

OsiriX DICOM Conformance Statement

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1 Definitions

Acronym/Terms	Definitions
AE	Application Entity
ANSI	American National Standards Institute
DICOM	Digital Imaging and Communications in Medicine
DIMSE-C	DICOM Message Service Element-Composite
DIMSE-N	DICOM Message Service Element-Normalized
FSC	File Set Creator
FSR	File Set Reader
FSU	File Set Updater
PDU	Protocol Data Unit
SCP	Service Class Provider
SCU	Service Class User
SOP	Service Object Pair
UID	Unique Identifier
WADO	Web Access to DICOM Persistent Objects

2 Conformance Statement Overview

This section is an abbreviated DICOM conformance statement for OsiriX, a software for review and post-processing of diagnostic medical images and information.

Tables of Supported Networking DICOM Service (SOP) Classes is provided with roles (User/Provider), organized in 3 categories: Transfer, Query/Retrieve and Print Management

2.1 Image, Waveform, Measurements and Reports Transfer/Storing

SOP Classes	UID	SCU	SCP
AmbulatoryECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.3	NO	YES
BasicTextSR	1.2.840.10008.5.1.4.1.1.88.11	NO	YES
BasicVoiceAudioWaveformStorage	1.2.840.10008.5.1.4.1.1.9.4.1	NO	YES
BlendingSoftcopyPresentationStateStorage	1.2.840.10008.5.1.4.1.1.11.4	NO	YES
CTImageStorage	1.2.840.10008.5.1.4.1.1.2	YES	YES
CardiacElectrophysiologyWaveformStorage	1.2.840.10008.5.1.4.1.1.9.3.1	NO	YES
ChestCADSR	1.2.840.10008.5.1.4.1.1.88.65	NO	YES
ColorSoftcopyPresentationStateStorage	1.2.840.10008.5.1.4.1.1.11.2	NO	YES
ComprehensiveSR	1.2.840.10008.5.1.4.1.1.88.33	NO	YES
ComputedRadiographyImageStorage	1.2.840.10008.5.1.4.1.1.1	YES	YES
DigitalIntraOralXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.3	YES	YES
DigitalIntraOralXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.3.1	YES	YES
DigitalMammographyXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.2	YES	YES
DigitalMammographyXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.2.1	YES	YES
DigitalXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.1	NO	YES

DigitalXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.1.1	YES	YES
EncapsulatedPDFStorage	1.2.840.10008.5.1.4.1.1.104.1	YES	YES
EnhancedCTImageStorage	1.2.840.10008.5.1.4.1.1.2.1	YES	YES
EnhancedMRIImageStorage	1.2.840.10008.5.1.4.1.1.4.1	YES	YES
EnhancedSR	1.2.840.10008.5.1.4.1.1.88.22	NO	YES
EnhancedXAImageStorage	1.2.840.10008.5.1.4.1.1.12.1.1	YES	YES
EnhancedXRFIImageStorage	1.2.840.10008.5.1.4.1.1.12.2.1	YES	YES
GeneralECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.2	NO	YES
GrayscaleSoftcopyPresentationStateStorage	1.2.840.10008.5.1.4.1.1.11.1	NO	YES
EnhancedPETImageStorage	1.2.840.10008.5.1.4.1.1.130	YES	YES
KeyObjectSelectionDocument	1.2.840.10008.5.1.4.1.1.88.59	NO	YES
MRIImageStorage	1.2.840.10008.5.1.4.1.1.4	YES	YES
MRSpectroscopyStorage	1.2.840.10008.5.1.4.1.1.4.2	NO	YES
MammographyCADSR	1.2.840.10008.5.1.4.1.1.88.50	NO	YES
MultiframeGrayscaleByteSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.2	YES	YES
MultiframeGrayscaleWordSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.3	YES	YES
MultiframeSingleBitSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.1	YES	YES
MultiframeTrueColorSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.4	YES	YES
NuclearMedicineImageStorage	1.2.840.10008.5.1.4.1.1.20	YES	YES
OphthalmicPhotography16BitImageStorage	1.2.840.10008.5.1.4.1.1.77.1.5.2	YES	YES
OphthalmicPhotography8BitImageStorage	1.2.840.10008.5.1.4.1.1.77.1.5.1	YES	YES
PETCurveStorage	1.2.840.10008.5.1.4.1.1.129	NO	YES
PETImageStorage	1.2.840.10008.5.1.4.1.1.130	NO	YES
ProcedureLogStorage	1.2.840.10008.5.1.4.1.1.88.40	NO	YES
PseudoColorSoftcopyPresentationStateStorage	1.2.840.10008.5.1.4.1.1.11.3	NO	YES
RTBeamsTreatmentRecordStorage	1.2.840.10008.5.1.4.1.1.481.4	NO	YES
RTBrachyTreatmentRecordStorage	1.2.840.10008.5.1.4.1.1.481.6	NO	YES
RTDoseStorage	1.2.840.10008.5.1.4.1.1.481.2	NO	YES
RTImageStorage	1.2.840.10008.5.1.4.1.1.481.1	NO	YES
RTPlanStorage	1.2.840.10008.5.1.4.1.1.481.5	NO	YES
RTStructureSetStorage	1.2.840.10008.5.1.4.1.1.481.3	NO	YES
RTTreatmentSummaryRecordStorage	1.2.840.10008.5.1.4.1.1.481.7	NO	YES
RawDataStorage	1.2.840.10008.5.1.4.1.1.66	NO	YES
RealWorldValueMappingStorage	1.2.840.10008.5.1.4.1.1.67	NO	YES
SecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7	YES	YES
SpatialFiducialsStorage	1.2.840.10008.5.1.4.1.1.66.2	NO	YES
SpatialRegistrationStorage	1.2.840.10008.5.1.4.1.1.66.1	NO	YES
StereometricRelationshipStorage	1.2.840.10008.5.1.4.1.1.77.1.5.3	NO	YES
TwelveLeadECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.1	NO	YES
UltrasoundImageStorage	1.2.840.10008.5.1.4.1.1.6	YES	YES
UltrasoundImageStorage - Retired	1.2.840.10008.5.1.4.1.1.3	YES	YES
UltrasoundMultiframeImageStorage	1.2.840.10008.5.1.4.1.1.3.1	YES	YES
VLEndoscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.1	YES	YES
VLMicroscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.2	YES	YES
VLPhotographicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.4	YES	YES
VideoEndoscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.1.1	YES	YES
XRayAngiographicImageStorage	1.2.840.10008.5.1.4.1.1.12.1	YES	YES
XRayFluoroscopyImageStorage	1.2.840.10008.5.1.4.1.1.12.2	YES	YES
XRayRadiationDoseSR	1.2.840.10008.5.1.4.1.1.88.67	NO	YES

