



Using DICOM Features in Metron



Click F11 on your keyboard for full screen display!

Dependent on your screen size, the menu buttons on the Database Browser screen may appear in one or two rows.

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Using DICOM Features in Metron

This online training session will provide you with detailed steps for "Using DICOM Features in Metron." *Note: these screens apply to version 5.35 and higher.*



Click F11 on your keyboard for full screen display!

Dependent on your screen size, the menu buttons on the Database Browser screen may appear in one or two rows.

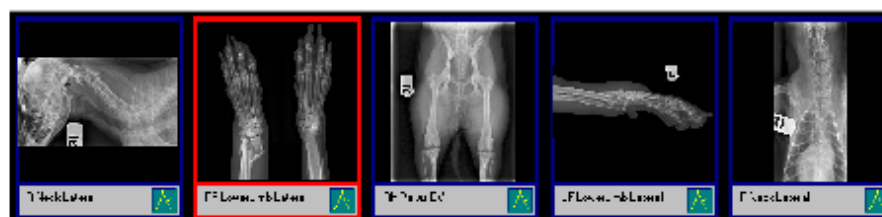
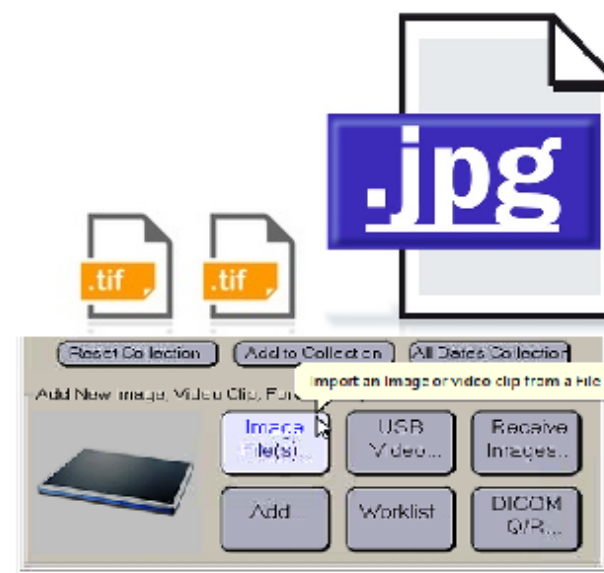
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Using DICOM Features in Metron

Introduction

Now that you have viewed "Setting DICOM Preferences in Metron" online training session, your DICOM Preferences should be set up for your practice.

Let's move on to discover the many DICOM features now available to you in Metron.



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Using DICOM Features in Metron

Introduction

In review, you have learned:

- ✓ What is DICOM?
- ✓ What does DICOM mean to you?
- ✓ Setting Preferences

This training session will cover the following topics about using DICOM features in Metron:



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Using DICOM Features in Metron

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This training session will cover the following topics about using DICOM features in Metron:

- ✓ **DICOM File Export/Import**



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Using DICOM Features in Metron

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- ✓ **DICOM File Export/Import**
- ✓ **DICOM Compliant CDs/DVDs**



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Using DICOM Features in Metron

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- ✓ **DICOM File Export/Import**
- ✓ **DICOM Compliant CDs/DVDs**
- ✓ **DICOM Send/Receive**



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Using DICOM Features in Metron

Introduction

In review, you have learned:

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This training session will cover the following topics about using DICOM features in Metron:

- ✓ **DICOM File Export/Import**
- ✓ **DICOM Compliant CDs/DVDs**
- ✓ **DICOM Send/Receive**
- ✓ **Modality Worklist**



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Using DICOM Features in Metron

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- ✓ **DICOM File Export/Import**
- ✓ **DICOM Compliant CDs/DVDs**
- ✓ **DICOM Send/Receive**
- ✓ **Modality Worklist**
- ✓ **General Information**



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Using DICOM Features in Metron

Introduction

Larger veterinary practices are already utilizing DICOM as a key part of daily practice. As a smaller veterinary practice, you may not care about DICOM today but it is important that you do understand the basics of DICOM as you face future decisions with digital equipment and software purchases.



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Using DICOM Features in Metron

Today, DICOM is both a standard and a feature.



Using DICOM Features in Metron

Introduction

Today, DICOM is both a standard and a feature.

As the standard, we know that it controls the send and receive of medical images and the patient information related to the images.

As a feature, DICOM makes it possible for different devices from various companies to share images and information within your practice. It is possible for your practice management software to make an x-ray request just like you do with your lab work. *Without DICOM*, each device and software would be isolated from the other. *Without DICOM*, you would be forced to buy all products from the same source in order to enjoy any benefits of integration.



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Using DICOM Features in Metron

Introduction

Today, DICOM is both a standard and a feature.

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Metron can both send and receive DICOM images. Metron is designed to be a great participant in your practice, cooperating with many and all other devices and software you might use in your medical imaging diagnostics.

Benefits of integration.

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Using DICOM Features in Metron

DICOM File Export

Any image in Metron can be exported as a DICOM image file type. The "**DICOM**" button (in the Single Image Viewer) can be used to view or edit DICOM tags on *any* image in Metron.

Any image in Metron, regardless of its original format, may be saved with DICOM tags if desired.

