



Advantage Cluster Storage / Archive System

Release 1 v1.1.5.2

Conformance Statement

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Revision History

Revision	Date	Author	Reason for Change
0	5/17/96	SD	official release
1	6/27/96	RZ	update style and layout
2	9/20/96	SD	document support for newest NM object (1.2.840.10008.5.1.4.1.1.20) and the Verification SOP Class as an SCU

NOTIFICATION

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1. Introduction

1.1 Purpose of this Document

This document is a provisional DICOM Conformance Statement for the software product **ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2**. *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2* is a service class provider for DIMSE-C services relating to the storage and retrieval of images.

1.2 Sources for this Document

- American College of Radiology-National Electrical Manufacturers Association (ACR-NEMA) Digital Imaging and Communications v2.0, 1988.
- ACR-NEMA Digital Imaging and Communications in Medicine (DICOM) v3.0.

1.3 Acronyms and Abbreviations

The following acronyms and abbreviations are used in this document.

- ACR American College of Radiology
- AE Application Entity
- ANSI American National Standards Institute
- DICOM Digital Imaging and Communications in Medicine
- DIMSE DICOM Message Service Element
- DIMSE-C DICOM Message Service Element-Composite
- DIMSE-N DICOM Message Service Element-Normalized
- NEMA National Electrical Manufacturers Association
- PDU Protocol Data Unit
- SCP Service Class Provider
- SCU Service Class User
- SOP Service Object Pair
- TCP/IP Transmission Control Protocol/Internet Protocol
- UID Unique Identifier

1.4 Typographical Conventions

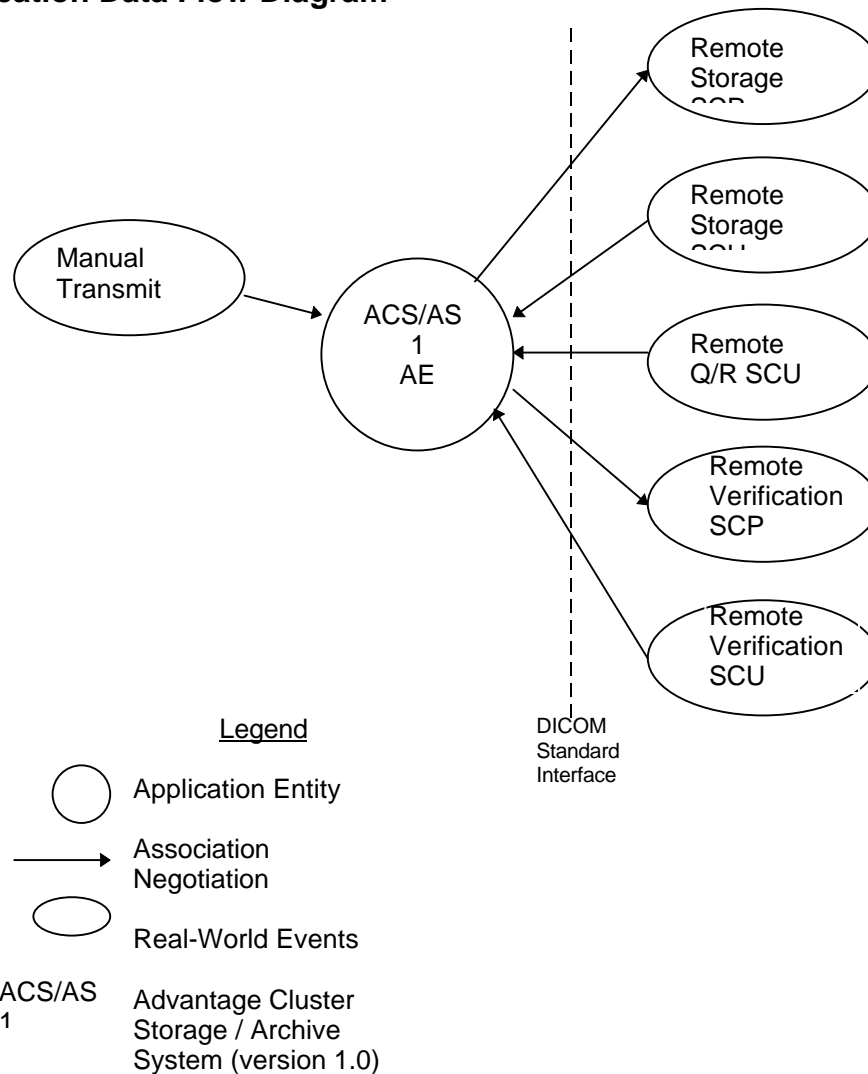
This section is designed to assist the reader in understanding the terms and typographical conventions used in this document.

