1.4.1.1.6.1	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
XA Image	1.2.840.10008.5.1.4.1.1.12.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
XA Image	1.2.840.10008.5.1.4.1.1.12.1	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
XA Image	1.2.840.10008.5.1.4.1.1.12.1	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
RF Image	1.2.840.10008.5.1.4.1.1.12.2	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
RF Image	1.2.840.10008.5.1.4.1.1.12.2	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
RF Image	1.2.840.10008.5.1.4.1.1.12.2	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
VL	1.2.840.10008.5.1.4.1.1.77.1.2	DICOM Explicit VR	1.2.840.10008.1.2.2	SCU	None

Microscopic Image Storage		Big Endian			
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None

3.1.3.2.4 Transfer Syntax Selection Policies

Disk-Server prefers an explicit Transfer Syntax encoding. If offered a choice of Transfer Syntax's in a Presentation Context, it will apply the following priorities to the choice of Transfer Syntax:

1. DICOM Explicit VR Big Endian (highest priority).
2. DICOM Explicit VR Little Endian.
3. DICOM Implicit VR Little Endian (Default).

3.1.3.3 Remote System Requests Image Transfer

A remote system requests image transfer from **Disk-Server** using the C-MOVE command.

3.1.3.3.1 Associated Real World Activity

The Real World activity associated with the C-MOVE command is retrieval of images from the disk and storage of the images to a remote system using a C-STORE command.

Disk-Server will issue a failure status if it is unable to process the transfer request.

3.1.3.3.2 Presentation Context Table

Any of the Presentation Contexts shown in Table 8 is acceptable to the **Disk-Server**:

Table 8: Acceptable Presentation Contexts for Disk-Server

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
Study Root MOVE	1.2.840.10008.5.1.4.1.2.2.2	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Study Root MOVE	1.2.840.10008.5.1.4.1.2.2.2	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Study Root MOVE	1.2.840.10008.5.1.4.1.2.2.2	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None

3.1.3.3.2.1 SOP Specific Conformance to Study Root MOVE

Disk-Server provides standard conformance to the DICOM V3.0 Query/Retrieve Service Class as an SCP for the following SOP Class: Study Root Query/Retrieve Information Model - MOVE, UID=1.2.840.10008.5.1.4.1.2.2.2.

Prioritization of C-MOVE requests is not supported.

Disk-Server does not support relational C-MOVE requests.

All images requested in the C-MOVE will be sent over a single association (the association will not be established and torn down for each image).

If **Disk-Server** returns one of the following status codes, it means that the C-MOVE has been unsuccessful:

A801 - Refused. Move destination unknown.

A700 - General refusal status.

B000 - General warning status.

C000 - General failure status.

3.1.3.3.3 Presentation Context Acceptance Criterion

Disk-Server will accept any Presentation Context from Table 8.

3.1.3.3.4 Transfer Syntax Selection Policies

Disk-Server prefers an explicit Transfer Syntax encoding. If offered a choice of Transfer Syntax's in a Presentation Context, it will apply the following priorities to the choice of Transfer Syntax:

1. DICOM Explicit VR Big Endian (highest priority).
2. DICOM Explicit VR Little Endian.
3. DICOM Implicit VR Little Endian (Default).

3.1.3.4 Remote System Initiates Query Request

A remote system initiates query request using the C-FIND command.

3.1.3.4.1 Associated Real World Activity

The Real World activity associated with the C-FIND command is an examination of the disk content. **Disk-Server** will issue a failure status if it is unable to process the query request.

3.1.3.4.2 Presentation Context Table

Any of the Presentation Contexts shown in Table 9 is acceptable to the **Disk-Server**:

Table 9: Acceptable Presentation Contexts for Disk-Server

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
Study Root FIND	1.2.840.10008.5.1.4.1.2.2.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Study Root FIND	1.2.840.10008.5.1.4.1.2.2.1	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Study Root FIND	1.2.840.10008.5.1.4.1.2.2.1	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None

3.1.3.4.2.1 SOP Specific Conformance to Study Root FIND

Disk-Server provides standard conformance to the DICOM V3.0 Query/Retrieve Service Class as an SCP for the following SOP Class: Study Root Query/Retrieve Information Model - FIND, UID=1.2.840.10008.5.1.4.1.2.2.1.

Disk-Server does not support Relational Search.