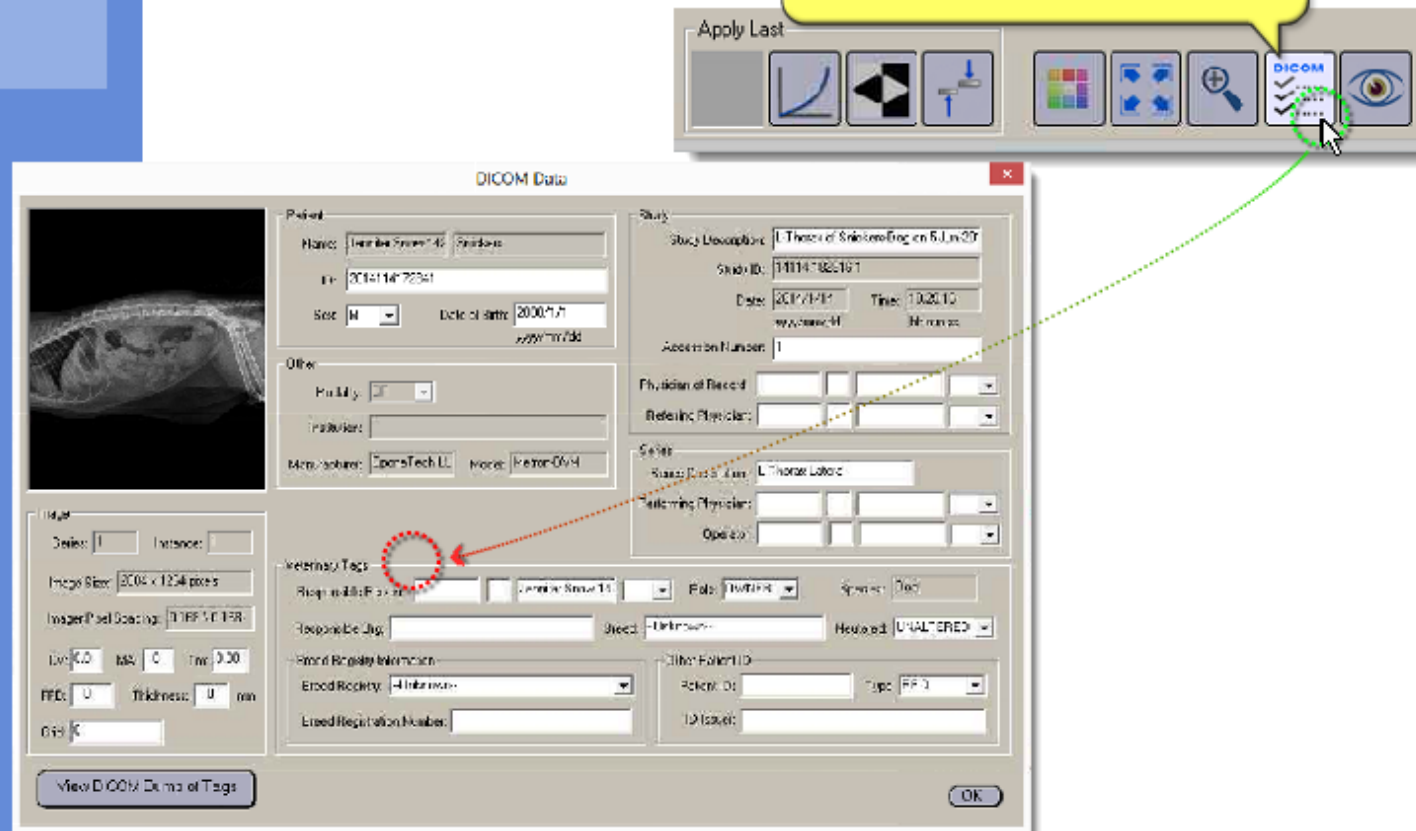


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Using DICOM Features

DICOM File Export

Clicking this button lets you view the DICOM tags attached to the image.



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Using DICOM Features in Metron

DICOM File Export

Metron can be configured so that when a single study is created, Metron prompts the user to mark one or more DICOM 'tags' for that study.

General Preferences

Default Species: Dog

Units: ☐ Metric ☒ English

Name Format: ☐ Use Structured Names Format: English (John D)

Language: ☒ English ☐ German ☐ French ☐ Polish ☐ Spanish ☐ Italian ☐ Dutch ☐ Portuguese

Ask when New Study Created:

Physician: ☐ of Record ☒ Performing ☐ Referring

☐ Accession Number ☒ Study Description ☒ Operator

DICOM Tags on this Study

Note: Acquired Images will be Stored under Today's Date... (4-May-2014)

Performing Physician: [Field] change to: Mike L. Cooper DVM

Operator: [Field] change to: - choose -

Study Description: Spot Dog on 4 May 2014

Dropdown menu options: - choose -, - choose -, Mary W. Smith, Terry P. Rogers

...and enter a Study Description.

For example: identify which operator or physician is performing the study...

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Using DICOM Features in Metron

DICOM File Export

To export one or more images, highlight them on the main Database Browser panel, and click "Export".



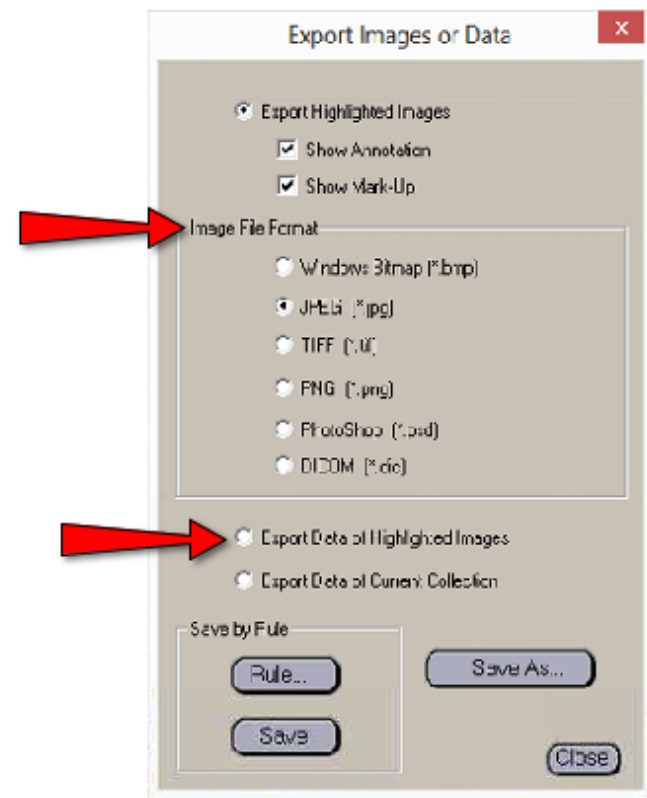
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Using DICOM Features in Metron

DICOM File Export

From the “**Export Images or Data**” window, you are able to define how you want to export the images including the file format and if you want the DICOM data exported with the images.



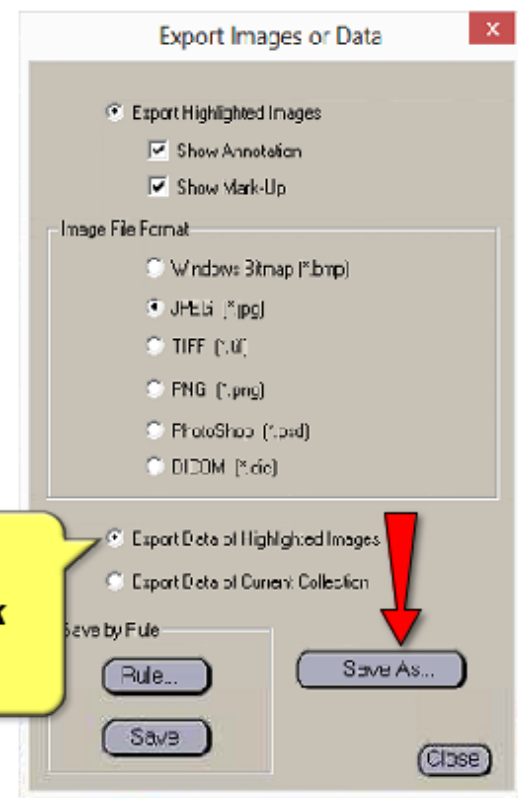
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Using DICOM Features in Metron

DICOM File Export

From the **"Export Images or Data"** window, you are able to define how you want to export the images including the file format and if you want the DICOM data exported with the images.

Once you have selected your export criteria, click "Save As".

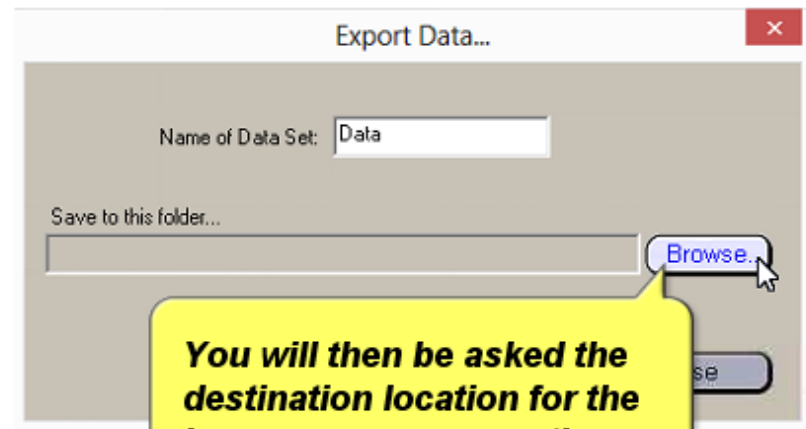


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Using DICOM Features in Metron