Formatting convention	Type of information
Bold type	DICOM SOP Class, or DIMSE Service
<i>Italic type</i>	Application Entity

2. Implementation Model

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 is an image database and storage facility. ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 is a single application entity that stores images sent to it by service class users, allows queries based on several standard query models, and retrieves requested images.

2.1 Application Data Flow Diagram



2.1.1 Remote Storage SCU

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 stores a received image in its entirety, without change, in its internal data store. ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 stores each image with the File Meta Information attached to it.

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 extracts the query information with respect to the patient, study, series and image, and stores this information within its internal database.

2.1.2 Remote Query/Retrieve SCU

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 responds to queries based on the records stored in its database.

2.1.3 Remote Storage SCP

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 responds to requests for retrieve images (**C-MOVEs** to the requester, or DIMSE **C-MOVEs** to a third party) by obtaining a reference from the database then obtaining the image object itself from the data store.

2.1.4 Remote Verification SCP

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 requests DICOM verification responses from remote systems to determine if the remote system can receive DICOM requests.

2.1.5 Remote Verification SCU

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 responds to DICOM verification requests from remote systems to provide the remote system with the ability to determine that DICOM requests can be received by the archive.

2.1.6 Manual Transmit

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 responds to manual transmit requests for sending of images to a remote location (**C-STOREs** to a selected destination).

2.2 Functional Definitions of AEs

2.3 Sequencing of Real World Activities

3. AE Specifications

3.1 ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 Specifications

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 provides Standard Conformance to the following DICOM V3.0 **Verification** SOP Class as an SCP and an SCU.

Table 1 Verification SOP Class

SOP Class	SOP Class UID
Verification	1.2.840.10008.1.1

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 provides Standard Conformance to the following DICOM V3.0 **Storage** SOP Classes as an SCP.

Table 2 Storage SOP Classes

SOP Class	SOP Class UID
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1
CT Image Storage	1.2.840.10008.5.1.4.1.1.2
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3
MR Image Storage	1.2.840.10008.5.1.4.1.1.4
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.5
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
Stand-alone Overlay Image Storage	1.2.840.10008.5.1.4.1.1.8
Stand-alone Curve Storage	1.2.840.10008.5.1.4.1.1.9
Stand-alone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10
Stand-alone VOI LUT Storage	1.2.840.10008.5.1.4.1.1.11
X-ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1
X-ray RadioFluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2
X-ray Angiographic Bi-plane Image Storage	1.2.840.10008.5.1.4.1.1.12.3

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 provides Standard Conformance to the following DICOM V3.0 **Query/Retrieve** SOP Classes as an SCP.

Table 3 Query/Retrieve SOP Classes

SOP Class	SOP Class UID
Patient Root Query/Retrieve IM Find	1.2.840.10008.5.1.4.1.2.1.1
Patient Root Query/Retrieve IM Move	1.2.840.10008.5.1.4.1.2.1.3
Study Root Query/Retrieve IM Find	1.2.840.10008.5.1.4.1.2.2.1
Study Root Query/Retrieve IM Move	1.2.840.10008.5.1.4.1.2.2.3
Patient/Study Only Query/Retrieve IM Find	1.2.840.10008.5.1.4.1.2.3.1
Patient/Study Only Query/Retrieve IM Move	1.2.840.10008.5.1.4.1.2.3.3

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 provides Standard Conformance to the following DICOM V3.0 **Storage** SOP Classes as an SCU.