2.2 Query/Retrieve

SOP Classes	UID	SCU	SCP
FIND Study Root Query/Retrieve Information Model	1.2.840.10008.5.1.4.1.2.2.1	YES	YES
MOVE Study Root Query/Retrieve Information Model	1.2.840.10008.5.1.4.1.2.2.2	YES	YES
GET Study Root Query/Retrieve Information Model	1.2.840.10008.5.1.4.1.2.2.3	YES	YES
FIND Patient Root Query/Retrieve Information Model	1.2.840.10008.5.1.4.1.2.1.1	NO	NO
MOVE Patient Root Query/Retrieve Information Model	1.2.840.10008.5.1.4.1.2.1.2	NO	NO
GET Patient Root Query/Retrieve Information Model	1.2.840.10008.5.1.4.1.2.1.3	NO	NO
FIND Patient Root Query/Retrieve Information Model	1.2.840.10008.5.1.4.1.2.3.1	NO	NO
MOVE Patient Root Query/Retrieve Information Model	1.2.840.10008.5.1.4.1.2.3.2	NO	NO
GET Patient Root Query/Retrieve Information Model	1.2.840.10008.5.1.4.1.2.3.3	NO	NO
WADO	N/A	YES	YES

2.3 Print Management

SOP Classes	UID	SCU
Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	YES
Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	YES
Basic Grayscale Image Box SOP Class	1.2.840.10008.5.1.1.4	YES
Basic Color Image Box SOP Class	1.2.840.10008.5.1.1.4.1	YES
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	YES
Printer SOP Class	1.2.840.10008.5.1.1.16	YES
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18	YES

2.4 Media Services

Media Storage Application Profile	Write Files (FSC or FSU)	Read Files (FSR)
General Purpose CD-R	YES	YES
General Purpose DVD-R	YES	YES
iPod	YES	YES

3 Introduction

3.1 Audience

The reader of this document is concerned with software design and/or system integration issues.

It is assumed that the reader of this document is familiar with the DICOM 3.0 Standard and with the terminology and concepts which are used in this standard.

This document specifies the compliance of OsiriX to file reading/writing and file transferring support to the DICOM 3.0 standard.

4 Networking

4.1 Implementation Model

4.1.1 Application Data Flow

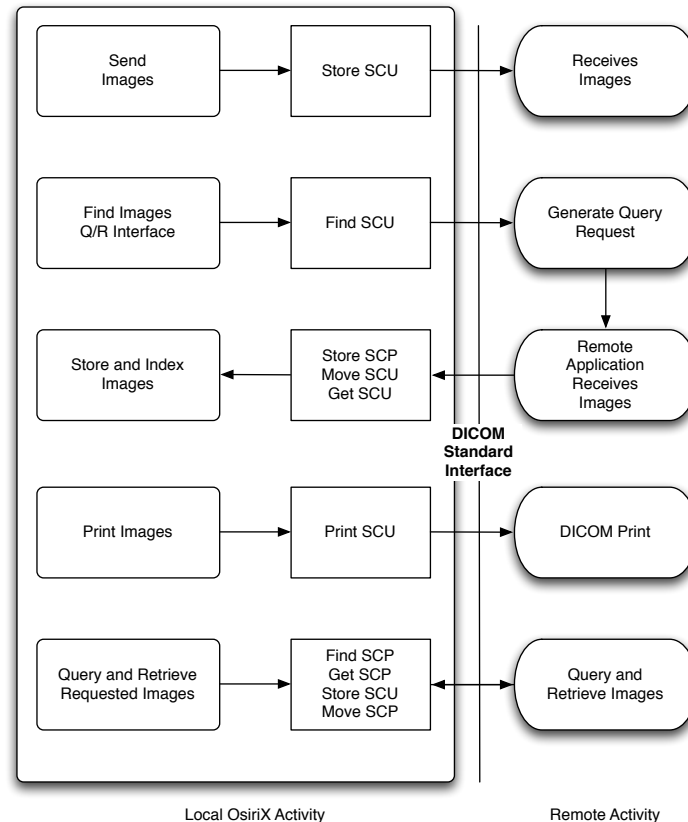


Figure 1: The Application Data Flow Diagram

The Application Entities (AEs) SCP & SCU detailed in the application data flow diagram are all included in the OsiriX application software.

They may be invoked multiple times and the instances may operate simultaneously and asynchronously.

4.1.2 Functional Definition of Application Entities

4.1.2.1 Store-SCU

OsiriX can send DICOM objects through a Store-SCU function. The user selects the destination AE through a graphic user interface. The user can select a proposed Presentation Context priority list for the Store-SCU.

4.1.2.2 Store-SCP

OsiriX can accept CSTORE associations at anytime, including multiple associations at the same time. Each object received through this association are written on the disk, and indexed in the OsiriX database. All AETitles are accepted, there is no restrictions based on the AETitle.

4.1.2.3 Find-SCU

OsiriX can generate CFIND associations to browse and search studies on a remote DICOM node. The Find-SCU is at STUDY or SERIES level. PATIENT and IMAGE C-Find-SCU are not supported.

4.1.2.4 Move-SCU / Get-SCU

Following a Find-SCU query, the user can retrieve the selected studies or series, by generating a Move-SCU or Get-SCU retrieve. The images are received and stored in the OsiriX database.

4.1.2.5 Print-SCU

OsiriX can print DICOM images to a DICOM printer.

4.1.2.6 Find-SCP, Get-SCP, Move-SCP

OsiriX can act as a DICOM server, answering to DICOM queries and retrieves from a distant DICOM compatible application. It can answer to Find-SCP requests, and send the requested images through a Get, Move or Store association.

4.1.2.7 WADO SCP SCU

OsiriX can accept WADO requests through the built-in http server (by default on port 3333, with path "wado"). OsiriX can produce WADO requests to retrieve images in the Query/Retrieve interface.

4.1.3 Sequencing of Real World Activities

All the application entities are asynchronous processes that can run at the same time. All DICOM objects are indexed and stored in the OsiriX database, when received. OsiriX can only send DICOM objects that are stored and indexed in the OsiriX database. OsiriX must be running on the Operating System to offer the applications entities (SCP).