DICOM File Export



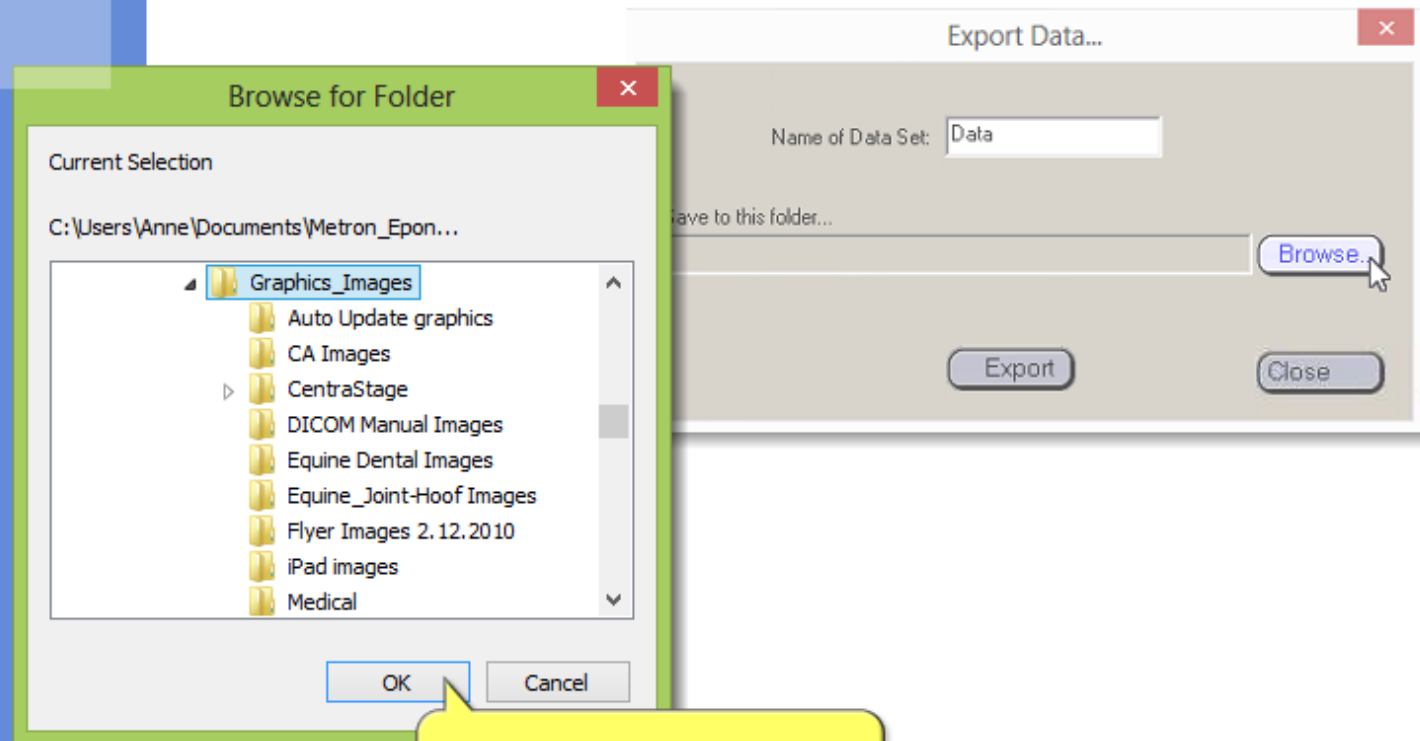
You will then be asked the destination location for the images you are exporting.

Click the "Browse" button.

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Using DICOM Features in Metron

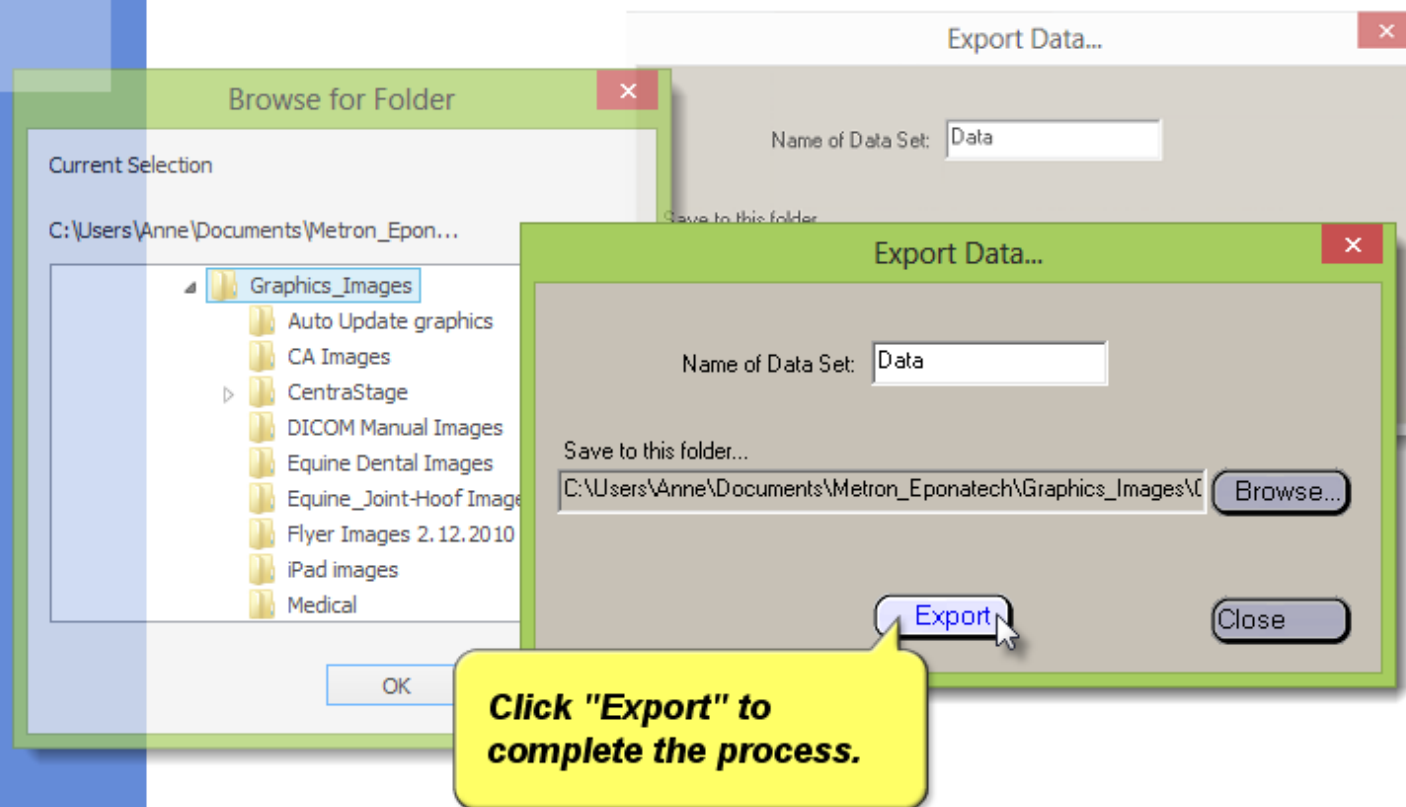
DICOM File Export



Find the folder you will export the image(s) to. Click "OK".