All Required (R) and Unique (U) Study, Series and Image level keys for the Study Root Query/Retrieve Information Model are supported. **Disk-Server** supports the following optional keys:

Study level optional keys:

- Study Description (0008,1030)

- Patient's Birth Date (0010,0030)

Series level optional keys:

- Series Data (0008,0021)
- Series Time (0008,0031)

Image level optional keys:

- Frame Of Reference UID (0020,0052)
- SOP Class UID (0008,0016)
- Image Date (0008,0023)
- Image Time (0008,0033)
- Image Type (0008,0008)
- Instance Creation Date (0008,0012)
- Instance Creation Time (0008,0013)
- Slice Location (0020,1041)
- Rows (0028,0010)
- Columns (0028,0011)
- Contrast Bolus Agent (0018,0010)
- Bits Allocated (0028,0100)
- Samples Per Pixel (0028,0002)
- Number Of Frames (0028,0008)
- Photometric Interpretation (0028,0004)
- Icon Image (0088,0200)

Unsupported fields will not be returned in the C-FIND response.

C-FIND-CANCEL is supported. However, some C-FIND responses may be forwarded before the C-FIND-CANCEL takes effect.

If **Disk-Server** returns one of the following status codes, it means that the C-FIND has been unsuccessful:

A700 - General refusal status.

B000 - General warning status.

C000 - General failure status.

3.1.3.4.3 Presentation Context Acceptance Criterion

Disk-Server will accept any Presentation Context from Table 2.5.

3.1.3.4.4 Transfer Syntax Selection Policies

Disk-Server prefers an explicit Transfer Syntax encoding. If offered a choice of Transfer Syntax's in a Presentation Context, it will apply the following priorities to the choice of Transfer Syntax:

1. DICOM Explicit VR Big Endian.
2. DICOM Explicit VR Little Endian.
3. DICOM Implicit VR Little Endian (Default).

3.2 Memory-Server Specifications

Memory-Server provides Standard Conformance to the following DICOM V3.0 SOP Classes as an SCU:

Table 10: Memory Server Specifications: SCU

SOP Class Name	SOP Class UID
Verification	1.2.840.10008.1.1
CT Image Storage	1.2.840.10008.5.1.4.1.1.2
MR Image Storage	1.2.840.10008.5.1.4.1.1.4
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.7.12.1
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.7.12.2
Ultra Sound Image Storage	1.2.840.10008.5.1.4.1.1.7.6.1
Ultra Sound Image Storage (retired)	1.2.840.10008.5.1.4.1.1.7.6
Ultra Sound Multi Frame Image Storage	1.2.840.10008.5.1.4.1.1.7.3.1
Ultra Sound Multi Frame Image Storage (retired)	1.2.840.10008.5.1.4.1.1.7.3
Digital X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1
Digital X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1
Digital Mammography X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.2
Digital Mammography X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.2.1
Digital Intra Oral X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3
Digital Intra Oral X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.3.1
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3

3.2.1 Association Establishment Policies

3.2.1.1 General

The maximum PDU size that the Memory-Server will use is configurable, with a minimum of 2K byte.

3.2.1.2 Number of Associations

The number of simultaneous associations that will be accepted by Memory-Server is limited only by the kernel parameters of the underlying TCP/IP implementation. **Memory-Server** will spawn a new process for each connection request it receives. Therefore, **Memory-Server** can have multiple simultaneous connections, and there are no inherent limitations on the number of simultaneous associations that the Application Entity represented by **Memory-Server** can maintain.

3.2.1.3 Asynchronous Nature

Memory-Server will only allow a single outstanding operation on an association. Therefore **Memory-Server** will not perform asynchronous operations window negotiation.

3.2.1.4 Implementation Identifying Information

Memory-Server provides a single Implementation Class UID which is 1.2.840.113704.7.0.2. The Application Context Name is 1.2.840.10008.3.1.1.1.

3.2.2 Association Initiation by Real-World Activity

Memory-Server never initiates an association.

3.2.3 Association Acceptance Policy

Memory-Server places no limitations on the number of simultaneous connections it will support. However, it is possible to control that may connect to **Memory-Server** during the server's configuration process.

3.2.3.1 Remote System Requests Verification

A remote system requests verification from **Memory-Server** using the C-ECHO command.

3.2.3.1.1 Associated Real World Activity

Memory-Server performs the Verification Service Class by responding with C-ECHO-RSP.

