

Trophy DICOM Patient Management System

DICOM Configuration Manual

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1 INTRODUCTION

This document is related to the usage of the Trophy DICOM application and provides the user with a description of the user interface related to the DICOM server and connection parameter configurations.

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 (refer to [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.

Trophy DICOM implementation of the DICOM standard is based on the underlying DICOM compliant DicomSuite Toolkit library provided by the ETIAM Company.

Note: This document is a supplement of the Trophy DICOM User's Manual: please refer to that document for a description of the structure of the current document (refer to [4]).

1.1 Revision History

Revision	Date	Author	Description
1.0	2005-01-07	Xavier CARAYOL	Creation
2.0	2006-07-01	Xavier CARAYOL	Updated for Trophy DICOM 6.0.4.0 version
3.0	2009-02-24	Xavier CARAYOL	Updated for Trophy DICOM 6.1.0.0 version
3.1	2010-02-17	Xavier CARAYOL	Updated for Trophy DICOM 6.2.0.0 version
3.2	2013-05-23	Marc LAURENTIN	Rebranding

1.2 Audience

This document is provided to any regular user of the Trophy DICOM application.

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 is also associated with the ETIAM DicomSuite Toolkit library version 2.52f, 2.60g and 2.80a as described in this document.

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 0 for more information about CSDServices).

1.4 Definitions, Terms and Abbreviations

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

DICOM	Digital Imaging and Communications in Medicine
DIMSE	DICOM Message Service Element
MPPS	Modality Performed Procedure Step
Q&R	DICOM Query/Retrieve Service
SCP	Service Class Provider
SCU	Service Class User
TCP/IP	Transmission Control Protocol/Internet Protocol

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-I Trophy DICOM IM" document

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

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

[5]. Trophy DICOM Patient Management System – DICOM Connectivity Troubleshooting Guide.

Reference: "08XC004-D Trophy DICOM TG" document

[6]. CSDServices – User's Manual.

Reference: "09XC003-C CSDServices UM" document

2 CONFIGURING REMOTE DICOM SERVERS

Trophy DICOM considers any remote DICOM servers simply as a DICOM connection. Whatever the services supported and provided by the remote server, all DICOM connections are equivalent within Trophy DICOM: i.e. a DICOM Imager or Printer is handled the same way than a PACS or a RIS system.

Trophy DICOM does not limit the number of remote servers the user can configure. Therefore the same physical remote system can be configured as many time as necessary: This functionality is useful for defining different printing parameter setups for the same physical printer (see section 3).


As described in this document and in [2], all DICOM parameters are configurable within Trophy DICOM.

2.1 Accessing remote DICOM Servers

2.1.1 Definition

The DICOM Server configuration screen may be accessed via one of the following Trophy DICOM common options:

Table 1: Accessing DICOM Server Screen

Type	Entry	Context Sensitive
Main Menu Option	Folders / DICOM Servers	No
Tool Bar Button		Yes
Explorer Tree Node	My Computer / Control Panel / My DICOM Servers	No

2.1.2 The DICOM Server List Screen

The DICOM Server List screen is described in the following figure:

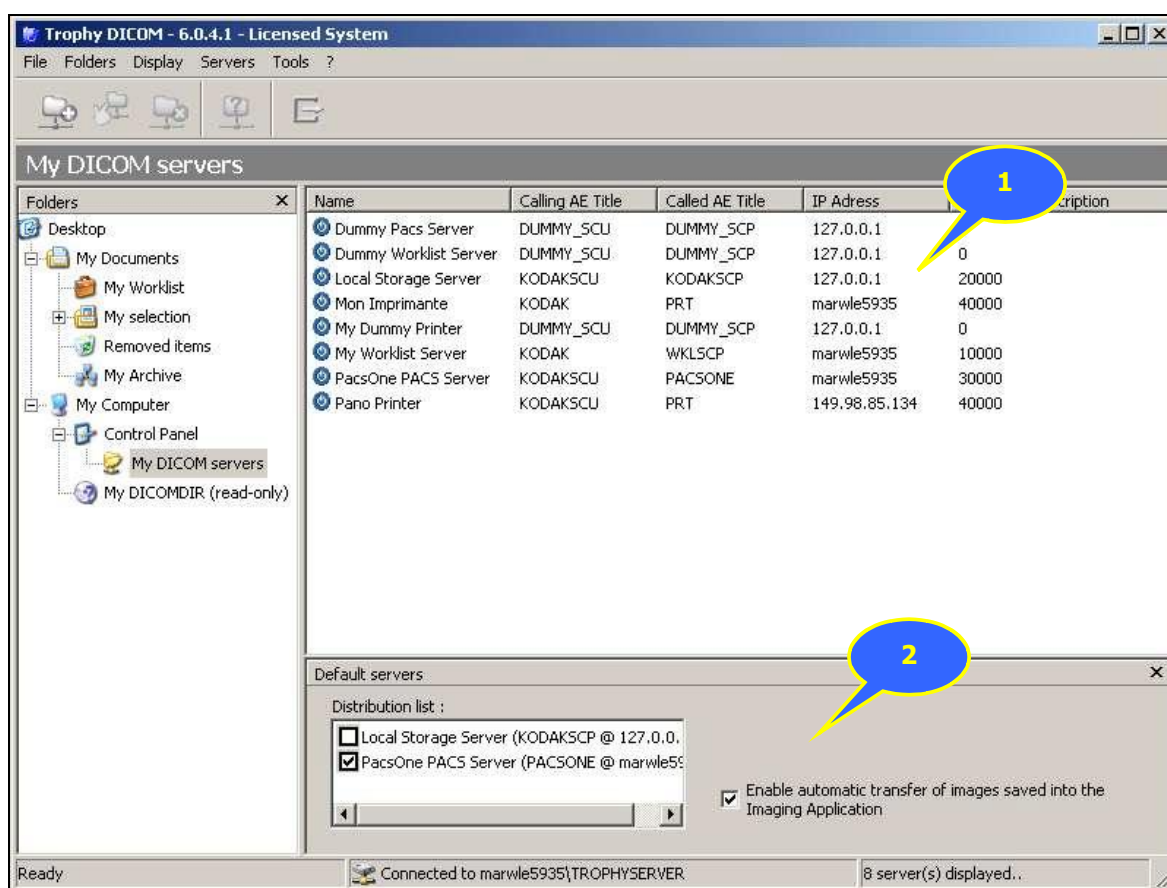


Figure 1: DICOM Server List Screen

2.1.2.1 Screen Components

The DICOM Server List screen consists of 2 main components as described in the following table:

Table 2: DICOM Server List Screen Components





#	Component	Description	Document Reference
1	Data List View	Provides access to all servers in table view.	See section 2.1.3
2	Default Panel	Provides ability to define the default destination servers for the automatic transfer functionality.	See section 2.1.4

2.1.2.2 Menus Options

The DICOM Server List Screen Menu Options and Sub-Options are described in the following table:

Table 3: DICOM Server List Screen Menu Options

Menu Option	Sub-Options	Description	Document Reference	Tool Bar Button	Keyboard Shortcut
File	All		Refer to [4]	-	-
Folders	All		Refer to [4]	-	-
Display	Defaults	Shows/Hides Default Panel.	See section 2.1.4	-	-

Servers	Create	Creates a new Server. See section 2.1.6		INS
	Modify	Modifies selected Server. See section 2.1.7		ENTER
	Delete	Deletes selected Server. See section 2.1.8		DEL
	Test	Test selected Server by performing DICOM Verification request. See section 2.1.5		-
	Refresh...	Refreshes DICOM Server List. See section 2.1.3		F5
Tools	Database	Refer to [4]	-	-
	Parameters	Refer to [4]	-	-
	Import Server	See section 4	-	-
	Log Files	See section 5	-	-
?	All	Refer to [4]	-	-

2.1.2.3 Tool Bar Buttons

The DICOM Server List Screen Tool Bar is represented in the following figure:



Figure 2: DICOM Server List Screen Tool Bar Buttons

See section 2.1.2.2 and Table 3 for Tool Bar Button descriptions.