Using DICOM Features in Metron

DICOM File Export



Using DICOM Features in Metron

DICOM File Import

Metron has two ways to perform
DICOM File Import:

1. A DICOM file can be imported to Metron in exactly the same manner as a JPEG, Tif, or Bitmap image file.



Using DICOM Features in Metron

DICOM File Import

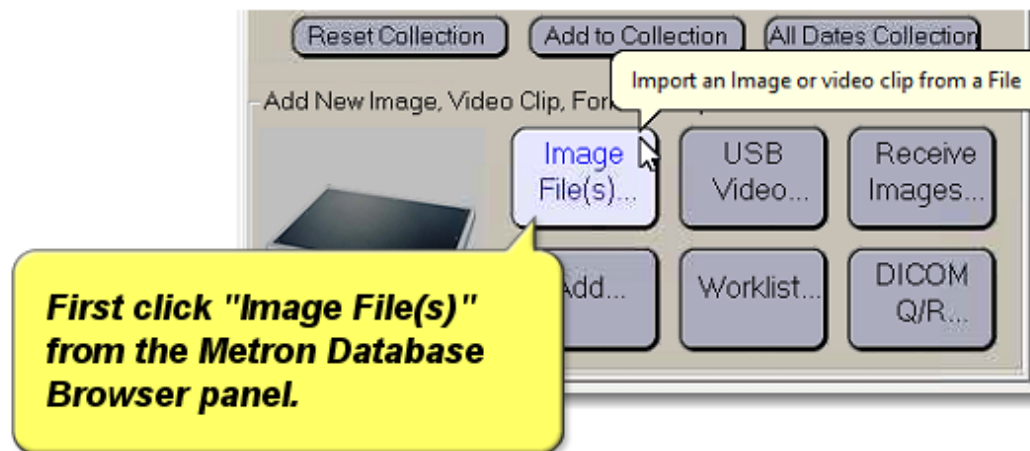
Metron has two ways to perform **DICOM File Import**:

1. A DICOM file can be imported to Metron in exactly the same manner as a JPEG, Tif, or Bitmap image file.
2. A special button on the **Import Image** file screen finds all DICOM images in a folder and imports them into Metron using the data in the DICOM tags stored within each file. Metron automatically creates the Owner, Animal, and Date records for the images being imported to the Metron database.