3.2.3.1.2 Presentation Context Table

Any of the Presentation Contexts shown in Table 11 is acceptable to **Memory-Server**:

Table 11 Acceptable Presentation Contexts for Memory-Server

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
Verification	1.2.840.10008.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
Verification	1.2.840.10008.1.1	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
Verification	1.2.840.10008.1.1	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None

3.2.3.1.2.1 SOP Specific Conformance to Verification SOP Class

Memory-Server provides standard conformance to the DICOM V3.0 Verification Service Class as an SCP for the Verification SOP Class, UID=1.2.840.10008.1.1.

3.2.3.1.3 Presentation Context Acceptance Criterion

Memory-Server will accept any Presentation Context from Table 11.

3.2.3.1.4 Transfer Syntax Selection Policies

Memory-Server prefers an explicit Transfer Syntax encoding. If offered a choice of Transfer Syntax's in a Presentation Context, it will apply the following priorities to the choice of Transfer Syntax:

1. DICOM Explicit VR Big Endian.
2. DICOM Explicit VR Little Endian.
3. DICOM Implicit VR Little Endian (Default).

3.2.3.2 Remote System Requests Image Transfer

A remote system requests image transfer from **Memory-Server**, as a result of a C-MOVE command issued by the **Memory-Manager**.

3.2.3.2.1 Associated Real World Activity

The Real World activity associated with the C-STORE operation is the storage of the image in the memory of the system upon which **Memory-Server** is running. **Memory-Server** will issue a failure status if it is unable to store the image in the memory.

3.2.3.2.2 Presentation Context Table

Any of the Presentation Contexts shown in Table 12 is acceptable to the **Memory-Server**:

3.2.3.2.2.1 SOP Specific Conformance to Storage SOP Class

Memory-Server provides standard conformance to the DICOM V3.0 Storage Service Class as an SCP for the following SOP Classes:

Table 12: Memory-Server : SOP Specific Conformance to Storage SOP Class: SCP

SOP Class Name	SOP Class UID
CT Image Storage	1.2.840.10008.5.1.4.1.1.2
MR Image Storage	1.2.840.10008.5.1.4.1.1.4
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.7.12.1
X-Ray Radiofluoroscapy Image Storage	1.2.840.10008.5.1.4.1.1.7.12.2
Ultra Sound Image Storage	1.2.840.10008.5.1.4.1.1.7.6.1
Ultra Sound Image Storage (retired)	1.2.840.10008.5.1.4.1.1.7.6
Ultra Sound Multi Frame Image Storage	1.2.840.10008.5.1.4.1.1.7.3.1
Ultra Sound Multi Frame Image Storage (retired)	1.2.840.10008.5.1.4.1.1.7.3
Digital X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.1
Digital X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.1.1
Digital Mammography X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.2
Digital Mammography X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.2.1
Digital Intra Oral X Ray Image Storage For Presentation	1.2.840.10008.5.1.4.1.1.1.3
Digital Intra Oral X Ray Image Storage For Processing	1.2.840.10008.5.1.4.1.1.1.3.1
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3

Memory-Server conforms to the SOPs of the Storage Service Class at Level 2 (Full). In case of a successful C-STORE, the stored image may be accessed by the **Memory-Manager**.

The user determines the duration of the storage.

Recovery from this condition is the responsibility of the **Memory-Manager**.

If **Memory-Server** returns one of the following status codes, it means that the C-STORE has been unsuccessful:

A700 -General refusal status.

B000 - General warning status.

C000 - General; failure status.

3.2.3.2.3 Presentation Context Acceptance Criterion

Memory-Server will accept any Presentation Context from Table 13.

Table 13: Acceptable Presentation Contexts for Memory-Server

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
CT Image	1.2.840.10008.5.1.4.1.1.2	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
CT Image	1.2.840.10008.5.1.4.1.1.2	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
CT Image	1.2.840.10008.5.1.4.1.1.2	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
MR Image	1.2.840.10008.5.1.4.1.1.4	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
MR Image	1.2.840.10008.5.1.4.1.1.4	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
MR Image	1.2.840.10008.5.1.4.1.1.4	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
NM Image	1.2.840.10008.5.1.4.1.1.20	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
NM Image	1.2.840.10008.5.1.4.1.1.20	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
NM Image	1.2.840.10008.5.1.4.1.1.20	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None