2.1.3 Displaying DICOM Server List

The DICOM Server List is automatically loaded and updated when entering the DICOM Server List Screen. The DICOM Server List may be manually updated via one of the following options:

Table 4: Displaying DICOM Server List Options

Type	Entry
Main Menu Option	Servers / Refresh...
Context Menu Option	-
Tool Bar Button	-
Keyboard Shortcut	F5

DICOM Server selection in the DICOM Server List can be performed manually as described in 0.

Note: Multiple DICOM Server selections are not possible in this Data List View.

By default, DICOM Servers are listed by Name in alphabetic order. Each table line entry includes the following DICOM Server parameters:

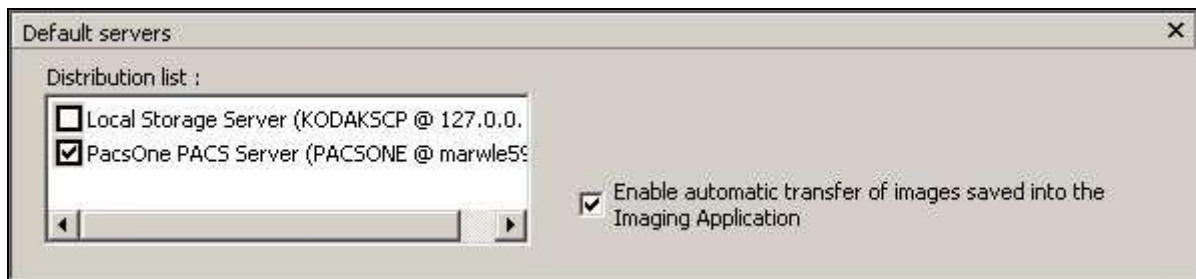
Table 5: DICOM Server List Table Columns

Column	Description	Value Range
Name	User defined name of the DICOM Server	N/a
Calling AE Title	Trophy DICOM AE Title as defined for underlying association	N/a
Called AE Title	Remote DICOM Server AE Title as defined for the underlying association.	N/a
IP Address	Remote DICOM Server IP Address	N/a
Port#	Remote DICOM Server Service IP Port#	N/a
Description	User defined description of the DICOM Server	N/a

Note: DICOM Server parameters have to be equivalent on the remote DICOM Server side.

2.1.4 Defaulting DICOM Server

The DICOM Server List Screen provides the user with the ability to specify default destination servers for all transfer requests. This default distribution list is also used when enabling automatic image transfer, as described in the following figure:

**Figure 3: DICOM Server Default Panel**

Only DICOM Servers supporting the Storage Service Class, as described in section 2.2.3, are listed in the DICOM Server Default Panel.

Note: DICOM Server has to be enabled in order to appear in this panel (see section 2.2.1).

At the date of this document, the following parameters can be defaulted:

Table 6: DICOM Server Service Defaults


Service	Notes
Distribution List	The distribution list allows creating more than one default server for the DICOM Store Service. Only DICOM Servers supporting the DICOM Store Service as an SCP are presented in this list. Checking the associated check box adds a DICOM Server to the distribution list.
Allow Automatic Image Transfer	This option shall be checked if automatic image transfer to the DICOM Server Distribution List should be performed after each new image creation in The Trophy Imaging Software (refer to 0).

Note: Starting with Trophy DICOM version 6.0.4, there is no more default servers' configuration for other DICOM Service Classes. Trophy DICOM provides now the ability to switch from configured servers directly within the associated application screens, and always proposes by default to a given user her last selection made (refer to [4]).

2.1.5 Testing DICOM Server

DICOM Server configuration can be tested using the DICOM Verification Service. DICOM Verification may be performed via one of the following DICOM Server List Screen options:




Table 7: Testing DICOM Server Options

Type	Entry
Main Menu Option	Servers / Test
Context Menu Option	Test
Tool Bar Button	
Keyboard Shortcut	-

Note: DICOM Server Verification can be only performed if properly configured for the server as described in section 2.2.3.

The DICOM Server Verification status is coded in the DICOM Server List using the following icons:

Table 8: DICOM Server State Icons


Icon	Description
	DICOM Verification not performed.
	DICOM Verification succeed: Server up and running
	DICOM Verification failed: Server not running or configuration error

2.1.6 Creating DICOM Server

DICOM Server creation is performed by filling the DICOM Server Property Window as described in section 2.2.

DICOM Server Property Window for server creation may be accessed via one of the following DICOM Server List Screen options:

Table 9: Creating DICOM Server Options


Type	Entry
Main Menu Option	Servers / Create
Context Menu Option	Create
Tool Bar Button	
Keyboard Shortcut	INS

2.1.7 Modifying DICOM Server

DICOM Server modification is performed by updating the DICOM Server Property Window as described in section 2.2.

DICOM Server Property Window for server modification may be accessed via one of the following DICOM Server List Screen options:


Table 10: Modifying DICOM Server Options

Type	Entry
Main Menu Option	Servers / Modify
Context Menu Option	Modify
Tool Bar Button	
Keyboard Shortcut	ENTER

2.1.8 Deleting DICOM Server

DICOM Server may be deleted via one of the following DICOM Server List Screen options:

Table 11: Deleting DICOM Server Options

Type	Entry
Main Menu Option	Servers / Delete
Context Menu Option	Delete
Tool Bar Button	
Keyboard Shortcut	DEL

2.2 DICOM Server Property Window

The DICOM Server Property Window is a tab based dialog window form allowing the user to enter or modify information related to a remote DICOM Server.

Note: Application's default DICOM Servers for transfers are defined into the DICOM Server List Screen as described in section 2.1.4.

Refer to [1] for field's description and value length.

Note: Modification in this form can be validated by the OK button or cancelled.

2.2.1 General Tab

The General Tab of the DICOM Server Property Window provides the user with the capability to enter user-defined information about the server or temporarily to disable a server, as shown in the following figure:

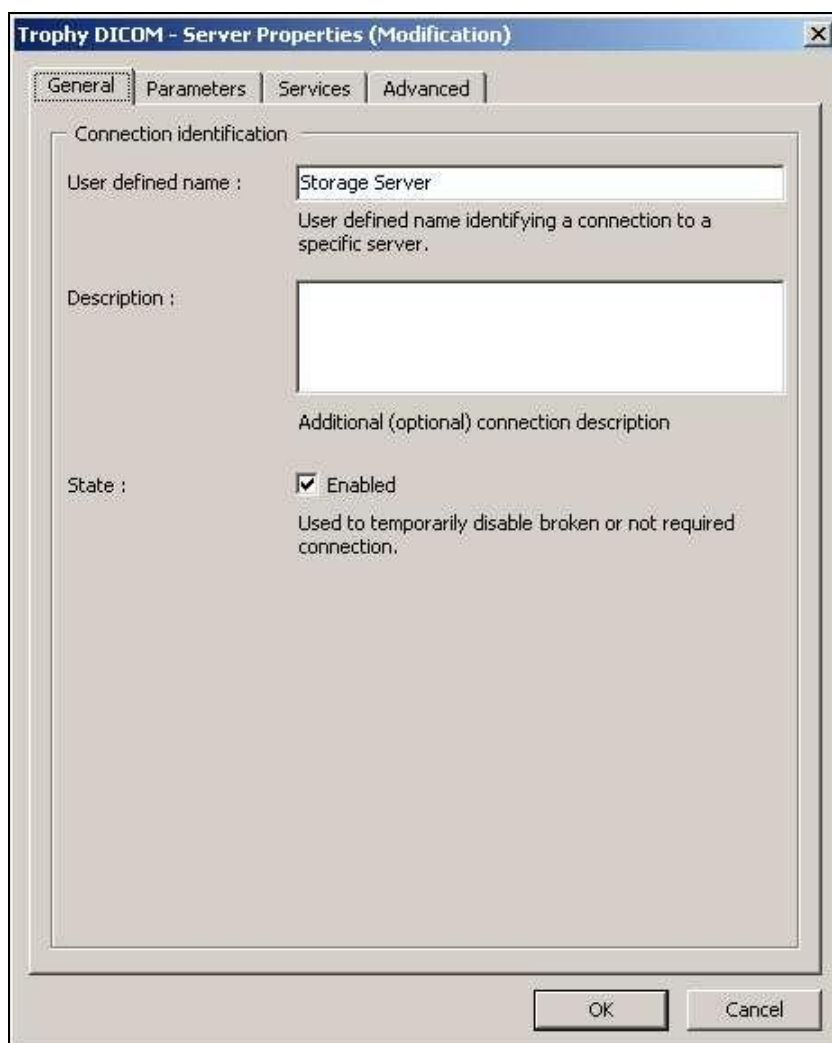



Figure 4: DICOM Server Property Window - General Tab

The set of information the user can enter is defined in the following table:

Table 12: DICOM Server General Tab Information

Field	Max Size	Required	Notes
User defined Name	64	Y	DICOM Server user's name.
Description	256	-	DICOM Server user's description.
State	-	-	Temporarily disable unavailable DICOM server.