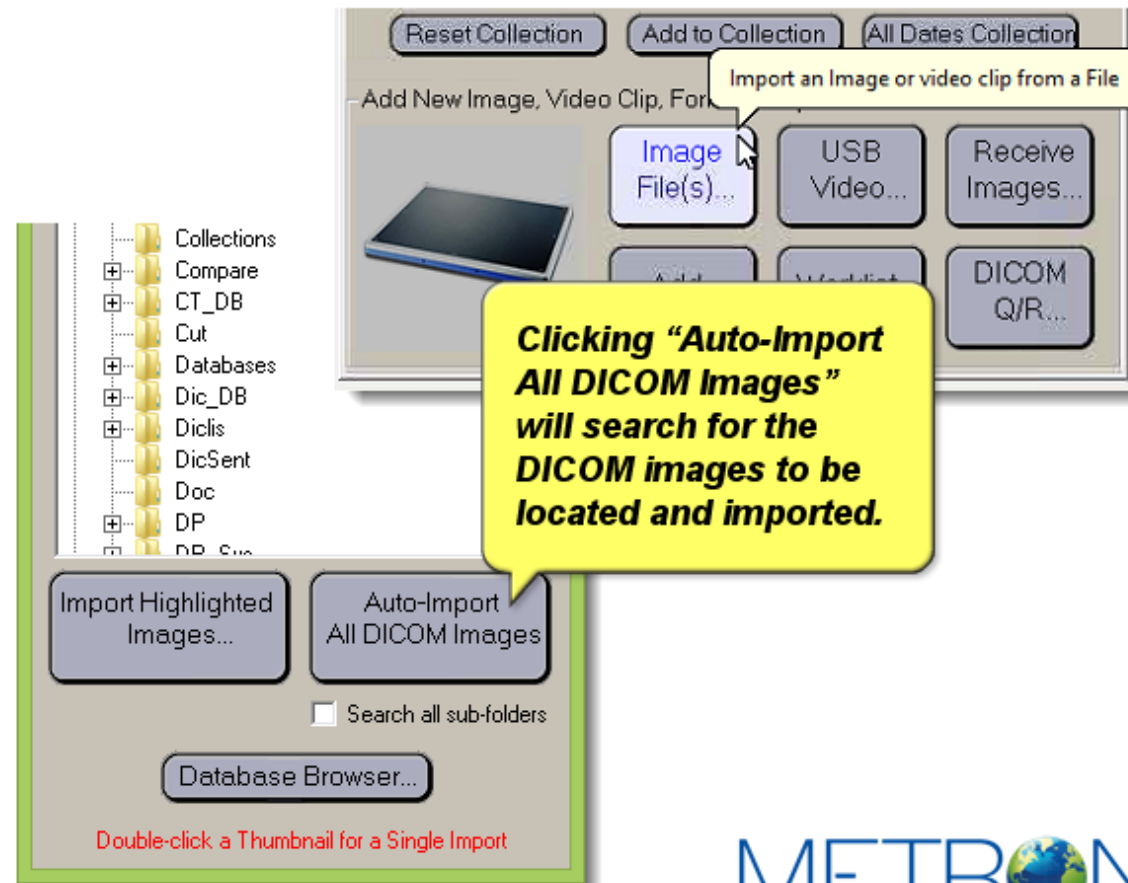
Using DICOM Features in Metron

DICOM File Import



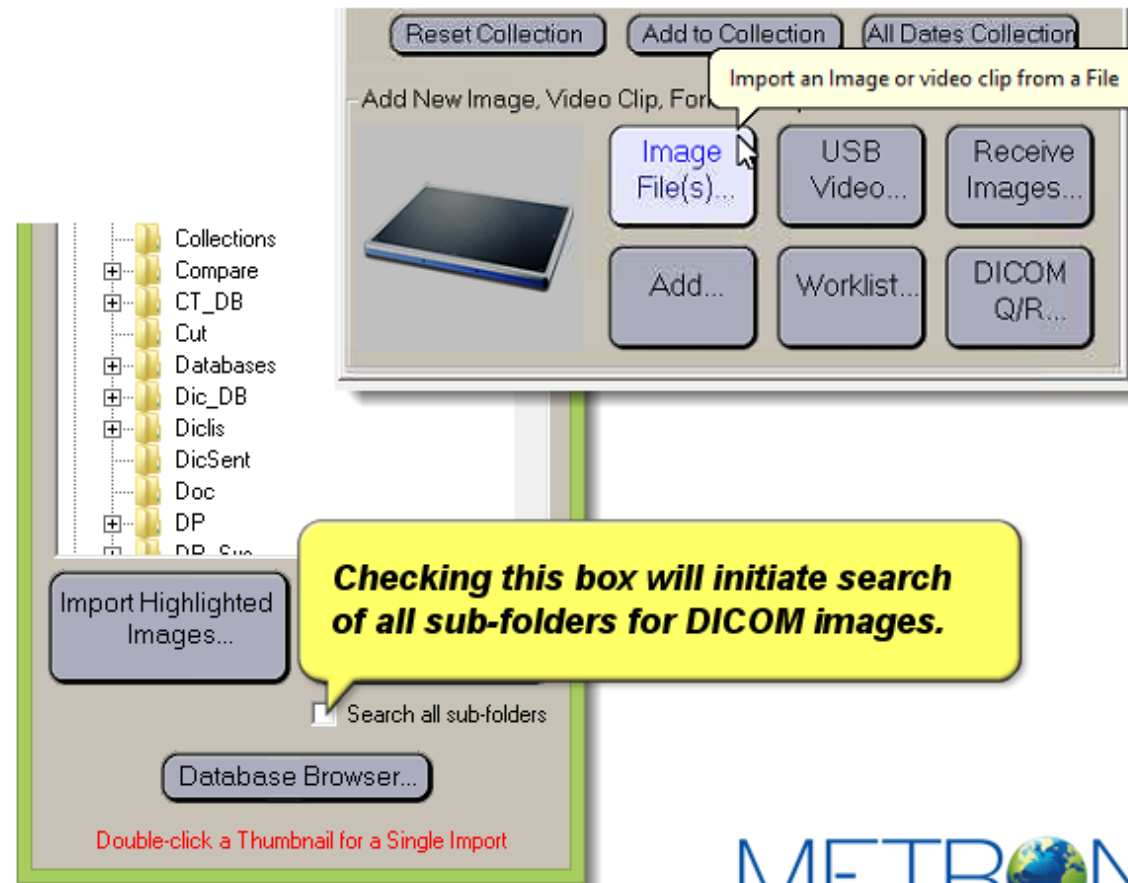
Using DICOM Features in Metron

DICOM File Import



Using DICOM Features in Metron

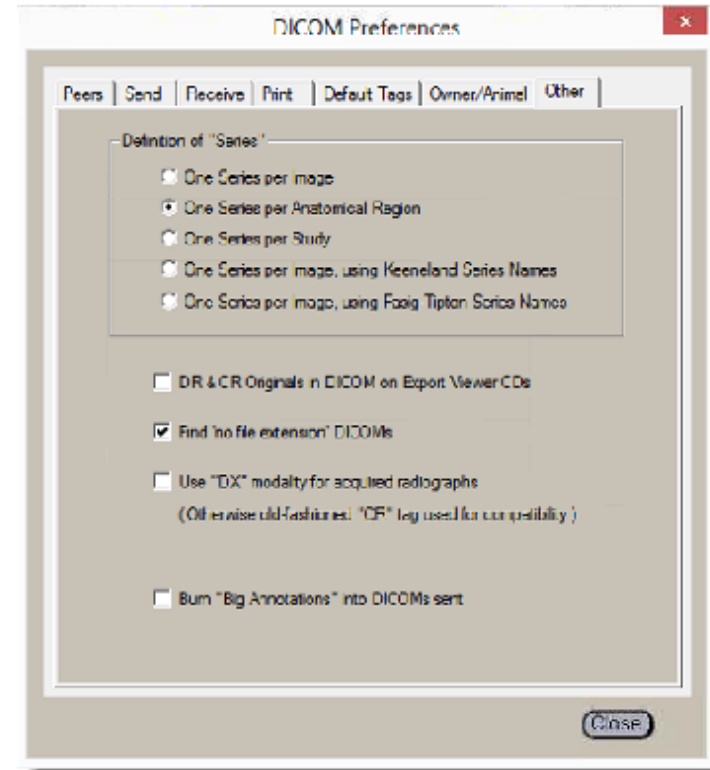
DICOM File Import



Using DICOM Features in Metron

DICOM File Import

With **File Import**, Metron looks for files with extensions *.dic or *.dcm to find DICOM files. Some systems create DICOM files with no extensions.

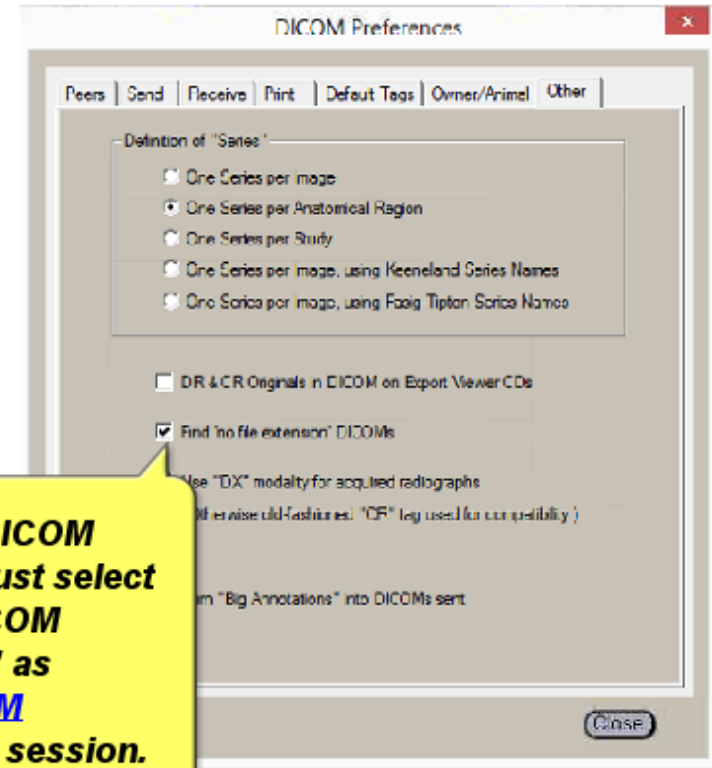


Using DICOM Features in Metron

DICOM File Import

With **File Import**, Metron looks for files with extensions *.dic or *.dcm to find DICOM files. Some systems create DICOM files with no extensions.

If you want Metron to look for DICOM files with no extensions, you must select a preference setting under "DICOM Preferences" then click "Other" as discussed in the "[Setting DICOM Preferences in Metron](#)" training session.



Using DICOM Features in Metron

DICOM Compliant CDs/DVDs

Metron can burn CDs or DVDs with DICOM files in a manner compliant with the **DICOM standard** so that other DICOM viewers will be able to read them.



Using DICOM Features in Metron

DICOM Compliant CDs/DVDs

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Metron can be used to create CDs or DVDs containing DICOM images in the format required by the Keeneland Repository as described in their document available on the [support site](#).

Using DICOM Features in Metron

DICOM Compliant CDs/DVDs

Metron can burn CDs or DVDs with DICOM files in a manner compliant with the DICOM standard so that other DICOM viewers will be able to read them.

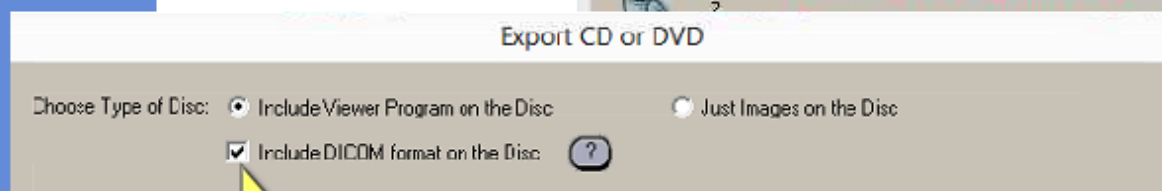


Click "CD/DVD" located in the Metron Database Browser panel.

Using DICOM Features in Metron

DICOM Compliant CDs/DVDs

Metron can burn CDs or DVDs with DICOM files in a manner compliant with the DICOM standard so that other DICOM viewers will be able to read them.



At the top of the window, you are able to select to "Include DICOM format on the Disc."

Using DICOM Features in Metron

DICOM Send

Metron can utilize the communication features of the DICOM standard to transmit images by clicking the **"Send"** button.



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Using DICOM Features in Metron

DICOM Send



In order to send to another DICOM system, you need to set up the address of the receiving system in DICOM Preferences as discussed in "[Setting DICOM Preferences in Metron](#)" training session.

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Using DICOM Features in Metron

DICOM Send

Metron provides two methods for sending images via DICOM:

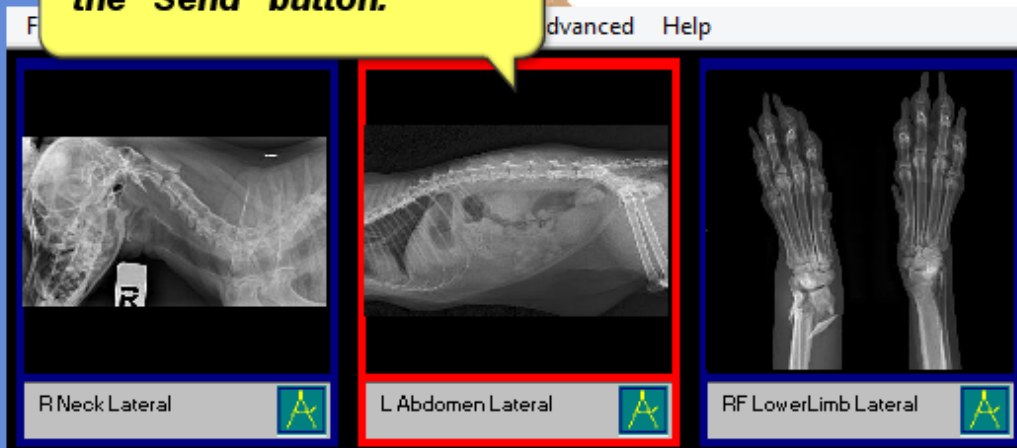


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Using DICOM Features in Metron