Table 4 Storage SOP Classes

SOP Class	SOP Class UID
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1
CT Image Storage	1.2.840.10008.5.1.4.1.1.2
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3
MR Image Storage	1.2.840.10008.5.1.4.1.1.4
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.5
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20

Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7
Stand-alone Overlay Image Storage	1.2.840.10008.5.1.4.1.1.8
Stand-alone Curve Storage	1.2.840.10008.5.1.4.1.1.9
Stand-alone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10
Stand-alone VOI LUT Storage	1.2.840.10008.5.1.4.1.1.11
X-ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1
X-ray RadioFluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2
X-ray Angiographic Bi-plane Image Storage	1.2.840.10008.5.1.4.1.1.12.3

3.1.1 Association Establishment Policies

3.1.1.1 General

The following Application Context Name will be proposed and recognized by *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2*:

- DICOM 3.0 Application Context **1.2.840.10008.3.1.1.1**

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 contains no limitations for maximum PDU size.

3.1.1.2 Number of Associations

The maximum number of simultaneous associations accepted by *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2* is configurable at run time, based on the system resources available. By default, the maximum number of associations is set at 32. There is no inherent limit to the number of associations other than limits imposed by the computer operating system.

3.1.1.3 Asynchronous Nature

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 allows a single outstanding operation on any association. Therefore, *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2* does not support asynchronous operations window negotiation, other than the default as specified by the DICOM specification.

3.1.1.4 Implementation Identifying Information

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 will respond with the following implementation identifying parameters:

- Implementation Class UID **1.2.124.113532.3300**
- Implementation Version Name **IMPAX951.0**

The implementation version name policies are the following: product name “**IMPAX**” followed by the year of the product “**95**”, and finally the version of the product, “**1.0**”.

3.1.1.5 Called/Calling Titles

The default calling title that *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2* will use is “**STORAGE_SCP**”. This parameter can be configured via the GUI. *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2* is configured to validate the Called Title of the requesting SCU during association negotiation. This

will provide ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 with a first pass level of security, to prevent unwanted SCU processes from accessing vital hospital information.

3.1.2 Association Initiation by Real World Activity

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 does initiate C-Store associations in response to the real-world activity “Manual Transmit”. Also, C-Store sub-operations are initiated by a C-Move request. These sub-operations are described in the following section, under “Real World Activity - Move.”

3.1.3 Association Acceptance Policy

3.1.3.1 Real World Activity - Verification

3.1.3.1.1 Associated Real World Activity - Verification

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 (as an SCP) will respond to **Verification** requests to provide an SCU with the ability to determine if ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 is receiving DICOM requests

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 (as an SCU) will request **Verification** responses from an SCP to determine if the SCP is receiving DICOM requests.

3.1.3.1.2 Presentation Context Table - Verification

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 supports the transfer syntaxes listed in Table 5. ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 will accept any of the Presentation Contexts listed in Table 6 for **Verification**.

Table 5 Transfer Syntaxes

DICOM Implicit VR Little Endian Transfer Syntax	1.2.840.10008.1.2
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Table 6 Presentation Contexts

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
SOP Class	SOP Class UID			
Verification	1.2.840.10008.1.1	all from Table 5	SCP	None

3.1.3.1.3 SOP Specific Conformance - Verification

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 provides standard conformance to the DICOM **Verification Service Class**. ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 returns one of the following status codes.

Table 7 Verification status codes.

Service Status	Further Meaning	Protocol Codes	Related Fields	Description
Success	Success	0000		Operation performed properly.

3.1.3.1.4 Presentation Context Acceptance Criterion - Verification

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 will always accept a Presentation Context for the Verification SOP Class with the default DICOM transfer syntax listed in Table 5.

3.1.3.1.5 Transfer Syntax Selection Policies - Verification

Since no DICOM data object is associated with a **Verification** command, only the default DICOM transfer syntax is required/supported.