4.2 AE Specifications

4.2.1 Store-SCU

4.2.1.1 SOP Classes

OsiriX Store-SCU provides Standard Conformance to the following DICOM 3.0 SOP Classes:

Table 6: C-Store SCU SOP Classes

SOP Classes	UID	SCU
CTImageStorage	1.2.840.10008.5.1.4.1.1.2	YES
ComputedRadiographyImageStorage	1.2.840.10008.5.1.4.1.1.1	YES
DigitalIntraOralXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.3	YES
DigitalIntraOralXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.3.1	YES
DigitalMammographyXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.2	YES
DigitalMammographyXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.2.1	YES
DigitalXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.1.1	YES
EncapsulatedPDFStorage	1.2.840.10008.5.1.4.1.1.104.1	YES
EnhancedCTImageStorage	1.2.840.10008.5.1.4.1.1.2.1	YES
EnhancedMRIImageStorage	1.2.840.10008.5.1.4.1.1.4.1	YES
EnhancedXAImageStorage	1.2.840.10008.5.1.4.1.1.12.1.1	YES
EnhancedXRFIImageStorage	1.2.840.10008.5.1.4.1.1.12.2.1	YES
EnhancedPETImageStorage	1.2.840.10008.5.1.4.1.1.130	YES
MRIImageStorage	1.2.840.10008.5.1.4.1.1.4	YES
MultiframeGrayscaleByteSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.2	YES
MultiframeGrayscaleWordSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.3	YES
MultiframeSingleBitSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.1	YES
MultiframeTrueColorSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.4	YES
NuclearMedicineImageStorage	1.2.840.10008.5.1.4.1.1.20	YES
OphthalmicPhotography16BitImageStorage	1.2.840.10008.5.1.4.1.1.77.1.5.2	YES
OphthalmicPhotography8BitImageStorage	1.2.840.10008.5.1.4.1.1.77.1.5.1	YES
SecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7	YES
UltrasoundImageStorage	1.2.840.10008.5.1.4.1.1.6	YES
UltrasoundImageStorage - Retired	1.2.840.10008.5.1.4.1.1.3	YES
UltrasoundMultiframeImageStorage	1.2.840.10008.5.1.4.1.1.3.1	YES
VLEndoscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.1	YES
VLMicroscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.2	YES
VLP photographicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.4	YES
VideoEndoscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.1.1	YES
XRayAngiographicImageStorage	1.2.840.10008.5.1.4.1.1.12.1	YES
XRayFluoroscopyImageStorage	1.2.840.10008.5.1.4.1.1.12.2	YES

4.2.1.2 Association Policies

OsiriX create a CSTORE association according the DICOM 3.0 standard. There are no restrictions to external AETitle. The default PDU size is 16384 bytes (minimum is 4096 bytes, maximum is 131072 bytes).

Number of Associations

The number of associations is unlimited.

Asynchronous Nature

Each association is handled synchronously. OsiriX doesn't support asynchronous operations in an association.

Implementation Identifying Information

OsiriX Implementation Version Name is OSIRIX001.

4.2.1.3 Association Initiation Policy

OsiriX Store-SCU AE will initiate a new association to transmit DICOM objects with a CSTORE command when the user requests sending of data from the GUI. The proposed Presentation Contexts will match the DICOM objects that are to be exported over this association. The priority order of these Presentation Contexts is defined by the user in the Preferences/Locations window.

Each event is stored in the local log file database.

If an error occurs, an error message is displayed to the user.

The default timeout for all communications (TCP/IP and DICOM) is 40 seconds. This value can be changed by the user.

Proposed Presentation Contexts

Name	UID	Role	Ext.Negot.
Implicit VR - Little Endian	1.2.840.10008.1.2	SCU	None
Explicit VR - Little Endian	1.2.840.10008.1.2.1	SCU	None
Deflated Explicit VR - Little Endian	1.2.840.10008.1.2.1.99	SCU	None
Explicit VR - Big Endian	1.2.840.10008.1.2.2	SCU	None
JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50	SCU	None
JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCU	None
JPEG Lossless, Non-Hierarchical (Process 14)	1.2.840.10008.1.2.4.57	SCU	None
JPEG Lossless, Hierarchical, First-Order Prediction	1.2.840.10008.1.2.4.70	SCU	None
JPEG 2000 Image Compression, Lossless	1.2.840.10008.1.2.4.90	SCU	None
JPEG 2000 Image Compression, Lossy	1.2.840.10008.1.2.4.91	SCU	None

SOP Specific Conformance for SOP Classes

The behavior of Storage AE when encountering status codes in a C-STORE response is summarized in the Table below:

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	The remote SCP AE has successfully received the DICOM object.
Refused	Out of resources	A700-A7FF	The Association is aborted using A-ABORT and the send job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Refused	Data Set does not match SOP Class	A900- A9FF	The Association is aborted using A-ABORT and the send job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.

Error	Cannot Under-stand	C000- CFFF	The Association is aborted using A-ABORT and the send job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Warning	Coercion of Data Elements	B000	Image transmission is considered successful but the status meaning is logged.
Warning	Data Set does not match SOP Class	B007	Image transmission is considered successful but the status meaning is logged.
Warning	Elements Dis-carded	B006	Image transmission is considered successful but the status meaning is logged.
*	*	Any other sta-tus code.	The Association is aborted using A-ABORT and the send job is marked as failed. The status code is logged and the job failure is reported to the user via an alert window.

The behavior of Storage AE during communication failure is summarized in the Table below:

Exception	Behavior
Timeout	The Association is aborted using A-ABORT and the send job is marked as failed. The reason is logged and the job failure is reported to the user via an alert window.
Association aborted by the SCP or network layers	The send job is marked as failed. The reason is logged and the job failure is reported to the user via an alert window.

A failed send job can be restarted by user interaction. The system can be configured to automatically resend failed jobs if a transient status code is received.

4.2.1.4 Association Acceptance Policy

OsiriX Store-SCU doesn't accept associations.