Note: A special  icon marks required fields when empty: The user has to enter a value in order to be able to continue with the next field.

Note: The DICOM Server has to be "Enabled" (State parameter) in order to be selectable in the default lists.

2.2.2 Parameters Tab


The Parameters Tab of the DICOM Server Property Window allows entering DICOM Association parameters as shown in the following figure:

Figure 5: DICOM Server Property Window - Parameters Tab

The set of information the user can enter is defined in the following table:

Table 13: DICOM Server Parameters Tab Information

Field	Max Size	Required	Notes
Calling AE Title	16	Y	Local Trophy DICOM AE Title.
Called AE Title	16	Y	Remote DICOM Server AE Title.
IP Address	64	Y	Remote DICOM Server IP Address. Hostname can be entered in this text box too. Also the Lookup by Name text box can be used for determining the IP Address associated with a given Hostname.
Port Number	8	Y	Remote DICOM Server Port Number.

Note: A special  icon marks required fields when empty: The user has to enter a value in order to be able to continue with the next field.

2.2.3 Services Tab

The Services Tab of the DICOM Server Property Window allows defining DICOM Services supported by the server as an SCP as shown in the following figure:

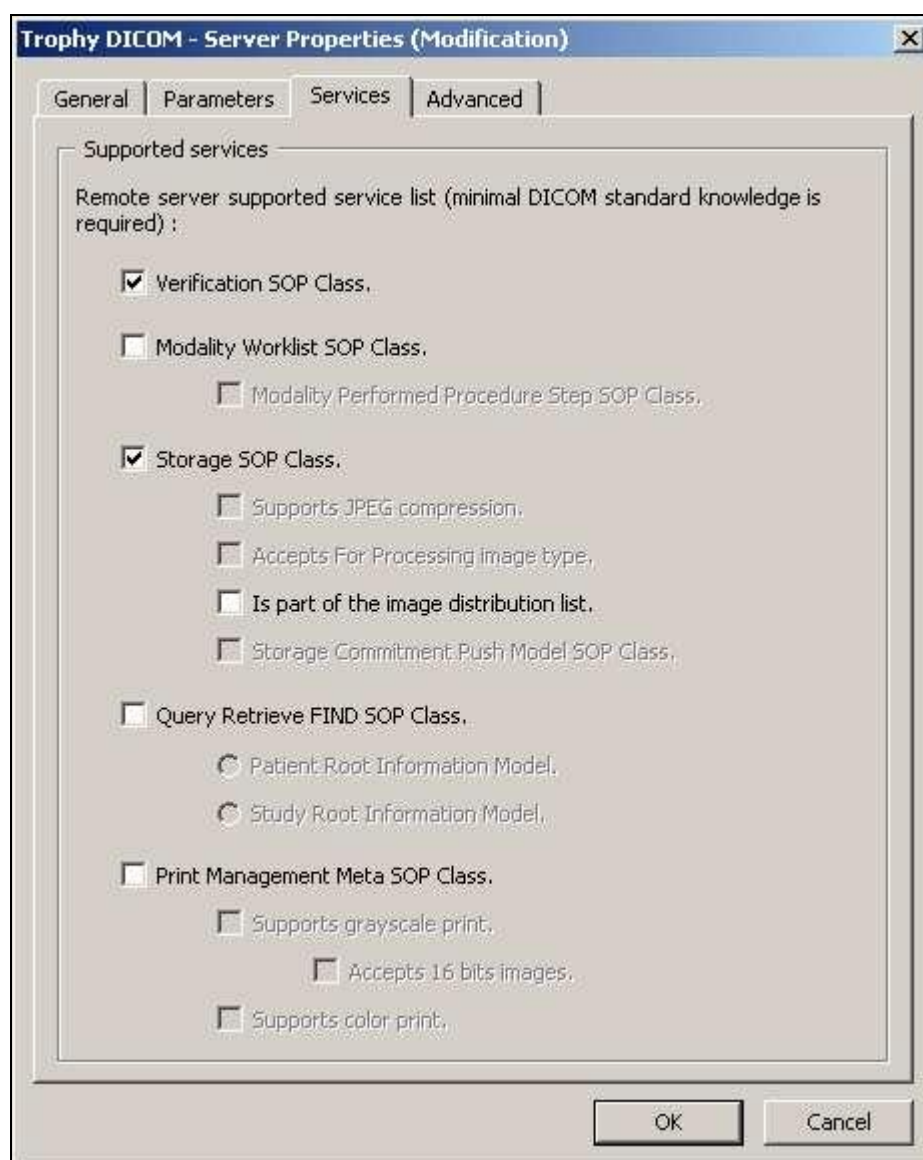


Figure 6: DICOM Server Property Window –Services Tab

Note: DICOM does not provide a mechanism for knowing a priori the services supported by a remote system. This type of information is only known at Association establishment time. Maintaining locally such information improves the software performance.

Refer to [1] for a definition of the terms used in this tab page.

The set of information the user can enter is defined in the following table:

Table 14: DICOM Server Services Tab Information

Field	Max Size	Required	Notes
Verification	-	-	Remote server supports DICOM Verification.
Modality Worklist	-	-	Remote server supports DICOM Modality Worklist Service Class.
Storage	-	-	Remote server supports DICOM Image Storage Service Class.
Is part of the image distribution list	-	-	Remote server shall be part of the distribution server list (see section 2.1.4).
Query Retrieve FIND	-	-	Remote server supports DICOM Q&R Service Class.

Patient Root Information Model	-	-	Informs about server Q&R Information Model supported.
Study Root Information Model	-	-	
Print Management	-	-	Remote server supports DICOM Print Management Service Class.
Supports grayscale print	-	-	Informs about server capabilities: this may be necessary for improving print quality.
Accepts 16 bits images	-	-	
Supports color print	-	-	

Note: Other options may be available for provision for future Trophy DICOM releases.

Refer to [2] for currently Trophy DICOM supported services.

Note: One single DICOM Server may support more than one service at a time as an SCP.