3.1.3.2 Real World Activity - Storage

3.1.3.2.1 Associated Real World Activity - Storage

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 will store images that are sent to it from an SCU. All images received by ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 can be retrieved at a later time from ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2, however, the rate of return of the images will vary depending the state of the images. The images can be in one of three states:

- Online The image is immediately available.
- Nearline The image is automatically available, however, there may be a small delay in the retrieval time.
- Offline The image requires manual assistance to become online. The retrieval time is dependent upon the time for manual intervention.

3.1.3.2.2 Presentation Context Table - Storage

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 supports the following transfer syntaxes listed in Table 8. ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 will accept any of the Presentation Contexts listed in Table 9 for Storage.

Table 8 Transfer Syntaxes

Transfer Syntax	UID
DICOM Implicit VR Little Endian Transfer Syntax	1.2.840.10008.1.2

Table 9 Presentation Contexts

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
SOP Class	SOP Class UID			
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	all from Table 8	SCP/SCU	See Note 1
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	all from Table 8	SCP/SCU	See Note 1
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3	all from Table 8	SCP/SCU	See Note 1
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	all from Table 8	SCP/SCU	See Note 1
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.5	all from Table 8	SCP/SCU	See Note 1
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	all from Table 8	SCP/SCU	See Note 1
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6	all from Table 8	SCP/SCU	See Note 1

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Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	all from Table 8	SCP/SCU	See Note 1
Stand-alone Overlay Image Storage	1.2.840.10008.5.1.4.1.1.8	all from Table 8	SCP/SCU	See Note 1
Stand-alone Curve Storage	1.2.840.10008.5.1.4.1.1.9	all from Table 8	SCP/SCU	See Note 1
Stand-alone Modality LUT Storage	1.2.840.10008.5.1.4.1.1.10	all from Table 8	SCP/SCU	See Note 1
Stand-alone VOI LUT Storage	1.2.840.10008.5.1.4.1.1.11	all from Table 8	SCP/SCU	See Note 1
X-ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	all from Table 8	SCP/SCU	See Note 1
X-ray RadioFluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	all from Table 8	SCP/SCU	See Note 1
X-ray Angiographic Bi-plane Image Storage	1.2.840.10008.5.1.4.1.1.12.3	all from Table 8	SCP/SCU	See Note 1

Note 1: Storage Extended Negotiation will be supported. *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2* will respond with the following information:

Table 10 Storage Extended Negotiation

Field Name	Value	Description of Field
Level of Support	2	level 2 (FULL) SCP
Element Coercion	0	does not coerce any element

3.1.3.2.3 SOP Specific Conformance - Storage

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 conforms to the DICOM **Storage** Service Class at Level 2 (Full). No elements are discarded or coerced by *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2*. In the event of a successful **C-STORE** operation, the image has been written to internal storage, and can be retrieved at any later time.

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 conforms to the DICOM **File Management Roles and Services** as a File-set Creator (FSC), a File-set Reader (FSR) and a File-set Updater (FSU) as defined in Part 10 of the DICOM specification.

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 will store all DICOM images with the **File Meta Information Header**. *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2* will create and update the DICOMDIR file for each File-set. The contents of the **Record Selection Keys** will contain those fields that are stored within the *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2* database at the time the image was written.

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 returns one of the following status codes.

Table 11 C-STORE status codes.

Service Status	Further Meaning	Protocol Codes	Related Fields	Description
	Out of resources	A800		Indicates that there was not enough storage space to store the image. Recovery from this condition is left to the administrative functions.
	SOP Class not supported	A800		Indicates that the SOP Class of the Image in the C-STORE operation did not match the Abstract Syntax negotiated for the Presentation Context.
Error	Data set does not match SOP Class	A900		Indicates that the Data Set does not encode an instance of the SOP Class specified.
	Failed	C000		The operation was not successful.
	Cannot	C005		Indicates that the Data Set cannot be parsed into elements.

	understand			
Warning	Data set does not match SOP Class	B007		Indicates that the Data Set does not match the SOP Class, but that the image was stored anyway.
	Duplicate SOP Instance UID	D000		Indicates that the SOP Instance UID of the specified image is already stored in the database.
Success	Success	0000		Operation performed properly.