DICOM Manual Send

1. Manual Send - From the Database Browser panel, highlight one or more images and click the "Send" button.

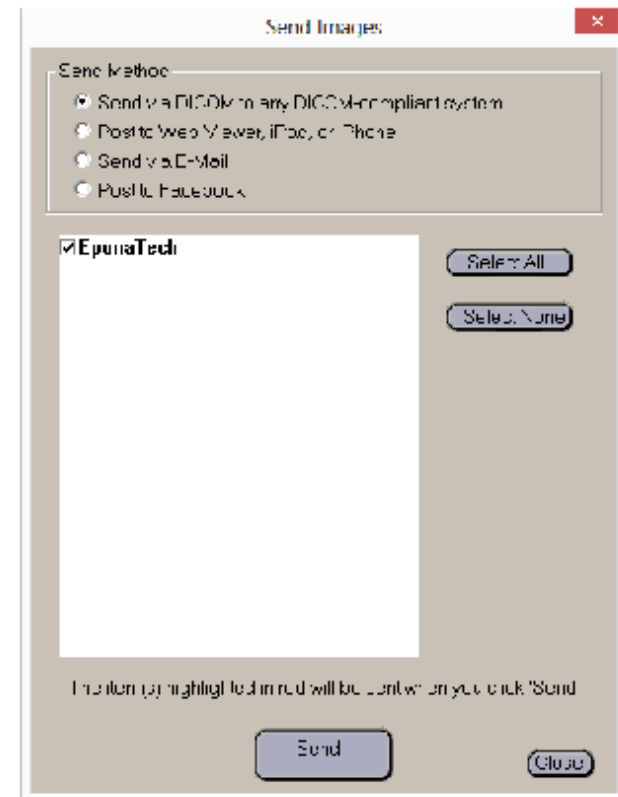


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Using DICOM Features in Metron

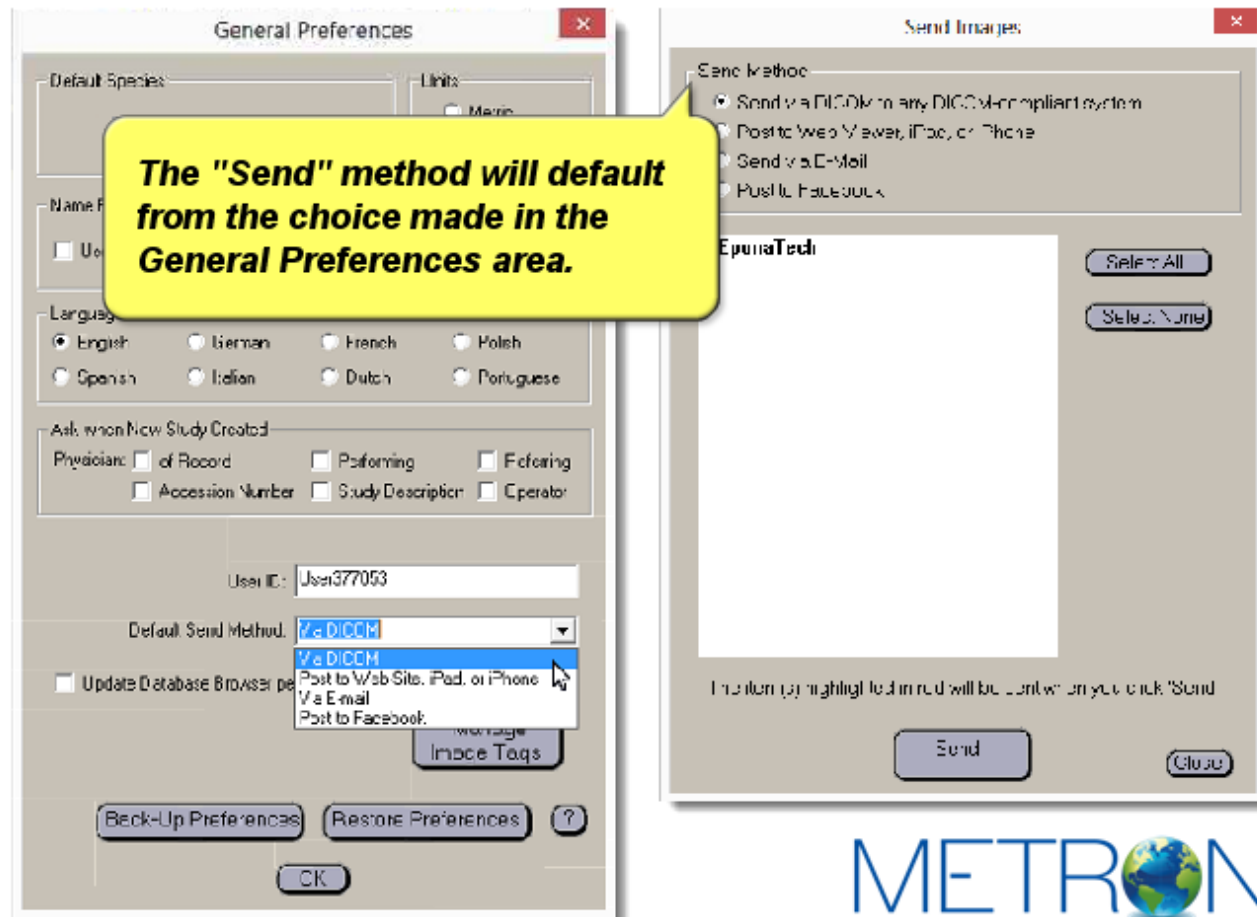
DICOM Manual Send

After clicking the button, you will be presented with a window to select the send method to the recipients of the DICOM images.



Using DICOM Features in Metron

DICOM Manual Send



Using DICOM Features in Metron

DICOM Manual Send

Select "Send via DICOM to any DICOM-compliant system".

Send Images

Send Method

- ☒ Send via DICOM to any DICOM-compliant system
- ☐ Post to Web Viewer, iPad, or Phone
- ☐ Send via E-Mail
- ☐ Push to Facebook

☒ Lipona Tech

Select All

Select None

Then select using the check boxes for the recipients for the DICOM images.

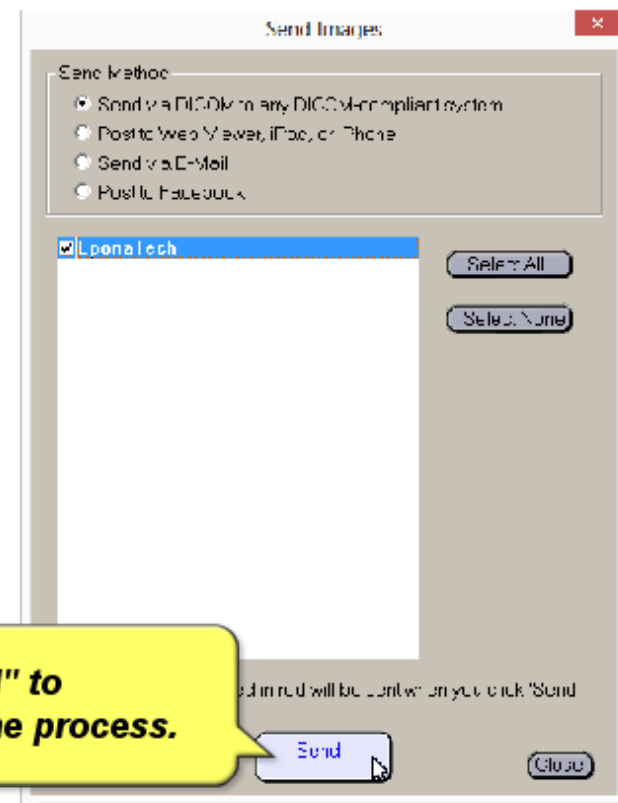
Then items highlighted in red will be sent when you click "Send"

Send

Close

Using DICOM Features in Metron

DICOM Manual Send



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Using DICOM Features in Metron

DICOM Automatic Send

Metron can utilize the communication feature of the DICOM standard to transmit images via "DICOM Send".