4.2.2 Store-SCP

4.2.2.1 SOP Classes

OsiriX Store-SCP provides Standard Conformance to the following DICOM 3.0 SOP Classes:

Table 10: C-Store SCP SOP Classes

SOP Classes	UID	SCP
AmbulatoryECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.3	YES
BasicTextSR	1.2.840.10008.5.1.4.1.1.88.11	YES
BasicVoiceAudioWaveformStorage	1.2.840.10008.5.1.4.1.1.9.4.1	YES
BlendingSoftcopyPresentationStateStorage	1.2.840.10008.5.1.4.1.1.11.4	YES
CTImageStorage	1.2.840.10008.5.1.4.1.1.2	YES
CardiacElectrophysiologyWaveformStorage	1.2.840.10008.5.1.4.1.1.9.3.1	YES
ChestCADSR	1.2.840.10008.5.1.4.1.1.88.65	YES
ColorSoftcopyPresentationStateStorage	1.2.840.10008.5.1.4.1.1.11.2	YES
ComprehensiveSR	1.2.840.10008.5.1.4.1.1.88.33	YES
ComputedRadiographyImageStorage	1.2.840.10008.5.1.4.1.1.1	YES

DigitalIntraOralXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.3	YES
DigitalIntraOralXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.3.1	YES
DigitalMammographyXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.2	YES
DigitalMammographyXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.2.1	YES
DigitalXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.1	YES
DigitalXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.1.1	YES
EncapsulatedPDFStorage	1.2.840.10008.5.1.4.1.1.104.1	YES
EnhancedCTImageStorage	1.2.840.10008.5.1.4.1.1.2.1	YES
EnhancedMRIImageStorage	1.2.840.10008.5.1.4.1.1.4.1	YES
EnhancedSR	1.2.840.10008.5.1.4.1.1.88.22	YES
EnhancedXAImageStorage	1.2.840.10008.5.1.4.1.1.12.1.1	YES
EnhancedXRFImageStorage	1.2.840.10008.5.1.4.1.1.12.2.1	YES
GeneralECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.2	YES
GrayscaleSoftcopyPresentationStateStorage	1.2.840.10008.5.1.4.1.1.11.1	YES
EnhancedPETImageStorage	1.2.840.10008.5.1.4.1.1.130	YES
KeyObjectSelectionDocument	1.2.840.10008.5.1.4.1.1.88.59	YES
MRIImageStorage	1.2.840.10008.5.1.4.1.1.4	YES
MRSpectroscopyStorage	1.2.840.10008.5.1.4.1.1.4.2	YES
MammographyCADSR	1.2.840.10008.5.1.4.1.1.88.50	YES
MultiframeGrayscaleByteSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.2	YES
MultiframeGrayscaleWordSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.3	YES
MultiframeSingleBitSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.1	YES
MultiframeTrueColorSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.4	YES
NuclearMedicineImageStorage	1.2.840.10008.5.1.4.1.1.20	YES
OphthalmicPhotography16BitImageStorage	1.2.840.10008.5.1.4.1.1.77.1.5.2	YES
OphthalmicPhotography8BitImageStorage	1.2.840.10008.5.1.4.1.1.77.1.5.1	YES
PETCurveStorage	1.2.840.10008.5.1.4.1.1.129	YES
PETImageStorage	1.2.840.10008.5.1.4.1.1.130	YES
ProcedureLogStorage	1.2.840.10008.5.1.4.1.1.88.40	YES
PseudoColorSoftcopyPresentationStateStorage	1.2.840.10008.5.1.4.1.1.11.3	YES
RTBeamsTreatmentRecordStorage	1.2.840.10008.5.1.4.1.1.481.4	YES
RTBrachyTreatmentRecordStorage	1.2.840.10008.5.1.4.1.1.481.6	YES
RTDoseStorage	1.2.840.10008.5.1.4.1.1.481.2	YES
RTImageStorage	1.2.840.10008.5.1.4.1.1.481.1	YES
RTPlanStorage	1.2.840.10008.5.1.4.1.1.481.5	YES
RTStructureSetStorage	1.2.840.10008.5.1.4.1.1.481.3	YES
RTTreatmentSummaryRecordStorage	1.2.840.10008.5.1.4.1.1.481.7	YES
RawDataStorage	1.2.840.10008.5.1.4.1.1.66	YES
RealWorldValueMappingStorage	1.2.840.10008.5.1.4.1.1.67	YES
SecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7	YES
SpatialFiducialsStorage	1.2.840.10008.5.1.4.1.1.66.2	YES
SpatialRegistrationStorage	1.2.840.10008.5.1.4.1.1.66.1	YES
StereometricRelationshipStorage	1.2.840.10008.5.1.4.1.1.77.1.5.3	YES
TwelveLeadECGWaveformStorage	1.2.840.10008.5.1.4.1.1.9.1.1	YES
UltrasoundImageStorage	1.2.840.10008.5.1.4.1.1.6	YES
UltrasoundImageStorage - Retired	1.2.840.10008.5.1.4.1.1.3	YES
UltrasoundMultiframeImageStorage	1.2.840.10008.5.1.4.1.1.3.1	YES
VLEndoscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.1	YES
VLMicroscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.2	YES
VLPhotographicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.4	YES
VideoEndoscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.1.1	YES
XRayAngiographicImageStorage	1.2.840.10008.5.1.4.1.1.12.1	YES

XRyFluoroscopyImageStorage	1.2.840.10008.5.1.4.1.1.12.2	YES
XRyRadiationDoseSR	1.2.840.10008.5.1.4.1.1.88.67	YES

4.2.2.2 Association Policies

OsiriX Store-SCP AE will accept associations for Verification and C-STORE Requests. It does not initiate any associations. There are no restrictions to external AETitle. The default PDU size is 16384 bytes (minimum is 4096 bytes, maximum is 131072 bytes).

Number of Associations

The number of associations is unlimited.

Asynchronous Nature

Each association is handled synchronously. OsiriX doesn't support asynchronous operation in an association.

Implementation Identifying Information

OsiriX Implementation Version Name is OSIRIX001.

4.2.2.3 Association Initiation Policy

OsiriX Store-SCP AE will initiate a new association to receive DICOM objects with a CSTORE command when a remote computer connected to the local computer on the defined IP port. The proposed Presentation Contexts will match the DICOM objects that are to be offered by the remote computer. The user can choose the priority order of the proposed Presentation Contexts in the Preferences/Listener window.

Each event is stored in the local log file database.

If an error occurs, an error message is displayed to the user.

The default timeout for all communications (TCP/IP and DICOM) is 40 seconds. This value can be changed by the user in the Preferences/Listener window.