2.2.4 Advanced Tab

The Advanced Tab of the DICOM Server Property Window allows configuring debugging mode and visualizing miscellaneous information about the server record as shown in the following figure:

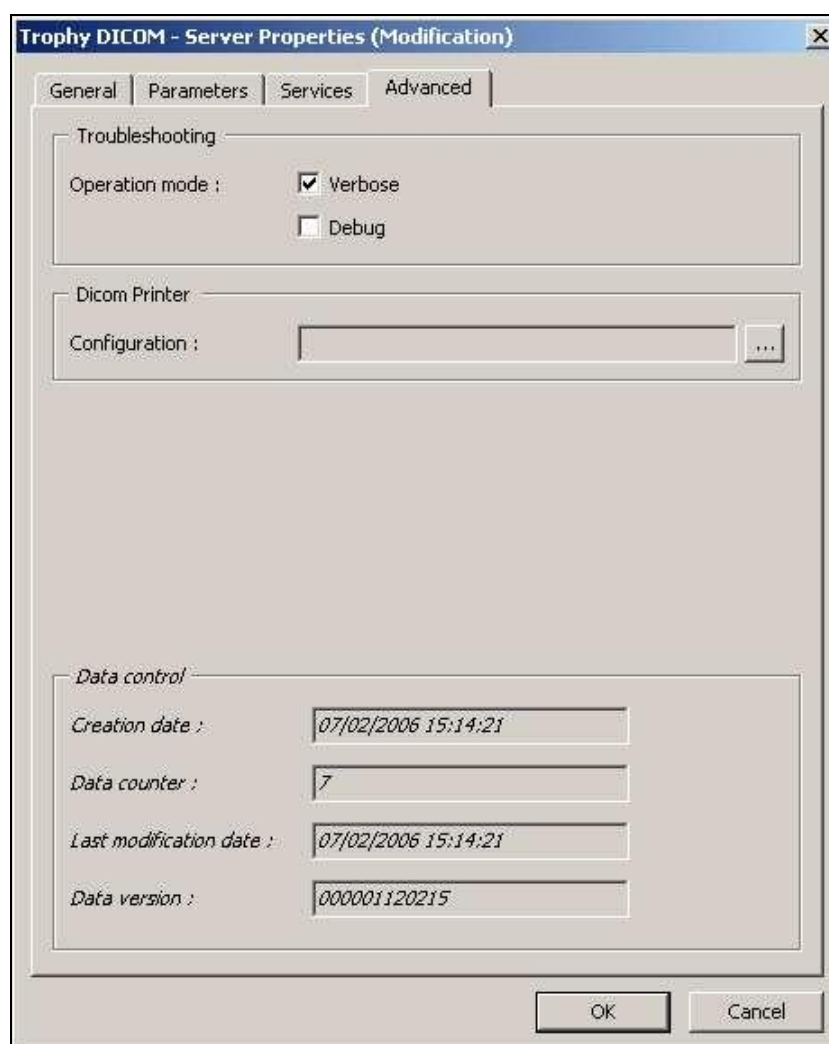


Figure 7: DICOM Server Property Window - Advanced Tab

The set of information the user can access is defined in the following table:

Table 15: DICOM Server Advanced Tab Information

Field	Max Size	Required	Notes
Verbose	-	-	Used for DICOM communication debugging purposes. Logs information into text files in the "logfiles" sub-directory of the Trophy DICOM installation directory (see section 5).
Debug	-	-	
Configuration	-	-	When setting up a DICOM Print Server, this option can be used for loading a Printer Template (see section 3). This option is available (not grayed) only if printing support is selected into the Services tab.
Creation	-	-	Database server record creation date.
Data Counter	-	-	Database server record number.
Last Modification	-	-	Database server record last modification date.
Data Version	-	-	Database Timestamp for defining server record version.

3 WORKING WITH PRINTER TEMPLATES

Refer to 0 for more information on how to use remote DICOM Servers within Trophy DICOM.

More than one DICOM Server can be defined within Trophy DICOM for the same physical DICOM Printer. This functionality provides the user with the ability to pre-configure different printing parameters for the same DICOM Printer: e.g. Film layout, Film size, Annotations etc... Such configurations can be saved as a Trophy DICOM Printer Template.

3.1 Managing DICOM Printer Templates

When setting up a new DICOM Print Server, the user can select a Template file for initializing printing parameters. As described in 0, the user can configure parameters specific either to the DICOM Print Server or the type of print session she wants to perform using that newly created DICOM Print Server.

Selection of a Printer Template file can be performed while configuring a DICOM Server (see section 2.2.4).

A specific printer configuration can be saved as a Printer Template file during a Print session within Trophy DICOM (refer to [4]).

By default, Trophy DICOM is installed with Templates for the following Carestream DICOM Printers:

Table 16: Trophy DICOM default Printer Templates

File	Carestream Printer
CMI 1000.xml	Default template for the CMI 1000 printer.
DryView 5800.xml	Default template for the DryView 5800 printer.
DryView 5850.xml	Default template for the DryView 5850 printer.
DryView 6800.xml	Default template for the DryView 6800 printer.
DryView 8100.xml	Default template for the DryView 8100 printer.
DryView 8150.xml	Default template for the DryView 8150 printer.
DryView 8200.xml	Default template for the DryView 8200 printer.
DryView 8300.xml	Default template for the DryView 8300 printer.
DryView 8500.xml	Default template for the DryView 8500 printer.
DryView 8610.xml	Default template for the DryView 8610 printer.

DryView 8700.xml	Default template for the DryView 8700 printer.
DryView 8900.xml	Default template for the DryView 8900 printer.
HQ 969.xml	Default template for the HQ 969 printer.
KELI 160.xml	Default template for the KELI 160 printer.
KELP 1120.xml	Default template for the KELP 1120 printer.
KELP 2180.xml	Default template for the KELP 2180 printer.
MLP 190.xml	Default template for the MLP 190 printer.

Note: Those templates can be found into the "Templates" sub-directory of the Trophy DICOM installation directory.

A Printer Template file is an XML file with specific items as described in the following figure (refer to 0 for more information about item definitions).

```
<?xml version="1.0" encoding="utf-8" standalone="yes" ?>
- <DicomPrinter Name="Print Server">
  <CollationFlag>false</CollationFlag>
  <NumberOfCopies>3</NumberOfCopies>
  <PrintPriority>LOW</PrintPriority>
  <MediumType>PAPER</MediumType>
  <FilmDestination>BIN_10</FilmDestination>
  <FilmSessionLabel>TROPHY</FilmSessionLabel>
  <ImageDisplayFormat>STANDARD</ImageDisplayFormat>
  <NbRows>1</NbRows>
  <NbColumns>1</NbColumns>
  <FilmOrientation>PORTRAIT</FilmOrientation>
  <FilmSizeID>A3</FilmSizeID>
  <MagnificationType>NONE</MagnificationType>
  <SmoothingType>SMOOTH_1</SmoothingType>
  <BorderDensity>WHITE</BorderDensity>
  <EmptyImageDensity>WHITE</EmptyImageDensity>
  <Trim>-1</Trim>
  <MinDensity>-1</MinDensity>
  <MaxDensity>-1</MaxDensity>
  <ConfigurationInfo>CONFIG_1</ConfigurationInfo>
  <TrueSize>true</TrueSize>
  <MagnificationFactor>2</MagnificationFactor>
  <PrintText>true</PrintText>
  <TextFont>Arial|21,75|Regular|Bold</TextFont>
  <BurnText>true</BurnText>
  <TextAlignment>1</TextAlignment>
</DicomPrinter>
```

Figure 8: Trophy DICOM Printer Template

4 DEFINING THE DICOM STORAGE SERVER

The DICOM Standard requires any client application, in its specifications of the Query/Retrieve Service Class, to implement a DICOM Storage Server for using the MOVE SOP Class for retrieving images. In such case the client application becomes temporarily a server application for storing requested images.

Trophy DICOM implements such requirements by providing a DICOM Storage Server which can be locally setup on a given system or shared between several Trophy DICOM applications over the network in a centralized Trophy DICOM Patient Database configuration (refer to 0).

Note: In a centralized Trophy DICOM Patient Database, it is still possible to setup several Trophy DICOM Storage Servers on each system.

The Trophy DICOM Storage Server may also be used as a default Storage Server for any other types of Store requests performed by remote client applications, and not necessary in a Q&R logic. Therefore the DICOM Storage Server may be used for image pre-fetching to better improve the workflow management.

The parameters setup for the Local DICOM Storage Server shall be used by any remote application accessing this server.