CR Image	1.2.840.10008.5.1.4.1.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
CR Image	1.2.840.10008.5.1.4.1.1.1	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
CR Image	1.2.840.10008.5.1.4.1.1.1	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
SC Image	1.2.840.10008.5.1.4.1.1.7	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
SC Image	1.2.840.10008.5.1.4.1.1.7	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
SC Image	1.2.840.10008.5.1.4.1.1.7	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
XA Image	1.2.840.10008.5.1.4.1.1.12.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
XA Image	1.2.840.10008.5.1.4.1.1.12.1	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
XA Image	1.2.840.10008.5.1.4.1.1.12.1	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
RF Image	1.2.840.10008.5.1.4.1.1.12.2	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
RF Image	1.2.840.10008.5.1.4.1.1.12.2	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
RF Image	1.2.840.10008.5.1.4.1.1.12.2	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
US Image	1.2.840.10008.5.1.4.1.1.6.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
US Image	1.2.840.10008.5.1.4.1.1.6.1	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
US Image	1.2.840.10008.5.1.4.1.1.6.1	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
US Image (Retired)	1.2.840.10008.5.1.4.1.1.6	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
US Image (Retired)	1.2.840.10008.5.1.4.1.1.6	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
US Image (Retired)	1.2.840.10008.5.1.4.1.1.6	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
US Multi Frame Image	1.2.840.10008.5.1.4.1.1.3.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
US Multi Frame Image	1.2.840.10008.5.1.4.1.1.3.1	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
US Multi Frame Image	1.2.840.10008.5.1.4.1.1.3.1	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
US Multi Frame Image (Retired)	1.2.840.10008.5.1.4.1.1.3	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
US Multi Frame Image (Retired)	1.2.840.10008.5.1.4.1.1.3	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
US Multi Frame Image	1.2.840.10008.5.1.4.1.1.3	DICOM Explicit VR	1.2.840.10008.1.2.2	SCP	None

Image (Retired)		Big Endian			
DX Image for Presentation	1.2.840.10008.5.1.4.1.1.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
DX Image for Presentation	1.2.840.10008.5.1.4.1.1.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
DX Image for Presentation	1.2.840.10008.5.1.4.1.1.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2.2	SCP	None
DX Image for Processing	1.2.840.10008.5.1.4.1.1.1.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
DX Image for Processing	1.2.840.10008.5.1.4.1.1.1.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
DX Image for Processing	1.2.840.10008.5.1.4.1.1.1.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2.2	SCP	None
MG Image For Presentation	1.2.840.10008.5.1.4.1.1.1.2	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
MG Image For Presentation	1.2.840.10008.5.1.4.1.1.1.2	DICOM Implicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
MG Image For Presentation	1.2.840.10008.5.1.4.1.1.1.2	DICOM Implicit VR Little Endian	1.2.840.10008.1.2.2	SCP	None
MG Image For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
MG Image For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
MG Image For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2.2	SCP	None
IO Image For Presentation	1.2.840.10008.5.1.4.1.1.1.3	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
IO Image For Presentation	1.2.840.10008.5.1.4.1.1.1.3	DICOM Implicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
IO Image For Presentation	1.2.840.10008.5.1.4.1.1.1.3	DICOM Implicit VR Little Endian	1.2.840.10008.1.2.2	SCP	None
IO Image For For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
IO Image For For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
IO Image For For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2.2	SCP	None
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2.2	SCP	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
VL Slide Coordinates	1.2.840.10008.5.1.4.1.1.77.1.3	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None

Microscopic Image Storage					
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
VL Slide Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None

3.2.3.2.4 Transfer Syntax Selection Policies

Memory-Server prefers an explicit Transfer Syntax encoding. If offered a choice of Transfer Syntax's in a Presentation Context, it will apply the following priorities to the choice of Transfer Syntax:

1. DICOM Explicit VR Big Endian.
2. DICOM Explicit VR Little Endian.
3. DICOM Implicit VR Little Endian (Default).

3.3 Web Software-Server Specifications

Web Software-Server provides Standard Conformance to the following DICOM V3.0 SOP Classes as an SCU:

Table 14: Web Software-Server Specifications: SCU

SOP Class Name	SOP Class UID
Study Root Q/R Information Model - FIND	1.2.840.10008.5.1.4.1.2.2.1

3.3.1 Association Establishment Policies

3.3.1.1 General

The maximum PDU size that the Web Software-Server will use is configurable, with a minimum of 2K byte.

3.3.1.2 Number of Associations

Web Software-Server can have multiple simultaneous connections. The maximal number of simultaneous associations that will be initiated by **Web Software-Server** is limited by the configuration of the server. **Web Software-Server** will not initiate more than one association per each AE configured as an SCP in *Web Software*.

3.3.1.3 Asynchronous Nature

Web Software-Server will only allow a single outstanding operation on an association. Therefore **Web Software-Server** will not perform asynchronous operations window negotiation.