Accepted Presentation Contexts

Name	UID	Role	Ext.Negot.
Implicit VR - Little Endian	1.2.840.10008.1.2	SCU	None
Explicit VR - Little Endian	1.2.840.10008.1.2.1	SCU	None
Deflated Explicit VR - Little Endian	1.2.840.10008.1.2.1.99	SCU	None
Explicit VR - Big Endian	1.2.840.10008.1.2.2	SCU	None
JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50	SCU	None
JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCU	None
JPEG Lossless, Non-Hierarchical (Process 14)	1.2.840.10008.1.2.4.57	SCU	None
JPEG Lossless, Hierarchical, First-Order Prediction	1.2.840.10008.1.2.4.70	SCU	None
JPEG 2000 Image Compression, Lossless	1.2.840.10008.1.2.4.90	SCU	None
JPEG 2000 Image Compression, Lossy	1.2.840.10008.1.2.4.91	SCU	None

SOP Specific Conformance for SOP Classes

The behavior of Storage AE when encountering status codes in a C-STORE response is summarized in the Table below:

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	OsiriX has successfully received the DICOM object.
Refused	Out of resources	A700-A7FF	The Association is aborted using A-ABORT and the send job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Refused	Data Set does not match SOP Class	A900-A9FF	The Association is aborted using A-ABORT and the send job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Error	Cannot Understand	C000-CFFF	The Association is aborted using A-ABORT and the send job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Warning	Coercion of Data Elements	B000	Image transmission is considered successful but the status meaning is logged.
Warning	Data Set does not match SOP Class	B007	Image transmission is considered successful but the status meaning is logged.
Warning	Elements Discarded	B006	Image transmission is considered successful but the status meaning is logged.
*	*	Any other status code.	The Association is aborted using A-ABORT and the send job is marked as failed. The status code is logged and the job failure is reported to the user via an alert window.

The behavior of Storage AE during communication failure is summarized in the Table below:

Exception	Behavior
Timeout	The Association is aborted using A-ABORT and the send job is marked as failed. The reason is logged and the job failure is reported to the user via an alert window.
Association aborted by the SCP or network layers	The send job is marked as failed. The reason is logged and the job failure is reported to the user via an alert window.

4.2.2.4 Association Acceptance Policy

OsiriX Store-SCP will try to accept all incoming associations. There are no restrictions based on the network address or on the AETitle, for example.

4.2.3 Print-SCU

4.2.3.1 SOP Classes

OsiriX Print-SCU provides Standard Conformance to the following DICOM 3.0 SOP Classes:

SOP Class	UID	Role
Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	SCU
Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	SCU
Basic Grayscale Image Box SOP Class	1.2.840.10008.5.1.1.4	SCU
Basic Color Image Box SOP Class	1.2.840.10008.5.1.1.4.1	SCU
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	SCU
Printer SOP Class	1.2.840.10008.5.1.1.16	SCU
Basic Color Print Management Meta SOP Class	1.2.840.10008.5.1.1.18	SCU

4.2.3.2 Association Policies

There are no restrictions to external AETitle. The default PDU size is 16384 bytes (minimum is 4096 bytes, maximum is 131072 bytes).

Number of Associations

The number of associations is unlimited.

Asynchronous Nature

Each association is handled synchronously. OsiriX doesn't support asynchronous operation in an association.

Implementation Identifying Information

OsiriX Implementation Version Name is OSIRIX001. This version name is updated with each new major version of the product software, as different AE versions are never released independently.

Proposed Presentation Contexts

OsiriX offers a unique presentation context for Print-SCU:

Name	UID	Role	Ext.Negot.
Implicit VR - Little Endian	1.2.840.10008.1.2	SCU	None

4.2.3.3 Association Acceptance Policy

OsiriX Print-SCU doesn't accept associations.

4.2.4 Find-SCU, Get-SCU, Move-SCU

4.2.4.1 SOP Classes

OsiriX Find-SCU, Get-SCU and Move-SCU provide Standard Conformance to the following DICOM 3.0 SOP Classes:

SOP Classes	UID	Role
FIND Study Root Query/Retrieve Information Model	1.2.840.10008.5.1.4.1.2.2.1	SCU
MOVE Study Root Query/Retrieve Information Model	1.2.840.10008.5.1.4.1.2.2.2	SCU
GET Study Root Query/Retrieve Information Model	1.2.840.10008.5.1.4.1.2.2.3	SCU

Table 17: C-Get-SCU, C-Move SCU SOP Classes

SOP Classes	UID	Role
CTImageStorage	1.2.840.10008.5.1.4.1.1.2	SCU
ComputedRadiographyImageStorage	1.2.840.10008.5.1.4.1.1.1	SCU
DigitalIntraOralXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.3	SCU
DigitalIntraOralXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.3.1	SCU
DigitalMammographyXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.2	SCU
DigitalMammographyXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.2.1	SCU
DigitalXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.1.1	SCU
EncapsulatedPDFStorage	1.2.840.10008.5.1.4.1.1.104.1	SCU
EnhancedCTImageStorage	1.2.840.10008.5.1.4.1.1.2.1	SCU
EnhancedMRIImageStorage	1.2.840.10008.5.1.4.1.1.4.1	SCU
EnhancedXAImageStorage	1.2.840.10008.5.1.4.1.1.12.1.1	SCU
EnhancedXRFImageStorage	1.2.840.10008.5.1.4.1.1.12.2.1	SCU
EnhancedPETImageStorage	1.2.840.10008.5.1.4.1.1.130	SCU
MRImageStorage	1.2.840.10008.5.1.4.1.1.4	SCU
MultiframeGrayscaleByteSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.2	SCU
MultiframeGrayscaleWordSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.3	SCU
MultiframeSingleBitSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.1	SCU
MultiframeTrueColorSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.4	SCU
NuclearMedicineImageStorage	1.2.840.10008.5.1.4.1.1.20	SCU
OphthalmicPhotography16BitImageStorage	1.2.840.10008.5.1.4.1.1.77.1.5.2	SCU
OphthalmicPhotography8BitImageStorage	1.2.840.10008.5.1.4.1.1.77.1.5.1	SCU
SecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7	SCU
UltrasoundImageStorage	1.2.840.10008.5.1.4.1.1.6	SCU
UltrasoundImageStorage - Retired	1.2.840.10008.5.1.4.1.1.3	SCU
UltrasoundMultiframeImageStorage	1.2.840.10008.5.1.4.1.1.3.1	SCU
VLEndoscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.1	SCU
VLMicroscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.2	SCU
VLPhotographicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.4	SCU
VideoEndoscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.1.1	SCU
XRayAngiographicImageStorage	1.2.840.10008.5.1.4.1.1.12.1	SCU
XRayFluoroscopyImageStorage	1.2.840.10008.5.1.4.1.1.12.2	SCU

4.2.4.2 Association Policies

There are no restrictions to external AETitle. The default PDU size is 16384 bytes (minimum is 4096 bytes, maximum is 131072 bytes).

Number of Associations

The number of associations is unlimited.

Asynchronous Nature

Each association is handled synchronously. OsiriX doesn't support asynchronous operation in an association.