4.1 Accessing the DICOM Storage Server

4.1.1 Definition

The DICOM Storage Server configuration dialog window may be accessed via one of the following Trophy DICOM common options:

Table 17: Accessing Local DICOM Storage Server Dialog Window

Type	Entry	Context Sensitive
Main Menu Option	Tools / Import Server	No
Tool Bar Button	-	-
Explorer Tree Node	-	-
Default Server Panel	Modify	Yes

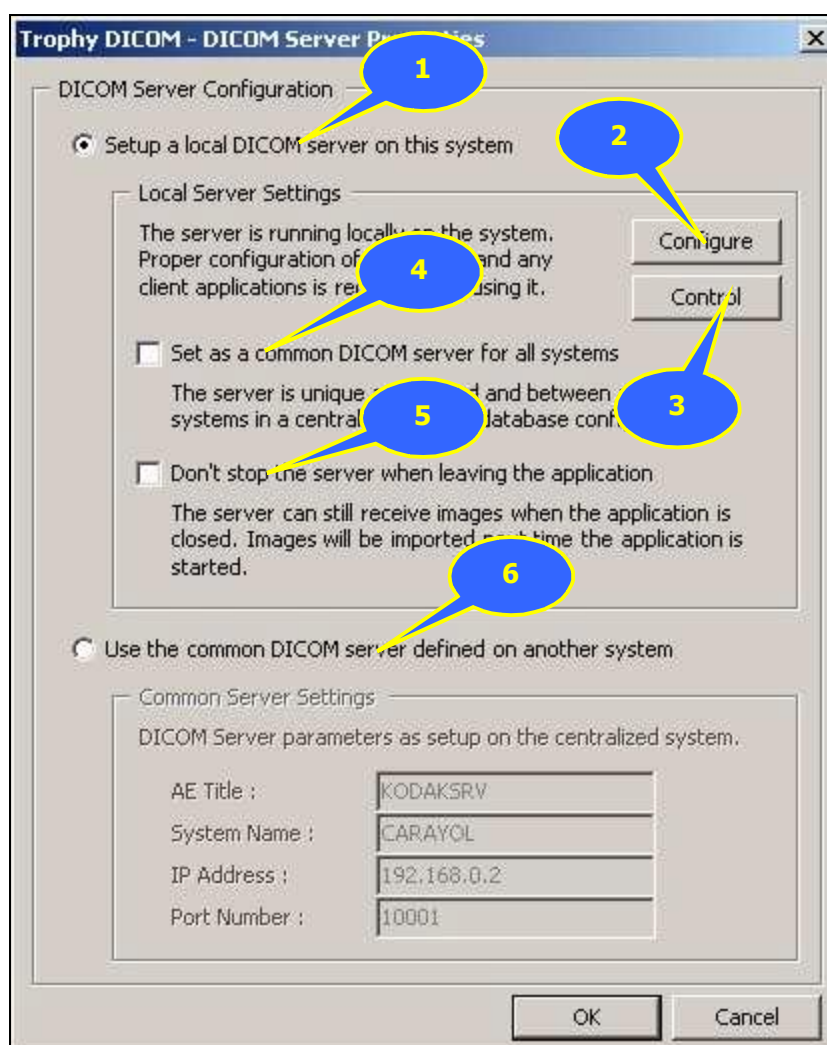


Figure 9: Local DICOM Storage Server Dialog Window

The user has the ability to perform the following actions on this dialog window:

Table 18: Local DICOM Storage Server Actions

Action#	Description
1	Setup locally on the current system a DICOM Storage Server. See section 4.1.2
2	Configure the locally defined DICOM Storage Server. See section 4.2
3	Control the locally defined DICOM Storage Server. See section 4.3
4	Share the locally defined DICOM Storage Server between Trophy DICOM systems See section 4.1.2
5	Configured the associated Storage SCP to stay up and running when leaving Trophy DICOM See section 4.1.2
6	Use the common DICOM Storage Server defined into the Trophy DICOM Patient Database. See section 4.1.3

4.1.2 Setting a Local DICOM Storage Server

The user can decide to setup locally a DICOM Storage Server by performing the proper action in the DICOM Storage Server Properties dialog window (see section 4.1.1).

Note: The DICOM Storage Server shall be properly configured before using it.

When setting up a local DICOM Storage Server, a specific background process is created on the current system for accepting incoming DICOM Association requests (refer to [2]). In this case, Trophy DICOM will use the AE Title setup for this DICOM Server as default destination Storage Server for all DICOM Q&R MOVE requests performed on the current system.

Note: This background process does not start if not properly and entirely configured (see section 4.2).

When setup locally on a given system, the DICOM Storage Server can be shared between different Trophy DICOM systems in a centralized database configuration by selecting the proper option in the DICOM Storage Server Properties dialog window (see section 4.1.1). In this case the Local DICOM Storage Server configuration parameters (mainly its AE Title) is saved into the Trophy DICOM Patient Database for all other Trophy DICOM applications connecting to that database.

The associated background process can also be left running when leaving Trophy DICOM in order to enable remote sending applications to continue sending images to the Trophy DICOM Patient Database (see section 4.1.1). In this case received images won't be imported into the Trophy DICOM Patient Database until the next time Trophy DICOM is launched on that system; but the DICOM Storage Server will continue to accept such images and keep them locally in a temporary repository (refer to [2]).

4.1.2.1 Associated Background Process

As described in this document, a specific background process is created when setting up locally a DICOM Storage Server on a given system. This background process uses a specific configuration file created in the Trophy DICOM installation directory for retrieving its configured DICOM parameters (see section 4.2).

Table 19: DICOM Storage Server Background Process Related Files

File	Description
WinScp32.exe	Background process serving as standalone Store SCP
WinScp32.ini	Configuration File

This background process is designed to be unique on a given system. Starting twice this process actually does not start a second process.

Using the following command may manually or automatically start this background process:

Table 20: Manual or Automatic DICOM Storage Server Background Process Execution

```
X:\TrophyDICOMInstallPath\WinScp32.exe /i"X:\TrophyDICOMInstallPath\WinScp32.ini"
```

Note: the '/i' option does not accept any spaces: it may be required to enclose the associated argument value between quotation marks.

Note: Configuring automatic execution within the underlying Windows Operating System is outside the scope of this document.

4.1.3 Using the common DICOM Storage Server

The user can decide to use the common DICOM Storage Server setup on one of the Trophy DICOM systems by performing the proper action in the DICOM Storage Server Properties dialog window (see section 4.1.1).

Note: The common DICOM Storage Server shall be first properly configured (see section 4.1.2).

4.2 Configuring a local DICOM Storage Server

The Local DICOM Storage Server Property Window is a tab based dialog window form allowing the user to enter or modify information related to the DICOM Storage Server as described in the following sections.

The Local DICOM Storage Server Property Window is accessible from the DICOM Storage Server general dialog window (see section 4.1.1).

Note: Modification in this form can be validated by the OK button or cancelled.

4.2.1 General Tab

The General Tab of the Local DICOM Storage Server Property Window allows entering general DICOM information about the DICOM Storage Server as shown in the following figure:

Trophy DICOM - Local DICOM Server Properties

General Options Advanced

DICOM Parameters

AE Title : Called AE Title as setup on remote clients (16 characters max).

IP Address : Called IP Address or System Name as setup on remote clients (for information only).


Port Number : Called TCP/IP port number as setup on remote clients, where the DICOM server is listening for incoming associations.

Import Directory

Directory : ... Directory where received image files are created before being imported into the patient database.

OK Cancel

Figure 10: Local DICOM Storage Server Property Window - General Tab

Note: A special  icon marks required fields when empty: The user has to enter a value in order to be able to continue with the next field.