Sending via DICOM can happen two ways:

1. **Manual Send** - From Database

Browser panel, highlight 1 or more images and click "Send by DICOM". You can also manually send the one image in the single image viewer screen by clicking "Send" under the image.

2. The second send via DICOM option "Send Images automatically after acquire" - this option is only available when Metron is being used with CR or DR hardware for image acquire. This method sends the image after it has been acquired and possibly filtered, rotated, etc.

The screenshot shows the 'Create/Edit DICOM Peer' dialog box. It contains the following fields and sections:

- Unknown:** Inspec QC Server
- Peer Address:** 192.168.1.100
- Peer Port:** 113
- Peer AP:** k77R001.QCVM
- Test this Connection** (button)
- Use:**
 - ☒ Send Destination
 - ☐ Mail Server
 - ☐ QR Server
 - ☐ MPDS Server
 - ☐ Other Server
- Format and Compression:**
 - Format: Symbolic
 - Compression: 1
 - ☐ Include the 'Original' image in Private Data
- Enable Send:**
 - ☐ Send Images when 'DICOM Send' is Used
 - ☒ Send Images automatically after acquire (highlighted by a red arrow)
- Retry Strategy and Notification:**
 - Retry: 2 times (Max: 3)
 - Wait: 30 seconds between attempts
 - (If send fails after retrying, a pop-up alert will appear)
 - ☒ Pop up Success Notification
- OK** and **Cancel** buttons at the bottom.

Using DICOM Features in Metron

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Using DICOM Features in Metron

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2. The second send via DICOM option **"Send Images automatically after acquire"** - this option is only available when Metron is being used with CR or DR hardware for image acquire. This method sends the image after it has been acquired and possibly filtered, rotated, etc.

Check this box if you would like to receive confirmation that an image has been successfully sent.

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Using DICOM Features in Metron

DICOM Automatic Send

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Sending via DICOM can happen two ways:

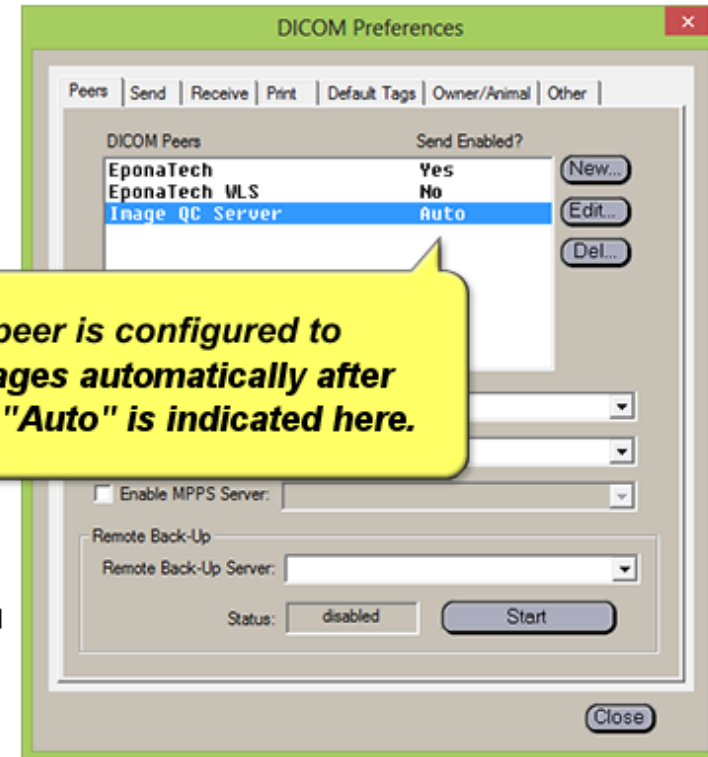
1. Manual Send - From Database

Browser panel, highlight 1 or more images and click "Send by DICOM".
manually send the one image from the image viewer screen by clicking the "Send" button under the image.

2. The second send via DICOM

"Send Images automatically after acquire" - this option is only available when Metron is being used with CR or DR hardware for image acquire. This method sends the image after it has been acquired and possibly filtered, rotated, etc.

When a peer is configured to send images automatically after acquire, "Auto" is indicated here.



Using DICOM Features in Metron

DICOM Automatic Send

When you send images via DICOM you can easily monitor how many remain to be sent to their destinations from the display queue on the main Metron screen.

Sending DICOM files to destinations across the Internet is completely dependent on your facility Internet speed and the Internet speed of the recipient. If the Internet speeds are slow, the DICOM Send can take awhile to complete.

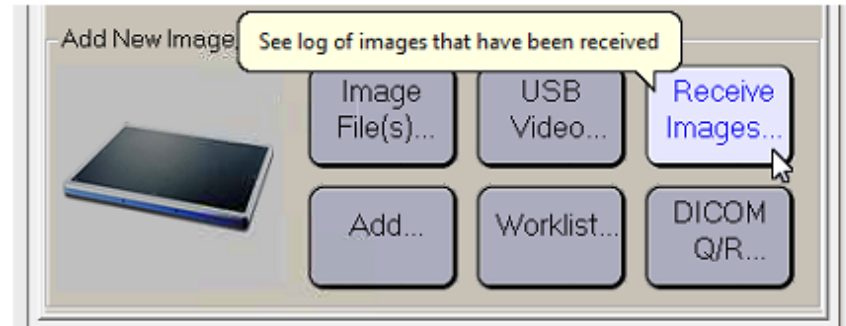


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Using DICOM Features in Metron

DICOM Receive

Normally, if a DICOM image is received by your copy of Metron, the "**Receive Images**" button will start blinking in **Red**.



Using DICOM Features in Metron

DICOM Receive

The screenshot shows the Metron software interface. At the top, there's a 'Receive Log' window with a table of received images. Below it, there's a 'DICOM Receive' section with buttons for 'Image File(s)...', 'USB Video...', 'Receive Images...', 'Add...', 'Worklist...', and 'DICOM Q/R...'. A yellow callout box points to the 'Receive Images...' button, stating: 'If the button is blinking, click on it to display the "Receive Log" window displaying the images you have received. By noting the image source, you can choose and import any or all images into your Metron database.' Another yellow callout box points to the 'Import all Pending' button, stating: '0 item(s) have been received and are ready to import'.