Implementation Identifying Information

OsiriX Implementation Version Name is OSIRIX001. This version name is updated with each new major version of the product software, as different AE versions are never released independently.

4.2.4.3 Association Initiation Policy

Find-SCU, Get-SCU, Move-SCU generate only STUDY or SERIES level queries. They don't support the PATIENT or IMAGE level query.

OsiriX can generate C-FIND on the following DICOM fields:

- Study level:
 - PatientsName
 - PatientID
 - AccessionNumber
 - StudyDescription
 - StudyDate
 - StudyTime
 - StudyID
 - ModalitiesInStudy
- Series level:
 - SeriesDescription
 - SeriesDate
 - SeriesTime
 - SeriesNumber
 - Modality

Each event is stored in the local log file database.

Proposed Presentation Contexts

Table 18: Presentation Context Table for C-FIND

Name	UID	Role	Ext.Negot.
Implicit VR - Little Endian	1.2.840.10008.1.2	SCU	None
Explicit VR - Little Endian	1.2.840.10008.1.2.1	SCU	None
Explicit VR - Big Endian	1.2.840.10008.1.2.2	SCU	None

Table 19: Proposed Presentation Context Table for C-GET and C-MOVE

Name	UID	Role	Ext.Negot.
Implicit VR - Little Endian	1.2.840.10008.1.2	SCU	None
Explicit VR - Little Endian	1.2.840.10008.1.2.1	SCU	None
Deflated Explicit VR - Little Endian	1.2.840.10008.1.2.1.99	SCU	None
Explicit VR - Big Endian	1.2.840.10008.1.2.2	SCU	None
JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50	SCU	None
JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCU	None
JPEG Lossless, Non-Hierarchical (Process 14)	1.2.840.10008.1.2.4.57	SCU	None
JPEG Lossless, Hierarchical, First-Order Prediction	1.2.840.10008.1.2.4.70	SCU	None
JPEG 2000 Image Compression, Lossless	1.2.840.10008.1.2.4.90	SCU	None
JPEG 2000 Image Compression, Lossy	1.2.840.10008.1.2.4.91	SCU	None

SOP Specific Conformance for SOP Classes

Table 20: C-FIND RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	OsiriX has successfully received the answer to the CFIND request.
Refused	Out of resources	A700-A7FF	The Association is aborted using A-ABORT and the find job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Refused	Data Set does not match SOP Class	A900- A9FF	The Association is aborted using A-ABORT and the find job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Error	Cannot Understand	C000- CFFF	The Association is aborted using A-ABORT and the find job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Warning	Coercion of Data Elements	B000	CFIND request is considered successful but the status meaning is logged.
Warning	Data Set does not match SOP Class	B007	CFIND request is considered successful but the status meaning is logged.
Warning	Elements Discarded	B006	CFIND request is considered successful but the status meaning is logged.
*	*	Any other status code.	The Association is aborted using A-ABORT and the find job is marked as failed. The status code is logged and the job failure is reported to the user via an alert window.

Table 21: C-FIND FAILURE BEHAVIOR

Exception	Behavior
Timeout	The Association is aborted using A-ABORT and the CFIND request is marked as failed. The reason is logged and the job failure is reported to the user via an alert window.

Association aborted by the SCP or network layers	The CFIND request is marked as failed. The reason is logged and the job failure is reported to the user via an alert window.
--	--

Table 22: C-GET/C-MOVE RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	OsiriX has successfully received the DICOM object.
Refused	Out of resources	A700-A7FF	The Association is aborted using A-ABORT and the get/move job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Refused	Data Set does not match SOP Class	A900- A9FF	The Association is aborted using A-ABORT and the get/move job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Error	Cannot Understand	C000- CFFF	The Association is aborted using A-ABORT and the get/move job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Warning	Coercion of Data Elements	B000	Image transmission is considered successful but the status meaning is logged.
Warning	Data Set does not match SOP Class	B007	Image transmission is considered successful but the status meaning is logged.
Warning	Elements Discarded	B006	Image transmission is considered successful but the status meaning is logged.
*	*	Any other status code.	The Association is aborted using A-ABORT and the get/move job is marked as failed. The status code is logged and the job failure is reported to the user via an alert window.

Table 23: C-GET/C-MOVE FAILURE BEHAVIOR

Exception	Behavior
Timeout	The Association is aborted using A-ABORT and the get/move job is marked as failed. The reason is logged and the job failure is reported to the user via an alert window.
Association aborted by the SCP or network layers	The get/move job is marked as failed. The reason is logged and the job failure is reported to the user via an alert window.

4.2.5 Find-SCP, Get-SCP, Move-SCP

4.2.5.1 SOP Classes

OsiriX Find-SCP, Get-SCP, Move-SCP provide Standard Conformance to the following DICOM 3.0 SOP Classes:

SOP Classes for C-FIND	UID	Role
FIND Study Root Query/Retrieve Information Model	1.2.840.10008.5.1.4.1.2.2.1	SCP
MOVE Study Root Query/Retrieve Information Model	1.2.840.10008.5.1.4.1.2.2.2	SCP
GET Study Root Query/Retrieve Information Model	1.2.840.10008.5.1.4.1.2.2.3	SCP