The set of information the user can enter is defined in the following table:

Table 21: DICOM Storage Server General Tab Information

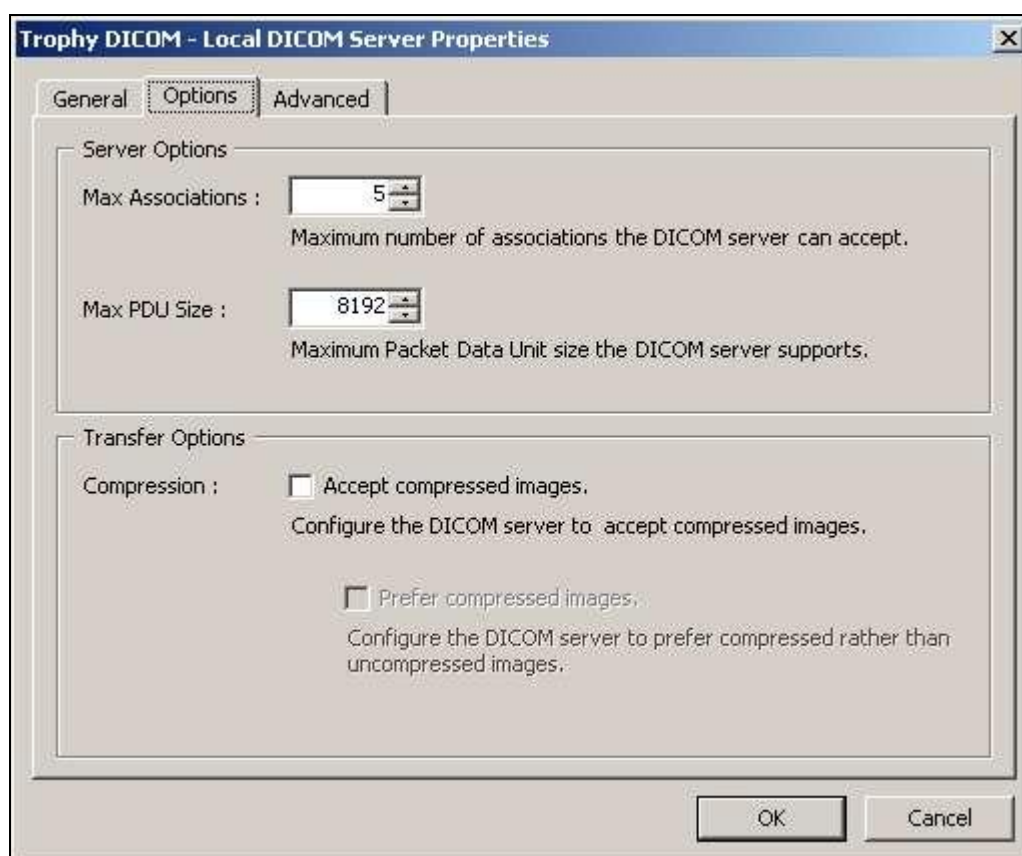
Field	Max Size	Required	Notes
AE Title	16	Y	AE Title of the local DICOM Storage Server.
IP Address	-	-	Provide the system Hostname and IP Address (useful for remote client application configuration).
Port Number	-	Y	Local TCP/IP Port used for listening for incoming association requests.
Directory	-	Y	Directory used as a repository by the Store SCP background process for creating temporary DICOM Part 10 compliant files for each composite instance received.

Note: Import Directory may be selected by the "... " dialog button. Any user of the system shall have full right access on the selected directory.

Note: Refer to [2] for more information about Import Directory management.

4.2.2 Options Tab

The Options Tab of the Local DICOM Storage Server Property Window allows entering specific DICOM configuration information about the DICOM Storage Server as shown in the following figure:

**Figure 11: Local DICOM Storage Server Property Window –Options Tab**

The set of information the user can enter is defined in the following table:

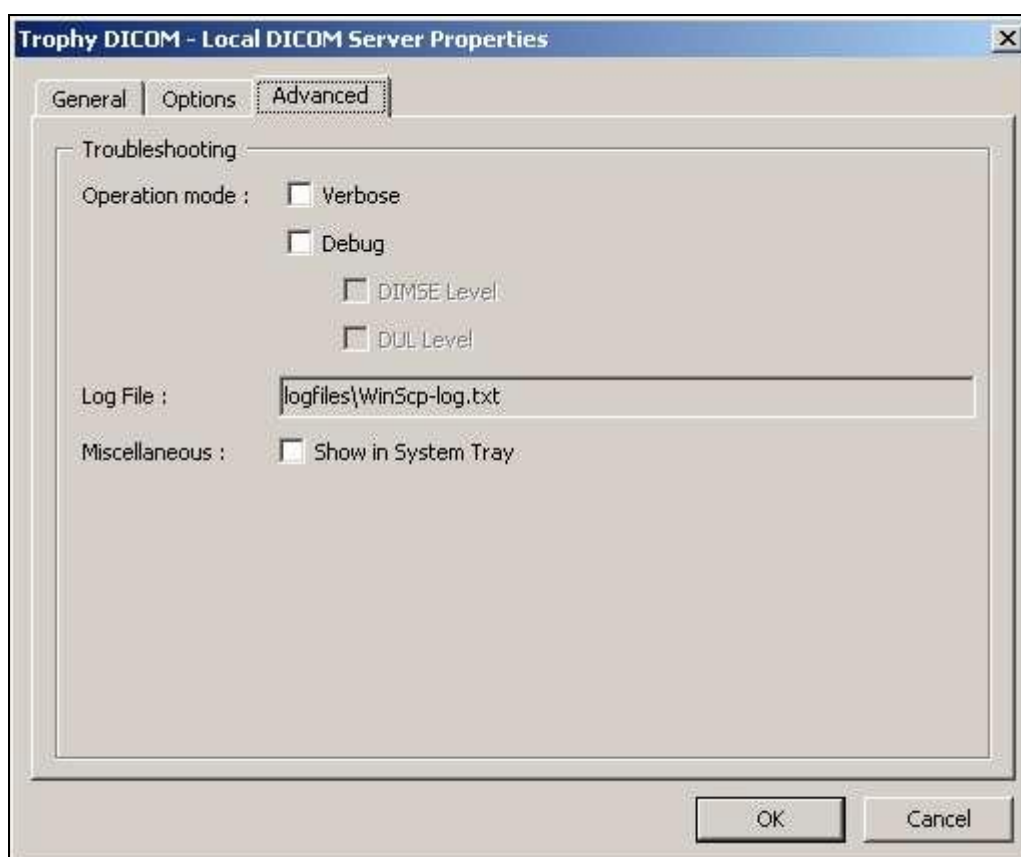
Table 22: DICOM Storage Server Options Tab Information

Field	Max Size	Required	Notes
Max Association	-	Y	Define the number of simultaneous associations the associated Store SCP may accept.
Max PDU Size	-	Y	Define the maximal PDU Size the associated Store SCP may support.
Accept compressed Images	-	-	Define Transfer Syntax types the associated Store SCP may accept.
Prefer compressed Images	-	-	Define Transfer Syntax Selection Policy the associated Store SCP may use.

Note: Refer to [2] for more information about associated Store SCP configuration parameters.

4.2.3 Advanced Tab

The Advanced Tab of the Local DICOM Storage Server Property Window allows entering specific information about the background process of DICOM Storage Server as shown in the following figure:

**Figure 12: Local DICOM Storage Server Property Window - Advanced Tab**

The set of information the user can enter is defined in the following table:

Table 23: DICOM Storage Server Advanced Tab Information

Field	Max Size	Required	Notes
Verbose	-	-	Used for DICOM communication debugging purposes. Logs information into text files in the "logfiles" sub-directory of the Trophy DICOM installation directory (see section 5).
Debug	-	-	
DIMSE Level	-	-	

DUL Level	-	-	
Log File	-	-	Name of the associated log file.
Show in System Tray	-	-	Add a specific icon in the Windows System Tray for the associated background process.

4.3 Controlling the local DICOM Storage Server

Running state of the Local DICOM Storage Server associated background process, i.e. associated Store SCP, may be control thru the Local DICOM Storage Server Control dialog window.

The Local DICOM Storage Server Control Window is accessible from the DICOM Storage Server general dialog window (see section 4.1.1).



Figure 13: Local DICOM Storage Server Control Dialog Window

This dialog window provides the user with the ability to control the current state of the Local DICOM Storage Server associated background process and to start or to stop this process if necessary.

