

Trophy DICOM Patient Management System DICOM Connectivity Troubleshooting Guide

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1 INTRODUCTION

This document is related to troubleshooting the Trophy DICOM application for DICOM connection issues with DICOM compliant devices.

Trophy DICOM is a patient management system implementing a subset of the DICOM standard in order to achieve patient information and image data exchange with remote systems as detailed in its DICOM Conformance Statement (see [2]).

Trophy DICOM is actually a front-end application program providing the Trophy Imaging Software (namely Trophy Windows or DIS) with both patient management and DICOM capabilities.

1.1 Revision History

Revision	Date	Author	Description
1.0	2008-05-05	Xavier CARAYOL	Initial Version
2.0	2009-02-24	Xavier CARAYOL	Updated for Trophy DICOM version 6.1.0.0
2.1	2010-02-17	Xavier CARAYOL	Updated for Trophy DICOM version 6.2.0.0
2.2	2013-05-23	Marc LAURENTIN	Rebranding

1.2 Audience

This document is provided for advanced users of the Trophy DICOM application and for Trophy Customer Support representatives.

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

1.3 Applicable Software Version

This document is related to the version 6.2.0.0 and above of Trophy DICOM, unless otherwise explicitly stated.

This Trophy DICOM version is associated with the Trophy imaging application version 6.11.0.0 and above, and shall not be used in conjunction with any other earlier version. Therefore this Trophy DICOM version is compatible with the associated 3D imaging application.

This Trophy DICOM version also provides a new background process named CSDServices for dealing with all dataset transfers in an asynchronous manner: this is particularly useful for large dataset, like 3D volume, transfers. This Trophy DICOM version is associated with CSDServices version 1.1.2.0 and above, unless otherwise stated (refer to [6] for more information about CSDServices).

1.4 Definitions, Terms and Abbreviations

The following definitions are used in this conformance statement:

Trophy Windows	The imaging application designed and developed by Trophy (also called Dental Imaging Software).
CSDServices	A background process providing Trophy DICOM with asynchronous transfer capabilities.

The following symbols and abbreviations are used in this conformance statement:

AE	Application Entity
DPMS	Dental Patient Management System
DIS	Dental Imaging Software (also known as Trophy Windows)
OS	Operating System
V&V	Verification & Validation

1.5 References

- [1]. ACR/NEMA Standards Publications, PS 3 - 2009 DICOM Standard

Copies of the DICOM 3.0 standard may be obtained by contacting:

National Electrical Manufacturers Association
1300 N. 17th Street
Rosslyn, Virginia 22209 USA
<http://medical.nema.org>

Current standard status may be checked also at:

<http://www.dclunie.com/dicom-status/status.html>

- [2]. Trophy DICOM Patient Management System – DICOM 3.0 Conformance Statement

Reference: "04XC001-I Trophy DICOM CS" document

- [3]. Trophy DICOM Patient Management System – Installation and Configuration Manual

Reference: "04XC002-H Trophy DICOM IM" document

- [4]. Trophy DICOM Patient Management System – DICOM Configuration Manual

Reference: "05XC002-E Trophy DICOM DC" document

- [5]. Trophy DICOM Patient Management System – User's Manual

Reference: "04XC004-G Trophy DICOM UM" document

- [6]. CSDServices – User's Manual

Reference: "09XC003-C CSDServices UM" document

2 PREREQUISITES

It is expected that Trophy DICOM application is properly installed and running on the target system before attempting to execute this procedure.

Refer to [3] for further information on installing Trophy DICOM.

It is also expected that the reader is familiar with Trophy DICOM configuration and usage. Many references to other Trophy DICOM documents are indeed made throughout this document.

Refer to [4] for further information on configuring Trophy DICOM from a DICOM standpoint.

Refer to [5] for further information on using Trophy DICOM.

Refer to [6] for further information on using CSDServices.

It is also obviously expected that the Trophy DICOM application already contain patient images within its patient database.

3 TROUBLESHOOTING CONNECTIVITY ISSUES

The following table shows all known connectivity issues encountered when using the Trophy DICOM application and proposes solutions for fixing each possible cause:

Symptom	Possible cause	Solution
Common Issues		
The DICOM Verification or Test (C-ECHO) function does not work. (Refer to [4] for further information on testing DICOM servers)	The Trophy DICOM system host is not on the network or the underlying Windows OS network configuration has not been properly performed.	Check the Windows OS configuration. Using a Ping command may help in troubleshooting such situations.
	A firewall prevents the Trophy DICOM application from accessing the network.	Check the firewall configuration.
	The Called AE Title or IP Address (or hostname) or Port# parameters of the remote DICOM server have not been properly configured on the Trophy DICOM application for that DICOM connection.	Verify your DICOM parameter configuration on the Trophy DICOM application.
	A fixed IP Address has been configured on the Trophy DICOM application for the remote DICOM server, when a DHCP server is used on the network.	Replace the IP Address of the remote DICOM server on the Trophy DICOM application by the hostname of the system hosting the remote server. Trophy DICOM provides the user with the ability to enter either a fixed IP Address or a Hostname in the same text box of the dialog window for the remote DICOM server.
	The Trophy DICOM application DICOM configuration parameters have not been properly setup on the remote side.	Check the DICOM configuration parameters on the server side. Incorrect or incomplete DICOM configuration for remote client on DICOM servers may result in impossibility to establish a DICOM connection, since very often, such remote client information is used as filtering values by DICOM server applications. Specially verify that Trophy DICOM Calling AE Title parameter, when necessary, is correctly entered on the server side. Indeed, the Calling AE Title is the only information that can be used, at a DICOM logic level, to verify or identify the calling application for a DICOM server.
RIS Specific Issues		
The Worklist server configured within the Trophy DICOM application does not appear into the bottom dropdown list of the "My Worklist" screen.	The state of the associated DICOM server entry is disabled.	Check the configuration of the associated DICOM server entry.
Can't retrieve Worklist information from a Worklist server, i.e. a RIS system	The Worklist server is inaccessible (either down or due to network problem).	Proceed to DICOM Verification as described above.
	The DICOM configuration for that remote DICOM server has not been properly set on the Trophy DICOM application.	

	The Worklist server does not support or accept one of the filter criteria entered by the user on the Trophy DICOM application.	Check the Worklist server DICOM Conformance Statement for any restrictions in its implementation. Reset filter criteria and query again. Inform the user of that situation if any.
	The Worklist server does not accept wildcards in the filter criteria entered by the user on the Trophy DICOM application.	
Can't retrieve appropriate Worklist information from a Worklist server.	One of the filter criteria entered by the user on the Trophy DICOM application is not appropriate for dental exams.	Verify all the filter criteria entered by the user, especially Date, Modality or Station AE Title values. Station AE Title refers to the Trophy DICOM application Calling AE Title parameter configured for the remote DICOM server.
PACS Push Specific Issues		
The PACS server configured within the Trophy DICOM application does not appear into proposed destination server list.	The state of the associated DICOM server entry is disabled.	Check the configuration of the associated DICOM server entry. Note: this also happens in the distribution list of the "My DICOM servers" screen.
Can't push images onto a remote server, i.e. PACS system.	The PACS server is inaccessible (either down or due to network problem).	Proceed to DICOM Verification as described above.
	The DICOM configuration for that remote DICOM server has not been properly set on the Trophy DICOM application.	
	The PACS server filters received images based on Calling AE Title parameter of the client application.	Verify the DICOM configuration of the Trophy DICOM application onto the DICOM server, if any.
Images do not appear within the PACS database browser.	The patient or study information attached with the images sent to the PACS is incorrect.	Verify that patient and study information of the images are correct or at least properly filled for the images (Hold the CTRL key while previewing an image within the Trophy DICOM application for getting access to the list of attributes contained within the image file: refer to [5] for further information about image preview in Trophy DICOM). Patient and Study information are essential for PACS systems to attach images to the right patient folder. Such information shall be retrieved from the Worklist server in order to prevent errors or orphan data.
	The PACS server does not support one of the image types used in dentistry.	Verify the remote server DICOM Conformance Statement for supported SOP Classes for Transfer service. Refer to [2] for a list of SOP Classes (i.e. image types) supported by Trophy DICOM.