SOP Classes for C-GET and C-MOVE	UID	Role
CTImageStorage	1.2.840.10008.5.1.4.1.1.2	SCP
ComputedRadiographyImageStorage	1.2.840.10008.5.1.4.1.1.1	SCP
DigitalIntraOralXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.3	SCP
DigitalIntraOralXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.3.1	SCP
DigitalMammographyXRayImageStorageForPresentation	1.2.840.10008.5.1.4.1.1.1.2	SCP
DigitalMammographyXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.2.1	SCP
DigitalXRayImageStorageForProcessing	1.2.840.10008.5.1.4.1.1.1.1.1	SCP
EncapsulatedPDFStorage	1.2.840.10008.5.1.4.1.1.104.1	SCP
EnhancedCTImageStorage	1.2.840.10008.5.1.4.1.1.2.1	SCP
EnhancedMRImageStorage	1.2.840.10008.5.1.4.1.1.4.1	SCP
EnhancedXAImageStorage	1.2.840.10008.5.1.4.1.1.12.1.1	SCP
EnhancedXRFImageStorage	1.2.840.10008.5.1.4.1.1.12.2.1	SCP
EnhancedPETImageStorage	1.2.840.10008.5.1.4.1.1.130	SCP
MRImageStorage	1.2.840.10008.5.1.4.1.1.4	SCP
MultiframeGrayscaleByteSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.2	SCP
MultiframeGrayscaleWordSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.3	SCP
MultiframeSingleBitSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.1	SCP
MultiframeTrueColorSecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7.4	SCP
NuclearMedicineImageStorage	1.2.840.10008.5.1.4.1.1.20	SCP
OphthalmicPhotography16BitImageStorage	1.2.840.10008.5.1.4.1.1.77.1.5.2	SCP
OphthalmicPhotography8BitImageStorage	1.2.840.10008.5.1.4.1.1.77.1.5.1	SCP
SecondaryCaptureImageStorage	1.2.840.10008.5.1.4.1.1.7	SCP
UltrasoundImageStorage	1.2.840.10008.5.1.4.1.1.6	SCP
UltrasoundImageStorage - Retired	1.2.840.10008.5.1.4.1.1.3	SCP
UltrasoundMultiframeImageStorage	1.2.840.10008.5.1.4.1.1.3.1	SCP
VLEndoscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.1	SCP
VLMicroscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.2	SCP
VLP photographicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.4	SCP
VideoEndoscopicImageStorage	1.2.840.10008.5.1.4.1.1.77.1.1.1	SCP
XRayAngiographicImageStorage	1.2.840.10008.5.1.4.1.1.12.1	SCP
XRayFluoroscopyImageStorage	1.2.840.10008.5.1.4.1.1.12.2	SCP

4.2.5.2 Association Policies

There are no restrictions to external AETitle. The default PDU size is 16384 bytes (minimum is 4096 bytes, maximum is 131072 bytes).

Number of Associations

The number of associations is unlimited.

Asynchronous Nature

Each association is handled synchronously. OsiriX doesn't support asynchronous operation in an association.

Implementation Identifying Information

OsiriX Implementation Version Name is OSIRIX001. This version name is updated with each new major version of the product software, as different AE versions are never released independently.

4.2.5.3 Association Acceptance Policy

Find-SCP, Get-SCP, Move-SCP answer only to STUDY, SERIES or IMAGE level queries. They don't support the PATIENT level query.

OsiriX accepts C-FIND on the following DICOM fields:

- Study level:
 - PatientsName
 - PatientID
 - AccessionNumber
 - StudyDescription
 - StudyDate
 - StudyTime
 - StudyID
 - ModalitiesInStudy
- Series level:
 - SeriesDescription
 - SeriesDate
 - SeriesTime
 - SeriesNumber
 - Modality
- Image level:
 - SOP Instance UID

Each event is stored in the local log file database.

4.2.5.4 Proposed Presentation Contexts

Table 26: Presentation Context Table for C-FIND

Name	UID	Role	Ext.Negot.
Implicit VR - Little Endian	1.2.840.10008.1.2	SCP	None
Explicit VR - Little Endian	1.2.840.10008.1.2.1	SCP	None
Explicit VR - Big Endian	1.2.840.10008.1.2.2	SCP	None

Table 27: Presentation Context Table for C-GET and C-MOVE

Name	UID	Role	Ext.Negot.
Implicit VR - Little Endian	1.2.840.10008.1.2	SCU	None
Explicit VR - Little Endian	1.2.840.10008.1.2.1	SCU	None
Deflated Explicit VR - Little Endian	1.2.840.10008.1.2.1.99	SCU	None
Explicit VR - Big Endian	1.2.840.10008.1.2.2	SCU	None
JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50	SCU	None
JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCU	None
JPEG Lossless, Non-Hierarchical (Process 14)	1.2.840.10008.1.2.4.57	SCU	None
JPEG Lossless, Hierarchical, First-Order Prediction	1.2.840.10008.1.2.4.70	SCU	None
JPEG 2000 Image Compression, Lossless	1.2.840.10008.1.2.4.90	SCU	None
JPEG 2000 Image Compression, Lossy	1.2.840.10008.1.2.4.91	SCU	None

SOP Specific Conformance for SOP Classes

Table 28: C-FIND RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	OsiriX has successfully received the answer to the CFIND request.
Refused	Out of resources	A700-A7FF	The Association is aborted using A-ABORT and the find job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Refused	Data Set does not match SOP Class	A900- A9FF	The Association is aborted using A-ABORT and the find job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Error	Cannot Understand	C000- CFFF	The Association is aborted using A-ABORT and the find job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Warning	Coercion of Data Elements	B000	CFIND request is considered successful but the status meaning is logged.
Warning	Data Set does not match SOP Class	B007	CFIND request is considered successful but the status meaning is logged.
Warning	Elements Discarded	B006	CFIND request is considered successful but the status meaning is logged.
*	*	Any other status code.	The Association is aborted using A-ABORT and the find job is marked as failed. The status code is logged and the job failure is reported to the user via an alert window.

Table 29: C-FIND FAILURE BEHAVIOR

Exception	Behavior
Timeout	The Association is aborted using A-ABORT and the CFIND request is marked as failed. The reason is logged and the job failure is reported to the user via an alert window.
Association aborted by the SCP or network layers	The CFIND request is marked as failed. The reason is logged and the job failure is reported to the user via an alert window.

Table 30: C-GET/C-MOVE RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	OsiriX has successfully received the DICOM object.
Refused	Out of resources	A700-A7FF	The Association is aborted using A-ABORT and the get/move job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Refused	Data Set does not match SOP Class	A900- A9FF	The Association is aborted using A-ABORT and the get/move job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Error	Cannot Understand	C000- CFFF	The Association is aborted using A-ABORT and the get/move job is marked as failed. The status meaning is logged and the job failure is reported to the user via an alert window.
Warning	Coercion of Data Elements	B000	Image transmission is considered successful but the status meaning is logged.
Warning	Data Set does not match SOP Class	B007	Image transmission is considered successful but the status meaning is logged.
Warning	Elements Discarded	B006	Image transmission is considered successful but the status meaning is logged.
*	*	Any other status code.	The Association is aborted using A-ABORT and the get/move job is marked as failed. The status code is logged and the job failure is reported to the user via an alert window.

Table 31: C-GET/C-MOVE FAILURE BEHAVIOR

Exception	Behavior
Timeout	The Association is aborted using A-ABORT and the get/move job is marked as failed. The reason is logged and the job failure is reported to the user via an alert window.
Association aborted by the SCP or network layers	The get/move job is marked as failed. The reason is logged and the job failure is reported to the user via an alert window.

4.2.6 WADO-SCU, WADO-SCP

4.2.6.1 SOP Classes

OsiriX WADO-SCU, WADO-SCP provide Standard Conformance to the Part 18: Web Access to DICOM Persistent Objects (WADO).