3.3.1.4 Implementation Identifying Information

Web Software-Server provides a single Implementation Class UID which is 1.2.840.113704.7.0.2. The Application Context Name is 1.2.840.10008.3.1.1.1.

3.3.2 Association Initiation by Real-World Activity

3.3.2.1 User Clicks on a Device Icon

3.3.2.1.1 Associated Real World Activity

Web Software-Server initiates an association when the user selects a device.

3.3.2.1.2 Proposed Presentation Contexts

All the Presentation Contexts shown in Table 15 are proposed by **Web Software-Server**:

Table 15: Proposed Presentation Contexts for Web Software-Server

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
Study Root FIND	1.2.840.10008.5.1.4.1.2.2.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1		
		DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2		

3.3.2.1.2.1 SOP Specific Conformance Statement for Study Root FIND

Web Software-Server provides standard conformance to the DICOM V3.0 Query/Retrieve Service Class as an SCU for the following SOP Class: Study Root Query/Retrieve Information Model - FIND, UID = 1.2.840.10008.5.1.4.1.2.2.1.

3.3.3 Association Acceptance Policy

Web Software-Server never accepts an association.

3.4 Memory-Manager Specifications

Memory-Manager provides Standard Conformance to the following DICOM V3.0 SOP Classes as an SCP:

Table 16: Memory-Manager Specifications: SCP

SOP Class Name	SOP Class UID
Study Root Q/R Information Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2

3.4.1 Association Establishment Policies

3.4.1.1 General

The maximum PDU size that the Memory-Manager will use is configurable, with a minimum of 2K byte.

3.4.1.2 Number of Associations

Memory-Manager can have multiple simultaneous connections. The maximal number of simultaneous associations that will be initiated by Memory-Manager is limited by the configuration of the server. **Memory-Manager** initiates several associations at a time, one for each transfer request being processed. All active concurrent associations are processed in parallel.

3.4.1.3 Asynchronous Nature

Memory-Manager will only allow a single outstanding operation on an association. Therefore **Memory-Manager** will not perform asynchronous operations window negotiation.

3.4.1.4 Implementation Identifying Information

Memory-Manager provides an Implementation Version Name which is "PROVISION-v1.0" and a single Implementation Class UID which is 1.2.840.113704.7.0.2. The Application Context Name is 1.2.840.10008.3.1.1.1.

3.4.2 Association Initiation by Real-World Activity

3.4.2.1 Application Asks for Image Loading

3.4.2.1.1 Associated Real World Activity

Memory-Manager initiates an association when an image processing application asks for image loading from a specified source device using a proprietary IPC protocol.

3.4.2.1.2 Proposed Presentation Contexts

All the Presentation Contexts shown in Table 17 are proposed by **Memory-Manager**:

Table 17: Proposed Presentation Contexts for Web Software-Server

Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name	UID		
Study Root MOVE	1.2.840.10008.5.1.4.1.2.2.1	DICOM Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		DICOM Explicit VR Little Endian	1.2.840.10008.1.2.1		
		DICOM Explicit VR Big Endian	1.2.840.10008.1.2.2		

3.4.2.1.2.1 SOP Specific Conformance Statement for Study Root MOVE

Memory-Manager provides standard conformance to the DICOM V3.0 Query/Retrieve Service Class as an SCU for the following SOP Class: Study Root Query/Retrieve Information Model - FIND, UID=1.2.840.10008.5.1.4.1.2.2.2.

3.4.3 Association Acceptance Policy

Memory-Manager never accepts an association.

4 Communication Profiles

4.1 Supported Communications Stacks (Parts 8,9)

Web Software provides DICOM v3.0 TCP/IP Network Communication Support as defined in Part 8 of the DICOM Standard.

4.2 TCP/IP Stack

All the Application Entities in *Web Software* inherit their TCP/IP stack from the UNIX system upon which they operate.

4.2.1 Physical Media Support

Web Software is indifferent to the physical medium over which TCP/IP operates.

4.2.2 Security Profiles

Web Software supports the TLS 1.0 security profile.

5 Extensions, Specialization, Privatization of SOP Classes and Transfer Syntaxes

Not applicable

5.1 Configuration

5.2 AE Title/Presentation Address Mapping

This mapping is defined during the *Web Software* installation procedure.

5.3 Configurable Parameters

- Dicom Port Number
- Application Entity Title
- Time-out.

6 Support of Extended Character Sets

No Extended Character Set is supported.