	The PACS server supports image types used in dentistry but performs some filtering logic based on the DICOM Modality attribute of the images.	<p>Verify the remote server DICOM Conformance Statement for supported SOP Classes for Transfer service and limitations.</p> <p>Some PACS system for example (like Fuji PACS), does not accept Panoramic images when the Modality attribute (0008,0060) contains the PX value... (a standard violation from a DICOM standpoint).</p> <p><i>Note: a patch exists for DIS 6, that fix this specific Modality attribute issue, by putting a DX value in the attribute when Panoramic images are created.</i></p>
	The CSDServices is not running or is stopped.	<p>Verify that the CSDServices icon (Carestream Dental logo) appears in the system tray next to the clock.</p> <p>This icon should be displayed in regular colors. If grayed, this means that the CSDServices is suspended because its management console is open. Just close it in order to resume CSDServices.</p> <p>If the icon is not in the system tray, stop and restart Trophy DICOM. This should restart CSDServices too.</p>
PACS Retrieve Specific Issues		
A warning message ("Warning: your destination DICOM storage server for Retrieve operations is not running") appears when accessing to "My Archive" screen.	The Trophy DICOM attached image receiver process is not properly configured or running.	<p>Verify the Import Server configuration and status of the Trophy DICOM application.</p> <p>Refer to [4] paragraph 4.1 "Accessing the DICOM Storage Server" for further information.</p>
The PACS server configured within the Trophy DICOM application does not appear into the bottom dropdown list of the "My Archive" screen.	The state of the associated DICOM server entry is disabled.	Check the configuration of the associated DICOM server entry.
Can't retrieve patient or study list from remote server, i.e. PACS system.	The PACS server is inaccessible (either down or due to network problem).	<p>Proceed to DICOM Verification as described above.</p> <p><i>Note: DICOM standard specifies 2 modes for accessing patient information from a PACS system: either Patient or Study Root Information Model. Refer to [5] paragraph 4.3 "Retrieving Images From PACS System" for further information.</i></p>
	The DICOM configuration for that remote DICOM server has not been properly set on the Trophy DICOM application.	
	The PACS system filters client connection request based on Calling AE Title parameter of the client application.	Verify the DICOM configuration of the Trophy DICOM application onto the DICOM server, if any.
Can't retrieve patient list from remote server.	The PACS system does not support the Patient Root Information Model for the Query/Retrieve Service Class.	Verify the PACS DICOM Conformance statement and/or switch to Study Root Information Model for that DICOM server onto the Trophy DICOM application.
The patient or study list can be retrieved from the remote server but not the image list.	The PACS system does not support the Image Level query.	<p>None: <u>this is a major standard violation of the PACS DICOM implementation...</u></p> <p><i>Note: this seems to happen to CSH System 4 PACS systems too: but switching to Study Root Information Model seems to fix the problem.</i></p>

	The PACS has not been configured properly, and does not know where requested images have to be sent.	DICOM standard specifies a 3-tier mechanism for the Query Retrieve Service Class: in other words, when a client application wants to retrieve images from a PACS system, it just tells the PACS to transfer the identified images to another location, by providing just an AE Title to identify the final destination. This AE Title must be known and associated with a real DICOM storage server onto the PACS.
Images retrieved from the remote server, do not appear in the local Trophy DICOM database, i.e. within the "My Selection" screen, but stay in a subdirectory of the configured import directory.	The final server destination AE Title for the retrieve operation is not properly configured onto the PACS system.	Normally the final destination server for the retrieve operation of the Query & Retrieve DICOM service is automatically extracted by the Trophy DICOM application from its internal import server configuration and transmitted to the PACS system. It may happen, that the PACS actually sends back images to the local import server but using a different Called AE Title. In this case, AE Title control has to be performed on both Trophy DICOM and PACS applications, for subsequent store operations.
Print Specific Issues		
The DICOM printer configured within the Trophy DICOM application does not appear into the top dropdown list of the print dialog window.	The state of the associated DICOM server entry is disabled.	Check the configuration of the associated DICOM server entry.
Can't print any image onto the remote printer.	The printer is inaccessible (either down or due to network problem).	Proceed to DICOM Verification as described above.
	The DICOM configuration for that remote DICOM server has not been properly set on the Trophy DICOM application.	
	The printer filters client connection request based on Calling AE Title parameter of the client application.	Verify the DICOM configuration of the Trophy DICOM application onto the DICOM printer, if any.
Image quality seems bad on the resulting film sheets.	Wrong parameters are passed to the printer when printing images, or not really applicable to the type of images printed.	Verify the DICOM print parameters setup onto the Trophy DICOM application for that "logical" printer. Check with the DICOM Conformance Statement of the printer, or with a customer support representative for best parameter values. <i>Note: only experience can actually helps in this case. Also "quality" often is a subjective feeling, and may require different "logical" setups for different users.</i>
True Size mode does not work even for Intra-Oral images.	The printer does not support True Size feature.	None. <i>Note: Verify the printer DICOM Conformance Statement.</i>
True Size mode does not work in all cases ("Best Print Width" parameter value) for non Intra-Oral images.	The printer has some limitations (regarding expected resulting dimensions for a given film size) when printing in True Size mode.	None. <i>Note: Verify the printer DICOM Conformance Statement.</i> <i>Note: This is a know issue for example with some AGFA printer.</i>

Some information (like Hospital or Department name) cannot be printed onto the film sheets.	Configure directly the printer for adding such "fixed" information automatically outside the printing area of each film sheet (this feature is supported by most of the DICOM printer).	The amount of information that can be printed either superimposed or on a separate image box onto a film sheet is limited in the Trophy DICOM application. <i>Note: Refer to [2] for the list of patient information that can be added to the print.</i>
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