4.2.6.2 Association Policies

There are no restrictions to external AETitle or addresses.

Number of Sockets

The number of associations is unlimited. For a retrieve, OsiriX will open a maximum of 50 http sockets.

Asynchronous Nature

Each communication is handled asynchronously.

4.2.6.3 HTTP Request

The HTTP Request uses the GET method as defined in IETF RFC2616.

4.2.6.4 HTTP Response

The response uses an HTTP Response Message as specified in IETF RFC2616.

OsiriX accepts the following MIME types:

- application/dicom
- image/jpeg
- image/gif
- image/png
- image/jp2
- video/mpeg

OsiriX don't support the following MIME types:

- text/xml
- application/pdf
- text/rtf
- HL7 CDA

OsiriX handle response for the following DICOM Objects:

- SINGLE FRAME IMAGE OBJECTS
- MULTI-FRAME IMAGE OBJECTS
- TEXT OBJECTS
- OTHER OBJECTS

Notice

TEXT OBJECTS and OTHER OBJECTS are supported only for 'application/dicom' MIME type. No transfer syntax conversion is supported. Only the original transfex syntax (as stored in the OsiriX database) is supported.

OsiriX supports the following parameters in the HTTP request path:

- requestType
- studyUID
- seriesUID
- objectUID
- contentType
- seriesUID
- rows
- columns
- windowCenter
- windowWidth
- frameNumber
- imageQuality
- transferSyntax
- useOrig

Notice

If the MIME type is 'application/dicom', and no 'transferSyntax' parameter is specified, OsiriX will return the DICOM object as stored in the database, without transfex syntax conversion. OsiriX supports the 'useOrig' parameter (not defined in the DICOM standard): OsiriX will return the DICOM object as stored in the database, ignoring the 'transferSyntax' parameter.

OsiriX doesn't support the following parameters in the HTTP request:

- charset
- anonymize
- annotation
- region
- presentationUID
- presentationSeriesUID

Each WADO-SCP event is stored in the local log file database.

4.3 Network Interfaces

4.3.1 Physical Network Interfaces

OsiriX supports multiple network interfaces. The following physical network interfaces will be available depending on installed hardware options:

Name
Ethernet 1000baseT
Ethernet 100baseT
Ethernet 10baseT
WIFI 802.11

4.3.2 Additional Protocols

None.

4.4 Configuration

4.4.1 AE Title/Presentation Address Mapping

All local applications use the AE Titles and TCP/IP Ports configured via the Preferences/Locations window in OsiriX. The user can configure the TCP Port via the Preferences/Listener window in OsiriX. The AE Titles must be configured during installation. The local AE Title used by each individual application can be configured independently of the AE Title used by other local applications.

4.4.2 Parameters

A large number of parameters related to viewing, storing and general operation can be configured using the Preferences window in OsiriX. All these parameters are accessible in the File Menu, Preferences item. These parameters are stored in the preference file, located in the user Library/Preferences directory. The name of this file is always : com.rossetantoine.osirix.plist

5 Media Storage

5.1 Implementation Model

OsiriX can export or import DICOM objects to external media storage, such a CD or DVD.

5.2 AE Specifications

5.2.1 OsiriX Media Exporter

OsiriX Media Exporter provides standard conformance to DICOM Interchange Option of the Media Storage Service Class.

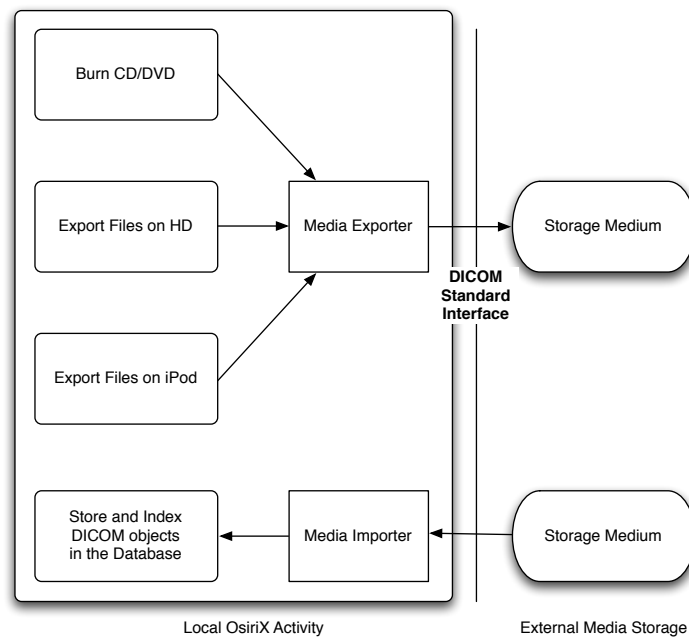


Figure 2: Media Storage

5.2.1.1 Implementation Identifying Information

OsiriX Implementation Version Name is OSIRIX001. This version name is updated with each new major version of the product software, as different AE versions are never released independently.

5.2.1.2 Activities

OsiriX can export DICOM objects to external media storage, when manually requested by the user. The user can export DICOM objects to: hard disks, CD, DVD and iPods. OsiriX supports the creation of a DICOMDIR file, if requested by the user.

5.2.2 OsiriX Media Importer

OsiriX Media Importer provides standard conformance to DICOM Interchange Option of the Media Storage Service Class.

5.2.2.1 Implementation Identifying Information

Not applicable.

5.2.2.2 Activities

OsiriX can import DICOM objects from CD, DVD, iPod or external hard disks. Each DICOM object will be stored and indexed in the OsiriX database. When

inserting or ejecting a DICOM CD/DVD, the DICOMDIR file, if available, will be automatically analyzed. The corresponding files will be incorporated in the database.

5.3 Augmented and Private Profiles

None.

6 Support for Extended Character Sets

The Specific Character Set value is stored in the file DICOM Tag field (0008,0005).

Table 32: Supported Character Sets

Code	Description
ISO_IR 100	Latin alphabet #1
ISO_IR 101	Latin alphabet #2
ISO_IR 109	Latin alphabet #3
ISO_IR 110	Latin alphabet #4
UTF-8	Unicode
ISO_IR 192	Unicode
ISO_IR 127	Arabic
ISO_IR 144	Cyrillic
ISO_IR 126	Greek
ISO_IR 138	Hebrew
GB18030	Chinese
ISO 2022 IR 149	Korean
ISO 2022 IR 13	Japanese
ISO_IR 13	Japanese
ISO 2022 IR 87	Japanese