5 LOG FILES

For debugging purpose, Trophy DICOM may create different log files. Log file creation may be performed while configuring DICOM remote or local servers within Trophy DICOM. See sections 2.2.4 and 4.2.3 for more information on how to setup debug options.

Due to the underlying DICOM Toolkit used, Trophy DICOM creates a specific log file for each supported DICOM Service Class.

The current list of accessible log files is described in the following table:

Table 24: Accessible Log Files

File	Description
DcmImport-log.txt	Import Process log file: this log file is filled each time a new image is automatically imported by Trophy DICOM because received by the Local DICOM Storage Server (see section 5.1.2).
DcmPrn32-log.yyyymmdd-nn.txt	DICOM Print Service Class specific log file. Note: 1) Starting with Trophy DICOM version 6.2.0.0, this log file replaces former DcmPrn-Log.txt file. 2) "yyymmdd-nn" refers to the file's creation date and order number.
DcmScu32-log.yyyymmdd-nn.txt	DICOM Q&R and Verification Service Class specific log file. Note: 1) Starting with Trophy DICOM version 6.0.4, this log file replaces former DcmQnR-log.txt and WinScu-log.txt log files. Therefore Q&R and Verification Service Class logs are now written into the same file. 2) "yyymmdd-nn" refers to the file's creation date and order number.
DcmWlist-log.txt	DICOM Modality Worklist Service Class specific log file.
WinScp-log.txt	Local DICOM Storage Server associated Store SCP specific log file.

Note: Starting with Trophy DICOM version 6.1.0.0, Store Service Class is no more controlled directly by Trophy DICOM, but by the associated CSDServices background process.

Trophy DICOM provides the user with the ability to access easily to such log files thru its user interface. Nevertheless, most of the log files are simple text files and can be visualized using the Windows Notepad editor.

In order to prevent any File System Full exception, Trophy DICOM provides the ability to control the maximum size of the Log Files (see section 5.1.3).

Log Files are located in the "logfiles" sub-directory of the Trophy DICOM installation directory.

Note: New starting with Trophy DICOM 6.1.0.0 is CSDServices, a background process used to perform asynchronous dataset transfers for Trophy DICOM. CSDServices creates its own log files when performing DICOM communications, based on the configurations performed within Trophy DICOM for the associated DICOM servers. Nevertheless, Trophy DICOM provides access to such log files as before thru its Log Files dialog window, as described in the following paragraph. CSDServices log files have the same form as the DcmScu32-log.yyyymmdd-nn.txt one described in the table above, but they are located into a specific directory on the system (by default: "C:\Program Files\Common Files\Trophy\KDServices\logfiles").

5.1.1 Definition

The Log Files dialog window may be accessed via one of the following Trophy DICOM common options:

Table 25: Accessing Log Files Dialog Window

Type	Entry	Context Sensitive
Main Menu Option	Tools / Log Files	No
Tool Bar Button	-	-
Explorer Tree Node	-	-

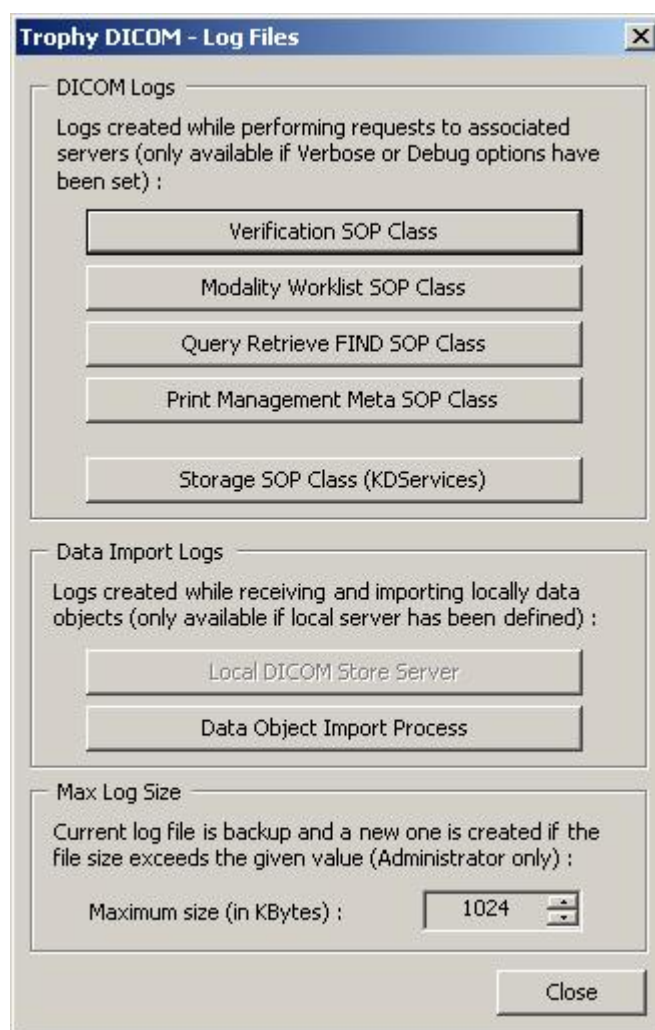


Figure 14: Log Files Dialog Window

The Log Files dialog window provides direct access to any existing Trophy DICOM log files. Except for the Import Process specific log file, most of the files are actually visualized from within Trophy DICOM using the Windows Notepad editor. Trophy DICOM using a specific display tool as described in the following section visualizes the Import Process log file.

Note: One of the log files may be actually inaccessible (associated button grayed) if not already created in the log file sub-directory.

Note: Backup log file is not accessible from this dialog window if real log file exists (see section 5.1.3).

5.1.2 Import Process Log File

Trophy DICOM provides the user with a specific tool for visualizing the Import Process log file.

This log file is actually filled with a new line entry each time a new file is received and decoded by the Local DICOM Storage Server associated Store SCP background process (refer to [2] for more information about the Store SCP Application Entity).

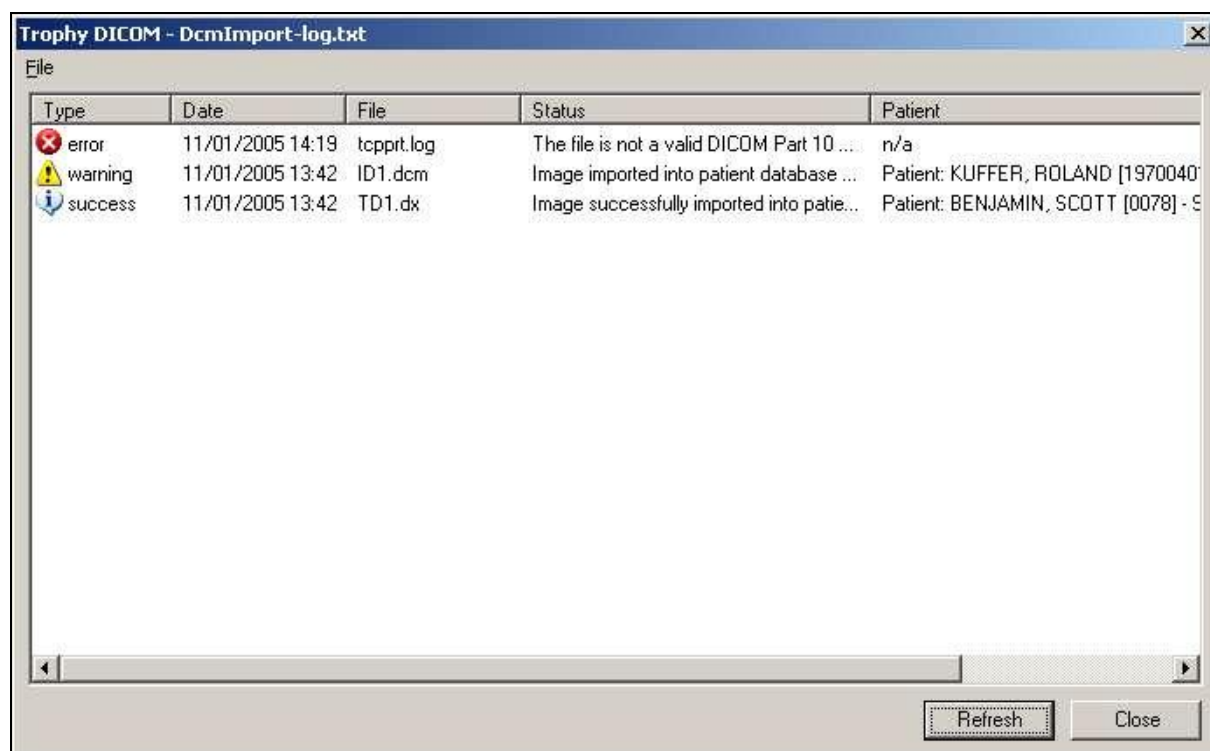


Figure 15: Import Process Log File Display Dialog Window

Note: It may be possible to update in real-time this dialog window by selecting the Refresh button.