3.1.3.2.4 Presentation Context Acceptance Criterion - Storage

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 will accept any number of **Storage** Presentation Contexts per association request. Any one Abstract Syntax may be specified more than once in an association request, if the Transfer Syntaxes differ between the Presentation Contexts.

3.1.3.2.5 Transfer Syntax Selection Policies - Storage

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 currently only supports the default transfer syntax of Implicit Little Endian.

3.1.3.3 Real World Activity - Find

3.1.3.3.1 Associated Real World Activity - Find

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 will respond to query requests that are sent to it from an *SCU*. *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2* accepts the three query models, Patient Root, Study Root, and Patient/Study Only.

3.1.3.3.2 Presentation Context Table - Find

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 supports the transfer syntaxes listed in Table 12. *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2* will accept any of the Presentation Contexts list in Table 13 for Query.

Table 12 Transfer Syntaxes

Transfer Syntax	UID
DICOM Implicit VR Little Endian Transfer Syntax	1.2.840.10008.1.2

Table 13 Presentation Contexts

Abstract Syntax		Transfer Syntax	Role	Extended Negotiation
SOP Class	SOP Class UID			
Patient Root Query/Retrieve IM Find	1.2.840.10008.5.1.4.1.2.1.1	all from Table 12	SCP	See Note 2
Study Root Query/Retrieve IM Find	1.2.840.10008.5.1.4.1.2.2.1	all from Table 12	SCP	See Note 2
Patient/Study Only Query/Retrieve IM Find	1.2.840.10008.5.1.4.1.2.3.1	all from Table 12	SCP	See Note 2

Note 2: Find Extended Negotiation will be supported. *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2* will respond with the following information:

Table 14 Find Extended Negotiation

Field Name	Value	Description of Field
Relational-queries	1	relational queries supported

3.1.3.3.3 SOP Specific Conformance - Find

SOP classes of the **Query/Retrieve** Service Class are implemented via the DIMSE **C-FIND** and **C-MOVE** services as defined in Part 7 of the DICOM standard.

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 supports hierarchical queries. *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2* supports relational queries. *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2*, by default, supports all mandatory search keys. By configuration, any additional field that is in the data dictionary, or a private extension can be made a search key. The following 4 tables describe the default search keys for the 4 levels of query that *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2* supports.

Table 15 Patient level attributes

Description	Tag
Patient name	(0x0010, 0x0010)
Patient id	(0x0010, 0x0020)

Table 16 Study level attributes

Description	Tag
Study instance UID	(0x0020, 0x000D)
Study id	(0x0020, 0x0010)
Study date	(0x0008, 0x0020)
Study time	(0x0008, 0x0010)
Accession number	(0x0008, 0x0050)

Table 17 Series level attributes

Description	Tag
Series instance UID	(0x0020, 0x000E)
Series number	(0x0020, 0x0011)
Modality	(0x0008, 0x0060)

Table 18 Image level attributes

Description	Tag
SOP instance UID	(0x0008, 0x0018)
Image number	(0x0020, 0x0013)

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 returns one of the following status codes to a C-FIND request.

Table 19 C-FIND status codes.

Service	Further Meaning	Protocol	Related	Description
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Status		Codes	Fields	
Refused	Out of Resources	A700		
Failed	Identifier does not match SOP Class	A900		The specified identifier contains a request that does not match the specified SOP Class.
	Unable to process	C001		For some reason (database off-line?) we cannot process this request at this time.
Cancel	Matching terminated due to Cancel Request	FE00		The original requestor canceled this operation.
Pending	Pending	FF00		All Optional Keys are supported in the same manner as Required Keys.
	Pending	FF01		The matching operation is continuing. Warning that one or more Optional Keys were not supported in the same manner as Required Keys.
Success	Success	0000		Operation performed properly.

3.1.3.3.4 Presentation Context Acceptance Criterion - Find

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 will accept any number of **Find** Presentation Contexts per association request. Any one Abstract Syntax may be specified more than once in an association request, if the Transfer Syntaxes differ between the Presentation Contexts.

3.1.3.3.5 Transfer Syntax Selection Policies - Find

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 currently only supports the default transfer syntax of Implicit Little Endian.