When Received	Owner	Animal	Date	Source	Status
18-Jan-2013	Wells -Kieffer	Remi	16-Jan-2013	DICOM	Imported
18-Jan-2013	Wells -Kieffer	Remi	16-Jan-2013	DICOM	Imported
18-Jan-2013	Smith-Daniel	Casper	14-Jan-2013	DICOM	Imported
18-Jan-2013	Lang-Angie	Dusty	11-Jan-2013	DICOM	Imported
18-Jan-2013	Lang-Angie	Dusty	11-Jan-2013	DICOM	Imported

0 item(s) have been received and are ready to import

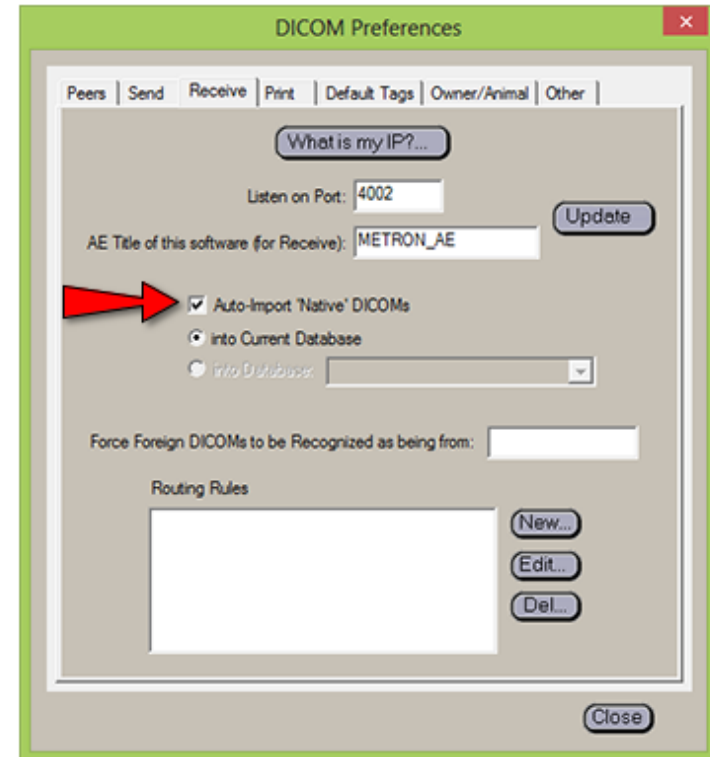
Buttons: Reject All Pending, Clear&Archive Log, Import all Pending, Jump to Highlighted Study

Using DICOM Features in Metron

DICOM Receive

If “**Auto-Import ‘Native Metron’ DICOMS**” is turned on in the preferences, the “**Receive Images**” button does not blink and there's no need to click to import the images – it's all automatic!”

Native Metron DICOMS are files being sent from senders that also use Metron.

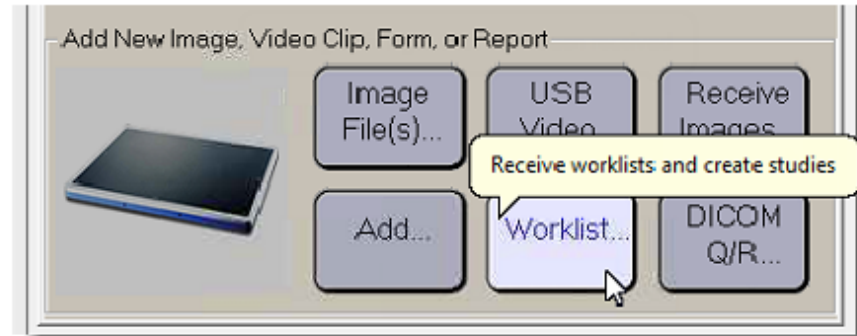


Using DICOM Features in Metron

Modality Worklist

A **Modality Worklist** is a means of communication between a Practice Management System and Metron.

By clicking the "**Worklist (WL)**" button, Metron can query a "**Modality Worklist (MWL) Server**" to ask if there are any scheduled exams, and Metron will display the exam request list sent back from the server.



Using DICOM Features in Metron

Modality Worklist

Worklist

DICOM Modality Worklist | HL7 Worklist | Text File Worklist

Server: (This selection can be made to persist in 'Preferences/DICOM Preferences' in top-bar)

☒ Modality: CR ☐ Patient Name: ☐ Date: Thursday, February 14, 2013 ☐ AE Title: ☐ Station: ☐ Auto-Query (every 2 minutes)

(by last name with wildcard - e.g. Sm* finds "John Smith")

Patient Name	Patient ID	Procedure Start Date	Procedure Start Time	Requested Procedure	Procedure ID	Station
Cleo	18	26-Feb-2008	12:07			
Cleo	18	4-Mar-2008	15:29			
Bo Bo	1A	11-Aug-2008	13:08			
Sauger	1A	13-Oct-2008	8:25			
Hardt	0948C	13-Oct-2008	12:23			
Stone	043894389B	13-Oct-2008	14:48			
Stone	043894389B	13-Jan-2009	15:34			
Kuehl	05824B	26-Feb-2009	9:13			
KONICA	6917A	26-Feb-2009	10:48			
KONICA	6917A	26-Feb-2009	12:23			
KONICA	6917A	26-Feb-2009	12:24			
Sauger	18	26-Feb-2009	14:22			
Sauger	18	26-Feb-2009	15:18			
KONICA	6917A	31-Jul-2009	9:13			
Sundt	6920B	26-Oct-2009	8:52			
KONICA	6917A	21-Dec-2009	8:07			
Fuji	6923B	6-Jan-2010	7:59			
Fuji	6923B	6-Jan-2010	8:10			
Sauger	18	6-Jan-2010	11:52			

For Highlighted Study Request

View Detailed Information

Owner: from:

Animal: from:

Add New Image, Video Clip, Form, or Report

Image File(s)... USB Video Receive Images Add... Worklist... DICOM Q/R...

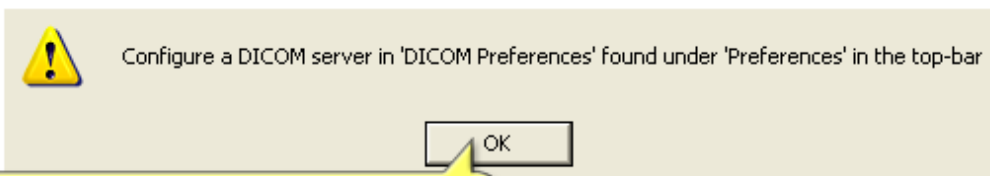
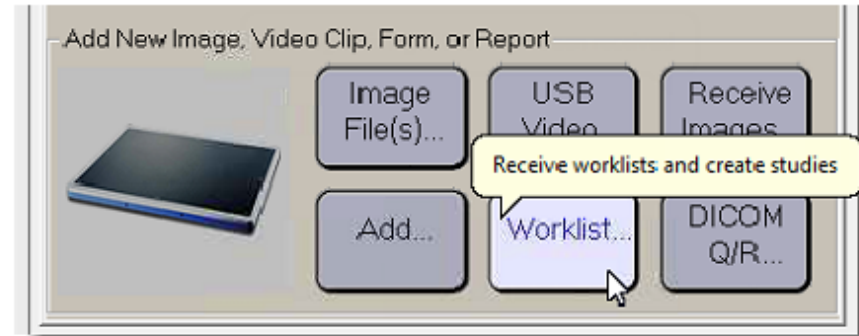
Receive worklists and create studies

You can then choose one or more Worklist entries to create the Owner and Animal details without re-typing this information.

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Using DICOM Features in Metron

Modality Worklist



You will get this message if you have not set up the worklist server in "DICOM Preferences". Refer to "[Setting DICOM Preferences in Metron](#)" training session to complete.

Using DICOM Features in Metron

General Information about DICOM and Metron

Metron stores all of its calibration and markup data "inside" the DICOM file in what is called **"Private Tags."** In this way, if a Metron-generated DICOM file is received by another Metron system, all of this data is recovered, and at the receiving end, it is exactly as if that image had been created locally.

Hence, DICOM Send/Receive is a great way to send images from Metron to Metron anywhere across the internet.





Using DICOM Features in Metron

This completes the "Using DICOM Features in Metron" online training.
Please feel free to view it again or select another online training session to review.



Click F11 on your keyboard to minimize the browser screen
and click the window closed to exit this training session.