A specific icon is used for each line entry to highlight the final status of the underlying import execution:

Table 26: Import Process Status Icons

Icon	Description
	Image successfully imported into the Trophy DICOM Patient Database.
	Image imported into the Trophy DICOM Patient Database but with Warnings.
	Image not imported into the Trophy DICOM Patient Database.

Details of a given line entry can be accessed thru a specific dialog window as described in the following section.

5.1.2.1 Import Process Event Property Window

The Import Process Event Property window may be accessed by double clicking a specific line entry in the Import Process Display window list view.

Based on the current selected line entry final status, different level of information may be accessible helping identifying imported files or reason for failure, as described in the following figures:

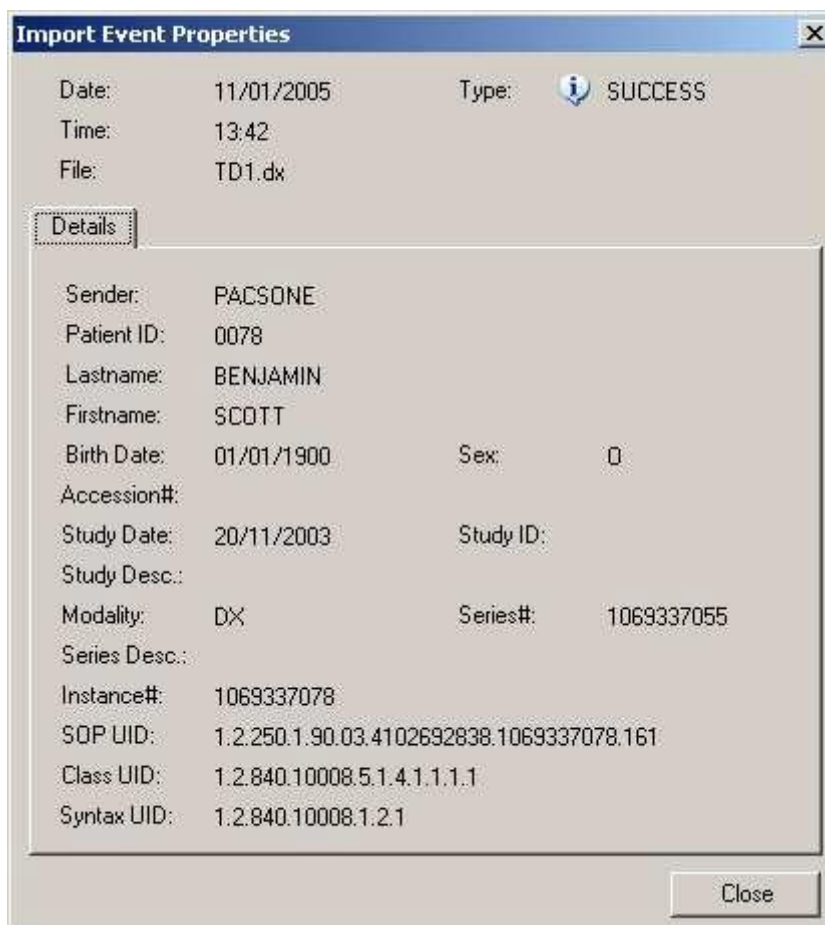


Figure 16: Import Process Event Property Window – Success

The Details Tab provides access to information extracted from the associated image file during the decoding process: This can be used to trace what images have been received and for which patient.

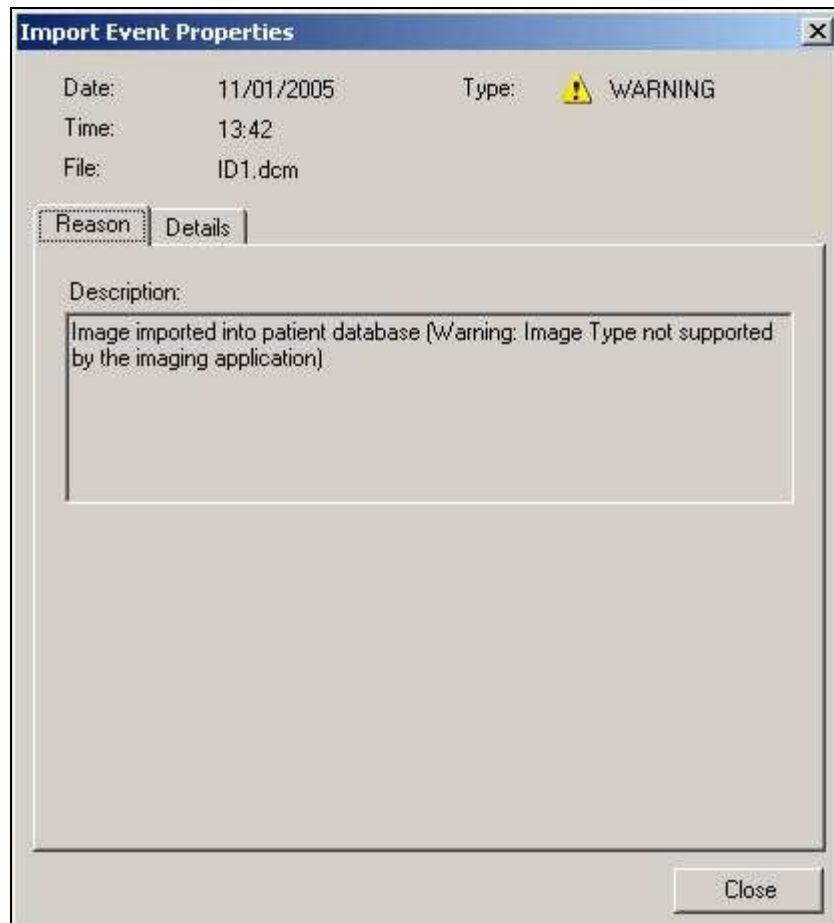


Figure 17: Import Process Event Property Window - Warnings

The Reason Tab provides information about a non-successful status of the decoding process.

5.1.3 Maximum Log File Size

In order to prevent the underlying Windows File System from being unnecessarily filled, Trophy DICOM provides the ability to define the maximum log file size.

Maximum log file size is used by Trophy DICOM at startup time: if a log file size exceeds that limit, the file is renamed with a new extension, and a new blank one will be created the next time a line entry will be added to the log file.

Maximum log file size can be between 256K and 5M size.

Note: Starting with Trophy DICOM version 6.0.4, the same logic can no longer be used for the new DcmScu32-log.yyyymmdd-nn.txt log file, replacing former DcmQnR-log.txt and WinScu32-log.txt files, since a new log file is automatically created by the underlying Etiam Toolkit libraries. Therefore, Trophy DICOM performs a control at startup time and keeps only available the last 2 created files. Starting with Trophy DICOM version 6.2.0.0, the same logic also applies to DcmPrn32-log.yyyymmdd-nn.txt log file, replacing former DcmPrn-Log.txt file for printing.