3.1.3.4 Real World Activity - Move

3.1.3.4.1 Associated Real World Activity - Move

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 will respond to retrieve requests that are sent to it from an *SCU*. *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2* accepts the three query models, Patient Root, Study Root, and Patient/Study Only.

3.1.3.4.2 Presentation Context Table - Move

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 supports the transfer syntaxes listed in Table 20. *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2* will accept any of the Presentation Contexts list in Table 21 for Query.

Table 20 Transfer Syntaxes

Transfer Syntax	UID
DICOM Implicit VR Little Endian Transfer Syntax	1.2.840.10008.1.2

Table 21 Presentation Contexts

Abstract Syntax	Transfer Syntax	Role	Extended Negotiation

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SOP Class	SOP Class UID			
Patient Root Query/Retrieve IM Move	1.2.840.10008.5.1.4.1.2.1.3	all from Table 20	SCP	See Note 3
Study Root Query/Retrieve IM Move	1.2.840.10008.5.1.4.1.2.2.3	all from Table 20	SCP	See Note 3
Patient/Study Only Query/Retrieve IM Move	1.2.840.10008.5.1.4.1.2.3.3	all from Table 20	SCP	See Note 3

Note 3: Move Extended Negotiation will be supported. *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2* will respond with the following information:

Table 22 Move Extended Negotiation

Field Name	Value	Description of Field
Relational-queries	1	relational queries supported

3.1.3.4.3 SOP Specific Conformance - Move

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 will try to establish an association with the move destination specified in the **Move** request. One or more of the Presentation Contexts listed in the **Store** section of this document, may be negotiated in this association.

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 will send pending responses after each image has been successfully sent to the move destination.

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 returns one of the following status codes to a C-MOVE request.

Table 23 C-MOVE status codes.

Service Status	Further Meaning	Protocol Codes	Related Fields	Description
Refused	Out of Resources	A701		Unable to calculate number of matches.
	Out of Resources	A702		Unable to perform storage of images to move destination.
Failed	Move destination unknown	A801		The destination of this move request is unknown.
	Identifier does not match SOP Class	A900		The specified identifier contains a request that does not match the specified SOP Class.
	Unable to process	C002		Indicates that <i>ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2</i> cannot process this request at this time.
Cancel	Storage terminated due to Cancel Request	FE00		The original requestor canceled this operation.
Warning	Warning	B000		Storage complete with one or more failures.
Pending	Pending	FF00		The storage operation is continuing.
	Pending for a long time	FF02		This operation is expected to require a long period of time to complete. The SCU may break the association at any time, but the operation will continue to completion.
Success	Success	0000		Operation performed properly.

3.1.3.4.4 Presentation Context Acceptance Criterion - Move

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 will accept any number of **Move** Presentation Contexts per association request. Any one Abstract Syntax may be specified more than once in an association request, if the Transfer Syntaxes differ between the Presentation Contexts.

3.1.3.4.5 Transfer Syntax Selection Policies - Move

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 currently only supports the default transfer syntax of Implicit Little Endian.

4. Communications Profiles

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 provides DICOM V3.0 TCP/IP Network Communication Support as defined in Part 8 of the DICOM Standard.

4.1 TCP/IP Stack

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 inherits its TCP/IP stack from the computer system upon which it executes.

4.1.1 Physical Media Support

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 is indifferent to the physical medium over which TCP/IP executes; it inherits the medium from the computer system upon which it executes.

5. Extensions/Specializations/Privatizations

6. Configuration

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 obtains configuration information from the following sources:

- Mapping from Application Entity Title to Presentation Address is provided by the database. Along with this mapping, the database stores those AE titles that are allowed to communicate with the *ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2*. These AE titles are considered, "Friends."

7. Support for Extended Character Sets

ADVANTAGE CLUSTER STORAGE / ARCHIVE SYSTEM RELEASE 1 V1.1.5.2 is known to support the following character sets:

- ISO-IR 6 (default) Basic G0 Set
- ISO-IR 100 Latin Alphabet No. 1